

1989 Index

IEEE Transactions on Microwave Theory and Techniques, Vol. 37 and MTT-S Sponsored Conferences

The indexed papers are identified by the acronyms:

CORNEL 89 1989 IEEE/Cornell Conference on Advanced Concepts in High-Speed Semiconductor Devices and Circuits
MCS 89 1989 IEEE Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest
MWSYM 89 1989 IEEE MTT-S International Microwave Symposium Digest
T-MTT *IEEE Transactions on Microwave Theory and Techniques*

The *Author Index* contains the primary entry for each item, listed under the first author's name, and cross-references from all coauthors. The *Subject Index* contains several entries for each item under appropriate subject headings, and subject cross-references.

It is always necessary to refer to the primary entry in the *Author Index* for the exact title, coauthors, and comments/corrections

AUTHOR INDEX

A

Abe, Masayuki, see Awano, Yuji, *CORNEL 89* Abstr II/1
 Abouzahra, Mohamed D., and K. C. Gupta. Multi-way unequal power divider circuits using sector-shaped planar components; *MWSYM 89 Vol. 1* 321-324
 Actis, Robert, Roy A. McMorran, R. Allen Murphy, Mark A. Hollis, Richard W. Chick, Carl O. Bozler, and Kirby B. Nichols. Large-signal characterization of millimeter-wave transistors using an active load-pull measurement system; *MWSYM 89 Vol. 2* 835-838
 Adde, Robert, see Ouslimani, A., *T-MTT Sep 89* 1460-1465
 Adelman, Jonah, Rachel Ben-Michael, Shimon Caspi, and Samuel Hopfer. The design of millimeter-wave control components; *T-MTT Feb 89* 317-323
 Adelseck, B., A. Colquhoun, J. M. Dieudonné, G. Ebert, J. Selders, K. E. Schmegner, and W. Schwab. A monolithic 60 GHz diode mixer in FET compatible technology; *MCS 89* 91-94
 Adelseck, B., A. Colquhoun, J. M. Dieudonné, G. Ebert, J. Selders, K. E. Schmegner, and W. Schwab. A monolithic 60 GHz diode mixer in FET compatible technology; *MWSYM 89 Vol. 1* 99-102
 Adelseck, Bernd, Alexander Colquhoun, Jean-Marie Dieudonné, Günther Ebert, Karl-Ernst Schmegner, Wolfgang Schwab, and Johannes Selders. A monolithic 60 GHz diode mixer and an IF amplifier in compatible technology; *T-MTT Dec 89* 2142-2147
 Adlerstein, Michael G., and James Pines. A multi-IMPATT injection-locked oscillator at 35 GHz; *T-MTT Mar 89* 571-579
 Affandi, Adnan M., and Ahmed M. Milyani. A novel exponential power combiner/divider; *T-MTT Feb 89* 400-405
 Aghvami, A. H., see Robertson, I. D., *MWSYM 89 Vol. 3* 1031-1032
 Aghvami, Hamid, see Uysal, Sener, *T-MTT Jun 89* 969-976
 Agrawal, Ashok K., see Mikucki, Gerald F., *T-MTT Jan 89* 112-117
 Aida, Kazuo, and Takashi Ono. Microwave surface resistance measurement technique for cylindrical high-Tc superconductor; *MWSYM 89 Vol. 2* 559-562
 Aikawa, Masayoshi, Hiroyo Ogawa, and Takayuki Sugeta. MMIC progress in Japan; *MCS 89* 1-6
 Aikawa, Masayoshi, see Hara, Shinji, *MWSYM 89 Vol. 3* 955-958
 Aikawa, Masayoshi, see Tokumitsu, Tsuneo, *MWSYM 89 Vol. 3* 963-966
 Aikawa, Masayoshi, and Hiroyo Ogawa. Double-sided MIC's and their applications; *T-MTT Feb 89* 406-413
 Aikawa, Masayoshi, see Hara, Shinji, *T-MTT Jul 89* 1155
 Aikawa, Masayoshi, see Hiraoka, Takahiro, *T-MTT Oct 89* 1569-1575
 Aikawa, Masayoshi, see Hara, Shinji, *T-MTT Dec 89* 1979-1984
 Aikawa, Masayoshi, see Tokumitsu, Tsuneo, *T-MTT Dec 89* 1985-1990
 Akiyama, M., see Ichioka, T., *MCS 89* 61-64
 Akyl, Cevdet, see Gauthier, Sylvain, *T-MTT Apr 89* 801-804
 Albinsson, B. M., see Starski, J. P., *T-MTT Oct 89* 1658-1659 (Original paper, Apr 88 789-791)
 Alessandri, F., U. Goebel, F. Melai, and R. Sorrentino. Theoretical and experimental characterization of nonsymmetrically shielded coplanar waveguides for millimeter wave circuits; *MWSYM 89 Vol. 3* 1219-1222
 Alessandri, Ferdinando, Uhland Goebel, Franco Melai, and Roberto Sorrentino. Theoretical and experimental characterization of nonsymmetrically shielded coplanar waveguides for millimeter-wave circuits; *T-MTT Dec 89* 2020-2027

Alexopoulos, Nicolaos G., see Yang, Hung-Yu, *T-MTT Oct 89* 1542-1546
 Ali, Sami M., see Kiang, Jean-Fu, *T-MTT Apr 89* 776-786
 Ali, Sami M., Terek M. Habashy, Jean-Fu Kiang, and Jin Au King. Resonance in cylindrical-rectangular and wraparound microstrip structures; *T-MTT Nov 89* 1773-1783
 Alyassini, W., see Dunn, V. E., *MWSYM 89 Vol. 1* 127-130
 Anada, T., see Hsu, Jui-Pang, *MWSYM 89 Vol. 3* 1135-1138
 Anderson, A. C., see Oates, D. E., *MWSYM 89 Vol. 2* 627-630
 Anderson, Alfredo C., see Dilorio, Mark S., *T-MTT Apr 89* 706-710
 Anderson, James L. The lossy waveguide as a problem in perturbation theory (Short p.); *T-MTT Nov 89* 1819-1821
 Andersson, Ingmar L., and Sverre T. Eng. Phase and amplitude characteristics of InP:Fe modified interdigitated gap photoconductive microwave switches; *T-MTT Apr 89* 729-733
 Ando, Yuji, and Tomohiro Itoh. Noise modeling for two-dimensional electron gas field-effect transistors based on accurate charge control characteristics; *CORNEL 89* Abstr II/9
 Andricos, C., see Bahl, Inder J., *MCS 89* 21-24
 Andricos, Constantine, see Bahl, Inder J., *T-MTT Sep 89* 1315-1320
 Andricos, Constantine, see Bahl, Inder J., *T-MTT Dec 89* 2154-2158
 Anemogiannis, K., P. Russer, and R. Weigel. Wide-band nonlinear chirp transducers for planar acoustooptic deflectors; *MWSYM 89 Vol. 1* 269-272
 Angénieux, G., see Chilo, J., *MWSYM 89 Vol. 3* 1259-1262
 Arai, Shigemitsu, see Oda, Yuji, *MCS 89* 33-36
 Arai, Shigemitsu, Tomohiro Yoshida, Kenichiro Kai, Shinji Takatsuka, Yuji Oda, and Shigeru Yanagawa. Ka-band 2-watt power GaAs MMIC; *MWSYM 89 Vol. 3* 1105-1108
 Araki, Katsuhiko, see Ohira, Takashi, *T-MTT Apr 89* 723-728
 Archer, John, Bryce M. Smith, Gary R. Weaver, Harry Wong, and Jeffry Y. Yonemura. Development and evaluation of a GaAs MMIC phase-locked loop chip set for space applications (Short p.); *T-MTT Apr 89* 790-792
 Ares, F., see Estévez, H., *T-MTT Mar 89* 634-637
 Arndt, Fritz, see Bornemann, Jens, *MWSYM 89 Vol. 2* 603-606
 Arndt, Fritz, see Dittloff, Joachim, *T-MTT Feb 89* 340-350
 Asa, Masahito, see Ito, Yasushi, *MWSYM 89 Vol. 1* 379-383
 Asbeck, P. M., see Wang, N. L., *CORNEL 89* Abstr III/4
 Assal, F. T., see Geller, B. D., *MWSYM 89 Vol. 3* 949-952
 Atsuki, Kazuhiko, see Yamashita, Eikichi, *MWSYM 89 Vol. 1* 339-342
 Atsuki, Kazuhiko, see Yamashita, Eikichi, *T-MTT May 89* 890-896
 Aubourg, M., see Verdeyme, S., *MWSYM 89 Vol. 3* 1151-1154
 Audu, Hesham A., see Hsu, Chung-I G., *T-MTT Apr 89* 806
 Audren, P., see Dumas, J. M., *MWSYM 89 Vol. 1* 483-486
 Auld, B. A., see Majidi-Ahy, R., *MWSYM 89 Vol. 1* 299-302
 Auricchio, F. S., Jr., R. A. Rhodes, and D. S. Day. A 12 watt 20 GHz FET power amplifier; *MWSYM 89 Vol. 3* 933-936
 Auxemery, P., see Verdeyme, S., *MWSYM 89 Vol. 3* 1151-1154
 Auxemery, P., see Cros D., *MWSYM 89 Vol. 3* 1215-1218
 Auxemery, P., see Jiao, X. H., *T-MTT Feb 89* 432-437
 Avasarala, M., D. S. Day, S. Chan, C. Hua, and J. R. Basset. A 2.5-watt high frequency X-band power MMIC; *MCS 89* 25-28
 Awano, Yuji, Makoto Kosugi, Shigeru Kuroda, Takashi Mimura, and Masayuki Abe. Electron dynamics and device physics of short-channel HEMTs: transverse-domain formation, velocity overshoot, and short-channel effects; *CORNEL 89* Abstr II/1
 Ayaki, N., T. Shimura, K. Hosogi, T. Kato, Y. Nakajima, M. Sakai, Y. Kohno, H. Nakano, and N. Tanino. A 12 GHz-band super low-noise amplifier using a self-aligned gate MESFET; *MCS 89* 7-10
 Ayasli, Y., see Shifrin, M., *MCS 89* 51-56
 Ayasli, Yalcin, see Shifrin, Mitchell B., *T-MTT Dec 89* 2134-2141
 Azuma, Chinatsu, see Ishikawa, Osamu, *MWSYM 89 Vol. 3* 979-982

B

Baba, T., see Tanaka, S., *CORNEL 89* Abstr III/6
 Bacon, J. W., see Lee, R. E., *MWSYM 89 Vol. 3* 975-978
 Bacon, Jeff W., see Lee, Robert E., *T-MTT Dec 89* 2086-2092

- Baghai-Wadji, Ali R., Oswald Männer, and Rudi Ganss-Puchstein. Analysis and measurement of transducer end radiation in SAW filters on strongly coupling substrates; *T-MTT Jan 89* 150-158
- Bahl, Inder J., Robert Wang, A. E. Geissberger, Edward Griffin, and C. Andricos. C-band 10 Watt MMIC amplifier manufactured using refractory SAG process; *MCS 89* 21-24
- Bahl, Inder J. Capacitively compensated high performance parallel coupled microstrip filters; *MWSYM 89 Vol. 2* 679-682
- Bahl, Inder J., see Winslow, T. A., *MWSYM 89 Vol. 3* 1019-1022
- Bahl, Inder J., Edward L. Griffin, Arthur E. Geissberger, Constantine Andricos, and Thomas F. Brukiewa. Class-B power MMIC amplifiers with 70 percent power-added efficiency; *T-MTT Sep 89* 1315-1320
- Bahl, Inder J., Robert Wang, Arthur E. Geissberger, Edward L. Griffin, and Constantine Andricos. C-band 10 W MMIC class-A amplifier manufactured using the refractory SAG process; *T-MTT Dec 89* 2154-2158
- Bajpai, S. N. Insertion loss of electronically variable magnetostatic wave delay lines; *T-MTT Oct 89* 1529-1535
- Balanis, Constantine A., see Gilb, James P., *MWSYM 89 Vol. 3* 1001-1004
- Balanis, Constantine A., see Gilb, James P., *T-MTT Oct 89* 1620-1628
- Ballingall, J. M., see Tessmer, A. J., *CORNEL 89 Abstr II/2*
- Ballingall, J. M., see Duh, K. H. G., *MWSYM 89 Vol. 2* 805-808
- Ballingall, J. M., see Smith, P. M., *MWSYM 89 Vol. 3* 983-986
- Ballingall, J. M., see Ferguson, D. W., *MWSYM 89 Vol. 3* 987-990
- Balzan, M. L., see Cooper, J. A., Jr., *CORNEL 89 Abstr V/7*
- Balzan, M. L., see Winslow, T. A., *MWSYM 89 Vol. 3* 1019-1022
- Bandla, S., see Bellantoni, J. V., *MCS 89* 47-50
- Bandla, S., see Bellantoni, J. V., *T-MTT Dec 89* 2162-2165
- Bandler, J. W., Q. J. Zhang, and R. M. Biernacki. Practical, high speed gradient computation for harmonic balance simulators; *MWSYM 89 Vol. 1* 363-366
- Bandler, J. W., Q. J. Zhang, S. Ye, and S. H. Chen. Efficient large-signal FET parameter extraction using harmonics; *MWSYM 89 Vol. 2* 577-580
- Bandler, J. W., Q. J. Zhang, J. Song, and R. M. Biernacki. Yield optimization of nonlinear circuits with statistically characterized devices; *MWSYM 89 Vol. 2* 649-652
- Bandler, John W., Qi-Jun Zhang, Shen Ye, and Shao Hua Chen. Efficient large-signal FET parameter extraction using harmonics; *T-MTT Dec 89* 2099-2108
- Bandy, S., see Yuen, C., *MCS 89* 117-120
- Bandy, S., see Yuen, C., *MWSYM 89 Vol. 1* 205-208
- Bandy, S., see Riazat, M., *MWSYM 89 Vol. 2* 525-528
- Bandy, S., see Yuen, C., *T-MTT Dec 89* 2169-2170
- Barbier, E., see Schmidt, P. E., *CORNEL 89 Abstr II/5*
- Barkeshli, Sina, see Marin, Miguel, *T-MTT Apr 89* 669-679
- Barnes, Brian C., see Wilson, Philip G., *MWSYM 89 Vol. 3* 1099-1102
- Barratt, C., see Boire, D. C., *MCS 89* 69-73
- Barth, Helmut. A 4-device power combiner used as a lossless high power switch at 94 GHz; *MWSYM 89 Vol. 3* 1087-1090
- Bartle, D. C., see Bellantoni, J. V., *MCS 89* 47-50
- Bartle, D. C., see Bellantoni, J. V., *T-MTT Dec 89* 2162-2165
- Bartolucci, G., see Giannini, F., *MWSYM 89 Vol. 1* 251-254
- Basile, P., see Rosen, A., *T-MTT Aug 89* 1255-1257
- Bass, J., see Metze, G., *MCS 89* 111-116
- Bass, J., see Metze, G., *MWSYM 89 Vol. 1* 199-204
- Bass, J. F., see Hegazi, G., *MCS 89* 121-125
- Bass, J. F., see Hegazi, G., *MWSYM 89 Vol. 1* 209-213
- Basset, J. R., see Avasarala, M., *MCS 89* 25-28
- Bates, Bevan D., see Ko, Andrew, *MWSYM 89 Vol. 3* 1191-1194
- Baudrand, Henri, see Medina, Francisco, *T-MTT Mar 89* 504-511
- Baudrand, Henri, see Bolioli, Sylvain, *T-MTT Apr 89* 698-705
- Baum, H.-P., B. K. Sarma, and M. Levy. Superconducting frequency tunable SAW filter and dispersion line; *MWSYM 89 Vol. 2* 639-641
- Bayraktaroglu, B., R. D. Hudgens, M. A. Khatibzadeh, and H. Q. Tserng. 2.5 W CW X-band heterojunction bipolar transistor; *MWSYM 89 Vol. 3* 1057-1060
- Bayruns, J., P. Wallace, and N. Scheinberg. A monolithic DC-1.6 GHz digital attenuator; *MWSYM 89 Vol. 3* 1295-1298
- Bayuk, F. J., and J. E. Raue, *Guest Eds.* Introduction to special issue on 1989 IEEE MTT-S International Microwave Symposium; *T-MTT Dec 89* 1837-1838
- Beam S. E., see Crescenzi, E. J., Jr., *MWSYM 89 Vol. 2* 773-776
- Beasley, M. R., see Drabeck, L., *MWSYM 89 Vol. 2* 551-554
- Beaubien, R. S., see Lee, R. E., *MWSYM 89 Vol. 3* 975-978
- Beaubien, Randall S., see Lee, Robert E., *T-MTT Dec 89* 2086-2092
- Bechtel, D., L. C. Upadhyayula, P. D. Gardner, and S. Y. Narayan. Wide-band GaInAs MISFET amplifiers (Short p.); *T-MTT Oct 89* 1636-1638
- Bedair, Said S., see Wolff, Ingo, *MWSYM 89 Vol. 2* 657-660
- Bedair, Said S., and Ingo Wolff. Extending the use of the conformal mapping technique for the calculation of the quasi-TEM parameters of several cylindrical and wrapped transmission lines; *MWSYM 89 Vol. 3* 1127-1130
- Bedair, Said S., and Ingo Wolff. Fast and accurate analytic formulas for calculating the parameters of a general broadside-coupled coplanar waveguide for (M)MIC applications; *T-MTT May 89* 843-850
- Belhadj, A., see Dumas, J. M., *MWSYM 89 Vol. 1* 483-486
- Bellantoni, J. V., and R. C. Compton. A new coplanar waveguide vector network analyzer for on-wafer measurements; *CORNEL Jun 89 Abstr IV/3*
- Bellantoni, J. V., D. C. Bartle, D. Payne, G. McDermott, S. Bandla, R. Tayrani, and L. Raffaelli. A monolithic high power Ka band pin switch; *MCS 89* 47-50
- Bellantoni, J. V., R. C. Compton, and H. M. Levy. A new W-band coplanar waveguide test fixture; *MWSYM 89 Vol. 3* 1203-1204
- Bellantoni, J. V., D. C. Bartle, D. Payne, G. McDermott, S. Bandla, R. Tayrani, and L. Raffaelli. Monolithic GaAs PIN diode switch circuits for high power millimeter-wave applications (Short p.); *T-MTT Dec 89* 2162-2165
- Bender, Y. W., see Brouzes, H., *MWSYM 89 Vol. 3* 849-852
- Ben-Michael, Rachel, see Adelman, Jonah, *T-MTT Feb 89* 317-323
- Benzina, Hamed, see Bolioli, Sylvain, *T-MTT Apr 89* 698-705
- Berceli, T., A. S. Daryoush, P. R. Herczfeld, W. D. Jemison, and A. Paoletta. A MMIC based injection locked oscillator for optically fed phased array antennas; *MWSYM 89 Vol. 1* 131-134
- Berceli, T., see Daryoush, A. S., *MWSYM 89 Vol. 2* 735-738
- Bernstein, G. H., and A. M. Krizan. Electron-diffraction transistors; *CORNEL 89 Abstr IV/8*
- Bertrand, Serge, see Cazaux, Jean-Louis, *T-MTT Sep 89* 1442-1451
- Betts, G. E., see Cox, C. H., III, *MWSYM 89 Vol. 2* 689-692
- Beyer, Adalbert, see Köther, Dietmar, *T-MTT Mar 89* 622-624
- Beyer, J. B., see O'Callaghan, J. M., *MWSYM 89 Vol. 1* 347-350
- Beyer, J. B., see Martens, J. S., *MWSYM 89 Vol. 1* 443-446
- Beyer, J. B., see Hohenwarter, G. K. G., *MWSYM 89 Vol. 1* 447-450
- Beyer, James B., see Byrne, Joseph W., *MWSYM 89 Vol. 1* 427-430
- Beyer, James B., see Deibele, Steve, *T-MTT Sep 89* 1425-1433
- Bharj, Sarjit S., S. P. Tan, J. Gluck, and B. Thompson. A 2-20 GHz dual channel receiver with 2-6 GHz IF; *MWSYM 89 Vol. 1* 409-412
- Bharj, Sarjit S., S. P. Tan, and B. Thompson. A 2-18 GHz 180 degree phase splitter network; *MWSYM 89 Vol. 3* 959-962
- Bharfia, P., see Pramanick, P., *T-MTT Oct 89* 1658
- Bhartia, Prakash, see Pramanick, Protap, *T-MTT Aug 89* 1184-1191
- Bhartia, Prakash, see Rao, Kodukula V. S., *T-MTT Aug 89* 1260-1263
- Bhasin, K. B., see Whitaker, J. F., *MWSYM 89 Vol. 1* 221-224
- Bhasin, Kul B., see Claspay, Paul C., *MWSYM 89 Vol. 3* 1163-1166
- Bhattacharya, P., see Peak, G., *CORNEL 89 Abstr VI/5*
- Bhattacharya, P. K., see Li, W. Q., *CORNEL 89 Abstr VI/4*
- Bhattacharya, P. K., see Ng, G. I., *CORNEL 89 Abstr II/4*
- Bialkowski, Marek E. Electromagnetic model of a radial-resonator waveguide diode mount; *T-MTT Oct 89* 1603-1611
- Biedenbender, Michael D., Vik J. Kapoor, Louis J. Messick, and Richard Nguyen. Ion-implanted high microwave power indium phosphide transistors; *T-MTT Sep 89* 1321-1326
- Biernacki, R. M., see Bandler, J. W., *MWSYM 89 Vol. 1* 363-366
- Biernacki, R. M., see Bandler, J. W., *MWSYM 89 Vol. 2* 649-652
- Bilbro, Griff L., Michael B. Steer, Robert J. Trew, and Steven G. Skaggs. Parameter extraction of microwave transistors using tree annealing; *CORNEL 89 Abstr IV/2*
- Binari, Steven C., see Neidert, Robert E., *T-MTT Nov 89* 1694-1698
- Bird, Stephen, and Matthew Reinhart. A production 30-kW, L-band solid-state transmitter; *MWSYM 89 Vol. 3* 867-870
- Birkeland, J., and T. Itoh. Quasi-optical planar FET transceiver modules; *MWSYM 89 Vol. 1* 119-122
- Birkeland, Joel, and Tatsuo Itoh. Planar FET oscillators using periodic microstrip patch antennas; *T-MTT Aug 89* 1232-1236
- Birkeland, Joel, and Tasuo Itoh. FET-based planar circuits for quasi-optical sources and transceivers; *T-MTT Sep 89* 1452-1459
- Biswas, B. N., S. Sarkar, and S. Chatterjee. Effect of a cochannel signal on the electrical tuning characteristics of a Gunn oscillator (Short p.); *T-MTT Mar 89* 627-630
- Bloom, D. M., see Majidi-Ahy, R., *MWSYM 89 Vol. 1* 299-302
- Bloom, David M. High speed electronic measurements; *CORNEL Jun 89 Abstr IV/1*
- Bobb, R., see Tartillo, J., *CORNEL 89 Abstr V/8*
- Boch, Erik, and Tony Staicer. High performance millimeter-wave local oscillator module for EW applications; *MWSYM 89 Vol. 3* 1207-1210
- Boden, A. F., and H. R. Fetterman. Magnetic bremsstrahlung radiation sources using the Meissner effect; *MWSYM 89 Vol. 1* 455-458
- Boesch, Wolfgang, and Giuliano Gatti. Measurement of memory effects in predistortion linearizers; *MWSYM 89 Vol. 3* 885-888
- Boheim, Manfred. Focusing mirrors for Gaussian beams; *MWSYM 89 Vol. 3* 1255-1258
- Boire, D. C., G. St. Onge, C. Barratt, G. B. Norris, and A. Moysenko. 4:1 bandwidth digital five bit MMIC phase shifters; *MCS 89* 69-73
- Boix, Rafael R., and Manuel Horno. Lumped capacitance and open end effects of stripline structures in multilayered and anisotropic substrates; *T-MTT Oct 89* 1523-1528
- Bolioli, Sylvain, Hamed Benzina, Henri Baudrand, and B. Chan. Centimeter-wave microstrip phase shifter on a ferrite-dielectric substrate; *T-MTT Apr 89* 698-705
- Bolomey, J. C. Recent European developments in active microwave imaging; *MWSYM 89 Vol. 2* 609-612
- Bolomey, Jean-Charles. Recent European developments in active microwave imaging for industrial, scientific, and medical applications; *T-MTT Dec 89* 2109-2117
- Bornemann, Jens. A new class of E-plane integrated millimeter-wave filters; *MWSYM 89 Vol. 2* 599-602
- Bornemann, Jens, and Fritz Arndt. Rigorous design of evanescent-mode E-plane finned waveguide bandpass filters; *MWSYM 89 Vol. 2* 603-606
- Bösch, Wolfgang, and Giuliano Gatti. Measurement and simulation of memory effects in predistortion linearizers; *T-MTT Dec 89* 1885-1890
- Boulouard, André, and Michel Le Rouzic. Analysis of rectangular spiral transformers for MMIC applications (Short p.); *T-MTT Aug 89* 1257-1260
- Bozler, Carl O., see Actis, Robert, *MWSYM 89 Vol. 2* 835-838
- Braddock, W. D., see Offsey, S. D., *CORNEL 89 Abstr VI/2*
- Brakensiek, W., J. Purviance, and T. Ferguson. High yield matching structures for 20% bandwidth microwave amplifiers; *MWSYM 89 Vol. 1* 431-434
- Brandle, C. D., see Hornak, L. A., *MWSYM 89 Vol. 2* 623-626
- Brennan, Kevin F., see Park, Duke H., *MWSYM 89 Vol. 3* 991-994

- Brockerhoff, Wolfgang**, Herbert Meschede, Werner Prost, Klaus Heime, Günter Weimann, and Winfried Schlapp. RF measurements and characterization of heterostructure field-effect transistors at low temperatures; *T-MTT Sep 89* 1380-1388
- Broumas, Antonios D.**, Hao Ling, and Tatsuo Itoh. Transmission properties of a right-angle microstrip bend with and without a miter (Short p.); *T-MTT May 89* 925-929
- Brouzes, H.**, G. Deredec, and Y. W. Bender. A 1 to 40 GHz MESFET hybrid distributed amplifier; *MWSYM 89 Vol. 3* 849-852
- Brown, A. S.**, see Delaney, M. J., *CORNEL 89 Abstr II/3*
- Brown, April S.**, see Mishra, Umesh K., *T-MTT Sep 89* 1279-1285
- Brown, William C.** The sophisticated properties of the microwave oven magnetron; *MWSYM 89 Vol. 3* 871-874
- Brukiewa, Thomas F.**, see Bahl, Inder J., *T-MTT Sep 89* 1315-1320
- Buechler, J.**, J. F. Luy, and K. M. Stroh. Varactor-tuned planar W-band oscillator; *MWSYM 89 Vol. 3* 1205-1206
- Bugeau, J. L.**, see Meharry, D. E., *MWSYM 89 Vol. 1* 115-118
- Bujatti, M.**, see Sechi, F. N., *MWSYM 89 Vol. 3* 937-940
- Bura, P.**, and B. Vassilakis. A balanced 11 GHz HEMT up-converter; *MWSYM 89 Vol. 3* 1299-1302
- Burke, John J.**, and Robert W. Jackson. Surface-to-surface transition via electromagnetic coupling of microstrip and coplanar waveguide; *T-MTT Mar 89* 519-525
- Burkhardt, E. G.**, see Hornak, L. A., *MWSYM 89 Vol. 2* 623-626
- Buswell, Mark**. Modeling ferrimagnetic resonators; *T-MTT May 89* 860-867
- Byrne, Joseph W.**, and James B. Beyer. A highly directive, broadband, bidirectional distributed amplifier; *MWSYM 89 Vol. 1* 427-430
- C
- Cahana, David**. A new coplanar waveguide/slotline double-balanced mixer; *MWSYM 89 Vol. 3* 967-968
- Calandra, Enrico F.**, and Antonino M. Sommariva. Transient analysis of multiple tuned injection-locked amplifiers with modulated input signal; *T-MTT May 89* 826-835
- Callsen, Heinrich**, Holger H. Meinel, and Wolfgang J. R. Hoefler. p-i-n diode control devices in E-plane technique; *T-MTT Feb 89* 307-316
- Camidae, M.**, see Vidalou, J. F., *MWSYM 89 Vol. 2* 831-834
- Camilleri, N.**, and P. Chye. Ka-band monolithic broadband LNA modules; *MWSYM 89 Vol. 2* 533-536
- Camilleri, Natalino**, see Kim, Bumman, *T-MTT Sep 89* 1327-1333
- Camou, J.**, see Matloubian, M., *MWSYM 89 Vol. 3* 889-892
- Camou, J. B.**, see Oki, A. K., *MCS 89* 83-86
- Camou, J. B.**, see Gorman, G. M., *MWSYM 89 Vol. 2* 537-540
- Camou, J. B.**, see Kim, M. E., *T-MTT Sep 89* 1286-1303
- Campbell, S. A.**, and A. Gopinath. Possibility of silicon monolithic millimeterwave integrated circuits; *MWSYM 89 Vol. 2* 817-819
- Campbell, Stephen A.**, and Anand Gopinath. Modeling of Ge-Si heterojunction bipolar transistors for use in silicon monolithic millimeterwave integrated circuits; *T-MTT Dec 89* 2046-2050
- Cangellaris, A. C.**, see van Deventer, T. E., *MWSYM 89 Vol. 3* 919-922
- Cangellaris, Andreas C.**, see van Deventer, T. Emilie, *T-MTT Dec 89* 1964-1972
- Cantos, B. D.**, see Chang, A. P., *MCS 89* 139-141
- Cantos, B. D.**, see Chang, A. P., *MWSYM 89 Vol. 1* 287-289
- Cantos, B. D.**, see Chang, A. P., *T-MTT Dec 89* 2159-2162
- Canyon, J. C.**, see Smith, D. M., *MWSYM 89 Vol. 2* 725-728
- Caorsi, Salvatore**, Gian Luigi Gragnani, and Matteo Pastorino. Equivalent current density reconstruction for microwave imaging purposes; *T-MTT May 89* 910-916
- Caplan, Malcolm**, see Neilson, Jeff M., *T-MTT Aug 89* 1165-1170
- Capsalis, Christos**, Constantinos P. Chronopoulos, and Nikolaos K. Uzunoglu. A rigorous analysis of a coaxial to shielded microstrip line transition; *T-MTT Jul 89* 1091-1098
- Careli César, Amílcar**, and Rui Fragassi Souza. Dispersion in anisotropic NRD waveguide; *MWSYM 89 Vol. 3* 1271-1272
- Carillo, J.**, see Dixit, R., *MCS 89* 15-19
- Carin, Lawrence**, and Kevin J. Webb. An equivalent circuit model for terminated hybrid-mode multiconductor transmission lines; *T-MTT Nov 89* 1784-1793
- Carint, J.**, see Drabeck, L., *MWSYM 89 Vol. 2* 551-554
- Carle, Pierluigi**. Multiport branch-waveguide couplers with arbitrary power splitting; *MWSYM 89 Vol. 1* 317-320
- Carlson, H.**, see Metze, G., *MCS 89* 111-116
- Carlson, H.**, see Metze, G., *MWSYM 89 Vol. 1* 199-204
- Carlson, H. E.**, see Hegazi, G., *MCS 89* 121-125
- Carlson, H. E.**, see Hegazi, G., *MWSYM 89 Vol. 1* 209-213
- Carr, Kenneth L.** Microwave radiometry: Its importance to the detection of cancer; *T-MTT Dec 89* 1862-1869
- Carter, R. L.**, see Owens, J. M., *MWSYM 89 Vol. 1* 141-144
- Carter, R. L.**, see Chang, R. L., *MWSYM 89 Vol. 1* 371-374
- Carter, William L.**, see Pond, Jeffrey M., *T-MTT Jan 89* 181-190
- Carver, Richard D.**, see Wilson, Philip G., *MWSYM 89 Vol. 3* 1033-1036
- Caspi, Shimon**, see Adelman, Jonah, *T-MTT Feb 89* 317-323
- Castaneda, Jesse**, see Nakatani, Akifumi, *MWSYM 89 Vol. 3* 1139-1142
- Castelino, A. J.**, see Sobhy, M. I., *MWSYM 89 Vol. 1* 397-400
- Caverly, Robert H.**, and Gerald Hiller. Distortion in microwave and RF switches by reverse biased pin diodes; *MWSYM 89 Vol. 3* 1073-1076
- Caverly, Robert H.**, and Gerald Hiller. The frequency-dependent impedance of p-i-n diodes (Short p.); *T-MTT Apr 89* 787-790
- Cazaux, Jean-Louis**, Michel Pouyssegur, Daniel Roques, and Serge Bertrand. A process-dependent worst-case analysis for MMIC design based on a handy MESFET simulator; *T-MTT Sep 89* 1442-1451
- Cecchetti, Claudio**, see Rizzoli, Vittorio, *MWSYM 89 Vol. 2* 585-588
- Cecchetti, Claudio**, see Rizzoli, Vittorio, *T-MTT Sep 89* 1401-1410
- Cerney, John**, see Truitt, Austin, *MWSYM 89 Vol. 1* 421-422
- César, Amílcar**, see Careli César, Amílcar
- Chakraborty, Ajoy**, see Das, B. N., *T-MTT Oct 89* 1590-1596
- Chaloupka, H.**, G. Müller, U. Klein, and H. Piel. New experimental results for microwave conductivity of high- T_c superconductors and consequences for applications to linear devices; *MWSYM 89 Vol. 2* 547-550
- Chamberlain, Thomas B.**, see Eisenberg, John A., *MCS 89* 41-45
- Chan, B.**, see Bolioli, Sylvain, *T-MTT Apr 89* 698-705
- Chan, C. H.**, see Ng, K. T., *MWSYM 89 Vol. 2* 715-718
- Chan, Chi Hou**, Kwong T. Ng, and Ammar B. Kouki. A mixed spectral-domain approach for dispersion analysis of suspended planar transmission lines with pedestals; *T-MTT Nov 89* 1716-1723
- Chan, Chi Hou**, see Ng, Kwong T., *T-MTT Dec 89* 2080-2085
- Chan, S.**, see Avsarala, M., *MCS 89* 25-28
- Chang, A. P.**, K. B. Niclas, B. D. Cantos, and W. A. Striffler. Design and performance of a 2-18 GHz monolithic matrix amplifier; *MCS 89* 139-141
- Chang, A. P.**, K. B. Niclas, B. D. Cantos, and W. A. Striffler. Design and performance of a 2-18 GHz monolithic matrix amplifier; *MWSYM 89 Vol. 1* 287-289
- Chang, A. P.**, K. B. Niclas, B. D. Cantos, and W. A. Striffler. Monolithic 2-18 GHz matrix amplifiers (Short p.); *T-MTT Dec 89* 2159-2162
- Chang, Augustin P.**, see Niclas, Karl B., *T-MTT Jan 89* 198-207
- Chang, Chao-Ren**, see Heron, Patrick L., *MWSYM 89 Vol. 1* 355-358
- Chang, Chao-ren**, Michael B. Steer, and George W. Rhyne. Frequency-domain spectral balance using the arithmetic operator method; *T-MTT Nov 89* 1681-1688
- Chang, E.**, see Metze, G., *MCS 89* 111-116
- Chang, E.**, see Metze, G., *MWSYM 89 Vol. 1* 199-204
- Chang, Fung-Yuel**. The generalized method of characteristics for waveform relaxation analysis of lossy coupled transmission lines; *MWSYM 89 Vol. 2* 653-656
- Chang, Fung-Yuel**. The generalized method of characteristics for waveform relaxation analysis of lossy coupled transmission lines; *T-MTT Dec 89* 2028-2038
- Chang, Hsin-Chin**, and Kawthar A. Zaki. Unloaded Q 's of axially asymmetric modes of dielectric resonators; *MWSYM 89 Vol. 3* 1231-1234
- Chang, Ik Soo**, see Yun, Sang Won, *T-MTT Mar 89* 492-496
- Chang, Jiing-Shyue**, see Wang, Weyl-kuo, *T-MTT Dec 89* 1891-1897
- Chang, K. W.**, B. R. Epstein, E. J. Denlinger, and P. D. Gardner. Zero bias GaInS MISFET mixers; *MWSYM 89 Vol. 3* 1027-1030
- Chang, Kai**, Kenneth A. Hummer, and James L. Klein. Experiments on injection locking of active antenna elements for active phased arrays and spatial power combiners; *T-MTT Jul 89* 1078-1084
- Chang, Kai**, see Chu, Bright H., *T-MTT Jul 89* 1138-1141
- Chang, M. F.**, see Wang, N. L., *CORNEL 89 Abstr III/4*
- Chang, R. L.**, T. J. Shieh, W. A. Davis, and R. L. Carter. Modeling and analysis of GaAs MESFETs considering the wave propagation effect; *MWSYM 89 Vol. 1* 371-374
- Chang, Y. C.**, see Dunn, V. E., *MWSYM 89 Vol. 1* 127-130
- Chao, P. C.**, see Tessmer, A. J., *CORNEL 89 Abstr II/2*
- Chao, P. C.**, see Duh, K. H. G., *MWSYM 89 Vol. 2* 805-808
- Chao, P. C.**, see Smith, P. M., *MWSYM 89 Vol. 3* 983-986
- Chao, P. C.**, see Ferguson, D. W., *MWSYM 89 Vol. 3* 987-990
- Chatterjee, S.**, see Biswas, B. N., *T-MTT Mar 89* 627-630
- Chauchard, Eve A.**, see Webb, Kevin J., *MWSYM 89 Vol. 1* 217-220
- Chen, Chang-Lee**, Alejandro Chu, Leonard J. Mahoney, William E. Courtney, R. Allen Murphy, and James C. Sethares. Oscillators using magnetostatic-wave active tapped delay lines; *T-MTT Jan 89* 239-243
- Chen, Chun Hsiung**, see Chung, Shyh-Jong, *T-MTT Jan 89* 208-214
- Chen, Chun Hsiung**, see Shih, Chin, *T-MTT Apr 89* 793-795
- Chen, J. C.**, see Lan, G. L., *MCS 89* 95-99
- Chen, J. C.**, see Lan, G. L., *MWSYM 89 Vol. 1* 103-107
- Chen, Jin-Yuan**, and Om P. Gandhi. Electromagnetic deposition in an anatomically based model of man for leakage fields of a parallel-plate dielectric heater; *T-MTT Jan 89* 174-180
- Chen, Kun-Mu**. A mathematical formulation of the equivalence principle; *T-MTT Oct 89* 1576-1581
- Chen, Ning**, Zhong-Liang Sun and Si-Fan Li. Study of fundamental wave injection locking of mm-wave Gunn harmonic oscillator using large signal model of Gunn device; *MWSYM 89 Vol. 1* 479-482
- Chen, S. H.**, see Bandler, J. W., *MWSYM 89 Vol. 2* 577-580
- Chen, S. H.**, see Bandler, John W., *T-MTT Dec 89* 2099-2108
- Chen, Seng-Woon**, Kawthar A. Zaki, and Russell G. West. A tunable, temperature compensated hybrid mode dielectric resonator; *MWSYM 89 Vol. 3* 1227-1230
- Chen, Zhaoqing**, and Baixin Gao. Deterministic approach to full-wave analysis of discontinuities in MIC's using the method of lines; *T-MTT Mar 89* 606-611
- Chenkin, Joseph**. DC to 40 GHz coaxial-to-microstrip transition for 100- μ m-thick GaAs substrates (Short p.); *T-MTT Jul 89* 1147-1150
- Cheung, P.**, D. P. Neikirk, and T. Itoh. An optically controlled coplanar waveguide phase-shifter; *MWSYM 89 Vol. 1* 307-309
- Chew, Weng Cho**, and Muhammad A. Nasir. A variational analysis of anisotropic, inhomogeneous dielectric waveguides; *T-MTT Apr 89* 661-668
- Chew, Wilbert**, and Harold R. Fetterman. Printed circuit antennas with integrated FET detectors for millimeter-wave quasi optics; *T-MTT Mar 89* 593-597
- Chiba, Jiro**, see Obata, Tsunehiro, *T-MTT Mar 89* 624-627
- Chick, Richard W.**, see Actis, Robert, *MWSYM 89 Vol. 2* 835-838
- Chilo, J.**, and G. Angénieux. Parasitic effects induced by power strips current switching in full wafer package; *MWSYM 89 Vol. 3* 1259-1262

- Chin, Y., see Emery, T., *MWSYM 89 Vol. 1* 329-332
- Chou, C. S., see Delaney, M. J., *CORNEL 89 Abstr II/3*
- Chou, J.-S., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Chow, P. D., D. Garske, J. Velebir, E. Hsieh, Y. C. Ngan, and H. C. Yen. Design and performance of a 94 GHz HEMT mixer; *MWSYM 89 Vol. 2* 731-734
- Chow, Y. L., see Faraji-Dana, R., *MWSYM 89 Vol. 1* 325-327
- Chow, Y. L., see Howard, G. E., *MWSYM 89 Vol. 3* 1251-1254
- Chowdhury, Dipakbin Q., see Hill, Steven C., *T-MTT Aug 89* 1192-1199
- Chramiec, Jerzy. Reactances of slotline short and open circuit on alumina substrate (Short p.); *T-MTT Oct 89* 1638-1641
- Christou, A., see Dumas, J. M., *MWSYM 89 Vol. 1* 483-486
- Chronopoulos, Constantinos P., see Capsalis, Christos, *T-MTT Jul 89* 1091-1098
- Chu, Alejandro, see Chen, Chang-Lee, *T-MTT Jan 89* 239-243
- Chu, Alex. Foreword to special section on the 1989 IEEE Microwave and Millimeter-wave Monolithic Circuits Symposium; *T-MTT Dec 89* 2118
- Chu, Bright H., and Kai Chang. Analysis of wide transverse inductive metal strips in a rectangular waveguide (Short p.); *T-MTT Jul 89* 1138-1141
- Chu, S. L. G., Y. Tajima, J. B. Cole, A. Platzker, and M. J. Schindler. A novel 4-18 GHz monolithic matrix distributed amplifier; *MCS 89* 143-147
- Chu, S. L. G., Y. Tajima, J. B. Cole, A. Platzker, and M. J. Schindler. A novel 4-18 GHz monolithic matrix distributed amplifier; *MWSYM 89 Vol. 1* 291-295
- Chu, Tah-Hsiung, and Ding-Bing Lin. On microwave imagery using Bojarski's identity (Short p.); *T-MTT Jul 89* 1141-1144
- Chung, Shyh-Jong, and Chun Hsiung Chen. A partial variational approach for arbitrary discontinuities in planar dielectric waveguides; *T-MTT Jan 89* 208-214
- Chye, P., see Camilleri, N., *MWSYM 89 Vol. 2* 533-536
- Cioffi, Kenneth R. Active broadband impedance transformations using distributed techniques; *MWSYM 89 Vol. 3* 1043-1046
- Cioffi, Kenneth R. Broad-band distributed amplifier impedance-matching techniques; *T-MTT Dec 89* 1870-1876
- Citerne, J., see Drissi, M., *MWSYM 89 Vol. 2* 791-794
- Clarke, R. C., see Driver, M. C., *CORNEL 89 Abstr I/1*
- Clarke, R. C., see Sriram, S., *CORNEL 89 Abstr IV/5*
- Claspy, Paul C., Scott M. Hill, and Kul B. Bhasin. Microwave characteristics of GaAs MMIC integratable optical detectors; *MWSYM 89 Vol. 3* 1163-1166
- Cline, P. K., see Geller, B. D., *MWSYM 89 Vol. 3* 949-952
- Cloud, M. J., and D. P. Nyquist. A note on the mixed potential representation of electric fields in layered media (Short p.); *T-MTT Jul 89* 1150-1152
- Cobb, Michael, see Wang, Nan-Lei, *T-MTT Feb 89* 393-399
- Coget, Patricia, Pascal Philippe, Vlad Pauker, Pierre Dautriche, and Patrick Jean. A multioctave active MMIC quadrature phase shifter; *MCS 89* 75-77
- Coget, Patricia, see Philippe, Pascal, *T-MTT Dec 89* 2119-2124
- Cohen, Jonathan D. A proposed microwave and millimeter-wave spectrum analyzer (Short p.); *T-MTT Jun 89* 1054-1057
- Cohen, Leonard D., and Eugene Sard. Millimeter-wave, lumped-element, Gunn VCO's with ultrawideband (20 GHz) tuning; *MWSYM 89 Vol. 3* 1287-1290
- Coldren, L. A., see Majewski, M. L., *MWSYM 89 Vol. 3* 1167-1170
- Cole, J. B., see Chu, S. L. G., *MCS 89* 143-147
- Cole, J. B., see Chu, S. L. G., *MWSYM 89 Vol. 1* 291-295
- Cole, J. Bradford, and Aryeh Platzker. Design technique for high power, high efficiency, broadband distributed amplifiers; *MWSYM 89 Vol. 3* 941-944
- Colquhoun, A., see Adelseck, B., *MCS 89* 91-94
- Colquhoun, A., see Adelseck, B., *MWSYM 89 Vol. 1* 99-102
- Colquhoun, Alexander, see Adelseck, Bernd, *T-MTT Dec 89* 2142-2147
- Combes, Paul F., see Espes, Patrick, *T-MTT Feb 89* 289-298
- Compton, R. C., see Bellantoni, J. V., *CORNEL 89 Abstr IV/3*
- Compton, R. C., see Bellantoni, J. V., *MWSYM 89 Vol. 3* 1203-1204
- Condie, A., see Dale, I., *MWSYM 89 Vol. 1* 467-470
- Cook, P., see Tartillo, J., *CORNEL 89 Abstr V/8*
- Cooper, J. A., Jr., Y. Yin, M. L. Balzan, and A. E. Geissberger. Experimental verification of the contiguous domain oscillator concept; *CORNEL 89 Abstr V/7*
- Cooper, Steven W., and G. Austin Truitt. Voltage-tolerant monolithic L-band GaAs SPDT switch; *MWSYM 89 Vol. 3* 1113-1114
- Cornfeld, A., see Metzger, G., *MCS 89* 111-116
- Cornfeld, A., see Metzger, G., *MWSYM 89 Vol. 1* 199-204
- Cornfeld, A. B., see Hegazi, G., *MCS 89* 121-125
- Cornfeld, A. B., see Hegazi, G., *MWSYM 89 Vol. 1* 209-213
- Costache, George I., see Eswarappa, *T-MTT Feb 89* 299-306
- Costamagna, Eugenio. Numerical conformal transformation of three-magnetic-wall structures (Short p.); *T-MTT Aug 89* 1263-1266
- Costanzo, Alessandra, see Rizzoli, Vittorio, *MWSYM 89 Vol. 2* 585-588
- Cotton, J. M., Jr., see McMillan, R. W., *T-MTT Nov 89* 1828-1830
- Couch, N., see Neylon, S., *MWSYM 89 Vol. 1* 519-522
- Coughlin, W. J., see Meharry, D. E., *MWSYM 89 Vol. 1* 115-118
- Courtney, William E., see Chen, Chang-Lee, *T-MTT Jan 89* 239-243
- Cowan, Colin F. N., see Mirzai, Ahmad R., *T-MTT Jan 89* 166-173
- Cox, C. H., III, L. M. Johnson, and G. E. Betts. A theoretical and experimental comparison of directly and externally modulated fiber-optic links; *MWSYM 89 Vol. 2* 689-692
- Crawford, Tom M., see Mirzai, Ahmad R., *T-MTT Jan 89* 166-173
- Crescenzi, E. J., Jr., Beam S. E., R. L. Fenton, T. R. Kritzer, and T. A. Maddox. Microwave amplifier manufacturing with advanced thin-film MIC and elementary MMIC technology; *MWSYM 89 Vol. 2* 773-776
- Cros, D., see Jiao, X. H., *T-MTT Feb 89* 432-437
- Cros D., P. Auxemery, X. H. Jiao, B. Jarry, and P. Guillon. A W band dielectric resonator power combiner; *MWSYM 89 Vol. 3* 1215-1218
- Crosmun, Andrea, see Maas, Stephen A., *T-MTT Jul 89* 1134-1136
- Crosmun, Andrea M., and Stephen A. Maas. Minimization of intermodulation distortion in GaAs MESFET small-signal amplifiers; *T-MTT Sep 89* 1411-1417
- Crosnier, Yves, see Halkias, George, *T-MTT May 89* 817-825
- Crowe, Thomas W., see Peatman, William C., *CORNEL 89 Abstr VI/8*
- Crozat, P., see Ouslimani, A., *T-MTT Sep 89* 1460-1465
- Cruz, J. L., see Garcia, A. C., *MWSYM 89 Vol. 1* 135-138
- Cuhaci, M., see Frlan, E., *MWSYM 89 Vol. 2* 661-664
- Curtice, W. R., and S. Pak. On-wafer verification of a large-signal MESFET model (Short p.); *T-MTT Nov 89* 1809-1811

D

- Daas, Moussa, and Reinhard Knöchel. Compact sounding system using microwaves and ultrasound; *MWSYM 89 Vol. 1* 257-260
- Daginnus, M., and J. H. Hinken. A 77 K computer controlled MM wave spectral Josephson detector using microstrip technique, preliminary results; *MWSYM 89 Vol. 2* 631-634
- Dahlstrom, R. K., see Ruth, B. G., *MWSYM 89 Vol. 3* 1277-1280
- Dahrooge, G., see Metzger, G., *MCS 89* 111-116
- Dahrooge, G., see Metzger, G., *MWSYM 89 Vol. 1* 199-204
- Dai, J., see Howard, G. E., *MWSYM 89 Vol. 3* 1251-1254
- Daido, Yoshimasa, Morihiko Minowa, and Naofumi Okubo. Class-A GaAs FET power amplifier design for optimizing intermodulation product; *MWSYM 89 Vol. 1* 393-396
- Dale, I., A. Condie, S. Neylon, and M. J. Kearney. Planar doped barrier mixer and detector diodes as alternatives to Schottky diodes for both microwave and millimeter wave applications; *MWSYM 89 Vol. 1* 467-470
- Dale, I., see Neylon, S., *MWSYM 89 Vol. 1* 519-522
- Damour, Jean-Pierre, see Ducourant, Thierry, *MCS 89* 87-90
- Damour, Jean-Pierre, see Ducourant, Thierry, *MWSYM 89 Vol. 1* 95-98
- D'Anna, Pablo E., see Johnson, Joseph H., *MWSYM 89 Vol. 3* 861-862
- Darling, Robert B. Distributed numerical modeling of dual-gate GaAs MESFET's; *T-MTT Sep 89* 1351-1360
- Daryoush, A. S., see Berceci, T., *MWSYM 89 Vol. 1* 131-134
- Daryoush, A. S., T. Berceci, R. Saedi, P. R. Herczfeld, and A. Rosen. Theory of subharmonic synchronization of nonlinear oscillators; *MWSYM 89 Vol. 2* 735-738
- Das, B. N., P. V. D. Somasekhar Rao, and Ajoy Chakraborty. Narrow wall axial-slot-coupled T junction between rectangular and circular waveguides; *T-MTT Oct 89* 1590-1596
- Da Silva, Luiz C. Determination of the scattering matrix of ring-loaded corrugated waveguide mode converters (Short p.); *T-MTT Mar 89* 646-649
- Dautriche, Pierre, see Coget, Patricia, *MCS 89* 75-77
- Dautriche, Pierre, see Ducourant, Thierry, *MCS 89* 87-90
- Dautriche, Pierre, see Ducourant, Thierry, *MWSYM 89 Vol. 1* 95-98
- Dautriche, Pierre, see Philippe, Pascal, *T-MTT Dec 89* 2119-2124
- Davidson, A., B. Leake, and E. Strid. Accuracy factors in microwave noise parameter measurements; *MWSYM 89 Vol. 2* 827-830
- Davidson, Andrew C., Bernard W. Leake, and Eric Strid. Accuracy improvements in microwave noise parameter measurements; *T-MTT Dec 89* 1973-1978
- Davis, E., see Whitson, D. W., *CORNEL 89 Abstr V/6*
- Davis, W. A., see Owens, J. M., *MWSYM 89 Vol. 1* 141-144
- Davis, W. A., see Chang, R. L., *MWSYM 89 Vol. 1* 371-374
- Dawe, G., and L. Raffaelli. Characterization of active and passive millimeter-wave monolithic elements by on-wafer probing; *MWSYM 89 Vol. 1* 413-415
- Day, D. S., see Avsarala, M., *MCS 89* 25-28
- Day, D. S., see Auricchio, F. S., Jr., *MWSYM 89 Vol. 3* 933-936
- Deibele, Steve, and James B. Beyer. Attenuation compensation in distributed amplifier design; *T-MTT Sep 89* 1425-1433
- Delaney, M. J., A. S. Brown, U. K. Mishra, C. S. Chou, and L. E. Larson. Low temperature MBE growth of GaAs and AlInAs for high speed devices; *CORNEL 89 Abstr II/3*
- Delaney, M. J., see Vaughn, S., *MWSYM 89 Vol. 2* 801-804
- Delaney, M. J., see Mishra, Umesh K., *T-MTT Sep 89* 1279-1285
- Delbare, W., and D. De Zutter. Accurate calculation of the capacitance matrix of a multiconductor transmission line in a multilayered dielectric medium; *MWSYM 89 Vol. 3* 1013-1016
- Delbare, Wim, and Daniël De Zutter. Space-domain Green's function approach to the capacitance calculation of multiconductor lines in multilayered dielectrics with improved surface charge modeling; *T-MTT Oct 89* 1562-1568
- De Leo, R., see Rozzi, T., *MWSYM 89 Vol. 3* 923-926
- Delisle, Gilles Y., see Wu, Ke Li, *T-MTT Jun 89* 993-998
- Delmaster, J., see Rosen, A., *T-MTT Aug 89* 1255-1257
- Delrue, R., E. Paleczny, J. F. Legier, P. Pribetich, and P. Kennis. Microwave characteristics of planar electrooptic modulator; *MWSYM 89 Vol. 3* 1171-1174
- Deng, Minren, and Dezhong Xu. An 8 mm FM and AM noise measuring equipment; *MWSYM 89 Vol. 3* 1179-1181
- Denlinger, E. J., see Chang, K. W., *MWSYM 89 Vol. 3* 1027-1030
- Deredec, G., see Brouzes, H., *MWSYM 89 Vol. 3* 849-852
- Dellefsen, J., see Lange, M., *MWSYM 89 Vol. 3* 1091-1094
- De Zutter, D., see Delbare, W., *MWSYM 89 Vol. 3* 1013-1016
- De Zutter, Daniël, see Fache, Niels, *T-MTT Feb 89* 421-425
- De Zutter, Daniël, see Fache, Niels, *T-MTT Mar 89* 512-518
- De Zutter, Daniël, see Delbare, Wim, *T-MTT Oct 89* 1562-1568
- Diestel, Heinrich. A quasi-TEM analysis for curved and straight planar multiconductor systems; *T-MTT Apr 89* 748-753
- Dieudonné, J. M., see Adelseck, B., *MCS 89* 91-94
- Dieudonné, J. M., see Adelseck, B., *MWSYM 89 Vol. 1* 99-102

- Dieudonné, Jean-Marie, see Adelseck, Bernd, *T-MTT Dec 89* 2142-2147
- Dilorio, Mark S., Richard S. Withers, and Alfredo C. Anderson. Wide-band superconductive chirp filters; *T-MTT Apr 89* 706-710
- Dionne, Gerald F., see Weiss, Jerald A., *MWSYM 89 Vol. 1* 145-148
- Diskus, C., see Lübke, K., *MWSYM 89 Vol. 2* 729-730
- Diskus, Christian G., see Scheiber, Helmut, *T-MTT Dec 89* 2093-2098
- Dittloff, Joachim, and Fritz Arndt. Rigorous field theory design of millimeter-wave E -plane integrated circuit multiplexers; *T-MTT Feb 89* 340-350
- Dixit, R., B. Nelson, W. Jones, and J. Carillo. A family of 2–20 GHz broadband low noise AlGaAs HEMT MMIC amplifiers; *MCS 89* 15-19
- Dobrowolski, Janusz A. A CAD-oriented method for noise figure computation of two-ports with any internal topology; *T-MTT Jan 89* 15-20
- Doggett, Wesley O., see Treado, Todd A., *MWSYM 89 Vol. 3* 875-878
- Donkor, E., and F. C. Jain. An analytical two-dimensional perturbation method to model submicron GaAs MESFET's (Short p.); *T-MTT Sep 89* 1484-1487
- Doust, D., see Fiedziuszko, S. J., *MWSYM 89 Vol. 2* 683-686
- Dow, G. S., T. N. Ton, and K. Nakano. Q -band coplanar waveguide amplifier; *MWSYM 89 Vol. 2* 809-812
- Drabeck, L., J. Carini, G. Grüner, T. L. Hylton, A. Kapitulnik, and M. R. Beasley. Surface impedance of high T_c superconductors; *MWSYM 89 Vol. 2* 551-554
- Driscoll, M. M. Low noise microwave signal generation: Resonator/oscillator comparisons; *MWSYM 89 Vol. 1* 261-264
- Drisss, M., V. Fouad Hanna, and J. Citerne. Analysis of radiating end effects of symmetric and asymmetric coplanar waveguide using integral equations technique; *MWSYM 89 Vol. 2* 791-794
- Driver, M. C., H. C. Nathanson, G. W. Eldridge, R. C. Clarke, M. M. Sopira, and R. G. Freitag. Wafer scale integration; *CORNEL Jun 89* Abstr I/1
- Driver, M. C., see Sriram, S., *CORNEL 89* Abstr IV/5
- Dropkin, H., see McMillan, R. W., *T-MTT Nov 89* 1828-1830
- Dubberley, J. R., see Wang, J. J. H., *MWSYM 89 Vol. 1* 183-186
- Dubberley, John R., see Wang, Johnson J. H., *T-MTT Jul 89* 1119-1125
- Dubberley, John R., see Wang, Johnson J. H., *T-MTT Dec 89* 1918-1923
- Dubrowski, Leonard, see Patel, Suman D., *MWSYM 89 Vol. 3* 879-882
- Ducourant, Thierry, Pascal Philippe, Pierre Dautriche, Vlad Pauker, Claudine Villalon, Marcel Pertus, and Jean-Pierre Damour. A 3 chip GaAs double conversion TV tuner system with 70 dB image rejection; *MCS 89* 87-90
- Ducourant, Thierry, Pascal Philippe, Pierre Dautriche, Vlad Pauker, Claudine Villalon, Marcel Pertus, and Jean-Pierre Damour. A 3 chip GaAs double conversion TV tuner system with 70 dB image rejection; *MWSYM 89 Vol. 1* 95-98
- Duffy, L., see Riley, A. L., *MCS 89* 65-68
- Duffy, L., see Rascoc, D. L., *T-MTT Dec 89* 2165-2168
- Duh, K. H. G., see Tessmer, A. J., *CORNEL 89* Abstr II/2
- Duh, K. H. G., P. C. Chao, P. Ho, M. Y. Kao, P. M. Smith, J. M. Ballingall, and A. A. Jabra. High-performance InP-based HEMT millimeter-wave low-noise amplifiers; *MWSYM 89 Vol. 2* 805-808
- Duh, K. H. G., see Smith, P. M., *MWSYM 89 Vol. 3* 983-986
- Dumas, J. M., A. Christou, A. Belhadj, G. Kiriakidis, Z. Hatzopoulos, P. Audren, H. Thomas, and J. Gostray. Performances of laser-processed HEMT's with AlAs-nGaAs superlattice donor layers; *MWSYM 89 Vol. 1* 483-486
- Dunn, V. E., N. E. Hodges, O. A. Sy, W. Alyassini, M. Feng, and Y. C. Chang. MMIC phase shifters and amplifiers for millimeter-wavelength active arrays; *MWSYM 89 Vol. 1* 127-130
- Dydyk, M., see Lucero, R., *MWSYM 89 Vol. 3* 893-896

E

- East, Jack, see Tiwari, Sandip, *CORNEL 89* Abstr VI/6
- Eastman, L. F., see Offsey, S. D., *CORNEL 89* Abstr VI/2
- Eastman, L. F., see Tadayon, Bijan, *CORNEL 89* Abstr III/5
- Eastman, L. F., see Park, H., *CORNEL 89* Abstr II/7
- Eastman, Lester F., see Wang, Guan-Wu, *T-MTT Sep 89* 1395-1400
- Ebert, G., see Adelseck, B., *MCS 89* 91-94
- Ebert, G., see Adelseck, B., *MWSYM 89 Vol. 1* 99-102
- Ebert, Günther, see Adelseck, Bernd, *T-MTT Dec 89* 2142-2147
- Eguchi, Kouhei, see Miyazaki, Shinichi, *MWSYM 89 Vol. 3* 1065-1068
- Eguchi, Masashi, see Hayata, Kazuya, *T-MTT Jan 89* 256-258
- Eisenberg, John A., Thomas B. Chamberlain, and Lynn R. Sloan. High isolation 1–20 GHz MMIC switches with on-chip drivers; *MCS 89* 41-45
- Eisenstadt, William R., see Paulter, Nicholas G., *T-MTT Oct 89* 1612-1619
- El-Deeb, Nabil A. An improved design of systems based on three coupled microstrip lines (Short p.); *T-MTT Apr 89* 795-798
- Eldridge, G. W., see Driver, M. C., *CORNEL 89* Abstr I/1
- El-Ghazaly, Samir M., and Tatsuo Itoh. Traveling-wave inverted-gate field-effect transistors: Concept, analysis, and potential; *T-MTT Jun 89* 1027-1032
- Elliott, Scott S., see Tan, Tun S., *T-MTT Aug 89* 1217-1222
- El-Sawy, Y. A. R., see Sobhy, M. I., *MWSYM 89 Vol. 2* 645-648
- El-Sawy, Y. A. R., see Sobhy, M. I., *T-MTT Dec 89* 2067-2073
- Emery, T., Y. Chin, H. Lee, and V. K. Tripathi. Analysis and design of ideal non symmetrical coupled microstrip directional couplers; *MWSYM 89 Vol. 1* 329-332
- Enders, A. An accurate measurement technique for line properties, junction effects, and dielectric and magnetic material parameters; *T-MTT Mar 89* 598-605
- Eng, Sverre T., see Andersson, Ingmar L., *T-MTT Apr 89* 729-733
- Eppich, R. Dean, and David D. Heston. A monolithic variable gain Ku -band LNA; *MWSYM 89 Vol. 2* 529-532

- Epstein, B. R., see Chang, K. W., *MWSYM 89 Vol. 3* 1027-1030
- Esman, Ronald D., Lew Goldberg, and J. F. Weller. Optical phase control of an optically injection-locked FET microwave oscillator; *T-MTT Oct 89* 1512-1518
- Espes, Patrick, Paul F. Combes, Jean-Marc Goutoule, and Bernard Theron. Asymmetrical finline for space applications using millimeter waves; *T-MTT Feb 89* 289-298
- Estévez, H., E. Moreno, and F. Ares. A method for approximating the characteristic impedance of coaxial lines in which the inner conductor is circular and the outer polygonal (Short p.); *T-MTT Mar 89* 634-637
- Eswarappa, George I. Costache, and Wolfgang Hoefer, J. R. Finlines in rectangular and circular waveguide housings including substrate mounting and bending effects — Finite element analysis; *T-MTT Feb 89* 299-306
- Eswarappa, see So, Poman P. M., *T-MTT Dec 89* 1877-1884
- Eul, H.-J. Establishing the complex measurement ability of a homodyne network analyzer via self-calibration; *MWSYM 89 Vol. 3* 1187-1190
- Evans, K., see Tartillo, J., *CORNEL 89* Abstr V/8

F

- Faché, Niels, and Daniël De Zutter. Circuit parameters for single and coupled microstrip lines by a rigorous full-wave space-domain analysis (Short p.); *T-MTT Feb 89* 421-425
- Faché, Niels, and Daniël De Zutter. Full-wave analysis of a perfectly conducting wire transmission line in a double layered conductor-backed medium; *T-MTT Mar 89* 512-518
- Fan, Desen, see Fan, Pong, *T-MTT Feb 89* 335-339
- Fan, Pong, and Desen Fan. Computer-aided design of E -plane waveguide passive components; *T-MTT Feb 89* 335-339
- Fang, Da Gang, see Wu, Ke Li, *T-MTT Jun 89* 993-998
- Faraji-Dana, R., and Y. L. Chow. The AC resistance of a microstripline and its ground plane; *MWSYM 89 Vol. 1* 325-327
- Feak, G., D. Nichols, J. Singh, J. Loehr, J. Pamulapati, and P. Bhattacharya. The influence of strain on the small signal gain and lasing threshold of GaInAs/GaAs and GaAs/GaInAlAs strained-layer quantum well lasers; *CORNEL 89* Abstr VI/5
- Feldman, Marc J., see Pan, Shing-Kuo, *T-MTT Mar 89* 580-592
- Feng, M., see Wang, G. W., *CORNEL 89* Abstr II/8
- Feng, M., see Dunn, V. E., *MWSYM 89 Vol. 1* 127-130
- Fenton, R. L., see Crescenzi, E. J., Jr., *MWSYM 89 Vol. 2* 773-776
- Ferguson, D. W., P. M. Smith, P. C. Chao, L. F. Lester, Smith R. P., P. Ho, A. Jabra, and J. M. Ballingall. 44 GHz hybrid HEMT power amplifiers; *MWSYM 89 Vol. 3* 987-990
- Ferguson, T., see Brakensiek, W., *MWSYM 89 Vol. 1* 431-434
- Fetterman, H., see Matloubian, M., *MWSYM 89 Vol. 3* 889-892
- Fetterman, H. R., see Boden, A. F., *MWSYM 89 Vol. 1* 455-458
- Fetterman, Harold R., see Chew, Wilbert, *T-MTT Mar 89* 593-597
- Fetterman, Harold R., see Takemoto, June H., *T-MTT Oct 89* 1650-1652
- Fiedziuszko, S. J., and P. D. Heidmann. Dielectric resonator used as a probe for high T_c superconductor measurements; *MWSYM 89 Vol. 2* 555-558
- Fiedziuszko, S. J., D. Doust, and S. Holme. Satellite L -band output multiplexer utilizing single and dual mode dielectric resonators; *MWSYM 89 Vol. 2* 683-686
- Figueredo, Domingo A., see Wakamoto, Kouichi, *MWSYM 89 Vol. 3* 1023-1026
- Fikart, Josef L., and J. L. M. Lord. FET up-converter design using load-dependent mixing transconductance; *T-MTT Jun 89* 1033-1039
- Fikioris, George J., see Fikioris, John G., *T-MTT Jan 89* 21-33
- Fikioris, John G., John L. Tsalamengas, and George J. Fikioris. Exact solutions for shielded printed microstrip lines by the Carleman-Vekua method; *T-MTT Jan 89* 21-33
- Filicori, Fabio, see Ghione, Giovanni, *T-MTT Mar 89* 457-468
- Fines, James, see Adlerstein, Michael G., *T-MTT Mar 89* 571-579
- Foliot, Georges, see Soares, Robert A., *T-MTT Nov 89* 1669-1674
- Fragassi Souza, Rui, see Careli César, Amílcar, *MWSYM 89 Vol. 3* 1271-1272
- Freitag, R. G., see Driver, M. C., *CORNEL 89* Abstr I/1
- Frezza, F., M. Guglielmi, and P. Lampariello. Complex guidance properties of the slitted asymmetric ridge waveguide; *MWSYM 89 Vol. 3* 927-930
- Fricke, K., see Krozer, V., *MWSYM 89 Vol. 1* 351-354
- Fricke, K., V. Krozer, and H. L. Hartnagel. A new GaAs power-MESFET with large unit gate width; *MWSYM 89 Vol. 1* 389-392
- Fricke, Klaus, Viktor Krozer, and Hans L. Hartnagel. A new GaAs power MESFET structure for improved power capabilities; *T-MTT Sep 89* 1334-1339
- Frlan, E., S. Meszaros, M. Cuhaci, and J. S. Wight. Computer aided design of square spiral transformers and inductors; *MWSYM 89 Vol. 2* 661-664
- Fujiwara, Kanako, see Ohta, Isao, *MWSYM 89 Vol. 1* 235-238
- Fukui, Kiyoshi, see Tanaka, Satoshi, *T-MTT Nov 89* 1755-1760
- Furukawa, A., see Tanaka, S., *CORNEL 89* Abstr III/6
- Fusegi, Yasuji, see Horio, Kazushige, *T-MTT Sep 89* 1371-1379

G

- Gajda, Gregory B., see L'Ecuyer, Jean, *T-MTT Feb 89* 425-428
- Gallagher, William J., see Pan, Shing-Kuo, *T-MTT Mar 89* 580-592
- Gamand, Patrice. Analysis of the oscillation conditions in distributed amplifiers (Short p.); *T-MTT Mar 89* 637-640
- Gandhi, Om P., see Wang, Chang-Qing, *T-MTT Jan 89* 118-126
- Gandhi, Om P., see Chen, Jin-Yuan, *T-MTT Jan 89* 174-180
- Ganss-Puchstein, Rudi, see Baghai-Wadji, Ali R., *T-MTT Jan 89* 150-158
- Gao, Baoxin, see Chen, Zhaoqing, *T-MTT Mar 89* 606-611

- Garcia, A. C., V. Such, J. L. Cruz, and B. Gimeno. Microwave broadband phased array element: Design and performance (Microstrip horn opened by conducting flaps); *MWSYM 89 Vol. 1* 135-138
- Gardiner, G. J., M. W. Geen, and D. C. Smith. Design techniques for GaAs MESFET switches; *MWSYM 89 Vol. 1* 405-408
- Gardner, P. D., and S. Y. Narayan. Deposited SiO₂ as the insulator for GaInAs and InP MISFETs; *CORNEL 89 Abstr. I/3*
- Gardner, P. D., see Chang, K. W., *MWSYM 89 Vol. 3* 1027-1030
- Gardner, P. D., see Bechtel, D., *T-MTT Oct 89* 1636-1638
- Garske, D., see Chow, P. D., *MWSYM 89 Vol. 2* 731-734
- Garver, Robert V., see Glenn, Chance M., *MWSYM 89 Vol. 1* 475-477
- Garver, Robert V., see Patel, Suman D., *MWSYM 89 Vol. 3* 879-882
- Gatti, Giuliano, see Boesch, Wolfgang, *T-MTT Dec 89* 1885-1890
- Gatti, Giuliano, see Bösch, Wolfgang, *T-MTT Dec 89* 1885-1890
- Gauthier, Sylvain, Louis Marchildon, and Cevdet Akyel. Shift of the complex resonance frequency of a dielectric-loaded cavity produced by small sample insertion holes (Short p.); *T-MTT Apr 89* 801-804
- Gee, C. M., see Newberg, I. L., *MWSYM 89 Vol. 2* 693-696
- Geen, M. W., see Gardiner, G. J., *MWSYM 89 Vol. 1* 405-408
- Geissberger, A. E., see Cooper, J. A., Jr., *CORNEL Jun 89 Abstr V/7*
- Geissberger, A. E., see Bahl, Inder J., *MCS 89* 21-24
- Geissberger, A. E., see Winslow, T. A., *MWSYM 89 Vol. 3* 1019-1022
- Geissberger, A. E., see Bahl, Inder J., *T-MTT Sep 89* 1315-1320
- Geissberger, A. E., see Bahl, Inder J., *T-MTT Dec 89* 2154-2158
- Geller, B. D., F. T. Assal, R. K. Gupta, and P. K. Cline. A technique for the maintenance of FET power amplifier efficiency under backoff; *MWSYM 89 Vol. 3* 949-952
- Gerard, Henri, see Halkias, George, *T-MTT May 89* 817-825
- German, Fred J., and Lloyd S. Riggs. Bandwidth properties of rectangular T-septum waveguides (Short p.); *T-MTT May 89* 917-919
- Gesche, Roland, and Norbert Löchel. Two cylindrical obstacles in a rectangular waveguide—Resonances and filter applications; *T-MTT Jun 89* 962-968
- Gesche, Roland, and Stephan Russenschuck. Improving the characteristics of rectangular waveguide branchings by cylindrical obstacles; *T-MTT Oct 89* 1597-1602
- Ghione, Giovanni, Ivan Maio, and Giuseppe Vecchi. Modeling of multiconductor buses and analysis of crosstalk, propagation delay and pulse distortion in high-speed GaAs logic circuits; *T-MTT Mar 89* 445-456
- Ghione, Giovanni, Carlo U. Naldi, and Fabio Filicori. Physical modeling of GaAs MESFETs in an integrated CAD environment: From device technology to microwave circuit performance; *T-MTT Mar 89* 457-468
- Giannini, F., G. Bartolucci, and M. Ruggieri. Enhanced model for interacting step-discontinuities; *MWSYM 89 Vol. 1* 251-254
- Gibbs, Alan J., see Paulter, Nicholas G., *T-MTT Oct 89* 1612-1619
- Gibson, Andrew A. P., see Helszajn, Joseph, *T-MTT Jan 89* 71-80
- Gibson, Andrew A. P., and Joseph Helszajn. Finite element solution of longitudinally magnetized elliptical gyromagnetic waveguides; *T-MTT Jun 89* 999-1005
- Gierlowski, P., see Konopka, J., *MWSYM 89 Vol. 2* 635-638
- Gilb, James P., and Constantine A. Balanis. Distortion of transient signals on multilayer coupled symmetric microstrip transmission lines; *MWSYM 89 Vol. 3* 1001-1004
- Gilb, James P., and Constantine A. Balanis. Pulse distortion on multilayer coupled microstrip lines; *T-MTT Oct 89* 1620-1628
- Gimeno, B., see Garcia, A. C., *MWSYM 89 Vol. 1* 135-138
- Ginley, D. S., see Martens, J. S., *MWSYM 89 Vol. 1* 443-446
- Glenn, Chance M., and Robert V. Garver. Trends in mixer damage; *MWSYM 89 Vol. 1* 475-477
- Glenn, M., see Riazat, M., *MWSYM 89 Vol. 2* 525-528
- Gluck, J., see Bharj, Sarjit S., *MWSYM 89 Vol. 1* 409-412
- Gluck, J., see Michels, R., *MWSYM 89 Vol. 2* 541-544
- Goebel, U., see Alessandri, F., *MWSYM 89 Vol. 3* 1219-1222
- Goebel, Uhlend, see Knöchel, Reinhard, *MWSYM 89 Vol. 3* 1247-1250
- Goebel, Uhlend, see Alessandri, Ferdinando, *T-MTT Dec 89* 2020-2027
- Goel, Jitendra, *Guest Ed.* Introduction to special issue on FET structures: Modeling and circuit applications; *T-MTT Sep 89* 1277-1278
- Goldberg, Lew, see Esman, Ronald D., *T-MTT Oct 89* 1512-1518
- Goldstick, D. I., see Upton, M. A. G., *MCS 89* 105-109
- Goldstick, D. I., see Upton, M. A. G., *MWSYM 89 Vol. 1* 193-197
- Goloubkoff, M., see Perennec, A., *T-MTT Sep 89* 1475-1478
- Gombar, A., see Rosen, A., *T-MTT Aug 89* 1255-1257
- Gominho, Emanuel C. An automated technique for post production tuning of microwave circuits; *MWSYM 89 Vol. 2* 765-767
- Goossen, Keith W., and Robert B. Hammond. Modeling of picosecond pulse propagation in microstrip interconnections of integrated circuits; *T-MTT Mar 89* 469-478
- Gostray, J., see Dumas, J. M., *MWSYM 89 Vol. 1* 483-486
- Gopinath, A., see Campbell, S. A., *MWSYM 89 Vol. 2* 817-819
- Gopinath, Anand, see Campbell, Stephen A., *T-MTT Dec 89* 2046-2050
- Gorman, G. M., see Oki, A. K., *MCS 89* 83-86
- Gorman, G. M., A. K. Oki, E. M. Mrozek, J. B. Camou, D. K. Umamoto, and M. E. Kim. A GaAs HBT monolithic logarithmic IF (0.5 to 1.5 GHz) amplifier with 60 dB dynamic range and 400 mW power consumption; *MWSYM 89 Vol. 2* 537-540
- Gorman, G. M., see Kim, M. E., *T-MTT Sep 89* 1286-1303
- Goth, P., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Goutoule, Jean-Marc, see Espes, Patrick, *T-MTT Feb 89* 289-298
- Gouzien, Pascal, see Soares, Robert A., *T-MTT Nov 89* 1669-1674
- Graffeuil, J., see Ng, G. I., *CORNEL 89 Abstr II/4*
- Graffeuil, J., see Reynoso-Hernandez, J. A., *T-MTT Sep 89* 1478-1481
- Gragnani, Gian Luigi, see Caorsi, Salvatore, *T-MTT May 89* 910-916
- Gray, Henry F. Vacuum microelectronics: Why it might address microwave to sub MM-wave applications; *CORNEL 89 Abstr I/5*
- Green, Harry E. Conductor geometry independence of phase velocity in TEM-mode transmission lines (Ltr.); *T-MTT Apr 89* 805
- Green, Harry E. Determination of the cutoff of the first higher order mode in a coaxial line by the transverse resonance technique (Short p.); *T-MTT Oct 89* 1652-1653
- Greiling, P., see Vaughn, S., *MWSYM 89 Vol. 2* 801-804
- Greiling, Paul T., see Mishra, Umesh K., *T-MTT Sep 89* 1279-1285
- Greve, D. W., see Racanelli, Marco, *CORNEL 89 Abstr III/3*
- Griffin, Edward, see Bahl, Inder J., *MCS 89* 21-24
- Griffin, Edward L., see Bahl, Inder J., *T-MTT Sep 89* 1315-1320
- Griffin, Edward L., see Bahl, Inder J., *T-MTT Dec 89* 2154-2158
- Griffin, J., see Tadayon, Bijan, *CORNEL 89 Abstr III/5*
- Gronau, Gregor, and Ingo Wolff. A simple broad-band device de-embedding method using an automatic network analyzer with time-domain option; *T-MTT Mar 89* 479-483
- Grossier, F., see Vidalou, J. F., *MWSYM 89 Vol. 2* 831-834
- Grubin, H. L., J. P. Kreskovsky, and R. Levy. Large signal physical based device circuit modeling of power FETs; *CORNEL Jun 89 Abstr I/6*
- Grüner, G., see Drabeck, L., *MWSYM 89 Vol. 2* 551-554
- Grützmacher, D., see Lübke, K., *MWSYM 89 Vol. 2* 729-730
- Grützmacher, D., see Scheiber, Helmut, *T-MTT Dec 89* 2093-2098
- Guglielmi, M., see Frezza, F., *MWSYM 89 Vol. 3* 927-930
- Guglielmi, Marco, and Arthur A. Oliner. Multimode network description of a planar periodic metal-strip grating at a dielectric interface—I: Rigorous network formulations; *T-MTT Mar 89* 534-541
- Guglielmi, Marco, and Arthur A. Oliner. Multimode network description of a planar periodic metal-strip grating at a dielectric interface—II: Small-aperture and small-obstacle solutions; *T-MTT Mar 89* 542-552
- Guglielmi, Marco, and Harry Hochstadt. Multimode network description of a planar periodic metal-strip grating at a dielectric interface—III: Rigorous solution; *T-MTT May 89* 902-909
- Guillard, Jean Christophe, and Xavier Le Polozec. A multipath fading microwave simulator for studying space diversity systems; *MWSYM 89 Vol. 3* 1199-1202
- Guillon, P., see Verdeyme, S., *MWSYM 89 Vol. 3* 1151-1154
- Guillon, P., see Cros D., *MWSYM 89 Vol. 3* 1215-1218
- Guillon, P., see Jiao, X. H., *T-MTT Feb 89* 432-437
- Guillory, D. M., see McMillan, R. W., *T-MTT Nov 89* 1828-1830
- Guo, J. Y., see Owens, J. M., *MWSYM 89 Vol. 1* 141-144
- Gupta, K. C., see Abouzahra, Mohamed D., *MWSYM 89 Vol. 1* 321-324
- Gupta, K. C., see Sabban, Albert, *MWSYM 89 Vol. 2* 707-710
- Gupta, R. K., see Geller, B. D., *MWSYM 89 Vol. 3* 949-952
- Gutmann, R. J., see Letavic, T. J., *MWSYM 89 Vol. 3* 969-972
- Gutmann, Ronald J., and Nitin Jain. Comments on GaAs MESFET baseband-to-microwave passive switches (Ltr.); *T-MTT Jul 89* 1154-1155
- includes reply by M. Schindler, M. Miller, and K. Simon
- Gutscher, W. Daril, see Jachim, Stephen P., *T-MTT Nov 89* 1825-1828

