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This index covers all items — papers, correspondence, reviews, etc. — that appeared in this periodical during 1990, and items from previous years that were commented upon or corrected in 1990.

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.

A separate index covering all papers in the 1990 IEEE Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest and the 1990 IEEE MTT-S International Microwave Symposium Digest will appear in the January 1991 issue of these Transactions.

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 Comments by Lee, K. S. H., *T-MTT Oct 90* 1529
 Goldberg, David A., L. Jackson Laslett, and Robert A. Rimmer. Modes of elliptical waveguides: A correction; *T-MTT Nov 90* 1603-1608
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- Heinrich, Wolfgang. Corrections to 'High-frequency MESFET noise modeling including distributed effects' (May 89 836-842); *T-MTT Jan 90* 96-97
- Heinrich, Wolfgang. Full-wave analysis of conductor losses on MMIC transmission lines; *T-MTT Oct 90* 1468-1472
- Herczfeld, Peter R., Guest Ed. Introduction to special issue on applications of lightwave technology to microwave devices, circuits and systems; *T-MTT May 90* 465-466
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- Higgins, J. A., see Wang, N. L., *T-MTT Oct 90* 1381-1390
- Hiller, Gerald, see Caverly, Robert H., *T-MTT Dec 90* 1938-1943
- Hiraoka, Takahiro, Tsuneco Tokumitsu, and Masami Akaike. A miniaturized broad-band MMIC frequency doubler; *T-MTT Dec 90* 1932-1937
- Hirayama, Koichi, and Masanori Koshiba. Numerical analysis of arbitrarily shaped discontinuities between planar dielectric waveguides with different thicknesses; *T-MTT Mar 90* 260-264
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- Hjipieris, George, Richard J. Collier, and Eric J. Griffin. A millimeter-wave six-port reflectometer using dielectric waveguide; *T-MTT Jan 90* 54-61
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- Hung, Hing-Loi A., see Li, Ming G., *T-MTT Dec 90* 1924-1931
- I
- Iezekiel, Stavros, Christopher M. Snowden, and Michael J. Howes. Nonlinear circuit analysis of harmonic and intermodulation distortions in laser diodes under microwave direct modulation; *T-MTT Dec 90* 1906-1915
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- Jacomb-Hood, Anthony W., Michael S. Booth, D. Houston, and T. Alcorn. A novel aperture isolation circuit for use in phased array systems; *T-MTT Dec 90* 1994-2000
- Jain, Nitin, and Ronald J. Gutmann. Modeling and design of GaAs MESFET control devices for broad-band applications; *T-MTT Feb 90* 109-117
- Janaswamy, Ramakrishna. Even-mode characteristics of the bilateral slotline; *T-MTT Jun 90* 760-765
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- Judah, Sunil R., and Andrew S. Wright. A dual six-port automatic network analyzer incorporating a biphasic-bimodulation element; *T-MTT Mar 90* 238-244
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- Jung, Wen-Lin, and Jingshown Wu. Stable broad-band microwave amplifier design; *T-MTT Aug 90* 1079-1085
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- Kakogiannos, Nikolaos B., and John A. Roumeliotis. Electromagnetic scattering from an infinite elliptic metallic cylinder coated by a circular dielectric one; *T-MTT Nov 90* 1660-1666
- Kamada, Hiromi, see Miura, Akira, *T-MTT Dec 90* 1980-1985
- Kanellopoulos, Vassilios N., and J. P. Webb. A complete *E*-plane analysis of waveguide junctions using the finite element method; *T-MTT Mar 90* 290-295
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- Kasten, Jefferey S., Michael B. Steer, and Real Pomerleau. Enhanced through-reflect-line characterization of two-port measuring systems using free-space capacitance calculation (Short p.); *T-MTT Feb 90* 215-217
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- Kato, Haruhiko, Takashi Ohira, Fuminori Ishitsuka, Tsuneco Tokumitsu, Yuichi Kihata, and Nobuaki Imai. A 30 GHz MMIC receiver for satellite transponders; *T-MTT Jul 90* 896-903
- Katsura, Kohsuke, see Takachio, Noboru, *T-MTT Dec 90* 1900-1905
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- Khebir, Ahmed, Ammar B. Kouki, and Raj Mittra. Asymptotic boundary conditions for finite element analysis of three-dimensional transmission line discontinuities; *T-MTT Oct 90* 1427-1432
- Khebir, Ahmed, Ammar B. Kouki, and Raj Mittra. Higher order asymptotic boundary condition for the finite element modeling of two-dimensional transmission line structures; *T-MTT Oct 90* 1433-1438
- Kiang, Jean-Fu, Sami M. Ali, and Jin Au Kong. Integral equation solution to the guidance and leakage properties of coupled dielectric strip waveguides; *T-MTT Feb 90* 193-203
- Kidner, C., I. Mehdi, J. R. East, and G. I. Haddad. Power and stability limitations of resonant tunneling diodes; *T-MTT Jul 90* 864-872
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- Kikuchi, Hiroyuki, see Takachio, Noboru, *T-MTT Dec 90* 1900-1905
- Kikuchi, Hiroyuki, Yuuzou Miyagawa, and Tadakatsu Kimura. Broad-band GaAs monolithic equalizing amplifiers for multigigabit-per-second optical receivers; *T-MTT Dec 90* 1916-1923
- Kim, Ihn S., and Wolfgang J. R. Hoefer. A local mesh refinement algorithm for the time domain-finite difference method using Maxwell's curl equations (Short p.); *T-MTT Jun 90* 812-815
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- King, Ronald W. P. Lateral electromagnetic waves and pulses on open microstrip; *T-MTT Jan 90* 38-47
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- Kiziloglu, Kürsad, see Matthaei, George L., *T-MTT Aug 90* 1031-1036
- Klein, Claude A. Microwave shielding effectiveness of EC-coated dielectric slabs (Short p.); *T-MTT Mar 90* 321-324
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- Ko, Andrew, see Bates, Bevan D., *T-MTT Aug 90* 1037-1045
- Ko, Youngho, Norinobu Yoshida, and Ichiro Fukai. Three-dimensional analysis of a cylindrical waveguide converter for circular polarization by the spatial network method; *T-MTT Jul 90* 912-918
- Kobayashi, Kunikatsu, see Sato, Risaburo, *T-MTT Aug 90* 1114-1122
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- Kolk, Evert W., Nico H. G. Bakken, and Hans Blok. Domain integral equation analysis of integrated optical channel and ridge waveguides in stratified media; *T-MTT Jan 90* 78-85
- Komlák, James J. Design and performance of an octave band 11 W power amplifier MMIC; *T-MTT Dec 90* 2001-2006
- Kompa, Günter, Michael Schlechtweg, and Friedbert van Raay. Precisely calibrated coaxial-to-microstrip transitions yield improved performance in GaAs FET characterization; *T-MTT Jan 90* 62-68
- Kompa, Günter, and Friedbert van Raay. Error-corrected large-signal waveform measurement system combining network analyzer and sampling oscilloscope capabilities; *T-MTT Apr 90* 358-365
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- Kong, Jin Au, see Sheen, David M., *T-MTT Jul 90* 849-857
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- Konopka, Janusz, Roman Sobolewski, Grzegorz Jung, Witold Kula, Piotr Gierlowski, Anna Konopka, and Stanislaw J. Lewandowski. Microwave detectors based on granular high- T_c thin films; *T-MTT Feb 90* 160-165
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- Krempasky, Jerome J. Analysis of TEM mode on a curved coaxial transmission line; *T-MTT Jun 90* 739-747
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- Lampariello, Paolo, Fabrizio Frezza, and Arthur A. Oliner. The transition region between bound-wave and leaky-wave ranges for a partially dielectric-loaded open guiding structure; *T-MTT Dec 90* 1831-1836
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- Lawson, Wesley G. Theoretical evaluation of nonlinear tapers for a high-power gyrotron; *T-MTT Nov 90* 1617-1622
- Lee, Chi H. Picosecond optics and microwave technology; *T-MTT May 90* 596-607
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- Lee, Chi H., see Li, Ming G., *T-MTT Dec 90* 1924-1931
- Lee, K. S. H. Comments, on 'Electric polarizability and magnetic susceptibility of small holes in a thin screen' by R. L. Gluckstern et al.; *T-MTT Oct 90* 1529 (Original paper, Feb 90 186-192)
- Lee, Tien-pei, see Way, Winston I., *T-MTT May 90* 534-545
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- Lewandowski, Stanislaw J., see Konopka, Janusz, *T-MTT Feb 90* 160-165
- Li, G., see Riazat, M., *T-MTT Feb 90* 212-215
- Li, Ming G., Eve A. Chauchard, Chi H. Lee, and Hing-Loi A. Hung. Intermixing optical and microwave signals in GaAs microstrip circuits for phase-locking applications; *T-MTT Dec 90* 1924-1931
- Li, Ming-Yi, see Chang, Kai, *T-MTT Oct 90* 1455-1460
- Li, Rui, see Gluckstern, Robert L., *T-MTT Feb 90* 186-192
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- Ling, Chen, see Shen, Ying, *T-MTT Jun 90* 785-787
- Ling, Hao, see Moore, John, *T-MTT Apr 90* 405-410