H

- Habashy, Terek M., see Ali, Sami M., *T-MTT Nov 89* 1773-1783
- Halchin, D. J., see Owens, J. M., *MWSYM 89 Vol. 1* 471-474
- Halkias, George, Henri Gerard, Yves Crosnier, and Georges Salmer. A new approach to the RF power operation of MESFETs; *T-MTT May 89* 817-825
- Hamamamura, Yoshinori, see Mizushima, Shizuo, *MWSYM 89 Vol. 1* 171-174
- Hammond, Robert B., see Goossen, Keith W., *T-MTT Mar 89* 469-478
- Han, Bin, see Sun, Shiyang, *MWSYM 89 Vol. 1* 401-404
- Hancock, B., see Hwu, R. J., *MWSYM 89 Vol. 3* 1069-1072
- Hanna, V. Fouad, see Drissi, M., *MWSYM 89 Vol. 2* 791-794
- Hansen, Robert K., see Madni, Asad M., *MWSYM 89 Vol. 1* 439-442
- Hansen, Robert K., see Madni, Asad M., *T-MTT Dec 89* 1942-1948
- Hara, Shinji, Tsuneo Tokumitsu, and Masayoshi Aikawa. Lossless, broadband monolithic microwave active inductors; *MWSYM 89 Vol. 3* 955-958
- Hara, Shinji, see Tokumitsu, Tsuneo, *MWSYM 89 Vol. 3* 963-966
- Hara, Shinji, Tsuneo Tokumitsu, Toshiaki Tanaka, and Masayoshi Aikawa. Correction to 'Broad-band monolithic microwave active inductor and its application to miniaturized wide-band amplifiers' (Dec 88 1920-1924); *T-MTT Jul 89* 1155
- Hara, Shinji, Tsuneo Tokumitsu, and Masayoshi Aikawa. Lossless broad-band monolithic microwave active inductors; *T-MTT Dec 89* 1979-1984
- Hara, Shinji, see Tokumitsu, Tsuneo, *T-MTT Dec 89* 1985-1990
- Hardy, W. N., see Lusher, C. P., *T-MTT Mar 89* 643-646
- Harokopus, William P., and Pisti B. Katehi. An accurate characterization of open microstrip discontinuities including radiation losses; *MWSYM 89 Vol. 1* 231-234
- Harokopus, William P., Jr., and Pisti B. Katehi. Characterization of microstrip discontinuities on multilayer dielectric substrates including radiation losses; *T-MTT Dec 89* 2058-2066
- Harris, G. L., see Tadayon, Bijan, *CORNEL 89 Abstr III/5*
- Harris, J. S., Jr., see Owens, J. M., *MWSYM 89 Vol. 1* 471-474
- Harris, R., see Weinreb, S., *MWSYM 89 Vol. 2* 813-816
- Harrison, Robert G. Theory of regenerative frequency dividers using double-balanced mixers; *MWSYM 89 Vol. 1* 459-462
- Harrison, Robert G., see Ross, Michael, *MWSYM 89 Vol. 3* 1039-1042
- Harrison, William H. The Rantec years—Dr. Seymour B. Cohn (1960 to 1967); *MWSYM 89 Vol. 2* 749-751, 757-758
- Hartnagel, H. L., see Krozer, V., *MWSYM 89 Vol. 1* 351-354
- Hartnagel, H. L., see Fricke, K., *MWSYM 89 Vol. 1* 389-392
- Hartnagel, Hans L., see Fricke, Klaus, *T-MTT Sep 89* 1334-1339

- Hash, R. J., see Salvage, S. T., *MWSYM 89 Vol. 3* 1051-1054
- Hashimoto, Koji, see Ogawa, Koichi, *T-MTT Sep 89* 1434-1441
- Hassan, Essam E. Field solution and propagation characteristics of monofilar-bifilar modes of axially slotted coaxial cable; *T-MTT Mar 89* 553-557
- Hatamian, M., see Hornak, L. A., *MWSYM 89 Vol. 2* 623-626
- Hattori, Jun, see Ishikawa, Youhei, *MWSYM 89 Vol. 2* 591-594
- Hattori, Jun, see Nishikawa, Toshio, *T-MTT Dec 89* 2074-2079
- Hatzopoulos, Z., see Dumas, J. M., *MWSYM 89 Vol. 1* 483-486
- Hay, R. G., see McMillan, R. W., *T-MTT Nov 89* 1828-1830
- Hayama, Nobuyuki, see Madihian, Mohammad, *T-MTT Nov 89* 1811-1814
- Hayata, Kazuya, Masashi Eguchi, and Masanori Koshiba. Finite element formulation for guided-wave problems using transverse electric field component (Short p.); *T-MTT Jan 89* 256-258
- Hayata, Kazuya, Kazunori Miura, and Masanori Koshiba. Full vectorial finite element formalism for lossy anisotropic waveguides; *T-MTT May 89* 875-883
- Hegazi, G., H.-L. A. Hung, J. L. Singer, F. R. Phelleps, A. B. Cornfeld, T. Smith, J. F. Bass, H. E. Carlson, and H. C. Huang. GaAs molecular beam epitaxy monolithic power amplifiers at U-band; *MCS 89* 121-125
- Hegazi, G., H.-L. A. Hung, J. L. Singer, F. R. Phelleps, A. B. Cornfeld, T. Smith, J. F. Bass, H. E. Carlson, and H. C. Huang. GaAs molecular beam epitaxy monolithic power amplifiers at U-band; *MWSYM 89 Vol. 1* 209-213
- Heidmann, P. D., see Fiedziuszko, S. J., *MWSYM 89 Vol. 2* 555-558
- Heime, Klaus, see Brockerhoff, Wolfgang, *T-MTT Sep 89* 1380-1388
- Heinrich, Wolfgang. Full-wave analysis of conductor losses on MMIC transmission lines; *MWSYM 89 Vol. 3* 911-914
- Heinrich, Wolfgang. High-frequency MESFET noise modeling including distributed effects; *T-MTT May 89* 836-842
- Helszajn, Joseph, and Andrew A. P. Gibson. Cutoff spaces of elliptical gyromagnetic planar circuits and waveguides using finite elements; *T-MTT Jan 89* 71-80
- Helszajn, Joseph, see Gibson, Andrew A. P., *T-MTT Jun 89* 999-1005
- Herczfeld, P. R., see Berceli, T., *MWSYM 89 Vol. 1* 131-134
- Herczfeld, P. R., see Daryoush, A. S., *MWSYM 89 Vol. 2* 735-738
- Herman, M. L., see Lan, G. L., *MCS 89* 95-99
- Herman, M. L., see Lan, G. L., *MWSYM 89 Vol. 1* 103-107
- Hernández-Gil, Félix, see Salazar-Palma, Magdalena, *MWSYM 89 Vol. 1* 507-510
- Heron, Patrick L., Chao-Ren Chang, and Michael B. Steer. Control of aliasing in the harmonic balance simulation of nonlinear microwave circuits; *MWSYM 89 Vol. 1* 355-358
- Heston, David D., see Eppich, R. Dean, *MWSYM 89 Vol. 2* 529-532
- Higgins, J. A., see Wang, N. L., *CORNEL 89 Abstr III/4*
- Hill, A., and V. K. Tripathi. Analysis and modeling of coupled right angle microstrip bend discontinuities; *MWSYM 89 Vol. 3* 1143-1146
- Hill, David A. Reflection coefficient of a waveguide with slightly uneven walls; *T-MTT Jan 89* 244-252
- Hill, Scott M., see Claspay, Paul C., *MWSYM 89 Vol. 3* 1163-1166
- Hill, Steven C., and Dipakbin Q. Chowdhury. Three-dimensional SAR distributions computed in a multilayered cylindrical model for electromagnetic hyperthermia; *T-MTT Aug 89* 1192-1199
- Hiller, Gerald, see Caverly, Robert H., *MWSYM 89 Vol. 3* 1073-1076
- Hiller, Gerald, see Caverly, Robert H., *T-MTT Apr 89* 787-790
- Hinckley, J. M., V. Sankaran, J. Singh, and S. Tiwari. An evaluation of Si and SiGe base bipolar transistors for high frequency and high speed applications—Basic transport and design; *CORNEL Jun 89 Abstr III/2*
- Hindy, Moataza A. Optimized method for obtaining permittivity and conductivity profiles of microwave materials (Short p.); *T-MTT May 89* 922-925
- Hinken, J. H., see Daginnus, M., *MWSYM 89 Vol. 2* 631-634
- Hirachi, Y., see Saito, T., *MWSYM 89 Vol. 3* 853-856
- Hiraoka, Takahiro, Tsuneo Tokumitsu, and Masayoshi Aikawa. Very small wide-band MMIC magic T's using microstrip lines on a thin dielectric film; *T-MTT Oct 89* 1569-1575
- Hirayama, Koichi, and Masanori Koshiba. Analysis of discontinuities in an open dielectric slab waveguide by combination of finite and boundary elements; *T-MTT Apr 89* 761-768
- Hirota, Tetsuo, see Ohira, Takashi, *MWSYM 89 Vol. 3* 1047-1050
- Hirota, Tetsuo, and Hiroyo Ogawa. Uniplanar monolithic frequency doublers; *T-MTT Aug 89* 1249-1254
- Hiruma, Kenji, see Yanokura, Eiji, *T-MTT Sep 89* 1466-1471
- Ho, P., see Tessmer, A. J., *CORNEL 89 Abstr II/2*
- Ho, P., see Upton, M. A. G., *MCS 89* 105-109
- Ho, P., see Upton, M. A. G., *MWSYM 89 Vol. 1* 193-197
- Ho, P., see Duh, K. H. G., *MWSYM 89 Vol. 2* 805-808
- Ho, P., see Smith, P. M., *MWSYM 89 Vol. 3* 983-986
- Ho, P., see Ferguson, D. W., *MWSYM 89 Vol. 3* 987-990
- Ho, T. Q., and Yi-Chi Shih. Spectral-domain analysis of E-plane waveguide to microstrip transitions; *T-MTT Feb 89* 388-392
- Ho, W. J., see Wang, N. L., *CORNEL 89 Abstr III/4*
- Hochstadt, Harry, see Guglielmi, Marco, *T-MTT May 89* 902-909
- Hodges, N. E., see Dunn, V. E., *MWSYM 89 Vol. 1* 127-130
- Hofer, Wolfgang J. R., see Eswarappa, T-MTT Feb 89 299-306
- Hofer, Wolfgang J. R., see So, Poman P. M., *MWSYM 89 Vol. 1* 343-346
- Hofer, Wolfgang J. R., see Uher, Jaroslav, *MWSYM 89 Vol. 3* 1273-1276
- Hofer, Wolfgang J. R., see Callen, Heinrich, *T-MTT Feb 89* 307-316
- Hofer, Wolfgang J. R. Oscillators and amplifiers in integrated E-plane technique; *T-MTT Feb 89* 351-364
- Hofer, Wolfgang J. R., see L'Ecuyer, Jean, *T-MTT Feb 89* 425-428
- Hofer, Wolfgang J. R., see Ruxton, James, *T-MTT Feb 89* 429-432
- Hofer, Wolfgang J. R., see So, Poman P. M., *T-MTT Dec 89* 1877-1884
- Hohenwarter, G. K. G., see Martens, J. S., *MWSYM 89 Vol. 1* 443-446
- Hohenwarter, G. K. G., D. P. McGinnis, J. B. Beyer, and J. E. Nordman. Observation of microwave comb generation with a Josephson junction array; *MWSYM 89 Vol. 1* 447-450
- Hollis, M. A., see Rathman, D. D., *CORNEL 89 Abstr III/7*
- Hollis, Mark A., see Actis, Robert, *MWSYM 89 Vol. 2* 835-838
- Holme, S., see Fiedziuszko, S. J., *MWSYM 89 Vol. 2* 683-686
- Homentcovschi, D., A. Manolescu, A. M. Manolescu, and L. Kreindler. Corrections to 'An analytical solution for the coupled stripline-like microstrip line problem' (Jun 88 1002-1007); *T-MTT Jun 89* 1061
- Homentcovschi, Dorel. A cylindrical multiconductor stripline-like microstrip transmission line; *T-MTT Mar 89* 497-503
- Honjo, K., see Tanaka, S., *CORNEL 89 Abstr III/6*
- Honjo, Kazuhiko, see Madihian, Mohammad, *T-MTT Nov 89* 1811-1814
- Hopfer, Samuel, see Adelman, Jonah, *T-MTT Feb 89* 317-323
- Horio, Kazushige, Yasuji Fuseya, Hiroyuki Kusuki, and Hisayoshi Yanai. Numerical simulation of GaAs MESFET's with a p-buffer layer on the semi-insulating substrate compensated by deep traps; *T-MTT Sep 89* 1371-1379
- Hornak, L. A., M. Hatamian, S. K. Tewksbury, E. G. Burkhardt, R. E. Howard, P. M. Mankiewicz, B. L. Straughn, and C. D. Brandle. Experiments with a 31-cm high- T_c superconducting thin film transmission line; *MWSYM 89 Vol. 2* 623-626
- Horno, Manuel, see Medina, Francisco, *T-MTT Mar 89* 504-511
- Horno, Manuel, see Boix, Rafael R., *T-MTT Oct 89* 1523-1528
- Horton, John B. Selected technology summaries for Microwave Theory and Techniques—1988; *T-MTT Jun 89* 1040-1053
- Hosogi, K., see Ayaki, N., *MCS 89* 7-10
- Howard, G. E., J. Dai, Y. L. Chow, and M. G. Stubbs. The power transfer mechanism of MMIC spiral transformers and adjacent spiral inductors; *MWSYM 89 Vol. 3* 1251-1254
- Howard, R. E., see Hornak, L. A., *MWSYM 89 Vol. 2* 623-626
- Howes, M. J., see Pantoja, R. R., *MWSYM 89 Vol. 2* 573-576
- Howes, Michael J., see Licquirish, Clint, *T-MTT Oct 89* 1497-1505
- Howes, Michael J., see Pantoja, Renato R., *T-MTT Nov 89* 1675-1680
- Howes, Michael J., see Pantoja, Renato R., *T-MTT Dec 89* 2039-2045
- Hsieh, E., see Chow, P. D., *MWSYM 89 Vol. 2* 731-734
- Hsu, Chung-I G., and Hesham A. Auda. Corrections to 'Multiple dielectric posts in a rectangular waveguide' (Aug 86 883-891); *T-MTT Apr 89* 806
- Hsu, Jui-Pang, T. Anada, A. A. Oliner, and S. T. Peng. Formulation of mode coupling equations at step discontinuity based on the planar circuit theory; *MWSYM 89 Vol. 3* 1135-1138
- Hsue, Ching-Wen. Elimination of ringing signals for a lossless, multiple-section transmission line; *T-MTT Aug 89* 1178-1183
- Hu, Yongcai, Juan Jesus Obregon, and Jean-Claude Mollier. Nonlinear analysis of microwave FET oscillators using Volterra series; *T-MTT Nov 89* 1689-1693
- Hua, C., see Avsarala, M., *MCS 89* 25-28
- Huang, Di-Hui, and Hung Chang Lin. Nonlinear charge control DC and transmission line models for GaAs MODFET's; *MWSYM 89 Vol. 1* 417-420
- Huang, Di-Hui, and Hung C. Lin. DC and transmission line models for a high electron mobility transistor; *T-MTT Sep 89* 1361-1370
- Huang, H. C., see Hegazi, G., *MCS 89* 121-125
- Huang, H. C., see Hegazi, G., *MWSYM 89 Vol. 1* 209-213
- Huang, H. C., see Peterson, K. E., *MWSYM 89 Vol. 3* 945-948
- Huang, Ho C., see Hung, Hing-Loi A., *T-MTT Aug 89* 1223-1231
- Huang, J., see Riley, A. L., *MCS 89* 65-68
- Huang, J., see Rascoe, D. L., *T-MTT Dec 89* 2165-2168
- Hudgens, R. D., see Bayraktaroglu, B., *MWSYM 89 Vol. 3* 1057-1060
- Hügli, Rolf, and Urs Lott. A 9 GHz oscillator stabilized with a STW delay line; *MWSYM 89 Vol. 1* 265-268
- Hummer, Kenneth A., see Chang, Kai, *T-MTT Jul 89* 1078-1084
- Hung, H.-L., see Metze, G., *MCS 89* 111-116
- Hung, H.-L., see Metze, G., *MWSYM 89 Vol. 1* 199-204
- Hung, H.-L., see Peterson, K. E., *MWSYM 89 Vol. 3* 945-948
- Hung, H.-L. A., see Hegazi, G., *MCS 89* 121-125
- Hung, H.-L. A., see Hegazi, G., *MWSYM 89 Vol. 1* 209-213
- Hung, Hing-Loi, see Webb, Kevin J., *MWSYM 89 Vol. 1* 217-220
- Hung, Hing-Loi A., Penny Polak-Dingels, Kevin J. Webb, Thane Smith, Ho C. Huang, and Chi H. Lee. Millimeter-wave monolithic integrated circuit characterization by a picosecond optoelectronic technique; *T-MTT Aug 89* 1223-1231
- Huntton, J. K. Novel contributions to microwave circuit design; *MWSYM 89 Vol. 2* 753-755, 757-758
- Hurley, Richard B., Irving Kaufman, and Ramendra P. Roy. Microstrip noncontacting thickness monitor; *MWSYM 89 Vol. 3* 905-908
- Hurwitz, R., see Rosen, A., *T-MTT Aug 89* 1255-1257
- Huting, William A., and Kevin J. Webb. Numerical solution of the continuous waveguide transition problem; *T-MTT Nov 89* 1802-1808
- Huyh, J., see Khanna, A. P. S., *MWSYM 89 Vol. 1* 515-518
- Hwang, Vincent D., Yi-Chi Shih, and Huy M. Le. Accurate nonlinear modeling and verification of MMIC amplifier; *MCS 89* 37-40
- Hwang, Vincent D., and Tatsuo Itoh. Waveform-balance method for nonlinear MESFET amplifier simulation; *MWSYM 89 Vol. 2* 581-584
- Hwang, Vincent D., Yi-Chi Shih, Huy Minh Le, and Tatsuo Itoh. Nonlinear modeling and verification of MMIC amplifiers using the waveform-balance method; *T-MTT Dec 89* 2125-2133
- Hwu, R. J., L. P. Sadwick, N. C. Luhmann, Jr., D. B. Rutledge, M. Sokolich, and B. Hancock. Quasi-optical watt-level millimeter-wave monolithic solid-state diode-grid frequency multipliers; *MWSYM 89 Vol. 3* 1069-1072
- Hylton, T. L., see Drabek, L., *MWSYM 89 Vol. 2* 551-554

I

- Ichioka, T., K. Tanaka, T. Saito, S. Nishi, and M. Akiyama. An ultra-high speed DCFL dynamic frequency divider; *MCS* 89 61-64
- Iida, Akio, see Iyama, Yoshitada, *MWSYM* 89 Vol. 3 1291-1294
- Iijima, Takahiko, see Kobayashi, Masanori, *T-MTT* Apr 89 799-801
- Ikäläinen, Pertti K. An RLC matching network and application in 1-20 GHz monolithic amplifier; *MWSYM* 89 Vol. 3 1115-1118
- Ikeda, Yoshito, see Ishikawa, Osamu, *MWSYM* 89 Vol. 3 979-982
- Imai, Nobuaki, Toshio Nojima, and Takehiro Murase. Novel linearizer using balanced circulators and its application to multilevel digital radio systems; *T-MTT* Aug 89 1237-1243
- Imura, Kimihiko, see Wakamoto, Kouichi, *MWSYM* 89 Vol. 3 1023-1026
- In, Ye-An, see Tanaka, Satoshi, *T-MTT* Nov 89 1755-1760
- Ino, Masayuki, see Ohira, Takashi, *MWSYM* 89 Vol. 3 1047-1050
- Inoue, Kaoru, see Ishikawa, Osamu, *MWSYM* 89 Vol. 3 979-982
- Ise, Kiyoshi, and Masanori Koshiba. Equivalent circuits for dielectric posts in a rectangular waveguide (Short p.); *T-MTT* Nov 89 1823-1825
- Ishii, T. Koryu, see Mehdiadeh, Mehrdad, *T-MTT* Jul 89 1113-1118
- Ishikawa, Osamu, Katsunori Nishii, Toshinobu Matsuno, Chinatsu Azuma, Yoshito Ikeda, Syutaro Nanbu, and Kaoru Inoue. Low-noise InGaAs HEMT using the new off-set recess gate process; *MWSYM* 89 Vol. 3 979-982
- Ishikawa, Osamu, Hideki Yagita, Toshiharu Tanbo, and Takeshi Onuma. Direct measurement of the optimum source impedance for minimum noise figure; *MWSYM* 89 Vol. 3 1183-1186
- Ishikawa, Youhei, see Nishikawa, Toshio, *MWSYM* 89 Vol. 1 153-156
- Ishikawa, Youhei, Toshio Nishikawa, Jun Hattori, and Kikuo Wakino. Dielectric receiving filter with sharp stop band using active feedback resonator method for cellular base stations; *MWSYM* 89 Vol. 2 591-594
- Ishikawa, Youhei, see Nishikawa, Toshio, *T-MTT* Dec 89 2074-2079
- Ishitsuka, Fuminori, see Ohira, Takashi, *T-MTT* Apr 89 723-728
- Ishizaki, Toshio, see Ogawa, Koichi, *T-MTT* Sep 89 1434-1441
- Iskander, M. F., and T. S. Lind. Electromagnetic coupling of microstrip lines and coplanar waveguides to multilayer lossy media; *MWSYM* 89 Vol. 1 175-178
- Iskander, Magdy F., see Tumeh, Amer M., *T-MTT* Jul 89 1126-1133
- Iskander, Magdy F., and Thomas S. Lind. Electromagnetic coupling of coplanar waveguides and microstrip lines to highly lossy dielectric media; *T-MTT* Dec 89 1910-1917
- Islam, Saiful. A new analytic design technique for two- and three-way warped mode combine directional couplers; *T-MTT* Jan 89 34-42
- Isomae, Masao, see Wakamoto, Kouichi, *MWSYM* 89 Vol. 3 1023-1026
- Ito, C., see Wang, G. W., *CORNEL* 89 Abstr II/8
- Ito, Yasushi, Masayuki Nakajima, Masayuki Kimishima, and Masahito Asa. Ultra-broadband lossy match amplifiers; *MWSYM* 89 Vol. 1 379-383
- Itoh, T., see Birkeland, J., *MWSYM* 89 Vol. 1 119-122
- Itoh, T., see Cheung, P., *MWSYM* 89 Vol. 1 307-309
- Itoh, T., see Kesan, V. P., *MWSYM* 89 Vol. 1 487-490
- Itoh, T., see Nam, S., *MWSYM* 89 Vol. 3 997-1000
- Itoh, T., see Kong, K. S., *MWSYM* 89 Vol. 3 1159-1162
- Itoh, Tatsuo, see Lee, Hai-Young, *MWSYM* 89 Vol. 1 367-370
- Itoh, Tatsuo, see Hwang, Vincent D., *MWSYM* 89 Vol. 2 581-584
- Itoh, Tatsuo. Overview of quasi-planar transmission lines; *T-MTT* Feb 89 275-280
- Itoh, Tatsuo, see Nam, S., *T-MTT* May 89 897-901
- Itoh, Tatsuo, see Broumas, Antonios D., *T-MTT* May 89 925-929
- Itoh, Tatsuo, see El-Ghazaly, Samir M., *T-MTT* Jun 89 1027-1032
- Itoh, Tatsuo, see Birkeland, Joel, *T-MTT* Aug 89 1232-1236
- Itoh, Tatsuo, see Birkeland, Joel, *T-MTT* Sep 89 1452-1459
- Itoh, Tatsuo, see Lee, Hai-Young, *T-MTT* Dec 89 1904-1909
- Itoh, Tatsuo, see Kesan, Vijay P., *T-MTT* Dec 89 1933-1941
- Itoh, Tatsuo, see Kong, Keon-Shik, *T-MTT* Dec 89 1998-2004
- Itoh, Tatsuo, see Nam, S., *T-MTT* Dec 89 2051-2057
- Itoh, Tatsuo, see Hwang, Vincent D., *T-MTT* Dec 89 2125-2133
- Itoh, Tomohiro, see Ando, Yuji, *CORNEL* 89 Abstr II/9
- Iyama, Yoshitada, Akio Iida, Tadashi Takagi, and Shuji Urasaki. Second-harmonic reflector type high-gain FET frequency doubler operating in K-band; *MWSYM* 89 Vol. 3 1291-1294
- Izadian, Jamal S. A new 6-18GHz, -3dB multisection hybrid coupler using asymmetric broadside, and edge coupled lines; *MWSYM* 89 Vol. 1 243-246

J

- Jablonski, D. G., and A. D. Krall. Comments on 'Attenuation measurement of very low loss dielectric waveguides by the cavity resonator method applicable in the millimeter/submillimeter wavelength range' by F. I. Shimabukuro; *T-MTT* Mar 89 650-651 (Original paper, Jul 88 1160-1166)
- Jablonski, Tomasz F., and Maciej J. Sowinski. Analysis of dielectric guiding structures by the iterative eigenfunction expansion method; *T-MTT* Jan 89 63-70
- Jabra, A., see Ferguson, D. W., *MWSYM* 89 Vol. 3 987-990
- Jabra, A., see Tessmer, A. J., *CORNEL* 89 Abstr II/2
- Jabra, A., see Upton, M. A. G., *MCS* 89 105-109
- Jabra, A., see Upton, M. A. G., *MWSYM* 89 Vol. 1 193-197
- Jabra, A., see Duh, K. H. G., *MWSYM* 89 Vol. 2 805-808
- Jabra, A., see Smith, P. M., *MWSYM* 89 Vol. 3 983-986
- Jachim, Stephen P., and W. Daril Gutscher. A statistical method for calibrating the six-port reflectometer using nonideal standards (Short p.); *T-MTT* Nov 89 1825-1828
- Jackson, David R., see Yang, Hung-Yu, *T-MTT* Oct 89 1542-1546

- Jackson, Robert W. Full-wave, finite element analysis of irregular microstrip discontinuities; *T-MTT* Jan 89 81-89
- Jackson, Robert W., see Burke, John J., *T-MTT* Mar 89 519-525
- Jackson, Robert W. Mode conversion at discontinuities in finite-width conductor-backed coplanar waveguide; *T-MTT* Oct 89 1582-1589
- Jackson, T. A., see Whitaker, J. F., *MWSYM* 89 Vol. 1 221-224
- Jain, F. C., see Donkor, E., *T-MTT* Sep 89 1484-1487
- Jain, Nitin, see Gutmann, Ronald J., *T-MTT* Jul 89 1154-1155
- Jang, Jiing-Shyue, see Tzuang, Ching-Kuang C., *MWSYM* 89 Vol. 1 495-498
- Jansen, Rolf H., and Ludger Wiemer. Full-wave theory based development of mm-wave circuit models for microstrip open end, gap, step, bend and tee; *MWSYM* 89 Vol. 2 779-782
- Janton, W., see Rosen, A., *T-MTT* Aug 89 1255-1257
- Jarem, John M., see Rollins, John M., *T-MTT* Jul 89 1144-1146
- Jarry, B., see Cros D., *MWSYM* 89 Vol. 3 1215-1218
- Jarry, P., see Perennec, A., *T-MTT* Sep 89 1475-1478
- Jean, Patrick, see Coget, Patricia, *MCS* 89 75-77
- Jean, Patrick, see Philippe, Pascal, *T-MTT* Dec 89 2119-2124
- Jemison, W. D., see Berceci, T., *MWSYM* 89 Vol. 1 131-134
- Jeng, Shyh-Kang, see Shih, Chin, *T-MTT* Apr 89 793-795
- Jenkins, David J., see Treado, Todd A., *MWSYM* 89 Vol. 3 875-878
- Jensen, J. F., see Trew, R. J., *MWSYM* 89 Vol. 3 897-900
- Jiang, J. W., see Yip, G. L., *MWSYM* 89 Vol. 3 1175-1178
- Jiao, X. H., see Cros D., *MWSYM* 89 Vol. 3 1215-1218
- Jiao, X. H., P. Guillon, P. Auxemery, and D. Cros. Dielectric resonators suitable for use in planar integrated circuits at short millimeter wavelengths (Short p.); *T-MTT* Feb 89 432-437
- Jin, Jian-Ming, John L. Volakis, and Valdis V. Liepa. A moment method solution of a volume-surface integral equation using isoparametric elements and point matching (Short p.); *T-MTT* Oct 89 1641-1645
- Johansson, Joakim F., see Yngvesson, K. Sigrid, *T-MTT* Feb 89 365-374
- Johnson, Joseph H., and Pablo E. D'Anna. Operation of solid state power amplifiers at cryogenic temperatures; *MWSYM* 89 Vol. 3 861-862
- Johnson, L. M., see Cox, C. H., III, *MWSYM* 89 Vol. 2 689-692
- Jones, Kenneth M., Joyce A. Mechling, John W. Strohbehn, and B. Stuart Trembly. Theoretical and experimental SAR distributions for interstitial dipole antenna arrays used in hyperthermia; *T-MTT* Aug 89 1200-1209
- Jones, W., see Dixit, R., *MCS* 89 15-19
- Judah, S. R., see Page, M. J., *MWSYM* 89 Vol. 1 247-250
- Jung, G., see Konopka, J., *MWSYM* 89 Vol. 2 635-638
- Jungerman, Roger L., see Tan, Tun S., *T-MTT* Aug 89 1217-1222

K

- Kabe, Y., see Kobayashi, Y., *MWSYM* 89 Vol. 3 1239-1242
- Kaertner, Franz X. Determination of the correlation spectrum of oscillators with low noise; *T-MTT* Jan 89 90-101
- Kai, Kenichiro, see Arai, Shigemitsu, *MWSYM* 89 Vol. 3 1105-1108
- Kai, Kenichiro, see Oda, Yuji, *MCS* 89 33-36
- Kajfez, Darko, and Jovan Lebaric. Numerical analysis of the tubular dielectric resonator with a dielectric tuning rod; *MWSYM* 89 Vol. 3 1235-1238
- Kajfez, Darko, see Lebaric, Jovan, *T-MTT* Nov 89 1740-1748
- Kakihana, Sanehiko, see Wakamoto, Kouichi, *MWSYM* 89 Vol. 3 1023-1026
- Kaliski, R., see Wang, G. W., *CORNEL* 89 Abstr II/8
- Kamei, Kiyoho, see Kawasaki, Hisao, *MWSYM* 89 Vol. 1 423-426
- Kameyama, Takehiko, see Wakamoto, Kouichi, *MWSYM* 89 Vol. 3 1023-1026
- Kaneko, Takenori, see Ohta, Isao, *MWSYM* 89 Vol. 1 235-238
- Kaneko, Takenori, see Ohta, Isao, *T-MTT* Nov 89 1699-1707
- Kao, M. Y., see Tessmer, A. J., *CORNEL* 89 Abstr II/2
- Kao, M.-Y., see Upton, M. A. G., *MCS* 89 105-109
- Kao, M. Y., see Duh, K. H. G., *MWSYM* 89 Vol. 2 805-808
- Kao, M. Y., see Smith, P. M., *MWSYM* 89 Vol. 3 983-986
- Kao, M.-Y., see Upton, M. A. G., *MWSYM* 89 Vol. 1 193-197
- Kapitulnik, A., see Drabeck, L., *MWSYM* 89 Vol. 2 551-554
- Kapoor, Vik J., see Biedenbender, Michael D., *T-MTT* Sep 89 1321-1326
- Kasel, K., see Shih, Y. C., *MWSYM* 89 Vol. 3 1119-1120
- Kasuga, T., see Saito, T., *MWSYM* 89 Vol. 3 853-856
- Katehi, P. B., see van Deventer, T. E., *MWSYM* 89 Vol. 3 919-922
- Katehi, Pisti B., see Harokopos, William P., *MWSYM* 89 Vol. 1 231-234
- Katehi, Pisti B., see Livernais, Thomas G., *MWSYM* 89 Vol. 3 1131-1134
- Katehi, Pisti B., see Livernais, Thomas G., *T-MTT* Nov 89 1761-1767
- Katehi, Pisti B., see van Deventer, T. Emilie, *T-MTT* Dec 89 1964-1972
- Katehi, Pisti B., see Harokopos, William P., Jr., *T-MTT* Dec 89 2058-2066
- Kato, Haruhiko, see Ohira, Takashi, *T-MTT* Apr 89 723-728
- Kato, T., see Ayaki, N., *MCS* 89 7-10
- Katz, J., see Lin, S. H., *CORNEL* 89 Abstr VI/3
- Katzin, P., see Shifrin, M., *MCS* 89 51-56
- Katzin, Peter J., see Shifrin, Mitchell B., *T-MTT* Dec 89 2134-2141
- Kaufman, I., see Pond, J. M., *MWSYM* 89 Vol. 1 451-454
- Kaufman, Irving, see Hurley, Richard B., *MWSYM* 89 Vol. 3 905-908
- Kaul, R., see Tan, R. J., *MWSYM* 89 Vol. 3 1303-1306
- Kaul, Roger, see Patel, Suman D., *MWSYM* 89 Vol. 3 879-882
- Kawano, Mitsuo, see Kawasaki, Hisao, *MWSYM* 89 Vol. 1 423-426
- Kawasaki, Hisao, Toshio Shino, Mitsuo Kawano, and Kiyoho Kamei. Super low noise AlGaAs/GaAs HEMT with one tenth micron gate; *MWSYM* 89 Vol. 1 423-426
- Kazi, Karoly, Bela B. Szendrenyi, and Imre Mojzes. Lossy model of diode packages: An alternative method for exact evaluation of active chip parameters; *MWSYM* 89 Vol. 3 1267-1270
- Kearney, M. J., see Dale, I., *MWSYM* 89 Vol. 1 467-470
- Kennis, P., see Pribetich, J., *MWSYM* 89 Vol. 1 179-182

- Kennis, P., see Delrue, R., *MWSYM 89 Vol. 3* 1171-1174
- Kerczewski, Robert J., George E. Ponchak, and Robert R. Romanofsky. Performance of five 30 GHz satellite receivers; *MWSYM 89 Vol. 3* 1079-1082
- Kerr, Anthony R., see Pan, Shing-Kuo, *T-MTT Mar 89* 580-592
- Kesan, V. P., A. Mortazawi, D. P. Neikirk, and T. Itoh. Microwave and millimeter wave QWITT diode oscillator; *MWSYM 89 Vol. 1* 487-490
- Kesan, Vijay P., Amir Mortazawi, Douglas R. Miller, Vijay K. Reddy, Dean P. Neikirk, and Tatsuo Itoh. Microwave and millimeter-wave QWITT diode oscillators; *T-MTT Dec 89* 1933-1941
- Khanna, A. P. S., R. T. Oyafuso, R. Soohoo, and J. Huynh. Microwave quenchable oscillators - A new class; *MWSYM 89 Vol. 1* 515-518
- Khanna, Amarpal S., see Kipnis, Issy, *T-MTT Mar 89* 558-564
- Khatibzadeh, M. A., see Bayraktaroglu, B., *MWSYM 89 Vol. 3* 1057-1060
- Kiang, Jean-Fu, Sami M. Ali, and Jin Au Kong. Propagation properties of striplines periodically loaded with crossing strips; *T-MTT Apr 89* 776-786
- Kiang, Jean-Fu, see Ali, Sami M., *T-MTT Nov 89* 1773-1783
- Kiefer, Dieter, see Wolff, Ingo, *MWSYM 89 Vol. 2* 657-660
- Kiehl, Richard A. Single-interface and quantum-well heterostructure MISFET's; *T-MTT Sep 89* 1304-1314
- Kim, Bumman, Natalino Camilleri, Hung-Dah Shih, Hua Quen Tserng, and Marianne Wurtele. 35 GHz GaAs power MESFET's and monolithic amplifiers; *T-MTT Sep 89* 1327-1333
- Kim, J. H., see Lin, S. H., *CORNEL 89 Abstr VI/3*
- Kim, M., see Matloubian, M., *MWSYM 89 Vol. 3* 889-892
- Kim, M. E., see Oki, A. K., *MCS 89* 83-86
- Kim, M. E., see Gorman, G. M., *MWSYM 89 Vol. 2* 537-540
- Kim, M. E., A. K. Oki, G. M. Gorman, D. K. Umemoto, and J. B. Camou. GaAs heterojunction bipolar transistor device and IC technology for high-performance analog and microwave applications; *T-MTT Sep 89* 1286-1303
- Kim, Young-Sik, see Yngvesson, K. Sigrid, *T-MTT Feb 89* 365-374
- Kimishima, Masayuki, see Ito, Yasushi, *MWSYM 89 Vol. 1* 379-383
- Kinard, W. B., M. H. Weichold, and W. P. Kirk. Fabrication of a gated resonant tunneling diode with a laterally adjustable quantum dot cross-section; *CORNEL 89 Abstr V/5*
- King, Jin Au, see Ali, Sami M., *T-MTT Nov 89* 1773-1783
- King, Ronald W. P. Wire and strip conductors over a dielectric-coated conducting or dielectric half-space; *T-MTT Apr 89* 754-760
- Kinoshita, Hiroshi, see Ohta, Isao, *MWSYM 89 Vol. 1* 235-238
- Kipnis, I., J. F. Kukiela, J. Wholey, and C. P. Snapp. Silicon bipolar fixed and variable gain amplifier MMICs for microwave and lightwave applications up to 6 GHz; *MCS 89* 101-104
- Kipnis, I., J. F. Kukiela, J. Wholey, and C. P. Snapp. Silicon bipolar fixed and variable gain amplifier MMICs for microwave and lightwave applications up to 6 GHz; *MWSYM 89 Vol. 1* 109-112
- Kipnis, Issy, see Wholey, Jim, *MCS 89* 133-137
- Kipnis, Issy, see Wholey, Jim, *MWSYM 89 Vol. 1* 281-285
- Kipnis, Issy, and Amarpal S. Khanna. Large-signal computer-aided analysis and design of silicon bipolar MMIC oscillators and self-oscillating mixers; *T-MTT Mar 89* 558-564
- Kiriakidis, G., see Dumas, J. M., *MWSYM 89 Vol. 1* 483-486
- Kirk, W. P., see Kinard, W. B., *CORNEL 89 Abstr V/5*
- Kirkendall, T., see Metzger, G., *MCS 89* 111-116
- Kirkendall, T., see Metzger, G., *MWSYM 89 Vol. 1* 199-204
- Kish, Naoto, and Takanori Okoshi. Vectorial wave analysis of uniform-core optical fibers using a novel boundary integral method; *T-MTT Mar 89* 526-533
- Kissick, William A., see Vanzura, Eric J., *MWSYM 89 Vol. 3* 901-904
- Kitazawa, Toshihide. Variational method for multiconductor coupled striplines with stratified anisotropic media; *T-MTT Mar 89* 484-491
- Kitazawa, Toshihide. Metallization thickness effect of striplines with anisotropic media: Quasi-static and hybrid-mode analysis; *T-MTT Apr 89* 769-775
- Kitazawa, Toshihide. Variational method for planar transmission lines with anisotropic magnetic media; *T-MTT Nov 89* 1749-1754
- Klein, James L., see Chang, Kai, *T-MTT Jul 89* 1078-1084
- Klein, U., see Chaloupka, H., *MWSYM 89 Vol. 2* 547-550
- Kleinsasser, A. W. FETs with superconducting channels; *CORNEL Jun 89* Abstr I/2
- Kleinsasser, Alan W., see Pan, Shing-Kuo, *T-MTT Mar 89* 580-592
- Knight, D., see Neylon, S., *MWSYM 89 Vol. 1* 519-522
- Knöchel, Reinhard, see Daas, Moussa, *MWSYM 89 Vol. 1* 257-260
- Knöchel, Reinhard, Bernd Mayer, and Uhlend Goebel. Unilateral microstrip balanced and doubly balanced mixers; *MWSYM 89 Vol. 3* 1247-1250
- Knudsen, J., see Matloubian, M., *MWSYM 89 Vol. 3* 889-892
- Ko, Andrew, and Bevan D. Bates. Theoretical and experimental characterization of radial-resonator waveguide mounting structures; *MWSYM 89 Vol. 3* 1191-1194
- Kobayashi, Masanori, and Takahiko Iijima. Frequency-dependent characteristics of current distributions on microstrip lines (Short p.); *T-MTT Apr 89* 799-801
- Kobayashi, Y., Y. Kabe, Y. Kogami, and T. Yamagishi. Frequency and low-temperature characteristics of high-Q dielectric resonators; *MWSYM 89 Vol. 3* 1239-1242
- Kobrin, Paul, see Takemoto, June H., *T-MTT Oct 89* 1650-1652
- Koenig, E., see Whitson, D. W., *CORNEL 89 Abstr V/6*
- Kogami, Y., see Kobayashi, Y., *MWSYM 89 Vol. 3* 1239-1242
- Kohn, E., A. Lepore, H. Lee, and M. Levy. Performance evaluation of GaAs based MODFETs; *CORNEL 89 Abstr II/6*
- Kohn, Y., see Ayaki, N., *MCS 89* 7-10
- Kollberg, Erik L., see Withington, Stafford, *T-MTT Jan 89* 231-238
- Kollberg, Erik L., see Yngvesson, K. Sigrid, *T-MTT Feb 89* 365-374
- Kondoh, Hiroshi. FET power performance prediction using a linearized device model; *MWSYM 89 Vol. 2* 569-572
- Kong, Jin Au, see Kiang, Jean-Fu, *T-MTT Apr 89* 776-786
- Kong, K. S., and T. Itoh. Computer aided design of evanescent mode waveguide bandpass filter with non-touching E-plane fins; *MWSYM 89 Vol. 3* 1159-1162
- Kong, Keon-Shik, and Tatsuo Itoh. Computer-aided design of evanescent-mode waveguide bandpass filter with nontouching E-plane fins; *T-MTT Dec 89* 1998-2004
- Kong, W. M., see Upton, M. A. G., *MCS 89* 105-109
- Kong, W. M., see Upton, M. A. G., *MWSYM 89 Vol. 1* 193-197
- Konopka, A., see Konopka, J., *MWSYM 89 Vol. 2* 635-638
- Konopka, J., R. Sobolewski, G. Jung, W. Kula, A. Konopka, P. Gierlowski, and J. Lewandowski. Microwave detectors based on granular high-T_c thin films; *MWSYM 89 Vol. 2* 635-638
- Kopp, Bruce. Asymmetric lumped element power splitters; *MWSYM 89 Vol. 1* 333-336
- Kopp, W. F., see Upton, M. A. G., *MCS 89* 105-109
- Kopp, W. F., see Upton, M. A. G., *MWSYM 89 Vol. 1* 193-197
- Kopp, William S., and Sam D. Pritchett. High efficiency power amplification for microwave and millimeter frequencies; *MWSYM 89 Vol. 3* 857-858
- Korzeniewski, T. L., see Yngvesson, K. Sigrid, *T-MTT Feb 89* 365-374
- Koshiba, Masanori, see Hayata, Kazuya, *T-MTT Jan 89* 256-258
- Koshiba, Masanori, see Long, Yi, *T-MTT Apr 89* 680-685
- Koshiba, Masanori, see Hirayama, Koichi, *T-MTT Apr 89* 761-768
- Koshiba, Masanori, see Hayata, Kazuya, *T-MTT May 89* 875-883
- Koshiba, Masanori, and Yi Long. Finite-element analysis of magnetostatic wave propagation in a YIG film of finite dimensions; *T-MTT Nov 89* 1768-1772
- Koshiba, Masanori, see Ise, Kiyoshi, *T-MTT Nov 89* 1823-1825
- Kosman, Z., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Kosugi, Makoto, see Awano, Yuji, *CORNEL 89 Abstr II/1*
- Kot, John S., see Rozzi, Tullio, *T-MTT May 89* 868-874
- Köther, Dietmar, Ingo Wolff, and Adalbert Beyer. A generalized theory for asymmetrical coupled lines (Short p.); *T-MTT Mar 89* 622-624
- Kotthaus, Ulrich, and Bernd Vowinkel. Investigation of planar antennas for submillimeter receivers; *T-MTT Feb 89* 375-380
- Kouki, Ammar B., see Chan, Chi Hou, *T-MTT Nov 89* 1716-1723
- Krall, A. D., see Jablonski, D. G., *T-MTT Mar 89* 650-651
- Kraszewski, A. W., S. O. Nelson, and T. S. You. Sensing dielectric properties of arbitrarily shaped biological objects with a microwave resonator; *MWSYM 89 Vol. 1* 187-190
- Kreindler, L., see Homenteovski, D., *T-MTT Jun 89* 1061
- Kreskovsky, J. P., see Grubin, H. L., *CORNEL 89 Abstr I/6*
- Kriman, A. M., see Bernstein, G. H., *CORNEL 89 Abstr IV/8*
- Kritzer, T. R., see Crescenzi, E. J., Jr., *MWSYM 89 Vol. 2* 773-776
- Krowne, Clifford M., see Pond, Jeffrey M., *T-MTT Jan 89* 181-190
- Krowne, Clifford M., and Gregory B. Tait. Propagation in layered biased semiconductor structures based on transport analysis; *T-MTT Apr 89* 711-722
- Krozer, V., K. Fricke, and H. L. Hartnagel. A novel analytical approach for the nonlinear microwave circuits and experimental characterisation of the nonlinear behaviour of a new MESFET device structure; *MWSYM 89 Vol. 1* 351-354
- Krozer, V., see Fricke, K., *MWSYM 89 Vol. 1* 389-392
- Krozer, Viktor, see Fricke, Klaus, *T-MTT Sep 89* 1334-1339
- Krumm, Charles F., see Mishra, Umesh K., *T-MTT Sep 89* 1279-1285
- Krupka, Jerzy. Resonant modes in shielded cylindrical ferrite and single-crystal dielectric resonators; *T-MTT Apr 89* 691-697
- Krupka, Jerzy. Magnetic tuning of cylindrical H_{01d}-mode dielectric resonators; *T-MTT Apr 89* 743-747
- Krusius, J. P., see Weinzierl, S., *CORNEL 89 Abstr IV/7*
- Krusius, J. Peter, see Saadat, Irfan A., *CORNEL 89 Abstr V/4*
- Kubota, M., see Mizunuma, Y., *MWSYM 89 Vol. 1* 161-164
- Kukiela, J. F., see Kipnis, I., *MCS 89* 101-104
- Kukiela, J. F., see Kipnis, I., *MWSYM 89 Vol. 1* 109-112
- Kula, W., see Konopka, J., *MWSYM 89 Vol. 2* 635-638
- Kuo, Jen-Tsai, see Tzuang, Ching-Kuang C., *MWSYM 89 Vol. 1* 495-498
- Kuo, Tai-Haur, Hung C. Lin, Robert C. Potter, and Dave Shupe. A/D converter using InGaAs/InAlAs resonant-tunneling diodes; *CORNEL Jun 89* Abstr V/2
- Kurihara, H., see Saito, T., *MWSYM 89 Vol. 3* 853-856
- Kuroda, Shigeru, see Awano, Yuji, *CORNEL 89 Abstr II/1*
- Kusuki, Hiroyuki, see Horio, Kazushige, *T-MTT Sep 89* 1371-1379
- Kwark, Y., P. Solomon, and D. LaTulipe. S-parameter characterization of GaAs gate SISFETs at liquid nitrogen temperatures; *CORNEL 89 Abstr IV/4*

L

- Laird, R. W., see Wang, G. W., *MWSYM 89 Vol. 3* 1061-1064
- Lampariello, P., see Frezza, F., *MWSYM 89 Vol. 3* 927-930
- Lan, G. L., J. C. Chen, C. K. Pao, M. I. Herman, and R. E. Neidert. A W-band channelized monolithic receiver; *MCS 89* 95-99
- Lan, G. L., J. C. Chen, C. K. Pao, M. I. Herman, and R. E. Neidert. A W-band channelized monolithic receiver; *MWSYM 89 Vol. 1* 103-107
- Lange, M., and J. Dettelfsen. 94 GHz 3D-imaging radar for sensor-based locomotion; *MWSYM 89 Vol. 3* 1091-1094
- Larson, L. E., see Delaney, M. J., *CORNEL 89 Abstr II/3*
- Latham, P. E. The use of a single source to drive a binary peak power multiplier (Short p.); *T-MTT May 89* 929-931
- Latham, Peter E., see Neilson, Jeff M., *T-MTT Aug 89* 1165-1170
- La Tourrette, Peter M. Special session in honor of Dr. Seymour B. Cohn; *T-MTT Dec 89* 1857-1861
- LaTulipe, D., see Kwark, Y., *CORNEL 89 Abstr IV/4*
- Lau, C. L., see Wang, G. W., *CORNEL 89 Abstr II/8*

- Lawson, Wesley G., see Neilson, Jeff M., *T-MTT Aug 89* 1165-1170
- Le, Huy M., see Hwang, Vincent D., *MCS 89* 37-40
- Le, Huy Minh, see Hwang, Vincent D., *T-MTT Dec 89* 2125-2133
- Leake, B., see Davidson, A., *MWSYM 89 Vol. 2* 827-830
- Leake, Bernard W., see Davidson, Andrew C., *T-MTT Dec 89* 1973-1978
- Lear, K. L., see Owens, J. M., *MWSYM 89 Vol. 1* 471-474
- Lebaric, Jovan, see Kajfez, Darko, *MWSYM 89 Vol. 3* 1235-1238
- Lebaric, Jovan, and Darko Kajfez. Analysis of dielectric resonator cavities using the finite integration technique; *T-MTT Nov 89* 1740-1748
- Lecours, Michel, see Wu, Ke Li, *T-MTT Jun 89* 993-998
- L'Ecuier, Jean, Gregory B. Gajda, and Wolfgang J. R. Hoefer. A FET amplifier in finline technique (Short p.); *T-MTT Feb 89* 425-428
- Lee, Anyu, see Palusinski, Olgierd A., *T-MTT Jan 89* 127-138
- Lee, B. R., see Upton, M. A. G., *MCS 89* 105-109
- Lee, B. R., see Upton, M. A. G., *MWSYM 89 Vol. 1* 193-197
- Lee, Chi H., see Webb, Kevin J., *MWSYM 89 Vol. 1* 217-220
- Lee, Chi H., see Sayadian, Hrayr A., *T-MTT Jan 89* 43-50
- Lee, Chi H., see Hung, Hing-Loi A., *T-MTT Aug 89* 1223-1231
- Lee, H., see Kohn, E., *CORNEL 89 Abstr II/6*
- Lee, H., see Emery, T., *MWSYM 89 Vol. 1* 329-332
- Lee, Hai-Young, and Tatsuo Itoh. Wideband conductor loss calculation of planar quasi-TEM transmission lines with thin conductors using a phenomenological loss equivalence method; *MWSYM 89 Vol. 1* 367-370
- Lee, Hai-Young, and Tatsuo Itoh. Phenomenological loss equivalence method for planar quasi-TEM transmission lines with a thin normal conductor or superconductor; *T-MTT Dec 89* 1904-1909
- Lee, Hyuckjae, see Tripathi, Vijai K., *T-MTT Jan 89* 215-221
- Lee, Min Joon, see Yun, Sang Won, *T-MTT Mar 89* 492-496
- Lee, R. E., R. S. Beaubien, R. H. Norton, and J. W. Bacon. Ultra-low-noise millimeter-wave pseudomorphic HEMT's; *MWSYM 89 Vol. 3* 975-978
- Lee, Robert E., Randall S. Beaubien, Robert H. Norton, and Jeff W. Bacon. Ultra-low-noise millimeter-wave pseudomorphic HEMT's; *T-MTT Dec 89* 2086-2092
- Lee, Shung-Wu, see Loane, Joseph T., III, *T-MTT Oct 89* 1629-1635
- Lee, T., see Metzger, G., *MCS 89* 111-116
- Lee, T., see Metzger, G., *MWSYM 89 Vol. 1* 199-204
- Lee, W. S., see Owens, J. M., *MWSYM 89 Vol. 1* 471-474
- Legaud, P., see Perennec, A., *T-MTT Sep 89* 1475-1478
- Legaud, Pierre, see Soares, Robert A., *T-MTT Nov 89* 1669-1674
- Legier, J. F., see Delrue, R., *MWSYM 89 Vol. 3* 1171-1174
- Le Polozec, Xavier, see Guillard, Jean Christophe, *MWSYM 89 Vol. 3* 1199-1202
- Lepore, A., see Kohn, E., *CORNEL 89 Abstr II/6*
- Le Rouzic, Michel, see Boulouard, Andre, *T-MTT Aug 89* 1257-1260
- Lesage, Steve R., see Madihian, Mohammad, *T-MTT Nov 89* 1811-1814
- Lester, L. F., see Ferguson, D. W., *MWSYM 89 Vol. 3* 987-990
- Letavic, T. J., S. Wu, E. W. Maby, and R. J. Gutmann. Recrystallized silicon-on-alumina as a monolithic circuit technology; *MWSYM 89 Vol. 3* 969-972
- Leviatan, Yehuda, and Gad S. Sheaffer. Comments on 'Numerical analysis of H-plane waveguide junctions by combination of finite and boundary elements' by K. Ise and M. Koshiba; *T-MTT Apr 89* 805-806 (Original paper, Sep 88 1343-1351)
- Levy, H. M., see Bellantoni, J. V., *MWSYM 89 Vol. 3* 1203-1204
- Levy, M., see Kohn, E., *CORNEL 89 Abstr II/6*
- Levy, M., see Baum, H.-P., *MWSYM 89 Vol. 2* 639-641
- Levy, R., see Grubin, H. L., *CORNEL 89 Abstr I/6*
- Levy, Ralph, Ed. Editorial; *T-MTT Jan 89* 1-2
- Lewandowski, J., see Konopka, J., *MWSYM 89 Vol. 2* 635-638
- Li, M. G., see Sayadian, Hrayr A., *T-MTT Jan 89* 43-50
- Li, Si-Fan, see Chen, Ning, *MWSYM 89 Vol. 1* 479-482
- Li, W. Q., Y. Zebda, P. K. Bhattacharya, D. Pavlidis, J. E. Oh, and J. Pamulapati. Monolithically integrated GaAs- and InP-based front-end photoreceivers; *CORNEL 89 Abstr VI/4*
- Liang, G. C., Y. W. Liu, and K. K. Mei. Analysis of coplanar waveguide by the time-domain finite-difference method; *MWSYM 89 Vol. 3* 1005-1008
- Liang, Guo-Chun, Yaowu Liu, and Kenneth K. Mei. Full-wave analysis of coplanar waveguide and slotline using the time-domain finite-difference method; *T-MTT Dec 89* 1949-1957
- Liaw, Y. P., see Wang, G. W., *CORNEL 89 Abstr II/8*
- Libelo, L. F., see Ruth, B. G., *MWSYM 89 Vol. 3* 1277-1280
- Licqurish, Clint, Michael J. Howes, and Christopher M. Snowden. A new model for the dual-gate GaAs MESFET; *T-MTT Oct 89* 1497-1505
- Liepa, Valdis V., see Jin, Jian-Ming, *T-MTT Oct 89* 1641-1645
- Lin, Ding-Bing, see Chu, Tah-Hsiung, *T-MTT Jul 89* 1141-1144
- Lin, Hung C., see Kuo, Tai-Haur, *CORNEL 89 Abstr V/2*
- Lin, Hung C., see Huang, Di-Hui, *T-MTT Sep 89* 1361-1370
- Lin, Hung Chang, see Huang, Di-Hui, *MWSYM 89 Vol. 1* 417-420
- Lin, S. H., J. H. Kim, J. Katz, and D. Psaltis. Integration of high-gain double heterojunction GaAs bipolar transistors with a LED; *CORNEL 89 Abstr VI/3*
- Lin, Weigan, and Chengli Ruan. Measurement and calibration of a universal six-port network analyzer; *T-MTT Apr 89* 734-742
- Lind, T. S., see Iskander, M. F., *MWSYM 89 Vol. 1* 175-178
- Lind, Thomas S., see Iskander, Magdy F., *T-MTT Dec 89* 1910-1917
- Lindell, Ismo V., see Oksanen, Markku L., *T-MTT Jan 89* 51-62
- Ling, H., see Nam, S., *MWSYM 89 Vol. 3* 997-1000
- Ling, Hao, see Nam, S., *T-MTT May 89* 897-901
- Ling, Hao, see Broumas, Antonios D., *T-MTT May 89* 925-929
- Ling, Hao, see Nam, S., *T-MTT Dec 89* 2051-2057
- Liu, Qing Zhong. An accurate and simple large signal model of HEMT; *MWSYM 89 Vol. 1* 463-466
- Liu, S. M. J., see Tessmer, A. J., *CORNEL 89 Abstr II/2*
- Liu, Y. W., see Liang, G. C., *MWSYM 89 Vol. 3* 1005-1008
- Liu, Yaowu, see Liang, Guo-Chun, *T-MTT Dec 89* 1949-1957
- Livornois, Thomas G., and Pisti B. Katehi. Analysis and design of slow-wave structures using an integral equation approach; *MWSYM 89 Vol. 3* 1131-1134
- Livornois, Thomas G., and Pisti B. Katehi. A generalized method for deriving the space-domain Green's function in a shielded, multilayer substrate structure with applications to MIS slow-wave transmission lines; *T-MTT Nov 89* 1761-1767
- Lo, C. N., and L. S. Smoot. Integrated fiber optic transmission of FM HDTV and 622 Mb/s data; *MWSYM 89 Vol. 2* 703-704
- Loane, Joseph T., III, and Shung-Wu Lee. Gain optimization of a near-field focusing array for hyperthermia applications; *T-MTT Oct 89* 1629-1635
- Löchel, Norbert, see Gesche, Roland, *T-MTT Jun 89* 962-968
- Loehr, J., see Feak, G., *CORNEL 89 Abstr VI/5*
- Long, Yi, and Masanori Koshiba. Evaluation of loss factor of multilayered inhomogeneous waveguides for magnetostatic waves using efficient finite element formalism; *T-MTT Apr 89* 680-685
- Long, Yi, see Koshiba, Masanori, *T-MTT Nov 89* 1768-1772
- Lord, J. L. M., see Fikart, Josef L., *T-MTT Jun 89* 1033-1039
- Lott, Urs, see Hügli, Rolf, *MWSYM 89 Vol. 1* 265-268
- Lott, Urs. Measurement of magnitude and phase of harmonics generated in nonlinear microwave two-ports; *T-MTT Oct 89* 1506-1511
- Lowery, G., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Lubecke, V., see Riley, A. L., *MCS 89* 65-68
- Lubecke, V., see Rascoc, D. L., *T-MTT Dec 89* 2165-2168
- Lübke, K., H. Scheiber, D. Grützmacher, C. Diskus, and H. Thim. MMIC-compatible 55 mW InP and GaAs 30-40 GHz field controlled TE-oscillators; *MWSYM 89 Vol. 2* 729-730
- Lübke, Kurt, see Scheiber, Helmut, *T-MTT Dec 89* 2093-2098
- Lucero, R., C. Moyer, R. Vaitkus, and M. Dydyk. Noise characterization uncertainty of microwave devices under low current operation; *MWSYM 89 Vol. 3* 893-896
- Luhmann, N. C., Jr., see Hwu, R. J., *MWSYM 89 Vol. 3* 1069-1072
- Lusher, C. P., and W. N. Hardy. Effects of gain compression, bias conditions, and temperature on the flicker phase noise of an 8.5 GHz GaAs MESFET amplifier (Short p.); *T-MTT Mar 89* 643-646
- Luy, J. F., see Buechler, J., *MWSYM 89 Vol. 3* 1205-1206

M

- Maas, Stephen A., see Nakatani, Akifumi, *MWSYM 89 Vol. 3* 1139-1142
- Maas, Stephen A., and Andrea Crosmun. Modeling the gate I/V characteristic of a GaAs MESFET for Volterra-series analysis (Short p.); *T-MTT Jul 89* 1134-1136
- Maas, Stephen A., see Crosmun, Andrea M., *T-MTT Sep 89* 1411-1417
- Maby, E. W., see Letavic, T. J., *MWSYM 89 Vol. 3* 969-972
- Macphie, R. H., see Mansour, R. R., *T-MTT Oct 89* 1654-1657
- Maddox, T. A., see Crescenzi, E. J., Jr., *MWSYM 89 Vol. 2* 773-776
- Madihian, M., see Tanaka, S., *CORNEL 89 Abstr III/6*
- Madihian, Mohammad, Nobuyuki Hayama, Steve R. Lesage, and Kazuhiko Honjo. A low-noise microwave oscillator employing a self-aligned AlGaAs/GaAs HBT (Short p.); *T-MTT Nov 89* 1811-1814
- Madjar, Asher. An improved analytical AC large-signal model for the GaAs MESFET; *T-MTT Oct 89* 1519-1522
- Madni, Asad M., Patrick T. McDonald, Robert K. Hansen, and Lawrence A. Wan. High dynamic range airborne tracking and fire control radar subsystems; *MWSYM 89 Vol. 1* 439-442
- Madni, Asad M., Patrick T. McDonald, Robert K. Hansen, and Lawrence A. Wan. High-dynamic-range airborne tracking and fire control radar subsystems; *T-MTT Dec 89* 1942-1948
- Mahoney, Leonard J., see Chen, Chang-Lee, *T-MTT Jan 89* 239-243
- Maio, Ivan, see Ghione, Giovanni, *T-MTT Mar 89* 445-456
- Majewski, M. L., and L. A. Coldren. Distortion characteristics in directly modulated laser diodes by microwave signals; *MWSYM 89 Vol. 3* 1167-1170
- Majidi-Ahy, R., B. A. Auld, and D. M. Bloom. 100 GHz on-wafer S-parameter measurements by electrooptic sampling; *MWSYM 89 Vol. 1* 299-302
- Makimoto, Mitsuo, see Takahashi, Kenichi, *MWSYM 89 Vol. 2* 667-670
- Makimoto, Mitsuo, see Sagawa, Morikazu, *T-MTT Dec 89* 1991-1997
- Mandeville, P., see Park, H., *CORNEL 89 Abstr II/7*
- Mankiewicz, P. M., see Hornak, L. A., *MWSYM 89 Vol. 2* 623-626
- Männer, Oswald, see Baghai-Wadji, Ali R., *T-MTT Jan 89* 150-158
- Manolescu, A., see Homentcovski, D., *T-MTT Jun 89* 1061
- Manolescu, A. M., see Homentcovski, D., *T-MTT Jun 89* 1061
- Mansour, R. R., and R. H. Macphie. Properties of dielectric-loaded T-septum waveguides (Short p.); *T-MTT Oct 89* 1654-1657
- Marchildon, Louis, see Gauthier, Sylvain, *T-MTT Apr 89* 801-804
- Marin, Miguel, Sina Barkeshli, and Prabhakar H. Pathak. Efficient analysis of planar microstrip geometries using a closed-form asymptotic representation of the grounded dielectric slab Green's function; *T-MTT Apr 89* 669-679
- Markunas, Robert J. Passivation and gating of III-V surfaces; *CORNEL 89 Abstr I/4*
- Martens, J. S., J. B. Beyer, J. E. Nordman, G. K. G. Hohenwarter, and D. S. Ginley. A superconducting single film device oscillator made of high T_c and low T_c materials; *MWSYM 89 Vol. 1* 443-446
- Martin, E., see Ruiz, J., *T-MTT Nov 89* 1814-1816
- Martinez, A., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Martinez, E. J., see Tartillo, J., *CORNEL 89 Abstr V/8*
- Martinez, M. J., see Tartillo, J., *CORNEL 89 Abstr V/8*
- Martakis, Konstantinos S., see Simons, Rainee N., *MWSYM 89 Vol. 3* 915-918
- Mason, James S., see Truitt, Austin, *MWSYM 89 Vol. 1* 421-422
- Mastri, Franco, see Rizzoli, Vittorio, *T-MTT Sep 89* 1401-1410

- Matloubian, M., H. Fetterman, M. Kim, A. Oki, J. Camou, S. Moss, D. Smith, and J. Knudsen. Picosecond optoelectronic characterization of a heterojunction bipolar transistor; *MWSYM 89 Vol. 3* 889-892
- Matsuda, Minoru, see Mizushima, Shizuo, *MWSYM 89 Vol. 1* 171-174
- Matsumura, Kazuhito, and Yoshiro Tomabechi. Reflection and transmission characteristics of an uncoincidental junction on rectangular dielectric waveguides; *T-MTT Feb 89* 414-420
- Matsunaga, Toshiaki, see Uchida, Kazunori, *T-MTT Jun 89* 947-952
- Matsuno, C. T., A. K. Sharma, and A. K. Oki. A large-signal HSPICE model for the heterojunction bipolar transistor (Short p.); *T-MTT Sep 89* 1472-1475
- Matsuno, Toshinobu, see Ishikawa, Osamu, *MWSYM 89 Vol. 3* 979-982
- Matthaei, George L. An overview of some important contributions to microwave engineering; *MWSYM 89 Vol. 2* 745-748, 757-758
- Mawhinney, D., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Mayer, Bernd, see Knöchel, Reinhard, *MWSYM 89 Vol. 3* 1247-1250
- Mazumder, Gopa Guha, see Saha, Pradip Kumar, *T-MTT Jun 89* 1021-1026
- Mazur, Jerzy, and Michal Mrozowski. On the mode coupling in longitudinally magnetized waveguiding structures; *T-MTT Jan 89* 159-165
- Mazur, Jerzy, and Michal Mrozowski. Comments, with reply, on 'Analysis of nonreciprocal coupled image lines' by D. B. Sillars and L. E. Davis; *T-MTT Jan 89* 262 (Original paper, Jul 87 629-635)
- Mazur, Jerzy, and Michal Mrozowski. Coupled mode analysis of a finline; *T-MTT Feb 89* 281-288
- Mazur, Jerzy, see Mrozowski, Michal, *T-MTT Mar 89* 640-643
- Mazur, Jerzy, and Michal Mrozowski. Nonreciprocal operation of structures comprising a section of coupled ferrite lines with longitudinal magnetization; *T-MTT Jun 89* 1012-1020
- McCandless, Jay H., see Voyce, Kenneth G., *MWSYM 89 Vol. 3* 863-866
- McCann, D. M. F. A balanced cascade 26-40 GHz amplifier; *MWSYM 89 Vol. 3* 845-848
- McCarty, Lyle H., see Wakamoto, Kouichi, *MWSYM 89 Vol. 3* 1023-1026
- McDermott, G., see Bellantoni, J. V., *MCS 89* 47-50
- McDermott, G., see Bellantoni, J. V., *T-MTT Dec 89* 2162-2165
- McDonald, Patrick T., see Madni, Asad M., *MWSYM 89 Vol. 1* 439-442
- McDonald, Patrick T., see Madni, Asad M., *T-MTT Dec 89* 1942-1948
- McDougall, Marc J., and J. P. Webb. Infinite elements for the analysis of open dielectric waveguides; *T-MTT Nov 89* 1724-1731
- McGeehan, J. P., see Railton, C. J., *MWSYM 89 Vol. 3* 1009-1012
- McGeehan, Joseph P., see Railton, C. J., *T-MTT Jul 89* 1099-1104
- McGinnis, D. P., see Hohenwarter, G. K. G., *MWSYM 89 Vol. 1* 447-450
- McGregor, Douglas S., Chang Soo Park, Mark H. Weichold, and Henry F. Taylor. An optically excited microwave ring resonator on a gallium arsenide substrate; *MWSYM 89 Vol. 1* 225-228
- McMillan, R. W., D. M. Guillory, R. G. Hay, D. E. Wortman, H. Dropkin, and J. M. Cotton, Jr. Results of phase and injection locking of an orotron oscillator (Short p.); *T-MTT Nov 89* 1828-1830
- McMorran, Roy A., see Actis, Robert, *MWSYM 89 Vol. 2* 835-838
- McNamara, M. J., see Rathman, D. D., *CORNEL 89 Abstr III/7*
- McWhorter, A. L., see Rathman, D. D., *CORNEL 89 Abstr III/7*
- Mechling, Joyce A., see Jones, Kenneth M., *T-MTT Aug 89* 1200-1209
- Medina, Francisco, Manuel Horno, and Henri Baudrand. Generalized spectral analysis of planar lines on layered media including uniaxial and biaxial dielectric substrates; *T-MTT Mar 89* 504-511
- Meharry, D. E., J. L. Bugeau, W. J. Coughlin, and M. A. Priolo. 6 to 18 GHz transmit/receive modules for multifunction phased arrays; *MWSYM 89 Vol. 1* 115-118
- Mehdizadeh, Mehrdad, and T. Koryu Ishii. Electromagnetic field analysis and calculation of the resonance characteristics of the loop-gap resonator; *T-MTT Aug 89* 1113-1118
- Mei, K. K., see Liang, G. C., *MWSYM 89 Vol. 3* 1005-1008
- Mei, Kenneth K., see Zhang, Xiaolei, *MWSYM 89 Vol. 1* 313-316
- Mei, Kenneth K., see Liang, Guo-Chun, *T-MTT Dec 89* 1949-1957
- Meinel, Holger H., see Calsen, Heinrich, *T-MTT Feb 89* 307-316
- Melai, F., see Alessandri, F., *MWSYM 89 Vol. 3* 1219-1222
- Melai, Franco, see Alessandri, Ferdinando, *T-MTT Dec 89* 2020-2027
- Meschede, Herbert, see Brockerhoff, Wolfgang, *T-MTT Sep 89* 1380-1388
- Messham, R. L., see Sriram, S., *CORNEL 89 Abstr IV/5*
- Messick, Louis J., see Biedenbender, Michael D., *T-MTT Sep 89* 1321-1326
- Meszaros, S., see Frlan, E., *MWSYM 89 Vol. 2* 661-664
- Metze, G., A. Cornfeld, J. Singer, H. Carlson, E. Chang, T. Kirkendall, G. Dahrooge, J. Bass, H.-L. Hung, and T. Lee. Monolithic V-band pseudomorphic-MODFET low-noise amplifier; *MCS 89* 111-116
- Metze, G., A. Cornfeld, J. Singer, H. Carlson, E. Chang, T. Kirkendall, G. Dahrooge, J. Bass, H.-L. Hung, and T. Lee. Monolithic V-band pseudomorphic-MODFET low-noise amplifiers; *MWSYM 89 Vol. 1* 199-204
- Miao, Jingfeng, see Yang, Ping, *MWSYM 89 Vol. 1* 499-502
- Michalski, Krzysztof A., and Dalian Zheng. Rigorous analysis of open microstrip lines of arbitrary cross-section in bound and leaky regimes; *MWSYM 89 Vol. 2* 787-790
- Michalski, Krzysztof A., and Dalian Zheng. Rigorous analysis of open microstrip lines of arbitrary cross section in bound and leaky regimes; *T-MTT Dec 89* 2005-2010
- Michels, R., N. Scheinberg, and J. Gluck. An L-band temperature compensated ultra low power successive detection logarithmic amplifier; *MWSYM 89 Vol. 2* 541-544
- Mikucki, Gerald F., and Ashok K. Agrawal. A broad-band printed circuit hybrid ring power divider; *T-MTT Jan 89* 112-117
- Miller, Douglas R., see Kesan, Vijay P., *T-MTT Dec 89* 1933-1941
- Milyani, Ahmed M., see Affandi, Adnan M., *T-MTT Feb 89* 400-405
- Mimura, Takashi, see Awano, Yuji, *CORNEL 89 Abstr II/1*
- Minowa, Morihiko, see Daido, Yoshimasa, *MWSYM 89 Vol. 1* 393-396
- Mirshakar-Syahkal, D., see Taheri, M. Mohammad, *T-MTT Oct 89* 1536-1541
- Mirzai, Ahmad R., Colin F. N. Cowan, and Tom M. Crawford. Intelligent alignment of waveguide filters using a machine learning approach; *T-MTT Jan 89* 166-173
- Mishra, U. K., see Delaney, M. J., *CORNEL 89 Abstr II/3*
- Mishra, U. K., see Vaughn, S., *MWSYM 89 Vol. 2* 801-804
- Mishra, U. K., see Trew, R. J., *MWSYM 89 Vol. 3* 897-900
- Mishra, Umesh K., April S. Brown, M. J. Delaney, Paul T. Greiling, and Charles F. Krumm. The AlInAs-GaInAs HEMT for microwave and millimeter-wave applications; *T-MTT Sep 89* 1279-1285
- Mittra, Raj, see Xu, Qiang, *T-MTT Feb 89* 381-387
- Miura, Kazunori, see Hayata, Kazuya, *T-MTT May 89* 875-883
- Miyazaki, Shinichi, Chizuko Takai, Kouhei Eguchi, and Takaaki Nakata. A 20 GHz silicon microwave monolithic integrated circuits process and a 7.4 GHz frequency divider; *MWSYM 89 Vol. 3* 1065-1068
- Miyazawa, K., see Saito, T., *MWSYM 89 Vol. 3* 853-856
- Mizunuma, Y., T. Ohgihara, H. Nakano, T. Okamoto, M. Kubota, and Y. Murakami. X- and Ku-band YIG-film tuned low noise oscillators; *MWSYM 89 Vol. 1* 161-164
- Mizushima, Shizuo, Yoshinori Hamamamura, Minoru Matsuda, and Toshifumi Sugiura. A method of solution for a class of inverse problems involving measurement errors and its application to medical microwave radiometry; *MWSYM 89 Vol. 1* 171-174
- Mizuta, H., T. Tanoue, and S. Takahashi. Theoretical analysis of peak-to-valley ratio degradation caused by scattering processes in multi-barrier resonant tunneling diodes; *CORNEL 89 Abstr V/3*
- Mizuta, M., see Tanaka, S., *CORNEL 89 Abstr III/6*
- Mock, P. M., and R. J. Trew. RF performance characteristics of double-drift millimeter-wave diamond IMPATT diodes; *CORNEL Jun 89 Abstr VI/7*
- Mojzes, Imre, see Kazi, Karoly, *MWSYM 89 Vol. 3* 1267-1270
- Mollie, Jean-Claude, see Hu, Yongcai, *T-MTT Nov 89* 1689-1693
- Mondal, Jyoti P. Distributed scaling approach of MESFET's and its comparison with the lumped-element approach; *T-MTT Jul 89* 1085-1090
- Moore, K., see Ng, G. I., *CORNEL 89 Abstr II/4*
- Moreno, E., see Estévez, H., *T-MTT Mar 89* 634-637
- Mori, Mitsuhiro, see Yanokura, Eiji, *T-MTT Sep 89* 1466-1471
- Morini, A., see Rozzi, T., *MWSYM 89 Vol. 3* 923-926
- Morley, B. C., see Sun, H. J., *MCS 89* 79-82
- Mortazawi, A., see Kesan, V. P., *MWSYM 89 Vol. 1* 487-490
- Mortazawi, Amir, see Kesan, Vijay P., *T-MTT Dec 89* 1933-1941
- Mosig, J. R., see Skrivervik, A., *MWSYM 89 Vol. 3* 1147-1150
- Moss, S., see Matloubian, M., *MWSYM 89 Vol. 3* 889-892
- Mott, Richard C. A GaAs monolithic 6 GHz low-noise amplifier for satellite receivers; *T-MTT Mar 89* 565-570
- Mourou, G. A., see Whitaker, J. F., *MWSYM 89 Vol. 1* 221-224
- Moyer, C., see Lucero, R., *MWSYM 89 Vol. 3* 893-896
- Moyenko, A., see Boire, D. C., *MCS 89* 69-73
- Mrozek, E. M., see Gorman, G. M., *MWSYM 89 Vol. 2* 537-540
- Mrozowski, Michal, see Mazur, Jerzy, *T-MTT Jan 89* 159-165
- Mrozowski, Michal, see Mazur, Jerzy, *T-MTT Jan 89* 262
- Mrozowski, Michal, see Mazur, Jerzy, *T-MTT Feb 89* 281-288
- Mrozowski, Michal, and Jerzy Mazur. Lower bound on the eigenvalues of the characteristic equation for an arbitrary multilayered gyromagnetic structure with perpendicular magnetization (Short p.); *T-MTT Mar 89* 640-643
- Mrozowski, Michal, see Mazur, Jerzy, *T-MTT Jun 89* 1012-1020
- Müller, G., see Chaloupka, H., *MWSYM 89 Vol. 2* 547-550
- Muraguchi, Masahiro, see Ohira, Takashi, *MWSYM 89 Vol. 3* 1047-1050
- Murakami, Y., see Mizunuma, Y., *MWSYM 89 Vol. 1* 161-164
- Murase, Takehiro, see Imai, Nobuaki, *T-MTT Aug 89* 1237-1243
- Murphy, R. A., see Rathman, D. D., *CORNEL 89 Abstr III/7*
- Murphy, R. Allen, see Actis, Robert, *MWSYM 89 Vol. 2* 835-838
- Murphy, R. Allen, see Chen, Chang-Lee, *T-MTT Jan 89* 239-243
- Myung, Jung-Su, see Oliner, Arthur A., *T-MTT Mar 89* 618-621

N

- Nagashima, Takashi, see Wakamoto, Kouichi, *MWSYM 89 Vol. 3* 1023-1026
- Nakajima, Masamitsu, see Wang, Ming, *T-MTT Mar 89* 612-617
- Nakajima, Masayuki, see Ito, Yasushi, *MWSYM 89 Vol. 1* 379-383
- Nakajima, Masayuki, and Eikichi Yamashita. Characterization of coupled asymmetric suspended strip lines having three thick-strip conductors and side-wall grooves; *MWSYM 89 Vol. 2* 719-722
- Nakajima, Y., see Ayaki, N., *MCS 89* 7-10
- Nakano, H., see Ayaki, N., *MCS 89* 7-10
- Nakano, H., see Mizunuma, Y., *MWSYM 89 Vol. 1* 161-164
- Nakano, K., see Dow, G. S., *MWSYM 89 Vol. 2* 809-812
- Nakao, Tomoyoshi, see Shigesawa, Hiroshi, *T-MTT Jul 89* 1105-1113
- Nakata, Takaaki, see Miyazaki, Shinichi, *MWSYM 89 Vol. 3* 1065-1068
- Nakatani, Akifumi, Stephen A. Maas, and Jesse Castaneda. Modeling of high frequency MMIC passive components; *MWSYM 89 Vol. 3* 1139-1142
- Naldi, Carlo U., see Ghione, Giovanni, *T-MTT Mar 89* 457-468
- Nam, S., H. Ling, and T. Itoh. Time-domain method of lines applied to the uniform microstrip line and its step discontinuity; *MWSYM 89 Vol. 3* 997-1000
- Nam, S., Hao Ling, and Tatsuo Itoh. Time-domain method of lines applied to planar guided wave structures; *T-MTT May 89* 897-901
- Nam, S., Hao Ling, and Tatsuo Itoh. Characterization of uniform microstrip line and its discontinuities using the time-domain method of lines; *T-MTT Dec 89* 2051-2057
- Nanbu, Syutaro, see Ishikawa, Osamu, *MWSYM 89 Vol. 3* 979-982
- Narayan, S. Y., see Gardner, P. D., *CORNEL 89 Abstr. I/3*

- Narayan, S. Y., see Bechtle, D., *T-MTT Oct 89* 1636-1638
- Nasir, Muhammad A., see Chew, Weng Cho, *T-MTT Apr 89* 661-668
- Nathanson, H. C., see Driver, M. C., *CORNEL 89* Abstr I/1
- Navarro, A., see Ruiz, J., *T-MTT Nov 89* 1814-1816
- Neider, R. E., see Lan, G. L., *MCS 89* 95-99
- Neider, R. E., see Lan, G. L., *MWSYM 89 Vol. 1* 103-107
- Neider, Robert E., and Steven C. Binari. Millimeter-wave planar InP Schottky diodes and their small-signal equivalent circuit; *T-MTT Nov 89* 1694-1698
- Neidhard, R., see Whitson, D. W., *CORNEL 89* Abstr V/6
- Neikirk, D. P., see Cheung, P., *MWSYM 89 Vol. 1* 307-309
- Neikirk, D. P., see Kesan, V. P., *MWSYM 89 Vol. 1* 487-490
- Neikirk, Dean P., see Kesan, Vijay P., *T-MTT Dec 89* 1933-1941
- Neilson, Jeff M., Peter E. Latham, Malcolm Caplan, and Wesley G. Lawson. Determination of the resonant frequencies in a complex cavity using the scattering matrix formulation; *T-MTT Aug 89* 1165-1170
- Nelson, B., see Dixit, R., *MCS 89* 15-19
- Nelson, S. O., see Kraszewski, A. W., *MWSYM 89 Vol. 1* 187-190
- Newberg, I. L., C. M. Gee, G. D. Thurmond, and H. W. Yen. Long microwave delay fiber optic link for radar testing; *MWSYM 89 Vol. 2* 693-696
- Neylon, S., see Dale, I., *MWSYM 89 Vol. 1* 467-470
- Neylon, S., I. Dale, H. Spooner, D. Worley, N. Couch, D. Knight, and J. Ondria. State-of-the-art performance millimeter wave gallium arsenide Gunn diodes using ballistically hot electron injectors; *MWSYM 89 Vol. 1* 519-522
- Ng, G. I., A. Reynoso, J. E. Oh, D. Pavlidis, J. Graffeuil, P. K. Bhattacharya, M. Weiss, and K. Moore. Low-frequency properties of lattice matched and strained InGaAs/InAlAs HEMTs; *CORNEL Jun 89* Abstr II/4
- Ng, K. T., and C. H. Chan. A mixed spectral domain method applied to the analysis of generalized dielectric-loaded ridged waveguides; *MWSYM 89 Vol. 2* 715-718
- Ng, Kwong T., see Chan, Chi Hou, *T-MTT Nov 89* 1716-1723
- Ng, Kwong T., and Chi Hou Chan. Unified solution of various dielectric-loaded ridge waveguides with a mixed spectral-domain method; *T-MTT Dec 89* 2080-2085
- Ngan, Y. C., see Chow, P. D., *MWSYM 89 Vol. 2* 731-734
- Nguyen, Richard, see Biedenbender, Michael D., *T-MTT Sep 89* 1321-1326
- Nichols, D., see Feak, G., *CORNEL 89* Abstr VI/5
- Nichols, Kirby B., see Actis, Robert, *MWSYM 89 Vol. 2* 835-838
- Niclas, K. B., see Chang, A. P., *MCS 89* 139-141
- Niclas, K. B., see Chang, A. P., *MWSYM 89 Vol. 1* 287-289
- Niclas, K. B., and R. R. Pereira. Performance of A 2-18 GHz ultra low-noise amplifier module; *MWSYM 89 Vol. 3* 841-844
- Niclas, K. B., see Chang, A. P., *T-MTT Dec 89* 2159-2162
- Niclas, Karl B., Ramon R. Pereira, and Augustin P. Chang. A 2-18 GHz low-noise/high-gain amplifier module; *T-MTT Jan 89* 198-207
- Niclas, Karl B., and Ramon R. Pereira. On the design and performance of a 6-18 GHz three-tier matrix amplifier; *T-MTT Jul 89* 1069-1077
- Nikita, Konstantina S., and Nikolaos K. Uzunoglu. Analysis of the power coupling from a waveguide hyperthermia applicator into a three-layered tissue model; *T-MTT Nov 89* 1794-1801
- Nishi, S., see Ichioka, T., *MCS 89* 61-64
- Nishii, Katsunori, see Ishikawa, Osamu, *MWSYM 89 Vol. 3* 979-982
- Nishikawa, Toshio, Kikuo Wakino, Hiroaki Tanaka, Satoru Shinmura, and Youhei Ishikawa. A low-loss magnetostatic wave filter using parallel strip transducer; *MWSYM 89 Vol. 1* 153-156
- Nishikawa, Toshio, see Ishikawa, Youhei, *MWSYM 89 Vol. 2* 591-594
- Nishikawa, Toshio, Youhei Ishikawa, Jun Hattori, and Kikuo Wakino. Dielectric receiving filter with sharp stopband using an active feedback resonator method for cellular base stations; *T-MTT Dec 89* 2074-2079
- Nishimoto, C., see Yuen, C., *MCS 89* 117-120
- Nishimoto, C., see Yuen, C., *MWSYM 89 Vol. 1* 205-208
- Nishimoto, C., see Yuen, C., *T-MTT Dec 89* 2169-2170
- Noble, T. F., see Peterson, K. E., *MWSYM 89 Vol. 3* 945-948
- Noda, Takeaki, see Uchida, Kazunori, *T-MTT Jun 89* 947-952
- Nogi, Shigeji, see Tanaka, Satoshi, *T-MTT Nov 89* 1755-1760
- Nojima, Toshio, see Imai, Nobuaki, *T-MTT Aug 89* 1237-1243
- Nordman, J. E., see Martens, J. S., *MWSYM 89 Vol. 1* 443-446
- Nordman, J. E., see Hohenwarter, G. K. G., *MWSYM 89 Vol. 1* 447-450
- Norris, G. B., see Boire, D. C., *MCS 89* 69-73
- Norton, R. H., see Lee, R. E., *MWSYM 89 Vol. 3* 975-978
- Norton, Robert H., see Lee, Robert E., *T-MTT Dec 89* 2086-2092
- Nuñez, M. J., see Ruiz, J., *T-MTT Nov 89* 1814-1816
- Nyquist, D. P., see Cloud, M. J., *T-MTT Jul 89* 1150-1152
- InGaAs-GaAs-AlGaAs graded-index separate-confinement single quantum well lasers; *CORNEL 89* Abstr VI/2
- Ogawa, Hiroyo, see Aikawa, Masayoshi, *MCS 89* 1-6
- Ogawa, Hiroyo, see Aikawa, Masayoshi, *T-MTT Feb 89* 406-413
- Ogawa, Hiroyo, see Hirota, Tetsuo, *T-MTT Aug 89* 1249-1254
- Ogawa, Koichi, Toshio Ishizaki, Koji Hashimoto, Makoto Sakakura, and Tomoki Uwano. A 50 GHz GaAs FET MIC transmitter/receiver using hermetic miniature probe transitions; *T-MTT Sep 89* 1434-1441
- Ogusu, Kazuhiko. TM waves guided by nonlinear planar waveguides; *T-MTT Jun 89* 941-946
- Oh, J. E., see Ng, G. I., *CORNEL 89* Abstr II/4
- Oh, J. E., see Li, W. Q., *CORNEL 89* Abstr VI/4
- Ohashi, Hideyuki, see Yamashita, Eikichi, *MWSYM 89 Vol. 1* 339-342
- Ohashi, Hideyuki, see Yamashita, Eikichi, *T-MTT May 89* 890-896
- Ohgihara, T., see Mizunuma, Y., *MWSYM 89 Vol. 1* 161-164
- Ohira, Takashi, Masahiro Muraguchi, Tetsuo Hirota, Kazuo Osafune, and Masayuki Ino. A Ku-band MMIC PLL frequency synthesizer; *MWSYM 89 Vol. 3* 1047-1050
- Ohira, Takashi, Haruhiko Kato, Katsuhiko Araki, and Fuminori Ishitsuka. A compact full MMIC module for Ku-band phase-locked oscillators; *T-MTT Apr 89* 723-728
- Ohoka, Mikiharu, see Wakamoto, Kouichi, *MWSYM 89 Vol. 3* 1023-1026
- Ohta, Isao, Hiroshi Kinoshita, Takenori Kaneko, and Kanako Fujiwara. Rectangular disk 3 dB hybrids; *MWSYM 89 Vol. 1* 235-238
- Ohta, Isao, and Takenori Kaneko. Parallel running system of three oscillators coupled through a six-port magic junction; *T-MTT Nov 89* 1699-1707
- Okamoto, T., see Mizunuma, Y., *MWSYM 89 Vol. 1* 161-164
- Oki, A., see Matloubian, M., *MWSYM 89 Vol. 3* 889-892
- Oki, A. K., G. M. Gorman, J. B. Camou, D. K. Umamoto, and M. E. Kim. A GaAs HBT monolithic microwave switched-gain amplifier with +31 dB to -31 dB gain in 2 dB increments; *MCS 89* 83-86
- Oki, A. K., see Gorman, G. M., *MWSYM 89 Vol. 2* 537-540
- Oki, A. K., see Kim, M. E., *T-MTT Sep 89* 1286-1303
- Oki, A. K., see Matsuno, C. T., *T-MTT Sep 89* 1472-1475
- Okoshi, Takanori, see Kishi, Naoto, *T-MTT Mar 89* 526-533
- Oksanen, Markku I., and Ismo V. Lindell. Transversely anisotropic curved optical fibers: Variational analysis of a nonstandard eigenproblem; *T-MTT Jan 89* 51-62
- Oksanen, Markku I. Variational analysis of dielectrically loaded multidepth corrugated waveguides; *T-MTT Jan 89* 191-197
- Okubo, Naofumi, see Daido, Yoshimasa, *MWSYM 89 Vol. 1* 393-396
- Okubo, Yukio, see Wakamoto, Kouichi, *MWSYM 89 Vol. 3* 1023-1026
- Oliner, A. A., see Tsuji, M., *MWSYM 89 Vol. 2* 783-786
- Oliner, A. A., see Hsu, Jui-Pang, *MWSYM 89 Vol. 3* 1135-1138
- Oliner, Arthur A., see Guglielmi, Marco, *T-MTT Mar 89* 534-541
- Oliner, Arthur A., see Guglielmi, Marco, *T-MTT Mar 89* 542-552
- Oliner, Arthur A., and Jung-Su Myung. A novel cavity resonator measurement method for leaky waveguides; *T-MTT Mar 89* 618-621
- Olley, Chris A., T. Rozzi, and C. M. D. Rycroft. An approximate variational solution to the step discontinuity in finline; *T-MTT Jun 89* 977-983
- Omar, A. S., and K. Schünemann. Analysis of waveguides with metal inserts; *MWSYM 89 Vol. 1* 511-514
- Omar, Abbas S., and Klaus F. Schünemann. Analysis of waveguides with metal inserts; *T-MTT Dec 89* 1924-1932
- Ondria, J., see Neylon, S., *MWSYM 89 Vol. 1* 519-522
- Ono, Takashi, see Aida, Kazuo, *MWSYM 89 Vol. 2* 559-562
- Onuma, Takeshi, see Ishikawa, Osamu, *MWSYM 89 Vol. 3* 1183-1186
- Oohashi, Y., see Saito, T., *MWSYM 89 Vol. 3* 853-856
- Osafune, Kazuo, see Ohira, Takashi, *MWSYM 89 Vol. 3* 1047-1050
- Oshita, Floyd K., see Takemoto, June H., *T-MTT Oct 89* 1650-1652
- Osofsky, Samuel S., and S. E. Schwarz. A non-contacting probe for measurements on high-frequency planar circuits; *MWSYM 89 Vol. 2* 823-825
- Ouslimani, A., Guy Vernet, P. Crozat, and Robert Adde. Large-signal model of picosecond FET's and measurement of the step response; *T-MTT Sep 89* 1460-1465
- Overfelt, P. L., and D. J. White. Alternate forms of the generalized composite scattering matrix (Ltr.); *T-MTT Aug 89* 1267-1268
- Owens, J. M., J. Y. Guo, W. A. Davis, and R. L. Carter. W-band ferrite-dielectric image-line field displacement isolators; *MWSYM 89 Vol. 1* 141-144
- Owens, J. M., D. J. Halchin, K. L. Lear, W. S. Lee, and J. S. Harris, Jr. Microwave characteristics of MBE grown resonant tunneling devices; *MWSYM 89 Vol. 1* 471-474
- Oyafuso, R. T., see Khanna, A. P. S., *MWSYM 89 Vol. 1* 515-518

O

- Oates, D. E., A. C. Anderson, and B. S. Shih. Superconducting stripline resonators and high- T_c materials; *MWSYM 89 Vol. 2* 627-630
- Obata, Tsunehiro, and Jiro Chiba. Improved theory for E-plane symmetrical tee junctions (Short p.); *T-MTT Mar 89* 624-627
- Obregon, J., see Vidalou, J. F., *MWSYM 89 Vol. 2* 831-834
- Obregon, Juan Jesus, see Hu, Yongcai, *T-MTT Nov 89* 1689-1693
- O'Callaghan, J. M., and J. B. Beyer. A large signal nonlinear MODFET model from small signal S-parameters; *MWSYM 89 Vol. 1* 347-350
- Oda, Yuji, Tomohiro Yoshida, Kenichirou Kai, Shigemitsu Arai, and Shigeru Yanagawa. Ka-band monolithic GaAs two-stage power amplifier; *MCS 89* 33-36
- Oda, Yuji, see Arai, Shigemitsu, *MWSYM 89 Vol. 3* 1105-1108
- Odyneic, Michal. A 3.8-30.0 GHz YIG oscillator—Theory and design; *MWSYM 89 Vol. 1* 157-160
- Offsey, S. D., W. J. Schaff, P. J. Tasker, W. D. Braddock, and L. F. Eastman. Microwave performance of GaAs-AlGaAs and strained-layer

P

- Paananen, David W., see Williams, Dylan F., *MWSYM 89 Vol. 3* 1263-1265
- Page, M. J., and S. R. Judah. A microstrip planar disk 3-dB quadrature hybrid; *MWSYM 89 Vol. 1* 247-250
- Pak, S., see Curtice, W. R., *T-MTT Nov 89* 1809-1811
- Palcyn, E., see Delrue, R., *MWSYM 89 Vol. 3* 1171-1174
- Palusinski, Olgerd A., and Anyu Lee. Analysis of transients in nonuniform and uniform multiconductor transmission lines; *T-MTT Jan 89* 127-138
- Pamulapati, J., see Li, W. Q., *CORNEL 89* Abstr VI/4
- Pamulapati, J., see Feak, G., *CORNEL 89* Abstr VI/5
- Pan, Shing-Kuo, Anthony R. Kerr, Marc J. Feldman, Alan W. Kleinsasser, James W. Stasiak, Robert L. Sandstrom, and William J. Gallagher. An 85-116 GHz SIS receiver using inductively shunted edge junctions; *T-MTT Mar 89* 580-592

- Pantoja, R. R., M. J. Howes, J. R. Richardson, and C. M. Snowden. A large signal physical MESFET model for CAD and its applications; *MWSYM 89 Vol. 2* 573-576
- Pantoja, Renato R., Michael J. Howes, J. R. Richardson, and Roger D. Pollard. Improved calibration and measurement of the scattering parameters of microwave integrated circuits; *T-MTT Nov 89* 1675-1680
- Pantoja, Renato R., Michael J. Howes, J. R. Richardson, and Christopher M. Snowden. A large-signal physical MESFET model for computer-aided design and its applications; *T-MTT Dec 89* 2039-2045
- Pao, C. K., see Lan, G. L., *MCS 89* 95-99
- Pao, C. K., see Lan, G. L., *MWSYM 89 Vol. 1* 103-107
- Paolella, A., see Berceci, T., *MWSYM 89 Vol. 1* 131-134
- Par, E., see Riazat, M., *MWSYM 89 Vol. 2* 525-528
- Parisi, Samuel J. 180° lumped element hybrid; *MWSYM 89 Vol. 3* 1243-1246
- Park, Chang Soo, see McGregor, Douglas S., *MWSYM 89 Vol. 1* 225-228
- Park, Duke H., and Kevin F. Brennan. Theoretical comparison of 0.35 μm gate length GaAs and GaInAs HEMTs; *MWSYM 89 Vol. 3* 991-994
- Park, H., P. Mandeville, R. Saito, P. J. Tasker, W. J. Schaff, and L. F. Eastman. RF and DC characterization of P-channel AlGaAs/GaAs MODFETs with gate lengths as small as 0.25 μm ; *CORNEL Jun 89* Abstr II/7
- Pastorino, Matteo, see Caorsi, Salvatore, *T-MTT May 89* 910-916
- Patel, Suman D., Leonard Dubrowsky, Stephen E. Sadow, Roger Kaul, and Robert V. Garver. Microstrip plasma limiter; *MWSYM 89 Vol. 3* 879-882
- Pathak, Prabhakar H., see Marin, Miguel, *T-MTT Apr 89* 669-679
- Pauker, Vlad, see Coget, Patricia, *MCS 89* 75-77
- Pauker, Vlad, see Ducourant, Thierry, *MCS 89* 87-90
- Pauker, Vlad, see Ducourant, Thierry, *MWSYM 89 Vol. 1* 95-98
- Pauker, Vlad, see Philippe, Pascal, *T-MTT Dec 89* 2119-2124
- Paulter, Nicholas G., Dipen N. Sinha, Alan J. Gibbs, and William R. Eisenstadt. Optoelectronic measurements of picosecond electrical pulse propagation in coplanar waveguide transmission lines; *T-MTT Oct 89* 1612-1619
- Paulus, M. J., see Whitson, D. W., *CORNEL 89* Abstr V/6
- Pauplis, B. E., and D. C. Power. On the bandwidth of T-septum waveguide (Short p.); *T-MTT May 89* 919-922
- Pavio, Jeanne S. Excellent reliability with high throughput techniques and materials for alloy attachment; *MWSYM 89 Vol. 2* 761-764
- Pavlidis, D., see Ng, G. I., *CORNEL 89* Abstr II/4
- Pavlidis, D., see Li, W. Q., *CORNEL 89* Abstr VI/4
- Payne, D., see Bellantoni, J. V., *MCS 89* 47-50
- Payne, D., see Bellantoni, J. V., *T-MTT Dec 89* 2162-2165
- Peatman, William C., and Thomas W. Crowe. Design and fabrication of ultra-small GaAs Schottky barrier diodes for low-noise terahertz receiver applications; *CORNEL 89* Abstr VI/8
- Peng, S. T., see Hsu, Jui-Pang, *MWSYM 89 Vol. 3* 1135-1138
- Peng, S. T., see Xu, Shanjia, *T-MTT Apr 89* 686-690
- Pereira, R. R., see Niclas, K. B., *MWSYM 89 Vol. 3* 841-844
- Pereira, Ramon R., see Niclas, Karl B., *T-MTT Jan 89* 198-207
- Pereira, Ramon R., see Niclas, Karl B., *T-MTT Jul 89* 1069-1077
- Perennec, A., R. Soares, P. Jarry, P. Legaud, and M. Goloubkoff. Computer-aided design of hybrid and monolithic broad-band amplifiers for optoelectronic receivers (Short p.); *T-MTT Sep 89* 1475-1478
- Pertus, Marcel, see Ducourant, Thierry, *MCS 89* 87-90
- Pertus, Marcel, see Ducourant, Thierry, *MWSYM 89 Vol. 1* 95-98
- Peterson, K. E., H.-L. Hung, F. R. Phelless, T. F. Noble, and H. C. Huang. Monolithic high-voltage FET power amplifiers; *MWSYM 89 Vol. 3* 945-948
- Petted, B. E., see Salvage, S. T., *MWSYM 89 Vol. 3* 1051-1054
- Petzold, Mark, John Purviance, and Clarence Potratz. An efficient linear statistical FET model; *MWSYM 89 Vol. 1* 375-378
- Petzold, Mark C., see Purviance, John E., *T-MTT Sep 89* 1389-1394
- Phelless, F. R., see Hegazi, G., *MCS 89* 121-125
- Phelless, F. R., see Hegazi, G., *MWSYM 89 Vol. 1* 209-213
- Phelless, F. R., see Peterson, K. E., *MWSYM 89 Vol. 3* 945-948
- Philippe, Pascal, see Coget, Patricia, *MCS 89* 75-77
- Philippe, Pascal, see Ducourant, Thierry, *MCS 89* 87-90
- Philippe, Pascal, see Ducourant, Thierry, *MWSYM 89 Vol. 1* 95-98
- Philippe, Pascal, see Coget, Patricia, Vlad Pauker, Pierre Dautriche, and Patrick Jean. A multioctave active GaAs MMIC quadrature phase shifter; *T-MTT Dec 89* 2119-2124
- Piel, H., see Chaloupka, H., *MWSYM 89 Vol. 2* 547-550
- Pilgrim, Mike, and Roger P. Searle. mm-wave direct-to-home multichannel TV delivery system; *MWSYM 89 Vol. 3* 1095-1098
- Platte, Walter, and Bernhard Sauerer. Optically CW-induced losses in semiconductor coplanar waveguides; *T-MTT Jan 89* 139-149
- Platzker, A., see Chu, S. L. G., *MCS 89* 143-147
- Platzker, A., see Chu, S. L. G., *MWSYM 89 Vol. 1* 291-295
- Platzker, Aryeh, see Cole, J. Bradford, *MWSYM 89 Vol. 3* 941-944
- Polak-Dingels, Penny, see Webb, Kevin J., *MWSYM 89 Vol. 1* 217-220
- Polak-Dingels, Penny, see Hung, Hing-Loi A., *T-MTT Aug 89* 1223-1231
- Pollard, Roger D., see Pantoja, Renato R., *T-MTT Nov 89* 1675-1680
- Ponchak, George E., see Simons, Rainee N., *MWSYM 89 Vol. 3* 915-918
- Ponchak, George E., see Kerczewski, Robert J., *MWSYM 89 Vol. 3* 1079-1082
- Pond, J. M., P. Weaver, and I. Kaufman. Propagation characteristics of inductively-coupled superconducting microstrip; *MWSYM 89 Vol. 1* 451-454
- Pond, Jeffrey M., Clifford M. Krowne, and William L. Carter. On the application of complex resistive boundary conditions to model transmission lines consisting of very thin superconductors; *T-MTT Jan 89* 181-190
- Popa, Adrian E. Microwave applications of photonics circuits; *CORNEL 89* Abstr VI/1
- Pospieszalski, Marian W. Modeling of noise parameters of MESFET's and MODFET's and their frequency and temperature dependence; *T-MTT Sep 89* 1340-1350
- Potratz, Clarence, see Petzold, Mark, *MWSYM 89 Vol. 1* 375-378
- Potratz, Clarence, see Purviance, John E., *T-MTT Sep 89* 1389-1394
- Potter, Robert C., see Kuo, Tai-Haur, *CORNEL 89* Abstr V/2
- Pouysegur, Michel, see Cazaux, Jean-Louis, *T-MTT Sep 89* 1442-1451
- Power, D. C., see Pauplis, B. E., *T-MTT May 89* 919-922
- Pramanick, P., and P. Bhartia. Corrections to 'computer-aided design models for broadside-coupled striplines and millimeter-wave suspended substrate microstrip lines (Nov 88 1476-1481)'; *T-MTT Oct 89* 1658
- Pramanick, Protap, and Prakash Bhartia. A generalized theory of tapered transmission line matching transformers and asymmetric couplers supporting non-TEM modes; *T-MTT Aug 89* 1184-1191
- Prasad, Sheila, see Vai, Man-Kuan, *MWSYM 89 Vol. 2* 565-568
- Presser, A., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Pribble, W. L., see Trew, R. J., *MWSYM 89 Vol. 3* 897-900
- Pribetich, J., P. Kennis, and P. Pribetich. Analysis of microstrip resonator with a dielectric protective layer radiating into human body; *MWSYM 89 Vol. 1* 179-182
- Pribetich, P., see Pribetich, J., *MWSYM 89 Vol. 1* 179-182
- Pribetich, P., see Delrue, R., *MWSYM 89 Vol. 3* 1171-1174
- Priolo, M. A., see Meharry, D. E., *MWSYM 89 Vol. 1* 115-118
- Pritchett, Sam D. Monolithic Ku-band GaAs 1-watt constant phase variable power amplifier; *MCS 89* 29-32
- Pritchett, Sam D., see Kopp, William S., *MWSYM 89 Vol. 3* 857-858
- Pritchett, Sam D., and David Seymour. A monolithic 2-20 GHz GaAs pin diode SP16T switch; *MWSYM 89 Vol. 3* 1109-1112
- Prost, Werner, see Brockerhoff, Wolfgang, *T-MTT Sep 89* 1380-1388
- Psaltis, D., see Lin, S. H., *CORNEL 89* Abstr VI/3
- Purviance, J., see Brakensiek, W., *MWSYM 89 Vol. 1* 431-434
- Purviance, John, see Petzold, Mark, *MWSYM 89 Vol. 1* 375-378
- Purviance, John E., Mark C. Petzold, and Clarence Potratz. A linear statistical FET model using principal component analysis; *T-MTT Sep 89* 1389-1394
- Racanello, Marco, and D. W. Greve. Calculated high frequency performance of an npn Si_{1-x}Ge_x HBT; *CORNEL 89* Abstr III/3
- Raffaelli, L., see Bellantoni, J. V., *MCS 89* 47-50
- Raffaelli, L., see Dawe, G., *MWSYM 89 Vol. 1* 413-415
- Raffaelli, L., see Bellantoni, J. V., *T-MTT Dec 89* 2162-2165
- Railton, C. J., and J. P. McGeehan. Analysis of microstrip discontinuities using the finite difference time domain technique; *MWSYM 89 Vol. 3* 1009-1012
- Railton, C. J., and Joseph P. McGeehan. A rigorous and computationally efficient analysis of microstrip for use as an electro-optic modulator; *T-MTT Jul 89* 1099-1104
- Räisänen, Antti, see Tolmunen, Timo, *MWSYM 89 Vol. 3* 1223-1226
- Räisänen, Antti V. Solid-state local oscillator sources for millimeter and submillimeter waves in Europe; *MWSYM 89 Vol. 2* 617-620
- Rao, Kodukula V. S., and Prakash Bhartia. Analysis of edge-coupled elliptical (oval) rods between infinite ground planes (Short p.); *T-MTT Aug 89* 1260-1263
- Rao, T. C., see Zargari, V., *T-MTT Oct 89* 1645-1647
- Rascoe, D., see Riley, A. L., *MCS 89* 65-68
- Rascoe, D. L., A. L. Riley, J. Huang, V. Lubecke, and L. Duffy. Ka-band MMIC beam-steered transmitter array; *T-MTT Dec 89* 2165-2168
- Rathman, D. D., M. A. Hollis, R. A. Murphy, A. L. McWhorter, and M. J. McNamara. Doping profile optimization in silicon permeable base transistors for high-frequency, high-voltage operation; *CORNEL Jun 89* Abstr III/7
- Raue, J. E., *Guest Ed.*, see Bayuk, F. J., *Guest Ed.*, *T-MTT Dec 89* 1837-1838
- Rauscher, Christen. Logarithmic-periodic contiguous-channel microwave multiplexers; *MWSYM 89 Vol. 2* 675-678
- Rautio, James C. An experimental investigation of the microstrip step discontinuity (Short p.); *T-MTT Nov 89* 1816-1818
- Reddy, Vijay K., see Kesan, Vijay P., *T-MTT Dec 89* 1933-1941
- Reinhart, Matthew, see Bird, Stephen, *MWSYM 89 Vol. 3* 867-870
- Rengarajan, Sembiam R. Analysis of a centered-inclined waveguide slot coupler; *T-MTT May 89* 884-889
- Rengarajan, Sembiam R. Characteristics of a longitudinal/transverse coupling slot in crossed rectangular waveguides; *T-MTT Aug 89* 1171-1177
- Rengarajan, Sembiam R. On higher order mode cutoff frequencies in elliptical step index fibers; *T-MTT Aug 89* 1244-1248
- Reynoso, A., see Ng, G. I., *CORNEL 89* Abstr II/4
- Reynoso-Hernandez, J. A., and J. Graffeuil. Output conductance frequency dispersion and low-frequency noise in HEMT's and MESFET's (Short p.); *T-MTT Sep 89* 1478-1481
- Rhodes, R. A., see Auricchio, F. S., Jr., *MWSYM 89 Vol. 3* 933-936
- Rhine, George W., see Chang, Chao-ren, *T-MTT Nov 89* 1681-1688
- Riazat, M., E. Par, G. Zdzisuk, S. Bandy, and M. Glenn. Monolithic millimeter wave CPW circuits; *MWSYM 89 Vol. 2* 525-528
- Riblet, G. P. A compact planar microstrip-slotline symmetrical junction comparator circuit; *MWSYM 89 Vol. 1* 239-242
- Riblet, Henry J. Expansions for the capacitance of a cross concentric with a circle with an application (Short p.); *T-MTT Nov 89* 1821-1823
- Richardson, J. R., see Pantoja, R. R., *MWSYM 89 Vol. 2* 573-576
- Richardson, J. R., see Pantoja, Renato R., *T-MTT Nov 89* 1675-1680
- Richardson, J. R., see Pantoja, Renato R., *T-MTT Dec 89* 2039-2045

- Riddle, Alf. A CAD program and equations for system phase and amplitude noise analysis; *MWSYM 89 Vol. 1* 359-362
- Riggs, Lloyd S., see German, Fred J., *T-MTT May 89* 917-919
- Riley, A. L., D. Rascoe, V. Lubbecke, J. Huang, and L. Duffy. K_a -band MMIC beam steered transmitter array; *MCS 89* 65-68
- Riley, A. L., see Rascoe, D. L., *T-MTT Dec 89* 2165-2168
- Rizzoli, Vittorio, Claudio Cecchetti, and Alessandra Costanzo. Computer-aided design of class-C microwave transistor amplifiers by direct numerical optimization; *MWSYM 89 Vol. 2* 585-588
- Rizzoli, Vittorio, Franco Mastri, and Claudio Cecchetti. Computer-aided noise analysis of MESFET and HEMT mixers; *T-MTT Sep 89* 1401-1410
- Robertson, I. D., and A. H. Aghvami. A practical distributed FET mixer for MMIC applications; *MWSYM 89 Vol. 3* 1031-1032
- Rollins, John M., and John M. Jarem. The input impedance of a hollow-probe-fed, semi-infinite rectangular waveguide (Short p.); *T-MTT Jul 89* 1144-1146
- Romanofsky, R., see Whitaker, J. F., *MWSYM 89 Vol. 1* 221-224
- Romanofsky, Robert R., see Simons, Rancee N., *MWSYM 89 Vol. 3* 915-918
- Romanofsky, Robert R., see Kerczewski, Robert J., *MWSYM 89 Vol. 3* 1079-1082
- Roques, Daniel, see Cazaux, Jean-Louis, *T-MTT Sep 89* 1442-1451
- Rosen, A., P. Walinsky, D. Smith, Y. Shi, Z. Kosman, A. Martinez, H. Rosen, F. Sterzer, D. Mawhinney, A. Presser, J.-S. Chou, P. Goth, and G. Lowery. Percutaneous transluminal microwave angioplasty catheter; *MWSYM 89 Vol. 1* 167-170
- Rosen, A., see Daryoush, A. S., *MWSYM 89 Vol. 2* 735-738
- Rosen, A., P. Stabile, W. Janton, A. Gombar, P. Basile, J. Delmaster, and R. Hurwitz. Laser-activated p-i-n diode switch for RF application (Short p.); *T-MTT Aug 89* 1255-1257
- Rosen, H., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Rosenbaum, F. J. 1989 MTT-S awards; *T-MTT Dec 89* 1850-1856
- Rosenbaum, S., see Vaughn, S., *MWSYM 89 Vol. 2* 801-804
- Rosenberg, Uwe, and Dieter Wolk. New possibilities of cavity-filter design by a novel TE-TM-mode iris-coupling; *MWSYM 89 Vol. 3* 1155-1158
- Rosenberg, Uwe, and Dieter Wolk. Filter design using in-line triple-mode cavities and novel iris couplings; *T-MTT Dec 89* 2011-2019
- Rosloniec, Stanislaw. An improved algorithm for the computer-aided design of coupled slab lines; *T-MTT Jan 89* 258-261
- Ross, Michael, Robert G. Harrison, and R. K. Surridge. Taper and forward-feed in GaAs MMIC distributed amplifiers; *MWSYM 89 Vol. 3* 1039-1042
- Rothman, M., see Weinreb, S., *MWSYM 89 Vol. 2* 813-816
- Roy, Ramendra P., see Hurley, Richard B., *MWSYM 89 Vol. 3* 905-908
- Rozzi, T., R. De Leo, and A. Morini. Analysis of the 'microstrip-loaded inset dielectric waveguide'; *MWSYM 89 Vol. 3* 923-926
- Rozzi, T., see Olley, Chris A., *T-MTT Jun 89* 977-983
- Rozzi, Tullio, and John S. Kot. The complete spectrum of image line; *T-MTT May 89* 868-874
- Ruan, Chengli, see Lin, Weigan, *T-MTT Apr 89* 734-742
- Rubin, Barry J. Modeling of arbitrarily shaped signal lines and discontinuities (Short p.); *T-MTT Jun 89* 1057-1060
- Ruggieri, M., see Giannini, F., *MWSYM 89 Vol. 1* 251-254
- Ruiz, J., M. J. Nuñez, A. Navarro, and E. Martín. Integral numerical technique for the study of axially symmetric resonant devices (Short p.); *T-MTT Nov 89* 1814-1816
- Russenschuck, Stephan, see Gesche, Roland, *T-MTT Oct 89* 1597-1602
- Russer, P., see Anemogiannis, K., *MWSYM 89 Vol. 1* 269-272
- Ruth, B. G., R. K. Dahlstrom, C. D. Schlesinger, and L. F. Libelo. Design and low-power testing of a microwave Vlasov mode converter; *MWSYM 89 Vol. 3* 1277-1280
- Rutledge, D. B., see Hwu, R. J., *MWSYM 89 Vol. 3* 1069-1072
- Ruxton, James, and Wolfgang J. R. Hoefler. A quasi-planar FET amplifier in integrated finline and microstrip technique (Short p.); *T-MTT Feb 89* 429-432
- Rycroft, C. M. D., see Olley, Chris A., *T-MTT Jun 89* 977-983
- Saadat, Irfan A., and J. Peter Krusius. Analysis of resonant tunneling structures for high frequency oscillator applications via time-dependent solution of Schrödinger's equation; *CORNEL Jun 89* Abstr V/4
- Sabbian, Albert, and K. C. Gupta. Multiport network model for evaluating radiation loss and spurious coupling between discontinuities in microstrip circuits; *MWSYM 89 Vol. 2* 707-710
- Saddow, Stephen E., see Patel, Suman D., *MWSYM 89 Vol. 3* 879-882
- Sadowski, J. P., see Wang, G. W., *MWSYM 89 Vol. 3* 1061-1064
- Sadwick, L. P., see Hwu, R. J., *MWSYM 89 Vol. 3* 1069-1072
- Saeidi, R., see Daryoush, A. S., *MWSYM 89 Vol. 2* 735-738
- Sagawa, Morikazu, see Takahashi, Kenichi, *MWSYM 89 Vol. 2* 667-670
- Sagawa, Morikazu, Kenichi Takahashi, and Mitsuo Makimoto. Miniaturized hairpin resonator filters and their application to receiver front-end MIC's; *T-MTT Dec 89* 1991-1997
- Saha, Pradip Kumar, and Gopa Guha Mazumder. Bandwidth characteristics of inhomogeneous T-septum waveguides; *T-MTT Jun 89* 1021-1026
- Saito, R., see Park, H., *CORNEL 89* Abstr II/7
- Saito, S., Y. Tarusawa, H. Suzuki, and S. Yuki. State-preserving intermittently-locked loop (SPILL) frequency synthesizer for portable radio; *MWSYM 89 Vol. 1* 435-438
- Saito, Shigeki, Yoshiaki Tarusawa, and Hiroshi Suzuki. State-preserving intermittently locked loop (SPILL) frequency synthesizer for portable radio; *T-MTT Dec 89* 1898-1903
- Saito, T., see Ichioka, T., *MCS 89* 61-64
- Saito, T., Y. Ohashi, H. Kurihara, Y. Hirachi, T. Kasuga, and K. Miyazawa. A cryogenic 43-GHz-band low-noise amplifier for radio astronomy; *MWSYM 89 Vol. 3* 853-856
- Sakai, M., see Ayaki, N., *MCS 89* 7-10
- Sakakura, Makoto, see Ogawa, Koichi, *T-MTT Sep 89* 1434-1441
- Salazar-Palma, Magdalena, and Félix Hernández-Gil. Self adaptive mesh scheme for the finite element analysis of anisotropic multiconductor transmission-lines; *MWSYM 89 Vol. 1* 507-510
- Salmer, Georges, see Halkias, George, *T-MTT May 89* 817-825
- Salvage, S. T., R. J. Hash, and B. E. Pettet. An octave band GaAs analog phase shifter; *MWSYM 89 Vol. 3* 1051-1054
- Sandstrom, Robert L., see Pan, Shing-Kuo, *T-MTT Mar 89* 580-592
- Sankaran, V., see Hinckley, J. M., *CORNEL 89* Abstr III/2
- Sard, Eugene, see Cohen, Leonard D., *MWSYM 89 Vol. 3* 1287-1290
- Sarkar, S., see Biswas, B. N., *T-MTT Mar 89* 627-630
- Sarma, B. K., see Baum, H.-P., *MWSYM 89 Vol. 2* 639-641
- Sauerer, Bernhard, see Platte, Walter, *T-MTT Jan 89* 139-149
- Sayadian, Hrayr A., M. G. Li, and Chi H. Lee. Generation of high-power broad-band microwave pulses by picosecond optoelectronic technique; *T-MTT Jan 89* 43-50
- Schaff, W. J., see Tadayon, Bijan, *CORNEL 89* Abstr III/5
- Schaff, W. J., see Park, H., *CORNEL 89* Abstr II/7
- Schaff, W. J., see Offsey, S. D., *CORNEL 89* Abstr VI/2
- Schaller, Gerd. On the imaging of hot spots using correlation radiometers and a circular aperture; *T-MTT Aug 89* 1210-1216
- Scheiber, H., see Lübke, K., *MWSYM 89 Vol. 2* 729-730
- Scheiber, Helmut, Kurt Lübke, D. Grützmacher, Christian G. Diskus, and Hartwig W. Thim. MIMIC-compatible GaAs and InP field effect controlled transferred electron (FECTED) oscillators; *T-MTT Dec 89* 2093-2098
- Scheinberg, N., see Michels, R., *MWSYM 89 Vol. 2* 541-544
- Scheinberg, N., see Bayruns, J., *MWSYM 89 Vol. 3* 1295-1298
- Schieblich, Christian. Mode charts for magnetized ferrite cylinders; *T-MTT Oct 89* 1555-1561
- Schindler, M. J., and Y. Tajima. A novel MMIC active filter with lumped and transversal elements; *MCS 89* 57-60
- Schindler, M. J., see Chu, S. L. G., *MCS 89* 143-147
- Schindler, M. J., see Chu, S. L. G., *MWSYM 89 Vol. 1* 291-295
- Schindler, Manfred J., and Yusuke Tajima. A novel MMIC active filter with lumped and transversal elements; *T-MTT Dec 89* 2148-2153
- Schlapp, Winfried, see Brockerhoff, Wolfgang, *T-MTT Sep 89* 1380-1388
- Schlesiger, C. D., see Ruth, B. G., *MWSYM 89 Vol. 3* 1277-1280
- Schmeger, K. E., see Adelseck, B., *MCS 89* 91-94
- Schmeger, K. E., see Adelseck, B., *MWSYM 89 Vol. 1* 99-102
- Schmeger, Karl-Ernst, see Adelseck, Bernd, *T-MTT Dec 89* 2142-2147
- Schmidt, P. E., and E. Barbier. A pseudomorphic GaAs/GaInAs/AlGaAs SISFET; *CORNEL 89* Abstr II/5
- Schroeder, W., and I. Wolff. A new hybrid mode boundary integral method for analysis of MMIC waveguides with complicated crosssection; *MWSYM 89 Vol. 2* 711-714
- Schuermeier, F., see Tartillo, J., *CORNEL 89* Abstr V/8
- Schünemann, K., see Omar, A. S., *MWSYM 89 Vol. 1* 511-514
- Schünemann, Klaus F., see Omar, Abbas S., *T-MTT Dec 89* 1924-1932
- Schwab, W., see Adelseck, B., *MCS 89* 91-94
- Schwab, W., see Adelseck, B., *MWSYM 89 Vol. 1* 99-102
- Schwab, Wolfgang, see Adelseck, Bernd, *T-MTT Dec 89* 2142-2147
- Schwarz, S., see Osofsky, Samuel S., *MWSYM 89 Vol. 2* 823-825
- Schwering, F. K., see Xu, Shanjia, *T-MTT Apr 89* 686-690
- Seabaugh, Alan C. Quantum-well resonant-tunneling transistors; *CORNEL 89* Abstr V/1
- Searle, Roger P., see Pilgrim, Mike, *MWSYM 89 Vol. 3* 1095-1098
- Seaton, A. F., see Virga, K. L., *MWSYM 89 Vol. 1* 123-126
- Sechi, F. N., and M. Bujatti. Broadband power amplifiers based on a new monolithic ceramic technology; *MWSYM 89 Vol. 3* 937-940
- Selders, J., see Adelseck, B., *MCS 89* 91-94
- Selders, J., see Adelseck, B., *MWSYM 89 Vol. 1* 99-102
- Selders, Johannes, see Adelseck, Bernd, *T-MTT Dec 89* 2142-2147
- Sethares, James C., see Chen, Chang-Lee, *T-MTT Jan 89* 239-243
- Seymour, David, see Pritchett, Sam D., *MWSYM 89 Vol. 3* 1109-1112
- Sharma, A. K., see Matsuno, C. T., *T-MTT Sep 89* 1472-1475
- Sharma, Arvind K., *Guest Ed.* Introduction to special issue on quasi-planar millimeter-wave components and subsystems; *T-MTT Feb 89* 273-274
- Sheaffer, Gad S., see Leviatan, Yehuda, *T-MTT Apr 89* 805-806
- Sheng, Chuyu, see Zhu, Lihong, *T-MTT Sep 89* 1488-1491
- Sheng, N. H., see Wang, N. L., *CORNEL 89* Abstr III/4
- Shi, Y., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Shieh, T. J., see Chang, R. L., *MWSYM 89 Vol. 1* 371-374
- Shifrin, M., P. Katzin, and Y. Ayasli. High power control components using a new monolithic FET structure; *MCS 89* 51-56
- Shifrin, Mitchell B., Peter J. Katzin, and Yalcin Ayasli. Monolithic FET structures for high-power control component applications; *T-MTT Dec 89* 2134-2141
- Shigesawa, H., see Tsuji, M., *MWSYM 89 Vol. 2* 783-786
- Shigesawa, H., M. Tsuji, and O. Tanaka. Theoretically zero-loss design of planar dielectric waveguide Y-branch—Amazing effect of serpentine-shaped taper; *MWSYM 89 Vol. 2* 795-798
- Shigesawa, Hiroshi, and Mikio Tsuji. A new equivalent network method for analyzing discontinuity properties of open dielectric waveguides; *T-MTT Jan 89* 3-14
- Shigesawa, Hiroshi, Mikio Tsuji, Tomoyoshi Nakao, and Kei Takiyama. Two-path cutoff waveguide dielectric resonator filters; *T-MTT Jul 89* 1105-1113
- Shih, B. S., see Oates, D. E., *MWSYM 89 Vol. 2* 627-630
- Shih, Chin, Ruey-Beei Wu, Shyh-Kang Jeng, and Chun Hsiung Chen. Frequency-dependent characteristics of open microstrip lines with finite strip thickness (Short p.); *T-MTT Apr 89* 793-795

- Shih, Chun-Yi, see Wang, Weyl-Kuo, *MWSYM 89 Vol. 1* 491-494
- Shih, Hung-Dah, see Kim, Bumman, *T-MTT Sep 89* 1327-1333
- Shih, Y. C., K. Tan, K. Kasel, K. K. Yu, and S. K. Wang. Broadband high-efficiency MMIC power amplifiers using ion-implanted MESFET technology; *MWSYM 89 Vol. 3* 1119-1120
- Shih, Yi-Chi, see Hwang, Vincent D., *MCS 89* 37-40
- Shih, Yi-Chi, see Ho, T. Q., *T-MTT Feb 89* 388-392
- Shih, Yi-Chi, see Hwang, Vincent D., *T-MTT Dec 89* 2125-2133
- Shillue, William P., Sai-Chu Wong, and Karl D. Stephan. Monolithic IMPATT millimeter-wave oscillator stabilized by open-cavity resonator; *MWSYM 89 Vol. 2* 739-740
- Shimoyama, Satoshi, see Wakamoto, Kouichi, *MWSYM 89 Vol. 3* 1023-1026
- Shimura, T., see Ayaki, N., *MCS 89* 7-10
- Shinmura, Satoru, see Nishikawa, Toshio, *MWSYM 89 Vol. 1* 153-156
- Shino, Toshio, see Kawasaki, Hisao, *MWSYM 89 Vol. 1* 423-426
- Shu, Yonghui, see Wang, Yunyi, *MWSYM 89 Vol. 3* 1123-1126
- Shu, Yonghui, and Yunyi Wang. A novel W-band suspended substrate microstrip second harmonic GaAs Gunn oscillator; *MWSYM 89 Vol. 3* 1211-1214
- Shupe, Dave, see Kuo, Tai-Haur, *CORNEL 89 Abstr V/2*
- Simons, Ralene N., George E. Ponchak, Konstantinos S. Martzaklis, and Robert R. Romanofsky. Channelized coplanar waveguide: Discontinuities, junctions, and propagation characteristics; *MWSYM 89 Vol. 3* 915-918
- Singer, J., see Metzke, G., *MCS 89* 111-116
- Singer, J., see Metzke, G., *MWSYM 89 Vol. 1* 199-204
- Singer, J. L., see Hegazi, G., *MCS 89* 121-125
- Singer, J. L., see Hegazi, G., *MWSYM 89 Vol. 1* 209-213
- Singer, J., see Feak, G., *CORNEL 89 Abstr VI/5*
- Singh, J., see Hinckley, J. M., *CORNEL 89 Abstr III/2*
- Sinha, Dipen N., see Paulter, Nicholas G., *T-MTT Oct 89* 1612-1619
- Sironen, Mikko, see Tolmunen, Timo, *MWSYM 89 Vol. 3* 1223-1226
- Skaggs, Steven G., see Bilbro, Griff L., *CORNEL 89 Abstr IV/2*
- Skrivervik, A., and J. R. Mosig. Equivalent circuits of microstrip discontinuities including radiation effects; *MWSYM 89 Vol. 3* 1147-1150
- Sloan, Lynn R., see Eisenberg, John A., *MCS 89* 41-45
- Smith, Bryce M., see Archer, John, *T-MTT Apr 89* 790-792
- Smith, D., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Smith, D., see Matlobian, M., *MWSYM 89 Vol. 3* 889-892
- Smith, D. C., see Gardiner, G. J., *MWSYM 89 Vol. 1* 405-408
- Smith, D. M., J. C. Canyon, and D. L. Tait. 25-42 GHz GaAs heterojunction bipolar transistor low phase noise push-push VCOs; *MWSYM 89 Vol. 2* 725-728
- Smith, P. M., see Tessmer, A. J., *CORNEL 89 Abstr II/2*
- Smith, P. M., see Duh, K. H. G., *MWSYM 89 Vol. 2* 805-808
- Smith, P. M., M. Y. Kao, P. Ho, P. C. Chao, K. H. G. Duh, A. A. Jabra, Smith R. P., and J. M. Ballingall. A 0.15 μ m gate-length pseudomorphic HEMT; *MWSYM 89 Vol. 3* 983-986
- Smith, P. M., see Ferguson, D. W., *MWSYM 89 Vol. 3* 987-990
- Smith, Richard S., III, see Treado, Todd A., *MWSYM 89 Vol. 3* 875-878
- Smith, T., see Hegazi, G., *MCS 89* 121-125
- Smith, T., see Hegazi, G., *MWSYM 89 Vol. 1* 209-213
- Smith, T. J., see Sriram, S., *CORNEL 89 Abstr IV/5*
- Smith, Thane, see Webb, Kevin J., *MWSYM 89 Vol. 1* 217-220
- Smith, Thane, see Hung, Hing-Loi A., *T-MTT Aug 89* 1223-1231
- Smith R. P., see Smith, P. M., *MWSYM 89 Vol. 3* 983-986
- Smith R. P., see Ferguson, D. W., *MWSYM 89 Vol. 3* 987-990
- Smoot, L. S., see Lo, C. N., *MWSYM 89 Vol. 2* 703-704
- Smuk, J. W., M. G. Stubbs, and J. S. Wight. Vector measurements of microwave devices at cryogenic temperatures; *MWSYM 89 Vol. 3* 1195-1198
- Snapp, C. P., see Kipnis, I., *MCS 89* 101-104
- Snapp, C. P., see Kipnis, I., *MWSYM 89 Vol. 1* 109-112
- Snapp, Craig, see Wholey, Jim, *MCS 89* 133-137
- Snapp, Craig, see Wholey, Jim, *MWSYM 89 Vol. 1* 281-285
- Snow, K. H., see Upton, M. A. G., *MCS 89* 105-109
- Snow, K. H., see Upton, M. A. G., *MWSYM 89 Vol. 1* 193-197
- Snowden, C. M., see Pantoja, R. R., *MWSYM 89 Vol. 2* 573-576
- Snowden, Christopher M., see Xuan, Yongnan, *T-MTT Sep 89* 1481-1484
- Snowden, Christopher M., see Licquirish, Clint, *T-MTT Oct 89* 1497-1505
- Snowden, Christopher M., see Pantoja, Renato R., *T-MTT Dec 89* 2039-2045
- So, Poman P. M., and Wolfgang J. R. Hofer. A general planar circuit simulator based on two-dimensional TLM method; *MWSYM 89 Vol. 1* 343-346
- So, Poman P. M., Esvarappa, and Wolfgang J. R. Hofer. A two-dimensional transmission line matrix microwave field simulator using new concepts and procedures; *T-MTT Dec 89* 1877-1884
- Soares, R., see Perennec, A., *T-MTT Sep 89* 1475-1478
- Soares, Robert A., Pascal Gouzien, Pierre Legaud, and Georges Foliot. A unified mathematical approach to two-port calibration techniques and some applications; *T-MTT Nov 89* 1669-1674
- Sobhy, M. I., and A. J. Castellino. The design and performance of large signal distributed microwave amplifiers; *MWSYM 89 Vol. 1* 397-400
- Sobhy, M. I., and Y. A. R. El-Sawy. Parallel processing application to non-linear microwave network design; *MWSYM 89 Vol. 2* 645-648
- Sobhy, M. I., and Y. A. R. El-Sawy. Parallel processing application to nonlinear microwave network design; *T-MTT Dec 89* 2067-2073
- Sobolewski, R., see Konopka, J., *MWSYM 89 Vol. 2* 635-638
- Sokolich, M., see Hwu, R. J., *MWSYM 89 Vol. 3* 1069-1072
- Solomon, P., see Kwark, Y., *CORNEL 89 Abstr IV/4*
- Somasekhar Rao, P. V. D., see Das, B. N., *T-MTT Oct 89* 1590-1596
- Sommariva, Antonino M., see Calandra, Enrico F., *T-MTT May 89* 826-835
- Song, J., see Bandler, J. W., *MWSYM 89 Vol. 2* 649-652
- Soohoo, R., see Khanna, A. P. S., *MWSYM 89 Vol. 1* 515-518
- Sopira, M. M., see Driver, M. C., *CORNEL 89 Abstr I/1*
- Sorrentino, R., see Alessandri, F., *MWSYM 89 Vol. 3* 1219-1222
- Sorrentino, Roberto. Modeling of microwave and millimeter wave passive components in Europe; *MWSYM 89 Vol. 2* 613-616
- Sorrentino, Roberto, see Alessandri, Ferdinando, *T-MTT Dec 89* 2020-2027
- Souza, Rui Fragassi, see Fragassi Souza, Rui
- Sovero, E., see Wang, N. L., *CORNEL 89 Abstr III/4*
- Sovero, Emilio, see Takemoto, June H., *T-MTT Oct 89* 1650-1652
- Sowinski, Maciej J., see Jablonski, Tomasz F., *T-MTT Jan 89* 63-70
- Spencer, M. G., see Tadayon, Bijan, *CORNEL 89 Abstr III/5*
- Spooner, H., see Neylon, S., *MWSYM 89 Vol. 1* 519-522
- Sriram, S., R. C. Clarke, R. L. Messham, T. J. Smith, and M. C. Driver. High voltage operation in class B GaAs X-band power MESFETs; *CORNEL 89 Abstr IV/5*
- Stabile, P., see Rosen, A., *T-MTT Aug 89* 1255-1257
- Stajcer, Tony, see Boch, Erik, *MWSYM 89 Vol. 3* 1207-1210
- Stancil, Daniel D. Theory of magnetostatic waves in moving ferrite films and applications to rotation rate sensing; *T-MTT May 89* 851-859
- Starski, J. P., and B. M. Albinsson. Comments, with reply, on 'p-i-n diode attenuator with small phase shift' by Baeten *et al*; *T-MTT Oct 89* 1658-1659 (Original paper, Apr 88 789-791)
- Stasiak, James W., see Pan, Shing-Kuo, *T-MTT Mar 89* 580-592
- Staudinger, Joseph. An ultra wide bandwidth power divider on MMIC operating 4 to 10 GHz; *MCS 89* 127-131
- Staudinger, Joseph. An ultra wide bandwidth power divider on MMIC operating 4 to 10 GHz; *MWSYM 89 Vol. 1* 275-279
- Steer, Michael B., see Bilbro, Griff L., *CORNEL 89 Abstr IV/2*
- Steer, Michael B., see Heron, Patrick L., *MWSYM 89 Vol. 1* 355-358
- Steer, Michael B., see Chang, Chao-ren, *T-MTT Nov 89* 1681-1688
- Stephan, Karl D., see Shillue, William P., *MWSYM 89 Vol. 2* 739-740
- Sterzer, F., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Stoneking, D. E., and R. J. Trew. Simulation of the variation and sensitivity of MESFET large signal figures-of-merit due to process, material, parasitic and bias parameters; *CORNEL 89 Abstr IV/6*
- St. Onge, G., see Boire, D. C., *MCS 89* 69-73
- Straughn, B. L., see Hornak, L. A., *MWSYM 89 Vol. 2* 623-626
- Strid, E., see Davidson, A., *MWSYM 89 Vol. 2* 827-830
- Strid, Eric, see Davidson, Andrew C., *T-MTT Dec 89* 1973-1978
- Striffler, W. A., see Chang, A. P., *MCS 89* 139-141
- Striffler, W. A., see Chang, A. P., *MWSYM 89 Vol. 1* 287-289
- Striffler, W. A., see Chang, A. P., *T-MTT Dec 89* 2159-2162
- Strohbehn, John W., see Jones, Kenneth M., *T-MTT Aug 89* 1200-1209
- Strohm, K. M., see Buechler, J., *MWSYM 89 Vol. 3* 1205-1206
- Stubbs, M. G., see Smuk, J. W., *MWSYM 89 Vol. 3* 1195-1198
- Stubbs, M. G., see Howard, G. E., *MWSYM 89 Vol. 3* 1251-1254
- Stumper, Ulrich. Six-port and four-port reflectometers for complex permittivity measurements at submillimeter wavelengths; *T-MTT Jan 89* 222-230
- Stutz, C. E., see Tartillo, J., *CORNEL 89 Abstr V/8*
- Stutz, C. E., see Whitson, D. W., *CORNEL 89 Abstr V/6*
- Su, Chung-Yi, see Wakamoto, Kouichi, *MWSYM 89 Vol. 3* 1023-1026
- Such, V., see Garcia, A. C., *MWSYM 89 Vol. 1* 135-138
- Sugeta, Takayuki, see Aikawa, Masayoshi, *MCS 89* 1-6
- Sugiura, Toshifumi, see Mizushima, Shizuo, *MWSYM 89 Vol. 1* 171-174
- Sullivan, G. J., see Wang, N. L., *CORNEL 89 Abstr III/4*
- Sun, H. J., and B. C. Morley. A DC-18 GHz GaAs MESFET monolithic variable slope gain-equalizer IC; *MCS 89* 79-82
- Sun, Shiyong, Bin Han, Chucheng Wu, and Xiaohong Zhang. CAD and performance of the ultrawide-band GaAs FET amplifiers; *MWSYM 89 Vol. 1* 401-404
- Sun, Zhong-Liang, see Chen, Ning, *MWSYM 89 Vol. 1* 479-482
- Surrridge, R. K., see Ross, Michael, *MWSYM 89 Vol. 3* 1039-1042
- Sussman-Fort, Stephen E. Design concepts for microwave GaAs FET active filters; *T-MTT Sep 89* 1418-1424
- Suzuki, H., see Saito, S., *MWSYM 89 Vol. 1* 435-438
- Suzuki, Hiroshi, see Saito, Shigeki, *T-MTT Dec 89* 1898-1903
- Svedin, Jan. A numerically efficient finite-element formulation for the general waveguide problem without spurious modes; *T-MTT Nov 89* 1708-1715
- Swanson, Dan. Thin-film lumped-element microwave filters; *MWSYM 89 Vol. 2* 671-674
- Swift, Charles W. Foreword to special issue on IEEE 1989 MTT-S International Microwave Symposium; *T-MTT Dec 89* 1842-1849
- Sy, O. A., see Dunn, V. E., *MWSYM 89 Vol. 1* 127-130
- Szendrenyi, Bela B., see Kazi, Karoly, *MWSYM 89 Vol. 3* 1267-1270

- Takahashi, Kenichi, see Sagawa, Morikazu, *T-MTT Dec 89* 1991-1997
- Takahashi, S., see Mizuta, H., *CORNEL 89* Abstr V/3
- Takahashi, Susumu, see Yanokura, Eiji, *T-MTT Sep 89* 1466-1471
- Takai, Chizuko, see Miyazaki, Shinichi, *MWSYM 89 Vol. 3* 1065-1068
- Takatsuka, Shinji, see Arai, Shigemitsu, *MWSYM 89 Vol. 3* 1105-1108
- Takeda, Tomoyuki, see Tsutsumi, Makoto, *MWSYM 89 Vol. 1* 149-152
- Takemoto, June H., Floyd K. Oshita, Harold R. Fetterman, Paul Kobrin, and Emilio Sovero. Microstrip ring resonator technique for measuring microwave attenuation in high- T_c superconducting thin films (Short p.); *T-MTT Oct 89* 1650-1652
- Takiyama, Kei, see Shigesawa, Hiroshi, *T-MTT Jul 89* 1105-1113
- Tan, K., see Shih, Y. C., *MWSYM 89 Vol. 3* 1119-1120
- Tan, R. J., A. L. Ward, and R. Kaul. Transient response of pin limiter diodes; *MWSYM 89 Vol. 3* 1303-1306
- Tan, S. P., see Bhari, Sarjit S., *MWSYM 89 Vol. 1* 409-412
- Tan, S. P., see Bhari, Sarjit S., *MWSYM 89 Vol. 3* 959-962
- Tan, Tun S., Roger L. Jungerman, and Scott S. Elliott. Optical receiver and modulator frequency response measurement with a Nd:YAG ring laser heterodyne technique; *T-MTT Aug 89* 1217-1222
- Tanaka, Hiroaki, see Nishikawa, Toshio, *MWSYM 89 Vol. 1* 153-156
- Tanaka, K., see Ichio, T., *MCS 89* 61-64
- Tanaka, Masayoshi, see Yamamoto, Kazuichi, *MWSYM 89 Vol. 3* 1281-1284
- Tanaka, O., see Shigesawa, H., *MWSYM 89 Vol. 2* 795-798
- Tanaka, S., A. Furukawa, T. Baba, M. Madhian, M. Mizuta, and K. Honjo. Extension of high frequency bias range for an AlInAs/InGaAs HBT; *CORNEL 89* Abstr III/6
- Tanaka, Satoshi, Shigeji Nogi, Kiyoshi Fukui, and Ye-An In. Crucial factors in power combining by oversized cylindrical cavity multiple-device structures; *T-MTT Nov 89* 1755-1760
- Tanaka, Toshiaki, see Hara, Shinji, *T-MTT Jul 89* 1155
- Tanbo, Toshiharu, see Ishikawa, Osamu, *MWSYM 89 Vol. 3* 1183-1186
- Tang, Douglas D. Multi-gigabit fiber-optic video distribution network using BPSK microwave subcarriers; *MWSYM 89 Vol. 2* 697-701
- Taniguchi, Ichiro, see Yoshikado, Shinzo, *T-MTT Jun 89* 984-992
- Tanino, N., see Ayaki, N., *MCS 89* 7-10
- Tanoue, T., see Mizuta, H., *CORNEL 89* Abstr V/3
- Tartillo, J., P. Cook, K. Evans, M. J. Martinez, R. Bobb, E. J. Martinez, C. E. Stutz, and F. Schuermeyer. p-HFETs with GaAsSb channel; *CORNEL 89* Abstr V/8
- Tarusawa, Y., see Saito, S., *MWSYM 89 Vol. 1* 435-438
- Tarusawa, Yoshiaki, see Saito, Shigeki, *T-MTT Dec 89* 1898-1903
- Tasker, P. J., see Offsey, S. D., *CORNEL 89* Abstr VI/2
- Tasker, P. J., see Park, H., *CORNEL 89* Abstr II/7
- Tasker, P. J., see Tadayon, Bijan, *CORNEL 89* Abstr III/5
- Taylor, Henry F., see McGregor, Douglas S., *MWSYM 89 Vol. 1* 225-228
- Tayrani, R., see Bellantoni, J. V., *MCS 89* 47-50
- Tayrani, R., see Bellantoni, J. V., *T-MTT Dec 89* 2162-2165
- Tessmer, A. J., P. C. Chao, K. H. G. Duh, P. Ho, M. Y. Kao, S. M. J. Liu, P. M. Smith, J. M. Ballingall, A. A. Jabra, and T. H. Yu. Very high performance 0.15μ gate-length InAlAs/InGaAs/InP lattice-matched HEMTs; *CORNEL 89* Abstr II/2
- Tessmer, G. J., see Upton, M. A. G., *MCS 89* 105-109
- Tessmer, G. J., see Upton, M. A. G., *MWSYM 89 Vol. 1* 193-197
- Tewksbury, S. K., see Hornak, L. A., *MWSYM 89 Vol. 2* 623-626
- Theron, Bernard, see Espes, Patrick, *T-MTT Feb 89* 289-298
- Thim, H., see Lübke, K., *MWSYM 89 Vol. 2* 729-730
- Thim, Hartwig W., see Scheiber, Helmut, *T-MTT Dec 89* 2093-2098
- Thomas, H., see Dumas, J. M., *MWSYM 89 Vol. 1* 483-486
- Thompson, B., see Bhari, Sarjit S., *MWSYM 89 Vol. 1* 409-412
- Thompson, B., see Bhari, Sarjit S., *MWSYM 89 Vol. 3* 959-962
- Thompson, William J. A broadband low noise dual gate FET distributed amplifier; *MCS 89* 11-13
- Thornber, K. K. Dominance of resistive losses over hysteretic losses in ferromagnetic conductors (Short p.); *T-MTT Jul 89* 1152-1153
- Thurmond, G. D., see Newberg, I. L., *MWSYM 89 Vol. 2* 693-696
- Tien, Ching-Cheng, see Tzuang, Ching-Kuang C., *MWSYM 89 Vol. 1* 495-498
- Tiwari, S., see Hinkley, J. M., *CORNEL 89* Abstr III/2
- Tiwari, Sandip, Wen I. Wang, and Jack East. The Auger transistor; *CORNEL 89* Abstr VI/6
- Tokumitsu, Tsuneo, see Hara, Shinji, *MWSYM 89 Vol. 3* 955-958
- Tokumitsu, Tsuneo, Shinji Hara, and Masayoshi Aikawa. Very small, ultra-wideband MMIC magic-T and applications to combiners and dividers; *MWSYM 89 Vol. 3* 963-966
- Tokumitsu, Tsuneo, see Hara, Shinji, *T-MTT Jul 89* 1155
- Tokumitsu, Tsuneo, see Hiraoka, Takahiro, *T-MTT Oct 89* 1569-1575
- Tokumitsu, Tsuneo, see Hara, Shinji, *T-MTT Dec 89* 1979-1984
- Tokumitsu, Tsuneo, Shinji Hara, and Masayoshi Aikawa. Very small ultra-wide-band MMIC magic T and applications to combiners and dividers; *T-MTT Dec 89* 1985-1990
- Tolmunen, Timo, Antti Räisänen, and Mikko Sironen. Higher order frequency multipliers—A solution for mm- and submm-wave local oscillator signal generation; *MWSYM 89 Vol. 3* 1223-1226
- Tomabechi, Yoshiro, see Matsumura, Kazuhito, *T-MTT Feb 89* 414-420
- Ton, T. N., see Dow, G. S., *MWSYM 89 Vol. 2* 809-812
- Toulios, Peter P., see Xia, Jiqing, *T-MTT Oct 89* 1547-1554
- Toyoda, Sachihito. Notch filters with variable center frequency and attenuation; *MWSYM 89 Vol. 2* 595-598
- Treado, Todd A., Richard S. Smith, III, Wesley O. Doggett, and David J. Jenkins. High-power microwave diagnostic system based on compact, single-unit, radiate-and-receive devices; *MWSYM 89 Vol. 3* 875-878
- Tremblay, B. Stuart, see Jones, Kenneth M., *T-MTT Aug 89* 1200-1209
- Trew, R. J., see Mock, P. M., *CORNEL 89* Abstr VI/7
- Trew, R. J., see Stoneking, D. E., *CORNEL 89* Abstr IV/6
- Trew, R. J., U. K. Mishra, W. L. Pribble, and J. F. Jensen. A parameter extraction technique for heterojunction bipolar transistors; *MWSYM 89 Vol. 3* 897-900
- Trew, R. J., see Winslow, T. A., *MWSYM 89 Vol. 3* 1019-1022
- Trew, Robert J., see Bilbro, Griff L., *CORNEL 89* Abstr IV/2
- Tripathi, V. K., see Emery, T., *MWSYM 89 Vol. 1* 329-332
- Tripathi, V. K., see Hill, A., *MWSYM 89 Vol. 3* 1143-1146
- Tripathi, Vijai K., and Hyuckjae Lee. Spectral-domain computation of characteristic impedances and multiport parameters of multiple coupled microstrip lines; *T-MTT Jan 89* 215-221
- Truitt, Austin, John Cerney, and James S. Mason. A 0.3 to 3 GHz monolithic vector modulator for adaptive array systems; *MWSYM 89 Vol. 1* 421-422
- Truitt, G. Austin, see Cooper, Steven W., *MWSYM 89 Vol. 3* 1113-1114
- Tsai, C. S., D. Young, T. Q. Vu, and C. L. Wang. Magnetostatic waves-based integrated optic device modules and applications to communications and signal processings; *MWSYM 89 Vol. 1* 303-306
- Tsalamengas, John L., see Fikioris, John G., *T-MTT Jan 89* 21-33
- Tserng, H. Q., see Bayraktaroglu, B., *MWSYM 89 Vol. 3* 1057-1060
- Tserng, Hua Quen, see Kim, Bumman, *T-MTT Sep 89* 1327-1333
- Tsuji, M., H. Shigesawa, and A. A. Oliner. Printed-circuit waveguides with anisotropic substrates: A new leakage effect; *MWSYM 89 Vol. 2* 783-786
- Tsuji, M., see Shigesawa, H., *MWSYM 89 Vol. 2* 795-798
- Tsuji, Mikio, see Shigesawa, Hiroshi, *T-MTT Jan 89* 3-14
- Tsuji, Mikio, see Shigesawa, Hiroshi, *T-MTT Jul 89* 1105-1113
- Tsutsumi, Makoto, and Tomoyuki Takeda. Magnetostatic wave resonators of microstrip type; *MWSYM 89 Vol. 1* 149-152
- Tumeh, Amer M., and Magdy F. Iskander. Performance comparison of available interstitial antennas for microwave hyperthermia; *T-MTT Jul 89* 1126-1133
- Tzuang, Ching-Kuang C., see Wang, Weyl-Kuo, *MWSYM 89 Vol. 1* 491-494
- Tzuang, Ching-Kuang C., Jen-Tsai Kuo, Ching-Cheng Tien, Jiing-Shyue Jang, and Te-Hui Wang. Complex modes in shielded planar microstrip lines; *MWSYM 89 Vol. 1* 495-498
- Tzuang, Ching-Kuang C., see Wang, Weyl-kuo, *T-MTT Dec 89* 1891-1897

U

- Uchida, Kazunori, Takeaki Noda, and Toshiaki Matsunaga. New type of spectral-domain analysis of a microstrip-line; *T-MTT Jun 89* 947-952
- Uher, Jaroslav, and Wolfgang J. R. Hofer. Analysis and tuning efficiency optimization of magnetically tuned printed E-plane circuit filters; *MWSYM 89 Vol. 3* 1273-1276
- Umamoto, D. K., see Oki, A. K., *MCS 89* 83-86
- Umamoto, D. K., see Gorman, G. M., *MWSYM 89 Vol. 2* 537-540
- Umamoto, D. K., see Kim, M. E., *T-MTT Sep 89* 1286-1303
- Upadhyayula, L. C., see Bechtel, D., *T-MTT Oct 89* 1636-1638
- Upton, M. A. G., K. H. Snow, D. I. Goldstick, W. M. Kong, M.-Y. Kao, W. F. Kopp, P. Ho, G. J. Tessmer, B. R. Lee, K. A. Wypych, and A. A. Jabra. Monolithic HEMT LNAs for radar, EW, and COMM; *MCS 89* 105-109
- Upton, M. A. G., K. H. Snow, D. I. Goldstick, W. M. Kong, M.-Y. Kao, W. F. Kopp, P. Ho, G. J. Tessmer, B. R. Lee, K. A. Wypych, and A. A. Jabra. Monolithic HEMT LNAs for radar, EW, and COMM; *MWSYM 89 Vol. 1* 193-197
- Urasaki, Shuji, see Iyama, Yoshitada, *MWSYM 89 Vol. 3* 1291-1294
- Uwano, Tomoki. Accurate characterization of microstrip resonator open end with new current expression in spectral-domain approach (Short p.); *T-MTT Mar 89* 630-633
- Uwano, Tomoki, see Ogawa, Koichi, *T-MTT Sep 89* 1434-1441
- Uysal, Sener, and Hamid Aghvami. Synthesis, design, and construction of ultra-wide-band nonuniform quadrature directional couplers in inhomogeneous media; *T-MTT Jun 89* 969-976
- Uzunoglu, Nikolaos K., see Capsalis, Christos, *T-MTT Jul 89* 1091-1098
- Uzunoglu, Nikolaos K., see Nikita, Konstantina S., *T-MTT Nov 89* 1794-1801