- Lipson, Jan, L. Chainulu Upadhyayula, Sun-Yuan Huang, Charles B. Roxlo, E. J. Flynn, Paul M. Nitzsche, Carl J. McGrath, Gerald L. Fenderson, and Mark S. Schaefer. High-fidelity lightwave transmission of multiple AM-VSB NTSC signals; *T-MTT May 90* 483-493
- Livernols, Thomas G., and Pisti B. Katchi. Characteristic impedance and electromagnetic field distribution in metal-insulator-semiconductor microstrip (Short p.); *T-MTT Nov 90* 1740-1743
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- Lowery, G., see Rosen, A., *T-MTT Jan 90* 90-93
- Lu, I. Tai, and R. L. Olesen. Analysis of transmission line structures using a new image-mode Green's function (Short p.); *T-MTT Jun 90* 782-785
- Lumori, Mikaya L. D., J. Bach Andersen, Mohan K. Gopal, and Thomas C. Cetas. Gaussian beam representation of aperture fields in layered, lossy media: Simulation and experiment; *T-MTT Nov 90* 1623-1630
- Lunsford, Philip J., II, George W. Rhyne, and Michael B. Steer. Frequency-domain bivariate generalized power series analysis of nonlinear analog circuits (Short p.); *T-MTT Jun 90* 815-818