V

- Vahldieck, Ruediger, see Wu, Ke, *MWSYM 89 Vol. 1* 503-506
- Vahldieck, Ruediger. Quasi-planar filters for millimeter-wave applications; *T-MTT Feb 89* 324-334
- Vahldieck, Ruediger, see Wu, Ke, *T-MTT Dec 89* 1958-1963
- Vai, Man-Kuan, and Sheila Prasad. Computer-aided design of MESFET distributed amplifier; *MWSYM 89 Vol. 2* 565-568
- Vaitkus, R., see Lucero, R., *MWSYM 89 Vol. 3* 893-896
- Valdmanis, J. A., see Whitaker, J. F., *MWSYM 89 Vol. 1* 221-224
- van Deventer, T. E., P. B. Katehi, and A. C. Cangellaris. High frequency conductor and dielectric losses in shielded microstrip; *MWSYM 89 Vol. 3* 919-922
- van Deventer, T. Emilie, Pisti B. Katehi, and Andreas C. Cangellaris. An integral equation method for the evaluation of conductor and dielectric losses in high-frequency interconnects; *T-MTT Dec 89* 1964-1972
- Vanzura, Eric J., and William A. Kissick. Advances in NIST dielectric measurement capability using a mode-filtered cylindrical cavity; *MWSYM 89 Vol. 3* 901-904
- Vassilakis, B., see Bura, P., *MWSYM 89 Vol. 3* 1299-1302
- Vaughn, S., K. White, U. K. Mishra, M. J. Delaney, P. Greiling, and S. Rosenbaum. High performance V-band low noise amplifiers; *MWSYM 89 Vol. 2* 801-804
- Vecchi, Giuseppe, see Ghione, Giovanni, *T-MTT Mar 89* 445-456
- Velebir, J., see Chow, P. D., *MWSYM 89 Vol. 2* 731-734
- Verdeyme, S., P. Auxemery, M. Aubourg, and P. Guillon. Three dimensional finite element method applied to dielectric resonator devices; *MWSYM 89 Vol. 3* 1151-1154
- Vernet, Guy, see Ouslimani, A., *T-MTT Sep 89* 1460-1465
- Vidalou, J. F., F. Grossier, M. Camiade, and J. Obregon. On-wafer large signal pulsed measurements; *MWSYM 89 Vol. 2* 831-834
- Villalon, Claudine, see Ducourant, Thierry, *MCS 89* 87-90

- Villalon, Claudine, see Ducourant, Thierry, *MWSYM 89 Vol. 1* 95-98
- Virga, K. L., A. F. Seaton, and L. R. Walker. A waveguide switched-susceptance (diode-patch) phase shifter; *MWSYM 89 Vol. 1* 123-126
- Vittoria, Carmine, see Xia, Jiqing, *T-MTT Oct 89* 1547-1554
- Volakis, John L., see Jin, Jian-Ming, *T-MTT Oct 89* 1641-1645
- Vorhaus, J. L. High volume manufacturing of a high-efficiency X-band power module for phased array applications; *MWSYM 89 Vol. 2* 769-772
- Vowinkel, Bernd, see Kothaus, Ulrich, *T-MTT Feb 89* 375-380
- Voyce, Kenneth G., and Jay H. McCandless. Power amplifier linearization using IF feedback; *MWSYM 89 Vol. 3* 863-866
- Vu, T. Q., see Tsai, C. S., *MWSYM 89 Vol. 1* 303-306
- W
- Wait, James R., see Young, Jeffrey L., *T-MTT Jul 89* 1136-1138
- Wakamoto, Kouichi, Kimihiko Imura, Masahiko Yamamoto, Satoshi Shimoyama, Takehiko Kameyama, Masao Isomae, Yukio Okubo, Mikiharu Ohoka, Takashi Nagashima, Domingo A. Figueredo, Lyle H. McCarty, Chung-Yi Su, Michael Yam, and Sanehiko Kakihana. A true off-set self-aligned process for high efficiency Ku-band power FETs; *MWSYM 89 Vol. 3* 1023-1026
- Wakino, Kikuo, see Nishikawa, Toshio, *MWSYM 89 Vol. 1* 153-156
- Wakino, Kikuo, see Ishikawa, Youhei, *MWSYM 89 Vol. 2* 591-594
- Wakino, Kikuo, see Nishikawa, Toshio, *T-MTT Dec 89* 2074-2079
- Wallinsky, P., see Rosen, A., *MWSYM 89 Vol. 1* 167-170
- Walker, L. R., see Virga, K. L., *MWSYM 89 Vol. 1* 123-126
- Wallace, P., see Bayruns, J., *MWSYM 89 Vol. 3* 1295-1298
- Wan, Lawrence A., see Madni, Asad M., *MWSYM 89 Vol. 1* 439-442
- Wan, Lawrence A., see Madni, Asad M., *T-MTT Dec 89* 1942-1948
- Wang, Bai-Suo. Corrections to 'Mutual impedance between probes in a waveguide' (Jan 88 53-60); *T-MTT May 89* 932
- Wang, Bai-Suo. Mutual impedance between probes in a circular waveguide; *T-MTT Jun 89* 1006-1012
- Wang, C. L., see Tsai, C. S., *MWSYM 89 Vol. 1* 303-306
- Wang, Chang-Qing, and Om P. Gandhi. Numerical simulation of annular phased arrays for anatomically based models using the FDTD method; *T-MTT Jan 89* 118-126
- Wang, G. W., M. Feng, R. Kaliski, Y. P. Liaw, C. L. Lau, and C. Ito. Mixed technology of ion implantation and heteroepitaxy: Ion-implanted In_{0.53}Ga_{0.47}As/GaAs MESFETs; *CORNEL 89 Abstr II/8*
- Wang, G. W., L. W. Yang, R. W. Laird, D. A. Williams, J. P. Sadowski, and P. D. Wright. Design optimization of microwave power heterojunction bipolar transistor cells; *MWSYM 89 Vol. 3* 1061-1064
- Wang, Guan Ling, see Wang, Yun Yi, *MWSYM 89 Vol. 3* 1123-1126
- Wang, Guan-Wu, and Lester F. Eastman. An analytical model for *I-V* and small-signal characteristics of planar-doped HEMTs; *T-MTT Sep 89* 1395-1400
- Wang, J. H., and J. R. Dubberley. Computation of EM effects on large biological bodies by an iterative moment method; *MWSYM 89 Vol. 1* 183-186
- Wang, Johnson J. H., and John R. Dubberley. Computation of fields in an arbitrarily shaped heterogeneous dielectric or biological body by an iterative conjugate gradient method; *T-MTT Jul 89* 1119-1125
- Wang, Johnson J. H., and John R. Dubberley. Computation of electromagnetic fields in large biological bodies by an iterative moment method with a restart technique; *T-MTT Dec 89* 1918-1923
- Wang, Kang L. Properties and devices of SiGe heterostructures and superlattices; *CORNEL 89 Abstr III/1*
- Wang, Ming, and Masamitsu Nakajima. Microwave power combination using a bifurcated waveguide and a reflecting plate; *T-MTT Mar 89* 612-617
- Wang, N. L., N. H. Sheng, M. F. Chang, W. J. Ho, G. J. Sullivan, E. Sovero, J. A. Higgins, and P. M. Asbeck. High power efficiency X-band GaAlAs/GaAs HBT; *CORNEL 89 Abstr III/4*
- Wang, Nan-Lai, and Michael Cobb. Monolithic IMPATT oscillator characterization; *T-MTT Feb 89* 393-399
- Wang, Robert, see Bahl, Inder J., *MCS 89* 21-24
- Wang, Robert, see Bahl, Inder J., *T-MTT Dec 89* 2154-2158
- Wang, S. K., see Shih, Y. C., *MWSYM 89 Vol. 3* 1119-1120
- Wang, Te-Hui, see Wang, Weyl-Kuo, *MWSYM 89 Vol. 1* 491-494
- Wang, Te-Hui, see Tzuang, Ching-Kuang C., *MWSYM 89 Vol. 1* 495-498
- Wang, Te-Hui, see Wang, Weyl-Kuo, *T-MTT Dec 89* 1891-1897
- Wang, Wen I., see Tiwari, Sandip, *CORNEL 89 Abstr VI/6*
- Wang, Weyl-Kuo, Ching-Kuang C. Tzuang, Chun-Yi Shih, and Te-Hui Wang. Investigations of complex modes in a generalized bilateral finline with mounting grooves and finite conductor thickness; *MWSYM 89 Vol. 1* 491-494
- Wang, Weyl-kuo, Ching-Kuang C. Tzuang, Jiing-Shyue Chang, and Te-Hui Wang. Investigations of complex modes in a generalized bilateral finline with mounting grooves and finite conductor thickness; *T-MTT Dec 89* 1891-1897
- Wang, Yuniyi, Guan Ling Wang, and Yonghui Shu. Analysis and synthesis equations for edge-coupled suspended substrate microstrip line; *MWSYM 89 Vol. 3* 1123-1126
- Wang, Yuniyi, see Shu, Yonghui, *MWSYM 89 Vol. 3* 1211-1214
- Ward, A. L., see Tan, R. J., *MWSYM 89 Vol. 3* 1303-1306
- Watson, Nigel G., see Weiss, Jerald A., *MWSYM 89 Vol. 1* 145-148
- Weaver, Gary R., see Archer, John, *T-MTT Apr 89* 790-792
- Weaver, P., see Pond, J. M., *MWSYM 89 Vol. 1* 451-454
- Webb, J. P., see McDougall, Marc J., *T-MTT Nov 89* 1724-1731
- Webb, Kevin J., Eve A. Chauchard, Penny Polak-Dingels, Chi H. Lee, Hing-Loi Hung, and Thane Smith. A time-domain network analyzer which uses optoelectronic techniques; *MWSYM 89 Vol. 1* 217-220
- Webb, Kevin J., see Xu, Qiang, *T-MTT Feb 89* 381-387
- Webb, Kevin J., see Hung, Hing-Loi A., *T-MTT Aug 89* 1223-1231
- Webb, Kevin J., see Carin, Lawrence, *T-MTT Nov 89* 1784-1793
- Webb, Kevin J., see Huting, William A., *T-MTT Nov 89* 1802-1808
- Weichold, M. H., see Kinard, W. B., *CORNEL 89 Abstr V/5*
- Weichold, Mark H., see McGregor, Douglas S., *MWSYM 89 Vol. 1* 225-228
- Weigel, R., see Anemogiannis, K., *MWSYM 89 Vol. 1* 269-272
- Weimann, Günter, see Brockerhoff, Wolfgang, *T-MTT Sep 89* 1380-1388
- Weinreb, S., R. Harris, and M. Rothman. Millimeter-wave noise parameters of high performance HEMTs at 300 K and 17 K; *MWSYM 89 Vol. 2* 813-816
- Weinzierl, S., and J. P. Krusius. Optimization of the design of the heterojunction vertical field effect transistor using a two-dimensional self-consistent Monte Carlo method; *CORNEL 89 Abstr IV/7*
- Weiss, Jerald A., Nigel G. Watson, and Gerald F. Dionne. New uniaxial-ferrite millimeter-wave junction circulators; *MWSYM 89 Vol. 1* 145-148
- Weiss, M., see Ng, G. I., *CORNEL 89 Abstr II/4*
- Weller, J. F., see Esman, Ronald D., *T-MTT Oct 89* 1512-1518
- West, Russell G., see Chen, Seng-Woon, *MWSYM 89 Vol. 3* 1227-1230
- Whitaker, J. F., J. A. Valdmantis, T. A. Jackson, K. B. Bhasin, R. Romanofsky, and G. A. Mourou. External electro-optic probing of millimeter-wave integrated circuits; *MWSYM 89 Vol. 1* 221-224
- White, D. J., see Overfelt, P. L., *T-MTT Aug 89* 1267-1268
- White, K., see Vaughn, S., *MWSYM 89 Vol. 2* 801-804
- Whitson, D. W., M. J. Paulus, C. E. Stutz, E. Koenig, R. Neidhard, and E. Davis. An improved small signal QWITT diode model including quantum well carrier lifetime effects; *CORNEL 89 Abstr V/6*
- Wholey, J., see Kipnis, I., *MCS 89* 101-104
- Wholey, J., see Kipnis, I., *MWSYM 89 Vol. 1* 109-112
- Wholey, Jim, Issy Kipnis, and Craig Snapp. Silicon bipolar double balanced active mixer MMIC's for RF and microwave applications up to 6 GHz; *MCS 89* 133-137
- Wholey, Jim, Issy Kipnis, and Craig Snapp. Silicon bipolar balanced active mixer MMIC's for RF and microwave applications up to 6 GHz; *MWSYM 89 Vol. 1* 281-285
- Wiemer, Ludger, see Jansen, Rolf H., *MWSYM 89 Vol. 2* 779-782
- Wight, J. S., see Frien, E., *MWSYM 89 Vol. 2* 661-664
- Wight, J. S., see Smuk, J. W., *MWSYM 89 Vol. 3* 1195-1198
- Williams, D. A., see Wang, G. W., *MWSYM 89 Vol. 3* 1061-1064
- Williams, Dylan F., and David W. Paananen. Suppression of resonant modes in microwave packages; *MWSYM 89 Vol. 3* 1263-1265
- Williams, Dylan F. Damping of the resonant modes of a rectangular metal package (Short p.); *T-MTT Jan 89* 253-256
- Wilson, Philip G., and Richard D. Carver. An easy-to-use FET DRO design procedure suited to most CAD programs; *MWSYM 89 Vol. 3* 1033-1036
- Wilson, Philip G., and Brian C. Barnes. Millimetre-wave downconverter using monolithic technology for high volume application; *MWSYM 89 Vol. 3* 1099-1102
- Winslow, T. A., R. J. Trew, I. J. Bahl, A. E. Geissberger, and M. L. Balzan. The effects of P-co-implants upon the RF performance of ion-implanted GaAs power FETs; *MWSYM 89 Vol. 3* 1019-1022
- Withers, Richard S., see Dilorio, Mark S., *T-MTT Apr 89* 706-710
- Withington, Stafford, and Erik L. Kollberg. Spectral-domain analysis of harmonic effects in superconducting quasiparticle mixers; *T-MTT Jan 89* 231-238
- Wolff, I., see Schroeder, W., *MWSYM 89 Vol. 2* 711-714
- Wolff, Ingo, Dieter Kiefer, and Said S. Bedair. Considering some undesired effects due to dense packing in supported coplanar waveguide MMICs by using combined methods; *MWSYM 89 Vol. 2* 657-660
- Wolff, Ingo, see Bedair, Said S., *MWSYM 89 Vol. 3* 1127-1130
- Wolff, Ingo, see Gronau, Gregor, *T-MTT Mar 89* 479-483
- Wolff, Ingo, see Köther, Dietmar, *T-MTT Mar 89* 622-624
- Wolff, Ingo, see Bedair, Said S., *T-MTT May 89* 843-850
- Wolk, Dieter, see Rosenberg, Uwe, *MWSYM 89 Vol. 3* 1155-1158
- Wolk, Dieter, see Rosenberg, Uwe, *T-MTT Dec 89* 2011-2019
- Wong, Harry, see Archer, John, *T-MTT Apr 89* 790-792
- Wong, Sai-Chu, see Shillue, William P., *MWSYM 89 Vol. 2* 739-740
- Wood, C. E. C., see Tadavon, Bijan, *CORNEL 89 Abstr III/5*
- Worley, D., see Neylon, S., *MWSYM 89 Vol. 1* 519-522
- Wortman, D. E., see McMillan, R. W., *T-MTT Nov 89* 1828-1830
- Wright, P. D., see Wang, G. W., *MWSYM 89 Vol. 3* 1061-1064
- Wu, Boxiu, see Zhu, Lizhong, *T-MTT Sep 89* 1488-1491
- Wu, Chucheng, see Sun, Shiyong, *MWSYM 89 Vol. 1* 401-404
- Wu, Ke, and Ruediger Vahldieck. On the analysis of quasi-planar transmission lines in circular/elliptical waveguides using the method of lines; *MWSYM 89 Vol. 1* 503-506
- Wu, Ke, and Ruediger Vahldieck. The method of lines applied to planar transmission lines in circular and elliptical waveguides; *T-MTT Dec 89* 1958-1963
- Wu, Ke Li, Gilles Y. Delisle, Da Gang Fang, and Michel Lecours. Waveguide discontinuity analysis with a coupled finite-boundary element method; *T-MTT Jun 89* 993-998
- Wu, Ruey-Beel, see Shih, Chin, *T-MTT Apr 89* 793-795
- Wu, S., see Letavic, T. J., *MWSYM 89 Vol. 3* 969-972
- Wurtele, Marianne, see Kim, Bumman, *T-MTT Sep 89* 1327-1333
- Wypych, K. A., see Upton, M. A. G., *MCS 89* 105-109
- Wypych, K. A., see Upton, M. A. G., *MWSYM 89 Vol. 1* 193-197
- X
- Xia, Jiqing, Peter P. Toullos, and Carmine Vittoria. Propagation properties of ferromagnetic insular guide; *T-MTT Oct 89* 1547-1554
- Xu, Dezhong, see Deng, Minren, *MWSYM 89 Vol. 3* 1179-1181

- Xu, Qiang, Kevin J. Webb, and Raj Mittra. Study of modal solution procedures for microstrip step discontinuities; *T-MTT Feb 89* 381-387
- Xu, Shanqia, S. T. Peng, and F. K. Schwing. Effect of transition waveguides on dielectric waveguide directional couplers; *T-MTT Apr 89* 686-690
- Xuan, Yongnan, and Christopher M. Snowden. Optimal computer-aided design of monolithic microwave integrated oscillators (Short p.); *T-MTT Sep 89* 1481-1484
- Xun, Peijue. Spectral-domain immittance approach for the propagation constants of unilateral finlines with magnetized ferrite substrate (Short p.); *T-MTT Oct 89* 1647-1650

Y

- Yagita, Hideki, see Ishikawa, Osamu, *MWSYM 89 Vol. 3* 1183-1186
- Yam, Michael, see Wakamoto, Kouichi, *MWSYM 89 Vol. 3* 1023-1026
- Yamagishi, T., see Kobayashi, Y., *MWSYM 89 Vol. 3* 1239-1242
- Yamamoto, Kazuichi, and Masayoshi Tanaka. 50 W class multi-port amplifier for multi-beam satellite communications; *MWSYM 89 Vol. 3* 1281-1284
- Yamamoto, Masahiko, see Wakamoto, Kouichi, *MWSYM 89 Vol. 3* 1023-1026
- Yamashita, Eikichi, Hideyuki Ohashi, and Kazuhiko Atsuki. Simple CAD formulas of edge-compensated microstrip lines; *MWSYM 89 Vol. 1* 339-342
- Yamashita, Eikichi, see Nakajima, Masayuki, *MWSYM 89 Vol. 2* 719-722
- Yamashita, Eikichi, Hideyuki Ohashi, and Kazuhiko Atsuki. Characterization of microstrip lines near a substrate edge and design formulas of edge-compensated microstrip lines; *T-MTT May 89* 890-896
- Yanagawa, Shigeru, see Oda, Yuji, *MCS 89* 33-36
- Yanagawa, Shigeru, see Arai, Shigemitsu, *MWSYM 89 Vol. 3* 1105-1108
- Yanal, Hisayoshi, see Horio, Kazushige, *T-MTT Sep 89* 1371-1379
- Yang, Hung-Yu, Nicolaos G. Alexopoulos, and David R. Jackson. Microstrip open-end and gap discontinuities in a substrate-superstrate structure; *T-MTT Oct 89* 1542-1546
- Yang, L. W., see Wang, G. W., *MWSYM 89 Vol. 3* 1061-1064
- Yang, Ping, and Jingfeng Miao. An investigation of NRD waveguide grating; *MWSYM 89 Vol. 1* 499-502
- Yanokura, Eiji, Mitsuhiro Mori, Kenji Hiruma, and Susumu Takahashi. A new self-alignment technology for sub-quarter-micron-gate FET's operating in the Ka-band; *T-MTT Sep 89* 1466-1471
- Ye, S., see Bandler, J. W., *MWSYM 89 Vol. 2* 577-580
- Ye, Shen, see Bandler, John W., *T-MTT Dec 89* 2099-2108
- Yen, H. C., see Chow, P. D., *MWSYM 89 Vol. 2* 731-734
- Yen, H. W., see Newberg, I. L., *MWSYM 89 Vol. 2* 693-696
- Yin, Y., see Cooper, J. A., Jr., *CORNEL 89 Abstr V/7*
- Yip, G. L., and J. W. Jiang. Dispersion studies of a single-mode triangular-core fiber with a trench by the vector mode analysis; *MWSYM 89 Vol. 3* 1175-1178
- Yngvesson, K. Sigrid, T. L. Korzeniowski, Young-Sik Kim, Erik L. Kollberg, and Joakim F. Johansson. The tapered slot antenna — A new integrated element for millimeter-wave applications; *T-MTT Feb 89* 365-374
- Yonemura, Jeffrey Y., see Archer, John, *T-MTT Apr 89* 790-792
- Yoneyama, Tsukasa. Millimeter-wave transmitter and receiver using the nonradiative dielectric waveguide; *MWSYM 89 Vol. 3* 1083-1086
- Yoshida, Tomohiro, see Oda, Yuji, *MCS 89* 33-36
- Yoshida, Tomohiro, see Arai, Shigemitsu, *MWSYM 89 Vol. 3* 1105-1108
- Yoshikado, Shinzo, and Ichiro Taniguchi. Microwave complex conductivity of a square post in rectangular waveguide; *T-MTT Jun 89* 984-992
- You, T. S., see Kraszewski, A. W., *MWSYM 89 Vol. 1* 187-190
- Young, D., see Tsai, C. S., *MWSYM 89 Vol. 1* 303-306
- Young, Jeffrey L., and James R. Wait. Note on the impedance of a wire grid parallel to homogenous interface (Short p.); *T-MTT Jul 89* 1136-1138
- Yu, K. K., see Shih, Y. C., *MWSYM 89 Vol. 3* 1119-1120
- Yu, T. H., see Tessmer, A. J., *CORNEL 89 Abstr II/2*
- Yuen, C., C. Nishimoto, S. Bandy, and G. Zdasiuk. A monolithic 40-GHz HEMT low-noise amplifier; *MCS 89* 117-120
- Yuen, C., C. Nishimoto, S. Bandy, and G. Zdasiuk. A monolithic 40-GHz HEMT low-noise amplifier; *MWSYM 89 Vol. 1* 205-208
- Yuen, C., C. Nishimoto, S. Bandy, and G. Zdasiuk. Sensitivity of a 40 GHz HEMT low-noise amplifier to material and processing variations; *T-MTT Dec 89* 2169-2170
- Yuki, S., see Saito, S., *MWSYM 89 Vol. 1* 435-438
- Yun, Sang Won, Min Joon Lee, and Ik Soo Chang. Analysis of step discontinuities on planar dielectric waveguide containing a gyrotropic layer; *T-MTT Mar 89* 492-496

Z

- Zaki, Kawthar A., see Chen, Seng-Woon, *MWSYM 89 Vol. 3* 1227-1230
- Zaki, Kawthar A., see Chang, Hsin-Chin, *MWSYM 89 Vol. 3* 1231-1234
- Zargari, V., and T. C. Rao. Characteristic impedance of a tubular dielectric cylinder covered with conducting arc strips (Short p.); *T-MTT Oct 89* 1645-1647
- Zdasiuk, G., see Yuen, C., *MCS 89* 117-120
- Zdasiuk, G., see Yuen, C., *MWSYM 89 Vol. 1* 205-208
- Zdasiuk, G., see Riazati, M., *MWSYM 89 Vol. 2* 525-528
- Zdasiuk, G., see Yuen, C., *T-MTT Dec 89* 2169-2170
- Zebda, Y., see Li, W. Q., *CORNEL 89 Abstr VI/4*
- Zhang, Q. J., see Bandler, J. W., *MWSYM 89 Vol. 1* 363-366
- Zhang, Q. J., see Bandler, J. W., *MWSYM 89 Vol. 2* 577-580
- Zhang, Q. J., see Bandler, J. W., *MWSYM 89 Vol. 2* 649-652
- Zhang, Qi-Jun, see Bandler, John W., *T-MTT Dec 89* 2099-2108
- Zhang, Xiaohung, see Sun, Shiyang, *MWSYM 89 Vol. 1* 401-404

Zhang, Xiaolei, and Kenneth K. Mei. Time-domain calculation of microstrip components and the curve-fitting of numerical results; *MWSYM 89 Vol. 1* 313-316

Zheng, Dalian, see Michalski, Krzysztof A., *MWSYM 89 Vol. 2* 787-790

Zheng, Dalian, see Michalski, Krzysztof A., *T-MTT Dec 89* 2005-2010

Zheng, Wenxin. Computation of complex resonance frequencies of isolated composite objects; *T-MTT Jun 89* 953-961

Zheng, Wenxin. Direct and inverse resonance problems for shielded composite objects treated by means of the null-field method; *T-MTT Nov 89* 1732-1739

Zhu, Lizhong, Chuyu Sheng, and Boxiu Wu. Lumped lossy circuit synthesis and its application in broad-band FET amplifier design in MMIC's (Short p.); *T-MTT Sep 89* 1488-1491

SUBJECT INDEX

A

Absorbing media; cf. Electromagnetic propagation, absorbing media

Abstracts; cf. Patent abstracts

Accelerator power supplies; cf. Pulse power systems

Acoustic bulk-wave resonators

low-noise microwave signal generation; comparison of six types of acoustic and nonacoustic resonator/oscillators. Driscoll, M. M., *MWSYM 89 Vol. 1* 261-264

Acoustic ...; cf. Acoustic surface-wave ...

Acoustic resonators

low-noise microwave signal generation; comparison of six types of acoustic and nonacoustic resonator/oscillators. Driscoll, M. M., *MWSYM 89 Vol. 1* 261-264

Acoustic resonators; cf. Acoustic bulk-wave resonators; Acoustic surface-wave resonators

Acoustic surface-wave delay lines

oscillators using magnetostatic-wave active tapped delay lines and GaAs IC. Chen, Chang-Lee, +, *T-MTT Jan 89* 239-243

superconducting NbN frequency-tunable SAW filter and dispersion line at 700 MHz. Baum, H-P., +, *MWSYM 89 Vol. 2* 639-641

Acoustic surface-wave filters

reflection and charge-induced transducer end radiation in SAW filters on strongly coupling substrates. Baghai-Wadji, Ali R., +, *T-MTT Jan 89* 150-158

superconducting NbN frequency-tunable SAW filter and dispersion line at 700 MHz. Baum, H-P., +, *MWSYM 89 Vol. 2* 639-641

Acoustic surface-wave oscillators

9-GHz oscillator stabilized with surface transverse wave delay line. Hügli, Rolf, +, *MWSYM 89 Vol. 1* 265-268

low-noise microwave signal generation; comparison of six types of acoustic and nonacoustic resonator/oscillators. Driscoll, M. M., *MWSYM 89 Vol. 1* 261-264

Acoustic surface-wave pulse compression

wideband nonlinear chirp transducers for planar acoustooptic deflectors. Anemogiannis, K., +, *MWSYM 89 Vol. 1* 269-272

Acoustic surface-wave reflection

reflection and charge-induced transducer end radiation in SAW filters on strongly coupling substrates. Baghai-Wadji, Ali R., +, *T-MTT Jan 89* 150-158

Acoustic surface-wave resonators

low-noise microwave signal generation; comparison of six types of acoustic and nonacoustic resonator/oscillators. Driscoll, M. M., *MWSYM 89 Vol. 1* 261-264

Acoustic surface-wave signal processing; cf. Acoustic surface-wave filters;

Acoustic surface-wave pulse compression

Acoustic surface-wave transducers

reflection and charge-induced transducer end radiation in SAW filters on strongly coupling substrates. Baghai-Wadji, Ali R., +, *T-MTT Jan 89* 150-158

Acoustooptic deflectors

wideband nonlinear chirp transducers for planar acoustooptic deflectors. Anemogiannis, K., +, *MWSYM 89 Vol. 1* 269-272

Acoustooptic signal processing

magneto-optic interactions between guided optical waves and magnetostatic waves; device modules and applications to communications and signal processing. Tsai, C. S., +, *MWSYM 89 Vol. 1* 303-306

Active arrays

injection locking of active microstrip antenna elements for active phased arrays and spatial power combiners. Chang, Kai, +, *T-MTT Jul 89* 1078-1084

MMIC phase shifters and amplifiers for millimeter-wave active arrays. Dunn, V. E., +, *MWSYM 89 Vol. 1* 127-130

Active circuits

0.1-4.5-GHz GaAs MMIC quadrature phase shifter using FETs in RC all-pass network. Coget, Patricia, +, *MCS 89* 75-77

0.1-4.5-GHz GaAs MMIC quadrature phase shifter using FETs in RC all-pass network. Philippe, Pascal, +, *T-MTT Dec 89* 2119-2124

silicon bipolar balanced active mixer MMICs for RF and microwave applications up to 6 GHz. Wholey, Jim, +, *MWSYM 89 Vol. 1* 281-285

silicon bipolar double-balanced active mixer MMICs for UHF and microwave applications up to 6 GHz. Wholey, Jim, +, *MCS 89* 133-137

Active circuits, RC

correction to 'Broad-band monolithic microwave active inductor and its application to miniaturized wide-band amplifiers' (Dec 88 1920-1924). *Hara, Shinya*, +, *T-MTT* Jul 89 1155

Active circuits, RC; cf. Inductance simulation

Active filters

design concepts for microwave GaAs FET active filters for MMIC applications 2. *Sussman-Fort, Stephen E.*, *T-MTT* Sep 89 1418-1424
MMIC bandpass filter using lumped and transversal elements. *Schindler, M. J.*, +, *MCS* 89 57-60

MMIC bandpass filter using lumped and transversal elements. *Schindler, Manfred J.*, +, *T-MTT* Dec 89 2148-2153

Adaptive arrays

0.3-3-GHz monolithic vector modulator for adaptive array systems. *Truit, Austin*, +, *MWSYM* 89 Vol. 1 421-422

Adaptive systems; cf. Learning systems

Admittance measurement

spectral-domain immittance approach for propagation constants of unilateral finlines with magnetized ferrite substrate. *Xun, Peijue*, *T-MTT* Oct 89 1647-1650

wide transverse inductive metal strips in rectangular waveguide; variational analysis of discontinuity susceptance. *Chu, Bright H.*, +, *T-MTT* Jul 89 1138-1141

Admittance measurement; cf. Scattering parameters measurement

Agriculture

waveguide resonator technique for moisture content and dielectric properties measurements of seeds. *Kraszewski, A. W.*, +, *MWSYM* 89 Vol. 1 187-190

Aircraft detection and tracking

radar receiver subsystems for high-dynamic-range airborne tracking and fire-control. *Madni, Asad M.*, +, *T-MTT* Dec 89 1942-1948

radar receiver subsystems for high-dynamic-range airborne tracking and fire-control systems. *Madni, Asad M.*, +, *MWSYM* 89 Vol. 1 439-442

Aircraft fire-control systems

radar receiver subsystems for high-dynamic-range airborne tracking and fire-control. *Madni, Asad M.*, +, *T-MTT* Dec 89 1942-1948

radar receiver subsystems for high-dynamic-range airborne tracking and fire-control systems. *Madni, Asad M.*, +, *MWSYM* 89 Vol. 1 439-442

Aliasing; cf. Signal sampling/reconstruction

All-pass circuits

0.1-4.5-GHz GaAs MMIC quadrature phase shifter using FETs in RC all-pass network. *Coet, Patricia*, +, *MCS* 89 75-77

0.1-4.5-GHz GaAs MMIC quadrature phase shifter using FETs in RC all-pass network. *Philippe, Pascal*, +, *T-MTT* Dec 89 2119-2124

Alloys

techniques and materials for device alloy attachment with high reliability and throughput. *Pavio, Jeanne S.*, *MWSYM* 89 Vol. 2 761-764

AM noise

37.5-GHz-band FM and AM oscillator noise measurement using cavity resonator discriminator. *Deng, Minren*, +, *MWSYM* 89 Vol. 3 1179-1181

AM-PM conversion

AM-AM and AM-PM technique for measurement and simulation of memory effects in predistortion linearizers. *Bösch, Wolfgang*, +, *T-MTT* Dec 89 1885-1890

AM-AM and AM-PM technique for measurement of memory effects in predistortion linearizers. *Boesch, Wolfgang*, +, *MWSYM* 89 Vol. 3 885-888

Amplifier distortion

AM-AM and AM-PM technique for measurement and simulation of memory effects in predistortion linearizers. *Bösch, Wolfgang*, +, *T-MTT* Dec 89 1885-1890

AM-AM and AM-PM technique for measurement of memory effects in predistortion linearizers. *Boesch, Wolfgang*, +, *MWSYM* 89 Vol. 3 885-888

oscillation conditions in distributed 1-20-GHz monolithic MESFET amplifier. *Garnand, Patrice*, *T-MTT* Mar 89 637-640

power amplifier linearization using IF feedback. *Voyce, Kenneth G.*, +, *MWSYM* 89 Vol. 3 863-866

RF predistortion linearizer using balanced circulators; application to 256-QAM digital radio systems. *Imai, Nobuaki*, +, *T-MTT* Aug 89 1237-1243

Amplifier distortion; cf. Harmonic distortion

Amplifier noise

CAD and performance of ultra-wide-band GaAs FET amplifiers; effect of feedback on noise figure. *Sun, Shiyong*, +, *MWSYM* 89 Vol. 1 401-404

CAD program and equations for phase and amplitude noise analysis of component chains. *Riddle, Alf*, *MWSYM* 89 Vol. 1 359-362

effects of gain compression, bias conditions, and temperature on flicker phase noise of 8.5-GHz GaAs MESFET amplifier. *Lusher, C. P.*, +, *T-MTT* Mar 89 643-646

Amplifiers; cf. Differential amplifiers; Feedback amplifiers; Feedforward amplifiers; IF amplifiers; Injection-locked amplifiers; Logarithmic amplifiers; Phase-locked amplifiers; UHF amplifiers

Analog-digital conversion

flash A/D converter using InGaAs/InAlAs resonant-tunneling diodes. *Kuo, Tai-Haur*, +, *CORNEL* 89 Abstr V/2

Analog integrated circuits; cf. UHF FET integrated circuits

Anisotropic media; cf. Electromagnetic propagation, anisotropic media

Antenna arrays

gain optimization of near-field focusing array for hyperthermia applications. *Loane, Joseph T., III*, +, *T-MTT* Oct 89 1629-1635

Antenna arrays; cf. Active arrays; Adaptive arrays; Dipole arrays; Phased arrays; Slot arrays; Waveguide arrays

Antenna proximity factors

corrections to 'Mutual impedance between probes in a waveguide' (Jan 88 53-60). *Wang, Bai-Suo*, *T-MTT* May 89 932

wire and strip conductors over dielectric-coated conducting or dielectric half-space; complex wavenumber and characteristic impedance. *King, Ronold W. P.*, *T-MTT* Apr 89 754-760

Antennas; cf. Antenna arrays; Horn antennas; Leaky-wave antennas; Lens antennas; Probe antennas; Slot antennas; UHF antennas; VHF antennas; Waveguide antennas

Antimony materials/devices

p-HFETs with GaAsSb channel. *Tartillo, J.*, +, *CORNEL* 89 Abstr V/8

Aperture antennas; cf. Coaxial aperture antennas; Horn antennas; Slot antennas; UHF antennas; Waveguide antennas

Approximation methods

characteristic impedance approximation for coaxial lines with circular inner conductor and polygonal outer conductor. *Estévez, H.*, +, *T-MTT* Mar 89 634-637

Approximation methods; cf. Curve fitting; Least-squares methods

Array processing; cf. Adaptive arrays

Arrays

quasi-optical watt-level millimeter-wave monolithic BIN diode grid frequency multipliers. *Hwu, R. J.*, +, *MWSYM* 89 Vol. 3 1069-1072

Arrays; cf. Antenna arrays

Arteries; cf. Blood vessels

Astronomy; cf. Radio astronomy

Attenuation measurement

attenuation compensation in distributed amplifier design using negative-resistive circuit 2. *Deibele, Steve*, +, *T-MTT* Sep 89 1425-1433

comments on 'Attenuation measurement of very low loss dielectric waveguides by the cavity resonator method applicable in the millimeter/submillimeter wavelength range' by F. I. Shimabukuro. *Jablonski, D. G.*, +, *T-MTT* Mar 89 650-651 (Original paper, Jul 88 1160-1166)

full-wave analysis of conductor losses on MMIC transmission lines. *Heinrich, Wolfgang*, *MWSYM* 89 Vol. 3 911-914

insertion loss of electronically variable magnetostatic volume wave delay lines. *Bajpai, S. N.*, *T-MTT* Oct 89 1529-1535

microstrip ring resonator technique for measuring microwave attenuation in high- T_c superconducting thin films. *Takekoto, June H.*, +, *T-MTT* Oct 89 1650-1652

Attenuators; cf. UHF attenuators

Avalanche diodes; cf. IMPATT diodes

Awards

1989 IEEE Fellow Awards; 29 MTT-S members elected Fellows. *MWSYM* 89 17-18

1989 IEEE MTT-S Awards presented at 1989 International Microwave Symposium. *Rosenbaum, F. J.*, *T-MTT* Dec 89 1850-1856

1989 IEEE MTT-S Distinguished Service Award to Don Parker. *MWSYM* 89 15

1989 IEEE MTT-S Microwave Applications Award to Kenneth L. Carr. *MWSYM* 89 13

1989 IEEE MTT-S Microwave Career Award to Alexander L. Cullen. *MWSYM* 89 12

1989 IEEE MTT-S Microwave Career Award to Harry F. Cooke. *MWSYM* 89 11

1989 IEEE MTT-S Microwave Prize to Stephen A. Maas. *MWSYM* 89 14

1989 IEEE MTT-S N. Walter Cox Service Award to Richard A. Sparks. *MWSYM* 89 16

B**Baluns**

MMIC triformer, planar three-line Ruthroff transformer for wideband balun. *Boulouard, Andre*, +, *T-MTT* Aug 89 1257-1260

Bandpass filters

33 GHz and 94 GHz E-plane integrated bandpass filters using inductively coupled stopband sections. *Bornemann, Jens*, *MWSYM* 89 Vol. 2 599-602

asymmetrical unilateral finline; characterization and application in 20-GHz bandpass filter and 4/20-GHz mixer. *Espes, Patrick*, +, *T-MTT* Feb 89 289-298

capacitively compensated high-performance parallel coupled microstrip filters with improved passband symmetry. *Bahl, Inder J.*, *MWSYM* 89 Vol. 2 679-682

computer-aided design of evanescent-mode waveguide bandpass filter with non touching E-plane fins. *Kong, K. S.*, +, *MWSYM* 89 Vol. 3 1159-1162

computer-aided design of evanescent-mode waveguide bandpass filter with nontouching E-plane fins. *Kong, Keon-Shik*, +, *T-MTT* Dec 89 1998-2004

evanescent-mode E-plane finned waveguide microwave and millimeter-wave bandpass filter design. *Bornemann, Jens*, +, *MWSYM* 89 Vol. 2 603-606

MMIC active filter using lumped and transversal elements. *Schindler, M. J.*, +, *MCS* 89 57-60

MMIC active filter using lumped and transversal elements. *Schindler, Manfred J.*, +, *T-MTT* Dec 89 2148-2153

quasi-planar filters for millimeter-wave applications using ladder-shaped E-plane structures. *Vahldieck, Ruediger*, *T-MTT* Feb 89 324-334

thin-film lumped-element microwave filters; lowpass, bandpass, and pseudo-elliptic microstrip designs. *Swanson, Dan*, *MWSYM* 89 Vol. 2 671-674

Bandstop filters

800-MHz-band dielectric receiving filter with sharp stopband using active feedback resonator approach. *Nishikawa, Toshio*, +, *T-MTT* Dec 89 2074-2079

- 800-MHz-band dielectric receiving filter with sharp stopband using active feedback resonator method for cellular base stations. *Ishikawa, Youhei*, +, *MWSYM 89 Vol. 2* 591-594
- filter characteristics of nonradiating dielectric (NRD) waveguide gratings. *Yang, Ping*, +, *MWSYM 89 Vol. 1* 499-502
- quasi-planar filters for millimeter-wave applications using ladder-shaped E-plane structures. *Vahldieck, Ruediger*, *T-MTT Feb 89* 324-334
- Barium materials/devices**; cf. Superconducting films
- Beam focusing**; cf. Focusing
- Beam steering**
- 32-GHz six-element linear beam-steered transmitter array using MMIC phase shifters and power amplifiers. *Riley, A. L.*, +, *MCS 89* 65-68
- 32-GHz six-element linear-beam-steered transmitter array using MMIC phase shifters and power amplifiers. *Rascoe, D. L.*, +, *T-MTT Dec 89* 2165-2168
- Bearings (direction-finding)**; cf. Radar position measurement
- Beryllium materials/devices**
- Be-diffusion reduction in GaAs through migration-enhanced epitaxy. *Tadayon, Bijan*, +, *CORNEL 89 Abstr III/5*
- Bibliographies**
- microwave radiometry; its importance to the detection of cancer. *Carr, Kenneth L.*, *T-MTT Dec 89* 1862-1869
- modeling methodologies for passive microwave and millimeter-wave components; recent European developments. *Sorrentino, Roberto*, *MWSYM 89 Vol. 2* 613-616
- open-ended coaxial exposure device for applying RF/microwave fields to very small biological preparations. *Seaman, Ronald L.*, +, *T-MTT Jan 89* 102-111
- selected technology summary for microwave computer-aided design; technical advances in 9 areas of interest (110 references) 1984-1988. *Horton, John B.*, *T-MTT Jun 89* 1040-1053
- Seymour B. Cohn's contributions to microwave engineering; overview. *Mathaei, George L.*, *MWSYM 89 Vol. 2* 745-748, 757-758
- Biological radiation effects, electromagnetic**
- field distributions in arbitrarily shaped heterogeneous dielectric or biological body, using iterative conjugate-gradient method. *Wang, Johnson J. H.*, +, *T-MTT Jul 89* 1119-1125
- iterative moment method computation of electromagnetic effects on large biological bodies. *Wang J. J. H.*, +, *MWSYM 89 Vol. 1* 183-186
- iterative moment-method computation of electromagnetic fields in large biological bodies. *Wang, Johnson J. H.*, +, *T-MTT Dec 89* 1918-1923
- Biological radiation effects, electromagnetic**; cf. Biomedical radiation applications, electromagnetic
- Biological thermal factors**; cf. Hyperthermia
- Biological tissues**
- power coupling from waveguide hyperthermia applicator into three-layered tissue model at 432 MHz and 144 MHz. *Nikita, Konstantina S.*, +, *T-MTT Nov 89* 1794-1801
- Biological tissues**; cf. Blood vessels
- Biomedical electrodes**; cf. Implantable electrodes
- Biomedical imaging, electromagnetic**
- microwave radiometry; its importance to the detection of cancer. *Carr, Kenneth L.*, *T-MTT Dec 89* 1862-1869
- Biomedical imaging, infrared**
- hot-spot imaging using correlation radiometers with circular synthetic aperture. *Schaller, Gerd*, *T-MTT Aug 89* 1210-1216
- solution method for inverse problems with measurement errors; application to medical microwave radiometry. *Mizushima, Shizuo*, +, *MWSYM 89 Vol. 1* 171-174
- Biomedical radiation applications, electromagnetic**
- electromagnetic deposition of parallel-plate dielectric heater leakage fields in anatomically based human model. *Chen, Jin-Yuan*, +, *T-MTT Jan 89* 174-180
- microstrip resonator with dielectric protective layer radiating into human body. *Pribetich, J.*, +, *MWSYM 89 Vol. 1* 179-182
- open-ended coaxial exposure device for applying RF/microwave fields to very small biological preparations. *Seaman, Ronald L.*, +, *T-MTT Jan 89* 102-111
- percutaneous transluminal microwave angioplasty catheter; effects on arterial tissue. *Rosen, A.*, +, *MWSYM 89 Vol. 1* 167-170
- Biomedical radiation applications, electromagnetic**; cf. Hyperthermia
- Bipolar transistors**
- Auger HBT; analytical theory and 1-D time-dependent large-signal simulation. *Tiwari, Sandip*, +, *CORNEL 89 Abstr VI/6*
- integrated high-gain double heterojunction GaAs bipolar transistors with LED for neural net array. *Liu, S. H.*, +, *CORNEL 89 Abstr VI/3*
- Bipolar transistors**; cf. Tunnel transistors
- Blood vessels**
- percutaneous transluminal microwave angioplasty catheter; effects on arterial tissue. *Rosen, A.*, +, *MWSYM 89 Vol. 1* 167-170
- Boundary-element methods**
- combined finite-element and boundary-element methods for waveguide discontinuity analysis. *Wu, Ke Li*, +, *T-MTT Jun 89* 993-998
- discontinuities in open dielectric slab waveguides; combined finite-element and boundary-element methods. *Hirayama, Koichi*, +, *T-MTT Apr 89* 761-768
- equivalent circuits for dielectric posts in rectangular waveguide; combined finite-element and boundary-element methods formulation. *Ise, Kiyoshi*, +, *T-MTT Nov 89* 1823-1825
- Boundary integral equations**
- hybrid-mode boundary integral method for analyzing MMIC waveguides of complicated crosssection. *Schroeder, W.*, +, *MWSYM 89 Vol. 2* 711-714
- mathematical formulation of equivalence principle. *Chen, Kun-Mu*, *T-MTT Oct 89* 1576-1581
- vectorial wave analysis of uniform-core optical fibers using extended boundary integral method. *Kishi, Naoto*, +, *T-MTT Mar 89* 526-533

Boundary integral methods; cf. Resistance calculations

Bragg scattering

magneto-optic interactions between guided optical waves and magnetostatic waves; device modules and applications to communications and signal processing. *Tsai, C. S.*, +, *MWSYM 89 Vol. 1* 303-306

Breakdown; cf. Semiconductor device breakdown

Bremsstrahlung

magnetic bremsstrahlung radiation sources using Meissner effect of high- T_c superconductors. *Boden, A. F.*, +, *MWSYM 89 Vol. 1* 455-458

Broadcasting; cf. TV broadcasting

Bulk waves; cf. Magnetostatic volume waves

C

Cables; cf. Coaxial transmission lines

CAD (computer-aided design); cf. Design automation

Calibration

measurement and calibration of universal six-port network analyzer. *Lin, Weigan*, +, *T-MTT Apr 89* 734-742

Calibration; cf. Measurement

Cancer

microwave radiometry; its importance to the detection of cancer. *Carr, Kenneth L.*, *T-MTT Dec 89* 1862-1869

Capacitance calculations

CAD formulas for edge-compensated microstrip lines used in MMICs; rectangular boundary division methods for capacitive proximity effects. *Yamashita, Eikichi*, +, *MWSYM 89 Vol. 1* 339-342

capacitance matrix of multiconductor transmission line in multilayered dielectric medium; calculation from integral equation formula. *Delbare, W.*, +, *MWSYM 89 Vol. 3* 1013-1016

corrections to 'An analytical solution for the coupled stripline-like microstrip line problem' (Jun 88 1002-1007). *Homentcovski, D.*, +, *T-MTT Jun 89* 1061

cylindrical multiconductor stripline-like microstrip transmission line; analytical expressions for Maxwell capacitance matrix. *Homentcovski, Doré*, *T-MTT Mar 89* 497-503

expansions for capacitance of cross concentric with circle, with application. *Riblet, Henry J.*, *T-MTT Nov 89* 1821-1823

lumped capacitance and open-end effects of stripline structures in multilayered and anisotropic substrates; calculation using variational techniques in spectral domain. *Boix, Rafael R.*, +, *T-MTT Oct 89* 1523-1528

microstrip open-end and gap discontinuities in a substrate-superstrate structure. *Yang, Hung-Yu*, +, *T-MTT Oct 89* 1542-1546

space-domain Green's function approach for capacitance calculation of multiconductor lines in multilayered dielectrics with improved surface charge modeling. *Delbare, Wim*, +, *T-MTT Oct 89* 1562-1568

Capacitor-compensated transmission lines

capacitively compensated high-performance parallel coupled microstrip filters with improved passband symmetry. *Bahl, Inder J.*, *MWSYM 89 Vol. 2* 679-682

Capacitors; cf. Thin-film capacitors

Cardiovascular system; cf. Blood vessels

Carrier processes; cf. Charge-carrier processes

Cascade circuits

balanced cascade 26-40 GHz amplifier; design, fabrication and performance. *McCann, D. M. F.*, *MWSYM 89 Vol. 3* 845-848

cascade of microstrip step discontinuities; experimental investigation. *Rautio, James C.*, *T-MTT Nov 89* 1816-1818

Cascade systems

alternate forms of generalized composite scattering matrix. *Overfelt, P. L.*, +, *T-MTT Aug 89* 1267-1268

Cavities

optimizing combining efficiency when using oversized cylindrical cavity multiple-device structures. *Tanaka, Satoshi*, +, *T-MTT Nov 89* 1755-1760

Cavity perturbation methods

comments on 'Attenuation measurement of very low loss dielectric waveguides by the cavity resonator method applicable in the millimeter/submillimeter wavelength range' by F. I. Shimabukuro. *Jablonski, D. G.*, +, *T-MTT Mar 89* 650-651 (Original paper, Jul 88 1160-1166)

high- T_c cylindrical superconductors; surface resistance measurement technique using microwave resonator cavity. *Aida, Kazuo*, +, *MWSYM 89 Vol. 2* 559-562

high- T_c superconductor 3-90-GHz conductivity measurements; materials' uses in linear devices. *Chaloupka, H.*, +, *MWSYM 89 Vol. 2* 547-550

NIST (US National Institute of Standards and Technology) dielectric measurement capability using mode-filtered cylindrical cavity. *Vanzura, Eric J.*, +, *MWSYM 89 Vol. 3* 901-904

Cavity-resonator filters; cf. Waveguide filters

Cavity resonators

cavity resonator measurement method for leaky waveguides. *Oliner, Arthur A.*, +, *T-MTT Mar 89* 618-621

damping resonant modes of rectangular metal packages. *Williams, Dylan F.*, *T-MTT Jan 89* 253-256

loop-gap resonator's resonance characteristics and analysis considering fringing fields. *Mehdizadeh, Mehrdad*, +, *T-MTT Jul 89* 1113-1118

resonant frequencies in complex waveguide cavity; determination using S-matrix formulation. *Neilson, Jeff M.*, +, *T-MTT Aug 89* 1165-1170

- shift of complex resonance frequency of dielectric-loaded cavity produced by small sample insertion holes. *Gauthier, Sylvain*, +, *T-MTT Apr 89* 801-804
- waveguide resonator technique for moisture content and dielectric properties measurements of seeds. *Kraszewski, A. W.*, +, *MWSYM 89 Vol. 1* 187-190
- Cavity resonators; cf. Cavity perturbation methods; Dielectric resonators**
- Ceramic materials/devices**
broadband power amplifiers based on monolithic ceramic technology. *Sechl, F. N.*, +, *MWSYM 89 Vol. 3* 937-940
- Charge-carrier processes**
Be-diffusion reduction in GaAs through migration-enhanced epitaxy. *Tadayon, Bijan*, +, *CORNEL 89 Abstr III/5*
- characterization of Si- and SiGe-base bipolar transistors for high frequency and high speed applications; basic transport and design. *Hinckley, J. M.*, +, *CORNEL 89 Abstr III/2*
- electron dynamics and device physics of short-channel HEMTs; transverse-domain formation, velocity overshoot, and short-channel effects. *Awano, Yuji*, +, *CORNEL 89 Abstr II/1*
- noise modeling for two-dimensional electron gas FETs based on accurate charge control characteristics. *Ando, Yuji*, +, *CORNEL 89 Abstr II/9*
- nonlinear charge control DC and transmission-line models for GaAs MODFETs. *Huang, Di-Hui*, +, *MWSYM 89 Vol. 1* 417-420
- quantum-well resonant-tunneling transistors; transport properties and physical characteristics. *Seabaugh, Alan C.*, *CORNEL 89 Abstr V/1*
- Chirp modulation**
tapped superconducting stripline chirp filter with 2.6-GHz bandwidth. *Dilorio, Mark S.*, +, *T-MTT Apr 89* 706-710
- Chirp modulation; cf. Acoustic surface-wave pulse compression**
- Circuit noise**
millimeter-wave noise parameters of high-performance HEMTs at 300 K and 17 K. *Weinreb, S.*, +, *MWSYM 89 Vol. 2* 813-816
- Circuit noise; cf. Amplifier noise; Filter noise**
- Circuit optimization**
doping profile optimization in silicon PBTs for high-frequency, high-voltage operation. *Rathman, D. D.*, +, *CORNEL 89 Abstr III/7*
- optimizing design of heterojunction vertical FET using 2-D self-consistent Monte Carlo method. *Weinzierl, S.*, +, *CORNEL 89 Abstr IV/7*
- parameter extraction of microwave transistors using tree annealing. *Bilbro, Griff L.*, +, *CORNEL 89 Abstr IV/2*
- Circuit optimization; cf. Design centering; Tuning; Yield optimization**
- Circuit simulation**
general planar circuit simulation using 2-D transmission-line matrix method. *So, Poman P. M.*, +, *MWSYM 89 Vol. 1* 343-346
- general planar circuit simulation using 2-D transmission line matrix method. *So, Poman P. M.*, +, *T-MTT Dec 89* 1877-1884
- Circuit transient analysis**
general planar circuit simulation using 2-D transmission-line matrix method. *So, Poman P. M.*, +, *MWSYM 89 Vol. 1* 343-346
- general planar circuit simulation using 2-D transmission line matrix method. *So, Poman P. M.*, +, *T-MTT Dec 89* 1877-1884
- large-signal transient analysis of multiple tuned injection-locked amplifiers with modulated input signal. *Cálandra, Enrico F.*, +, *T-MTT May 89* 826-835
- Circuit tuning; cf. Tuning**
- Circuits; cf. All-pass circuits; Cascade circuits; Impedance matching; Inductance simulation; Lossy circuits; Phase shifters; Scattering parameters; Two-port circuits**
- Circular waveguides**
finlines in rectangular and circular waveguide housings including substrate mounting and bending effects; finite-element analysis. *Eswarappa*, +, *T-MTT Feb 89* 299-306
- mutual impedance between probes in circular waveguide using dyadic Green's function with reaction theorem. *Wang, Bai-Suo*, *T-MTT Jun 89* 1006-1012
- narrow-wall axial-slot-coupled T-junction between rectangular and circular waveguides; moment-method formulation of scattering matrix elements. *Das, B. N.*, +, *T-MTT Oct 89* 1590-1596
- parallel running system of three oscillators coupled through six-port magic junction feeding coaxial and circular waveguides. *Ohia, Isao*, +, *T-MTT Nov 89* 1699-1707
- quasiplanar transmission lines within circular or elliptical waveguides; method of lines formulation. *Wu, Ke*, +, *MWSYM 89 Vol. 1* 503-506
- quasiplanar transmission lines within circular or semicircular/elliptical waveguides; method of lines formulation. *Wu, Ke*, +, *T-MTT Dec 89* 1958-1963
- Vlasov mode converters; design and low-power testing. *Ruth, B. G.*, +, *MWSYM 89 Vol. 3* 1277-1280
- Circulators; cf. Ferrite circulators**
- Coaxial aperture antennas**
open-ended coaxial exposure device for applying RF/microwave fields to very small biological preparations. *Seaman, Ronald L.*, +, *T-MTT Jan 89* 102-111
- Coaxial cables**
field solution and propagation characteristics of monofilar-bifilar modes of axially slotted coaxial cable. *Hassan, Essam E.*, *T-MTT Mar 89* 553-557
- Coaxial transmission-line discontinuities**
coaxial-to-shielded microstrip line transition; rigorous mode-matching analysis. *Capsalis, Christos*, +, *T-MTT Jul 89* 1091-1098
- DC to 40 GHz coaxial-to-microstrip transition for 100- μ m-thick GaAs substrates. *Chenkin, Joseph*, *T-MTT Jul 89* 1147-1150
- Coaxial transmission lines**
approximation method for characteristic impedance of coaxial lines with circular inner conductor and polygonal outer conductor. *Estévez, H.*, +, *T-MTT Mar 89* 634-637
- cutoff of first higher-order mode in coaxial line; determination using transverse-resonance technique. *Green, Harry E.*, *T-MTT Oct 89* 1652-1653
- Coaxial transmission lines; cf. Leaky-wave antennas**
- Coaxial waveguides**
parallel running system of three oscillators coupled through six-port magic junction feeding coaxial and circular waveguides. *Ohia, Isao*, +, *T-MTT Nov 89* 1699-1707
- Coaxial waveguides; cf. Coaxial aperture antennas**
- Cochannel interference**
tuning characteristics of Gunn injection-locked microwave oscillator; effects due to cochannel signal. *Biswas, B. N.*, +, *T-MTT Mar 89* 627-630
- Cohn, Seymour B.**
contributions of Seymour B. Cohn in design of slotline and equiripple optimization. *Huntion, J. K.*, *MWSYM 89 Vol. 2* 753-755, 757-758
- overview of special session in honor of Dr. Seymour B. Cohn. *La Tourrette, Peter M.*, *T-MTT Dec 89* 1857-1861
- Seymour B. Cohn's contributions to microwave engineering; overview. *Mauhaei, George L.*, *MWSYM 89 Vol. 2* 745-748, 757-758
- Coils; cf. Transformers**
- Communication satellites; cf. Satellite communication**
- Comparators**
8-port microstrip-slotline symmetrical planar comparator circuit. *Riblet, G. P.*, *MWSYM 89 Vol. 1* 239-242
- Computer-aided design; cf. Design automation**
- Conducting films; cf. Superconducting films**
- Conducting strips; cf. Strip conductors**
- Conduction bodies; cf. Cylinders**
- Conductivity measurement**
high- T_c superconductor 3-90-GHz conductivity measurements; materials' uses in linear devices. *Chaloupka, H.*, +, *MWSYM 89 Vol. 2* 547-550
- microwave complex conductivity of square dielectric post in rectangular waveguide. *Yoshikado, Shinzo*, +, *T-MTT Jun 89* 984-992
- permittivity and conductivity profiles of microwave semiconducting materials using optimized iterative method. *Hindy, Moataza A.*, *T-MTT May 89* 922-925
- Coplanar transmission lines**
100-GHz on-wafer *S*-parameter measurements using electrooptic sampling; application to coplanar waveguide characterization. *Majidi-Ahy, R.*, +, *MWSYM 89 Vol. 1* 299-302
- amplifier and frequency doubler monolithic millimeter-wave CPW circuits using 0.25- μ m-gate AlGaAs HEMT. *Riazat, M.*, +, *MWSYM 89 Vol. 2* 525-528
- analysis of coplanar waveguide using FDTD method. *Liang, G. C.*, +, *MWSYM 89 Vol. 3* 1005-1008
- analysis of coplanar waveguides and slotlines using time-domain finite-difference method. *Liang, Guo-Chun*, +, *T-MTT Dec 89* 1949-1957
- broadside-coupled coplanar waveguide for MICs/MMICs; analytic characterization formulas for quasistatic TEM parameters. *Bedair, Said S.*, +, *T-MTT May 89* 843-850
- channelized coplanar waveguide; discontinuities, junctions, and propagation characteristics. *Simons, Rance N.*, +, *MWSYM 89 Vol. 3* 915-918
- coplanar waveguide vector network analyzer for on-wafer measurements at millimeter-wave frequencies. *Bellantoni, J. V.*, +, *CORNEL 89 Abstr IV/3*
- electromagnetic coupling of coplanar waveguides and microstrip lines to multilayer lossy dielectric media. *Iskander, Magdy F.*, +, *T-MTT Dec 89* 1910-1917
- electromagnetic coupling of microstrip lines and coplanar waveguides to multilayer lossy media; spectral-domain analysis. *Iskander, M. F.*, +, *MWSYM 89 Vol. 1* 175-178
- exact solutions for shielded microstrip lines using Carleman-Vekua method. *Fikioris, John G.*, +, *T-MTT Jan 89* 21-33
- hybrid-mode boundary integral method for analyzing MMIC waveguides of complicated crosssection. *Schroeder, W.*, +, *MWSYM 89 Vol. 2* 711-714
- MIC coplanar waveguide/slotline double-balanced mixer. *Cahana, David*, *MWSYM 89 Vol. 3* 967-968
- mode conversion at discontinuities in finite-width conductor-backed coplanar waveguide. *Jackson, Robert W.*, *T-MTT Oct 89* 1582-1589
- nonsymmetrically coplanar waveguides for millimeter-wave uses; theoretical and experimental characterization. *Alessandri, E.*, +, *MWSYM 89 Vol. 3* 1219-1222
- nonsymmetrically shielded coplanar waveguides for millimeter-wave uses; theoretical and experimental characterization. *Alessandri, Ferdinando*, +, *T-MTT Dec 89* 2020-2027
- on-wafer probe techniques for characterizing millimeter-wave MMICs using coplanar waveguide-microstrip transition data. *Dawe, G.*, +, *MWSYM 89 Vol. 1* 413-415
- optically controlled coplanar waveguide phase-shifter. *Cheung, P.*, +, *MWSYM 89 Vol. 1* 307-309
- optoelectronic measurements of picosecond electrical pulse propagation in coplanar waveguide. *Paulter, Nicholas G.*, +, *T-MTT Oct 89* 1612-1619
- photoinduced wave attenuation in semiconductor coplanar waveguides; quasistatic analysis using conformal mapping. *Platte, Walter*, +, *T-MTT Jan 89* 139-149
- Q-band coplanar waveguide amplifier; comparison with microstrip amplifier. *Dow, G. S.*, +, *MWSYM 89 Vol. 2* 809-812
- quasi-planar transmission lines; overview. *Itoh, Tatsuo*, *T-MTT Feb 89* 275-280
- radiating end effects of symmetric and asymmetric coplanar waveguide, using integral equations technique. *Drissi, M.*, +, *MWSYM 89 Vol. 2* 791-794

- surface-to-surface transition via electromagnetic coupling of microstrip and coplanar waveguide. *Burke, John J.*, +, *T-MTT Mar 89* 519-525
- undesired effects due to dense packing in supported coplanar waveguide MMICs using combined methods. *Wolff, Ingo*, +, *MWSYM 89 Vol. 2* 657-660
- variational method for line inductances of planar transmission lines with anisotropic magnetic media. *Kitazawa, Toshihide*, *T-MTT Nov 89* 1749-1754
- W-band coplanar waveguide test fixture using finline tapers from rectangular to coplanar waveguides. *Bellani, J. V.*, +, *MWSYM 89 Vol. 3* 1203-1204
- Coplanar transmission lines; cf. MMIC ...**
- Correlation; cf. Spectral analysis**
- Correlators**
- hot-spot imaging using correlation radiometers with circular synthetic aperture. *Schaller, Gerd*, *T-MTT Aug 89* 1210-1216
- Corrugated surfaces; cf. Electromagnetic scattering, periodic structures**
- Corrugated waveguides**
- scattering matrix of ring-loaded corrugated waveguide mode converters. *Da Silva, Luiz C.*, *T-MTT Mar 89* 646-649
- variational analysis of dielectrically loaded multidepth corrugated waveguides. *Oksanen, Markku I.*, *T-MTT Jan 89* 191-197
- Counting circuits**
- DCFL (direct-coupled FET logic) ultra-high-speed frequency divider using 0.25- μ m-gate HEMTs. *Ichio, T.*, +, *MCS 89* 61-64
- Coupled-mode analysis**
- asymmetrical coupled image guides; generalized theory in terms of two superposed modes. *Köther, Dietmar*, +, *T-MTT Mar 89* 622-624
- electromagnetic structures; wave-mode coupling equations at step discontinuity using planar-circuit theory. *Hsu, Jui-Pang*, +, *MWSYM 89 Vol. 3* 1135-1138
- finline loaded with arbitrary nonhomogeneous lossy dielectric; coupled-mode analysis. *Mazur, Jerzy*, +, *T-MTT Feb 89* 281-288
- infinite elements for analysis of open dielectric waveguides. *McDougall, Marc J.*, +, *T-MTT Nov 89* 1724-1731
- mode coupling in longitudinally magnetized waveguiding structures based on two coupled guides. *Mazur, Jerzy*, +, *T-MTT Jan 89* 159-165
- T-septum waveguide bandwidth properties; transmission-line modeling for separation of TE₁₀ and hybrid TE₂₀ modes. *German, Fred J.*, +, *T-MTT May 89* 917-919
- two-way and three-way warped-mode microstrip combine directional coupler design technique. *Islam, Saiful*, *T-MTT Jan 89* 34-42
- Coupled transmission lines**
- algorithm for computer-aided design of coupled slab lines. *Rosloniec, Stanislaw*, *T-MTT Jan 89* 258-261
- asymmetrical coupled image guides; generalized theory in terms of two superposed modes. *Köther, Dietmar*, +, *T-MTT Mar 89* 622-624
- circuit parameters for single and coupled microstrip lines using rigorous full-wave space-domain analysis. *Faché, Niels*, +, *T-MTT Feb 89* 421-425
- comments, with reply, on 'Analysis of nonreciprocal coupled image lines' by D. B. Sillars and L. E. Davis. *Mazur, Jerzy*, +, *T-MTT Jan 89* 262 (Original paper, Jul 87 629-635)
- complex modes in shielded planar microstrip lines using spectral-domain approach. *Tzuang, Ching-Kuang C.*, +, *MWSYM 89 Vol. 1* 495-498
- conformal mapping for calculating quasi-TEM parameters of cylindrical, wrapped, and coupled lines. *Bedair, Said S.*, +, *MWSYM 89 Vol. 3* 1127-1130
- corrections to 'An analytical solution for the coupled stripline-like microstrip line problem' (Jun 88 1002-1007). *Homencovschi, D.*, +, *T-MTT Jan 89* 1061
- design of systems based on three coupled equal-mode-impedance microstrip lines. *El-Deeb, Nabil A.*, *T-MTT Apr 89* 795-798
- distortion of transient signals on multilayer coupled symmetric microstrip transmission lines. *Gilb, James P.*, +, *MWSYM 89 Vol. 3* 1001-1004
- edge-coupled elliptical (oval) rods between infinite ground planes; even-mode and odd-mode impedances. *Rao, Kodukula V. S.*, +, *T-MTT Aug 89* 1260-1263
- edge-coupled suspended-substrate microstrip line; dispersion analysis and synthesis equations. *Wang, Yunyi*, +, *MWSYM 89 Vol. 3* 1123-1126
- eliminating ringing signals for lossless multisection transmission lines. *Hsue, Ching-Wen*, *T-MTT Aug 89* 1178-1183
- exact solutions for shielded microstrip lines using Carleman-Vekua method. *Fikioris, John G.*, +, *T-MTT Jan 89* 21-33
- high-frequency conductor and dielectric losses in interconnects made of multilayer planar structures using strip conductors. *van Deventer, T. Emilie*, +, *T-MTT Dec 89* 1964-1972
- high frequency conductor and dielectric losses in shielded microstrip using integral equation formulation. *van Deventer, T. E.*, +, *MWSYM 89 Vol. 3* 919-922
- ideal asymmetric-line microstrip directional couplers; analysis and design for planar and layered structures. *Emery, T.*, +, *MWSYM 89 Vol. 1* 329-332
- inductively-coupled superconducting microstrip; propagation characteristics. *Pond, J. M.*, +, *MWSYM 89 Vol. 1* 451-454
- metallization thickness' effect of striplines with anisotropic media; quasi-static and hybrid-mode analysis. *Kitazawa, Toshihide*, *T-MTT Apr 89* 769-775
- mode coupling in longitudinally magnetized waveguiding structures based on two coupled guides. *Mazur, Jerzy*, +, *T-MTT Jan 89* 159-165
- nonreciprocal operation of structures consisting of coupled ferrite lines with longitudinal magnetization. *Mazur, Jerzy*, +, *T-MTT Jun 89* 1012-1020
- propagation properties of striplines periodically loaded with crossing strips; spectral domain dyadic Green's function formulation. *Kiang, Jean-Fu*, +, *T-MTT Apr 89* 776-786
- pulse distortion on multilayer coupled microstrip lines. *Gilb, James P.*, +, *T-MTT Oct 89* 1620-1628
- relaxation analysis of lossy coupled transmission lines; simulating transient response from equivalent disjoint lumped networks. *Chang, Fung-Yueh*, *MWSYM 89 Vol. 2* 653-656
- relaxation analysis of lossy coupled transmission lines; simulating transient response from equivalent disjoint lumped networks. *Chang, Fung-Yueh*, *T-MTT Dec 89* 2028-2038
- spectral-domain computation of characteristic impedances and multiport parameters of multiple coupled microstrip lines. *Tripathi, Vijai K.*, +, *T-MTT Jan 89* 215-221
- undesired effects due to dense packing in supported coplanar waveguide MMICs using combined methods. *Wolff, Ingo*, +, *MWSYM 89 Vol. 2* 657-660
- variational method for multiconductor coupled striplines with stratified anisotropic media. *Kitazawa, Toshihide*, *T-MTT Mar 89* 484-491
- Couplers**
- centered-inclined waveguide slot coupler. *Rengarajan, Sembiam R.*, *T-MTT May 89* 884-889
- contributions during Rantec years of Seymour B. Cohn (1960 to 1967). *Harrison, William H.*, *MWSYM 89 Vol. 2* 749-751, 757-758
- longitudinal-to-transverse coupling slot in crossed waveguides; characterization and numerical results. *Rengarajan, Sembiam R.*, *T-MTT Aug 89* 1171-1177
- multiport branch-waveguide couplers with arbitrary power splitting; six-port coupler design using WR75 waveguide. *Carle, Pierluigi*, *MWSYM 89 Vol. 1* 317-320
- Couplers; cf. Coupled transmission lines; Stripline couplers**
- Coupling; cf. Electromagnetic coupling**
- Crosstalk**
- multiconductor buses for high-speed GaAs logic circuits; crosstalk, propagation delay, and pulse distortion. *Ghione, Giovanni*, +, *T-MTT Mar 89* 445-456
- transients in nonuniform and uniform multiconductor transmission lines; effects on IC interconnections. *Palusinski, Olgierd A.*, +, *T-MTT Jan 89* 127-138
- Crosstalk; cf. Coupled transmission lines**
- Cryogenic electronics**
- Auger HBT; analytical theory and 1-D time-dependent large-signal simulation. *Tiwari, Sandip*, +, *CORNEL 89 Abstr VI/6*
- cooling approach for bipolar transistor power amplifier modules giving 1.8 kW at 425 MHz. *Johnson, Joseph H.*, +, *MWSYM 89 Vol. 3* 861-862
- effects of gain compression, bias conditions, and temperature on flicker phase noise of 8.5-GHz GaAs MESFET amplifier. *Lusher, C. P.*, +, *T-MTT Mar 89* 643-646
- HEMT cryogenic 43-GHz-band low-noise amplifier. *Saito, T.*, +, *MWSYM 89 Vol. 3* 853-856
- high-Q dielectric resonators consisting of dielectric rod in conducting cavity; frequency and low-temperature characteristics. *Kobayashi, Y.*, +, *MWSYM 89 Vol. 3* 1239-1242
- high-T_c superconducting Josephson millimeter-wave spectral detector using granular bridge sensor coupled to microstrip line. *Daginnus, M.*, +, *MWSYM 89 Vol. 2* 631-634
- MESFET and MODFET wideband noise parameter modeling at room and cryogenic temperatures; frequency and temperature dependence. *Pospieszalski, Marian W.*, *MWSYM 89 Vol. 1* 385-388
- millimeter-wave noise parameters of high-performance HEMTs at 300 K and 17 K. *Weinreb, S.*, +, *MWSYM 89 Vol. 2* 813-816
- pseudomorphic and conventional AlGaAs capacitors on GaAs n⁺ substrates. *Schmidt, P. E.*, +, *CORNEL 89 Abstr II/5*
- S-parameter characterization of GaAs-gate SISFETs at liquid nitrogen temperatures. *Kwark, Y.*, +, *CORNEL 89 Abstr IV/4*
- vector measurements of microwave devices at cryogenic temperatures; real-time deembedding method for S parameters. *Smuk, J. W.*, +, *MWSYM 89 Vol. 3* 1195-1198
- Cryogenic electronics; cf. Superconducting devices**
- Current measurement**
- equivalent current density reconstruction for microwave imaging. *Caorsi, Salvatore*, +, *T-MTT May 89* 910-916
- frequency-dependent characteristics of current distributions on microstrip lines using spectral-domain analysis and Chebyshev polynomials. *Kobayashi, Masanori*, +, *T-MTT Apr 89* 799-801
- Curve fitting**
- FDTD calculation of microstrip open-end terminations; curve-fitting of numerical dispersion results. *Zhang, Xiaolei*, +, *MWSYM 89 Vol. 1* 313-316
- Curved waveguides; cf. Waveguide bends**
- Cylinders**
- characteristic impedance of tubular dielectric cylinder covered with conducting arc strips. *Zargari, V.*, +, *T-MTT Oct 89* 1645-1647
- minimizing scattering at rectangular waveguide branchings by loading with pair of metallic or dielectric cylinders. *Gesche, Roland*, +, *T-MTT Oct 89* 1597-1602
- mode charts for magnetized ferrite cylinders used in waveguide junction circulators. *Schieblich, Christian*, *T-MTT Oct 89* 1555-1561

Cylindrical waveguides; cf. Circular waveguides

D

Data acquisition; cf. Analog-digital conversion

Data communication; cf. Optical fiber subscriber networks

Delay circuits; cf. All-pass circuits

Delay effects

multiconductor buses for high-speed GaAs logic circuits; crosstalk, propagation delay, and pulse distortion. *Ghione, Giovanni*, +, *T-MTT Mar 89* 445-456

transients in nonuniform and uniform multiconductor transmission lines; effects on IC interconnections. *Palusinski, Olgierd A.*, +, *T-MTT Jan 89* 127-138

Delay estimation

radar-acoustic sounding system for remote atmospheric temperature and range determinations. *Daas, Moussa*, +, *MWSYM 89 Vol. 1* 257-260

Delay lines

9-GHz oscillator stabilized with surface transverse wave delay line. *Hügli, Rolf*, +, *MWSYM 89 Vol. 1* 265-268

Delay lines; cf. Acoustic surface-wave delay lines; Ferroelectric delay lines

Design automation

algorithm for computer-aided design of coupled slab lines. *Rosloniec, Stanislaw*, *T-MTT Jan 89* 258-261

CAD automated technique for post production tuning of microwave circuits. *Gomrinho, Emanuel C.*, *MWSYM 89 Vol. 2* 765-767

CAD formulas for edge-compensated microstrip lines used in MMICs; rectangular boundary division methods for capacitive proximity effects. *Yamashita, Eikichi*, +, *MWSYM 89 Vol. 1* 339-342

CAD-oriented method for noise figure computation of two-ports with any internal topology. *Dobrowolski, Janusz A.*, *T-MTT Jan 89* 15-20

computer-aided design of E-plane waveguide passive components. *Fan, Pong*, +, *T-MTT Feb 89* 335-339

computer-aided design of hybrid and monolithic broadband amplifiers for optoelectronic receivers 2. *Perennec, A.*, +, *T-MTT Sep 89* 1475-1478

computer-aided design of MESFET distributed amplifier; design-by-simulation approach. *Vai, Man-Kuan*, +, *MWSYM 89 Vol. 2* 565-568

FET dielectric resonator oscillators; design procedure suited to most CAD programs. *Wilson, Philip G.*, +, *MWSYM 89 Vol. 3* 1033-1036

optimal CAD of MMIC GaAs MESFET microwave oscillators 2. *Xuan, Yongnan*, +, *T-MTT Sep 89* 1481-1484

parallel processing application in CAD of nonlinear microwave circuits. *Sobhy, M. I.*, +, *MWSYM 89 Vol. 2* 645-648

physical modeling of GaAs microwave MESFETs in integrated CAD environment. *Ghione, Giovanni*, +, *T-MTT Mar 89* 457-468

selected technology summary for microwave computer-aided design; technical advances in 9 areas of interest (110 references) 1984-1988. *Horton, John B.*, *T-MTT Jun 89* 1040-1053

using parallel processing for CAD of nonlinear microwave circuits. *Sobhy, M. I.*, +, *T-MTT Dec 89* 2067-2073

Design automation; cf. Design automation software; Specific topic or device

Design automation software

CAD program and equations for phase and amplitude noise analysis of component chains. *Riddle, Alf*, *MWSYM 89 Vol. 1* 359-362

Design centering

design optimization of microwave power heterojunction bipolar transistor cells. *Wang, G. W.*, +, *MWSYM 89 Vol. 3* 1061-1064

Diamond materials/devices

RF performance characteristics of double-drift millimeter-wave diamond IMPATT diodes. *Mock, P. M.*, +, *CORNEL 89 Abstr VI/7*

Diathermy; cf. Hyperthermia

Dielectric antennas; cf. Lens antennas

Dielectric bodies; cf. Cylinders

Dielectric couplers

energy coupling between nonuniform curved dielectric waveguides; analysis using staircase approximation method. *Xu, Shanjia*, +, *T-MTT Apr 89* 686-690

Dielectric films

deposited SiO₂ as insulator for GaInAs and InP MISFETs. *Gardner, P. D.*, +, *CORNEL 89 Abstr. I/3*

passivation and gating of III-V surfaces; MIS gate structures using GaAs. *Markunas, Robert J.*, *CORNEL 89 Abstr I/4*

Dielectric heating; cf. Biological radiation effects, electromagnetic; Hyperthermia

Dielectric-loaded waveguides

cutoff frequency and bandwidth properties of dielectric-loaded T-septum waveguides. *Mansour, R. R.*, +, *T-MTT Oct 89* 1654-1657

mixed spectral-domain method applied to analysis of generalized dielectric-loaded ridge waveguides. *Ng Kwong T.*, +, *T-MTT Dec 89* 2080-2085

mixed spectral-domain method applied to analysis of generalized dielectric-loaded ridged waveguides. *Ng K. T.*, +, *MWSYM 89 Vol. 2* 715-718

variational analysis of dielectrically loaded multidepth corrugated waveguides. *Oksanen, Markku I.*, *T-MTT Jan 89* 191-197

vector finite-element formalism for waveguides loaded with lossy anisotropic materials. *Hayata, Kazuya*, +, *T-MTT May 89* 875-883

Dielectric-loaded waveguides; cf. Dielectric resonator filters

Dielectric losses; cf. Dielectric measurements

Dielectric measurements

comments on 'Attenuation measurement of very low loss dielectric waveguides by the cavity resonator method applicable in the

millimeter/submillimeter wavelength range' by F. I. Shimabukuro. *Jablonski, D. G.*, +, *T-MTT Mar 89* 650-651 (Original paper, Jul 88 1160-1166)

NIST (US National Institute of Standards and Technology) dielectric measurement capability using mode-filtered cylindrical cavity. *Vanzura, Eric J.*, +, *MWSYM 89 Vol. 3* 901-904

permittivity and conductivity profiles of microwave semiconducting materials using optimized iterative method. *Hindy, Moataza A.*, *T-MTT May 89* 922-925

six-port and four-port reflectometers for complex permittivity measurements at submillimeter wavelengths. *Stumper, Ulrich*, *T-MTT Jan 89* 222-230

waveguide resonator technique for moisture content and dielectric properties measurements of seeds. *Kraszewski, A. W.*, +, *MWSYM 89 Vol. 1* 187-190

Dielectric radiation effects; cf. Biomedical radiation applications, electromagnetic

Dielectric resonator filters

800-MHz-band dielectric receiving filter with sharp stopband using active feedback resonator approach. *Nishikawa, Toshio*, +, *T-MTT Dec 89* 2074-2079

800-MHz-band dielectric receiving filter with sharp stopband using active feedback resonator method for cellular base stations. *Ishikawa, Youhei*, +, *MWSYM 89 Vol. 2* 591-594

satellite four-channel multiplexer using single-mode and dual-mode dielectric resonator filters at L-band. *Fiedziuszko, S. J.*, +, *MWSYM 89 Vol. 2* 683-686

two-path evanescent-mode waveguide dielectric resonator filters; full-wave analysis incorporating impedance inverter method. *Shigesawa, Hiroshi*, +, *T-MTT Jul 89* 1105-1113

Dielectric resonators

complex resonance frequencies of isolated, composite dielectric-ferrite objects using null-field-based method. *Zheng, Wenxin*, *T-MTT Jun 89* 953-961

contributions during Rantec years of Seymour B. Cohn (1960 to 1967). *Harrison, William H.*, *MWSYM 89 Vol. 2* 749-751, 757-758

FET dielectric resonator oscillators; design procedure suited to most CAD programs. *Wilson, Philip G.*, +, *MWSYM 89 Vol. 3* 1033-1036

high-Q dielectric resonators consisting of dielectric rod in conducting cavity; frequency and low-temperature characteristics. *Kobayashi, Y.*, +, *MWSYM 89 Vol. 3* 1239-1242

high-T_c superconductor measurements using post-type dielectric resonator as probe. *Fiedziuszko, S. J.*, +, *MWSYM 89 Vol. 2* 555-558

integral numerical technique for study of axially symmetric resonant devices. *Ruiz, J.*, +, *T-MTT Nov 89* 1814-1816

magnetic tuning of cylindrical H_{01δ}-mode dielectric resonators using axial ferrite rod. *Kupka, Jerzy*, *T-MTT Apr 89* 743-747

modes in dielectric-loaded cylindrical cavities using a one-dimensional finite element method. *Taheri, M. Mohammad*, +, *T-MTT Oct 89* 1536-1541

monolithic IMPATT oscillator characterization using transmission resonance method and varactor method. *Wang, Nan-Lei*, +, *T-MTT Feb 89* 393-399

planar W-band dielectric resonator power combiner using whispering-gallery modes. *Cros D.*, +, *MWSYM 89 Vol. 3* 1215-1218

resonant modes in dielectric resonator cavities; characterization using finite integration technique. *Lebaric, Jovan*, +, *T-MTT Nov 89* 1740-1748

resonant modes in shielded cylindrical ferrite and single-crystal dielectric resonators using Galerkin-Rayleigh-Ritz method. *Krupka, Jerzy*, *T-MTT Apr 89* 691-697

three-dimensional finite element method applied to dielectric resonator devices in metallic enclosure. *Verdeyme, S.*, +, *MWSYM 89 Vol. 3* 1151-1154

tubular dielectric resonator with dielectric tuning rod; numerical analysis. *Kajfez, Darko*, +, *MWSYM 89 Vol. 3* 1235-1238

tunable temperature-compensated hybrid-mode dielectric resonators; mode-matching analysis. *Chen, Seng-Woon*, +, *MWSYM 89 Vol. 3* 1227-1230

unloaded Qs of axially asymmetric modes of dielectric resonators. *Chang, Hsin-Chin*, +, *MWSYM 89 Vol. 3* 1231-1234

whispering-gallery-mode dielectric resonator for planar millimeter-wave integrated circuits. *Jiao, X. H.*, +, *T-MTT Feb 89* 432-437

Dielectric waveguides

90-100-GHz ferrite-dielectric image-line field displacement isolators. *Owens, J. M.*, +, *MWSYM 89 Vol. 1* 141-144

asymmetrical coupled image guides; generalized theory in terms of two superposed modes. *Köther, Dietmar*, +, *T-MTT Mar 89* 622-624

cavity resonator measurement method for leaky waveguides. *Oliner, Arthur A.*, +, *T-MTT Mar 89* 618-621

comments, with reply, on 'Analysis of nonreciprocal coupled image lines' by D. B. Sillars and L. E. Davis. *Mazur, Jerzy*, +, *T-MTT Jan 89* 262 (Original paper, Jul 87 629-635)

continuous orthonormalized spectrum of bound modes in image line. *Rozzi, Tullio*, +, *T-MTT May 89* 868-874

dispersion in anisotropic nonradiating dielectric waveguide. *Coreli César, Amílcar*, +, *MWSYM 89 Vol. 3* 1271-1272

energy coupling between nonuniform curved dielectric waveguides; analysis using staircase approximation method. *Xu, Shanjia*, +, *T-MTT Apr 89* 686-690

- equivalent network method for analyzing discontinuity properties of open dielectric waveguides. *Shigesawa, Hiroshi*, +, *T-MTT Jan 89* 3-14
- filter characteristics of nonradiating dielectric (NRD) waveguide gratings. *Yang, Ping*, +, *MWSYM 89 Vol. 1* 499-502
- infinite elements for analysis of open dielectric waveguides; slab, circular and square waveguide cross-sections. *McDougall, Marc J.*, +, *T-MTT Nov 89* 1724-1731
- microstrip-loaded inset dielectric waveguide; application to strip-loaded antenna arrays with horizontal polarization. *Rozzi, T.*, +, *MWSYM 89 Vol. 3* 923-926
- millimeter-wave transmitter and receiver using nonradiative dielectric waveguide. *Yoneyama, Tsukasa*, *MWSYM 89 Vol. 3* 1083-1086
- partial variational approach for arbitrary discontinuities in planar dielectric waveguides. *Chung, Shyh-Jong*, +, *T-MTT Jan 89* 208-214
- quasi-planar transmission lines; overview. *Itoh, Tatsuo*, *T-MTT Feb 89* 275-280
- reflection and transmission characteristics of noncoincident junction of rectangular dielectric waveguides. *Matsumura, Kazuhiro*, +, *T-MTT Feb 89* 414-420
- step discontinuities on planar dielectric waveguide containing gyrotropic layer. *Yun, Sang Won*, +, *T-MTT Mar 89* 492-496
- variational analysis of anisotropic nonhomogeneous dielectric waveguides; variation formulation using only two field components. *Chew, Weng Cho*, +, *T-MTT Apr 89* 661-668
- vectorial finite-element formulation using transverse electric field component for nonhomogeneous dielectric waveguides. *Hayata, Kazuya*, +, *T-MTT Jan 89* 256-258
- Y-branch dielectric waveguide design with theoretical zero radiation loss, using serpentine-shaped taper. *Shigesawa, H.*, +, *MWSYM 89 Vol. 2* 795-798
- Difference methods; cf. Finite-difference methods**
- Differential amplifiers**
- 0.3-3-GHz monolithic vector modulator for adaptive array systems. *Fruit, Austin*, +, *MWSYM 89 Vol. 1* 421-422
- Diffraction; cf. Bragg scattering**
- Digital communication; cf. Digital radio; Phase-shift keying; Satellite communication**
- Digital modulation/demodulation; cf. Phase-shift keying**
- Digital phase shifters; cf. Phase shifters**
- Digital radio**
- multipath fading UHF simulator for studying space-diversity digital radio systems. *Guillard, Jean Christophe*, +, *MWSYM 89 Vol. 3* 1199-1202
- RF predistortion linearizer using balanced circulators; application to 256-QAM digital radio systems. *Imai, Nobuaki*, +, *T-MTT Aug 89* 1237-1243
- Diode phase shifters**
- waveguide switched-susceptance (diode-patch) phase shifter. *Virga, K. L.*, +, *MWSYM 89 Vol. 1* 123-126
- Diodes**
- lossy model of diode packages as alternative method for exact evaluation of active chip parameters. *Kazi, Karoly*, +, *MWSYM 89 Vol. 3* 1267-1270
- Diodes; cf. Semiconductor diodes**
- Diplexers**
- rigorous field theory design for millimeter-wave *E*-plane integrated circuit multiplexers. *Dittloff, Joachim*, +, *T-MTT Feb 89* 340-350
- Dipole antennas; cf. Microstrip antennas**
- Dipole arrays**
- specific absorption rate distributions for interstitial hyperthermia dipole antenna arrays at 915 MHz. *Jones, Kenneth M.*, +, *T-MTT Aug 89* 1200-1209
- Dipole arrays; cf. Phased arrays**
- Directional couplers; cf. Hybrid junctions**
- Discontinuities; cf. Transmission-line discontinuities; Waveguide discontinuities**
- Disks**
- microstrip planar-disk 3-dB quadrature hybrid. *Page, M. J.*, +, *MWSYM 89 Vol. 1* 247-250
- Dispersive media; cf. Electromagnetic propagation, dispersive media; Electromagnetic transient analysis; Electromagnetic transient propagation**
- Displacement measurement**
- magnetostatic waves in moving ferrite films; applications to rotation rate sensing. *Stancil, Daniel D.*, *T-MTT May 89* 851-859
- Dissipative systems; cf. Lossy systems**
- Distortion; cf. Amplifier distortion; AM-PM conversion; Crosstalk; Delay effects; Harmonic distortion; Intermodulation distortion; Noise**
- Distributed amplifiers**
- 1-40 GHz MESFET hybrid distributed amplifier. *Brouzes, H.*, +, *MWSYM 89 Vol. 3* 849-852
- 2-18-GHz low-noise dual GaAs FET distributed amplifier with 10-dB gain. *Thompson, William J.*, *MCS 89* 11-13
- 2-18-GHz MMIC matrix distributed amplifier. *Chang, A. P.*, +, *MCS 89* 139-141
- 2-18-GHz MMIC matrix distributed amplifier. *Chang, A. P.*, +, *MWSYM 89 Vol. 1* 287-289
- 2-18-GHz MMIC matrix distributed amplifier. *Chang, A. P.*, +, *T-MTT Dec 89* 2159-2162
- 4-18-GHz MMIC matrix distributed amplifier using combined cascade/cascode-connected stages. *Chu, S. L. G.*, +, *MCS 89* 143-147
- 4-18-GHz MMIC matrix distributed amplifier using combined cascade/cascode-connected stages. *Chu, S. L. G.*, +, *MWSYM 89 Vol. 1* 291-295
- active broadband impedance transformations using distributed techniques. *Cioffi, Kenneth R.*, *MWSYM 89 Vol. 3* 1043-1046
- active broadband impedance transformations using distributed techniques. *Cioffi, Kenneth R.*, *T-MTT Dec 89* 1870-1876
- computer-aided design of MESFET distributed amplifier; design-by-simulation approach. *Vai, Man-Kuan*, +, *MWSYM 89 Vol. 2* 565-568
- design technique for high-power, high-efficiency, broadband distributed MMIC amplifiers. *Cole, J. Bradford*, +, *MWSYM 89 Vol. 3* 941-944
- family of 2-20-GHz broadband low-noise AlGaAs HEMT MMIC amplifiers. *Dixit, R.*, +, *MCS 89* 15-19
- highly directive, broadband, bidirectional distributed amplifier. *Byrne, Joseph W.*, +, *MWSYM 89 Vol. 1* 427-430
- inductance taper and forward-feed in GaAs MMIC distributed amplifiers. *Ross, Michael*, +, *MWSYM 89 Vol. 3* 1039-1042
- large-signal distributed microwave MESFET amplifiers' design and performance of three circuits. *Sobhy, M. I.*, +, *MWSYM 89 Vol. 1* 397-400
- oscillation conditions in distributed 1-20-GHz monolithic MESFET amplifier. *Garnand, Patrice*, *T-MTT Mar 89* 637-640
- performance of a 2-18 GHz ultra-low-noise matrix amplifier module. *Niclas, K. B.*, +, *MWSYM 89 Vol. 3* 841-844
- Distributed antennas; cf. Leaky-wave antennas**
- Distributed-parameter circuits**
- 2-12 GHz distributed FET MMIC mixer with 3-dB conversion gain and 11-dB SSB noise figure. *Roberson, I. D.*, +, *MWSYM 89 Vol. 3* 1031-1032
- characteristic impedance of tubular dielectric cylinder covered with conducting arc strips. *Zargari, V.*, +, *T-MTT Oct 89* 1645-1647
- coupled asymmetric suspended strip lines with three thick-strip conductors and side-wall grooves. *Nakajima, Masayuki*, +, *MWSYM 89 Vol. 2* 719-722
- modeling and analysis of GaAs MESFETs with consideration to wave propagation effect along electrodes. *Chang, R. L.*, +, *MWSYM 89 Vol. 1* 371-374
- radiating end effects of symmetric and asymmetric coplanar waveguide, using integral equations technique. *Drissi, M.*, +, *MWSYM 89 Vol. 2* 791-794
- tapered transmission line matching transformers and asymmetric couplers supporting non-TEM modes; generalized theory. *Pramanick, Protap*, +, *T-MTT Aug 89* 1184-1191
- transients in nonuniform and uniform multiconductor transmission lines; effects on IC interconnections. *Palusinski, Olgierd A.*, +, *T-MTT Jan 89* 127-138
- ultra-wide-band nonuniform quadrature directional couplers in inhomogeneous media; synthesis, design, and construction. *Uysal, Sener*, +, *T-MTT Jun 89* 969-976
- Distributed-parameter circuits; cf. Coupled transmission lines**
- Distributed-parameter circuits, active; cf. Distributed amplifiers**
- Diversity methods**
- multipath fading UHF simulator for studying space-diversity digital radio systems. *Guillard, Jean Christophe*, +, *MWSYM 89 Vol. 3* 1199-1202
- Doppler radar**
- radar receiver subsystems for high-dynamic-range airborne tracking and fire-control. *Madni, Asad M.*, +, *T-MTT Dec 89* 1942-1948
- radar receiver subsystems for high-dynamic-range airborne tracking and fire-control systems. *Madni, Asad M.*, +, *MWSYM 89 Vol. 1* 439-442
- Doppler radar, pulse**
- 94-GHz 3-D-imaging radar for sensor-based locomotion. *Lange, M.*, +, *MWSYM 89 Vol. 3* 1091-1094
- Dyadic analysis; cf. Green's function**

E

Eigenvalues/eigenvectors

- iterative eigenfunction expansion method for determining modes in dielectric guiding structures. *Jablonski, Tomasz F.*, +, *T-MTT Jan 89* 63-70
- lower bound on eigenvalues of characteristic equation for arbitrary multilayered gyromagnetic structure with perpendicular magnetization. *Mrozowski, Michal*, +, *T-MTT Mar 89* 640-643
- Eigenvalues/eigenvectors; cf. Variational methods**
- Electric variables control; cf. Phase control**
- Electric variables measurement; cf. Admittance measurement; Attenuation measurement; Conductivity measurement; Current measurement; Dielectric measurements; Impedance measurement; Integrated-circuit measurements; Pulse measurements; Scattering parameters measurement**
- Electrodes; cf. Implantable electrodes**
- Electroluminescent materials/devices; cf. Light-emitting diodes**
- Electromagnetic analysis**
- mathematical formulation of equivalence principle. *Chen, Kun-Mu*, *T-MTT Oct 89* 1576-1581
- mixed-potential representation of electric fields in layered media due to surface currents. *Cloud, M. J.*, +, *T-MTT Jul 89* 1150-1152
- Electromagnetic coupling**
- electromagnetic coupling of coplanar waveguides and microstrip lines to multilayer lossy dielectric media. *Iskander, Magdy F.*, +, *T-MTT Dec 89* 1910-1917
- electromagnetic coupling of microstrip lines and coplanar waveguides to multilayer lossy media; spectral-domain analysis. *Iskander, M. F.*, +, *MWSYM 89 Vol. 1* 175-178
- multiport network model for evaluating radiation loss and spurious coupling between discontinuities in microstrip circuits. *Sabban, Albert*, +, *MWSYM 89 Vol. 2* 707-710
- power transfer mechanism of MMIC spiral transformers and adjacent spiral inductors; analysis using WATMIC-EMsim software. *Howard, G. E.*, +, *MWSYM 89 Vol. 3* 1251-1254

- Electromagnetic coupling**; cf. Cavities; Coupled transmission lines; Couplers
- Electromagnetic heating**
microwave-oven magnetrons; operation and properties. *Brown, William C.*, *MWSYM 89 Vol. 3* 871-874
- Electromagnetic heating**; cf. Hyperthermia
- Electromagnetic induction**; cf. Electromagnetic coupling
- Electromagnetic interference, radiated**; cf. Cochannel interference
- Electromagnetic measurements**; cf. Dielectric measurements; Magnetic measurements; Probe antennas; Submillimeter-wave measurements; UHF measurements
- Electromagnetic propagation**; cf. Coupled transmission lines; Electromagnetic reflection; Electromagnetic surface waves; Electromagnetic transient propagation
- Electromagnetic propagation, absorbing media**
dominance of resistive losses over hysteretic losses in ferromagnetic conductors. *Thornber, K. K.*, *T-MTT Jul 89* 1152-1153
electromagnetic coupling of coplanar waveguides and microstrip lines to multilayer lossy dielectric media. *Iskander, Magdy F.*, +, *T-MTT Dec 89* 1910-1917
electromagnetic coupling of microstrip lines and coplanar waveguides to multilayer lossy media; spectral-domain analysis. *Iskander, M. F.*, +, *MWSYM 89 Vol. 1* 175-178
wideband conductor loss calculation for planar quasi-TEM transmission lines with thin conductors, using phenomenological loss equivalence method. *Lee, Hai-Young*, +, *MWSYM 89 Vol. 1* 367-370
wideband conductor loss calculation using phenomenological loss equivalence method for planar quasi-TEM transmission lines with thin conductors. *Lee, Hai-Young*, +, *T-MTT Dec 89* 1904-1909
- Electromagnetic propagation, absorbing media**; cf. Biological radiation effects, electromagnetic; Biomedical radiation applications, electromagnetic; Hyperthermia
- Electromagnetic propagation, anisotropic media**
generalized spectral-domain analysis of planar lines on layered media including uniaxial and biaxial dielectric substrates. *Medina, Francisco*, +, *T-MTT Mar 89* 504-511
metallization thickness' effect of striplines with anisotropic media; quasi-static and hybrid-mode analysis. *Kitazawa, Toshihide*, *T-MTT Apr 89* 769-775
printed-circuit waveguides with anisotropic substrates; leakage effect. *Tsuji, M.*, +, *MWSYM 89 Vol. 2* 783-786
self-adaptive mesh scheme for finite-element analysis of anisotropic multiconductor transmission lines. *Salazar-Palma, Magdalena*, +, *MWSYM 89 Vol. 1* 507-510
variational method for multiconductor coupled striplines with stratified anisotropic media. *Kitazawa, Toshihide*, *T-MTT Mar 89* 484-491
vector finite-element formalism for waveguides loaded with lossy anisotropic materials. *Hayata, Kazuya*, +, *T-MTT May 89* 875-883
- Electromagnetic propagation, anisotropic media**; cf. Electromagnetic propagation, magnetic media
- Electromagnetic propagation, dispersive media**
dispersion in anisotropic nonradiating dielectric waveguide. *Carelí César, Amílcar*, +, *MWSYM 89 Vol. 3* 1271-1272
- Electromagnetic propagation, dispersive media**; cf. Electromagnetic transient propagation
- Electromagnetic propagation, magnetic media**
cutoff spaces of elliptical gyromagnetic planar circuits and waveguides using finite-element methods. *Hélszajn, Joseph*, +, *T-MTT Jan 89* 71-80
dominance of resistive losses over hysteretic losses in ferromagnetic conductors. *Thornber, K. K.*, *T-MTT Jul 89* 1152-1153
evaluating loss factor of multilayered inhomogeneous waveguides for magnetostatic waves using finite-element formalism. *Long, Yi*, +, *T-MTT Apr 89* 680-685
lower bound on eigenvalues of characteristic equation for arbitrary multilayered gyromagnetic structure with perpendicular magnetization. *Mrozowski, Michal*, +, *T-MTT Mar 89* 640-643
magnetostatic waves in moving ferrite films; applications to rotation rate sensing. *Stancil, Daniel D.*, *T-MTT May 89* 851-859
mode charts for magnetized ferrite cylinders used in waveguide junction circulators. *Schieblich, Christian*, *T-MTT Oct 89* 1555-1561
mode coupling in longitudinally magnetized waveguiding structures based on two coupled guides. *Mazur, Jerzy*, +, *T-MTT Jan 89* 159-165
propagation properties of ferromagnetic insular guide for 26.5 to 40 GHz. *Xia, Jiqing*, +, *T-MTT Oct 89* 1547-1554
spectral-domain immittance approach for propagation constants of unilateral finlines with magnetized ferrite substrate. *Xun, Peijue*, *T-MTT Oct 89* 1647-1650
variational method for line inductances of planar transmission lines with anisotropic magnetic media. *Kitazawa, Toshihide*, *T-MTT Nov 89* 1749-1754
- Electromagnetic propagation, magnetic media**; cf. Ferrite-loaded waveguides; Ferrites
- Electromagnetic propagation, moving media**
magnetostatic waves in moving ferrite films; applications to rotation rate sensing. *Stancil, Daniel D.*, *T-MTT May 89* 851-859
- Electromagnetic propagation, nonhomogeneous media**
3-D specific absorption rate distributions in multilayered cylindrical model for 70 MHz hyperthermia. *Hill, Steven C.*, +, *T-MTT Aug 89* 1192-1199
correction factor for impedance of wire grid parallel to homogeneous dielectric interface. *Young, Jeffrey L.*, +, *T-MTT Jul 89* 1136-1138
deriving space-domain Green's function in shielded, multilayer substrate structure; applications to MIS slow-wave transmission lines. *Livernois, Thomas G.*, +, *T-MTT Nov 89* 1761-1767
distortion of transient signals on multilayer coupled symmetric microstrip transmission lines. *Gilb, James P.*, +, *MWSYM 89 Vol. 3* 1001-1004
electromagnetic coupling of coplanar waveguides and microstrip lines to multilayer lossy dielectric media. *Iskander, Magdy F.*, +, *T-MTT Dec 89* 1910-1917
electromagnetic coupling of microstrip lines and coplanar waveguides to multilayer lossy media; spectral-domain analysis. *Iskander, M. F.*, +, *MWSYM 89 Vol. 1* 175-178
evaluating loss factor of multilayered inhomogeneous waveguides for magnetostatic waves using finite-element formalism. *Long, Yi*, +, *T-MTT Apr 89* 680-685
field distributions in arbitrarily shaped heterogeneous dielectric or biological body, using iterative conjugate-gradient method. *Wang, Johnson J. H.*, +, *T-MTT Jul 89* 1119-1125
generalized spectral-domain analysis of planar lines on layered media including uniaxial and biaxial dielectric substrates. *Medina, Francisco*, +, *T-MTT Mar 89* 504-511
high-frequency conductor and dielectric losses in interconnects made of multilayer planar structures using strip conductors. *van Deventer, T. Emilie*, +, *T-MTT Dec 89* 1964-1972
high frequency conductor and dielectric losses in shielded microstrip using integral equation formulation. *van Deventer, T. E.*, +, *MWSYM 89 Vol. 3* 919-922
lower bound on eigenvalues of characteristic equation for arbitrary multilayered gyromagnetic structure with perpendicular magnetization. *Mrozowski, Michal*, +, *T-MTT Mar 89* 640-643
microstrip phase shifter on ferrite-dielectric substrate; comparison of variational and least-squares boundary residual methods. *Bolioli, Sylvain*, +, *T-MTT Apr 89* 698-705
open microstrip discontinuities; full-wave characterization including radiation losses. *Harokopus, William P. Jr.*, +, *T-MTT Dec 89* 2058-2066
perfectly conducting wire transmission line in double-layered conductor-backed medium; full-wave eigenmode analysis. *Faché, Niels*, +, *T-MTT Mar 89* 512-518
power coupling from waveguide hyperthermia applicator into three-layered tissue model at 432 MHz and 144 MHz. *Nikita, Konstantina S.*, +, *T-MTT Nov 89* 1794-1801
propagation in layered biased semiconductor structures using transport analysis. *Krowné, Clifford M.*, +, *T-MTT Apr 89* 711-722
pulse distortion on multilayer coupled microstrip lines. *Gilb, James P.*, +, *T-MTT Oct 89* 1620-1628
space-domain Green's function approach for capacitance calculation of multiconductor lines in multilayered dielectrics with improved surface charge modeling. *Delbare, Wim*, +, *T-MTT Oct 89* 1562-1568
variational analysis of anisotropic nonhomogeneous dielectric waveguides; variation formulation using only two field components. *Chew, Weng Cho*, +, *T-MTT Apr 89* 661-668
variational method for line inductances of planar transmission lines with anisotropic magnetic media. *Kitazawa, Toshihide*, *T-MTT Nov 89* 1749-1754
variational method for multiconductor coupled striplines with stratified anisotropic media. *Kitazawa, Toshihide*, *T-MTT Mar 89* 484-491
vectorial finite-element formulation using transverse electric field component for nonhomogeneous dielectric waveguides. *Hayata, Kazuya*, +, *T-MTT Jan 89* 256-258
wire and strip conductors over dielectric-coated conducting or dielectric half-space; complex wavenumber and characteristic impedance. *King, Ronald W. P.*, *T-MTT Apr 89* 754-760
- Electromagnetic propagation, nonhomogeneous media**; cf. Planar waveguides
- Electromagnetic propagation, nonreciprocal media**
comments, with reply, on 'Analysis of nonreciprocal coupled image lines' by D. B. Sillars and L. E. Davis. *Mazur, Jerzy*, +, *T-MTT Jan 89* 262 (Original paper, Jul 87 629-635)
- Electromagnetic propagation, plasma media**; cf. Plasma-loaded waveguides
- Electromagnetic radiation**
equivalent circuits of microstrip discontinuities including radiation effects. *Skriver, A.*, +, *MWSYM 89 Vol. 3* 1147-1150
multiport network model for evaluating radiation loss and spurious coupling between discontinuities in microstrip circuits. *Sabbat, Albert*, +, *MWSYM 89 Vol. 2* 707-710
- Electromagnetic radiation effects**; cf. Biological radiation effects, electromagnetic; Biomedical radiation applications, electromagnetic
- Electromagnetic reflection**
eliminating ringing signals for lossless multisection transmission lines. *Hsue, Ching-Wen*, *T-MTT Aug 89* 1178-1183
- Electromagnetic reflection**; cf. Submillimeter-wave measurements
- Electromagnetic scattering**; cf. Bragg scattering; Cylinders; Electromagnetic reflection; Microwave imaging/mapping; Transmission-line discontinuities; Waveguide discontinuities; Waveguide transitions
- Electromagnetic scattering, absorbing media**; cf. Biological radiation effects, electromagnetic
- Electromagnetic scattering, inverse problems**
direct and inverse resonance problems for shielded composite objects using null-field method. *Zheng, Wenxin*, *T-MTT Nov 89* 1732-1739
permittivity and conductivity profiles of microwave semiconducting materials using optimized iterative method. *Hindy, Moataza A.*, *T-MTT May 89* 922-925
- Electromagnetic scattering, inverse problems**; cf. Radar target recognition
- Electromagnetic scattering, magnetic media**
step discontinuities on planar dielectric waveguide containing gyrotropic layer. *Yin, Sang Won*, +, *T-MTT Mar 89* 492-496
- Electromagnetic scattering, nonhomogeneous media**
multimode network description of planar periodic metal-strip grating at dielectric interface; rigorous network formulations. *Guglielmi, Marco*, +, *T-MTT Mar 89* 534-541

- multimode network description of planar periodic metal-strip grating at dielectric interface; rigorous solution. *Guglielmi, Marco*, +, *T-MTT May 89* 902-909
- multimode network description of planar periodic metal-strip grating at dielectric interface; small-aperture and small-obstacle solutions. *Guglielmi, Marco*, +, *T-MTT Mar 89* 542-552
- Electromagnetic scattering, periodic structures**
- equivalent network method for analyzing discontinuity properties of open dielectric waveguides. *Shigesawa, Hiroshi*, +, *T-MTT Jan 89* 3-14
- multimode network description of planar periodic metal-strip grating at dielectric interface; rigorous network formulations. *Guglielmi, Marco*, +, *T-MTT Mar 89* 534-541
- multimode network description of planar periodic metal-strip grating at dielectric interface; rigorous solution. *Guglielmi, Marco*, +, *T-MTT May 89* 902-909
- multimode network description of planar periodic metal-strip grating at dielectric interface; small-aperture and small-obstacle solutions. *Guglielmi, Marco*, +, *T-MTT Mar 89* 542-552
- propagation properties of striplines periodically loaded with crossing strips; spectral domain dyadic Green's function formulation. *Kiang, Jean-Fu*, +, *T-MTT Apr 89* 776-786
- Electromagnetic surface waves**
- equivalent circuits of microstrip discontinuities including radiation effects. *Skrivervik, A.*, +, *MWSYM 89 Vol. 3* 1147-1150
- mode-coupling equations at step discontinuity using planar-circuit theory. *Hsu, Jui-Pang*, +, *MWSYM 89 Vol. 3* 1135-1138
- Electromagnetic surface waves; cf. Magnetostatic surface waves**
- Electromagnetic transient analysis**
- high-power microwave diagnostic system based on compact, single-unit, radiate-and-receive devices. *Treado, Todd A.*, +, *MWSYM 89 Vol. 3* 875-878
- Electromagnetic transient propagation**
- distortion of transient signals on multilayer coupled symmetric microstrip transmission lines. *Gilb, James P.*, +, *MWSYM 89 Vol. 3* 1001-1004
- eliminating ringing signals for lossless multisection transmission lines. *Hsue, Chung-Wen*, *T-MTT Aug 89* 1178-1183
- modeling picosecond pulse propagation in microstrip interconnections of integrated circuits. *Goossen, Keith W.*, +, *T-MTT Mar 89* 469-478
- optoelectronic measurements of picosecond electrical pulse propagation in coplanar waveguide. *Pautler, Nicholas G.*, +, *T-MTT Oct 89* 1612-1619
- pulse distortion on multilayer coupled microstrip lines. *Gilb, James P.*, +, *T-MTT Oct 89* 1620-1628
- relaxation analysis of lossy coupled transmission lines; simulating transient response from equivalent disjoint lumped networks. *Chang, Fung-Yueh*, *MWSYM 89 Vol. 2* 653-656
- relaxation analysis of lossy coupled transmission lines; simulating transient response from equivalent disjoint lumped networks. *Chang, Fung-Yueh*, *T-MTT Dec 89* 2028-2038
- time-domain method of lines applied to planar guided-wave structures. *Nam, S.*, +, *T-MTT May 89* 897-901
- time-domain method of lines applied to uniform microstrip line and its step discontinuity. *Nam, S.*, +, *MWSYM 89 Vol. 3* 997-1000
- time-domain method of lines applied to uniform microstrip line and step discontinuity. *Nam, S.*, +, *T-MTT Dec 89* 2051-2057
- transients in nonuniform and uniform multiconductor transmission lines; effects on IC interconnections. *Palusinski, Olgierd A.*, +, *T-MTT Jan 89* 127-138
- Electron emission**
- vacuum microelectronics using electron emitter arrays for RF and submillimeter-wave applications. *Gray, Henry E.*, *CORNEL 89 Abstr I/5*
- Electron radiation effects; cf. Bremsstrahlung**
- Electronic warfare**
- HEMT MMIC low-noise amplifiers for radar, electronic warfare, and military satellite communications uses. *Upton, M. A. G.*, +, *MCS 89* 105-109
- HEMT MMIC low-noise amplifiers for radar, electronic warfare, and military satellite communications uses. *Upton, M. A. G.*, +, *MWSYM 89 Vol. 1* 193-197
- high-performance millimeter-wave local oscillator module for electronic warfare applications. *Boch, Erik*, +, *MWSYM 89 Vol. 3* 1207-1210
- Electrooptic materials/devices**
- incremental device models of electrooptic components for fiber-optic links; external vs. direct modulation. *Cox, C. H., III*, +, *MWSYM 89 Vol. 2* 689-692
- microwave applications of photonics circuits. *Popa, Adrian E.*, *CORNEL 89 Abstr VI/1*
- MMIC-based injection-locked oscillator for optically fed phased-array antennas. *Berceli, T.*, +, *MWSYM 89 Vol. 1* 131-134
- optical phase control of optically injection-locked FET microwave oscillator. *Esman, Ronald D.*, +, *T-MTT Oct 89* 1512-1518
- optically controlled coplanar waveguide phase-shifter. *Cheung, P.*, +, *MWSYM 89 Vol. 1* 307-309
- optically excited microwave ring resonator on GaAs substrate. *McGregor, Douglas S.*, +, *MWSYM 89 Vol. 1* 225-228
- optoelectronic measurements of picosecond electrical pulse propagation in coplanar waveguide. *Pautler, Nicholas G.*, +, *T-MTT Oct 89* 1612-1619
- Electrooptic materials/devices; cf. Integrated optoelectronics**
- Electrooptic measurements**
- external electro-optic probing of millimeter-wave MMICs. *Whitaker, J. F.*, +, *MWSYM 89 Vol. 1* 221-224
- picosecond optoelectronic techniques for characterizing monolithic IC amplifier. *Hung, Hing-Loi A.*, +, *T-MTT Aug 89* 1223-1231
- Electrooptic measurements; cf. Optical pulse measurements**
- Electrooptic modulation**
- laser diodes directly modulated by analog microwave signals; distortion characteristics. *Majewski, M. L.*, +, *MWSYM 89 Vol. 3* 1167-1170
- microstrip used as electrooptic modulator; full-wave analysis using modified spectral-domain approach. *Railton, C. J.*, +, *T-MTT Jul 89* 1099-1104
- planar traveling-wave electrooptic modulators; microwave characteristics. *Delrue, R.*, +, *MWSYM 89 Vol. 3* 1171-1174
- Electrooptic switches**
- generating high-power broadband microwave pulses using picosecond optoelectronic technique. *Sayadian, Hrayr A.*, +, *T-MTT Jan 89* 43-50
- Elevated antennas; cf. Antenna proximity factors**
- Elliptical filters**
- filter design using in line dual-mode and triple-mode cavities and novel iris couplings. *Rosenberg, Uwe*, +, *T-MTT Dec 89* 2011-2019
- filter design using inline dual-mode and triple-mode cavities and novel iris couplings. *Rosenberg, Uwe*, +, *MWSYM 89 Vol. 3* 1155-1158
- thin-film lumped-element microwave filters; lowpass, bandpass, and pseudo-elliptic microstrip designs. *Swanson, Dan*, *MWSYM 89 Vol. 2* 671-674
- Elliptical waveguides**
- cutoff spaces of elliptical gyromagnetic planar circuits and waveguides using finite-element methods. *Hélszajn, Joseph*, +, *T-MTT Jan 89* 71-80
- edge-coupled elliptical (oval) rods between infinite ground planes; even-mode and odd-mode impedances. *Rao, Kodukula V. S.*, +, *T-MTT Aug 89* 1260-1263
- finite-element solution of longitudinally magnetized elliptical gyromagnetic waveguides. *Gibson, Andrew A. P.*, +, *T-MTT Jun 89* 999-1005
- higher-order-mode cutoff frequencies in elliptical step index fibers. *Rengarajan, Sembiam R.*, *T-MTT Aug 89* 1244-1248
- quasiplanar transmission lines within circular or elliptical waveguides; method of lines formulation. *Wu, Ke*, +, *MWSYM 89 Vol. 1* 503-506
- quasiplanar transmission lines within circular or semicircular/elliptical waveguides; method of lines formulation. *Wu, Ke*, +, *T-MTT Dec 89* 1958-1963
- Epitaxial growth**
- 300 KMBE growth of GaAs and AlInAs for high-speed devices. *Delaney, M. J.*, +, *CORNEL 89 Abstr II/3*
- Be-diffusion reduction in GaAs through migration-enhanced epitaxy. *Tadayon, Bijan*, +, *CORNEL 89 Abstr III/5*
- mixed technology of ion implantation and heteroepitaxy; ion-implanted In_xGa_{1-x}As/GaAs MESFETs. *Wang, G. W.*, +, *CORNEL 89 Abstr II/8*
- Equalizers**
- DC-18-GHz variable slope gain-equalizer GaAs MESFET MMIC. *Sun, H. J.*, +, *MCS 89* 79-82
- Equiripple filters**
- contributions of Seymour B. Cohn in design of slotline and equiripple optimization. *Huntor, J. K.*, *MWSYM 89 Vol. 2* 753-755, 757-758
- Equiripple filters; cf. Elliptic filters**
- Equivalent circuits**
- lumped equivalent circuit model for interacting and noninteracting microstrip discontinuities. *Giannini, F.*, +, *MWSYM 89 Vol. 1* 251-254
- Estimation; cf. Delay estimation; Least-squares methods**
- Europe**
- modeling methodologies for passive microwave and millimeter-wave components; recent European developments. *Sorrentino, Roberto*, *MWSYM 89 Vol. 2* 613-616
- recent European developments in active microwave imaging. *Bolomey, J. C.*, *MWSYM 89 Vol. 2* 609-612
- recent European developments in active microwave imaging for industrial, scientific, and medical applications. *Bolomey, Jean-Charles*, *T-MTT Dec 89* 2109-2117
- solid-state local oscillator sources for millimeter and submillimeter waves; recent European developments. *Räsänen, Antti V.*, *MWSYM 89 Vol. 2* 617-620
- Excitation of lasers; cf. Laser excitation**

F

- Fabrication; cf. Integrated-circuit fabrication; Semiconductor device fabrication**
- Fading channels; cf. Diversity methods**
- FDTD (finite-difference - time-domain) methods; cf. Finite-difference methods**
- Feedback amplifiers**
- CAD and performance of ultra-wide-band GaAs FET amplifiers; effect of feedback on noise figure. *Sun, Shiyong*, +, *MWSYM 89 Vol. 1* 401-404
- monolithic GaAs three-stage resistive feedback amplifier for space-vehicle applications. *Archer, John*, +, *T-MTT Apr 89* 790-792
- power amplifier linearization using IF feedback. *Voyce, Kenneth G.*, +, *MWSYM 89 Vol. 3* 863-866
- Feedforward amplifiers**
- inductance taper and forward-feed in GaAs MMIC distributed amplifiers. *Röss, Michael*, +, *MWSYM 89 Vol. 3* 1039-1042
- Ferrimagnetic materials/devices**
- modeling *N*-port ferrimagnetic resonators; impedance matrix derivation using Poynting's theorem. *Buswell, Mark*, *T-MTT May 89* 860-867
- Ferrite circulators**
- 31-GHz uniaxial-ferrite millimeter-wave junction circulators. *Weiss, Gerald A.*, +, *MWSYM 89 Vol. 1* 145-148
- mode charts for magnetized ferrite cylinders used in waveguide junction circulators. *Schieblich, Christian*, *T-MTT Oct 89* 1555-1561
- Ferrite isolators**
- 90-100-GHz ferrite-dielectric image-line field displacement isolators. *Owens, J. M.*, +, *MWSYM 89 Vol. 1* 141-144

Ferrite isolators; cf. Finline isolators**Ferrite-loaded resonators**

complex resonance frequencies of isolated, composite dielectric-ferrite objects using null-field-based method. *Zheng, Wenxin, T-MTT Jun 89 953-961*

magnetic tuning of cylindrical $H_{01\delta}$ -mode dielectric resonators using axial ferrite rod. *Krupka, Jerzy, T-MTT Apr 89 743-747*

resonant modes in shielded cylindrical ferrite and single-crystal dielectric resonators using Galerkin-Rayleigh-Ritz method. *Krupka, Jerzy, T-MTT Apr 89 691-697*

Ferrite-loaded waveguides

magnetically tuned printed E -plane waveguide filters: analysis and tuning efficiency optimization. *Uher, Jaroslav, +, MWSYM 89 Vol. 3 1273-1276*

modeling N -port ferrimagnetic resonators; impedance matrix derivation using Poynting's theorem. *Buswell, Mark, T-MTT May 89 860-867*

nonreciprocal operation of structures consisting of coupled ferrite lines with longitudinal magnetization. *Mazur, Jerzy, +, T-MTT Jun 89 1012-1020*

spectral-domain immittance approach for propagation constants of unilateral finlines with magnetized ferrite substrate. *Xun, Peijue, T-MTT Oct 89 1647-1650*

Ferrite materials/devices; cf. Electromagnetic propagation, magnetic media**Ferrite waveguides**

finite-element solution of longitudinally magnetized elliptical gyromagnetic waveguides. *Gibson, Andrew A. P., +, T-MTT Jun 89 999-1005*

propagation properties of ferromagnetic insular guide for 26.5 to 40 GHz. *Xia, Jiqing, +, T-MTT Oct 89 1547-1554*

Ferrites; cf. YIG films/devices**Ferroelectric delay lines**

insertion loss of electronically variable magnetostatic volume wave delay lines. *Bajpai, S. N., T-MTT Oct 89 1529-1535*

Ferroelectric films/devices; cf. Electromagnetic propagation, magnetic media**FETs**

noise modeling for two-dimensional electron gas FETs based on accurate charge control characteristics. *Ando, Yuji, +, CORNEL 89 Abstr II/9*

FETs; cf. Gallium FETs; JFETs; UHF FETs**Film capacitors; cf. Thin-film capacitors****Filter noise**

CAD program and equations for phase and amplitude noise analysis of component chains. *Riddle, Alf, MWSYM 89 Vol. 1 359-362*

Filtering; cf. Limiting

Filters; cf. Acoustic surface-wave filters; All-pass circuits; Bandpass filters; Bandstop filters; Equalizers; Equiripple filters; Impedance matching; Low-pass filters; Transversal filters; UHF filters

Finite-difference methods

annular phased-arrays for hyperthermia application; numerical simulation using finite-difference time-domain method. *Wang, Chang-Qing, +, T-MTT Jan 89 118-126*

coplanar waveguides; analysis using FDTD method. *Liang, G. C., +, MWSYM 89 Vol. 3 1005-1008*

FDTD calculation of microstrip open-end terminations; curve-fitting of numerical dispersion results. *Zhang, Xiaolei, +, MWSYM 89 Vol. 1 313-316*

microstrip discontinuities; analysis using FDTD. *Railton, C. J., +, MWSYM 89 Vol. 3 1009-1012*

slotline and coplanar waveguide analysis using time-domain finite-difference method. *Liang, Guo-Chun, +, T-MTT Dec 89 1949-1957*

Finite-element methods

combined finite-element and boundary-element methods for waveguide discontinuity analysis. *Wu, Ke Li, +, T-MTT Jun 89 993-998*

comments on 'Numerical analysis of H -plane waveguide junctions by combination of finite and boundary elements' by K. Ise and M. Koshiba. *Leviatan, Yehuda, +, T-MTT Apr 89 805-806* (Original paper, Sep 88 1343-1351)

cutoff spaces of elliptical gyromagnetic planar circuits and waveguides using finite-element methods. *Helszajn, Joseph, +, T-MTT Jan 89 71-80*

discontinuities in open dielectric slab waveguides; combined finite-element and boundary-element methods. *Hirayama, Koichi, +, T-MTT Apr 89 761-768*

equivalent circuits for dielectric posts in rectangular waveguide; combined finite-element and boundary-element methods formulation. *Ise, Kiyoshi, +, T-MTT Nov 89 1823-1825*

evaluating loss factor of multilayered inhomogeneous waveguides for magnetostatic waves using finite-element formalism. *Long, Yi, +, T-MTT Apr 89 680-685*

finite-element solution of longitudinally magnetized elliptical gyromagnetic waveguides. *Gibson, Andrew A. P., +, T-MTT Jun 89 999-1005*

finlines in rectangular and circular waveguide housings including substrate mounting and bending effects; finite-element analysis. *Eswarappa, +, T-MTT Feb 89 299-306*

full-wave finite-element analysis of irregular microstrip discontinuities. *Jackson, Robert W., T-MTT Jan 89 81-89*

infinite elements for analysis of open dielectric waveguides. *McDougall, Marc J., +, T-MTT Nov 89 1724-1731*

modes in dielectric-loaded cylindrical cavities using a one-dimensional finite element method. *Taheri, M. Mohammad, +, T-MTT Oct 89 1536-1541*

moment method solution of volume-surface integral equation using isoparametric elements and point matching. *Jin, Jian-Ming, +, T-MTT Oct 89 1641-1645*

numerically efficient finite-element formulation for general waveguide problem without spurious modes, derived from first-order Maxwell curl equations. *Svedin, Jan, T-MTT Nov 89 1708-1715*

self-adaptive mesh scheme for finite-element analysis of anisotropic multiconductor transmission lines. *Salazar-Palma, Magdalena, +, MWSYM 89 Vol. 1 507-510*

three-dimensional finite element method applied to dielectric resonator devices in metallic enclosure. *Verdeyme, S., +, MWSYM 89 Vol. 3 1151-1154*

vector finite-element formalism for waveguides loaded with lossy anisotropic materials. *Hayata, Kazuya, +, T-MTT May 89 875-883*

vectorial finite-element formulation using transverse electric field component for nonhomogeneous dielectric waveguides. *Hayata, Kazuya, +, T-MTT Jan 89 256-258*

Finline

asymmetrical unilateral finline; characterization and application in 20-GHz bandpass filter and 4/20-GHz mixer. *Espes, Patrick, +, T-MTT Feb 89 289-298*

complex modes in generalized bilateral finline with mounting grooves and finite conductor thickness. *Wang, Weyl-Kuo, +, MWSYM 89 Vol. 1 491-494*

complex modes in generalized bilateral finline with mounting grooves and finite conductor thickness. *Wang, Weyl-Kuo, +, T-MTT Dec 89 1891-1897*

coupled mode analysis of finline loaded with arbitrary nonhomogeneous lossy dielectric. *Mazur, Jerzy, +, T-MTT Feb 89 281-288*

finlines in rectangular and circular waveguide housings including substrate mounting and bending effects; finite-element analysis. *Eswarappa, +, T-MTT Feb 89 299-306*

generalized spectral-domain analysis of planar lines on layered media including uniaxial and biaxial dielectric substrates. *Medina, Francisco, +, T-MTT Mar 89 504-511*

mixed spectral-domain approach for dispersion analysis of suspended planar transmission lines with pedestals. *Chan, Chi Hou, +, T-MTT Nov 89 1716-1723*

nonsymmetrically coplanar waveguides for millimeter-wave uses; theoretical and experimental characterization. *Alessandri, F., +, MWSYM 89 Vol. 3 1219-1222*

nonsymmetrically shielded coplanar waveguides for millimeter-wave uses; theoretical and experimental characterization. *Alessandri, Ferdinando, +, T-MTT Dec 89 2020-2027*

quasi-planar transmission lines; overview. *Itoh, Tatsuo, T-MTT Feb 89 275-280*

spectral-domain immittance approach for propagation constants of unilateral finlines with magnetized ferrite substrate. *Xun, Peijue, T-MTT Oct 89 1647-1650*

Finline circuits

17-GHz finline FET amplifier using NE67300 field-effect transistor. *L'Ecuyer, Jean, +, T-MTT Feb 89 425-428*

oscillators and amplifiers using integrated E -plane technique. *Hoefer, Wolfgang J. R., T-MTT Feb 89 351-364*

p-i-n diode control devices for finline circuits; state-of-the-art overview. *Callsen, Heinrich, +, T-MTT Feb 89 307-316*

quasi-planar FET amplifier in integrated finline and microstrip technique. *Ruxton, James, +, T-MTT Feb 89 429-432*

Finline components

nonreciprocal operation of structures consisting of coupled ferrite lines with longitudinal magnetization. *Mazur, Jerzy, +, T-MTT Jun 89 1012-1020*

quasi-planar millimeter-wave components and subsystems (special issue). *T-MTT Feb 89 273-437*

Finline components; cf. Specific device**Finline discontinuities**

approximate variational solution to step discontinuity in finline giving optimized lumped equivalent circuit components. *Olley, Chris A., +, T-MTT Jun 89 977-983*

Finline filters

asymmetrical unilateral finline; characterization and application in 20-GHz bandpass filter and 4/20-GHz mixer. *Espes, Patrick, +, T-MTT Feb 89 289-298*

quasi-planar filters for millimeter-wave applications using ladder-shaped E -plane structures. *Vahldieck, Ruediger, T-MTT Feb 89 324-334*

Finline isolators

mode coupling in longitudinally magnetized waveguiding structures; application to finline isolators. *Mazur, Jerzy, +, T-MTT Jan 89 159-165*

Finline switches

p-i-n diode control devices for finline circuits; state-of-the-art overview. *Callsen, Heinrich, +, T-MTT Feb 89 307-316*

Finline transitions

tapered transmission line matching transformers and asymmetric couplers supporting non-TEM modes; generalized theory. *Pramanick, Protap, +, T-MTT Aug 89 1184-1191*

Fire-control systems; cf. Aircraft fire-control systems**FM broadcasting; cf. TV broadcasting****FM noise**

37.5-GHz-band FM and AM oscillator noise measurement using cavity resonator discriminator. *Deng, Minren, +, MWSYM 89 Vol. 3 1179-1181*

FM pulse compression; cf. Chirp modulation**Focusing**

focusing mirrors for Gaussian beams; procedure for mirror shape calculation using control of beam-phase distribution. *Boheim, Manfred, MWSYM 89 Vol. 3 1255-1258*

gain optimization of near-field focusing array for hyperthermia applications. *Loane, Joseph T., III, +, T-MTT Oct 89 1629-1635*

Fourier transforms

generalized transform pair for tapered transmission-line matching transformers and asymmetric couplers supporting non-TEM modes. *Pramanick, Protap*, +, *T-MTT Aug 89* 1184-1191

Frequency conversion

regenerative frequency dividers using double-balanced mixers; closed-form expressions using modified Bessel functions. *Harrison, Robert G.*, *MWSYM 89 Vol. 1* 459-462

Frequency conversion; cf. Harmonic distortion; Heterodyning; Josephson device mixers/frequency converters; Schottky diode frequency converters; UHF frequency conversion

Frequency division; cf. Counting circuits; Frequency conversion

Frequency-locked loops; cf. Phase-locked loops

Frequency multiplication; cf. Microwave frequency conversion

Frequency synthesizers

Ku-band MMIC PLL frequency synthesizer using two GaAs MMICs; prototype development. *Ohira, Takashi*, +, *MWSYM 89 Vol. 3* 1047-1050

state-preserving intermittently locked loop (SPILL) frequency synthesizer for portable radio. *Saito, S.*, +, *MWSYM 89 Vol. 1* 435-438

state-preserving intermittently locked loop (SPILL) frequency synthesizer for portable radio. *Saito, Shigeki*, +, *T-MTT Dec 89* 1898-1903

G**Gallium FETs**

1-D numerical gradual channel model for dual-gate GaAs MESFETs. *Darling, Robert B.*, *T-MTT Sep 89* 1351-1360

numerical simulation of GaAs MESFETs with p-buffer layer on semi-insulating substrate compensated by deep traps. *Horio, Kazushige*, +, *T-MTT Sep 89* 1371-1379

p-HFETs with GaAsSb channel. *Tarillo, J.*, +, *CORNEL 89 Abstr V/8*

Gallium FETs; cf. Microwave FETs; Millimeter-wave FETs; MMICs; MODFETs; Specific device

Gallium materials/devices

25-42-GHz GaAs heterojunction bipolar transistor push-push VCOs with low phase noise. *Smith, D. M.*, +, *MWSYM 89 Vol. 2* 725-728

passivation and gating of III-V surfaces; MIS gate structures using GaAs. *Markunas, Robert J.*, *CORNEL 89 Abstr I/4*

Gallium materials/devices; cf. Bipolar transistors; Integrated circuit ...

Gallium materials/lasers; cf. Quantum-well lasers

Gaussian beams

focusing mirrors for Gaussian beams; procedure for mirror shape calculation using control of beam-phase distribution. *Boheim, Manfred*, *MWSYM 89 Vol. 3* 1255-1258

Geometry

conductor geometry independence of phase velocity in TEM-mode transmission lines; proof using circuital considerations. *Green, Harry E.*, *T-MTT Apr 89* 805

Germanium materials/devices

calculated high frequency performance of npn Si_{1-x}Ge_x HBT. *Racanelli, Marco*, +, *CORNEL 89 Abstr III/3*

characterization of Si- and SiGe-base bipolar transistors for high frequency and high speed applications; basic transport and design. *Hinckley, J. M.*, +, *CORNEL 89 Abstr III/2*

possibility of silicon-germanium monolithic millimeter-wave integrated circuits. *Campbell, S. A.*, +, *MWSYM 89 Vol. 2* 817-819

possibility of silicon-germanium monolithic millimeter-wave integrated circuits. *Campbell, Stephen A.*, +, *T-MTT Dec 89* 2046-2050

SiGe heterostructures and superlattices; properties and characterization. *Wang, Kang L.*, *CORNEL 89 Abstr III/1*

Gradient methods

field distributions in arbitrarily shaped heterogeneous dielectric or biological body, using iterative conjugate-gradient method. *Wang, Johnson J. H.*, +, *T-MTT Jul 89* 1119-1125

high-speed gradient computation for harmonic balance simulators. *Bandler, J. W.*, +, *MWSYM 89 Vol. 1* 363-366

iterative moment method computation of electromagnetic effects on large biological bodies. *Wang, J. J. H.*, +, *MWSYM 89 Vol. 1* 183-186

iterative moment-method computation of electromagnetic fields in large biological bodies. *Wang, Johnson J. H.*, +, *T-MTT Dec 89* 1918-1923

Gratings

filter characteristics of nonradiating dielectric (NRD) waveguide gratings. *Yang, Ping*, +, *MWSYM 89 Vol. 1* 499-502

Gratings; cf. Electromagnetic scattering, periodic structures

Green's function

closed-form asymptotic representation of grounded dielectric slab Green's function for planar microstrip geometries. *Marin, Miguel*, +, *T-MTT Apr 89* 669-679

deriving space-domain Green's function in shielded, multilayer substrate structure; applications to MIS slow-wave transmission lines. *Livernois, Thomas G.*, +, *T-MTT Nov 89* 1761-1767

mutual impedance between probes in circular waveguide using dyadic Green's function with reaction theorem. *Wang, Bai-Suo*, *T-MTT Jun 89* 1006-1012

space-domain Green's function approach for capacitance calculation of multiconductor lines in multilayered dielectrics with improved surface charge modeling. *Delbare, Wim*, +, *T-MTT Oct 89* 1562-1568

Gunn device oscillators

cochannel signal's effect on electrical tuning characteristics of Gunn injection-locked microwave oscillator. *Biswas, B. N.*, +, *T-MTT Mar 89* 627-630

electromagnetic model of radial-resonator waveguide diode mount. *Bialkowski, Marek E.*, *T-MTT Oct 89* 1603-1611

fundamental-wave injection locking of millimeter-wave Gunn harmonic oscillator using large-signal model of Gunn device. *Chen, Ning*, +, *MWSYM 89 Vol. 1* 479-482

millimeter-wave lumped-element Gunn VCOs with ultrawideband (20 GHz) tuning. *Cohen, Leonard D.*, +, *MWSYM 89 Vol. 3* 1287-1290

MMIC-compatible 55-mW InP and GaAs 30-40-GHz field-controlled transferred-electron device oscillators. *Lübke, K.*, +, *MWSYM 89 Vol. 2* 729-730

MMIC-compatible 55 mW InP and GaAs 30-40-GHz field-controlled transferred-electron device oscillators. *Scheiber, Helmut*, +, *T-MTT Dec 89* 2093-2098

oscillators and amplifiers using integrated E-plane technique. *Hoefer, Wolfgang J. R.*, *T-MTT Feb 89* 351-364

solid-state local oscillator sources for millimeter and submillimeter waves; recent European developments. *Räsänen, Antti V.*, *MWSYM 89 Vol. 2* 617-620

W-band channelized three-chip MMIC receiver using MMIC mixer/multiplexer, MMIC Gunn oscillator, and MMIC amplifier. *Lan, G. L.*, +, *MCS 89* 95-99

W-band channelized three-chip MMIC receiver using MMIC mixer/multiplexer, MMIC Gunn oscillator, and MMIC amplifier. *Lan, G. L.*, +, *MWSYM 89 Vol. 1* 103-107

W-band suspended-substrate microstripline second-harmonic GaAs Gunn oscillator. *Shu, Yonghui*, +, *MWSYM 89 Vol. 3* 1211-1214

Gunn devices

GaAs Gunn diodes using ballistically hot electron injectors; characterization at 94 GHz. *Neylon, S.*, +, *MWSYM 89 Vol. 1* 519-522

Gyromagnetism; cf. Electromagnetic propagation, magnetic media; Ferrite waveguides

Gyrotrons

phase and injection locking of orotron oscillator; experimental results. *McMillan, R. W.*, +, *T-MTT Nov 89* 1828-1830

H**Harmonic analysis**

aliasing control in harmonic balance simulation of nonlinear microwave circuits. *Heron, Patrick L.*, +, *MWSYM 89 Vol. 1* 355-358

frequency-domain spectral balance using arithmetic operator method; simulating nonlinear analog circuits with multidimensional nonlinearities. *Chang, Chao-ren*, +, *T-MTT Nov 89* 1681-1688

high-speed gradient computation for harmonic balance simulators. *Bandler, J. W.*, +, *MWSYM 89 Vol. 1* 363-366

large-signal FET parameter extraction using harmonic balance method. *Bandler, J. W.*, +, *MWSYM 89 Vol. 2* 577-580

large-signal FET parameter extraction using harmonic balance method. *Bandler, John W.*, +, *T-MTT Dec 89* 2099-2108

large-signal quasistatic MESFET model for CAD also usinn signal/two-tone harmonic balance analysis. *Pantoja, R. R.*, +, *MWSYM 89 Vol. 2* 573-576

large-signal quasistatic MESFET model for CAD using single/two-tone harmonic balance analysis. *Pantoja, Renato R.*, +, *T-MTT Dec 89* 2039-2045

spectral-domain analysis of harmonic effects in superconducting quasiparticle mixers. *Withington, Stafford*, +, *T-MTT Jan 89* 231-238

waveform-balance method algorithm for nonlinear MESFET amplifier simulation. *Hwang, Vincent D.*, +, *T-MTT Dec 89* 2125-2133

waveform-balance method algorithm for nonlinear MESFET amplifier simulation. *Hwang, Vincent D.*, +, *MWSYM 89 Vol. 2* 581-584

Harmonic analysis; cf. Spectral analysis

Harmonic distortion

laser diodes directly modulated by analog microwave signals; distortion characteristics. *Majewski, M. L.*, +, *MWSYM 89 Vol. 3* 1167-1170

measuring magnitude and phase of harmonics generated in nonlinear microwave two-ports. *Lott, Urs*, *T-MTT Oct 89* 1506-1511

third-harmonic-peaking class-F power amplifier operation for higher efficiencies. *Köpp, William S.*, +, *MWSYM 89 Vol. 3* 857-858

Harmonic generation; cf. Frequency conversion

HDTV (high-definition TV); cf. TV

Heating; cf. Electromagnetic heating

HEMTs; cf. Millimeter-wave FETs; MODFETs

Heterodyning

optical receiver and modulator frequency response measurement using Nd:YAG ring laser heterodyne technique. *Tan, Tan S.*, +, *T-MTT Aug 89* 1217-1222

Heterojunctions; cf. Semiconductor heterojunctions

High-speed integrated circuits

2-D electron gas AlGaAs/InGaAs/GaAs structures on GaAs for high-speed millimeter-wave MODFETs. *Kohn, E.*, +, *CORNEL 89 Abstr II/6*

300 K MBE growth of GaAs and AlInAs for high-speed devices. *Delaney, M. J.*, +, *CORNEL 89 Abstr II/3*

characterization of Si- and SiGe-base bipolar transistors for high frequency and high speed applications; basic transport and design. *Hinckley, J. M.*, +, *CORNEL 89 Abstr III/2*

equivalent circuit model for terminated hybrid-mode multiconductor transmission lines; application to high-speed ICs. *Carin, Lawrence*, +, *T-MTT Nov 89* 1784-1793

noninvasive laser high speed electronic measurements of millimeter-wave ICs. *Bloom, David M.*, *CORNEL 89 Abstr IV/1*

High- T_c superconductors; cf. Superconducting materials**History**

- contributions of Seymour B. Cohn in design of slotline and equiripple optimization. *Huntton, J. K.*, *MWSYM 89 Vol. 2* 753-755, 757-758
- overview of special session in honor of Dr. Seymour B. Cohn. *La Turrette, Peter M.*, *T-MTT Dec 89* 1857-1861
- Rantec years of Seymour B. Cohn (1960 to 1967). *Harrison, William H.*, *MWSYM 89 Vol. 2* 749-751, 757-758
- Seymour B. Cohn's contributions to microwave engineering; overview. *Matthaei, George L.*, *MWSYM 89 Vol. 2* 745-748, 757-758

Home appliances

- microwave-oven magnetrons; operation and properties. *Brown, William C.*, *MWSYM 89 Vol. 3* 871-874

Homodyne detection

- phase-shifter controlled homodyne double-reflectometer; using reciprocity for complex network analyzer measurements. *Eul, H.-J.*, *MWSYM 89 Vol. 3* 1187-1190

Horn antennas

- microstrip horn with conducting flaps for broadband phased-array elements. *Garcia, A. C.*, +, *MWSYM 89 Vol. 1* 135-138

Hybrid integrated circuits

- 1-40 GHz MESFET hybrid distributed amplifier. *Brouzes, H.*, +, *MWSYM 89 Vol. 3* 849-852
- broadband power amplifiers based on monolithic ceramic technology. *Sechi, F. N.*, +, *MWSYM 89 Vol. 3* 937-940
- microwave amplifier manufacturing with advanced thin-film MIC and elementary MMIC technology. *Crescenzi, E. J., Jr.*, +, *MWSYM 89 Vol. 2* 773-776

Hybrid integrated circuits; cf. Microwave FET integrated circuits; Thin-film circuits**Hybrid junctions**

- 6-18-GHz multisection hybrid coupler using asymmetric broadside-coupled and edge-coupled lines. *Izadian, Jamal S.*, *MWSYM 89 Vol. 1* 243-246
- broadband printed-circuit hybrid ring power divider. *Mikucki, Gerald F.*, +, *T-MTT Jan 89* 112-117
- contributions during Rantec years of Seymour B. Cohn (1960 to 1967). *Harrison, William H.*, *MWSYM 89 Vol. 2* 749-751, 757-758
- double-sided microwave integrated circuit components. *Aikawa, Masayoshi*, +, *T-MTT Feb 89* 406-413
- microstrip planar-disk 3-dB quadrature hybrid. *Page, M. J.*, +, *MWSYM 89 Vol. 1* 247-250
- MMIC 180° lumped-element hybrid. *Parisi, Samuel J.*, *MWSYM 89 Vol. 3* 1243-1246
- MMIC GaAs FET magic-T for 1-18 GHz operation. *Tokumitsu, Tsuneo*, +, *MWSYM 89 Vol. 3* 963-966
- MMIC GaAs FET magic-T for 1-18 GHz operation. *Tokumitsu, Tsuneo*, +, *T-MTT Dec 89* 1985-1990
- rectangular disk 3-dB hybrid. *Ohia, Isao*, +, *MWSYM 89 Vol. 1* 235-238
- very small wideband MMIC magic-Ts using microstrip on thin dielectric film. *Hiraoka, Takahiro*, +, *T-MTT Oct 89* 1569-1575

Hyperthermia

- 3-D specific absorption rate distributions in multilayered cylindrical model for 70 MHz hyperthermia. *Hill, Steven C.*, +, *T-MTT Aug 89* 1192-1199
- annular phased-arrays for hyperthermia application; numerical simulation using finite-difference time-domain method. *Wang, Chang-Qing*, +, *T-MTT Jan 89* 118-126
- gain optimization of near-field focusing array for hyperthermia applications. *Loane, Joseph T., III*, +, *T-MTT Oct 89* 1629-1635
- performance comparison of three interstitial antennas for hyperthermia at 915 MHz, using numerical model. *Turneh, Amer M.*, +, *T-MTT Jul 89* 1126-1133
- power coupling from waveguide hyperthermia applicator into three-layered tissue model at 432 MHz and 144 MHz. *Nikita, Konstantina S.*, +, *T-MTT Nov 89* 1794-1801
- specific absorption rate distributions for interstitial hyperthermia dipole antenna arrays at 915 MHz. *Jones, Kenneth M.*, +, *T-MTT Aug 89* 1200-1209

Hysteresis (magnetics)

- dominance of resistive losses over hysteretic losses in ferromagnetic conductors. *Thomber, K. K.*, *T-MTT Jul 89* 1152-1153

I**IEEE Microwave Theory and Techniques Society; cf. Awards****IEEE Transactions on Microwave Theory and Techniques**

- outgoing Editor's farewell. *Levy, Ralph, Ed.*, *T-MTT Jan 89* 1-2

IF amplifiers

- GaAs HBT monolithic logarithmic IF (0.5-1.5 GHz) amplifier with 60-dB dynamic range and 400-mW power consumption. *Gorman, G. M.*, +, *MWSYM 89 Vol. 2* 537-540
- monolithic 60-GHz diode mixer and IF amplifier in compatible technology. *Adelbeck, Bernd*, +, *T-MTT Dec 89* 2142-2147

Image guide; cf. Dielectric waveguides**Image reconstruction; cf. Image orientation analysis****Image shape analysis; cf. Radar target recognition****Imaging/mapping; cf. Inverse problems; Synthetic-aperture imaging****IMPATT diode oscillators**

- lossless high-power switch at 94 GHz using four power-combined IMPATT oscillators. *Barth, Helmut*, *MWSYM 89 Vol. 3* 1087-1090
- monolithic IMPATT millimeter-wave quasioptical oscillator stabilized by open-cavity resonator operating in 50-GHz region. *Shillue, William P.*, +, *MWSYM 89 Vol. 2* 739-740

monolithic IMPATT oscillator characterization using transmission resonance method and varactor method. *Wang, Nan-Lei*, +, *T-MTT Feb 89* 393-399

multi-IMPATT injection-locked oscillator at 35-GHz with 38 W peak power for 30% duty cycle. *Adlerstein, Michael G.*, +, *T-MTT Mar 89* 571-579

oscillators and amplifiers using integrated E-plane technique. *Hoefler, Wolfgang J. R.*, *T-MTT Feb 89* 351-364

solid-state local oscillator sources for millimeter and submillimeter waves; recent European developments. *Räsänen, Antti V.*, *MWSYM 89 Vol. 2* 617-620

IMPATT diodes

RF performance characteristics of double-drift millimeter-wave diamond IMPATT diodes. *Mock, P. M.*, +, *CORNEL 89 Abstr VI/7*

Impedance matching

2-32-GHz three-stage HEMT ultra-broad-band lossy match amplifiers. *Ito, Yasushi*, +, *MWSYM 89 Vol. 1* 379-383

active broadband impedance transformations using distributed techniques. *Cioffi, Kenneth R.*, *MWSYM 89 Vol. 3* 1043-1046

active broadband impedance transformations using distributed techniques. *Cioffi, Kenneth R.*, *T-MTT Dec 89* 1870-1876

circuit yield as criterion for choice among possible two-element or three-element lumped, lossless matching structures for specified bandwidth constraint. *Brakenstiek, W.*, +, *MWSYM 89 Vol. 1* 431-434

lumped lossy circuit synthesis; application to matching networks in broadband FET MMIC amplifier. *Zhu, Lizhong*, +, *T-MTT Sep 89* 1488-1491

rectangular spiral impedance transformers for MMIC applications. *Boulouard, Andre*, +, *T-MTT Aug 89* 1257-1260

RLC matching network and application in 1-20 GHz monolithic amplifier. *Ikäläinen, Pertti K.*, *MWSYM 89 Vol. 3* 1115-1118

tapered transmission line matching transformers and asymmetric couplers supporting non-TEM modes; generalized theory. *Pramanick, Protap*, +, *T-MTT Aug 89* 1184-1191

Impedance matching; cf. Baluns**Impedance matrix**

modeling N -port ferrimagnetic resonators; impedance matrix derivation using Poynting's theorem. *Buswell, Mark*, *T-MTT May 89* 860-867

Impedance measurement

approximation method for characteristic impedance of coaxial lines with circular inner conductor and polygonal outer conductor. *Estévez, H.*, +, *T-MTT Mar 89* 634-637

characteristic impedance of tubular dielectric cylinder covered with conducting arc strips. *Zargari, V.*, +, *T-MTT Oct 89* 1645-1647

correction factor for impedance of wire grid parallel to homogeneous dielectric interface. *Young, Jeffrey L.*, +, *T-MTT Jul 89* 1136-1138

corrections to 'Mutual impedance between probes in a waveguide' (Jan 88 53-60). *Wang, Bai-Suo*, *T-MTT May 89* 932

direct measurement of optimum transistor source impedance for minimum noise figure. *Ishikawa, Osamu*, +, *MWSYM 89 Vol. 3* 1183-1186

frequency-dependent impedance of p-i-n diodes; dependence on device geometry and electric properties. *Caverly, Robert H.*, +, *T-MTT Apr 89* 787-790

high- T_c superconductor surface impedance at millimeter-wave spectral range. *Drabek, L.*, +, *MWSYM 89 Vol. 2* 551-554

input impedance of hollow-probe-fed semi-infinite rectangular waveguide, using image theory. *Rollins, John M.*, +, *T-MTT Jul 89* 1144-1146

MBE-grown resonant tunneling device characteristics. *Owens, J. M.*, +, *MWSYM 89 Vol. 1* 471-474

mutual impedance between probes in circular waveguide using dyadic Green's function with reaction theorem. *Wang, Bai-Suo*, *T-MTT Jun 89* 1006-1012

reactances of slotline short and open circuit on alumina substrate. *Chramiec, Jerzy*, *T-MTT Oct 89* 1638-1641

wire and strip conductors over dielectric-coated conducting or dielectric half-space; complex wavenumber and characteristic impedance. *King, Ronald W. P.*, *T-MTT Apr 89* 754-760

Impedance measurement; cf. Admittance measurement; Scattering parameters measurement**Impedance transformers; cf. Baluns; Impedance matching****Implantable biomedical devices**

specific absorption rate distributions for interstitial hyperthermia dipole antenna arrays at 915 MHz. *Jones, Kenneth M.*, +, *T-MTT Aug 89* 1200-1209

Implantable electrodes

performance comparison of three interstitial antennas for hyperthermia at 915 MHz, using numerical model. *Turneh, Amer M.*, +, *T-MTT Jul 89* 1126-1133

Indexes

cumulative index issue. *T-MTT Jun 89* II/1-187

Indium materials/devices; cf. Specific device**Inductance calculations**

variational method for line inductances of planar transmission lines with anisotropic magnetic media. *Kitazawa, Toshihide*, *T-MTT Nov 89* 1749-1754

Inductance simulation

lossless, broadband monolithic microwave active inductors. *Hara, Shinji*, +, *MWSYM 89 Vol. 3* 955-958

lossless broad-band monolithic microwave active inductors. *Hara, Shinji*, +, *T-MTT Dec 89* 1979-1984

Inductive coupling; cf. Coupled transmission lines**Inductors**

- analysis and modeling of coupled right-angle microstrip bend discontinuities; iterative moment method formulation applied to rectangular spiral inductor. *Hill, A.*, +, *MWSYM 89 Vol. 3* 1143-1146
- correction to 'Broad-band monolithic microwave active inductor and its application to miniaturized wide-band amplifiers' (Dec 88 1920-1924). *Hara, Shinji*, +, *T-MTT Jul 89* 1155
- lossless, broadband monolithic microwave active inductors. *Hara, Shinji*, +, *MWSYM 89 Vol. 3* 955-958
- lossless broad-band monolithic microwave active inductors. *Hara, Shinji*, +, *T-MTT Dec 89* 1979-1984
- power transfer mechanism of MMIC spiral transformers and adjacent spiral inductors; analysis using WATMIC-EMSim software. *Howard, G. E.*, +, *MWSYM 89 Vol. 3* 1251-1254

Inductors; cf. Thin-film inductors**Industrial production; cf. Manufacturing****Infrared imaging/mapping; cf. Biomedical imaging, infrared****Injection-locked amplifiers**

- large-signal transient analysis of multiple tuned injection-locked amplifiers with modulated input signal. *Calandra, Enrico F.*, +, *T-MTT May 89* 826-835

Injection-locked amplifiers; cf. Phase-locked amplifiers**Injection-locked oscillators**

- experiments on injection locking of active antenna elements for active phased arrays and spatial power combiners. *Chang, Kai*, +, *T-MTT Jul 89* 1078-1084
- fundamental-wave injection locking of millimeter-wave Gunn harmonic oscillator using large-signal model of Gunn device. *Chen, Ning*, +, *MWSYM 89 Vol. 1* 479-482
- MMIC-based injection-locked oscillator for optically fed phased-array antennas. *Berceli, T.*, +, *MWSYM 89 Vol. 1* 131-134
- multi-IMPATT injection-locked oscillator at 35-GHz with 38 W peak power for 30% duty cycle. *Adlerstein, Michael G.*, +, *T-MTT Mar 89* 571-579
- optical phase control of optically injection-locked FET microwave oscillator. *Esman, Ronald D.*, +, *T-MTT Oct 89* 1512-1518
- phase and injection locking of orotron oscillator; experimental results. *McMillan, R. W.*, +, *T-MTT Nov 89* 1828-1830

Injection-locked oscillators; cf. Gunn device oscillators**Integral equations**

- integral equation approach for analysis and design of slow-wave structures. *Livernois, Thomas G.*, +, *MWSYM 89 Vol. 3* 1131-1134