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- Maas, Stephen A., and David Neilson. Modeling MESFETs for intermodulation analysis of mixers and amplifiers; *T-MTT Dec 90* 1964-1971
- Maas, Stephen A., Ed. Editor's note; *T-MTT Dec 90* 1775
- MacPhie, R. H., M. Opie, and C. R. Ries. Input impedance of a coaxial line probe feeding a circular waveguide in the TM₀₁ mode (Short p.); *T-MTT Mar 90* 334-337
- MacPhie, Robert H., see Wade, J. Douglas, *T-MTT Apr 90* 373-378
- Mahmoud, Samir F. Modal analysis of open groove waveguide (Short p.); *T-MTT Apr 90* 437-439
- Mahon, John P., and Robert S. Elliott. Tapered transmission lines with a controlled ripple response; *T-MTT Oct 90* 1415-1420
- Majidi-Ahy, Reza, see Riazat, Majid, *T-MTT Mar 90* 245-251
- Majidi-Ahy, Reza, Clifford K. Nishimoto, Majid Riazat, Michael Glenn, S. Silverman, Shang-Lin Weng, Yi-Ching Pao, George A. Zdasiuk, Steve G. Bandy, and Zoilo C. H. Tan. 5-100 GHz InP coplanar waveguide MMIC distributed amplifier; *T-MTT Dec 90* 1986-1993
- Mamouni, A., see Bocquet, B., *T-MTT Jun 90* 791-793
- Manela, Moshe, see Sarkar, Tapan K., *T-MTT Nov 90* 1609-1616
- Manet, P., see Dalle, C., *T-MTT Aug 90* 1132-1136
- Manheimer, Wallace M., see Burke, John M., *T-MTT Oct 90* 1503-1509
- Maoz, Barak. A novel, linear voltage variable MMIC attenuator; *T-MTT Nov 90* 1675-1683
- Marchionna, Emilio, see Rozzi, Tullio, *T-MTT Aug 90* 1069-1078
- Maricevic, Zoran A., see Djordjevic, Antonije R., *T-MTT Oct 90* 1407-1414
- Marks, Roger. Comments, with author's reply, on 'Improved calibration and measurement of the scattering parameters of microwave integrated circuits' by R. R. Pantoja et al.; *T-MTT Apr 90* 453-454 (Original paper, Nov 89 1675-1680)
- Marqués, Ricardo, see Horno, Manuel, *T-MTT Aug 90* 1059-1068
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- Matloubian, M., H. Fetterman, M. Kim, A. Oki, J. Camou, S. Moss, and D. Smith. Picosecond optoelectronic measurement of S parameters and optical response of an AlGaAs/GaAs HBT (Short p.); *T-MTT May 90* 683-686
- Matsumura, Hajime. Analysis of a microwave power amplifier using a combiner/divider with circular cavities; *T-MTT Jul 90* 928-933
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- McDermott, M. Gary, Colin N. Sweeney, Michael Benedek, John J. Borelli, Geoffrey Dawe, and Lamberto Raffaelli. Integration of high-Q GaAs varactor diodes and 0.25 μm GaAs MESFETs for multifunction millimeter-wave monolithic circuit applications; *T-MTT Sep 90* 1183-1190
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- McQuiddy, D. N., Jr., *Guest Ed.*, and Vladimir Sokolov, *Guest Ed.* Guest Editors' overview (Special issue intro.); *T-MTT Dec 90* 1776-1777
- Mead, James B., and Robert E. McIntosh. A 225 GHz polarimetric radar; *T-MTT Sep 90* 1252-1258
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- Mesa, Francisco L., *see* Horno, Manuel, *T-MTT Aug 90* 1059-1068
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- Mittra, Raj, *see* Khebir, Ahmed, *T-MTT Oct 90* 1433-1438
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- Miura, Akira, Tsuyoshi Yakihara, Satoru Uchida, Sadaharu Oka, Shinji Kobayashi, Hiromi Kamada, and Machio Dobashi. Monolithic sampling head IC; *T-MTT Dec 90* 1980-1985
- Miwa, Tetsuji, *see* Eda, Kazuo, *T-MTT Dec 90* 1949-1956
- Miyagawa, Yuuzou, *see* Kikuchi, Hiroyuki, *T-MTT Dec 90* 1916-1923
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- Mrozowski, Michal, and Michal Okoniewski. Comments, with reply, on 'Computation of cutoff wavenumbers of TE and TM modes in waveguides of arbitrary cross sections using a surface integral formulation' by M. Swaminathan et al.; *T-MTT Nov 90* 1761-1762 (Original paper, Feb 90 154-159)
- Muggli, P., M. Q. Tran, T. M. Tran, H.-G. Mathews, G. Agosti, S. Alberti, and A. Perrenoud. Effect of power reflection on the operation of a low-Q 8 GHz gyrotron; *T-MTT Sep 90* 1345-1351
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- Ni, David C., Harold R. Fetterman, and Wilbert Chew. Millimeter-wave generation and characterization of a GaAs FET by optical mixing; *T-MTT May 90* 608-614
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- Nishimoto, C., *see* Yuen, C., *T-MTT Dec 90* 2016-2017
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- Obrzut, J., and P. F. Goldsmith. Flexible circular waveguides at millimeter wavelengths from metallized Teflon tubing (Short p.); *T-MTT Mar 90* 324-327
- Offermanns, Stephan. Resonance characteristics of a cavity-operated electrodeless high-pressure microwave discharge system; *T-MTT Jul 90* 904-911
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- Ohira, Takashi, *see* Kato, Haruhiko, *T-MTT Jul 90* 896-903
- Ohira, Takashi, Masahiro Muraguchi, Tetsuo Hirota, Kazuo Osafune, and Masayuki Ino. Dual-chip GaAs monolithic integration Ku-band phase-locked-loop microwave synthesizer; *T-MTT Sep 90* 1204-1209
- Oka, Sadaharu, *see* Miura, Akira, *T-MTT Dec 90* 1980-1985
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- Ortuño, M., *see* García-Molina, R., *T-MTT Apr 90* 445-448
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- Page, M. J., and S. R. Judah. A flexible design procedure for microstrip planar disk 3 dB quadrature hybrids (Short p.); *T-MTT Nov 90* 1733-1736
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- Pandharipande, V. M., *see* Jogiraju, G. V., *T-MTT Apr 90* 440-443
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- Pao, Yi-Ching, *see* Majidi-Ahy, Reza, *T-MTT Dec 90* 1986-1993
- Papathodorou, Stilianos, Roger F. Harrington, and Joseph R. Mautz. The equivalent circuit of a microstrip crossover in a dielectric substrate; *T-MTT Feb 90* 135-140
- Papathodorou, Stilianos, Joseph R. Mautz, and Roger F. Harrington. Full-wave analysis of a strip crossover; *T-MTT Oct 90* 1439-1448
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- Phatak, D. S., and A. P. Defonzo. Dispersion characteristics of optically excited coplanar striplines: Pulse propagation; *T-MTT May 90* 654-661
- Phatak, Dhananjay S., Nirod K. Das, and A. P. Defonzo. Dispersion characteristics of optically excited coplanar striplines: Comprehensive full-wave analysis; *T-MTT Nov 90* 1719-1730
- Pichot, Christian, *see* Joachimowicz, Nadine, *T-MTT Feb 90* 178-185
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- Naber, John F., *see* Bahl, Inder J., *T-MTT Sep 90* 1232-1241
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Integrated-circuit packaging