Integral equations; cf. Boundary integral equations**Integrated-circuit bonding**

- techniques and materials for device alloy attachment with high reliability and throughput. *Pavio, Jeanne S.*, *MWSYM 89 Vol. 2* 761-764

Integrated-circuit design; cf. Circuit optimization; Yield optimization**Integrated-circuit fabrication**

- wafer-scale integration of microwave T/R modules on 3-inch GaAs wafers. *Driver, M. C.*, +, *CORNEL 89 Abstr I/1*

Integrated-circuit fabrication; cf. Epitaxial growth; Specific device**Integrated-circuit interconnections**

- multiconductor buses for high-speed GaAs logic circuits; crosstalk, propagation delay, and pulse distortion. *Ghione, Giovanni*, +, *T-MTT Mar 89* 445-456
- parasitic effects induced by power strip current switching in wafer package. *Chilo, J.*, +, *MWSYM 89 Vol. 3* 1259-1262
- transients in nonuniform and uniform multiconductor transmission lines; effects on IC interconnections. *Palusinski, Olgierd A.*, +, *T-MTT Jan 89* 127-138

Integrated-circuit measurements

- coplanar waveguide vector network analyzer for on-wafer measurements at millimeter-wave frequencies. *Bellanioni, J. V.*, +, *CORNEL 89 Abstr IV/3*
- direct measurement of optimum transistor source impedance for minimum noise figure. *Ishikawa, Osamu*, +, *MWSYM 89 Vol. 3* 1183-1186
- full-wave analysis of conductor losses on MMIC transmission lines. *Heinrich, Wolfgang*, *MWSYM 89 Vol. 3* 911-914
- noncontacting magnetic-field probe for measurements on high-frequency planar circuits for 26.5-40-GHz operation. *Osofsky, Samuel S.*, +, *MWSYM 89 Vol. 2* 823-825
- noninvasive laser high speed electronic measurements of millimeter-wave ICs. *Bloom, David M.*, *CORNEL 89 Abstr IV/1*
- on-wafer large-signal pulsed measurements. *Vidalou, J. F.*, +, *MWSYM 89 Vol. 2* 831-834
- on-wafer verification of a large-signal MESFET model. *Curcio, W. R.*, +, *T-MTT Nov 89* 1809-1811

Integrated-circuit metallization; cf. Integrated-circuit interconnections**Integrated-circuit noise**

- parasitic effects induced by power strip current switching in wafer package. *Chilo, J.*, +, *MWSYM 89 Vol. 3* 1259-1262
- suppression of resonant modes in microwave packages. *Williams, Dylan F.*, +, *MWSYM 89 Vol. 3* 1263-1265

Integrated-circuit packaging

- lossy model of diode packages as alternative method for exact evaluation of active chip parameters. *Kazi, Karoly*, +, *MWSYM 89 Vol. 3* 1267-1270
- suppression of resonant modes in microwave packages. *Williams, Dylan F.*, +, *MWSYM 89 Vol. 3* 1263-1265

Integrated circuit reliability

- undesired effects due to dense packing in supported coplanar waveguide MMICs using combined methods. *Wolff, Ingo*, +, *MWSYM 89 Vol. 2* 657-660

Integrated-circuit thermal factors; cf. Cryogenic electronics**Integrated circuits; cf. High-speed integrated circuits; Hybrid integrated circuits; Integrated optoelectronics; MMICs; Thin-film circuits; Wafer-scale integration****Integrated optoelectronics**

- magneto-optic interactions between guided optical waves and magnetostatic waves; device modules and applications to communications and signal processing. *Tsai, C. S.*, +, *MWSYM 89 Vol. 1* 303-306
- microwave applications of photonics circuits. *Popa, Adrian E.*, *CORNEL 89 Abstr VI/1*
- monolithically integrated GaAs- and InP-based front-end photoreceivers. *Li, W. Q.*, +, *CORNEL 89 Abstr VI/4*

Intelligent systems; cf. Learning systems**Interchannel interference; cf. Crosstalk****Interconnected circuits**

- high-frequency conductor and dielectric losses in interconnects made of multilayer planar structures using strip conductors. *van Deventer, T. Emilie*, +, *T-MTT Dec 89* 1964-1972

Interconnected circuits; cf. Cascade circuits**Interconnections, integrated circuits; cf. Integrated-circuit interconnections****Interference; cf. Cochannel interference; Crosstalk; Distortion****Intermodulation distortion**

- Class-A GaAs FET power amplifier design for optimizing intermodulation product. *Daido, Yoshimasa*, +, *MWSYM 89 Vol. 1* 393-396
- laser diodes directly modulated by analog microwave signals; distortion characteristics. *Majewski, M. L.*, +, *MWSYM 89 Vol. 3* 1167-1170
- minimizing intermodulation distortion in GaAs MESFET small-signal amplifiers; numerical Volterra series formulation 2. *Crosmun, Andrea M.*, +, *T-MTT Sep 89* 1411-1417

Inverse problems

- microwave imagery using Bojarski's identity; specular reflections on surface of large conducting convex object. *Chu, Tah-Hsiung*, +, *T-MTT Jul 89* 1141-1144
- solution method for inverse problems with measurement errors; application to medical microwave radiometry. *Mizushima, Shizuo*, +, *MWSYM 89 Vol. 1* 171-174

Ion implantation; cf. Semiconductor device ion implantation**Isolators; cf. Ferrite isolators; Finline isolators****J****Japan**

- GaAs MMIC progress in Japan; overview of present trends. *Aikawa, Masayoshi*, +, *MCS 89* 1-6

JFETs

- FETs with superconducting channels. *Kleinsasser, A. W.*, *CORNEL 89 Abstr I/2*

Josephson device measurement applications

- high- T_c superconducting Josephson millimeter-wave spectral detector using granular bridge sensor coupled to microstrip line. *Daginnus, M.*, +, *MWSYM 89 Vol. 2* 631-634

Josephson device mixers/frequency converters

- microwave comb generation with Josephson junction array. *Hohenwarter, G. K. G.*, +, *MWSYM 89 Vol. 1* 447-450

Junctions; cf. Hybrid junctions; Waveguide junctions**L****Land mobile radio; cf. Portable radio****Land mobile radio base stations**

- 800-MHz-band dielectric receiving filter with sharp stopband using active feedback resonator approach. *Nishikawa, Toshio*, +, *T-MTT Dec 89* 2074-2079
- 800-MHz-band dielectric receiving filter with sharp stopband using active feedback resonator method for cellular base stations. *Ishikawa, Youhei*, +, *MWSYM 89 Vol. 2* 591-594

Large signal ...; cf. Nonlinear ...**Laser applications; cf. Light-triggered switches****Laser applications, materials processing**

- laser-processed microwave HEMTs with AlAs-nGaAs superlattice donor layers. *Dumas, J. M.*, +, *MWSYM 89 Vol. 1* 483-486

Laser applications, measurement

- 100-GHz on-wafer S-parameter measurements using electrooptic sampling; application to coplanar waveguide characterization. *Majidi-Ahy, R.*, +, *MWSYM 89 Vol. 1* 299-302
- noninvasive laser high speed electronic measurements of millimeter-wave ICs. *Bloom, David M.*, *CORNEL 89 Abstr IV/1*
- optical receiver and modulator frequency response measurement using Nd:YAG ring laser heterodyne technique. *Tan, Jun S.*, +, *T-MTT Aug 89* 1217-1222
- picosecond optoelectronic characterization of heterojunction bipolar transistor. *Malloubian, M.*, +, *MWSYM 89 Vol. 3* 889-892
- time-domain network analyzer using optoelectronic techniques. *Webb, Kevin J.*, +, *MWSYM 89 Vol. 1* 217-220

Laser excitation

- influence of strain on small-signal gain and lasing threshold of GaInAs/GaAs and GaAs/GaInAlAs strained-layer quantum-well lasers. *Peak, G.*, +, *CORNEL 89 Abstr VI/5*

- Lasers; cf. Ring lasers**
Layered media; cf. Nonhomogeneous media
Leaky-wave antennas
 field solution and propagation characteristics of monofilar-bifilar modes of axially slotted coaxial cable. *Hassan, Essam E.*, *T-MTT Mar 89* 553-557
 planar FET oscillators using linear periodic microstrip leaky-wave antenna array. *Birkeland, Joel*, +, *T-MTT Aug 89* 1232-1236
 quasi-optical planar FET transceiver modules. *Birkeland, J.*, +, *MWSYM 89 Vol. 1* 119-122
Leaky waves
 cavity resonator measurement method for leaky waveguides. *Oliner, Arthur A.*, +, *T-MTT Mar 89* 618-621
 rigorous dispersion analysis of open microstrip lines of arbitrary cross-section in bound and leaky regimes. *Michalski, Krzysztof A.*, +, *MWSYM 89 Vol. 2* 787-790
 rigorous dispersion analysis of open microstrip lines of arbitrary cross section in bound and leaky regimes. *Michalski, Krzysztof A.*, +, *T-MTT Dec 89* 2005-2010
Learning systems
 intelligent alignment of waveguide filters using machine learning approach for tuning. *Mirzai, Ahmad R.*, +, *T-MTT Jan 89* 166-173
Least-squares methods
 microstrip phase shifter on ferrite-dielectric substrate; comparison of variational and least-squares boundary residual methods. *Bolioli, Sylvain*, +, *T-MTT Apr 89* 698-705
LEDs; cf. Light-emitting diodes
Lens antennas
 Seymour B. Cohn's contributions to microwave engineering; overview. *Mauhaei, George L.*, *MWSYM 89 Vol. 2* 745-748, 751-758
Light deflectors; cf. Acousto-optic deflectors
Light-emitting diodes
 integrated high-gain double heterojunction GaAs bipolar transistors with LED for neural net array. *Lin, S. H.*, +, *CORNEL 89 Abstr VI/3*
Light-triggered switches
 InP:Fe modified interdigitated-gap photoconducting microwave switch; transmission amplitude and phase characteristics. *Andersson, Ingmar L.*, +, *T-MTT Apr 89* 729-733
 laser-activated p-i-n diode switch for high-voltage 2-30-MHz application. *Rosen, A.*, +, *T-MTT Aug 89* 1255-1257
Light-triggered switches; cf. Electrooptic switches
Limiting
 L-band monolithic GaAs FET switch for high-power control components; SPST and limiter design. *Shifrin, Mitchell B.*, +, *T-MTT Dec 89* 2134-2141
 L-band monolithic GaAs FET switch for high-power control components; SPST and limiter designs. *Shifrin, M.*, +, *MCS 89* 51-56
 transient response of p-i-n limiter diodes at 1 GHz. *Tan, R. J.*, +, *MWSYM 89 Vol. 3* 1303-1306
Linear arrays
 32-GHz six-element linear beam-steered transmitter array using MMIC phase shifters and power amplifiers. *Riley, A. L.*, +, *MCS 89* 65-68
 32-GHz six-element linear-beam-steered transmitter array using MMIC phase shifters and power amplifiers. *Rascoe, D. L.*, +, *T-MTT Dec 89* 2165-2168
 planar FET oscillators using linear periodic microstrip leaky-wave antenna array. *Birkeland, Joel*, +, *T-MTT Aug 89* 1232-1236
Linear FM; cf. Chirp modulation
Linearization; cf. Amplifier distortion
Loaded waveguides
 accurate measurement technique for line properties, junction effects, and dielectric and magnetic material parameters. *Enders, A.*, *T-MTT Mar 89* 598-605
 comments on 'Numerical analysis of H-plane waveguide junctions by combination of finite and boundary elements' by K. Ise and M. Koshiba. *Leviatan, Yehuda*, +, *T-MTT Apr 89* 805-806 (Original paper, Sep 88 1343-1351)
 metal inserts in waveguides; field expansion approach using normal modes of hollow, unloaded waveguides. *Omar, Abbas S.*, +, *T-MTT Dec 89* 1924-1932
 microstrip-loaded inset dielectric waveguide; application to strip-loaded antenna arrays with horizontal polarization. *Rozzi, T.*, +, *MWSYM 89 Vol. 3* 923-926
 numerically efficient finite-element formulation for general waveguide problem without spurious modes, derived from first-order Maxwell curl equations. *Svedin, Jan*, *T-MTT Nov 89* 1708-1715
 quasiplanar transmission lines within circular or elliptical waveguides; method of lines formulation. *Wu, Ke*, +, *MWSYM 89 Vol. 1* 503-506
 quasiplanar transmission lines within circular or semicircular/elliptical waveguides; method of lines formulation. *Wu, Ke*, +, *T-MTT Dec 89* 1958-1963
Loaded waveguides; cf. Dielectric-loaded waveguides; Ferrite-loaded waveguides; Plasma-loaded waveguides; Waveguide discontinuities
Locked amplifiers; cf. Injection-locked amplifiers; Phase-locked amplifiers
Locked oscillators; cf. Injection-locked oscillators; Phase-locked oscillators
Logarithmic amplifiers
 GaAs HBT monolithic logarithmic IF (0.5-1.5 GHz) amplifier with 60-dB dynamic range and 400-mW power consumption. *Gorman, G. M.*, +, *MWSYM 89 Vol. 2* 537-540
 successive detection GaAs MMIC logarithmic amplifier; L-band temperature-compensated ultralow power design. *Michels, R.*, +, *MWSYM 89 Vol. 2* 541-544
Logic circuits; cf. Counting circuits
Lossy circuits
 2-32-GHz three-stage HEMT ultra-broad-band lossy match amplifiers. *Ito, Yasushi*, +, *MWSYM 89 Vol. 1* 379-383
 lumped lossy circuit synthesis and its application in broadband FET amplifier design in MMICs. *Zhu, Lizhong*, +, *T-MTT Sep 89* 1488-1491
Lossy systems
 lossy model of diode packages as alternative method for exact evaluation of active chip parameters. *Kazi, Karoly*, +, *MWSYM 89 Vol. 3* 1267-1270
Low-pass filters
 quasi-planar filters for millimeter-wave applications using ladder-shaped E-plane structures. *Vahldieck, Ruediger*, *T-MTT Feb 89* 324-334
 thin-film lumped-element microwave filters; lowpass, bandpass, and pseudo-elliptic microstrip designs. *Swanson, Dan*, *MWSYM 89 Vol. 2* 671-674
Lumped-element microwave circuits
 2-6-GHz asymmetric lumped-element power splitters fabricated in microstrip. *Kopp, Bruce*, *MWSYM 89 Vol. 1* 333-336
 approximate variational solution to step discontinuity in finline giving optimized lumped equivalent circuit components. *Olley, Chris A.*, +, *T-MTT Jun 89* 977-983
 circuit yield as criterion for choice among possible two-element or three-element lumped, lossless matching structures for specified bandwidth constraint. *Brakensiek, W.*, +, *MWSYM 89 Vol. 1* 431-434
 computer-aided design of MMIC lumped-element square spiral transformers and inductors. *Frlan, E.*, +, *MWSYM 89 Vol. 2* 661-664
 correlation spectrum of oscillators with low noise; application to lumped-element Colpitts oscillator. *Kaertner, Franz X.*, *T-MTT Jan 89* 90-101
 distributed scaling approach for MESFETs; comparison with lumped-element approach for small-signal analysis. *Mondal, Jyoti P.*, *T-MTT Jul 89* 1085-1090
 lumped equivalent circuit model for interacting and noninteracting microstrip discontinuities. *Giannini, F.*, +, *MWSYM 89 Vol. 1* 251-254
 lumped lossy circuit synthesis and its application in broadband FET amplifier design in MMICs. *Zhu, Lizhong*, +, *T-MTT Sep 89* 1488-1491
 millimeter-wave lumped-element Gunn VCOs with ultrawideband (20 GHz) tuning. *Cohen, Leonard D.*, +, *MWSYM 89 Vol. 3* 1287-1290
 MMIC 180° lumped-element hybrid. *Parisi, Samuel J.*, *MWSYM 89 Vol. 3* 1243-1246
 MMIC bandpass active filter using lumped and transversal elements. *Schindler, M. J.*, +, *MCS 89* 57-60
 MMIC bandpass active filter using lumped and transversal elements. *Schindler, Manfred J.*, +, *T-MTT Dec 89* 2148-2153
 relaxation analysis of lossy coupled transmission lines; simulating transient response from equivalent disjoint lumped networks. *Chang, Fung-Yueh*, *MWSYM 89 Vol. 2* 653-656
 relaxation analysis of lossy coupled transmission lines; simulating transient response from equivalent disjoint lumped networks. *Chang, Fung-Yueh*, *T-MTT Dec 89* 2028-2038
 thin-film lumped-element microwave filters; lowpass, bandpass, and pseudo-elliptic microstrip designs. *Swanson, Dan*, *MWSYM 89 Vol. 2* 671-674
Lumped-element microwave measurements
 lumped capacitance and open-end effects of stripline structures in multilayered and anisotropic substrates; calculation using variational techniques in spectral domain. *Boix, Rafael R.*, +, *T-MTT Oct 89* 1523-1528

M

Magnetic-field effectsmagnetic bremsstrahlung radiation sources using Meissner effect of high- T_c superconductors. *Boden, A. P.*, +, *MWSYM 89 Vol. 1* 455-458**Magnetic films/devices; cf. Magneto-optic materials/devices; YIG films/devices****Magnetic losses; cf. Hysteresis (magnetics)****Magnetic-material-loaded waveguides; cf. Ferrite-loaded waveguides****Magnetic materials/devices; cf. Electromagnetic propagation, magnetic media; Ferrimagnetic materials/devices; Magneto-optic materials/devices****Magnetic measurements**noncontacting magnetic-field probe for measurements on high-frequency planar circuits for 26.5-40-GHz operation. *Osofsky, Samuel S.*, +, *MWSYM 89 Vol. 2* 823-825**Magnetization processes; cf. Hysteresis (magnetics)****Magneto-optic materials/devices**magneto-optic interactions between guided optical waves and magnetostatic waves; device modules and applications to communications and signal processing. *Tsai, C. S.*, +, *MWSYM 89 Vol. 1* 303-306**Magnetostatic surface waves**finite-element analysis of magnetostatic wave propagation in YIG film of finite dimensions with uniform and nonuniform bias fields. *Koshiba, Masanori*, +, *T-MTT Nov 89* 1768-1772oscillators using magnetostatic-wave active tapped delay lines and GaAs IC. *Chen, Chang-Lee*, +, *T-MTT Jan 89* 239-243**Magnetostatic volume waves**evaluating loss factor of multilayered inhomogeneous waveguides for magnetostatic waves using finite-element formalism. *Long, Yi*, +, *T-MTT Apr 89* 680-685finite-element analysis of magnetostatic wave propagation in YIG film of finite dimensions with uniform and nonuniform bias fields. *Koshiba, Masanori*, +, *T-MTT Nov 89* 1768-1772insertion loss of electronically variable magnetostatic volume wave delay lines. *Bajpai, S. N.*, *T-MTT Oct 89* 1529-1535

magneto-optic interactions between guided optical waves and magnetostatic waves; device modules and applications to

- communications and signal processing. *Tsai, C. S.*, +, *MWSYM 89 Vol. 1* 303-306
- magnetostatic waves in moving ferrite films; applications to rotation rate sensing. *Stancil, Daniel D.*, *T-MTT May 89* 851-859
- YIG-film low-loss magnetostatic wave filter using parallel strip transducer. *Nishikawa, Toshio*, +, *MWSYM 89 Vol. 1* 153-156
- YIG-film magnetostatic wave resonators of microstrip type. *Tsutsumi, Makoto*, +, *MWSYM 89 Vol. 1* 149-152
- Magnetrons**
microwave-oven magnetrons; operation and properties. *Brown, William C.*, *MWSYM 89 Vol. 3* 871-874
- Manufacturing**
high-volume manufacturing of highly-efficient X-band power module for phased arrays applications. *Vörhaus, J. L.*, *MWSYM 89 Vol. 2* 769-772
- Matching; cf. Impedance matching**
- Materials processing; cf. Laser applications, materials processing**
- Matrices; cf. Impedance matrix; Scattering matrices**
- Matrix amplifiers; cf. Distributed amplifiers**
- Matrix decomposition/factorization; cf. Circuit simulation**
- Measurement; cf. Dielectric measurements; Electrooptic measurements; Impedance measurement; Integrated-circuit measurements; Josephson device measurement applications; Laser applications, measurement; Magnetic measurements; Microwave measurements; Time-domain measurements**
- Measurement standards**
statistical method for calibrating six-port reflectometer using nonideal standards. *Jachim, Stephen P.*, +, *T-MTT Nov 89* 1825-1828
- Mechanical factors**
finlines in rectangular and circular waveguide housings including substrate mounting and bending effects; finite-element analysis. *Eswarappa*, +, *T-MTT Feb 89* 299-306
- Mechanical resonators; cf. Acoustic bulk-wave resonators**
- Mechanical variables control; cf. Strain control**
- Mechanical variables measurement; cf. Displacement measurement**
- Medical treatment; cf. Hyperthermia**
- MESFET switches**
high-isolation 1–20-GHz MMIC SPST and SPDT MESFET switches with on-chip drivers. *Eisenberg, John A.*, +, *MCS 89* 41-45
- MESFETs; cf. UHF FETs**
- Metal-semiconductor devices; cf. Gallium materials/devices; Schottky diodes**
- Metallization**
metallization thickness' effect of striplines with anisotropic media; quasi-static and hybrid-mode analysis. *Kitazawa, Toshihide*, *T-MTT Apr 89* 769-775
- Metallization; cf. Integrated-circuit interconnections**
- Meteorological radar**
radar-acoustic sounding system for remote atmospheric temperature and range determinations. *Daas, Moussa*, +, *MWSYM 89 Vol. 1* 257-260
- Microstrip**
AC resistance of microstripline and its ground plane; reasons for resistance values above theoretical strip skin-effect levels. *Faraji-Dana, R.*, +, *MWSYM 89 Vol. 1* 325-327
- CAD formulas for edge-compensated microstrip lines used in MMICs; rectangular boundary division methods for capacitive proximity effects. *Yamashita, Eikichi*, +, *MWSYM 89 Vol. 1* 339-342
- circuit parameters for single and coupled microstrip lines using rigorous full-wave space-domain analysis. *Faché, Niels*, +, *T-MTT Feb 89* 421-425
- closed-form asymptotic representation of grounded dielectric slab Green's function for planar microstrip geometries. *Marin, Miguel*, +, *T-MTT Apr 89* 669-679
- combined spectral-domain/sampling theorem analysis of microstrip line. *Uchida, Kazunori*, +, *T-MTT Jun 89* 947-952
- conformal mapping for calculating quasi-TEM parameters of cylindrical, wrapped, and coupled lines. *Bédair, Said S.*, +, *MWSYM 89 Vol. 3* 1127-1130
- corrections to 'An analytical solution for the coupled stripline-like microstrip line problem' (Jun 88 1002-1007). *Homentcovschi, D.*, +, *T-MTT Jun 89* 1061
- cylindrical multiconductor stripline-like microstrip transmission line; analytical expressions for Maxwell capacitance matrix. *Homentcovschi, Doré*, *T-MTT Mar 89* 497-503
- deriving space-domain Green's function in shielded, multilayer substrate structure; applications to MIS slow-wave transmission lines. *Livernois, Thomas G.*, +, *T-MTT Nov 89* 1761-1767
- distortion of transient signals on multilayer coupled symmetric microstrip transmission lines. *Gilb, James P.*, +, *MWSYM 89 Vol. 3* 1001-1004
- edge-coupled suspended-substrate microstrip line; dispersion analysis and synthesis equations. *Wang, Yunyi*, +, *MWSYM 89 Vol. 3* 1123-1126
- equivalent circuit model for terminated hybrid-mode multiconductor transmission lines; application to high-speed ICs. *Carin, Lawrence*, +, *T-MTT Nov 89* 1784-1793
- exact solutions for shielded microstrip lines using Carleman-Vekua method. *Fikioris, John G.*, +, *T-MTT Jan 89* 21-33
- frequency-dependent characteristics of current distributions on microstrip lines using spectral-domain analysis and Chebyshev polynomials. *Kobayashi, Masanori*, +, *T-MTT Apr 89* 799-801
- frequency-dependent characteristics of open microstrip lines with finite strip thickness using variational conformal mapping technique. *Shih, Chin*, +, *T-MTT Apr 89* 793-795
- full-wave analysis of conductor losses on MMIC transmission lines. *Heinrich, Wolfgang*, *MWSYM 89 Vol. 3* 911-914
- generalized spectral-domain analysis of planar lines on layered media including uniaxial and biaxial dielectric substrates. *Medina, Francisco*, +, *T-MTT Mar 89* 504-511
- high-frequency conductor and dielectric losses in interconnects made of multilayer planar structures using strip conductors. *van Deventer, T. Emilie*, +, *T-MTT Dec 89* 1964-1972
- high frequency conductor and dielectric losses in shielded microstrip using integral equation formulation. *van Deventer, T. E.*, +, *MWSYM 89 Vol. 3* 919-922
- high- T_c 31-cm-long thin-film transmission line. *Hornak, L. A.*, +, *MWSYM 89 Vol. 2* 623-626
- inductively-coupled superconducting microstrip; propagation characteristics. *Pond, J. M.*, +, *MWSYM 89 Vol. 1* 451-454
- lumped capacitance and open-end effects of striplike structures in multilayered and anisotropic substrates; calculation using variational techniques in spectral domain. *Boix, Rafael R.*, +, *T-MTT Oct 89* 1523-1528
- microstrip lines near substrate edge; design formulas of edge-compensated microstrip lines. *Yamashita, Eikichi*, +, *T-MTT May 89* 890-896
- microstrip-loaded inset dielectric waveguide; application to strip-loaded antenna arrays with horizontal polarization. *Rozzi, T.*, +, *MWSYM 89 Vol. 3* 923-926
- microstrip noncontacting thickness monitor for measuring height of materials on metallic surfaces from microwave propagation velocity. *Hurley, Richard B.*, +, *MWSYM 89 Vol. 3* 905-908
- microstrip used as electrooptic modulator; full-wave analysis using modified spectral-domain approach. *Railton, C. J.*, +, *T-MTT Jul 89* 1099-1104
- pulse distortion on multilayer coupled microstrip lines. *Gilb, James P.*, +, *T-MTT Oct 89* 1620-1628
- quasiplanar transmission lines within circular or elliptical waveguides; method of lines formulation. *Wu, Ke*, +, *MWSYM 89 Vol. 1* 503-506
- quasiplanar transmission lines within circular or semicircular/elliptical waveguides; method of lines formulation. *Wu, Ke*, +, *T-MTT Dec 89* 1958-1963
- rigorous dispersion analysis of open microstrip lines of arbitrary cross-section in bound and leaky regimes. *Michalski, Krzysztof A.*, +, *MWSYM 89 Vol. 2* 787-790
- rigorous dispersion analysis of open microstrip lines of arbitrary cross section in bound and leaky regimes. *Michalski, Krzysztof A.*, +, *T-MTT Dec 89* 2005-2010
- spectral-domain computation of characteristic impedances and multiport parameters of multiple coupled microstrip lines. *Tripathi, Vijai K.*, +, *T-MTT Jan 89* 215-221
- time-domain method of lines applied to uniform microstrip line and its step discontinuity. *Nam, S.*, +, *MWSYM 89 Vol. 3* 997-1000
- time-domain method of lines applied to uniform microstrip line and step discontinuity. *Nam, S.*, +, *T-MTT Dec 89* 2051-2057
- transmission properties of right-angle microstrip bend with and without miter, using Green's theorem approach. *Bröunas, Antonios D.*, +, *T-MTT May 89* 925-929
- wideband conductor loss calculation for planar quasi-TEM transmission lines with thin conductors, using phenomenological loss equivalence method. *Lee, Hai-Young*, +, *MWSYM 89 Vol. 1* 367-370
- wideband conductor loss calculation using phenomenological loss equivalence method for planar quasi-TEM transmission lines with thin conductors. *Lee, Hai-Young*, +, *T-MTT Dec 89* 1904-1909
- Microstrip; cf. MMIC ...; Superconducting transmission lines**
- Microstrip antennas**
closed-form asymptotic representation of grounded dielectric slab Green's function for center-fed microstrip dipole. *Marin, Miguel*, +, *T-MTT Apr 89* 669-679
- experiments on injection locking of active antenna elements for active phased arrays and spatial power combiners. *Chang, Kai*, +, *T-MTT Jul 89* 1078-1084
- FET-based planar circuits for quasi-optical sources and transceivers 2. *Birkeland, Joel*, +, *T-MTT Sep 89* 1452-1459
- high- T_c superconductor 3–90-GHz conductivity measurements; materials' uses in linear devices. *Chaloupka, H.*, +, *MWSYM 89 Vol. 2* 547-550
- noncontacting magnetic-field probe for measurements on high-frequency planar circuits for 26.5–40-GHz operation. *Osofsky, Samuel S.*, +, *MWSYM 89 Vol. 2* 823-825
- planar FET oscillators using linear periodic microstrip leaky-wave antenna array. *Birkeland, Joel*, +, *T-MTT Aug 89* 1232-1236
- printed-circuit antennas with integrated FET detectors for millimeter-wave quasioptic applications. *Chew, Wilbert*, +, *T-MTT Mar 89* 593-597
- tapered slot antennas for millimeter-wave applications; characterization of single elements and arrays. *Yngvesson, K. Sigrid*, +, *T-MTT Feb 89* 365-374
- Microstrip arrays**
horn antenna with conducting flaps for broadband phased-array elements. *Garcia, A. C.*, +, *MWSYM 89 Vol. 1* 135-138
- quasi-optical planar FET transceiver modules. *Birkeland, J.*, +, *MWSYM 89 Vol. 1* 119-122
- tapered slot antennas for millimeter-wave applications; characterization of single elements and arrays. *Yngvesson, K. Sigrid*, +, *T-MTT Feb 89* 365-374
- Microstrip arrays; cf. Slot arrays**
- Microstrip circuits**
70-MHz to 11-GHz balanced HEMT upconverter. *Bura, P.*, +, *MWSYM 89 Vol. 3* 1299-1302
- 94-GHz HEMT mixer Si design and performance. *Chow, P. D.*, +, *MWSYM 89 Vol. 2* 731-734
- comments, with reply, on 'p-i-n diode attenuator with small phase shift' by Baeten et al. *Starski, J. P.*, +, *T-MTT Oct 89* 1658-1659 (Original paper, Apr 88 789-791)

- MMIC-compatible 55-mW InP and GaAs 30–40-GHz field-controlled transferred-electron device oscillators. *Lübke, K.*, +, *MWSYM 89 Vol. 2* 729-730
- MMIC-compatible 55 mW InP and GaAs 30–40-GHz field-controlled transferred-electron device oscillators. *Scheiber, Helmut*, +, *T-MTT Dec 89* 2093-2098
- Q*-band coplanar waveguide amplifier; comparison with microstrip amplifier. *Dow, G. S.*, +, *MWSYM 89 Vol. 2* 809-812
- quasi-planar FET amplifier in integrated finline and microstrip technique. *Ruxton, James*, +, *T-MTT Feb 89* 429-432
- varactor-tuned planar *W*-band oscillator. *Buechler, J.*, +, *MWSYM 89 Vol. 3* 1205-1206
- W*-band suspended-substrate microstripline second-harmonic GaAs Gunn oscillator. *Shu, Yonghui*, +, *MWSYM 89 Vol. 3* 1211-1214
- Microstrip circulators**
- 31-GHz uniaxial-ferrite millimeter-wave junction circulators. *Weiss, Jerald A.*, +, *MWSYM 89 Vol. 1* 145-148
- Microstrip components**
- deembedding method for *S*-parameters of microstrip devices utilizing automatic network analyzer with time-domain option. *Gronau, Gregor*, +, *T-MTT Mar 89* 479-483
- high-*T_c* superconducting Josephson millimeter-wave spectral detector using granular bridge sensor coupled to microstrip line. *Daginnus, M.*, +, *MWSYM 89 Vol. 2* 631-634
- high-*T_c* YBCO and BCSCO granular thin-film-based microstrip mixer characterization. *Konopka, J.*, +, *MWSYM 89 Vol. 2* 635-638
- microstrip plasma limiter for DC–18-GHz operation. *Fatel, Suman D.*, +, *MWSYM 89 Vol. 3* 879-882
- planar *W*-band dielectric resonator power combiner using whispering-gallery modes. *Cros, D.*, +, *MWSYM 89 Vol. 3* 1215-1218
- quasi-planar millimeter-wave components and subsystems (special issue). *T-MTT Feb 89* 273-437
- quasi-TEM analysis for curved and straight planar multiconductor systems; capacitance and inductance matrices of concentric microstrip. *Diestel, Heinrich*, *T-MTT Apr 89* 748-753
- resonance in cylindrical-rectangular and wraparound microstrip structures; Galerkin formulation. *Ali, Sami M.*, +, *T-MTT Nov 89* 1773-1783
- Seymour B. Cohn's contributions to microwave engineering; overview. *Mathaei, George L.*, *MWSYM 89 Vol. 2* 745-748, 757-758
- unilateral microstrip balanced and doubly balanced microwave mixers. *Knöchel, Reinhard*, +, *MWSYM 89 Vol. 3* 1247-1250
- very small wideband MMIC magic-Ts using microstrip on thin dielectric film. *Hiraoka, Takahiro*, +, *T-MTT Oct 89* 1569-1575
- Microstrip components; cf. Specific device**
- Microstrip couplers**
- corrections to 'computer-aided design models for broadside-coupled striplines and millimeter-wave suspended substrate microstrip lines (Nov 88 1476-1481). *Pramanick, P.*, +, *T-MTT Oct 89* 1658
- design of control components for 18–40-GHz band microstrip: reentrant coupler, SPST and SPDT switches and voltage-controlled attenuator. *Adelman, Jonah*, +, *T-MTT Feb 89* 317-323
- design of systems based on three coupled equal-mode-impedance microstrip lines. *El-Deeb, Nabil A.*, *T-MTT Apr 89* 795-798
- Microstrip directional couplers**
- 6–18-GHz multisection hybrid coupler using asymmetric broadside-coupled and edge-coupled lines. *Izadian, Jamal S.*, *MWSYM 89 Vol. 1* 243-246
- broadband printed-circuit hybrid ring power divider. *Mikucki, Gerald F.*, +, *T-MTT Jan 89* 112-117
- ideal asymmetric-line microstrip directional couplers; analysis and design for planar and layered structures. *Emery, T.*, +, *MWSYM 89 Vol. 1* 329-332
- microstrip planar-disk 3-dB quadrature hybrid. *Page, M. J.*, +, *MWSYM 89 Vol. 1* 247-250
- rectangular disk 3-dB hybrid. *Ohta, Isao*, +, *MWSYM 89 Vol. 1* 235-238
- two-way and three-way warped-mode combline directional coupler design technique. *Islam, Saiful*, *T-MTT Jan 89* 34-42
- ultra-wide-band nonuniform quadrature directional couplers in inhomogeneous media; synthesis, design, and construction. *Uysal, Sener*, +, *T-MTT Jun 89* 969-976
- Microstrip discontinuities**
- analysis and modeling of coupled right-angle microstrip bend discontinuities; iterative moment method formulation. *Hill, A.*, +, *MWSYM 89 Vol. 3* 1143-1146
- analysis of microstrip discontinuities using finite-difference-time domain technique. *Railton, C. J.*, +, *MWSYM 89 Vol. 3* 1009-1012
- cascade of microstrip step discontinuities; experimental investigation. *Rautio, James C.*, *T-MTT Nov 89* 1816-1818
- complex modes in shielded planar microstrip lines using spectral-domain approach. *Tzuang, Ching-Kuang C.*, +, *MWSYM 89 Vol. 1* 495-498
- deterministic approach to full-wave analysis of discontinuities in MIC's using the method of lines. *Chen, Zhaoqing*, +, *T-MTT Mar 89* 606-611
- electromagnetic coupling of coplanar waveguides and microstrip lines to multilayer lossy dielectric media. *Iskander, Magdy F.*, +, *T-MTT Dec 89* 1910-1917
- electromagnetic coupling of microstrip lines and coplanar waveguides to multilayer lossy media; spectral-domain analysis. *Iskander, M. F.*, +, *MWSYM 89 Vol. 1* 175-178
- equivalent circuits of microstrip discontinuities including radiation effects. *Skrivervik, A.*, +, *MWSYM 89 Vol. 3* 1147-1150
- FDTD calculation of microstrip open-end terminations; curve-fitting of numerical dispersion results. *Zhang Xiaolei*, +, *MWSYM 89 Vol. 1* 313-316
- full-wave finite-element analysis of irregular microstrip discontinuities. *Jackson, Robert W.*, *T-MTT Jan 89* 81-89
- lumped equivalent circuit model for interacting and noninteracting microstrip discontinuities. *Giannini, F.*, +, *MWSYM 89 Vol. 1* 251-254
- millimeter-wave circuit models for microstrip open-end, gap, step, bend and tee, based on full-wave theory. *Jansen, Rolf H.*, +, *MWSYM 89 Vol. 2* 779-782
- modal solution procedures for microstrip step discontinuities. *Xu, Qiang*, +, *T-MTT Feb 89* 381-387
- multiport network model for evaluating radiation loss and spurious coupling between discontinuities in microstrip circuits. *Sabbat, Albert*, +, *MWSYM 89 Vol. 2* 707-710
- open-end and gap discontinuities in substrate-superstrate structure; numerical solution of integral equations. *Yang Hung-Yu*, +, *T-MTT Oct 89* 1542-1546
- open microstrip discontinuities; full-wave analysis and characterization including radiation losses. *Harokopus, William P.*, +, *MWSYM 89 Vol. 1* 231-234
- open microstrip discontinuities; full-wave characterization including radiation losses. *Harokopus, William P. Jr.*, +, *T-MTT Dec 89* 2058-2066
- time-domain method of lines applied to uniform microstrip line and its step discontinuity. *Nam, S.*, +, *MWSYM 89 Vol. 3* 997-1000
- time-domain method of lines applied to uniform microstrip line and step discontinuity. *Nam, S.*, +, *T-MTT Dec 89* 2051-2057
- Microstrip filters**
- capacitively compensated high-performance parallel coupled microstrip filters with improved passband symmetry. *Bahl, Inder J.*, *MWSYM 89 Vol. 2* 679-682
- general planar circuit simulation using 2-D transmission line matrix method. *So, Poman P. M.*, +, *T-MTT Dec 89* 1877-1884
- hair-pin microstrip resonator filters; application to receiver front-end MICs. *Takahashi, Kenichi*, +, *MWSYM 89 Vol. 2* 667-670
- miniaturized hairpin resonator filters; application to receiver front-end MICs. *Sagawa, Morikazu*, +, *T-MTT Dec 89* 1991-1997
- Seymour B. Cohn's contributions to microwave engineering; overview. *Mathaei, George L.*, *MWSYM 89 Vol. 2* 745-748, 757-758
- thin-film lumped-element microwave filters; lowpass, bandpass, and pseudo-elliptic microstrip designs. *Swanson, Dan*, *MWSYM 89 Vol. 2* 671-674
- Microstrip phase shifters**
- centimeter-wave microstrip phase shifter on ferrite-dielectric substrate; comparison of variational and least-squares boundary residual methods. *Bolioli, Sylvain*, +, *T-MTT Apr 89* 698-705
- MMIC 2–18 GHz 180° phase splitter network. *Bharj, Sarjit S.*, +, *MWSYM 89 Vol. 3* 959-962
- Microstrip resonators**
- hair-pin microstrip resonator filters; application to receiver front-end MICs. *Takahashi, Kenichi*, +, *MWSYM 89 Vol. 2* 667-670
- microstrip resonator with dielectric protective layer radiating into human body. *Pribetich, J.*, +, *MWSYM 89 Vol. 1* 179-182
- microstrip ring resonator technique for measuring microwave attenuation in high-*T_c* superconducting thin films. *Takemoto, June H.*, +, *T-MTT Oct 89* 1650-1652
- miniaturized hairpin resonator filters; application to receiver front-end MICs. *Sagawa, Morikazu*, +, *T-MTT Dec 89* 1991-1997
- optically excited microwave ring resonator on GaAs substrate. *McGregor, Douglas S.*, +, *MWSYM 89 Vol. 1* 225-228
- spectral-domain approach for characterizing microstrip open end with high accuracy. *Uwano, Tomoki*, *T-MTT Mar 89* 630-633
- whispering-gallery-mode dielectric resonator for planar millimeter-wave integrated circuits. *Jiao, X. H.*, +, *T-MTT Feb 89* 432-437
- YIG-film magnetostatic wave resonators of microstrip type. *Tsutsumi, Makoto*, +, *MWSYM 89 Vol. 1* 149-152
- Microstrip switches**
- design of control components for 18–40-GHz band microstrip: reentrant coupler, SPST and SPDT switches and voltage-controlled attenuator. *Adelman, Jonah*, +, *T-MTT Feb 89* 317-323
- Microstrip transitions**
- 2–6-GHz asymmetric lumped-element power splitters fabricated in microstrip. *Kopp, Bruce*, *MWSYM 89 Vol. 1* 333-336
- 8-port microstrip-slotline symmetrical planar comparator circuit. *Riblet, G. P.*, *MWSYM 89 Vol. 1* 239-242
- coaxial-to-shielded microstrip line transition; rigorous mode-matching analysis. *Capsalis, Christos*, +, *T-MTT Jul 89* 1091-1098
- DC to 40 GHz coaxial-to-microstrip transition for 100-μm-thick GaAs substrates. *Chenkin, Joseph*, *T-MTT Jul 89* 1147-1150
- double-sided microwave integrated circuit components. *Aikawa, Masayoshi*, +, *T-MTT Feb 89* 406-413
- exponential power combiner/divider. *Affandi, Adnan M.*, +, *T-MTT Feb 89* 400-405
- full-wave finite-element analysis of irregular microstrip discontinuities. *Jackson, Robert W.*, *T-MTT Jan 89* 81-89
- modeling picosecond pulse propagation in microstrip interconnections of integrated circuits. *Goossen, Keith W.*, +, *T-MTT Mar 89* 469-478
- multi-way unequal power divider circuits using sector-shaped planar components; results for four-way design. *Abouzahra, Mohamed D.*, +, *MWSYM 89 Vol. 1* 321-324
- on-wafer probe techniques for characterizing millimeter-wave MMICs using coplanar waveguide-microstrip transition data. *Dawe, G.*, +, *MWSYM 89 Vol. 1* 413-415
- spectral-domain analysis of *E*-plane waveguide-to-microstrip transitions. *Ho, T. Q.*, +, *T-MTT Feb 89* 388-392
- surface-to-surface transition via electromagnetic coupling of microstrip and coplanar waveguide. *Burke, John J.*, +, *T-MTT Mar 89* 519-525
- tunable waveguide-to-microstrip transition for measuring millimeter-wave noise parameters of high-performance HEMTs at 300 K and 17 K. *Weinreb, S.*, +, *MWSYM 89 Vol. 2* 813-816

Microwave (3 - 30 GHz); cf. Millimeter-wave (30 - 300 GHz)**Microwave amplifiers**

circuit yield as criterion for choice among possible two-element or three-element lumped, lossless matching structures for specified bandwidth constraint. *Brakenstiek, W.*, +, *MWSYM 89 Vol. 1* 431-434

Microwave amplifiers; cf. Amplifier distortion; MMIC amplifiers**Microwave antennas; cf. Implantable electrodes****Microwave attenuation**

DC-18-GHz variable slope gain-equalizer GaAs MESFET MMIC. *Sun, H. J.*, +, *MCS 89* 79-82

Microwave attenuators

2-4-GHz notch filters with variable center frequency and attenuation. *Toyoda, Sachihiro*, *MWSYM 89 Vol. 2* 595-598

comments, with reply, on 'p-i-n diode attenuator with small phase shift' by Baeten *et al.* *Starski, J. P.*, +, *T-MTT Oct 89* 1658-1659 (Original paper, Apr 88 789-791)

design of control components for 18-40-GHz band microstrip: reentrant coupler, SPST and SPDT switches and voltage-controlled attenuator. *Adelman, Jonah*, +, *T-MTT Feb 89* 317-323

HBT MMIC digital switched-gain amplifier with +31 to -31 dB gain in 2-dB increments. *Oki, A. K.*, +, *MCS 89* 83-86

p-i-n diode control devices for finline circuits; state-of-the-art overview. *Callsen, Heinrich*, +, *T-MTT Feb 89* 307-316

silicon bipolar fixed- and variable-gain amplifier MMICs for microwave and lightwave applications up to 6 GHz. *Kipnis, I.*, +, *MCS 89* 101-104

silicon bipolar fixed and variable gain amplifier MMICs for microwave and lightwave applications up to 6 GHz. *Kipnis, I.*, +, *MWSYM 89 Vol. 1* 109-112

variable gain four-stage low-noise MMIC amplifier for 14-17 GHz. *Eppich, R. Dean*, +, *MWSYM 89 Vol. 2* 529-532

Microwave bipolar integrated circuits

silicon bipolar balanced active mixer MMICs for RF and microwave applications up to 6 GHz. *Wholey, Jim*, +, *MWSYM 89 Vol. 1* 281-285

silicon bipolar double-balanced active mixer MMICs for UHF and microwave applications up to 6 GHz. *Wholey, Jim*, +, *MCS 89* 133-137

Microwave bipolar integrated circuits; cf. MMIC ...**Microwave bipolar transistor amplifiers**

computer-aided design of class-C microwave transistor amplifiers by direct numerical optimization using enhanced Ebers-Moll-type model. *Rizzoli, Vittorio*, +, *MWSYM 89 Vol. 2* 585-588

GaAs HBT monolithic logarithmic IF (0.5-1.5 GHz) amplifier with 60-dB dynamic range and 400-mW power consumption. *Gorman, G. M.*, +, *MWSYM 89 Vol. 2* 537-540

Microwave bipolar transistor oscillators

25-42-GHz GaAs heterojunction bipolar transistor push-push VCOs with low phase noise. *Smith, D. M.*, +, *MWSYM 89 Vol. 2* 725-728

large-signal computer-aided analysis and design of silicon bipolar MMIC oscillators and self-oscillating mixers. *Kipnis, Issy*, +, *T-MTT Mar 89* 558-564

low-noise microwave oscillator using self-aligned AlGaAs/GaAs HBT. *Madihian, Mohammad*, +, *T-MTT Nov 89* 1811-1814

Microwave bipolar transistors

2.43 W CW X-band heterojunction bipolar transistor. *Bayraktaroglu, B.*, +, *MWSYM 89 Vol. 3* 1057-1060

DNP-III silicon MMIC process technology for non-self-aligned gate NPN transistors; use in fabricating 7.46-GHz frequency divider IC. *Miyazaki, Shinichi*, +, *MWSYM 89 Vol. 3* 1065-1068

parameter extraction of microwave transistors using tree annealing. *Bilbro, Griff L.*, +, *CORNEL 89 Abstr IV/2*

parameter extraction technique for heterojunction bipolar transistors. *Trew, R. J.*, +, *MWSYM 89 Vol. 3* 897-900

Microwave bipolar transistors, power

design optimization of microwave power heterojunction bipolar transistor cells. *Wang, G. W.*, +, *MWSYM 89 Vol. 3* 1061-1064

Microwave circuits

CAD automated technique for post production tuning of microwave circuits. *Gominho, Emanuel C.*, *MWSYM 89 Vol. 2* 765-767

Microwave couplers; cf. Couplers; MMICs**Microwave devices**

microwave applications of photonics circuits. *Popa, Adrian E.*, *CORNEL 89 Abstr VI/1*

modeling methodologies for passive microwave and millimeter-wave components; recent European developments. *Sorrentino, Roberto*, *MWSYM 89 Vol. 2* 613-616

Microwave devices; cf. Patent abstracts; Specific topic**Microwave diodes**

QWITT diode small-signal model including quantum-well carrier lifetime effects. *Whitson, D. W.*, +, *CORNEL 89 Abstr V/6*

Microwave FET amplifiers

1-40 GHz MESFET hybrid distributed amplifier. *Brouzes, H.*, +, *MWSYM 89 Vol. 3* 849-852

17-GHz finline FET amplifier using NE67300 field-effect transistor. *L'Ecuier, Jean*, +, *T-MTT Feb 89* 425-428

2-18-GHz low-noise/high-gain amplifier module. *Niclas, Karl B.*, +, *T-MTT Jan 89* 198-207

2-32-GHz three-stage HEMT ultra-broad-band lossy match amplifiers. *Ito, Yasushi*, +, *MWSYM 89 Vol. 1* 379-383

balanced cascade 26-40 GHz amplifier; design, fabrication and performance. *McCann, D. M. F.*, *MWSYM 89 Vol. 3* 845-848

CAD and performance of ultra-wide-band GaAs FET amplifiers: effect of feedback on noise figure. *Sun, Shiyang*, +, *MWSYM 89 Vol. 1* 401-404

computer-aided design of MESFET distributed amplifier; design-by-simulation approach. *Vai, Man-Kuan*, +, *MWSYM 89 Vol. 2* 565-568

effects of gain compression, bias conditions, and temperature on flicker phase noise of 8.5-GHz GaAs MESFET amplifier. *Lusher, C. P.*, +, *T-MTT Mar 89* 643-646

family of 2-20-GHz broadband low-noise AlGaAs HEMT MMIC amplifiers. *Dixit, R.*, +, *MCS 89* 15-19

GaInAs MISFET 7-11-GHz amplifier designs. *Bechtel, D.*, +, *T-MTT Oct 89* 1636-1638

microwave amplifier manufacturing with advanced thin-film MIC and elementary MMIC technology. *Crescenzi, E. J., Jr.*, +, *MWSYM 89 Vol. 2* 773-776

performance of a 2-18 GHz ultra-low-noise matrix amplifier module. *Niclas, K. B.*, +, *MWSYM 89 Vol. 3* 841-844

quasi-planar FET amplifier in integrated finline and microstrip technique. *Ruxton, James*, +, *T-MTT Feb 89* 429-432

three-tier 6-18-GHz MESFET matrix amplifier; design and performance. *Niclas, Karl B.*, +, *T-MTT Jul 89* 1069-1077

waveform-balance method algorithm for nonlinear MESFET amplifier simulation. *Hwang, Vincent D.*, +, *T-MTT Dec 89* 2125-2133

waveform-balance method algorithm for nonlinear MESFET amplifier simulation. *Hwang, Vincent D.*, +, *MWSYM 89 Vol. 2* 581-584

yield optimization of nonlinear circuits with statistically characterized devices. *Bandler, J. W.*, +, *MWSYM 89 Vol. 2* 649-652

Microwave FET amplifiers; cf. Distributed amplifiers; MMIC amplifiers**Microwave FET amplifiers, power**

12-W 20-GHz GaAs FET power amplifier with 15.5% power-added efficiency. *Auricchio, F. S., Jr.*, +, *MWSYM 89 Vol. 3* 933-936

broadband power amplifiers based on monolithic ceramic technology. *Sechi, F. N.*, +, *MWSYM 89 Vol. 3* 937-940

Class-A GaAs FET power amplifier design for optimizing intermodulation product. *Daido, Yoshimasa*, +, *MWSYM 89 Vol. 1* 393-396

high-volume manufacturing of highly-efficient X-band power module for phased arrays applications. *Vorhaus, J. L.*, *MWSYM 89 Vol. 2* 769-772

large-signal distributed microwave MESFET amplifiers' design and performance of three circuits. *Sobhy, M. I.*, +, *MWSYM 89 Vol. 1* 397-400

maintaining FET power amplifier efficiency under backoff conditions. *Geller, B. D.*, +, *MWSYM 89 Vol. 3* 949-952

third-harmonic-peaking class-F power amplifier operation for higher efficiencies. *Kopp, William S.*, +, *MWSYM 89 Vol. 3* 857-858

Microwave FET amplifiers, power; cf. MMIC amplifiers, power**Microwave FET integrated circuits**

discrete HEMTs; large-signal models for SPICE simulation of hybrid ICs. *Liu, Qing Zhong*, *MWSYM 89 Vol. 1* 463-466

frequency-domain spectral balance using arithmetic operator method; simulating nonlinear analog circuits with multidimensional nonlinearities. *Chang, Chao-ren*, +, *T-MTT Nov 89* 1681-1688

three-port bias-dependent model for GaAs MESFET switches; large-signal behavior. *Gardiner, G. J.*, +, *MWSYM 89 Vol. 1* 405-408

Microwave FET integrated circuits; cf. MMICs**Microwave FET oscillators**

experimental verification of contiguous-domain oscillator concept. *Cooper, J. A., Jr.*, +, *CORNEL 89 Abstr V/7*

FET dielectric resonator oscillators; design procedure suited to most CAD programs. *Wilson, Philip G.*, +, *MWSYM 89 Vol. 3* 1033-1036

FET upconverter modeling using load-dependent mixing transconductance. *Fikart, Josef L.*, +, *T-MTT Jun 89* 1033-1039

nonlinear analysis of microwave FET oscillators using Volterra series; amplitude and frequency determination. *Hu, Yongcai*, +, *T-MTT Nov 89* 1689-1693

planar FET oscillators using linear periodic microstrip leaky-wave antenna array. *Birkeland, Joel*, +, *T-MTT Aug 89* 1232-1236

Microwave FET oscillators; cf. MMIC oscillators**Microwave FETs**

0.15- μ m gate-length very high performance InAlAs/InGaAs/InP lattice-matched HEMTs. *Tessier, A. J.*, +, *CORNEL 89 Abstr II/2*

2-12 GHz distributed FET MMIC mixer with 3-dB conversion gain and 11-dB SSB noise figure. *Robertson, I. D.*, +, *MWSYM 89 Vol. 3* 1031-1032

300 K MBE growth of GaAs and AlInAs for high-speed devices. *Delaney, M. J.*, +, *CORNEL 89 Abstr II/3*

AlGaAs/GaAs HEMT with 0.1- μ m T-shaped gate, giving low noise figure. *Kawasaki, Hisao*, +, *MWSYM 89 Vol. 1* 423-426

CAD large-signal model of picosecond FETs; measurement of step response. *Ouslimani, A.*, +, *T-MTT Sep 89* 1460-1465

DC and transmission-line models for high-electron-mobility transistor. *Huang, Di-Hui*, +, *T-MTT Sep 89* 1361-1370

discrete HEMTs; large-signal models for SPICE simulation of hybrid ICs. *Liu, Qing Zhong*, *MWSYM 89 Vol. 1* 463-466

FET structures; modeling and circuit applications (special issue). *T-MTT Sep 89* 1277-1491

high-frequency MESFET noise modeling including distributed effects for millimeter-wave range below 100 GHz. *Heinrich, Wolfgang*, *T-MTT May 89* 836-842

improved analytical AC large-signal model for GaAs MESFET. *Madjar, Asher*, *T-MTT Oct 89* 1519-1522

InGaAs pseudomorphic low-noise HEMT fabrication using offset recess gate process. *Ishikawa, Osamu*, +, *MWSYM 89 Vol. 3* 979-982

large-signal FET parameter extraction using harmonic balance method. *Bandler, J. W.*, +, *MWSYM 89 Vol. 2* 577-580

large-signal FET parameter extraction using harmonic balance method. *Bandler, John W.*, +, *T-MTT Dec 89* 2099-2108

large-signal nonlinear MODFET model using small-signal S-parameter measurements. *O'Callaghan, J. M.*, +, *MWSYM 89 Vol. 1* 347-350

laser-processed microwave HEMTs with AlAs-nGaAs superlattice donor layers. *Dumas, J. M.*, +, *MWSYM 89 Vol. 1* 483-486

- lattice matched and strained InGaAs/InAlAs HEMTs; low-frequency properties. Ng, G. L., +, *CORNEL 89 Abstr II/4*
- linear statistical FET model based on principal-component analysis. Petzold, Mark, +, *MWSYM 89 Vol. 1 375-378*
- MESFET and MODFET wideband noise parameter modeling at room and cryogenic temperatures; frequency and temperature dependence. Pospieszalski, Marian W., *MWSYM 89 Vol. 1 385-388*
- modeling and analysis of GaAs MESFETs with consideration to wave propagation effect along electrodes. Chang, R. L., +, *MWSYM 89 Vol. 1 371-374*
- modeling gate I/V characteristic of GaAs MESFET for Volterra-series analysis. Maas, Stephen A., +, *T-MTT Jul 89 1134-1136*
- noise characterization uncertainty of microwave FET devices under low current operation. Lucero, R., +, *MWSYM 89 Vol. 3 893-896*
- nonlinear charge control DC and transmission-line models for GaAs MODFETs. Huang, Di-Hui, +, *MWSYM 89 Vol. 1 417-420*
- nonlinear microwave circuit analysis technique based on Volterra series; demonstration on MESFET device. Krozer, V., +, *MWSYM 89 Vol. 1 351-354*
- offset self-aligned process for high-efficiency Ku-band power FETs. Wakamoto, Kouichi, +, *MWSYM 89 Vol. 3 1023-1026*
- on-wafer verification of a large-signal MESFET model. Curtice, W. R., +, *T-MTT Nov 89 1809-1811*
- physical modeling of GaAs microwave MESFETs in integrated CAD environment. Ghione, Giovanni, +, *T-MTT Mar 89 457-468*
- process-dependent worst-case model for MMIC design based on MESFET simulator. Cazaux, Jean-Louis, +, *T-MTT Sep 89 1442-1451*
- quasi-two-dimensional model for dual-gate GaAs MESFET. Licqurish, Clint, +, *T-MTT Oct 89 1497-1505*
- quasistatic large-signal MESFET model for CAD. Pantoja, R. R., +, *MWSYM 89 Vol. 2 573-576*
- quasistatic large-signal MESFET model for CAD. Pantoja, Renato R., +, *T-MTT Dec 89 2039-2045*
- RF and DC characterization of P-channel AlGaAs/GaAs MODFETs with gate lengths as small as 0.25 μm . Park, H., +, *CORNEL 89 Abstr II/7*
- self-alignment technology for sub-quarter-micron-gate FETs produced by optical lithography and operating in Ka band. Yanokura, Eiji, +, *T-MTT Sep 89 1466-1471*
- simulator for variation and sensitivity of microwave MESFET large signal figures-of-merit due to process, material, parasitic and bias parameters. Stoneking, D. E., +, *CORNEL 89 Abstr IV/6*
- superlattice and conventional heterostructure FETs; RF measurements and characterization at 120 K. Brockerhoff, Wolfgang, +, *T-MTT Sep 89 1380-1388*
- traveling-wave inverted-gate FETs (INGFETs); characterization. El-Ghazaly, Samir M., +, *T-MTT Jun 89 1027-1032*
- zero-bias GaInAs MISFET mixers. Chang, K. W., +, *MWSYM 89 Vol. 3 1027-1030*
- Microwave FETs, power**
- FET power performance prediction using linearized device model; agreement with measurements up to 40 GHz. Kondoh, Hiroshi, *MWSYM 89 Vol. 2 569-572*
- GaAs power MESFET incorporating transmission line parallel to gate for increased single-gate width. Fricke, Klaus, +, *T-MTT Sep 89 1334-1339*
- GaAs power MESFET with large unit gate width. Fricke, K., +, *MWSYM 89 Vol. 1 389-392*
- high-voltage operation in class-B GaAs X-band power MESFETs. Sriram, S., +, *CORNEL 89 Abstr IV/5*
- Ka-band 2-W power GaAs MMIC. Arai, Shigemitsu, +, *MWSYM 89 Vol. 3 1105-1108*
- large-signal numerical model for X-band MESFET. Halkias, George, +, *T-MTT May 89 817-825*
- P-type dopant coimplants in ion-implanted GaAs power FETs; effects on RF performance. Winslow, T. A., +, *MWSYM 89 Vol. 3 1019-1022*
- Microwave filters**
- 2-4-GHz notch filters with variable center frequency and attenuation. Toyoda, Sachihito, *MWSYM 89 Vol. 2 595-598*
- MMIC bandpass active filter using lumped and transversal elements. Schindler, M. J., +, *MCS 89 57-60*
- MMIC bandpass active filter using lumped and transversal elements. Schindler, Manfred J., +, *T-MTT Dec 89 2148-2153*
- Microwave filters; cf. Finline filters; Waveguide filters**
- Microwave frequency conversion**
- 29 GHz-to-1 GHz receiver/downconverter using MICs and MMICs for M²VDS TV broadcast system. Wilson, Philip G., +, *MWSYM 89 Vol. 3 1099-1102*
- balanced 11 GHz HEMT up-converter. Bura, P., +, *MWSYM 89 Vol. 3 1299-1302*
- FET upconverter modeling using load-dependent mixing transconductance. Fikart, Josef L., +, *T-MTT Jun 89 1033-1039*
- general planar circuit simulation using 2-D transmission line matrix method. So, Poman P. M., +, *T-MTT Dec 89 1877-1884*
- second-harmonic reflector-type high-gain FET frequency doubler operating in K band. Iyama, Yoshiyuda, +, *MWSYM 89 Vol. 3 1291-1294*
- yield optimization of nonlinear circuits with statistically characterized devices. Bandler, J. W., +, *MWSYM 89 Vol. 2 649-652*
- Microwave frequency conversion; cf. MMIC frequency converters**
- Microwave heating; cf. Biomedical radiation applications, electromagnetic; Electromagnetic heating; Hyperthermia**
- Microwave imaging/mapping**
- equivalent current density reconstruction for microwave imaging. Caorsi, Salvatore, +, *T-MTT May 89 910-916*
- microwave imagery using Bojarski's identity; specular reflections on surface of large conducting convex object. Chu, Tah-Hsiung, +, *T-MTT Jul 89 1141-1144*
- recent European developments in active microwave imaging. Bolomey, J. C., *MWSYM 89 Vol. 2 609-612*
- recent European developments in active microwave imaging for industrial, scientific, and medical applications. Bolomey, Jean-Charles, *T-MTT Dec 89 2109-2117*
- solution method for inverse problems with measurement errors; application to medical microwave radiometry. Mizushima, Shizuo, +, *MWSYM 89 Vol. 1 171-174*
- Microwave integrated circuits**
- broadside-coupled coplanar waveguide for MICs/MMICs; analytic characterization formulas for quasistatic TEM parameters. Bedair, Said S., +, *T-MTT May 89 843-850*
- deterministic approach to full-wave analysis of discontinuities in MICs using the method of lines. Chen, Zhaoqing, +, *T-MTT Mar 89 606-611*
- double-sided microwave integrated circuit components. Aikawa, Masayoshi, +, *T-MTT Feb 89 406-413*
- hair-pin microstrip resonator filters; application to receiver front-end MICs. Takahashi, Kenichi, +, *MWSYM 89 Vol. 2 667-670*
- improved calibration and measurement of scattering parameters of microwave integrated circuits. Pantoja, Renato R., +, *T-MTT Nov 89 1675-1680*
- lossy model of diode packages as alternative method for exact evaluation of active chip parameters. Kazi, Karoly, +, *MWSYM 89 Vol. 3 1267-1270*
- microwave amplifier manufacturing with advanced thin-film MIC and elementary MMIC technology. Crescenzi, E. J., Jr., +, *MWSYM 89 Vol. 2 773-776*
- miniaturized hairpin resonator filters; application to receiver front-end MICs. Sugawa, Morikazu, +, *T-MTT Dec 89 1991-1997*
- modeling of arbitrarily shaped signal lines and discontinuities embedded in homogeneous medium. Rubin, Barry J., *T-MTT Jun 89 1057-1060*
- modeling picosecond pulse propagation in microstrip interconnections of integrated circuits. Goossen, Keith W., +, *T-MTT Mar 89 469-478*
- quasi-optical planar FET transceiver modules. Birkeland, J., +, *MWSYM 89 Vol. 1 119-122*
- techniques and materials for device alloy attachment with high reliability and throughput. Pavio, Jeanne S., *MWSYM 89 Vol. 2 761-764*
- Microwave integrated circuits; cf. Lumped-element microwave circuits; MMICs; Planar waveguides**
- Microwave limiters**
- microstrip plasma limiter for DC-18-GHz operation. Patel, Suman D., +, *MWSYM 89 Vol. 3 879-882*
- Microwave measurements**
- AM-AM and AM-PM technique for measurement and simulation of memory effects in predistortion linearizers. Bösch, Wolfgang, +, *T-MTT Dec 89 1885-1890*
- AM-AM and AM-PM technique for measurement of memory effects in predistortion linearizers. Bösch, Wolfgang, +, *MWSYM 89 Vol. 3 885-888*
- CAD large-signal model of picosecond FETs; measurement of step response. Ouslimani, A., +, *T-MTT Sep 89 1460-1465*
- contributions during Rantec years of Seymour B. Cohn (1960 to 1967). Harrison, William H., *MWSYM 89 Vol. 2 749-751, 757-758*
- de-embedding and calibration procedures for two-port error network representations; mathematical formulation. Soares, Robert A., +, *T-MTT Nov 89 1669-1674*
- high-power microwave diagnostic system based on compact, single-unit, radiate-and-receive devices. Treddo, Todd A., +, *MWSYM 89 Vol. 3 875-878*
- MBE-grown resonant tunneling device characteristics. Owens, J. M., +, *MWSYM 89 Vol. 1 471-474*
- microstrip noncontacting thickness monitor for measuring height of materials on metallic surfaces from microwave propagation velocity. Hurley, Richard B., +, *MWSYM 89 Vol. 3 905-908*
- noncontacting magnetic-field probe for measurements on high-frequency planar circuits for 26.5-40-GHz operation. Osofsky, Samuel S., +, *MWSYM 89 Vol. 2 823-825*
- on-wafer verification of a large-signal MESFET model. Curtice, W. R., +, *T-MTT Nov 89 1809-1811*
- parameter extraction technique for heterojunction bipolar transistors. Trew, R. J., +, *MWSYM 89 Vol. 3 897-900*
- phase-shifter controlled homodyne double-reflectometer; using reciprocity for complex network analyzer measurements. Eul, H.-J., *MWSYM 89 Vol. 3 1187-1190*
- proposed real-time microwave and millimeter-wave spectrum analyzer for large-bandwidth signals. Cohen, Jonathan D., *T-MTT Jun 89 1054-1057*
- statistical method for calibrating six-port reflectometer using nonideal standards. Jachim, Stephen E., +, *T-MTT Nov 89 1825-1828*
- Microwave measurements; cf. Attenuation measurement; Cavity perturbation methods; Conductivity measurement; Dielectric measurements; Finite-difference methods; Lumped-element microwave measurements; Noise measurement; Optical pulse measurements; Scattering parameters measurement; Thickness measurement; Time-domain measurements**
- Microwave mixers**
- asymmetrical unilateral finline; characterization and application in 20-GHz bandpass filter and 4/20-GHz mixer. Espes, Patrick, +, *T-MTT Feb 89 289-298*
- computer-aided noise analysis of MESFET and HEMT mixers. Rizzoli, Vittorio, +, *T-MTT Sep 89 1401-1410*
- damage properties of 1N23 X-band mixer diodes due to short pulse trains. Glenn, Chance M., +, *MWSYM 89 Vol. 1 475-477*

- high- T_c YBCO and BCSCO granular thin-film-based microstrip mixer characterization. *Konopka, J.*, +, *MWSYM 89 Vol. 2* 635-638
- MIC coplanar waveguide/slotline double-balanced mixer. *Cahana, David*, *MWSYM 89 Vol. 3* 967-968
- microwave comb generation with Josephson junction array. *Hohenwarter, G. K. G.*, +, *MWSYM 89 Vol. 1* 447-450
- planar doped barrier mixer and detector diodes as alternatives to Schottky diodes for microwave and millimeter-wave applications. *Dale, I.*, +, *MWSYM 89 Vol. 1* 467-470
- unilateral microstrip balanced and doubly balanced microwave mixers. *Knöchel, Reinhard*, +, *MWSYM 89 Vol. 3* 1247-1250
- zero-bias GaInAs MISFET mixers. *Chang, K. W.*, +, *MWSYM 89 Vol. 3* 1027-1030
- Microwave mixers; cf. MMIC mixers**
- Microwave modulation/demodulation**
- double-sided microwave integrated circuit components. *Aikawa, Masayoshi*, +, *T-MTT Feb 89* 406-413
- logarithmic-periodic contiguous-channel microwave multiplexers. *Rauscher, Christen*, *MWSYM 89 Vol. 2* 675-678
- multi-gigabit fiber-optic video distribution network using BPSK microwave subcarriers. *Tang, Douglas D.*, *MWSYM 89 Vol. 2* 697-701
- p-i-n diode control devices for finline circuits; state-of-the-art overview. *Callen, Heinrich*, +, *T-MTT Feb 89* 307-316
- W-band channelized three-chip MMIC receiver using MMIC mixer/multiplexer, MMIC Gunn oscillator, and MMIC amplifier. *Lan, G. L.*, +, *MCS 89* 95-99
- W-band channelized three-chip MMIC receiver using MMIC mixer/multiplexer, MMIC Gunn oscillator, and MMIC amplifier. *Lan, G. L.*, +, *MWSYM 89 Vol. 1* 103-107
- Microwave oscillators**
- 0.7-3.3-GHz superconducting single-film device oscillator made of high- T_c and low- T_c materials. *Martens, J. S.*, +, *MWSYM 89 Vol. 1* 443-446
- correlation spectrum of oscillators with low noise; general expression from perturbation theory. *Kaertner, Franz X.*, *T-MTT Jan 89* 90-101
- fast-switching multioscillator assemblies using negative resistance quenching p-i-n diode technique. *Khan, A. P. S.*, +, *MWSYM 89 Vol. 1* 515-518
- generating high-power broadband microwave pulses using picosecond optoelectronic technique. *Sayadian, Hrayr A.*, +, *T-MTT Jan 89* 43-50
- high- T_c superconducting stripline microwave resonators and oscillators. *Oates, D. E.*, +, *MWSYM 89 Vol. 2* 627-630
- QWITT (quantum-well injection transient time) diode oscillators for 5-8-GHz planar and 28-31-GHz waveguide uses. *Kesan, V. P.*, +, *MWSYM 89 Vol. 1* 487-490
- QWITT (quantum-well injection transient time) diode oscillators for 5-8-GHz planar and 28-31-GHz waveguide uses. *Kesan, Vijay P.*, +, *T-MTT Dec 89* 1933-1941
- Microwave oscillators; cf. Acoustic surface-wave oscillators; Gunn device oscillators; Injection-locked oscillators; Magnetrons; MMIC oscillators; Phase-locked oscillators**
- Microwave phase shifters; cf. Phase shifters**
- Microwave power dividers/combiners**
- 2-6-GHz asymmetric lumped-element power splitters fabricated in microstrip. *Kopp, Bruce*, *MWSYM 89 Vol. 1* 333-336
- binary peak power multiplier driven by single source. *Latham, P. E.*, *T-MTT May 89* 929-931
- broadband printed-circuit hybrid ring power divider. *Mikucki, Gerald F.*, +, *T-MTT Jan 89* 112-117
- channelized coplanar waveguide; discontinuities, junctions, and propagation characteristics. *Simons, Rainee N.*, +, *MWSYM 89 Vol. 3* 915-918
- experiments on injection locking of active antenna elements for active phased arrays and spatial power combiners. *Chang, Kai*, +, *T-MTT Jul 89* 1078-1084
- exponential power combiner/divider. *Affandi, Adnan M.*, +, *T-MTT Feb 89* 400-405
- microwave power combination using bifurcated waveguide and reflecting plate. *Wang, Ming*, +, *T-MTT Mar 89* 612-617
- multi-way unequal power divider circuits using sector-shaped planar components; results for four-way design. *Abouzahra, Mohamed D.*, +, *MWSYM 89 Vol. 1* 321-324
- multiport branch-waveguide couplers with arbitrary power splitting; six-port coupler design using WR75 waveguide. *Carle, Pierluigi*, *MWSYM 89 Vol. 1* 317-320
- optimizing combining efficiency when using oversized cylindrical cavity multiple-device structures. *Tanaka, Satoshi*, +, *T-MTT Nov 89* 1755-1760
- parallel running system of three oscillators coupled through six-port magic junction feeding coaxial and circular waveguides. *Ohia, Isao*, +, *T-MTT Nov 89* 1699-1707
- Microwave power dividers/combiners; cf. MMIC power dividers/combiners**
- Microwave radiation effects; cf. Biomedical radiation applications, electromagnetic**
- Microwave radio communication**
- RF predistortion linearizer using balanced circulators; application to 256-QAM digital radio systems. *Imai, Nobuaki*, +, *T-MTT Aug 89* 1237-1243
- Microwave radio communication; cf. Satellite communication**
- Microwave radiometry**
- cancer detection using microwave radiometry. *Carr, Kenneth L.*, *T-MTT Dec 89* 1862-1869
- waveguide resonator technique for moisture content and dielectric properties measurements of seeds. *Kraszewski, A. W.*, +, *MWSYM 89 Vol. 1* 187-190
- Microwave radiometry; cf. Biomedical imaging, infrared**
- Microwave receivers**
- hair-pin microstrip resonator filters; application to receiver front-end MICs. *Takahashi, Kenichi*, +, *MWSYM 89 Vol. 2* 667-670
- miniaturized hairpin resonator filters; application to receiver front-end MICs. *Sagawa, Morikazu*, +, *T-MTT Dec 89* 1991-1997
- quasi-optical planar FET transceiver modules. *Birkeland, J.*, +, *MWSYM 89 Vol. 1* 119-122
- wafer-scale integration of microwave T/R modules on 3-inch GaAs wafers. *Driver, M. C.*, +, *CORNEL 89 Abstr I/1*
- Microwave receivers; cf. TR devices**
- Microwave resonators; cf. Cavity resonators; Dielectric resonators; Microstrip resonators; Stripline resonators**
- Microwave switches**
- distortion in microwave and RF switches due to reverse-biased p-i-n diodes. *Caverly, Robert H.*, +, *MWSYM 89 Vol. 3* 1073-1076
- InP:Fe modified interdigitated-gap photoconducting microwave switch; transmission amplitude and phase characteristics. *Andersson, Ingmar L.*, +, *T-MTT Apr 89* 729-733
- three-port bias-dependent model for GaAs MESFET switches; large-signal behavior. *Gardner, G. J.*, +, *MWSYM 89 Vol. 1* 405-408
- Microwave switches; cf. Finline switches; Phase shifters**
- Microwave technology**
- 1989 IEEE MTT-S International Microwave Symposium Digest, 3 vols.. *MWSYM 89*
- 1989 IEEE MTT-S International Microwave Symposium (special issue). *T-MTT Dec 89* 1837-2170
- cumulative index issue. *T-MTT Jun 89* II/1-187
- selected papers from 1989 IEEE MTT-S International Microwave Symposium. (special section) *T-MTT Dec 89* 1837-2117
- selected papers from 1989 IEEE MTT-S Microwave and Millimeter-wave Monolithic Circuits Symposium (special section). *T-MTT Dec 89* 2118-2170
- selected technology summary for microwave computer-aided design; technical advances in 9 areas of interest (110 references) 1984-1988. *Horton, John B.*, *T-MTT Jun 89* 1040-1053
- Microwave transmitters**
- quasi-optical planar FET transceiver modules. *Birkeland, J.*, +, *MWSYM 89 Vol. 1* 119-122
- wafer-scale integration of microwave T/R modules on 3-inch GaAs wafers. *Driver, M. C.*, +, *CORNEL 89 Abstr I/1*
- Microwave transmitters; cf. TR devices**
- Military satellites**
- HEMT MMIC low-noise amplifiers for radar, electronic warfare, and military satellite communications uses. *Upton, M. A. G.*, +, *MCS 89* 105-109
- HEMT MMIC low-noise amplifiers for radar, electronic warfare, and military satellite communications uses. *Upton, M. A. G.*, +, *MWSYM 89 Vol. 1* 193-197
- Millimeter oscillators**
- resonant tunneling structures for high-frequency oscillator applications using time-dependent solution of Schrodinger's equation. *Saadat, Irfan A.*, +, *CORNEL 89 Abstr V/4*
- Millimeter-wave amplifiers, power**
- third-harmonic-peaking class-F power amplifier operation for higher efficiencies. *Kopp, William S.*, +, *MWSYM 89 Vol. 3* 857-858
- Millimeter-wave antennas; cf. Slot antennas**
- Millimeter-wave attenuators**
- design of control components for 18-40-GHz band microstrip: reentrant coupler, SPST and SPDT switches and voltage-controlled attenuator. *Adelman, Jonah*, +, *T-MTT Feb 89* 317-323
- Millimeter-wave bipolar transistor amplifiers, power**
- high power efficiency X-band GaAlAs/GaAs HBT. *Wang, N. L.*, +, *CORNEL 89 Abstr III/4*
- Millimeter-wave bipolar transistor oscillators**
- 25-42-GHz GaAs heterojunction bipolar transistor push-push VCOs with low phase noise. *Smith, D. M.*, +, *MWSYM 89 Vol. 2* 725-728
- Millimeter-wave bipolar transistors**
- calculated high frequency performance of npn Si_{1-x}Ge_x HBT. *Racanello, Marco*, +, *CORNEL 89 Abstr III/3*
- characterization of Si- and SiGe-base bipolar transistors for high frequency and high speed applications; basic transport and design. *Hinckley, J. M.*, +, *CORNEL 89 Abstr III/2*
- high-fr-operation bias range for AlInAs/InGaAs HBT. *Tanaka, S.*, +, *CORNEL 89 Abstr III/6*
- picosecond optoelectronic characterization of heterojunction bipolar transistor. *Mauloubian, M.*, +, *MWSYM 89 Vol. 3* 889-892
- Millimeter-wave circuits**
- modeling methodologies for passive microwave and millimeter-wave components; recent European developments. *Sorrentino, Roberto*, *MWSYM 89 Vol. 2* 613-616
- Millimeter-wave circulators**
- 31-GHz uniaxial-ferrite millimeter-wave junction circulators. *Weiss, Gerald A.*, +, *MWSYM 89 Vol. 1* 145-148
- Millimeter-wave components**
- quasi-planar millimeter-wave components and subsystems (special issue). *T-MTT Feb 89* 273-437
- Millimeter-wave devices**
- millimeter-wave circuit models for microstrip open-end, gap, step, bend and tee, based on full-wave theory. *Jansen, Rolf H.*, +, *MWSYM 89 Vol. 2* 779-782
- Millimeter-wave diodes; cf. Gunn devices; IMPATT diodes; Schottky diodes**
- Millimeter-wave FET amplifiers**
- 1-40 GHz MESFET hybrid distributed amplifier. *Brouzes, H.*, +, *MWSYM 89 Vol. 3* 849-852

- balanced cascade 26–40 GHz amplifier: design, fabrication and performance. *McCann, D. M. F.*, *MWSYM 89 Vol. 3* 845-848
- HEMT cryogenic 43-GHz-band low-noise amplifier. *Saito, T.*, +, *MWSYM 89 Vol. 3* 853-856
- InP-based HEMT millimeter-wave low-noise amplifiers. *Duh, K. H. G.*, +, *MWSYM 89 Vol. 2* 805-808
- oscillators and amplifiers using integrated *E*-plane technique. *Hoefler, Wolfgang J. R.*, *T-MTT Feb 89* 351-364
- V*-band high-performance low-noise HEMT amplifier. *Vaughn, S.*, +, *MWSYM 89 Vol. 2* 801-804
- Millimeter-wave FET amplifiers, power**
- 44 GHz two-stage power amplifiers using InGaAs 0.25- μ m gate-length pseudomorphic HEMTs. *Ferguson, D. W.*, +, *MWSYM 89 Vol. 3* 987-990
- Millimeter-wave FET oscillators**
- high-performance millimeter-wave local oscillator module for electronic warfare applications. *Boch, Erik.*, +, *MWSYM 89 Vol. 3* 1207-1210
- oscillators and amplifiers using integrated *E*-plane technique. *Hoefler, Wolfgang J. R.*, *T-MTT Feb 89* 351-364
- Millimeter-wave FETs**
- 0.15- μ m gate-length pseudomorphic HEMTs. *Smith, P. M.*, +, *MWSYM 89 Vol. 3* 983-986
- 0.15- μ m gate-length very high performance InAlAs/InGaAs/InP lattice-matched HEMTs. *Tessmer, A. J.*, +, *CORNEL 89 Abstr II/2*
- 2-D electron gas AlGaAs/InGaAs/GaAs structures on GaAs for high-speed millimeter-wave MODFETs. *Kohn, E.*, +, *CORNEL 89 Abstr II/6*
- 94-GHz HEMT mixer Si design and performance. *Chow, P. D.*, +, *MWSYM 89 Vol. 2* 731-734
- AlGaAs/GaAs HEMT with 0.1- μ m T-shaped gate, giving low noise figure. *Kawasaki, Hisao.*, +, *MWSYM 89 Vol. 1* 423-426
- AlInAs-GaInAs HEMT for microwave and millimeter-wave applications. *Mishra, Umesh K.*, +, *T-MTT Sep 89* 1279-1285
- high-frequency MESFET noise modeling including distributed effects for millimeter-wave range below 100 GHz. *Heinrich, Wolfgang.*, *T-MTT May 89* 836-842
- mixed technology of ion implantation and heteroepitaxy: ion-implanted In_xGa_{1-x}As/GaAs MESFETs. *Wang, G. W.*, +, *CORNEL 89 Abstr II/8*
- theoretical comparison of 0.35- μ m gate length GaAs and GaInAs HEMTs, using Monte Carlo simulations with 2-D Poisson solver. *Park, Duke H.*, +, *MWSYM 89 Vol. 3* 991-994
- ultra-low-noise millimeter-wave pseudomorphic HEMTs with 0.1- μ m-length gates. *Lee, R. E.*, +, *MWSYM 89 Vol. 3* 975-978
- ultralow-noise millimeter-wave pseudomorphic HEMTs with 0.1 μ m-length gates. *Lee, Robert E.*, +, *T-MTT Dec 89* 2086-2092
- Millimeter-wave FETs, power**
- 35-GHz GaAs power MESFETs and monolithic amplifiers: fabrication and characterization 2. *Kim, Bumman.*, +, *T-MTT Sep 89* 1327-1333
- FET power performance prediction using linearized device model; agreement with measurements up to 40 GHz. *Kondohe, Hiroshi.*, *MWSYM 89 Vol. 2* 569-572
- Ka-band 2-W power GaAs MMIC. *Arai, Shigemitsu.*, +, *MWSYM 89 Vol. 3* 1105-1108
- Millimeter-wave filters**
- 33 GHz and 94 GHz *E*-plane integrated bandpass filters using inductively coupled stopband sections. *Bornemann, Jens.*, *MWSYM 89 Vol. 2* 599-602
- evanescent-mode *E*-plane finned waveguide microwave and millimeter-wave bandpass filter design. *Bornemann, Jens.*, +, *MWSYM 89 Vol. 2* 603-606
- quasi-planar filters for millimeter-wave applications using ladder-shaped *E*-plane structures. *Vahldeick, Ruediger.*, *T-MTT Feb 89* 324-334
- Millimeter-wave frequency conversion**
- frequency doublers and quadruplers for 140-GHz–230-GHz inputs for local oscillator signal generation. *Tolmunen, Timo.*, +, *MWSYM 89 Vol. 3* 1223-1226
- Millimeter-wave imaging/mapping**
- printed-circuit antennas with integrated FET detectors for millimeter-wave quasi-optic applications. *Chew, Wilbert.*, +, *T-MTT Mar 89* 593-597
- Millimeter-wave integrated circuits**
- possibility of silicon-germanium monolithic millimeter-wave integrated circuits. *Campbell, S. A.*, +, *MWSYM 89 Vol. 2* 817-819
- whispering-gallery-mode dielectric resonator for planar millimeter-wave integrated circuits. *Jiao, X. H.*, +, *T-MTT Feb 89* 432-437
- Millimeter-wave isolators**
- 90–100-GHz ferrite-dielectric image-line field displacement isolators. *Owens, J. M.*, +, *MWSYM 89 Vol. 1* 141-144
- Millimeter-wave measurements**
- cavity resonator measurement method for leaky waveguides. *Oliner, Arthur A.*, +, *T-MTT Mar 89* 618-621
- coplanar waveguide vector network analyzer for on-wafer measurements at millimeter-wave frequencies. *Bellantoni, J. V.*, +, *CORNEL 89 Abstr IV/3*
- external electro-optic probing of millimeter-wave MMICs. *Whitaker, J. F.*, +, *MWSYM 89 Vol. 1* 221-224
- high-*T_c* superconducting Josephson millimeter-wave spectral detector using granular bridge sensor coupled to microstrip line. *Daginnus, M.*, +, *MWSYM 89 Vol. 2* 631-634
- large-signal characterization of millimeter-wave transistors using actively tuned load-pull measurement system. *Actis, Robert.*, +, *MWSYM 89 Vol. 2* 835-838
- noncontacting magnetic-field probe for measurements on high-frequency planar circuits for 26.5–40-GHz operation. *Osofsky, Samuel S.*, +, *MWSYM 89 Vol. 2* 823-825
- noninvasive laser high speed electronic measurements of millimeter-wave ICs. *Bloom, David M.*, *CORNEL 89 Abstr IV/1*
- on-wafer probe techniques for characterizing millimeter-wave MMICs using coplanar waveguide-microstrip transition data. *Dawe, G.*, +, *MWSYM 89 Vol. 1* 413-415
- proposed real-time microwave and millimeter-wave spectrum analyzer for large-bandwidth signals. *Cohen, Jonathan D.*, *T-MTT Jun 89* 1054-1057
- tunable waveguide-to-microstrip transition for measuring millimeter-wave noise parameters of high-performance HEMTs at 300 K and 17 K. *Weinreb, S.*, +, *MWSYM 89 Vol. 2* 813-816
- W*-band coplanar waveguide test fixture using finline tapers from rectangular to coplanar waveguides. *Bellantoni, J. V.*, +, *MWSYM 89 Vol. 3* 1203-1204
- Millimeter-wave measurements; cf. Conductivity measurements; Finite-difference methods; Optical pulse measurements; Scattering parameters measurement**
- Millimeter-wave mixers**
- 94-GHz HEMT mixer Si design and performance. *Chow, P. D.*, +, *MWSYM 89 Vol. 2* 731-734
- high-*T_c* YBCO and BCSCO granular thin-film-based microstrip mixer characterization. *Konopka, J.*, +, *MWSYM 89 Vol. 2* 635-638
- planar doped barrier mixer and detector diodes as alternatives to Schottky diodes for microwave and millimeter-wave applications. *Dale, I.*, +, *MWSYM 89 Vol. 1* 467-470
- printed-circuit antennas with integrated FET detectors for millimeter-wave quasi-optic applications. *Chew, Wilbert.*, +, *T-MTT Mar 89* 593-597
- spectral-domain analysis of harmonic effects in superconducting quasiparticle mixers. *Withington, Stafford.*, +, *T-MTT Jan 89* 231-238
- Millimeter-wave modulation/demodulation**
- rigorous field theory design for millimeter-wave *E*-plane integrated circuit multiplexers. *Diuloff, Joachim.*, +, *T-MTT Feb 89* 340-350
- Millimeter-wave oscillators**
- QWITT (quantum-well injection transient time) diode oscillators for 5–8-GHz planar and 28–31-GHz waveguide uses. *Kesan, V. P.*, +, *MWSYM 89 Vol. 1* 487-490
- QWITT (quantum-well injection transient time) diode oscillators for 5–8-GHz planar and 28–31-GHz waveguide uses. *Kesan, Vijay P.*, +, *T-MTT Dec 89* 1933-1941
- Millimeter-wave oscillators; cf. Gunn device oscillators; IMPATT diode oscillators; Injection-locked oscillators; Phase-locked oscillators; Voltage-controlled oscillators**
- Millimeter-wave power dividers/combiners**
- lossless high-power switch at 94 GHz using four power-combined IMPATT oscillators. *Barth, Helmut.*, *MWSYM 89 Vol. 3* 1087-1090
- planar *W*-band dielectric resonator power combiner using whispering-gallery modes. *Cros, D.*, +, *MWSYM 89 Vol. 3* 1215-1218
- Millimeter-wave radar imaging/mapping**
- 94-GHz 3-D-imaging radar for sensor-based locomotion. *Lange, M.*, +, *MWSYM 89 Vol. 3* 1091-1094
- Millimeter-wave radio communication**
- M³VDS (Millimeter-wave Multichannel Multipoint Video Delivery Service) system for direct-to-home TV broadcasting. *Pilgrim, Mike.*, +, *MWSYM 89 Vol. 3* 1095-1098
- Millimeter-wave receivers**
- 85–116-GHz SIS receiver using inductively shunted edge junctions. *Pan, Shing-Kuo.*, +, *T-MTT Mar 89* 580-592
- performance test results for five 30-GHz satellite receivers. *Kerczewski, Robert J.*, +, *MWSYM 89 Vol. 3* 1079-1082
- transmitter and receiver using nonradiative dielectric waveguide. *Yoneyama, Tsukasa.*, *MWSYM 89 Vol. 3* 1083-1086
- Millimeter-wave resonators**
- monolithic IMPATT millimeter-wave quasioptical oscillator stabilized by open-cavity resonator operating in 50-GHz region. *Shillue, William P.*, +, *MWSYM 89 Vol. 2* 739-740
- Millimeter-wave resonators; cf. Dielectric resonators**
- Millimeter-wave switches**
- lossless high-power switch at 94 GHz using four power-combined IMPATT oscillators. *Barth, Helmut.*, *MWSYM 89 Vol. 3* 1087-1090
- Millimeter-wave switches; cf. Microstrip switches**
- Millimeter-wave technology**
- 1989 IEEE MTT-S International Microwave Symposium Digest, 3 vols.. *MWSYM 89*
- 1989 MTT-S International Microwave Symposium (special issue). *T-MTT Dec 89* 1837-2170
- MMICs. *T-MTT Dec 89* 1837-2117
- selected papers from 1989 IEEE MTT-S International Microwave Symposium. (special section) *T-MTT Dec 89* 1837-2117
- selected papers from 1989 IEEE MTT-S Microwave and Millimeter-wave Monolithic Circuits Symposium (special section). *T-MTT Dec 89* 2118-2170
- Millimeter-wave transmitters**
- transmitter and receiver using nonradiative dielectric waveguide. *Yoneyama, Tsukasa.*, *MWSYM 89 Vol. 3* 1083-1086
- Millimeter-wave waveguides**
- DC to 40 GHz coaxial-to-microstrip transition for 100- μ m-thick GaAs substrates. *Chenkin, Joseph.*, *T-MTT Jul 89* 1147-1150
- propagation properties of ferromagnetic insular guide for 26.5 to 40 GHz. *Xia, Jiqing.*, +, *T-MTT Oct 89* 1547-1554
- quasiplanar transmission lines within circular or elliptical waveguides; method of lines formulation. *Wu, Ke.*, +, *MWSYM 89 Vol. 1* 503-506
- quasiplanar transmission lines within circular or semicircular/elliptical waveguides; method of lines formulation. *Wu, Ke.*, +, *T-MTT Dec 89* 1958-1963

- Millimeter-wave waveguides;** cf. Coplanar transmission lines; Dielectric waveguides; Microstrip; Ridge waveguides
- MIS devices**
deposited SiO₂ as insulator for GaInAs and InP MISFETs. *Gardner, P. D.*, +, *CORNELL 89* Abstr. I/3
deriving space-domain Green's function in shielded, multilayer substrate structure; applications to MIS slow-wave transmission lines. *Livernois, Thomas G.*, +, *T-MTT Nov 89* 1761-1767
GaInAs MISFET 7–11-GHz amplifier designs. *Bechtel, D.*, +, *T-MTT Oct 89* 1636-1638
ion-implanted high-microwave-power InP MISFETs. *Biedenbender, Michael D.*, +, *T-MTT Sep 89* 1321-1326
zero-bias GaInAs MISFET mixers. *Chang, K. W.*, +, *MWSYM 89 Vol. 3* 1027-1030
- Mixer noise**
CAD program and equations for phase and amplitude noise analysis of component chains. *Riddle, Alf.*, *MWSYM 89 Vol. 1* 359-362
computer-aided noise analysis of MESFET and HEMT mixers. *Rizzoli, Vittorio.*, +, *T-MTT Sep 89* 1401-1410
- Mixers;** cf. Heterodyning; Josephson device mixers/frequency converters; Schottky diode mixers; Submillimeter-wave mixers; UHF mixers
- MMIC amplifiers**
1989 IEEE Microwave and Millimeter-Wave Monolithic Circuits Symposium. Digest of Papers. *MCS 89*
0.25- μ m-gate length 40-GHz HEMT low-noise amplifier. *Yuen, C.*, +, *MCS 89* 117-120
0.25- μ m-gate length monolithic 40-GHz HEMT low noise amplifier; sensitivity to material and processing variations. *Yuen, C.*, +, *T-MTT Dec 89* 2169-2170
0.25- μ m-gate monolithic 40-GHz HEMT low-noise amplifier. *Yuen, C.*, +, *MWSYM 89 Vol. 1* 205-208
0.3–3-GHz monolithic vector modulator for adaptive array systems. *Thiut, Austin.*, +, *MWSYM 89 Vol. 1* 421-422
12 GHz amplifier designed from direct measurement of optimum transistor source impedance for minimum noise figure. *Ishikawa, Osamu.*, +, *MWSYM 89 Vol. 3* 1183-1186
12-GHz-band super-low-noise amplifier using self-aligned gate MESFET. *Ayaki, N.*, +, *MCS 89* 7-10
2–18-GHz low-noise dual GaAs FET distributed amplifier with 10-dB gain. *Thompson, William J.*, *MCS 89* 11-13
2–18-GHz MMIC matrix distributed amplifier. *Chang, A. P.*, +, *MCS 89* 139-141
2–18-GHz MMIC matrix distributed amplifier. *Chang, A. P.*, +, *MWSYM 89 Vol. 1* 287-289
2–18-GHz MMIC matrix distributed amplifier. *Chang, A. P.*, +, *T-MTT Dec 89* 2159-2162
29 GHz-to-1 GHz receiver/downconverter using MICs and MMICs for M³VDS TV broadcast system. *Wilson, Philip G.*, +, *MWSYM 89 Vol. 3* 1099-1102
4–18-GHz MMIC matrix distributed amplifier using combined cascade/cascode-connected stages. *Chu, S. L. G.*, +, *MCS 89* 143-147
4–18-GHz MMIC matrix distributed amplifier using combined cascade/cascode-connected stages. *Chu, S. L. G.*, +, *MWSYM 89 Vol. 1* 291-295
5–16-GHz-band 10-W GaAs MMIC amplifier manufactured using refractory self-aligned gate process. *Bahl, Inder J.*, +, *T-MTT Dec 89* 2154-2158
active broadband impedance transformations using distributed techniques. *Cioffi, Kenneth R.*, *MWSYM 89 Vol. 3* 1043-1046
active broadband impedance transformations using distributed techniques. *Cioffi, Kenneth R.*, *T-MTT Dec 89* 1870-1876
amplifier and frequency doubler monolithic millimeter-wave CPW circuits using 0.25- μ m-gate AlGaAs HEMT. *Riazat, M.*, +, *MWSYM 89 Vol. 2* 525-528
correction to 'Broad-band monolithic microwave active inductor and its application to miniaturized wide-band amplifiers' (Dec 88 1920-1924). *Hara, Shinji.*, +, *T-MTT Jul 89* 1155
family of 2–20-GHz broadband low-noise AlGaAs HEMT MMIC amplifiers. *Dixit, R.*, +, *MCS 89* 15-19
GaAs HBT monolithic logarithmic IF (0.5–1.5 GHz) amplifier with 60-dB dynamic range and 400-mW power consumption. *Gorman, G. M.*, +, *MWSYM 89 Vol. 2* 537-540
GaAs monolithic 6-GHz low-noise amplifier for satellite receivers. *Mout, Richard C.*, *T-MTT Mar 89* 565-570
HBT MMIC digital switched-gain amplifier with +31 to –31 dB gain in 2-dB increments. *Oki, A. K.*, +, *MCS 89* 83-86
HEMT MMIC low-noise amplifiers for radar, electronic warfare, and military satellite communications uses. *Upton, M. A. G.*, +, *MCS 89* 105-109
HEMT MMIC low-noise amplifiers for radar, electronic warfare, and military satellite communications uses. *Upton, M. A. G.*, +, *MWSYM 89 Vol. 1* 193-197
IEEE 1989 Microwave and Millimeter-Wave Monolithic Circuits Symposium. Digest of Papers. *MCS 89*
inductance taper and forward-feed in GaAs MMIC distributed amplifiers. *Ross, Michael.*, +, *MWSYM 89 Vol. 3* 1039-1042
large-signal computer-aided analysis and design of silicon bipolar MMIC oscillators and self-oscillating mixers. *Kipnis, Issy.*, +, *T-MTT Mar 89* 558-564
lumped lossy circuit synthesis and its application in broadband FET amplifier design in MMICs. *Zhu, Lizhong.*, +, *T-MTT Sep 89* 1488-1491
MESFET nonlinear model and model verification using on-wafer RF probing method; application to MMIC amplifiers. *Hwang, Vincent D.*, +, *MCS 89* 37-40
monolithic 60-GHz diode mixer and IF amplifier in compatible technology. *Adelbeck, Bernd.*, +, *T-MTT Dec 89* 2142-2147
monolithic V-band pseudomorphic-MODFET low-noise amplifiers. *Metze, G.*, +, *MWSYM 89 Vol. 1* 199-204
oscillation conditions in distributed 1–20-GHz monolithic MESFET amplifier. *Garnand, Patrice.*, *T-MTT Mar 89* 637-640
phase shifters and amplifiers for millimeter-wave active arrays. *Dunn, V. E.*, +, *MWSYM 89 Vol. 1* 127-130
picosecond optoelectronic techniques for characterizing monolithic IC amplifier. *Hung, Hing-Loi A.*, +, *T-MTT Aug 89* 1223-1231
process-dependent worst-case model for MMIC design based on MESFET simulator 2. *Cazaux, Jean-Louis.*, +, *T-MTT Sep 89* 1442-1451
Q-band coplanar waveguide amplifier; comparison with microstrip amplifier. *Dow, G. S.*, +, *MWSYM 89 Vol. 2* 809-812
RLC matching network and application in 1–20 GHz monolithic amplifier. *Ikäläinen, Pertti K.*, *MWSYM 89 Vol. 3* 1115-1118
silicon bipolar fixed- and variable-gain amplifier MMICs for microwave and lightwave applications up to 6 GHz. *Kipnis, I.*, +, *MCS 89* 101-104
silicon bipolar fixed and variable gain amplifier MMICs for microwave and lightwave applications up to 6 GHz. *Kipnis, I.*, +, *MWSYM 89 Vol. 1* 109-112
sub-0.25- μ m-gate MESFET low-noise amplifiers for 26.5–40 GHz. *Camilleri, N.*, +, *MWSYM 89 Vol. 2* 533-536
successive detection GaAs MMIC logarithmic amplifier; L-band temperature-compensated ultralow power design. *Michels, R.*, +, *MWSYM 89 Vol. 2* 541-544
V-band pseudomorphic-MODFET low-noise amplifier. *Metze, G.*, +, *MCS 89* 111-116
variable gain four-stage low-noise MMIC amplifier for 14–17 GHz. *Eppich, R. Dean.*, +, *MWSYM 89 Vol. 2* 529-532
W-band channelized three-chip MMIC receiver using MMIC mixer/multiplexer, MMIC Gunn oscillator, and MMIC amplifier. *Lan, G. L.*, +, *MCS 89* 95-99
W-band channelized three-chip MMIC receiver using MMIC mixer/multiplexer, MMIC Gunn oscillator, and MMIC amplifier. *Lan, G. L.*, +, *MWSYM 89 Vol. 1* 103-107
- MMIC amplifiers, power**
13.5–15.5-GHz-band GaAs 1-W constant phase variable-power MMIC amplifier using three-stage dual-FET design. *Prichett, Sam D.*, *MCS 89* 29-32
2.5-W two-stage X-band power MMIC amplifier. *Avasarala, M.*, +, *MCS 89* 25-28
26.5–30-GHz-band two-stage GaAs MMIC power amplifier. *Oda, Yuji.*, +, *MCS 89* 33-36
32-GHz six-element linear beam-steered transmitter array using MMIC phase shifters and power amplifiers. *Riley, A. L.*, +, *MCS 89* 65-68
32-GHz six-element linear-beam-steered transmitter array using MMIC phase shifters and power amplifiers. *Rascoe, D. L.*, +, *T-MTT Dec 89* 2165-2168
5–16-GHz-band 10-W GaAs MMIC amplifier manufactured using refractory self-aligned gate process. *Bahl, Inder J.*, +, *MCS 89* 21-24
6–18 GHz high-efficiency MMIC power amplifiers using ion-implanted MESFET technology. *Shih, Y. C.*, +, *MWSYM 89 Vol. 3* 1119-1120
class-B power MMIC amplifiers with 70% power-added efficiency at C-band. *Bahl, Inder J.*, +, *T-MTT Sep 89* 1315-1320
design technique for high-power, high-efficiency, broadband distributed MMIC amplifiers. *Cole, J. Bradford.*, +, *MWSYM 89 Vol. 3* 941-944
GaAs molecular-beam epitaxy monolithic power amplifiers at U-band. *Hegazi, G.*, +, *MCS 89* 121-125
GaAs molecular-beam epitaxy monolithic power amplifiers at U-band. *Hegazi, G.*, +, *MWSYM 89 Vol. 1* 209-213
single-cell and four-cell monolithic high-voltage FET power amplifiers with up to 40-V drain bias. *Peterson, K. E.*, +, *MWSYM 89 Vol. 3* 945-948
- MMIC frequency converters**
29 GHz-to-1 GHz receiver/downconverter using MICs and MMICs for M³VDS TV broadcast system. *Wilson, Philip G.*, +, *MWSYM 89 Vol. 3* 1099-1102
6.5-to-13-GHz and 13-to-26-GHz uniplanar monolithic frequency doublers. *Hirota, Tetsuo.*, +, *T-MTT Aug 89* 1249-1254
amplifier and frequency doubler monolithic millimeter-wave CPW circuits using 0.25- μ m-gate AlGaAs HEMT. *Riazat, M.*, +, *MWSYM 89 Vol. 2* 525-528
DCFL (direct-coupled FET logic) ultra-high-speed frequency divider using 0.25- μ m-gate HEMTs. *Ichioke, T.*, +, *MCS 89* 61-64
DNP-III silicon MMIC process technology for non-self-aligned gate NPN transistors; use in fabricating 7.46-GHz frequency divider IC. *Miyazaki, Shinichi.*, +, *MWSYM 89 Vol. 3* 1065-1068
quasi-optical watt-level millimeter-wave monolithic BIN diode grid frequency multipliers. *Hwu, R. J.*, +, *MWSYM 89 Vol. 3* 1069-1072
- MMIC mixers**
2–12 GHz distributed FET MMIC mixer with 3-dB conversion gain and 11-dB SSB noise figure. *Robertson, I. D.*, +, *MWSYM 89 Vol. 3* 1031-1032
60-GHz MMIC diode mixer using FET-compatible technology. *Adelbeck, B.*, +, *MCS 89* 91-94
60-GHz MMIC diode mixer using FET-compatible technology. *Adelbeck, Bernd.*, +, *T-MTT Dec 89* 2142-2147
60-GHz MMIC diode mixer using FET-compatible technology. *Adelbeck, B.*, +, *MWSYM 89 Vol. 1* 99-102
silicon bipolar balanced active mixer MMICs for RF and microwave applications up to 6 GHz. *Wholey, Jim.*, +, *MWSYM 89 Vol. 1* 281-285
silicon bipolar double-balanced active mixer MMICs for UHF and microwave applications up to 6 GHz. *Wholey, Jim.*, +, *MCS 89* 133-137
W-band channelized three-chip MMIC receiver using MMIC mixer/multiplexer, MMIC Gunn oscillator, and MMIC amplifier. *Lan, G. L.*, +, *MCS 89* 95-99
W-band channelized three-chip MMIC receiver using MMIC mixer/multiplexer, MMIC Gunn oscillator, and MMIC amplifier. *Lan, G. L.*, +, *MWSYM 89 Vol. 1* 103-107

MMIC oscillators

- MMIC-based injection-locked oscillator for optically fed phased-array antennas. *Berceli, T.*, +, *MWSYM 89 Vol. 1* 131-134
- monolithic IMPATT millimeter-wave quasi-optical oscillator stabilized by open-cavity resonator operating in 50-GHz region. *Shulue, William P.*, +, *MWSYM 89 Vol. 2* 739-740
- monolithic IMPATT oscillator characterization using transmission resonance method and varactor method. *Wang, Nan-Lei.*, +, *T-MTT Feb 89* 393-399
- six-chip MMIC module for 15-GHz phase-locked oscillator. *Ohira, Takashi.*, +, *T-MTT Apr 89* 723-728

MMIC phase shifters

- 0.1-4.5-GHz GaAs MMIC quadrature phase shifter using FETs in RC all-pass network. *Coget, Patricia.*, +, *MCS 89* 75-77
- 0.1-4.5-GHz GaAs MMIC quadrature phase shifter using FETs in RC all-pass network. *Philippe, Pascal.*, +, *T-MTT Dec 89* 2119-2124
- 32-GHz six-element linear beam-steered transmitter array using MMIC phase shifters and power amplifiers. *Riley, A. L.*, +, *MCS 89* 65-68
- 32-GHz six-element linear-beam-steered transmitter array using MMIC phase shifters and power amplifiers. *Rascoe, D. L.*, +, *T-MTT Dec 89* 2165-2168
- 4:1 bandwidth digital five-bit MMIC phase shifters. *Boire, D. C.*, +, *MCS 89* 69-73
- phase shifters and amplifiers for millimeter-wave active arrays. *Dunn, V. E.*, +, *MWSYM 89 Vol. 1* 127-130

MMIC power dividers/combiners

- 2.5:1 or greater-bandwidth MMIC power divider for 4-10-GHz operation. *Staudinger, Joseph.*, *MCS 89* 127-131
- 4-10-GHz MMIC power divider for bandwidths of 2.5:1 or more. *Staudinger, Joseph.*, *MWSYM 89 Vol. 1* 275-279
- GaAs FET 1-18 GHz MMIC magic-T. *Tokumitsu, Tsuneo.*, +, *T-MTT Dec 89* 1985-1990
- GaAs FET 1-18 GHz MMIC magic-T. *Tokumitsu, Tsuneo.*, +, *MWSYM 89 Vol. 3* 963-966
- MMIC 2-18 GHz 180° phase splitter network. *Bharj, Sarjit S.*, +, *MWSYM 89 Vol. 3* 959-962

MMIC receivers

- 2-20-GHz dual-channel receiver with 2-6-GHz intermediate frequency using nine MMICs. *Bharj, Sarjit S.*, +, *MWSYM 89 Vol. 1* 409-412
- W-band channelized three-chip MMIC receiver using MMIC mixer/multiplexer, MMIC Gunn oscillator, and MMIC amplifier. *Lan, G. L.*, +, *MCS 89* 95-99
- W-band channelized three-chip MMIC receiver using MMIC mixer/multiplexer, MMIC Gunn oscillator, and MMIC amplifier. *Lan, G. L.*, +, *MWSYM 89 Vol. 1* 103-107

MMIC switches

- GaAs MESFET baseband-to-microwave passive switches; comments, with authors' reply, to two papers published in *IEEE Trans. Electron. Devices*. *Gutmann, Ronald J.*, +, *T-MTT Jul 89* 1154-1155
- high-isolation 1-20-GHz MMIC SPST and SPDT MESFET switches with on-chip drivers. *Eisenberg, John A.*, +, *MCS 89* 41-45
- Ka-band MMIC power SPDT switch using GaAs p-i-n diode. *Bellantoni, J. V.*, +, *MCS 89* 47-50
- Ka-band MMIC power SPDT switches using GaAs p-i-n diode; two different designs. *Bellantoni, J. V.*, +, *T-MTT Dec 89* 2162-2165
- monolithic 2-20 GHz GaAs pin diode SP16T switch. *Pritchett, Sam D.*, +, *MWSYM 89 Vol. 3* 1109-1112
- voltage-tolerant monolithic L-band GaAs FET SPDT switch. *Cooper, Steven W.*, +, *MWSYM 89 Vol. 3* 1113-1114

MMICS

- 1989 IEEE Microwave and Millimeter-Wave Monolithic Circuits Symposium. Digest of Papers. *MCS 89*
- 1989 IEEE MTT-S International Microwave Symposium Digest, 3 vols.. *MWSYM 89*
- 1989 MTT-S International Microwave Symposium (special issue). *T-MTT Dec 89* 1837-2170
- 6-18-GHz transmit/receive modules for multifunction phased arrays using MMIC subcomponents. *Meharry, D. E.*, +, *MWSYM 89 Vol. 1* 115-118
- bandpass active filter using lumped and transversal elements. *Schindler, M. J.*, +, *MCS 89* 57-60
- bandpass active filter using lumped and transversal elements. *Schindler, Manfred J.*, +, *T-MTT Dec 89* 2148-2153
- broadside-coupled coplanar waveguide for MICs/MMICs; analytic characterization formulas for quasistatic TEM parameters. *Bedair, Said S.*, +, *T-MTT May 89* 843-850
- CAD formulas for edge-compensated microstrip lines used in MMICs; rectangular boundary division methods for capacitive proximity effects. *Yamashita, Eikichi.*, +, *MWSYM 89 Vol. 1* 339-342
- computer-aided design of MMIC lumped-element square spiral transformers and inductors. *Fran, E.*, +, *MWSYM 89 Vol. 2* 661-664
- DC-18-GHz variable slope gain-equalizer GaAs MESFET MMIC. *Sun, H. J.*, +, *MCS 89* 79-82
- external electro-optic probing of millimeter-wave MMICs. *Whitaker, J. F.*, +, *MWSYM 89 Vol. 1* 221-224
- full-wave analysis of conductor losses on MMIC transmission lines. *Heinrich, Wolfgang.*, *MWSYM 89 Vol. 3* 911-914
- GaAs 180° lumped-element hybrid. *Parisi, Samuel J.*, *MWSYM 89 Vol. 3* 1243-1246
- GaAs MMIC progress in Japan; overview of present trends. *Aikawa, Masayoshi.*, +, *MCS 89* 1-6
- hybrid-mode boundary integral method for analyzing MMIC waveguides of complicated crosssection. *Schroeder, W.*, +, *MWSYM 89 Vol. 2* 711-714
- Ka-band 2-W power GaAs MMIC. *Arai, Shigemitsu.*, +, *MWSYM 89 Vol. 3* 1105-1108

- Ku-band MMIC PLL frequency synthesizer using two GaAs MMICs; prototype development. *Ohira, Takashi.*, +, *MWSYM 89 Vol. 3* 1047-1050
- lossless, broadband monolithic microwave active inductors. *Hara, Shinji.*, +, *MWSYM 89 Vol. 3* 955-958
- lossless broad-band monolithic microwave active inductors. *Hara, Shinji.*, +, *T-MTT Dec 89* 1979-1984
- microwave amplifier manufacturing with advanced thin-film MIC and elementary MMIC technology. *Crescenzi, E. J., Jr.*, +, *MWSYM 89 Vol. 2* 773-776
- microwave characteristics of GaAs MMIC integratable optical detectors. *Claspy, Paul C.*, +, *MWSYM 89 Vol. 3* 1163-1166
- MMIC-compatible 55-mW InP and GaAs 30-40-GHz field-controlled transferred-electron device oscillators. *Lubke, K.*, +, *MWSYM 89 Vol. 2* 729-730
- MMIC-compatible 55 mW InP and GaAs 30-40-GHz field-controlled transferred-electron device oscillators. *Scheiber, Helmut.*, +, *T-MTT Dec 89* 2093-2098
- modeling of high-frequency MMIC passive components. *Nakatani, Akiyumi.*, +, *MWSYM 89 Vol. 3* 1139-1142
- on-wafer probe techniques for characterizing millimeter-wave MMICs using coplanar waveguide-microstrip transition data. *Dawe, G.*, +, *MWSYM 89 Vol. 1* 413-415
- possibility of silicon-germanium monolithic millimeter-wave integrated circuits. *Campbell, S. A.*, +, *MWSYM 89 Vol. 2* 817-819
- possibility of silicon-germanium monolithic millimeter-wave integrated circuits. *Campbell, Stephen A.*, +, *T-MTT Dec 89* 2046-2050
- power transfer mechanism of MMIC spiral transformers and adjacent spiral inductors; analysis using WATMIC-EMSim software. *Howard, G. E.*, +, *MWSYM 89 Vol. 3* 1251-1254
- process-dependent worst-case model for MMIC design based on MESFET simulator 2. *Cazaux, Jean-Louis.*, +, *T-MTT Sep 89* 1442-1451
- rectangular spiral impedance transformers for MMIC applications. *Boulouard, Andre.*, +, *T-MTT Aug 89* 1257-1260
- suppression of resonant modes in microwave packages. *Williams, Dylan F.*, +, *MWSYM 89 Vol. 3* 1263-1265
- undesired effects due to dense packing in supported coplanar waveguide MMICs using combined methods. *Wolff, Ingo.*, +, *MWSYM 89 Vol. 2* 657-660
- very small wideband MMIC magic-Ts using microstrip on thin dielectric film. *Hiraoka, Takahiro.*, +, *T-MTT Oct 89* 1569-1575

Mobile communication; cf. Portable radio

Mode coupling; cf. Coupled-mode analysis

Mode-matching methods

- coaxial-to-shielded microstrip line transition; rigorous mode-matching analysis. *Capsalis, Christos.*, +, *T-MTT Jul 89* 1091-1098
- complex modes in generalized bilateral finline with mounting grooves and finite conductor thickness. *Wang, Weyl-kuo.*, +, *T-MTT Dec 89* 1891-1897
- cutoff of first higher-order mode in coaxial line; determination using transverse-resonance technique. *Green, Harry E.*, *T-MTT Oct 89* 1652-1653
- full-wave analysis of conductor losses on MMIC transmission lines. *Heinrich, Wolfgang.*, *MWSYM 89 Vol. 3* 911-914
- modal solution procedures for microstrip step discontinuities. *Xu, Qiang.*, +, *T-MTT Feb 89* 381-387
- planar traveling-wave electrooptic modulators; microwave characteristics. *Delrue, R.*, +, *MWSYM 89 Vol. 3* 1171-1174
- scattering matrix of ring-loaded corrugated waveguide mode converters. *Da Silva, Luiz C.*, *T-MTT Mar 89* 646-649
- two-path evanescent-mode waveguide dielectric resonator filters; full-wave analysis incorporating impedance inverter method. *Shigesawa, Hiroshi.*, +, *T-MTT Jul 89* 1103-1113
- Vlasov mode converters; design and low-power testing. *Ruth, B. G.*, +, *MWSYM 89 Vol. 3* 1277-1280

Modeling

- distributed scaling approach for MESFETs; comparison with lumped-element approach for small-signal analysis. *Mondal, Jyoti P.*, *T-MTT Jul 89* 1085-1090
- FET structures; modeling and circuit applications (special issue). *T-MTT Sep 89* 1277-1491
- large-signal nonlinear MODFET model using small-signal S-parameter measurements. *O'Callaghan, J. M.*, +, *MWSYM 89 Vol. 1* 347-350
- millimeter-wave circuit models for microstrip open-end, gap, step, bend and tee, based on full-wave theory. *Jansen, Rolf H.*, +, *MWSYM 89 Vol. 2* 779-782
- physical modeling of GaAs microwave MESFETs in integrated CAD environment. *Ghione, Giovanni.*, +, *T-MTT Mar 89* 457-468
- Modeling;** cf. Equivalent circuits; Nonlinear circuits; Specific topic or device
- MODFET oscillators;** cf. UHF FET oscillators
- MODFETs**
- analytical model for I-V and small-signal characteristics of planar-doped HEMTs. *Wang, Guan-Wu.*, +, *T-MTT Sep 89* 1395-1400
- electron dynamics and device physics of short-channel HEMTs; transverse-domain formation, velocity overshoot, and short-channel effects. *Awano, Yuji.*, +, *CORNELL 89 Abstr II/1*
- MODFETs;** cf. UHF FETs
- Modulation/demodulation;** cf. Chirp modulation; Heterodyning; Homodyne detection; Phase-locked loops; UHF modulation/demodulation

Moisture

- waveguide resonator technique for moisture content and dielectric properties measurements of seeds. *Kraszewski, A. W.*, +, *MWSYM 89 Vol. 1* 187-190

Moment methods

- numerical solution of continuous waveguide transition problem; comparison of moment method, Runge-Kutta, and iterative numerical integration techniques. *Huting, William A.*, +, *T-MTT Nov 89* 1802-1808
- combined spectral-domain/sampling theorem analysis of microstrip line. *Uchida, Kazunori*, +, *T-MTT Jun 89* 947-952
- frequency-dependent characteristics of current distributions on microstrip lines using spectral-domain analysis and Chebyshev polynomials. *Kobayashi, Masanori*, +, *T-MTT Apr 89* 799-801
- generalized spectral-domain analysis of planar lines on layered media including uniaxial and biaxial dielectric substrates. *Medina, Francisco*, +, *T-MTT Mar 89* 504-511
- highly accurate microstrip open-end characterization using spectral-domain approach. *Uwano, Tomoki*, *T-MTT Mar 89* 630-633
- integral numerical technique for study of axially symmetric resonant devices. *Ruiz, J.*, +, *T-MTT Nov 89* 1814-1816
- microstrip used as electrooptic modulator; full-wave analysis using modified spectral-domain approach. *Railton, C. J.*, +, *T-MTT Jul 89* 1099-1104
- mixed spectral-domain approach for dispersion analysis of suspended planar transmission lines with pedestals. *Chan, Chi Hou*, +, *T-MTT Nov 89* 1716-1723
- mixed spectral-domain method applied to analysis of generalized dielectric-loaded ridge waveguides. *Ng, Kwong T.*, +, *T-MTT Dec 89* 2080-2085
- mixed spectral-domain method applied to analysis of generalized dielectric-loaded ridged waveguides. *Ng, K. T.*, +, *MWSYM 89 Vol. 2* 715-718
- resonant modes in shielded cylindrical ferrite and single-crystal dielectric resonators using Galerkin-Rayleigh-Ritz method. *Krupka, Jerzy*, *T-MTT Apr 89* 691-697
- spectral-domain analysis of *E*-plane waveguide-to-microstrip transitions. *Ho, T. Q.*, +, *T-MTT Feb 89* 388-392
- spectral-domain analysis of harmonic effects in superconducting quasiparticle mixers. *Withington, Stafford*, +, *T-MTT Jan 89* 231-238
- spectral-domain computation of characteristic impedances and multiport parameters of multiple coupled microstrip lines. *Tripathi, Vijai K.*, +, *T-MTT Jan 89* 215-221
- T-septum waveguide bandwidth from Rayleigh-Ritz-Galerkin formulation. *Pauplis, B. E.*, +, *T-MTT May 89* 919-922
- volume-surface integral equation moment solution using isoparametric elements and point matching. *Jin, Jian-Ming*, +, *T-MTT Oct 89* 1641-1645

Moment methods; cf. Gradient methods**Monopulse radar**

- radar receiver subsystems for high-dynamic-range airborne tracking and fire-control. *Madni, Asad M.*, +, *T-MTT Dec 89* 1942-1948
- radar receiver subsystems for high-dynamic-range airborne tracking and fire-control systems. *Madni, Asad M.*, +, *MWSYM 89 Vol. 1* 439-442

Monte Carlo methods

- optimizing design of heterojunction vertical FET using 2-D self-consistent Monte Carlo method. *Weinzert, S.*, +, *CORNEL 89 Abstr IV/7*

Moving media; cf. Electromagnetic propagation, moving media**Multiconductor transmission lines**

- capacitance matrix of multiconductor transmission line in multilayered dielectric medium; calculation from integral equation formula. *Delbare, W.*, +, *MWSYM 89 Vol. 3* 1013-1016
- corrections to 'An analytical solution for the coupled stripline-like microstrip line problem' (Jun 88 1002-1007). *Homentcovschi, D.*, +, *T-MTT Jun 89* 1061
- coupled asymmetric suspended strip lines with three thick-strip conductors and side-wall grooves. *Nakajima, Masayuki*, +, *MWSYM 89 Vol. 2* 719-722
- cylindrical multiconductor stripline-like microstrip transmission line; analytical expressions for Maxwell capacitance matrix. *Homentcovschi, Doré*, *T-MTT Mar 89* 497-503
- equivalent circuit model for terminated hybrid-mode multiconductor transmission lines; application to high-speed ICs. *Carin, Lawrence*, +, *T-MTT Nov 89* 1784-1793
- hybrid-mode boundary integral method for analyzing MMIC waveguides of complicated crosssection. *Schroeder, W.*, +, *MWSYM 89 Vol. 2* 711-714
- multiconductor buses for high-speed GaAs logic circuits; crosstalk, propagation delay, and pulse distortion. *Ghione, Giovanni*, +, *T-MTT Mar 89* 445-456
- quasi-TEM analysis for curved and straight planar multiconductor systems; capacitance and inductance matrices of concentric microstrip. *Diesel, Heinrich*, *T-MTT Apr 89* 748-753
- self-adaptive mesh scheme for finite-element analysis of anisotropic multiconductor transmission lines. *Salazar-Palma, Magdalena*, +, *MWSYM 89 Vol. 1* 507-510
- space-domain Green's function approach for capacitance calculation of multiconductor lines in multilayered dielectrics with improved surface charge modeling. *Delbare, Wim*, +, *T-MTT Oct 89* 1562-1568
- transients in nonuniform and uniform multiconductor transmission lines; effects on IC interconnections. *Palusinski, Olgierd A.*, +, *T-MTT Jan 89* 127-138

Multiconductor transmission lines; cf. Coupled transmission lines**Multimode transmission lines**

- multimode network description of planar periodic metal-strip grating at dielectric interface; rigorous solution. *Guglielmi, Marco*, +, *T-MTT May 89* 902-909

Multimode transmission lines; cf. Coupled transmission lines**Multipath channels; cf. Diversity methods****Multiplexers**

- rigorous field theory design for millimeter-wave *E*-plane integrated circuit multiplexers. *Diutloff, Joachim*, +, *T-MTT Feb 89* 340-350
- Multiplexing; cf. Diplexers; Microwave modulation/demodulation
- Multipoint circuits**
- 8-port microstrip-slotline symmetrical planar comparator circuit. *Riblet, G. P.*, *MWSYM 89 Vol. 1* 239-242
- GaAs MESFET baseband-to-microwave passive switches; comments, with authors' reply, to two papers published in *IEEE Trans. Electron. Devices*. *Gutmann, Ronald J.*, +, *T-MTT Jul 89* 1154-1155
- logarithmic-periodic contiguous-channel microwave multiplexers. *Rauscher, Christen*, *MWSYM 89 Vol. 2* 675-678
- measurement and calibration of universal six-port network analyzer. *Lin, Weigan*, +, *T-MTT Apr 89* 734-742
- modeling *N*-port ferrimagnetic resonators; impedance matrix derivation using Poynting's theorem. *Buswell, Mark*, *T-MTT May 89* 860-867
- multiport network model for evaluating radiation loss and spurious coupling between discontinuities in microstrip circuits. *Sabban, Albert*, +, *MWSYM 89 Vol. 2* 707-710
- six-port and four-port reflectometers for complex permittivity measurements at submillimeter wavelengths. *Stumper, Ulrich*, *T-MTT Jan 89* 222-230
- statistical method for calibrating six-port reflectometer using nonideal standards. *Jachim, Stephen P.*, +, *T-MTT Nov 89* 1825-1828
- three-port bias-dependent model for GaAs MESFET switches; large-signal behavior. *Gardiner, G. J.*, +, *MWSYM 89 Vol. 1* 405-408
- Multipoint circuits; cf. Directional couplers; Scattering parameters**
- measurement; Two-port circuits; Waveguide junctions
- Multistatic scattering**
- radar-acoustic sounding system for remote atmospheric temperature and range determinations. *Daas, Moussa*, +, *MWSYM 89 Vol. 1* 257-260
- Multivariable systems**
- frequency-domain spectral balance using arithmetic operator method; simulating nonlinear analog circuits with multidimensional nonlinearities. *Chang, Chao-ren*, +, *T-MTT Nov 89* 1681-1688
- Mutual impedance measurement; cf. Impedance measurement**

N**Negative-resistance circuits**

- planar FET oscillators using linear periodic microstrip leaky-wave antenna array. *Birkeland, Joel*, +, *T-MTT Aug 89* 1232-1236

Neural networks

- integrated high-gain double heterojunction GaAs bipolar transistors with LED for neural net array. *Lin, S. H.*, +, *CORNEL 89 Abstr VI/3*

Niobium materials/devices; cf. Superconducting films

- Noise; cf. Amplifier noise; Circuit noise; Filter noise; FM noise; Phase noise; Radar clutter; Radar detection; Semiconductor device noise

Noise measurement

- 37.5-GHz-band FM and AM oscillator noise measurement using cavity resonator discriminator. *Deng, Minren*, +, *MWSYM 89 Vol. 3* 1179-1181
- accuracy factors in microwave noise parameter measurements. *Davidson, A.*, +, *MWSYM 89 Vol. 2* 827-830
- accuracy factors in microwave noise parameter measurements. *Davidson, Andrew C.*, +, *T-MTT Dec 89* 1973-1978
- CAD-oriented method for noise figure computation of two-ports with any internal topology. *Dobrowolski, Janusz A.*, *T-MTT Jan 89* 15-20
- laser diodes directly modulated by analog microwave signals; distortion characteristics. *Majewski, M. L.*, +, *MWSYM 89 Vol. 3* 1167-1170
- noise characterization uncertainty for UHF FET devices under low current operation. *Lucero, R.*, +, *MWSYM 89 Vol. 3* 893-896

Nonhomogeneous media

- mixed-potential representation of electric fields in layered media due to surface currents. *Cloud, M. J.*, +, *T-MTT Jul 89* 1150-1152

Nonhomogeneous media; cf. Electromagnetic propagation, nonhomogeneous media; Electromagnetic scattering, nonhomogeneous media; Microstrip**Nonhomogeneously loaded waveguides**

- coupled mode analysis of finline loaded with arbitrary nonhomogeneous lossy dielectric. *Mazur, Jerzy*, +, *T-MTT Feb 89* 281-288

Nonlinear circuits

- aliasing control in harmonic balance simulation of nonlinear microwave circuits. *Heron, Patrick L.*, +, *MWSYM 89 Vol. 1* 355-358
- Auger HBT; analytical theory and 1-D time-dependent large-signal simulation. *Tiwari, Sandip*, +, *CORNEL 89 Abstr VI/6*
- CAD large-signal model of picosecond FETs; measurement of step response. *Ouslimani, A.*, +, *T-MTT Sep 89* 1460-1465
- computer-aided design of class-C microwave transistor amplifiers by direct numerical optimization using enhanced Ebers-Moll-type model. *Rizzoli, Vittorio*, +, *MWSYM 89 Vol. 2* 585-588
- discrete HEMTs; large-signal models for SPICE simulation of hybrid ICs. *Liu, Qing Zhong*, *MWSYM 89 Vol. 1* 463-466
- frequency-domain spectral balance using arithmetic operator method; simulating nonlinear analog circuits with multidimensional nonlinearities. *Chang, Chao-ren*, +, *T-MTT Nov 89* 1681-1688
- fundamental-wave injection locking of millimeter-wave Gunn harmonic oscillator using large-signal model of Gunn device. *Chen, Ning*, +, *MWSYM 89 Vol. 1* 479-482
- improved analytical AC large-signal model for GaAs MESFET. *Madjar, Asher*, *T-MTT Oct 89* 1519-1522

- large-signal characterization of millimeter-wave transistors using actively tuned load-pull measurement system. *Acus, Robert*, +, *MWSYM 89 Vol. 2* 835-838
- large-signal computer-aided analysis and design of silicon bipolar MMIC oscillators and self-oscillating mixers. *Kipnis, Issy*, +, *T-MTT Mar 89* 558-564
- large-signal distributed microwave MESFET amplifiers' design and performance of three circuits. *Sobhy, M. I.*, +, *MWSYM 89 Vol. 1* 397-400
- large-signal FET parameter extraction using harmonic balance method. *Bandler, J. W.*, +, *MWSYM 89 Vol. 2* 577-580
- large-signal FET parameter extraction using harmonic balance method. *Bandler, John W.*, +, *T-MTT Dec 89* 2099-2108
- large-signal HSPICE model for heterojunction bipolar transistor 2. *Matsuno, C. T.*, +, *T-MTT Sep 89* 1472-1475
- large-signal nonlinear MODFET model using small-signal S-parameter measurements. *O'Callaghan, J. M.*, +, *MWSYM 89 Vol. 1* 347-350
- large-signal numerical model for X-band MESFET. *Halkias, George*, +, *T-MTT May 89* 817-825
- large-signal physically based power-FET-device circuit modeling; 2-D time-dependent algorithm. *Grubin, H. L.*, +, *CORNEL 89 Abstr I/6*
- large-signal transient analysis of multiple tuned injection-locked amplifiers with modulated input signal. *Caldra, Enrico F.*, +, *T-MTT May 89* 826-835
- measuring magnitude and phase of harmonics generated in nonlinear microwave two-ports. *Loth, Urs*, *T-MTT Oct 89* 1506-1511
- MESFET nonlinear model and model verification using on-wafer RF probing method; application to MMIC amplifiers. *Hwang, Vincent D.*, +, *MCS 89* 37-40
- nonlinear analysis of microwave FET oscillators using Volterra series; amplitude and frequency determination. *Hu, Yongcai*, +, *T-MTT Nov 89* 1689-1693
- nonlinear charge control DC and transmission-line models for GaAs MODFETs. *Huang, Di-Hui*, +, *MWSYM 89 Vol. 1* 417-420
- nonlinear microwave circuit analysis technique based on Volterra series; demonstration on MESFET device. *Krozer, V.*, +, *MWSYM 89 Vol. 1* 351-354
- on-wafer large-signal pulsed measurements. *Vidalou, J. F.*, +, *MWSYM 89 Vol. 2* 831-834
- on-wafer verification of a large-signal MESFET model. *Curtice, W. R.*, +, *T-MTT Nov 89* 1809-1811
- parallel processing application in CAD of nonlinear microwave circuits. *Sobhy, M. I.*, +, *MWSYM 89 Vol. 2* 645-648
- quasistatic large-signal MESFET model for CAD. *Pantoja, R. R.*, +, *MWSYM 89 Vol. 2* 573-576
- quasistatic large-signal MESFET model for CAD. *Pantoja, Renato R.*, +, *T-MTT Dec 89* 2039-2045
- simulator for variation and sensitivity of microwave MESFET large signal figures-of-merit due to process, material, parasitic and bias parameters. *Sioneking, D. E.*, +, *CORNEL 89 Abstr IV/6*
- three-port bias-dependent model for GaAs MESFET switches; large-signal behavior. *Gardiner, G. J.*, +, *MWSYM 89 Vol. 1* 405-408
- using parallel processing for CAD of nonlinear microwave circuits. *Sobhy, M. I.*, +, *T-MTT Dec 89* 2067-2073
- waveform-balance method algorithm for nonlinear MESFET amplifier simulation. *Hwang, Vincent D.*, +, *T-MTT Dec 89* 2125-2133
- waveform-balance method algorithm for nonlinear MESFET amplifier simulation. *Hwang, Vincent D.*, +, *MWSYM 89 Vol. 2* 581-584
- yield optimization of nonlinear circuits with statistically characterized devices. *Bandler, J. W.*, +, *MWSYM 89 Vol. 2* 649-652
- Nonlinear circuits; cf. Frequency conversion**
- Nonlinear distortion**
distortion in microwave and RF switches due to reverse-biased p-i-n diodes. *Caverly, Robert H.*, +, *MWSYM 89 Vol. 3* 1073-1076
- Nonlinear distortion; cf. Amplifier distortion; AM-PM conversion; Harmonic distortion; Intermodulation distortion**
- Nonlinear filtering; cf. Limiting**
- Nonlinear magnetics; cf. Hysteresis (magnetics)**
- Nonlinear oscillators**
subharmonic synchronization of nonlinear oscillators. *Daryoush, A. S.*, +, *MWSYM 89 Vol. 2* 735-738
- Nonlinear oscillators; cf. Injection-locked oscillators; Voltage-controlled oscillators**
- Nonreciprocal wave propagation**
mode coupling in longitudinally magnetized waveguiding structures based on two coupled guides. *Mazur, Jerzy*, +, *T-MTT Jan 89* 159-165
- nonreciprocal operation of structures consisting of coupled ferrite lines with longitudinal magnetization. *Mazur, Jerzy*, +, *T-MTT Jun 89* 1012-1020
- step discontinuities on planar dielectric waveguide containing gyrotropic layer. *Yun, Sang Won*, +, *T-MTT Mar 89* 492-496
- Nonuniform transmission lines; cf. Distributed-parameter circuits**
- Notch filters**
2-4-GHz notch filters with variable center frequency and attenuation. *Toyoda, Sachihiro*, *MWSYM 89 Vol. 2* 595-598
- Numerical integration**
resonant modes in dielectric resonator cavities; characterization using finite integration technique. *Lebaric, Jovan*, +, *T-MTT Nov 89* 1740-1748
- Numerical integration; cf. Boundary-element methods**
- Numerical methods**
FET structures; modeling and circuit applications (special issue). *T-MTT Sep 89* 1277-1491
- frequency-dependent characteristics of open microstrip lines with finite strip thickness using variational conformal mapping technique. *Shih, Chin*, +, *T-MTT Apr 89* 793-795
- modeling methodologies for passive microwave and millimeter-wave components; recent European developments. *Sorrentino, Roberto*, *MWSYM 89 Vol. 2* 613-616
- numerical conformal transformation of three-magnetic-wall structures. *Costamagna, Eugenio*, *T-MTT Aug 89* 1263-1266
- Numerical methods; cf. Approximation methods; Eigenvalues/eigenvectors; Finite-difference methods; Finite-element methods; Sampling methods**
- O
- Operator theory**
frequency-domain spectral balance using arithmetic operator method; simulating nonlinear analog circuits with multidimensional nonlinearities. *Chang, Chao-ren*, +, *T-MTT Nov 89* 1681-1688
- Optical detectors; cf. Photodetectors**
- Optical fiber communication**
fiber-optic transmission of FM HDTV with 622 Mb/s data. *Lo, C. N.*, +, *MWSYM 89 Vol. 2* 703-704
- incremental device models of electrooptic components for fiber-optic links; external vs. direct modulation. *Cox, C. H., III*, +, *MWSYM 89 Vol. 2* 689-692
- silicon bipolar fixed- and variable-gain amplifier MMICs for microwave and lightwave applications up to 6 GHz. *Kipnis, I.*, +, *MCS 89* 101-104
- silicon bipolar fixed and variable gain amplifier MMICs for microwave and lightwave applications up to 6 GHz. *Kipnis, I.*, +, *MWSYM 89 Vol. 1* 109-112
- Optical fiber delay lines**
long-delay fiber-optic link for radar testing. *Newberg, J. L.*, +, *MWSYM 89 Vol. 2* 693-696
- Optical fiber dispersion**
triangular-core single-mode fiber with trench; dispersion studies using Runge-Kutta vector mode analysis. *Yip, G. L.*, +, *MWSYM 89 Vol. 3* 1175-1178
- Optical fiber mechanical factors**
transversely anisotropic curved optical fibers; variational analysis of nonstandard eigenproblem. *Oksanen, Markku I.*, +, *T-MTT Jan 89* 51-62
- Optical fiber subscriber networks**
fiber-optic transmission of FM HDTV with 622 Mb/s data. *Lo, C. N.*, +, *MWSYM 89 Vol. 2* 703-704
- multi-gigabit fiber-optic video distribution network using BPSK microwave subcarriers. *Tang, Douglas D.*, *MWSYM 89 Vol. 2* 697-701
- Optical fibers**
vectorial wave analysis of uniform-core optical fibers using extended boundary integral method. *Kishi, Naoto*, +, *T-MTT Mar 89* 526-533
- Optical materials/devices; cf. Ultrafast optics**
- Optical measurements; cf. Laser applications, measurement**
- Optical planar waveguides**
algorithm for computer-aided design of coupled slab lines. *Rosloniec, Stanislaw*, *T-MTT Jan 89* 258-261
- discontinuities in open dielectric slab waveguides; combined finite-element and boundary-element methods. *Hirayama, Koichi*, +, *T-MTT Apr 89* 761-768
- TM waves guided by nonlinear planar waveguides; numerical method for dispersion relations and fields. *Ogusu, Kazuhiko*, *T-MTT Jun 89* 941-946
- Optical propagation**
higher-order-mode cutoff frequencies in elliptical step index fibers. *Rengarajan, Sembiam R.*, *T-MTT Aug 89* 1244-1248
- Optical propagation, anisotropic media**
transversely anisotropic curved optical fibers; variational analysis of nonstandard eigenproblem. *Oksanen, Markku I.*, +, *T-MTT Jan 89* 51-62
- Optical propagation, dispersive media**
TM waves guided by nonlinear planar waveguides; numerical method for dispersion relations and fields. *Ogusu, Kazuhiko*, *T-MTT Jun 89* 941-946
- Optical propagation, nonhomogeneous media**
transversely anisotropic curved optical fibers; variational analysis of nonstandard eigenproblem. *Oksanen, Markku I.*, +, *T-MTT Jan 89* 51-62
- Optical propagation, nonlinear media**
TM waves guided by nonlinear planar waveguides; numerical method for dispersion relations and fields. *Ogusu, Kazuhiko*, *T-MTT Jun 89* 941-946
- Optical pulse measurements**
optoelectronic measurements of picosecond electrical pulse propagation in coplanar waveguide. *Paulter, Nicholas G.*, +, *T-MTT Oct 89* 1612-1619
- picosecond optoelectronic characterization of heterojunction bipolar transistor. *Mauloubian, M.*, +, *MWSYM 89 Vol. 3* 889-892
- Optical receivers**
monolithically integrated GaAs- and InP-based front-end photoreceivers. *Li, W. Q.*, +, *CORNEL 89 Abstr VI/4*
- optical receiver and modulator frequency response measurement using Nd:YAG ring laser heterodyne technique. *Tan, Tun S.*, +, *T-MTT Aug 89* 1217-1222
- Optical signal processing; cf. Acoustooptic signal processing**
- Optical switches; cf. Electrooptic switches**
- Optical transducers; cf. Photodetectors**
- Optical waveguides**
higher-order-mode cutoff frequencies in elliptical step index fibers. *Rengarajan, Sembiam R.*, *T-MTT Aug 89* 1244-1248

- iterative eigenfunction expansion method for determining modes in dielectric guiding structures. *Jablonski, Tomasz F.*, +, *T-MTT Jan 89* 63-70
- Optics; cf. Ultrafast optics**
- Optimization methods**
computer-aided design of class-C microwave transistor amplifiers by direct numerical optimization using enhanced Ebers-Moll-type model. *Rizzoli, Vittorio*, +, *MWSYM 89 Vol. 2* 585-588
- Optimization methods; cf. Approximation methods; Circuit optimization; Gradient methods; Least-squares methods**
- Optoelectronics; cf. Electrooptics**
- Oscillator noise**
37.5-GHz-band FM and AM oscillator noise measurement using cavity resonator discriminator. *Deng, Minren*, +, *MWSYM 89 Vol. 3* 1179-1181
CAD program and equations for phase and amplitude noise analysis of component chains. *Riddle, Alfj*, *MWSYM 89 Vol. 1* 359-362
correlation spectrum of oscillators with low noise: general expression from perturbation theory. *Kaertner, Franz X.*, *T-MTT Jan 89* 90-101
- Oscillator stability**
shift of complex resonance frequency of dielectric-loaded cavity produced by small sample insertion holes. *Gauthier, Sylvain*, +, *T-MTT Apr 89* 801-804
subharmonic synchronization of nonlinear oscillators. *Daryoush, A. S.*, +, *MWSYM 89 Vol. 2* 735-738
- Oscillators; cf. Acoustic surface-wave oscillators; Gunn device oscillators; IMPATT diode oscillators; Injection-locked oscillators; Phase-locked oscillators; Submillimeter-wave oscillators; UHF oscillators; Voltage-controlled oscillators**

P

- Parallel-plate waveguides**
propagation in layered biased semiconductor structures using transport analysis. *Krowné, Clifford M.*, +, *T-MTT Apr 89* 711-722
- Parallel processing**
nonlinear microwave circuit CAD using parallel processing. *Sobhy, M. I.*, +, *MWSYM 89 Vol. 2* 645-648
nonlinear microwave circuit CAD using parallel processing. *Sobhy, M. I.*, +, *T-MTT Dec 89* 2067-2073
- Parameter estimation**
parameter extraction of microwave transistors using tree annealing. *Bilbro, Griff L.*, +, *CORNEL 89 Abstr IV/2*
- Passivity**
modeling methodologies for passive microwave and millimeter-wave components; recent European developments. *Sorrentino, Roberto*, *MWSYM 89 Vol. 2* 613-616
- Patch antennas; cf. Microstrip antennas**
- Patent abstracts**
microwave devices and technology; 16 patent abstracts. *T-MTT Jan 89* 263-267
microwave devices and technology; 16 patent abstracts. *T-MTT Feb 89* 438-442
microwave devices and technology; 20 patent abstracts. *T-MTT Mar 89* 652-657
microwave devices and technology; 19 patent abstracts. *T-MTT Apr 89* 807-812
microwave devices and technology; 17 patent abstracts. *T-MTT May 89* 933-937
microwave technology and devices; 14 patent abstracts. *T-MTT Jun 89* 1062-1065
microwave devices and technology; 26 patent abstracts. *T-MTT Jul 89* 1156-1162
microwave devices and technology; 22 patent abstracts. *T-MTT Aug 89* 1269-1274
microwave devices and technology; 10 patent abstracts. *T-MTT Sep 89* 1492-1494
microwave devices and technology; 21 patent abstracts. *T-MTT Oct 89* 1660-1665
microwave devices and technology; 16 patent abstracts. *T-MTT Nov 89* 1831-1835
- Pattern recognition; cf. Radar target recognition**
- Periodic structures; cf. Electromagnetic scattering, periodic structures**
- Permeable-base transistors**
doping profile optimization in silicon PBTs for high-frequency, high-voltage operation. *Rathman, D. D.*, +, *CORNEL 89 Abstr III/7*
large-signal characterization of millimeter-wave transistors using actively tuned load-pull measurement system. *Actis, Robert*, +, *MWSYM 89 Vol. 2* 835-838
large-signal physically based power-FET-device circuit modeling; 2-D time-dependent algorithm. *Gnubin, H. L.*, +, *CORNEL 89 Abstr I/6*
- Perturbation methods**
analytical two-dimensional perturbation method to model submicron GaAs MESFET's potential distributions. *Donkor, E.*, +, *T-MTT Sep 89* 1484-1487
correlation spectrum of oscillators with low noise: general expression from perturbation theory. *Kaertner, Franz X.*, *T-MTT Jan 89* 90-101
lossy waveguide as problem in perturbation theory. *Anderson, James L.*, *T-MTT Nov 89* 1819-1821
- Perturbation methods; cf. Cavity perturbation methods**
- Phase control**
optical phase control of optically injection-locked FET microwave oscillator. *Esman, Ronald D.*, +, *T-MTT Oct 89* 1512-1518
- Phase distortion; cf. Delay effects**
- Phase-locked amplifiers**
microwave-oven magnetrons; operation and properties. *Brown, William C.*, *MWSYM 89 Vol. 3* 871-874
- Phase-locked loops**
GaAs monolithic phase-locked loop chip set for space-vehicle applications. *Archer, John*, +, *T-MTT Apr 89* 790-792
Ku-band MMIC PLL frequency synthesizer using two GaAs MMICs; prototype development. *Ohira, Takashi*, +, *MWSYM 89 Vol. 3* 1047-1050
state-preserving intermittently locked loop (SPILL) frequency synthesizer for portable radio. *Saito, S.*, +, *MWSYM 89 Vol. 1* 435-438
state-preserving intermittently locked loop (SPILL) frequency synthesizer for portable radio. *Saito, Shigeki*, +, *T-MTT Dec 89* 1898-1903
- Phase-locked oscillators**
phase and injection locking of orotron oscillator; experimental results. *McMillan, R. W.*, +, *T-MTT Nov 89* 1828-1830
six-chip MMIC module for 15-GHz phase-locked oscillator. *Ohira, Takashi*, +, *T-MTT Apr 89* 723-728
- Phase-locked oscillators; cf. Injection-locked oscillators**
- Phase modulation; cf. Phase-shift keying**
- Phase noise**
CAD program and equations for phase and amplitude noise analysis of component chains. *Riddle, Alfj*, *MWSYM 89 Vol. 1* 359-362
effects of gain compression, bias conditions, and temperature on flicker phase noise of 8.5-GHz GaAs MESFET amplifier. *Lusher, C. P.*, +, *T-MTT Mar 89* 643-646
- Phase-shift keying**
multigigabit fiber-optic video distribution network using BPSK microwave subcarriers. *Tang, Douglas D.*, *MWSYM 89 Vol. 2* 697-701
- Phase shifters**
0.1-4.5-GHz GaAs MMIC quadrature phase shifter using FETs in RC all-pass network. *Coget, Patricia*, +, *MCS 89* 75-77
0.1-4.5-GHz GaAs MMIC quadrature phase shifter using FETs in RC all-pass network. *Philippe, Pascal*, +, *T-MTT Dec 89* 2119-2124
180° digital phase shifter using finline p-i-n diode implementation. *Callen, Heinrich*, +, *T-MTT Feb 89* 307-316
optically controlled coplanar waveguide phase-shifter. *Cheung, P.*, +, *MWSYM 89 Vol. 1* 307-309
variable-gain active-band GaAs analog phase shifter using chips in hybrid package; 400-1400 MHz operation. *Salvage, S. T.*, +, *MWSYM 89 Vol. 3* 1051-1054
- Phase shifters; cf. Diode phase shifters; Phased arrays**
- Phased arrays**
6-18-GHz transmit/receive modules for multifunction phased arrays using MMIC subcomponents. *Mehary, D. E.*, +, *MWSYM 89 Vol. 1* 115-118
annular dipole and aperture arrays for hyperthermia application; numerical simulation using finite-difference time-domain method. *Wang, Chang-Qing*, +, *T-MTT Jan 89* 118-126
high-volume manufacturing of highly-efficient X-band power module for phased arrays applications. *Vorhaus, J. L.*, *MWSYM 89 Vol. 2* 769-772
injection locking of active microstrip antenna elements for active phased arrays and spatial power combiners. *Chang, Kai*, +, *T-MTT Jul 89* 1078-1084
microstrip horn with conducting flaps for broadband phased-array elements. *Garcia, A. C.*, +, *MWSYM 89 Vol. 1* 135-138
MMIC-based injection-locked oscillator for optically fed phased-array antennas. *Berceli, T.*, +, *MWSYM 89 Vol. 1* 131-134
- Phosphorous materials/devices; cf. Specific device**
- Photoconducting materials/devices**
photoinduced wave attenuation in semiconductor coplanar waveguides; quasistatic analysis using conformal mapping. *Plaue, Walter*, +, *T-MTT Jan 89* 139-149
- Photoconducting materials/devices; cf. Light-triggered switches**
- Photodetectors**
microwave characteristics of GaAs MMIC integratable optical detectors. *Claspy, Paul C.*, +, *MWSYM 89 Vol. 3* 1163-1166
monolithically integrated GaAs- and InP-based front-end photoreceivers. *Li, W. Q.*, +, *CORNEL 89 Abstr VI/4*
- Photomagnetic materials/devices; cf. Magneto optic materials/devices**
- Piezoelectric ...; cf. Acoustic surface-wave ...**
- p-i-n diodes**
comments, with reply, on 'p-i-n diode attenuator with small phase shift' by Baeten *et al.* *Starski, J. P.*, +, *T-MTT Oct 89* 1658-1659 (Original paper, Apr 88 789-791)
distortion in microwave and RF switches due to reverse-biased p-i-n diodes. *Caverly, Robert H.*, +, *MWSYM 89 Vol. 3* 1073-1076
fast-switching multioscillator assemblies using negative resistance quenching p-i-n diode technique. *Khanna, A. P. S.*, +, *MWSYM 89 Vol. 1* 515-518
frequency-dependent impedance of p-i-n diodes; dependence on device geometry and electric properties. *Caverly, Robert H.*, +, *T-MTT Apr 89* 787-790
Ka-band MMIC power SPDT switch using GaAs p-i-n diode. *Bellantoni, J. V.*, +, *MCS 89* 47-50
Ka band MMIC power SPDT switches using GaAs p-i-n diode; two different designs. *Bellantoni, J. V.*, +, *T-MTT Dec 89* 2162-2165
laser-activated p-i-n diode switch for high-voltage 2-30-MHz application. *Rosen, A.*, +, *T-MTT Aug 89* 1255-1257
monolithic 2-20 GHz GaAs pin diode SP16T switch. *Pritchett, Sam D.*, +, *MWSYM 89 Vol. 3* 1109-1112
planar doped barrier mixer and detector diodes as alternatives to Schottky diodes for microwave and millimeter-wave applications. *Dale, I.*, +, *MWSYM 89 Vol. 1* 467-470

- state-of-the-art overview of p-i-n diode control devices for finline circuits. *Callen, Heinrich*, +, *T-MTT Feb 89* 307-316
- transient response of p-i-n limiter diodes at 1 GHz. *Tan, R. J.*, +, *MWSYM 89 Vol. 3* 1303-1306
- waveguide switched-susceptance (diode-patch) phase shifter. *Virga, K. L.*, +, *MWSYM 89 Vol. 1* 123-126
- zone-melt recrystallized silicon-on-alumina as monolithic circuit technology; demonstration of surface-oriented p-i-n diode device structure. *Letavic, T. J.*, +, *MWSYM 89 Vol. 3* 969-972
- Planar arrays; cf.** Electromagnetic scattering, periodic structures
- Planar waveguides**
- cutoff spaces of elliptical gyromagnetic planar circuits and waveguides using finite-element methods. *Helszajn, Joseph*, +, *T-MTT Jan 89* 71-80
- equivalent network method for analyzing discontinuity properties of open dielectric waveguides. *Shigesawa, Hiroshi*, +, *T-MTT Jan 89* 3-14
- general planar circuit simulation using 2-D transmission-line matrix method. *So, Poman P. M.*, +, *MWSYM 89 Vol. 1* 343-346
- general planar circuit simulation using 2-D transmission line matrix method. *So, Poman P. M.*, +, *T-MTT Dec 89* 1877-1884
- partial variational approach for arbitrary discontinuities in planar dielectric waveguides. *Chung, Shyh-Jong*, +, *T-MTT Jan 89* 208-214
- quasi-planar transmission lines; overview. *Itoh, Tatsuo*, *T-MTT Feb 89* 275-280
- wideband conductor loss calculation for planar quasi-TEM transmission lines with thin conductors, using phenomenological loss equivalence method. *Lee, Hai-Young*, +, *MWSYM 89 Vol. 1* 367-370
- wideband conductor loss calculation using phenomenological loss equivalence method for planar quasi-TEM transmission lines with thin conductors. *Lee, Hai-Young*, +, *T-MTT Dec 89* 1904-1909
- Planar waveguides; cf.** Finline; Microstrip; Stripline
- Plasma devices**
- microstrip plasma limiter for DC-18-GHz operation. *Patel, Suman D.*, +, *MWSYM 89 Vol. 3* 879-882
- Plasma-loaded waveguides**
- photoinduced wave attenuation in semiconductor coplanar waveguides; quasistatic analysis using conformal mapping. *Platte, Walter*, +, *T-MTT Jan 89* 139-149
- PLL; cf.** Phase-locked loops
- Portable radio**
- state-preserving intermittently locked loop (SPILL) frequency synthesizer for portable radio. *Saito, S.*, +, *MWSYM 89 Vol. 1* 435-438
- state-preserving intermittently locked loop (SPILL) frequency synthesizer for portable radio. *Saito, Shigeki*, +, *T-MTT Dec 89* 1898-1903
- Position measurement; cf.** Displacement measurement; Radar position measurement
- Power amplifiers; cf.** Amplifier distortion; UHF amplifiers, power
- Power cables; cf.** Superconducting transmission lines
- Power dividers/combiners; cf.** UHF power dividers/combiners
- Power FET switches**
- L-band monolithic GaAs FET switch for high-power control components; SPST and limiter design. *Shifrin, Mitchell B.*, +, *T-MTT Dec 89* 2134-2141
- L-band monolithic GaAs FET switch for high-power control components; SPST and limiter designs. *Shifrin, M.*, +, *MCS 89* 51-56
- Power generation; cf.** Pulse power systems
- Power semiconductor diode switches**
- Ka-band MMIC power SPDT switch using GaAs p-i-n diode. *Bellantoni, J. V.*, +, *MCS 89* 47-50
- Ka band MMIC power SPDT switches using GaAs p-i-n diode; two different designs. *Bellantoni, J. V.*, +, *T-MTT Dec 89* 2162-2165
- laser-activated p-i-n diode switch for high-voltage 2-30-MHz application. *Rosen, A.*, +, *T-MTT Aug 89* 1255-1257
- lossless high-power switch at 94 GHz using four power-combined IMPATT oscillators. *Barth, Helmut*, *MWSYM 89 Vol. 3* 1087-1090
- Power semiconductors**
- large-signal physically based power-FET-device circuit modeling; 2-D time-dependent algorithm. *Gruhin, H. L.*, +, *CORNEL 89 Abstr 1/6*
- Predistortion; cf.** Amplifier distortion
- Probe antennas**
- corrections to 'Mutual impedance between probes in a waveguide' (Jan 88 53-60). *Wang Bai-Suo*, *T-MTT May 89* 932
- input impedance of hollow-probe-fed semi-infinite rectangular waveguide, using image theory. *Rollins, John M.*, +, *T-MTT Jul 89* 1144-1146
- mutual impedance between probes in circular waveguide using dyadic Green's function with reaction theorem. *Wang Bai-Suo*, *T-MTT Jun 89* 1006-1012
- noncontacting magnetic-field probe for measurements on high-frequency planar circuits for 26.5-40-GHz operation. *Osofsky, Samuel S.*, +, *MWSYM 89 Vol. 2* 823-825
- Probe antennas; cf.** Waveguide transitions
- PSK; cf.** Phase-shift keying
- Pulse analysis; cf.** Electromagnetic transient analysis; Transient analysis
- Pulse-compression methods; cf.** Acoustic surface-wave pulse compression; Chirp modulation
- Pulse generation; cf.** Pulse power systems
- Pulse measurements**
- AM-AM and AM-PM technique for measurement and simulation of memory effects in predistortion linearizers. *Bösch, Wolfgang*, +, *T-MTT Dec 89* 1885-1890
- AM-AM and AM-PM technique for measurement of memory effects in predistortion linearizers. *Bösch, Wolfgang*, +, *MWSYM 89 Vol. 3* 885-888
- on-wafer large-signal pulsed measurements. *Vidalou, J. F.*, +, *MWSYM 89 Vol. 2* 831-834
- Pulse power systems**
- binary peak power multiplier driven by single source. *Latham, P. E.*, *T-MTT May 89* 929-931
- generating high-power broadband microwave pulses using picosecond optoelectronic technique. *Sayadian, Hrayr A.*, +, *T-MTT Jan 89* 43-50
- Pulse propagation; cf.** Electromagnetic transient propagation