packaging of optoelectronic components for microwave transmission systems. *Schlafer, John*, +, *T-MTT May 90* 518-523

Integrated circuits; cf. Integrated optoelectronics; Microwave integrated circuits; Millimeter-wave integrated circuits; MMICs; Very large-scale integration

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Integration (math.); cf. Numerical integration

Interconnected circuits; cf. Cascade circuits; Diakoptics

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Intermodulation distortion

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Inverse problems; cf. Electromagnetic scattering, inverse problem

Ionization; cf. Gas discharges

Isolators

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Isolators; cf. Optical isolators

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Junction lasers; cf. Gallium materials/lasers; Semiconductor lasers

Junctions; cf. Hybrid junctions; Multiport circuits; Waveguide junctions

K

Klystrons

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Large-scale systems; cf. Diakoptics; Very large-scale integration

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Laser modulation; cf. Optical modulation/demodulation

Laser noise

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Leaky waves

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Magnetostatic surface waves

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Magnetostatic volume waves

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- periodic planar Gunn diode power-combining oscillator using two to six diodes. *Mortazawi, A.*, +, *T-MTT Jan 90* 86-87
- Microwave radiation effects; cf. Biomedical radiation applications, electromagnetic**
- Microwave radiometry**
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- Microwave receivers; cf. MMIC receivers**
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- Microwave switches**
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- Microwave switches; cf. Finline switches**
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- applications of lightwave technology to microwave devices, circuits and systems (special issue). *T-MTT May 90* 465-688

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- Millimeter-wave frequency conversion; cf. Millimeter-wave mixers; Schottky diode frequency converters**
- Millimeter-wave generation; cf. Millimeter-wave oscillators**
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- MMIC transmitters**
- multifunction small-signal chip set for C -band transmit/receive modules. *Willems, David A., +, T-MTT Dec 90 2007-2015*
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- 1990 Symposium issue (special issue). *T-MTT Dec 90 1776-2017*
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- rigorous, multimode equivalent network representation of inductive discontinuities such as windows and obstacles. *Guglielmi, Marco*, +, *T-MTT Nov 90* 1651-1659
- Multimode transmission lines; cf. Coupled transmission lines**
- Multimode waveguides**
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- Multiplexing**
- multiplexing and double band filtering using common-multimode cavities; cylindrical diplexer and filter examples. *Rosenberg, Uwe*, *T-MTT Dec 90* 1862-1871
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- Multipoint circuits; cf. Scattering matrices; Scattering parameters measurement; Two-port circuits; Waveguide junctions**
- Multivariable circuits**
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Negative-resistance circuits