Q

- QAM; cf.** Digital radio
- Quadrature amplitude modulation; cf.** Digital radio
- Quantization; cf.** Analog-digital conversion; Signal sampling/reconstruction
- Quantum-effect semiconductor devices**
- Quad-FET (quantum diffraction FET) operation using electron diffraction of ballistic electrons. *Bernstein, G. H.*, +, *CORNEL 89 Abstr IV/8*
- Quantum-effect semiconductor devices; cf.** Quantum-well devices; Quantum-well lasers; Tunnel devices/effects
- Quantum-well devices**
- quantum-well resonant-tunneling transistors; transport properties and physical characteristics. *Seabaugh, Alan C.*, *CORNEL 89 Abstr V/1*
- QWITT (quantum-well injection transient time) diode oscillators for 5-8-GHz planar and 28-31-GHz waveguide uses. *Kesan, V. P.*, +, *MWSYM 89 Vol. 1* 487-490
- QWITT (quantum-well injection transient time) diode oscillators for 5-8-GHz planar and 28-31-GHz waveguide uses. *Kesan, Vijay P.*, +, *T-MTT Dec 89* 1933-1941
- QWITT diode small-signal model including quantum-well carrier lifetime effects. *Whitson, D. W.*, +, *CORNEL 89 Abstr V/6*
- Quantum-well lasers**
- influence of strain on small-signal gain and lasing threshold of GaInAs/GaAs and GaAs/GaInAlAs strained-layer quantum-well lasers. *Peak, G.*, +, *CORNEL 89 Abstr VI/5*
- microwave performance of GaAs-AlGaAs and strained-layer InGaAs-GaAs-AlGaAs graded-index separate-confinement single-quantum-well lasers. *Offsey, S. D.*, +, *CORNEL 89 Abstr VI/2*

R

- Radar**
- HEMT MMIC low-noise amplifiers for radar, electronic warfare, and military satellite communications uses. *Upton, M. A. G.*, +, *MCS 89* 105-109
- HEMT MMIC low-noise amplifiers for radar, electronic warfare, and military satellite communications uses. *Upton, M. A. G.*, +, *MWSYM 89 Vol. 1* 193-197
- Radar; cf.** Aircraft detection and tracking; Doppler radar, pulse; Doppler radar
- Radar antennas; cf.** Phased arrays
- Radar position measurement**
- radar-acoustic sounding system for remote atmospheric temperature and range determinations. *Daas, Moussa*, +, *MWSYM 89 Vol. 1* 257-260
- Radar receivers**
- radar receiver subsystems for high-dynamic-range airborne tracking and fire-control. *Madni, Asad M.*, +, *T-MTT Dec 89* 1942-1948
- radar receiver subsystems for high-dynamic-range airborne tracking and fire-control systems. *Madni, Asad M.*, +, *MWSYM 89 Vol. 1* 439-442
- Radar target recognition**
- 94-GHz 3-D-imaging radar for sensor-based locomotion. *Lange, M.*, +, *MWSYM 89 Vol. 3* 1091-1094
- Radar testing**
- long-delay fiber-optic link for radar testing. *Newberg, I. L.*, +, *MWSYM 89 Vol. 2* 693-696
- Radar tracking; cf.** Aircraft detection and tracking
- Radar transmitters**
- production 30-kW, L-band solid-state transmitter for look-down radar. *Bird, Stephen*, +, *MWSYM 89 Vol. 3* 867-870
- Radio astronomy**
- solid-state local oscillator sources for millimeter and submillimeter waves; recent European developments. *Räsänen, Antti V.*, *MWSYM 89 Vol. 2* 617-620
- Radio broadcasting; cf.** TV broadcasting
- Radio communication; cf.** Digital radio; Diversity methods; Portable radio; Satellite communication
- Radio distance measurement; cf.** Delay estimation
- Radio receivers; cf.** Portable radio
- Radiometry; cf.** UHF radiometry
- Rare earth materials/devices**
- tapped superconducting stripline chirp filter with 2.6-GHz bandwidth. *Dilorio, Mark S.*, +, *T-MTT Apr 89* 706-710
- Rayleigh-Ritz methods**
- resonant modes in shielded cylindrical ferrite and single-crystal dielectric resonators using Galerkin-Rayleigh-Ritz method. *Krupka, Jerzy*, *T-MTT Apr 89* 691-697
- T-septum waveguide bandwidth from Rayleigh-Ritz-Galerkin formulation. *Pauplis, B. E.*, +, *T-MTT May 89* 919-922

- RC circuits; cf.** Active circuits; *RC*
Reactance measurement; cf. Impedance measurement
Reactors; cf. Inductors
Reflection; cf. Acoustic surface-wave reflection; Electromagnetic reflection
Reflection coefficient measurement; cf. Scattering parameters measurement
Relaxation processes
 generalized method of characteristics for waveform relaxation analysis of lossy coupled transmission lines. *Chang, Fung-Yueh, MWSYM 89 Vol. 2* 653-656
 generalized method of characteristics for waveform relaxation analysis of lossy coupled transmission lines. *Chang, Fung-Yueh, T-MTT Dec 89* 2028-2038
Resistance
 dominance of resistive losses over hysteretic losses in ferromagnetic conductors. *Thomber, K. K., T-MTT Jul 89* 1152-1153
Resistance calculations
 AC resistance of microstripline and its ground plane; reasons for resistance values above theoretical strip skin-effect levels. *Faraji-Dana, R., +, MWSYM 89 Vol. 1* 325-327
 complex resistive boundary conditions for model transmission lines consisting of very thin superconductors. *Pond, Jeffrey M., +, T-MTT Jan 89* 181-190
Resistance measurement
 high- T_c cylindrical superconductors; surface resistance measurement technique using microwave resonator cavity. *Aida, Kazuo, +, MWSYM 89 Vol. 2* 559-562
Resistance measurement; cf. Impedance measurement
Resistivity measurement
 high- T_c superconductor measurements using post-type dielectric resonator as probe. *Fiedziuszko, S. J., +, MWSYM 89 Vol. 2* 555-558
Resistivity measurement; cf. Conductivity measurement
Resonance
 complex resonance frequencies of isolated, composite dielectric-ferrite objects using null-field-based method. *Zheng, Wenxin, T-MTT Jun 89* 953-961
 damping resonant modes of rectangular metal packages. *Williams, Dylan F., T-MTT Jan 89* 253-256
 direct and inverse resonance problems for shielded composite objects using null-field method. *Zheng, Wenxin, T-MTT Nov 89* 1732-1739
 integral numerical technique for study of axially symmetric resonant devices. *Ruiz, J., +, T-MTT Nov 89* 1814-1816
 resonance in cylindrical-rectangular and wraparound microstrip structures; Galerkin formulation. *Ali, Sami M., +, T-MTT Nov 89* 1773-1783
 resonant frequencies in complex waveguide cavity; determination using S -matrix formulation. *Neilson, Jeff M., +, T-MTT Aug 89* 1165-1170
 resonant modes in dielectric resonator cavities; characterization using finite integration technique. *Lebaric, Jovan, +, T-MTT Nov 89* 1740-1748
 shift of complex resonance frequency of dielectric-loaded cavity produced by small sample insertion holes. *Gauthier, Sylvain, +, T-MTT Apr 89* 801-804
 two cylindrical dielectric or metallic obstacles in rectangular waveguide; resonances and filter applications. *Gesche, Roland, +, T-MTT Jun 89* 962-968
Resonant-transfer circuits
 gated resonant tunneling diode with laterally adjustable quantum dot cross-section. *Kinard, W. B., +, CORNEL 89 Abstr V/5*
Resonator filters; cf. UHF resonator filters
Resonators; cf. Acoustic bulk-wave resonators; Acoustic resonators; Acoustic surface-wave resonators; Cavity resonators; Dielectric resonators; Ferrite-loaded resonators; Stripline resonators; UHF resonators
Ridge waveguides
 metal inserts in waveguides; field expansion approach using normal modes of hollow, unloaded waveguides. *Omar, Abbas S., +, T-MTT Dec 89* 1924-1932
 metal inserts in waveguides; field expansion approach using normal modes of hollow unloaded waveguides. *Omar, A. S., +, MWSYM 89 Vol. 1* 511-514
 mixed spectral-domain method applied to analysis of generalized dielectric-loaded ridge waveguides. *Ng Kwong T., +, T-MTT Dec 89* 2080-2085
 mixed spectral-domain method applied to analysis of generalized dielectric-loaded ridged waveguides. *Ng K. T., +, MWSYM 89 Vol. 2* 715-718
 slitted asymmetric ridge waveguide; dispersion relations in terms of structural parameters. *Frezza, F., +, MWSYM 89 Vol. 3* 927-930
Ring lasers
 optical receiver and modulator frequency response measurement using Nd:YAG ring laser heterodyne technique. *Tan, Tun S., +, T-MTT Aug 89* 1217-1222
RLC circuits
 RLC matching network and application in 1–20 GHz monolithic amplifier. *Ikäläinen, Pertti K., MWSYM 89 Vol. 3* 1115-1118
 combined spectral-domain/sampling theorem analysis of microstrip line. *Uchida, Kazunori, +, T-MTT Jun 89* 947-952
Satellite communication
 performance test results for five 30-GHz satellite receivers. *Kerczewski, Robert J., +, MWSYM 89 Vol. 3* 1079-1082
Satellite communication; cf. Military satellites
Satellite communication, onboard systems
 2.5-GHz 50-W multiport amplifier for multibeam satellite communications. *Yamamoto, Kazuichi, +, MWSYM 89 Vol. 3* 1281-1284
Scaling circuits; cf. Counting circuits
Scattering; cf. Bragg scattering; Inverse problems; Waveguide discontinuities
Scattering matrices
 alternate forms of generalized composite scattering matrix. *Overfelt, P. L., +, T-MTT Aug 89* 1267-1268
 narrow-wall axial-slot-coupled T-junction between rectangular and circular waveguides; moment-method formulation of scattering matrix elements. *Das, B. N., +, T-MTT Oct 89* 1590-1596
 resonant frequencies in complex waveguide cavity; determination using S -matrix formulation. *Neilson, Jeff M., +, T-MTT Aug 89* 1165-1170
Scattering parameters
 minimizing scattering at rectangular waveguide branchings by loading with pair of metallic or dielectric cylinders. *Gesche, Roland, +, T-MTT Oct 89* 1597-1602
Scattering parameters measurement
 100-GHz on-wafer S -parameter measurements using electrooptic sampling; application to coplanar waveguide characterization. *Majidi-Ahy, R., +, MWSYM 89 Vol. 1* 299-302
 100-GHz on-wafer S -parameter measurements using electrooptic sampling; application to coplanar waveguide characterization. *Majidi-Ahy, R., +, MWSYM 89 Vol. 1* 299-302
 accuracy factors in microwave noise parameter measurements. *Davidson, A., +, MWSYM 89 Vol. 2* 827-830
 accuracy factors in microwave noise parameter measurements. *Davidson, Andrew C., +, T-MTT Dec 89* 1973-1978
 accurate measurement technique for line properties, junction effects, and dielectric and magnetic material parameters. *Enders, A., T-MTT Mar 89* 598-605
 deembedding method for S -parameters of microstrip devices utilizing automatic network analyzer with time-domain option. *Gronau, Gregor, +, T-MTT Mar 89* 479-483
 improved calibration and measurement of scattering parameters of microwave integrated circuits. *Pantoja, Renato R., +, T-MTT Nov 89* 1675-1680
 large-signal nonlinear MODFET model using small-signal S -parameter measurements. *O'Callaghan, J. M., +, MWSYM 89 Vol. 1* 347-350
 measurement and calibration of universal six-port network analyzer. *Lin, Weigan, +, T-MTT Apr 89* 734-742
 MESFET nonlinear model and model verification using on-wafer RF probing method; application to MMIC amplifiers. *Hwang, Vincent D., +, MCS 89* 37-40
 microwave complex conductivity of square post in rectangular waveguide using TE₁₀ E -field reflection coefficient. *Yoshikado, Shinzo, +, T-MTT Jun 89* 984-992
 reflection and transmission characteristics of noncoincident junction of rectangular dielectric waveguides. *Matsumura, Kazuhito, +, T-MTT Feb 89* 414-420
 reflection coefficient of waveguide with slightly uneven walls; first-order results. *Hill, David A., T-MTT Jan 89* 244-252
 S -parameter characterization of GaAs-gate SISFETs at liquid nitrogen temperatures. *Kwark, Y., +, CORNEL 89 Abstr IV/4*
 scattering matrix of ring-loaded corrugated waveguide mode converters. *Da Silva, Luiz C., T-MTT Mar 89* 646-649
 spectral-domain computation of characteristic impedances and multiport parameters of multiple coupled microstrip lines. *Tripathi, Vijai K., +, T-MTT Jan 89* 215-221
 time-domain network analyzer using optoelectronic techniques. *Webb, Kevin J., +, MWSYM 89 Vol. 1* 217-220
 vector measurements of microwave devices at cryogenic temperatures; real-time deembedding method for S parameters. *Smuk, J. W., +, MWSYM 89 Vol. 3* 1195-1198
Schottky-diode frequency converters
 quasi-optical watt-level millimeter-wave monolithic BIN diode grid frequency multipliers. *Hwu, R. J., +, MWSYM 89 Vol. 3* 1069-1072
 solid-state local oscillator sources for millimeter and submillimeter waves; recent European developments. *Räsänen, Antti V., MWSYM 89 Vol. 2* 617-620
Schottky diode mixers
 60-GHz MMIC diode mixer using FET-compatible technology. *Adelseck, B., +, MCS 89* 91-94
 60-GHz MMIC diode mixer using FET-compatible technology. *Adelseck, Bernd, +, T-MTT Dec 89* 2142-2147
 60-Hz MMIC diode mixer using FET-compatible technology. *Adelseck, B., +, MWSYM 89 Vol. 1* 99-102
 design and fabrication of ultra-small GaAs Schottky diodes for low-noise terahertz receiver applications. *Peatman, William C., +, CORNEL 89 Abstr VI/8*
 regenerative frequency dividers using double-balanced mixers; closed-form expressions using modified Bessel functions. *Harrison, Robert G., MWSYM 89 Vol. 1* 459-462
Schottky diodes
 millimeter-wave planar InP Schottky diodes and their small-signal equivalent circuit. *Neider, Robert E., +, T-MTT Nov 89* 1694-1698

S

Sampled-data filters; cf. Transversal filters

Sampling methods

100-GHz on-wafer S -parameter measurements using electrooptic sampling; application to coplanar waveguide characterization. *Majidi-Ahy, R., +, MWSYM 89 Vol. 1* 299-302

Semiconductor charge carriers; cf. Charge-carrier processes**Semiconductor device breakdown**

damage properties of 1N23 X-band mixer diodes due to short pulse trains. *Glenn, Chance M.*, +, *MWSYM 89 Vol. 1* 475-477

Semiconductor device doping; cf. Semiconductor device ion implantation**Semiconductor device fabrication**

deposited SiO₂ as insulator for GaInAs and InP MISFETs. *Gardner, P. D.*, +, *CORNEL 89 Abstr. I/3*

DNP-III silicon MMIC process technology for non-self-aligned gate NPN transistors; use in fabricating 7.46-GHz frequency divider IC. *Miyazaki, Shinichi*, +, *MWSYM 89 Vol. 3* 1065-1068

mixed technology of ion implantation and heteroepitaxy; ion-implanted In_xGa_{1-x}As/GaAs MESFETs. *Wang, G. W.*, +, *CORNEL 89 Abstr. II/8*

offset self-aligned process for high-efficiency Ku-band power FETs. *Wakamoto, Kouichi*, +, *MWSYM 89 Vol. 3* 1023-1026

Semiconductor device fabrication; cf. Epitaxial growth; Integrated-circuit fabrication; Laser applications, materials processing; Semiconductor device ion implantation; Specific device**Semiconductor device ion implantation**

doping profile optimization in silicon PBTs for high-frequency, high-voltage operation. *Rathman, D. D.*, +, *CORNEL 89 Abstr. III/7*

P-type dopant coimplants in ion-implanted GaAs power FETs; effects on RF performance. *Winslow, T. A.*, +, *MWSYM 89 Vol. 3* 1019-1022

passivation and gating of III-V surfaces; state-of-the-art overview. *Markunas, Robert J.*, *CORNEL 89 Abstr. I/4*

Semiconductor-device measurements

parameter extraction of microwave transistors using tree annealing. *Bilbro, Griff L.*, +, *CORNEL 89 Abstr. IV/2*

Semiconductor device measurements; cf. Integrated-circuit measurements; Specific device**Semiconductor device noise**

high-frequency MESFET noise modeling including distributed effects for millimeter-wave range below 100 GHz. *Heinrich, Wolfgang*, *T-MTT May 89* 836-842

MESFET and MODFET wideband noise parameter modeling at room and cryogenic temperatures; frequency and temperature dependence. *Pospieszalski, Marian W.*, *MWSYM 89 Vol. 1* 385-388

noise modeling for two-dimensional electron gas FETs based on accurate charge control characteristics. *Ando, Yuji*, +, *CORNEL 89 Abstr. II/9*

noise parameter modeling for MODFETs and MESFETs, showing frequency and temperature dependence. *Pospieszalski, Marian W.*, *T-MTT Sep 89* 1340-1350

output conductance frequency dispersion and low-frequency noise in HEMTs and MESFETs 2. *Reynoso-Hernandez, J. A.*, +, *T-MTT Sep 89* 1478-1481

Semiconductor device thermal factors

RF performance characteristics of double-drift millimeter-wave diamond IMPATT diodes. *Mock, P. M.*, +, *CORNEL 89 Abstr. VI/7*

Semiconductor device thermal factors; cf. Cryogenic electronics; Semiconductor device noise**Semiconductor diode switches; cf. Diode phase shifters; Power semiconductor diode switches****Semiconductor diodes; cf. Light-emitting diodes; Schottky diodes; Tunnel diodes; Varactors****Semiconductor domains**

experimental verification of contiguous-domain oscillator concept. *Cooper, J. A., Jr.*, +, *CORNEL 89 Abstr. V/7*

Semiconductor growth; cf. Epitaxial growth**Semiconductor heterojunctions**

2.43 W CW X-band heterojunction bipolar transistor. *Bayraktaroglu, B.*, +, *MWSYM 89 Vol. 3* 1057-1060

calculated high frequency performance of npn Si_{1-x}Ge_x HBT. *Racanelli, Marco*, +, *CORNEL 89 Abstr. III/3*

characterization of Si- and SiGe-base bipolar transistors for high frequency and high speed applications; basic transport and design. *Hinckley, J. M.*, +, *CORNEL 89 Abstr. III/2*

design optimization of microwave power heterojunction bipolar transistor cells. *Wang, G. W.*, +, *MWSYM 89 Vol. 3* 1061-1064

GaAs HBT monolithic logarithmic IF (0.5-1.5 GHz) amplifier with 60-dB dynamic range and 400-mW power consumption. *Gorman, G. M.*, +, *MWSYM 89 Vol. 2* 537-540

GaAs heterojunction bipolar transistor device and IC technology for high-performance analog and microwave applications; overview. *Kim, M. E.*, +, *T-MTT Sep 89* 1286-1303

HBT MMIC digital switched-gain amplifier with +31 to -31 dB gain in 2-dB increments. *Oki, A. K.*, +, *MCS 89* 83-86

high power efficiency X-band GaAlAs/GaAs HBT. *Wang, N. L.*, +, *CORNEL 89 Abstr. III/4*

low-noise microwave oscillator using self-aligned AlGaAs/GaAs HBT. *Madhian, Mohammad*, +, *T-MTT Nov 89* 1811-1814

optimizing design of heterojunction vertical FET using 2-D self-consistent Monte Carlo method. *Weinzierl, S.*, +, *CORNEL 89 Abstr. IV/7*

p-HFETs with GaAsSb channel. *Turtillo, J.*, +, *CORNEL 89 Abstr. V/8*

parameter extraction technique for heterojunction bipolar transistors. *Trew, R. J.*, +, *MWSYM 89 Vol. 3* 897-900

possibility of silicon-germanium monolithic millimeter-wave integrated circuits. *Campbell, Stephen A.*, +, *T-MTT Dec 89* 2046-2050

SiGe heterostructures and superlattices; properties and characterization. *Wang, Kang L.*, *CORNEL 89 Abstr. III/1*

Semiconductor heterojunctions; cf. Bipolar transistors; Gallium materials/devices**Semiconductor heterostructures**

picosecond optoelectronic characterization of heterojunction bipolar transistor. *Mailoubian, M.*, +, *MWSYM 89 Vol. 3* 889-892

single-interface and quantum-well heterostructure MISFETs 2. *Kiehl, Richard A.*, *T-MTT Sep 89* 1304-1314

Semiconductor heterostructures; cf. Gallium materials/devices**Semiconductor lasers**

laser diodes directly modulated by analog microwave signals; distortion characteristics. *Majewski, M. L.*, +, *MWSYM 89 Vol. 3* 1167-1170

Semiconductor lasers; cf. Quantum-well lasers**Semiconductor-loaded waveguides**

propagation in layered biased semiconductor structures using transport analysis. *Krowné, Clifford M.*, +, *T-MTT Apr 89* 711-722

Semiconductor materials

P-type dopant coimplants in ion-implanted GaAs power FETs; effects on RF performance. *Winslow, T. A.*, +, *MWSYM 89 Vol. 3* 1019-1022

zone-melt recrystallized silicon-on-alumina as monolithic circuit technology; demonstration of surface-oriented p-i-n diode device structure. *Letavic, T. J.*, +, *MWSYM 89 Vol. 3* 969-972

Semiconductor materials; cf. Superlattices; Specific topic or device**Semiconductor materials measurement**

permittivity and conductivity profiles of microwave semiconducting materials using optimized iterative method. *Hindy, Moataza A.*, *T-MTT May 89* 922-925

Semiconductor noise; cf. Semiconductor device noise**Semiconductor switches; cf. Light-triggered switches; Microwave switches; MMIC switches; Phase shifters; Power FET switches; Power semiconductor diode switches****Semiconductor waveguides**

photoinduced wave attenuation in semiconductor coplanar waveguides; quasistatic analysis using conformal mapping. *Platte, Walter*, +, *T-MTT Jan 89* 139-149

Septa; cf. Waveguide discontinuities**Signal analysis; cf. Harmonic distortion****Signal processing; cf. Acoustooptic signal processing****Signal sampling/reconstruction**

aliasing control in harmonic balance simulation of nonlinear microwave circuits. *Heron, Patrick L.*, +, *MWSYM 89 Vol. 1* 355-358

Signal sampling/reconstruction; cf. Analog-digital conversion**Silicon materials/devices**

calculated high frequency performance of npn Si_{1-x}Ge_x HBT. *Racanelli, Marco*, +, *CORNEL 89 Abstr. III/3*

characterization of Si- and SiGe-base bipolar transistors for high frequency and high speed applications; basic transport and design. *Hinckley, J. M.*, +, *CORNEL 89 Abstr. III/2*

DNP-III silicon MMIC process technology for non-self-aligned gate NPN transistors; use in fabricating 7.46-GHz frequency divider IC. *Miyazaki, Shinichi*, +, *MWSYM 89 Vol. 3* 1065-1068

possibility of silicon-germanium monolithic millimeter-wave integrated circuits. *Campbell, S. A.*, +, *MWSYM 89 Vol. 2* 817-819

possibility of silicon-germanium monolithic millimeter-wave integrated circuits. *Campbell, Stephen A.*, +, *T-MTT Dec 89* 2046-2050

SiGe heterostructures and superlattices; properties and characterization. *Wang, Kang L.*, *CORNEL 89 Abstr. III/1*

zone-melt recrystallized silicon-on-alumina as monolithic circuit technology; demonstration of surface-oriented p-i-n diode device structure. *Letavic, T. J.*, +, *MWSYM 89 Vol. 3* 969-972

Simulation; cf. Specific topic**SIS; cf. Superconductor-insulator-superconductor****Skin effect**

AC resistance of microstripline and its ground plane; reasons for resistance values above theoretical strip skin-effect levels. *Faraji-Dana, R.*, +, *MWSYM 89 Vol. 1* 325-327

Slot antennas

tapered slot antennas for millimeter-wave applications; characterization of single elements and arrays. *Yngvesson, K. Sigrid*, +, *T-MTT Feb 89* 365-374

Slot antennas; cf. Leaky-wave antennas**Slot arrays**

tapered-slot antenna; frequency-sealed microwave model. *Kothaus, Ulrich*, +, *T-MTT Feb 89* 375-380

Slotline

analysis of coplanar waveguides and slotlines using time-domain finite-difference method. *Liang, Guo-Chun*, +, *T-MTT Dec 89* 1949-1957

contributions of Seymour B. Cohn in design of slotline and equiripple optimization. *Huntton, J. K.*, *MWSYM 89 Vol. 2* 753-755, 757-758

quasiparallel transmission lines within circular or elliptical waveguides; method of lines formulation. *Wu, Ke*, +, *MWSYM 89 Vol. 1* 503-506

quasiparallel transmission lines within circular or semicircular/elliptical waveguides; method of lines formulation. *Wu, Ke*, +, *T-MTT Dec 89* 1958-1963

Slotline components

MIC coplanar waveguide/slotline double-balanced mixer. *Cahana, David*, *MWSYM 89 Vol. 3* 967-968

Slotline discontinuities

reactances of slotline short and open circuit on alumina substrate. *Chramiec, Jerzy*, *T-MTT Oct 89* 1638-1641

Slotline transitions

8-port microstrip-slotline symmetrical planar comparator circuit. *Riblet, G. P.*, *MWSYM 89 Vol. 1* 239-242

Slow-wave structures

deriving space-domain Green's function in shielded, multilayer substrate structure; applications to MIS slow-wave transmission lines. *Livernois, Thomas G.*, +, *T-MTT Nov 89* 1761-1767

integral equation approach for analysis and design of slow-wave structures. *Livernois, Thomas G.*, +, *MWSYM 89 Vol. 3* 1131-1134

Software; cf. Design automation software**Space-vehicle electronics**

GaAs monolithic phase-locked loop chip set for space-vehicle applications. *Archer, John*, +, *T-MTT Apr 89* 790-792

Special issues/sections

1989 IEEE MTT-S International Microwave Symposium. *T-MTT Dec 89* 1837-2170

FET structures; modeling and circuit applications. *T-MTT Sep 89* 1277-1491

MMICs. *T-MTT Dec 89* 1837-2117

quasi-planar millimeter-wave components and subsystems. *T-MTT Feb 89* 273-437

selected papers from 1989 IEEE MTT-S International Microwave Symposium. (special section) *T-MTT Dec 89* 1837-2117

selected papers from 1989 IEEE MTT-S Microwave and Millimeter-wave Monolithic Circuits Symposium (special section). *T-MTT Dec 89* 1837-2117

Spectral analysis

continuous orthonormalized spectrum of bound modes in image line. *Rozzi, Tullio*, +, *T-MTT May 89* 868-874

correlation spectrum of oscillators with low noise; general expression from perturbation theory. *Kaertner, Franz X.*, *T-MTT Jan 89* 90-101

low-noise microwave signal generation; comparison of six types of acoustic and nonacoustic resonator/oscillators. *Driscoll, M. M.*, *MWSYM 89 Vol. 1* 261-264

proposed real-time microwave and millimeter-wave spectrum analyzer for large-bandwidth signals. *Cohen, Jonathan D.*, *T-MTT Jun 89* 1054-1057

Spectral analysis; cf. Harmonic analysis**Standards; cf. Measurement standards****Statistics**

linear statistical FET model based on principal-component analysis. *Petzold, Mark*, +, *MWSYM 89 Vol. 1* 375-378

linear statistical FET model using principal-component analysis 2. *Purviance, John E.*, +, *T-MTT Sep 89* 1389-1394

Strain control

influence of strain on small-signal gain and lasing threshold of GaInAs/GaAs and GaAs/GaInAlAs strained-layer quantum-well lasers. *Feak, G.*, +, *CORNEL 89 Abstr VI/5*

lattice matched and strained InGaAs/InAlAs HEMTs; low-frequency properties. *Ng, G. I.*, +, *CORNEL 89 Abstr II/4*

Strip conductors

wire and strip conductors over dielectric-coated conducting or dielectric half-space; complex wavenumber and characteristic impedance. *King, Ronald W. P.*, *T-MTT Apr 89* 754-760

Strip scatterers

multimode network description of planar periodic metal-strip grating at dielectric interface; rigorous solution. *Guglielmi, Marco*, +, *T-MTT May 89* 902-909

wide transverse inductive metal strips in rectangular waveguide; variational analysis of discontinuity susceptance. *Chu, Bright H.*, +, *T-MTT Jul 89* 1138-1141

Strip transmission lines

modeling of arbitrarily shaped signal lines and discontinuities embedded in homogeneous medium. *Rubin, Barry J.*, *T-MTT Jun 89* 1057-1060

printed-circuit waveguides with anisotropic substrates; leakage effect. *Tsuji, M.*, +, *MWSYM 89 Vol. 2* 783-786

Strip transmission lines; cf. Distributed-parameter circuits; Microstrip; Planar waveguides; Stripline

Stripline

conformal mapping for calculating quasi-TEM parameters of cylindrical, wrapped, and coupled lines. *Bedair, Said S.*, +, *MWSYM 89 Vol. 3* 1127-1130

coupled asymmetric suspended strip lines with three thick-strip conductors and side-wall grooves. *Nakajima, Masayuki*, +, *MWSYM 89 Vol. 2* 719-722

cylindrical multiconductor stripline-like microstrip transmission line; analytical expressions for Maxwell capacitance matrix. *Homentcovschi, Dorcel*, *T-MTT Mar 89* 497-503

lumped capacitance and open-end effects of striplike structures in multilayered and anisotropic substrates; calculation using variational techniques in spectral domain. *Boix, Rafael R.*, +, *T-MTT Oct 89* 1523-1528

metallization thickness' effect of striplines with anisotropic media; quasi-static and hybrid-mode analysis. *Kitazawa, Toshihide*, *T-MTT Apr 89* 769-775

mixed spectral-domain approach for dispersion analysis of suspended planar transmission lines with pedestals. *Chan, Chi Hou*, +, *T-MTT Nov 89* 1716-1723

propagation properties of striplines periodically loaded with crossing strips; spectral domain dyadic Green's function formulation. *Kiang, Jean-Fu*, +, *T-MTT Apr 89* 776-786

quasi-planar transmission lines; overview. *Itoh, Tatsuo*, *T-MTT Feb 89* 275-280

variational method for line inductances of planar transmission lines with anisotropic magnetic media. *Kitazawa, Toshihide*, *T-MTT Nov 89* 1749-1754

variational method for multiconductor coupled striplines with stratified anisotropic media. *Kitazawa, Toshihide*, *T-MTT Mar 89* 484-491

Stripline; cf. Coplanar transmission lines; Superconducting films; Superconducting transmission lines

Stripline couplers

corrections to 'computer-aided design models for broadside-coupled striplines and millimeter-wave suspended substrate microstrip lines (Nov 88 1476-1481). *Pramanick, P.*, +, *T-MTT Oct 89* 1658

Stripline resonators

high- T_c superconducting stripline microwave resonators and oscillators. *Oates, D. E.*, +, *MWSYM 89 Vol. 2* 627-630

low-noise microwave signal generation; comparison of six types of acoustic and nonacoustic resonator/oscillators. *Driscoll, M. M.*, *MWSYM 89 Vol. 1* 261-264

Stripline transitions

double-sided microwave integrated circuit components. *Aikawa, Masayoshi*, +, *T-MTT Feb 89* 406-413

Submillimeter devices

vacuum microelectronics using electron emitter arrays for RF and submillimeter-wave applications. *Gray, Henry F.*, *CORNEL 89 Abstr I/5*

Submillimeter-wave diodes; cf. Submillimeter-wave mixers; Submillimeter-wave oscillators

Submillimeter-wave frequency conversion

frequency doublers and quadruplers for 140-GHz-230-GHz inputs for local oscillator signal generation. *Tolmunen, Timo*, +, *MWSYM 89 Vol. 3* 1223-1226

Submillimeter-wave frequency conversion; cf. Submillimeter-wave mixers

Submillimeter-wave generation; cf. Submillimeter-wave oscillators

Submillimeter-wave measurements

six-port and four-port reflectometers for complex permittivity measurements at submillimeter wavelengths. *Stumper, Ulrich*, *T-MTT Jan 89* 222-230

Submillimeter-wave mixers

design and fabrication of ultra-small GaAs Schottky diodes for low-noise terahertz receiver applications. *Peatman, William C.*, +, *CORNEL 89 Abstr VI/8*

spectral-domain analysis of harmonic effects in superconducting quasiparticle mixers. *Withington, Stafford*, +, *T-MTT Jan 89* 231-238

Submillimeter-wave oscillators

solid-state local oscillator sources for millimeter and submillimeter waves; recent European developments. *Raisänen, Antti V.*, *MWSYM 89 Vol. 2* 617-620

Superconducting device measurements

high- T_c YBCO and BCSCO granular thin-film-based microstrip mixer characterization. *Konopka, J.*, +, *MWSYM 89 Vol. 2* 635-638

Superconducting devices

0.7-3.3-GHz superconducting single-film device oscillator made of high- T_c and low- T_c materials. *Martens, J. S.*, +, *MWSYM 89 Vol. 1* 443-446

FETs with superconducting channels. *Kleinsasser, A. W.*, *CORNEL 89 Abstr I/2*

magnetic bremsstrahlung radiation sources using Meissner effect of high- T_c superconductors. *Boden, A. F.*, +, *MWSYM 89 Vol. 1* 455-458

Superconducting devices; cf. Josephson devices; Tunnel diode circuits

Superconducting films

0.7-3.3-GHz superconducting single-film device oscillator made of high- T_c and low- T_c materials. *Martens, J. S.*, +, *MWSYM 89 Vol. 1* 443-446

chirp filter with 2.6-GHz bandwidth using tapped superconducting stripline of niobium film. *DiIorio, Mark S.*, +, *T-MTT Apr 89* 706-710

complex resistive boundary conditions for model transmission lines consisting of very thin superconductors. *Pond, Jeffrey M.*, +, *T-MTT Jan 89* 181-190

high- T_c 31-cm-long thin-film transmission line. *Homak, L. A.*, +, *MWSYM 89 Vol. 2* 623-626

high- T_c superconductor surface impedance at millimeter-wave spectral range. *Drabek, L.*, +, *MWSYM 89 Vol. 2* 551-554

microstrip ring resonator technique for measuring microwave attenuation in high- T_c superconducting thin films. *Takemoto, June H.*, +, *T-MTT Oct 89* 1650-1652

superconducting NbN frequency-tunable SAW filter and dispersion line at 700 MHz. *Baum, H-P.*, +, *MWSYM 89 Vol. 2* 639-641

Superconducting materials

high- T_c cylindrical superconductors; surface resistance measurement technique using microwave resonator cavity. *Aida, Kazuo*, +, *MWSYM 89 Vol. 2* 559-562

high- T_c superconductor measurements using post-type dielectric resonator as probe. *Fiedziuszko, S. J.*, +, *MWSYM 89 Vol. 2* 555-558

Superconducting transmission lines

complex resistive boundary conditions for model transmission lines consisting of very thin superconductors. *Pond, Jeffrey M.*, +, *T-MTT Jan 89* 181-190

high- T_c 31-cm-long thin-film transmission line. *Homak, L. A.*, +, *MWSYM 89 Vol. 2* 623-626

high- T_c superconducting stripline microwave resonators and oscillators. *Oates, D. E.*, +, *MWSYM 89 Vol. 2* 627-630

high- T_c superconductor 3-90-GHz conductivity measurements; materials' uses in linear devices. *Chaloupka, H.*, +, *MWSYM 89 Vol. 2* 547-550

propagation characteristics of inductively coupled superconducting microstrip. *Pond, J. M.*, +, *MWSYM 89 Vol. 1* 451-454

wideband conductor loss calculation using phenomenological loss equivalence method for planar quasi-TEM transmission lines with thin conductors. *Lee, Hai-Young*, +, *T-MTT Dec 89* 1904-1909

Superconductor-insulator-superconductor

85-116-GHz SIS receiver using inductively shunted edge junctions. *Pan, Shing-Kuo*, +, *T-MTT Mar 89* 580-592

pseudomorphic GaAs/GaInAs/AlGaAs SISFET. *Schmidt, P. E.*, +, *CORNEL 89 Abstr II/5*

S-parameter characterization of GaAs-gate SISFETs at liquid nitrogen temperatures. *Kwak, Y.*, +, *CORNEL 89 Abstr IV/4*

Superlattices

laser-processed microwave HEMTs with AlAs-nGaAs superlattice donor layers. *Dumas, J. M.*, +, *MWSYM 89 Vol. 1* 483-486

- SiGe heterostructures and superlattices; properties and characterization. *Wang, Kang L., CORNEL 89 Abstr III/1*
- Surface charging**
space-domain Green's function approach for capacitance calculation of multiconductor lines in multilayered dielectrics with improved surface charge modeling. *Delbare, Wim, +, T-MTT Oct 89 1562-1568*
- Surface waves; cf.** Electromagnetic surface waves; Magnetostatic surface waves
- Surges; cf.** Transient analysis
- Switched circuits; cf.** Resonant-transfer circuits
- Switches/switching; cf.** Electrooptic switches; Light-triggered switches; UHF switches
- Switching transients**
parasitic effects induced by power strip current switching in wafer package. *Chilo, J., +, MWSYM 89 Vol. 3 1259-1262*
- Synchronization**
subharmonic synchronization of nonlinear oscillators. *Daryoush, A. S., +, MWSYM 89 Vol. 2 735-738*
- Synthetic-aperture imaging**
hot-spot imaging using correlation radiometers with circular synthetic aperture. *Schaller, Gerd, T-MTT Aug 89 1210-1216*

T

- Target detection; cf.** Aircraft detection and tracking
- Target recognition; cf.** Inverse problems; Radar target recognition
- Technology surveys**
GaAs MMIC progress in Japan; overview of present trends. *Aikawa, Masayoshi, +, MCS 89 1-6*
- Technology surveys; cf.** Europe
- Testing; cf.** Radar testing
- Thermal factors; cf.** Cryogenic electronics; Semiconductor device noise
- Thick-film ...; cf.** MMIC ...
- Thickness measurement**
microstrip noncontacting thickness monitor for measuring height of materials on metallic surfaces from microwave propagation velocity. *Hurley, Richard B., +, MWSYM 89 Vol. 3 905-908*
- Thin-film ...; cf.** MMIC ...
- Thin-film capacitors**
pseudomorphic and conventional AlGaAs capacitors on GaAs n⁺ substrates. *Schmidt, P. E., +, CORNEL 89 Abstr II/5*
- Thin-film circuits**
balanced cascade 26-40 GHz amplifier; design, fabrication and performance. *McCann, D. M. E., MWSYM 89 Vol. 3 845-848*
- Thin-film inductors**
computer-aided design of MMIC lumped-element square spiral transformers and inductors. *Frlan, E., +, MWSYM 89 Vol. 2 661-664*
- Thin-film transducers**
wideband nonlinear chirp transducers for planar acoustooptic deflectors. *Anemogiannis, K., +, MWSYM 89 Vol. 1 269-272*
- YIG-film low-loss magnetostatic wave filter using parallel strip transducer.** *Nishikawa, Toshio, +, MWSYM 89 Vol. 1 153-156*
- Thin films; cf.** Superconducting films
- Thyristors**
SCR-like behavior of integrated high-gain double heterojunction GaAs bipolar transistors with LED for neural net array. *Lin, S. H., +, CORNEL 89 Abstr VI/3*
- Time-domain analysis; cf.** Finite-difference methods; Transient analysis
- Time-domain measurements**
deembedding method for S-parameters of microstrip devices utilizing automatic network analyzer with time-domain option. *Gronau, Gregor, +, T-MTT Mar 89 479-483*
- external electro-optic probing of millimeter-wave MMICs.** *Whitaker, J. F., +, MWSYM 89 Vol. 1 221-224*
- time-domain network analyzer using optoelectronic techniques.** *Webb, Kevin J., +, MWSYM 89 Vol. 1 217-220*
- Time-domain measurements; cf.** Electrooptic measurements; Pulse measurements
- Time-of-arrival estimation; cf.** Delay estimation
- Tissues; cf.** Biological tissues
- Tolerance analysis/assignment**
simulator for variation and sensitivity of microwave MESFET large signal figures-of-merit due to process, material, parasitic and bias parameters. *Stoneking, D. E., +, CORNEL 89 Abstr IV/6*
- Tolerance analysis/assignment; cf.** Design centering
- TR devices**
50-GHz GaAs FET MIC transmitter/receiver using hermetic miniature probe transitions. *Ogawa, Koichi, +, T-MTT Sep 89 1434-1441*
- 6-18-GHz transmit/receive modules for multifunction phased arrays using MMIC subcomponents.** *Meharry, D. E., +, MWSYM 89 Vol. 1 115-118*
- high-volume manufacturing of highly-efficient X-band power module for phased arrays applications.** *Vorhaus, J. L., MWSYM 89 Vol. 2 769-772*
- microstrip plasma limiter for DC-18-GHz operation.** *Patel, Suman D., +, MWSYM 89 Vol. 3 879-882*
- MMIC-based injection-locked oscillator for optically fed phased-array antennas.** *Berceli, T., +, MWSYM 89 Vol. 1 131-134*
- Tracking; cf.** Aircraft detection and tracking
- Tracking loops; cf.** Phase-locked loops
- Transducers; cf.** Acoustic surface-wave transducers; Thin-film transducers
- Transformers**
computer-aided design of MMIC lumped-element square spiral transformers and inductors. *Frlan, E., +, MWSYM 89 Vol. 2 661-664*
- power transfer mechanism of MMIC spiral transformers and adjacent spiral inductors; analysis using WATMIC-EMsim software.** *Howard, G. E., +, MWSYM 89 Vol. 3 1251-1254*
- Transformers; cf.** Impedance matching
- Transforms**
numerical conformal transformation of three-magnetic-wall structures. *Costamagna, Eugenio, T-MTT Aug 89 1263-1266*
- Transforms; cf.** Fourier transforms
- Transient analysis**
transient response of p-i-n limiter diodes at 1 GHz. *Tan, R. J., +, MWSYM 89 Vol. 3 1303-1306*
- Transient analysis; cf.** Circuit transient analysis; Electromagnetic transient analysis; Switching transients
- Transient propagation; cf.** Electromagnetic transient propagation
- Transistors; cf.** Bipolar transistors; FETs
- Transitions; cf.** Finline transitions; Slotline transitions; Stripline transitions
- Transmission coefficient measurement; cf.** Scattering parameters measurement
- Transmission-line discontinuities**
modeling of arbitrarily shaped signal lines and discontinuities embedded in homogeneous medium. *Rubin, Barry J., T-MTT Jun 89 1057-1060*
- Transmission-line discontinuities; cf.** Finline discontinuities; Slotline discontinuities; Waveguide discontinuities
- Transmission lines**
conductor geometry independence of phase velocity in TEM-mode transmission lines; proof using circuital considerations. *Green, Harry E., T-MTT Apr 89 805*
- nonlinear charge control DC and transmission-line models for GaAs MODFETs.** *Huang, Di-Hui, +, MWSYM 89 Vol. 1 417-420*
- perfectly conducting wire transmission line in double-layered conductor-backed medium; full-wave eigenmode analysis.** *Faché, Niels, +, T-MTT Mar 89 512-518*
- Transmission lines; cf.** Coaxial transmission lines; Coplanar transmission lines; Coupled transmission lines; Microstrip
- Transversal filters**
MMIC bandpass active filter using lumped and transversal elements. *Schindler, M. J., +, MCS 89 57-60*
- MMIC bandpass active filter using lumped and transversal elements.** *Schindler, Manfred J., +, T-MTT Dec 89 2148-2153*
- Traveling-wave devices**
GaAs traveling-wave inverted-gate FETs (INGFETs); characterization. *El-Ghazaly, Samir M., +, T-MTT Jun 89 1027-1032*
- planar traveling-wave electrooptic modulators; microwave characteristics.** *Delrue, R., +, MWSYM 89 Vol. 3 1171-1174*
- Tunable devices**
2-4-GHz notch filters with variable center frequency and attenuation. *Toyoda, Sachihiro, MWSYM 89 Vol. 2 595-598*
- magnetically tuned printed E-plane waveguide filters; analysis and tuning efficiency optimization.** *Uher, Jaroslav, +, MWSYM 89 Vol. 3 1273-1276*
- millimeter-wave lumped-element Gunn VCOs with ultrawideband (20 GHz) tuning.** *Cohen, Leonard D., +, MWSYM 89 Vol. 3 1287-1290*
- superconducting NbN frequency-tunable SAW filter and dispersion line at 700 MHz.** *Baum, H.-P., +, MWSYM 89 Vol. 2 639-641*
- tunable temperature-compensated hybrid-mode dielectric resonators; mode-matching analysis.** *Chen, Seng-Woon, +, MWSYM 89 Vol. 3 1227-1230*
- Tuners; cf.** TV receiver tuners; Varactor tuners; Voltage-controlled oscillators
- Tuning**
CAD automated technique for post production tuning of microwave circuits. *Gominho, Emanuel C., MWSYM 89 Vol. 2 765-767*
- cochannel signal's effect on electrical tuning characteristics of Gunn injection-locked microwave oscillator.** *Biswas, B. N., +, T-MTT Mar 89 627-630*
- intelligent alignment of waveguide filters using machine learning approach for tuning.** *Mirzai, Ahmad R., +, T-MTT Jan 89 166-173*
- large-signal characterization of millimeter-wave transistors using actively tuned load-pull measurement system.** *Actis, Robert, +, MWSYM 89 Vol. 2 835-838*
- magnetic tuning of cylindrical H_{01δ}-mode dielectric resonators using axial ferrite rod.** *Krupka, Jerzy, T-MTT Apr 89 743-747*
- magnetically tuned printed E-plane waveguide filters; analysis and tuning efficiency optimization.** *Uher, Jaroslav, +, MWSYM 89 Vol. 3 1273-1276*
- optical tuning of oscillator frequency for optical phase control of optically injection-locked FET microwave oscillator.** *Esman, Ronald D., +, T-MTT Oct 89 1512-1518*
- Tunnel devices/effects**
microwave characteristics of MBE-grown resonant tunneling devices; 130-20-GHz measurements. *Owens, J. M., +, MWSYM 89 Vol. 1 471-474*
- resonant tunneling structures for high-frequency oscillator applications using time-dependent solution of Schrodinger's equation.** *Saadat, Irfan A., +, CORNEL 89 Abstr V/4*
- Tunnel devices/effects; cf.** Superconductor-insulator-superconductor
- Tunnel diode circuits**
spectral-domain analysis of harmonic effects in superconducting quasiparticle mixers. *Wihington, Stafford, +, T-MTT Jan 89 231-238*
- Tunnel diodes**
flash A/D converter using InGaAs/InAlAs resonant-tunneling diodes. *Kuo, Tai-Haur, +, CORNEL 89 Abstr V/2*
- gated resonant tunneling diode with laterally adjustable quantum dot cross-section.** *Kinard, W. B., +, CORNEL 89 Abstr V/5*
- theoretical analysis of peak-to-valley ratio degradation caused by scattering processes in multibarrier resonant tunneling diodes.** *Mizuta, H., +, CORNEL 89 Abstr V/3*

Tunnel transistors

quantum-well resonant-tunneling transistors; transport properties and physical characteristics. *Seabaugh, Alan C., CORNELL 89 Abstr V/1*

TV broadcasting

fiber-optic transmission of FM HDTV with 622 Mb/s data. *Lo, C. N., +, MWSYM 89 Vol. 2 703-704*

M² system 29 GHz–1 GHz receiver/downconverter using MICs and MMICs. *Wilson, Philip G., +, MWSYM 89 Vol. 3 1099-1102*

M²VDS (Millimeter-wave Multichannel Multipoint Video Delivery Service) system for direct-to-home TV broadcasting. *Pilgrim, Mike, +, MWSYM 89 Vol. 3 1095-1098*

TV receiver tuners

3-chip GaAs double-conversion TV tuner system with 70-dB image rejection. *Ducourant, Thierry, +, MCS 89 87-90*

3-chip GaAs double-conversion TV tuner system with 70-dB image rejection. *Ducourant, Thierry, +, MWSYM 89 Vol. 1 95-98*

Two-port circuits

CAD-oriented method for noise figure computation of two-ports with any internal topology. *Dobrowolski, Janusz A., T-MTT Jan 89 15-20*
de-embedding and calibration procedures for two-port error network representations; mathematical formulation. *Soares, Robert A., +, T-MTT Nov 89 1669-1674*

measuring magnitude and phase of harmonics generated in nonlinear microwave two-ports. *Loti, Urs, T-MTT Oct 89 1506-1511*

Two-port circuits; cf. Specific topic or device

U

UHF (300 - 3000 MHz); cf. Microwave (3 - 30 GHz)

UHF amplifiers

0.3-3-GHz monolithic vector modulator for adaptive array systems. *Truitt, Austin, +, MWSYM 89 Vol. 1 421-422*

2-18-GHz MMIC matrix distributed amplifier. *Chang, A. P., +, T-MTT Dec 89 2159-2162*

inductance taper and forward-feed in GaAs monolithic UHF distributed amplifier architecture. *Ross, Michael, +, MWSYM 89 Vol. 3 1039-1042*
RLC matching network and application in 1-20 GHz monolithic amplifier. *Ikäläinen, Pertti K., MWSYM 89 Vol. 3 1115-1118*

UHF amplifiers; cf. Feedback amplifiers; IF amplifiers; Phase-locked amplifiers; UHF FET amplifiers

UHF amplifiers, power

2.5-GHz 50-W multipoint amplifier for multibeam satellite communications. *Yamamoto, Kazuichi, +, MWSYM 89 Vol. 3 1281-1284*
power amplifier linearization using IF feedback. *Voyce, Kenneth G., +, MWSYM 89 Vol. 3 863-866*

UHF amplifiers, power; cf. UHF bipolar transistor amplifiers, power

UHF antennas

open-ended coaxial exposure device for applying 2450 MHz fields to very small biological preparations. *Seaman, Ronald L., +, T-MTT Jan 89 102-111*

UHF attenuators

2-4-GHz notch filters with variable center frequency and attenuation. *Toyoda, Sachihiro, MWSYM 89 Vol. 2 595-598*
monolithic DC-1.6 GHz digital attenuator with integral TTL-compatible switch drivers. *Bayruns, J., +, MWSYM 89 Vol. 3 1295-1298*

UHF bipolar transistor amplifiers, power

cooling approach for bipolar transistor power amplifier modules giving 1.8 kW at 425 MHz. *Johnson, Joseph H., +, MWSYM 89 Vol. 3 861-862*

UHF diodes; cf. p-i-n diodes**UHF FET amplifiers**

2-18-GHz MMIC matrix distributed amplifier. *Chang, A. P., +, MCS 89 139-141*

2-18-GHz MMIC matrix distributed amplifier. *Chang, A. P., +, MWSYM 89 Vol. 1 287-289*

correction to 'Broad-band monolithic microwave active inductor and its application to miniaturized wide-band amplifiers' (Dec 88 1920-1924). *Hara, Shinji, +, T-MTT Jul 89 1155*

UHF FET integrated circuits

3-chip GaAs double-conversion TV tuner system with 70-dB image rejection. *Ducourant, Thierry, +, MCS 89 87-90*

3-chip GaAs double-conversion TV tuner system with 70-dB image rejection. *Ducourant, Thierry, +, MWSYM 89 Vol. 1 95-98*
monolithic DC-1.6 GHz digital attenuator with integral TTL-compatible switch drivers. *Bayruns, J., +, MWSYM 89 Vol. 3 1295-1298*

UHF FET oscillators

GaAs monolithic phase-locked loop chip set for space-vehicle applications. *Archei, John, +, T-MTT Apr 89 790-792*

UHF FETs

70-MHz to 11-GHz balanced HEMT upconverter. *Bura, P., +, MWSYM 89 Vol. 3 1299-1302*

large-signal FET parameter extraction using harmonic balance method. *Bandler, J. W., +, MWSYM 89 Vol. 2 577-580*

large-signal FET parameter extraction using harmonic balance method. *Bandler, John W., +, T-MTT Dec 89 2099-2108*

linear statistical FET model based on principal-component analysis. *Petzold, Mark, +, MWSYM 89 Vol. 1 375-378*

noise characterization uncertainty for UHF FET devices under low current operation. *Lucero, R., +, MWSYM 89 Vol. 3 893-896*

UHF filters

2-4-GHz notch filters with variable center frequency and attenuation. *Toyoda, Sachihiro, MWSYM 89 Vol. 2 595-598*

800-MHz-band dielectric receiving filter with sharp stopband using active feedback resonator approach. *Nishikawa, Toshio, +, T-MTT Dec 89 2074-2079*

800-MHz-band dielectric receiving filter with sharp stopband using active feedback resonator method for cellular base stations. *Ishikawa, Youhei, +, MWSYM 89 Vol. 2 591-594*

UHF filters; cf. Acoustic surface-wave filters; UHF resonator filters

UHF frequency conversion

70-MHz to 11-GHz balanced HEMT upconverter. *Bura, P., +, MWSYM 89 Vol. 3 1299-1302*

UHF frequency conversion; cf. UHF mixers

UHF generation; cf. UHF oscillators

UHF integrated circuits; cf. UHF FET integrated circuits

UHF measurements

MBE-grown resonant tunneling device characteristics. *Owens, J. M., +, MWSYM 89 Vol. 1 471-474*

multipath fading UHF simulator for studying space-diversity digital radio systems. *Guillard, Jean Christophe, +, MWSYM 89 Vol. 3 1199-1202*

UHF measurements; cf. UHF radiometry

UHF mixers

2-12 GHz distributed FET MMIC mixer with 3-dB conversion gain and 11-dB SSB noise figure. *Robertson, I. D., +, MWSYM 89 Vol. 3 1031-1032*

silicon bipolar balanced active mixer MMICs for RF and microwave applications up to 6 GHz. *Wholey, Jim, +, MWSYM 89 Vol. 1 281-285*

silicon bipolar double-balanced active mixer MMICs for UHF and microwave applications up to 6 GHz. *Wholey, Jim, +, MCS 89 133-137*

UHF modulation/demodulation

satellite four-channel multiplexer using single-mode and dual-mode dielectric resonator filters at L-band. *Fiedziuszko, S. J., +, MWSYM 89 Vol. 2 683-686*

UHF modulation/demodulation; cf. UHF mixers

UHF oscillators

0.7-3.3-GHz superconducting single-film device oscillator made of high-T_c and low-T_c materials. *Martens, J. S., +, MWSYM 89 Vol. 1 443-446*

oscillators using magnetostatic-wave active tapped delay lines and GaAs IC. *Chen, Chang-Lee, +, T-MTT Jan 89 239-243*

UHF oscillators; cf. Gunn device oscillators; UHF FET oscillators

UHF power dividers/combiners

2.5-GHz 50-W multipoint amplifier for multibeam satellite communications. *Yamamoto, Kazuichi, +, MWSYM 89 Vol. 3 1281-1284*

MMIC GaAs FET magic-T for 1-18 GHz operation. *Tokumitsu, Tsuneo, +, MWSYM 89 Vol. 3 963-966*

MMIC GaAs FET magic-T for 1-18 GHz operation. *Tokumitsu, Tsuneo, +, T-MTT Dec 89 1985-1990*

UHF radiation effects; cf. Hyperthermia

UHF radiometry

solution method for inverse problems with measurement errors; application to medical microwave radiometry. *Mizushima, Shizuo, +, MWSYM 89 Vol. 1 171-174*

UHF resonator filters

satellite four-channel multiplexer using single-mode and dual-mode dielectric resonator filters at L-band. *Fiedziuszko, S. J., +, MWSYM 89 Vol. 2 683-686*

UHF resonators

microstrip resonator with dielectric protective layer radiating into human body. *Pribetich, J., +, MWSYM 89 Vol. 1 179-182*

UHF resonators; cf. Acoustic surface-wave resonators; Cavity resonators

UHF switches

L-band monolithic GaAs FET switch for high-power control components; SPST and limiter design. *Shifrin, Mitchell B., +, T-MTT Dec 89 2134-2141*

L-band monolithic GaAs FET switch for high-power control components; SPST and limiter designs. *Shifrin, M., +, MCS 89 51-56*

Ultrafast electronics

CAD large-signal model of picosecond FETs; measurement of step response. *Ouslimani, A., +, T-MTT Sep 89 1460-1465*

optoelectronic measurements of picosecond electrical pulse propagation in coplanar waveguide. *Paulter, Nicholas G., +, T-MTT Oct 89 1612-1619*

Ultrafast optics

millimeter-wave monolithic integrated circuit characterization using picosecond optoelectronic technique. *Hung, Hing-Loi A., +, T-MTT Aug 89 1223-1231*

Ultrafast optics; cf. Optical pulse measurements

V**Vacuum systems**

vacuum microelectronics using electron emitter arrays for RF and submillimeter-wave applications. *Gray, Henry F., CORNELL 89 Abstr I/5*

Varactor tuners

varactor-tuned planar W-band oscillator. *Buechler, J., +, MWSYM 89 Vol. 3 1205-1206*

Varactors

solid-state local oscillator sources for millimeter and submillimeter waves; recent European developments. *Räsänen, Antti V., MWSYM 89 Vol. 2 617-620*

Variational methods

approximate variational solution to step discontinuity in finline giving optimized lumped equivalent circuit components. *Olley, Chris A., +, T-MTT Jun 89 977-983*

dielectrically loaded multidepth corrugated waveguides; variational analysis. *Oksanen, Markku I., T-MTT Jan 89 191-197*

microstrip phase shifter on ferrite-dielectric substrate; comparison of variational and least-squares boundary residual methods. *Bollioli, Sylvain, +, T-MTT Apr 89 698-705*

- multiconductor coupled striplines with stratified anisotropic media; characterization using variational method. *Kitazawa, Toshihide*, *T-MTT Mar 89* 484-491
- partial variational approach for arbitrary discontinuities in planar dielectric waveguides. *Chung, Shyh-Jong*, *T-MTT Jan 89* 208-214
- planar transmission lines with anisotropic magnetic media; variational method for line inductances. *Kitazawa, Toshihide*, *T-MTT Nov 89* 1749-1754
- transversely anisotropic curved optical fibers; variational analysis of nonstandard eigenproblem. *Oksanen, Markku I.*, *T-MTT Jan 89* 51-62
- variational analysis of anisotropic nonhomogeneous dielectric waveguides; variation formulation using only two field components. *Chew, Weng Cho*, *T-MTT Apr 89* 661-668
- Very large-scale integration; cf. Wafer-scale integration**
- VHF antennas**
- annular phased-arrays for hyperthermia application; numerical simulation using finite-difference time-domain method. *Wang, Chang-Qing*, *T-MTT Jan 89* 118-126
- VHF devices**
- 3-chip GaAs double-conversion TV tuner system with 70-dB image rejection. *Ducourant, Thierry*, *MCS 89* 87-90
- 3-chip GaAs double-conversion TV tuner system with 70-dB image rejection. *Ducourant, Thierry*, *MWSYM 89 Vol. 1* 95-98
- VHF filters; cf. Acoustic surface-wave filters**
- Voltage-controlled oscillators**
- 2-GHz voltage-controlled oscillator; part of monolithic GaAs phase-locked loop chip set for space-vehicle applications. *Archer, John*, *T-MTT Apr 89* 790-792
- 25-42-GHz GaAs heterojunction bipolar transistor push-push VCOs with low phase noise. *Smith, D. M.*, *MWSYM 89 Vol. 2* 725-728
- fast-switching multioscillator assemblies using negative resistance quenching p-i-n diode technique. *Khanna, A. P. S.*, *MWSYM 89 Vol. 1* 515-518
- millimeter-wave lumped-element Gunn VCOs with ultrawideband (20 GHz) tuning. *Cohen, Leonard D.*, *MWSYM 89 Vol. 3* 1287-1290
- varactor-tuned planar W-band oscillator. *Buechler, J.*, *MWSYM 89 Vol. 3* 1205-1206
- Volterra series**
- modeling gate I/V characteristic of GaAs MESFET for Volterra-series analysis. *Maas, Stephen A.*, *T-MTT Jul 89* 1134-1136
- nonlinear analysis of microwave FET oscillators using Volterra series; amplitude and frequency determination. *Hu, Yongcai*, *T-MTT Nov 89* 1689-1693
- nonlinear microwave circuit analysis technique based on Volterra series; demonstration on MESFET device. *Krozer, V.*, *MWSYM 89 Vol. 1* 351-354
- Volume waves; cf. Magnetostatic volume waves**
- W**
- Wafer-scale integration**
- microwave T/R modules; wafer-scale integration on 3-inch GaAs wafers. *Driver, M. C.*, *CORNEL 89 Abstr 1/1*
- Waveguide antennas**
- power coupling from waveguide hyperthermia applicator into three-layered tissue model at 432 MHz and 144 MHz. *Nikita, Konstantina S.*, *T-MTT Nov 89* 1794-1801
- Waveguide antennas; cf. Coaxial aperture antennas; Slot antennas**
- Waveguide arrays**
- microstrip-loaded inset dielectric waveguide; application to strip-loaded antenna arrays with horizontal polarization. *Rozzi, T.*, *MWSYM 89 Vol. 3* 923-926
- Waveguide arrays; cf. Slot arrays**
- Waveguide bends**
- energy coupling between nonuniform curved dielectric waveguides; analysis using staircase approximation method. *Xu, Shanjia*, *T-MTT Apr 89* 686-690
- microstrip bend discontinuities; iterative moment method modeling and analysis. *Hill, A.*, *MWSYM 89 Vol. 3* 1143-1146
- multiport network model for evaluating radiation loss and spurious coupling between discontinuities in microstrip circuits. *Sabban, Albert*, *MWSYM 89 Vol. 2* 707-710
- quasi-TEM analysis for curved and straight planar multiconductor systems; capacitance and inductance matrices of concentric microstrip. *Diestel, Heinrich*, *T-MTT Apr 89* 748-753
- right-angle microstrip bend with and without miter; transmission properties using Green's theorem approach. *Broumas, Antonios D.*, *T-MTT May 89* 925-929
- Waveguide components; cf. Cavity resonators; Couplers; Ferrite circulators; Millimeter-wave oscillators; Phase shifters; Specific device**
- Waveguide discontinuities**
- accurate measurement technique for line properties, junction effects, and dielectric and magnetic material parameters. *Ender, A.*, *T-MTT Mar 89* 598-605
- channelized coplanar waveguide; discontinuities, junctions, and propagation characteristics. *Simons, Ramee N.*, *MWSYM 89 Vol. 3* 915-918
- combined finite-element and boundary-element methods for waveguide discontinuity analysis. *Wu, Ke Li*, *T-MTT Jun 89* 993-998
- computer-aided design of E-plane waveguide passive components. *Fan, Pong*, *T-MTT Feb 89* 335-339
- computer-aided design of evanescent-mode waveguide bandpass filter with non touching E-plane fins. *Kong, K. S.*, *MWSYM 89 Vol. 3* 1159-1162
- computer-aided design of evanescent-mode waveguide bandpass filter with nontouching E-plane fins. *Kong, Keon-Shik*, *T-MTT Dec 89* 1998-2004
- corrections to 'Multiple dielectric posts in a rectangular waveguide' (Aug 86 883-891). *Hsu, Chung-I G.*, *T-MTT Apr 89* 806
- corrections to 'Mutual impedance between probes in a waveguide' (Jan 88 53-60). *Wang, Bai-Suo*, *T-MTT May 89* 932
- cutoff frequency and bandwidth properties of dielectric-loaded T-septum waveguides. *Mansour, R. R.*, *T-MTT Oct 89* 1654-1657
- discontinuities in open dielectric slab waveguides; combined finite-element and boundary-element methods. *Hirayama, Koichi*, *T-MTT Apr 89* 761-768
- electromagnetic structures; wave-mode coupling equations at step discontinuity using planar-circuit theory. *Hsu, Jui-Pang*, *MWSYM 89 Vol. 3* 1135-1138
- equivalent circuits for dielectric posts in rectangular waveguide; combined finite-element and boundary-element methods formulation. *Ise, Kiyoshi*, *T-MTT Nov 89* 1823-1825
- infinite elements for analysis of open dielectric waveguides. *McDougall, Marc J.*, *T-MTT Nov 89* 1724-1731
- inhomogeneously filled T-septum waveguides; bandwidth characteristics. *Saha, Pradip Kumar*, *T-MTT Jun 89* 1021-1026
- longitudinal-to-transverse coupling slot in crossed waveguides; characterization and numerical results. *Rengarajan, Sembiam R.*, *T-MTT Aug 89* 1171-1177
- metal inserts in waveguides; field expansion approach using normal modes of hollow, unloaded waveguides. *Omar, Abbas S.*, *T-MTT Dec 89* 1924-1932
- metal inserts in waveguides; field expansion approach using normal modes of hollow unloaded waveguides. *Omar, A. S.*, *MWSYM 89 Vol. 1* 511-514
- microwave complex conductivity of square dielectric post in rectangular waveguide. *Yoshikado, Shinzo*, *T-MTT Jun 89* 984-992
- microwave power combination using bifurcated waveguide and reflecting plate. *Wang, Ming*, *T-MTT Mar 89* 612-617
- mode conversion at discontinuities in finite-width conductor-backed coplanar waveguide. *Jackson, Robert W.*, *T-MTT Oct 89* 1582-1589
- quasi-planar transmission lines; overview. *Itoh, Tatsuo*, *T-MTT Feb 89* 275-280
- radiating end effects of symmetric and asymmetric coplanar waveguide, using integral equations technique. *Drissi, M.*, *MWSYM 89 Vol. 2* 791-794
- reflection and transmission characteristics of noncoincident junction of rectangular dielectric waveguides. *Matsumura, Kazuhito*, *T-MTT Feb 89* 414-420
- reflection coefficient of waveguide with slightly uneven walls; first-order results. *Hill, David A.*, *T-MTT Jan 89* 244-252
- resonant frequencies in complex waveguide cavity; determination using S-matrix formulation. *Neelson, Jeff M.*, *T-MTT Aug 89* 1165-1170
- Seymour B. Cohn's contributions to microwave engineering; overview. *Mathaei, George L.*, *MWSYM 89 Vol. 2* 745-748, 757-758
- step discontinuities on planar dielectric waveguide containing gyrotropic layer. *Yun, Sang Won*, *T-MTT Mar 89* 492-496
- T-septum waveguide bandwidth from Rayleigh-Ritz-Galerkin formulation. *Pauplis, B. E.*, *T-MTT May 89* 919-922
- T-septum waveguide bandwidth properties; transmission-line modeling for separation of TE₁₀ and hybrid TE₂₀ modes. *German, Fred J.*, *T-MTT May 89* 917-919
- time-domain method of lines applied to planar guided-wave structures. *Nam, S.*, *T-MTT May 89* 897-901
- two cylindrical dielectric or metallic obstacles in rectangular waveguide; resonances and filter applications. *Gesche, Roland*, *T-MTT Jun 89* 962-968
- Vlasov mode converters; design and low-power testing. *Ruih, B. G.*, *MWSYM 89 Vol. 3* 1277-1280
- wide transverse inductive metal strips in rectangular waveguide; variational analysis of discontinuity susceptance. *Chu, Bright H.*, *T-MTT Jul 89* 1138-1141
- Waveguide discontinuities; cf. Loaded waveguides; Transmission-line discontinuities; Waveguide bends; Waveguide junctions; Waveguide mounts**
- Waveguide filters**
- 33 GHz and 94 GHz E-plane integrated bandpass filters using inductively coupled stopband sections. *Bornemann, Jens*, *MWSYM 89 Vol. 2* 599-602
- computer-aided design of E-plane waveguide passive components. *Fan, Pong*, *T-MTT Feb 89* 335-339
- computer-aided design of evanescent-mode waveguide bandpass filter with non touching E-plane fins. *Kong, K. S.*, *MWSYM 89 Vol. 3* 1159-1162
- computer-aided design of evanescent-mode waveguide bandpass filter with nontouching E-plane fins. *Kong, Keon-Shik*, *T-MTT Dec 89* 1998-2004
- evanescent-mode E-plane finned waveguide microwave and millimeter-wave bandpass filter design. *Bornemann, Jens*, *MWSYM 89 Vol. 2* 603-606
- filter characteristics of nonradiating dielectric (NRD) waveguide gratings. *Yang Ping*, *MWSYM 89 Vol. 1* 499-502
- filter design using in line dual-mode and triple-mode cavities and novel iris couplings. *Rosenberg, Uwe*, *T-MTT Dec 89* 2011-2019
- filter design using inline dual-mode and triple-mode cavities and novel iris couplings. *Rosenberg, Uwe*, *MWSYM 89 Vol. 3* 1155-1158
- general planar circuit simulation using 2-D transmission line matrix method. *So, Poman P. M.*, *T-MTT Dec 89* 1877-1884

intelligent alignment of waveguide filters using machine learning approach for tuning. *Mirzai, Ahmad R.*, +, *T-MTT Jan 89* 166-173
 magnetically tuned printed *E*-plane waveguide filters; analysis and tuning efficiency optimization. *Uher, Jaroslav*, +, *MWSYM 89 Vol. 3* 1273-1276
 two cylindrical dielectric or metallic obstacles in rectangular waveguide; resonances and filter applications. *Gesche, Roland*, +, *T-MTT Jun 89* 962-968

Waveguide junctions

channelized coplanar waveguide; discontinuities, junctions, and propagation characteristics. *Simons, Rainee N.*, +, *MWSYM 89 Vol. 3* 915-918
 comments on 'Numerical analysis of *H*-plane waveguide junctions by combination of finite and boundary elements' by K. Ise and M. Koshiba. *Leviatan, Yehuda*, +, *T-MTT Apr 89* 805-806 (Original paper, Sep 88 1343-1351)
 improvement to Lewin's theory for *E*-plane symmetric T-junctions. *Obata, Tsunehiro*, +, *T-MTT Mar 89* 624-627
 minimizing scattering at rectangular waveguide branchings by loading with pair of metallic or dielectric cylinders. *Gesche, Roland*, +, *T-MTT Oct 89* 1597-1602
 narrow-wall axial-slot-coupled T-junction between rectangular and circular waveguides; moment-method formulation of scattering matrix elements. *Das, B. N.*, +, *T-MTT Oct 89* 1590-1596
 Y-branch dielectric waveguide design with theoretical zero radiation loss, using serpentine-shaped taper. *Shigesawa, H.*, +, *MWSYM 89 Vol. 2* 795-798

Waveguide junctions; cf. Hybrid junctions; Waveguide discontinuities

Waveguide mounts

electromagnetic model of radial-resonator waveguide diode mount. *Bialkowski, Marek E.*, *T-MTT Oct 89* 1603-1611
 radial-resonator waveguide mounting structures; theoretical and experimental characterization. *Ko, Andrew*, +, *MWSYM 89 Vol. 3* 1191-1194

Waveguide obstacles; cf. Waveguide discontinuities

Waveguide transitions

centered-inclined waveguide slot coupler. *Rengarajan, Sembiam R.*, *T-MTT May 89* 884-889
 energy coupling between nonuniform curved dielectric waveguides; analysis using staircase approximation method. *Xu, Shan-jia*, +, *T-MTT Apr 89* 686-690
 equivalent network method for analyzing discontinuity properties of open dielectric waveguides. *Shigesawa, Hiroshi*, +, *T-MTT Jan 89* 3-14
 numerical solution of continuous waveguide transition problem; comparison of moment method, Runge-Kutta, and iterative numerical integration techniques. *Huting, William A.*, +, *T-MTT Nov 89* 1802-1808
 partial variational approach for arbitrary discontinuities in planar dielectric waveguides. *Chung, Shyh-Jong*, +, *T-MTT Jan 89* 208-214
 scattering matrix of ring-loaded corrugated waveguide mode converters. *Da Silva, Luiz C.*, *T-MTT Mar 89* 646-649
 spectral-domain analysis of *E*-plane waveguide-to-microstrip transitions. *Ho, T. Q.*, +, *T-MTT Feb 89* 388-392

tunable waveguide-to-microstrip transition for measuring millimeter-wave noise parameters of high-performance HEMTs at 300 K and 17 K. *Weinreb, S.*, +, *MWSYM 89 Vol. 2* 813-816
 W-band coplanar waveguide test fixture using finline tapers from rectangular to coplanar waveguides. *Bellantoni, J. V.*, +, *MWSYM 89 Vol. 3* 1203-1204

Waveguides

input impedance of hollow-probe-fed semi-infinite rectangular waveguide, using image theory. *Rollins, John M.*, +, *T-MTT Jul 89* 1144-1146
 lossy waveguide as problem in perturbation theory. *Anderson, James L.*, *T-MTT Nov 89* 1819-1821
 Waveguides; cf. Circular waveguides; Coaxial waveguides; Corrugated waveguides; Dielectric-loaded waveguides; Dielectric waveguides; Elliptical waveguides; Ferrite-loaded waveguides; Ferrite waveguides; Loaded waveguides; Plasma-loaded waveguides; Ridge waveguides

Wire antennas; cf. Antenna proximity factors

Wire communication cables; cf. Leaky-wave antennas

Wiring; cf. Integrated-circuit interconnections

Y

Yield optimization

circuit yield as criterion for choice among possible two-element or three-element lumped, lossless matching structures for specified bandwidth constraint. *Brakensiek, W.*, +, *MWSYM 89 Vol. 1* 431-434
 nonlinear circuits with statistically characterized microwave devices; yield optimization in frequency doubler and amplifier circuits. *Bandler, J. W.*, +, *MWSYM 89 Vol. 2* 649-652

Yield optimization; cf. Tolerance analysis/assignment

YIG films/devices

finite-element analysis of magnetostatic wave propagation in YIG film of finite dimensions with uniform and nonuniform bias fields. *Koshiba, Masanori*, +, *T-MTT Nov 89* 1768-1772
 insertion loss of electronically variable magnetostatic volume wave delay lines. *Bajpai, S. N.*, *T-MTT Oct 89* 1529-1535
 YIG-film magnetostatic wave resonators of microstrip type. *Tsutsumi, Makoto*, +, *MWSYM 89 Vol. 1* 149-152

YIG films/devices; cf. Electromagnetic propagation, magnetic media

YIG filters

YIG-film low-loss magnetostatic wave filter using parallel strip transducer. *Nishikawa, Toshio*, +, *MWSYM 89 Vol. 1* 153-156

YIG tuned oscillators

tunable 3.8-30-GHz YIG oscillator. *Odyniec, Michal*, *MWSYM 89 Vol. 1* 157-160

X-band and Ku-band YIG film tuned low-noise oscillators; design criteria. *Mizunuma, Y.*, +, *MWSYM 89 Vol. 1* 161-164