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Newton's method

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Noise; cf. Amplifier noise; Laser noise; Mixer noise; Semiconductor device noise

Nonhomogeneous media; cf. Electromagnetic propagation, nonhomogeneous media; Electromagnetic scattering, nonhomogeneous media; Optical propagation, nonhomogeneous media

Nonhomogeneously loaded waveguides

transition region between bound-wave and leaky-wave ranges for partially dielectric-loaded open guiding structure. *Lampariello, Paolo*, +, *T-MTT Dec 90* 1831-1836

Nonlinear circuits

- combined FD-TD/transmission-line matrix method incorporating nonlinear device model. *Voelker, Robert H.*, +, *T-MTT Mar 90* 302-312
- FAST (feasible adjoint sensitivity technique) gradient-based yield optimization of nonlinear microwave circuits; FET frequency doubler example. *Bandler, John W.*, +, *T-MTT Nov 90* 1701-1710
- frequency-domain bivariate generalized power series analysis of nonlinear analog circuits; application to diode ring mixer. *Lunsford, Philip J., II*, +, *T-MTT Jun 90* 815-818
- frequency-domain simulation of nonlinear microwave circuits using arithmetic operator technique; application to MESFET amplifier. *Chang, Chao-Ren*, +, *T-MTT Aug 90* 1139-1143
- harmonic balance and frequency-domain simulation of nonlinear microwave circuits using block Newton method; MESFET amplifier simulation example. *Chang, Chao-Ren*, +, *T-MTT Apr 90* 431-434
- Jacobian calculation using multidimensional fast Fourier transform in harmonic balance analysis of nonlinear circuits. *Heron, Patrick L.*, +, *T-MTT Apr 90* 429-431

Nonlinear distortion

- distortion characteristics of optical directional coupler modulators. *Halemane, T. R.*, +, *T-MTT May 90* 669-673

Nonlinear distortion; cf. Harmonic distortion; Intermodulation distortion**Nonlinear systems**

- error-corrected large-signal waveform measurement system combining network analyzer and sampling oscilloscope capabilities. *Kompa, Günter*, +, *T-MTT Apr 90* 358-365

Nonlinearities

- nonlinear circuit analysis of harmonic and intermodulation distortions in laser diodes under microwave direct modulation. *Iezekiel, Stavros*, +, *T-MTT Dec 90* 1906-1915
- tapered multiple microstrip lines for VLSI circuits containing nonlinear loads; taper approximation and analysis of digital pulse propagation. *Mehalic, Mark A.*, +, *T-MTT Nov 90* 1559-1567

Numerical integration

- improved accuracy in determining modes of elliptical waveguides using wave equations solved by numerical integration. *Goldberg, David A.*, +, *T-MTT Nov 90* 1603-1608

Numerical integration; cf. Boundary-element methods; Discrete Fourier transforms; Integral equations**Numerical methods; cf. Finite-difference methods; Finite-element methods; Laplace equations; Mode-matching methods; Moment methods; Newton's method; Optimization methods; Variational methods****O****Operator theory**

- frequency-domain simulation of nonlinear microwave circuits using arithmetic operator technique; application to MESFET amplifier. *Chang, Chao-Ren*, +, *T-MTT Aug 90* 1139-1143

Optical communication; cf. Optical fiber communication**Optical components**

- absorbing boundary conditions for finite-element analysis of planar devices. *Webb, J. P.*, *T-MTT Sep 90* 1328-1332
- direct optical control of microwave semiconductor devices. *Seeds, Alwyn J.*, +, *T-MTT May 90* 577-585

Optical couplers; cf. Optical directional couplers; Optical planar waveguide couplers**Optical detectors; cf. Optical modulation/demodulation****Optical directional couplers**

- distortion characteristics of optical directional coupler modulators. *Halemane, T. R.*, +, *T-MTT May 90* 669-673

Optical fiber communication

- analog optical-fiber links; analytic and experimental comparison of direct versus external modulation. *Cox, Charles H., III*, +, *T-MTT May 90* 501-509
- applications of traveling-wave laser amplifiers in subcarrier-multiplexed lightwave systems for video signal distribution. *Way, Winston I.*, +, *T-MTT May 90* 534-545
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- FDM microwave and baseband digital optical-fiber link for phased array antennas. *Heim, Peter J.*, +, *T-MTT May 90* 494-500
- X-band RF fiber-optic links with reduced insertion loss. *Blauvelt, H.*, +, *T-MTT May 90* 662-664

Optical fiber delay lines

- long microwave delay-line fiber-optic link for radar testing. *Newberg, I. L.*, +, *T-MTT May 90* 664-666
- optical-fiber Fabry-Perot cavities and recirculating delay lines as tunable microwave filters. *Chen, Chin-Lin*, *T-MTT May 90* 647-653

Optical fiber receivers

- 10 Gb/s optical heterodyne detection experiment using 23-GHz bandwidth-balanced receiver made of solder-bump flip-chip

- interconnection of p-i-n diodes and distributed amplifier. *Takachio, Noboru*, +, *T-MTT Dec 90* 1900-1905

- broadband GaAs monolithic equalizing amplifiers for multigabit-per-second optical receivers. *Kikuchi, Hiroyuki*, +, *T-MTT Dec 90* 1916-1923

Optical fiber subscriber networks

- high-fidelity lightwave transmission of multiple AM-VSB NTSC TV signals transmission; progress report. *Lipson, Jan*, +, *T-MTT May 90* 483-493

- lightwave-subcarrier CATV transmission systems. *Darcie, Thomas E.*, +, *T-MTT May 90* 524-533

Optical frequency conversion; cf. Optical mixers**Optical isolators**

- optoelectronic isolator for microwave applications. *Huff, David B.*, +, *T-MTT May 90* 571-576

Optical materials/devices; cf. Ultrafast optics**Optical measurements**

- optical test set for microwave fiber-optic network analysis. *Curtis, David D.*, +, *T-MTT May 90* 552-559

Optical measurements; cf. Optical pulse measurements**Optical mixers**

- millimeter-wave generation and characterization of GaAs FET by optical mixing. *Ni, David C.*, +, *T-MTT May 90* 608-614

Optical modulation/demodulation

- optical generation, distribution, and control of microwaves using laser heterodyning. *Simonis, George J.*, +, *T-MTT May 90* 667-669

Optical modulation/demodulation; cf. Electrooptic modulation; Optical fiber receivers; Optical mixers**Optical planar waveguide couplers**

- losses of tapered dielectric slab waveguides with axially varying cladding refraction index. *Scarmozzino, Robert*, +, *T-MTT Feb 90* 141-147

Optical planar waveguides

- numerical analysis of arbitrarily shaped discontinuities between planar dielectric waveguides with different thicknesses. *Hirayama, Koichi*, +, *T-MTT Mar 90* 260-264

Optical propagation; cf. Optical transient propagation**Optical propagation, nonhomogeneous media**

- domain integral equation analysis of integrated optical channel and ridge waveguides in stratified media. *Kolk, Evert W.*, +, *T-MTT Jan 90* 78-85

Optical propagation, nonlinear media; cf. Optical mixers**Optical pulse measurements**

- picosecond optoelectronic measurement of *S* parameters and optical response of AlGaAs/GaAs HBT. *Maitoubian, M.*, +, *T-MTT May 90* 683-686

Optical pulse shaping

- arbitrary pulse shape synthesis using stripline nonuniform transmission lines. *Burkhardt, Scott C.*, +, *T-MTT Oct 90* 1514-1518

Optical radiometry; cf. Infrared radiometry**Optical receivers**

- tuned optical receivers for microwave subcarrier multiplexed lightwave systems; noise performance improvement. *Alameh, Kamal E.*, +, *T-MTT May 90* 546-551

Optical resonators; cf. Fabry-Perot resonators**Optical signal detection; cf. Optical fiber receivers****Optical strip waveguides**

- domain integral equation analysis of integrated optical channel and ridge waveguides in stratified media. *Kolk, Evert W.*, +, *T-MTT Jan 90* 78-85
- finite-difference method without spurious solutions for hybrid-mode analysis of diffused dielectric channel waveguides. *Schulz, Norbert*, +, *T-MTT Jun 90* 722-729

Optical switches; cf. Electrooptic switches; Optical directional couplers**Optical transient propagation**

- broadband microwave measurements with transient radiation from optoelectronically pulsed antennas. *Arjavalingam, G.*, +, *T-MTT May 90* 615-621

Optical waveguide communication; cf. Optical fiber communication**Optical waveguides; cf. Optical planar waveguides; Optical strip waveguides****Optics; cf. Ultrafast optics****Optimization methods**

- extracting parameters of equivalent circuits of microwave HBTs from *S*-parameter measurements using tree annealing. *Bilbro, Griff L.*, +, *T-MTT Nov 90* 1711-1718

- optimizing planar waveguide devices using finite-element method. *Garcia, Pablo*, +, *T-MTT Jan 90* 48-53

- stable broadband microwave amplifier design using modified real-frequency technique; formulation as optimization problem. *Jung, Wen-Lin*, +, *T-MTT Aug 90* 1079-1085

Optimization methods; cf. Gradient methods; Least-squares methods**Oscillator noise; cf. Laser noise****Oscillator stability**

- optical synchronization of millimeter-wave oscillators for distributed architectures. *Daryoush, Afshin S.*, *T-MTT May 90* 467-476

Oscillators; cf. Gunn device oscillators; Microwave oscillators; Millimeter-wave oscillators; Phase-locked oscillators; Submillimeter-wave oscillators

Oscilloscopes

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Permeability measurement

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Perturbation methods

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Phase shifters; cf. Ferrite phase shifters; Microstrip phase shifters; Millimeter-wave phase shifters; Slotline phase shifters

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interstitial phased array for hyperthermia cancer treatment at 915 MHz. *Zhang, Yang*, +, *T-MTT Feb 90* 217-221

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Signal sampling/reconstruction

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Tunnel devices/effects; cf. Superconductor-insulator-superconductor

Tunnel diodes

power and stability limitations of resonant tunneling diodes; double-barrier diode. *Kidner, C., +, T-MTT Jul 90 864-872*

TV; cf. Cable TV

TV broadcasting

high-fidelity lightwave transmission of multiple AM-VSB NTSC TV signals transmission; progress report. *Lipson, Jan, +, T-MTT May 90 483-493*

Two-port circuits

characterizing microwave test fixtures describable as two-port networks for purpose of determining S parameters of devices embedded in fixture. *Williams, Dylan, T-MTT Jun 90 787-791*
 comments on 'A unified mathematical approach to two-port calibration techniques and some applications' by R. A. Soares et al.. *Eul, H., T-MTT Aug 90 1144-1145* (Original paper, Nov. 89 1669-1674)
 design procedure for four-port microstrip planar disk 3-dB quadrature hybrids using matched two-ports at each coupling port. *Page, M. J., +, T-MTT Nov 90 1733-1736*
 through-reflect-line characterization of two-port measuring systems using free-space capacitance calculation. *Kasten, Jefferey S., +, T-MTT Feb 90 215-217*

U

UHF antennas

phased interstitial antenna array for hyperthermia; calculated and measured temperature distribution at 915 MHz. *Zhang, Yang, +, T-MTT Jan 90 69-77*

UHF FET amplifiers

2-4-GHz monolithic lateral p-i-n photodetector and MESFET amplifier on GaAs-on-Si. *Subbarao, Saligrama N., +, T-MTT Sep 90 1199-1203*

Ultrafast optics

applying picosecond optics to microwave technology. *Lee, Chi H., T-MTT May 90 596-607*
 electromagnetic and transport considerations in subpicosecond photoconductive switch modeling. *El-Ghazaly, Samir M., +, T-MTT May 90 629-637*
 picosecond optoelectronic measurement of S parameters and optical response of AlGaAs/GaAs HBT. *Matloubian, M., +, T-MTT May 90 683-686*

V

Varactors

integration of high- Q GaAs varactor diodes and 0.25- μ m GaAs MESFETs for multifunction millimeter-wave monolithic circuit applications. *McDermott, M. Gary, +, T-MTT Sep 90 1183-1190*

Variational methods

capacitance computation of elliptic microstrip disks in biaxial anisotropic multilayered substrates, using spectral-domain variational techniques. *Boix, Rafael R., +, T-MTT Jan 90 30-37*
 dielectric-loaded waveguides; analysis using modified variation-iteration method. *Yu, Cheng-Cheh, +, T-MTT Sep 90 1333-1338*
 full-wave analysis of coplanar waveguides using variational conformal mapping technique. *Chang, Chia-Nan, +, T-MTT Sep 90 1339-1344*
 H -plane slot-coupled T-junction; rigorous variational formulation. *Das, B. N., +, T-MTT Jan 90 93-95*
 hybrid modes, substrate leakage, and losses of slotline at millimeter-wave and microwave frequencies. *Rozzi, Tullio, +, T-MTT Aug 90 1069-1078*
 spectral and variational analysis of generalized cylindrical and elliptical strip and microstrip lines. *Medina, Francisco, +, T-MTT Sep 90 1287-1293*

Very large-scale integration

isolation effects in single- and dual-plane VLSI interconnects. *Carin, Lawrence, +, T-MTT Apr 90 396-404*

Volume waves; cf. Magnetostatic volume waves

W

Waveguide arrays

infinite array of rectangular dielectric waveguides; propagation characteristics using integral equation analysis. *Yang, Hung-Yu*, +, *T-MTT Jul 90* 873-880

Waveguide bends

90° microstrip bend with arbitrary miter; characterization using FDTD method. *Moore, John*, +, *T-MTT Apr 90* 405-410
dispersion characteristics of curved microstrip transmission lines. *Roy, Jibendu Sekhar*, +, *T-MTT Sep 90* 1366-1370
machining 90° waveguide twists from Al blocks. *Lenzing, H. F.*, +, *T-MTT Jul 90* 942-944
perturbation analysis and modeling of curved microstrip bends. *Weisshaar, Andreas*, +, *T-MTT Oct 90* 1449-1454
TEM mode analysis of curved coaxial transmission line using perturbation technique. *Krempasky, Jerome J.*, *T-MTT Jun 90* 739-747

Waveguide communication; cf. Optical fiber communication

Waveguide components

moment method solution for slotted waveguide directional coupler characteristics. *Yee, Hung-Yuet*, *T-MTT Oct 90* 1497-1502

Waveguide components; cf. Specific device or application

Waveguide discontinuities

3-D finite-element solution for scattering from dielectric obstacles in rectangular waveguide. *Ise, Kiyoshi*, +, *T-MTT Sep 90* 1352-1359
broadband simultaneous measurement of complex permittivity and permeability using coaxial discontinuity. *Belhadj-Tahar, Nour-Eddine*, +, *T-MTT Jan 90* 1-7
class of waveguide discontinuities characterized using modified TEM_x. *Bornemann, Jens*, +, *T-MTT Dec 90* 1816-1822
equivalent capacitances of coplanar waveguide discontinuities and interdigitated capacitors using 3-D finite-difference method. *Naghd, Mohsen*, +, *T-MTT Dec 90* 1808-1815
N-port microstrip planar disk device with arbitrarily located short circuit post of arbitrary radius. *Judah, Sunil R.*, +, *T-MTT Dec 90* 1823-1830
noninvasive electrical characterization of materials at microwave frequencies using open-ended coaxial line; modeling and calibration of automated network analyzer. *Misra, Devendra*, +, *T-MTT Jan 90* 8-14
optimum field theory design of broadband E-plane branch guide phase shifters and 180° couplers. *Arndt, Fritz*, +, *T-MTT Dec 90* 1854-1861
reflection and transmission coefficients of rectangular dielectric waveguide discontinuity with air gap. *Tomabechi, Yoshiro*, +, *T-MTT Jun 90* 797-799
resonance method for evaluating impedances of equivalent network for dielectric posts in rectangular waveguide. *Auda, Hesham A.*, +, *T-MTT Nov 90* 1595-1602
rigorous, multimode equivalent network representation of inductive discontinuities such as windows and obstacles. *Guglielmi, Marco*, +, *T-MTT Nov 90* 1651-1659
shunt posts in microstrip transmission lines; analysis using planar waveguide model. *Finch, Kevin L.*, +, *T-MTT Nov 90* 1585-1594

Waveguide discontinuities; cf. Loaded waveguides; Waveguide junctions; Waveguide mounts; Waveguide transitions

Waveguide excitation

dispersion characteristics of optically excited coplanar striplines; pulse propagation. *Phatak, D. S.*, +, *T-MTT May 90* 654-661
periodic-structure photoexcitation of silicon coplanar waveguide for selective optoelectronic microwave control. *Platte, Walter*, *T-MTT May 90* 638-646

Waveguide filters

coupling method for dual-mode dielectric resonators and waveguide filters. *Chen, Seng-Woon*, +, *T-MTT Dec 90* 1885-1893
multiplexing and double band filtering using common-multimode cavities; cylindrical diplexer and filter examples. *Rosenberg, Uwe*, *T-MTT Dec 90* 1862-1871
transverse-resonance, standing-wave, and resonator formulations of ridge waveguide problem; E-plane finned-waveguide bandpass filter design. *Bornemann, Jens*, +, *T-MTT Aug 90* 1104-1113

Waveguide junctions

analysis of junction between smooth and corrugated cylindrical waveguides in mode converters. *da Silva, Luiz C.*, +, *T-MTT Jun 90* 800-802

combining modal analysis and FD-TD method for dielectric waveguide problems. *Chu, Sai T.*, +, *T-MTT Nov 90* 1755-1760

conservation of complex power technique for waveguide junctions with finite wall conductivity. *Wade, J. Douglas*, +, *T-MTT Apr 90* 373-378
finite-element analysis for nonhomogeneous E-plane waveguide junctions. *Kanellopoulos, Vassilios N.*, +, *T-MTT Mar 90* 290-295

S-matrix of slot-coupled H-plane T-junction using rectangular waveguides. *Das, B. N.*, +, *T-MTT Jun 90* 779-781

variational formulation of H-plane slot-coupled Tee junction. *Das, B. N.*, +, *T-MTT Jan 90* 93-95

Waveguide junctions; cf. Hybrid junctions; Multiport circuits; Waveguide transitions

Waveguide mounts

modal analysis of radial-resonator waveguide diode mounts. *Bates, Bevan D.*, +, *T-MTT Aug 90* 1037-1045

Waveguide obstacles; cf. Waveguide discontinuities

Waveguide transitions

calibrating coaxial-to-microstrip transitions used in GaAs FET characterization. *Kompa, Günier*, +, *T-MTT Jan 90* 62-68
coaxial-to-rectangular waveguide end launcher modeling and design. *Saad, Saad Michael*, *T-MTT Feb 90* 129-134
losses of tapered dielectric slab waveguides with axially varying cladding refraction index. *Scarmozzino, Robert*, +, *T-MTT Feb 90* 141-147
nonlinear circular waveguide tapers for 30-MW gyrokystron; theoretical evaluation. *Lawson, Wesley G.*, *T-MTT Nov 90* 1617-1622
wave propagation in double-sided exponentially tapered rectangular waveguide. *Ajose, S. O.*, +, *T-MTT Sep 90* 1362-1365

Waveguides

3-D analysis of fields in rectangular waveguides using boundary integral equation method. *Ishibashi, Kazuhisa*, +, *T-MTT Sep 90* 1300-1308
cut-off wavenumbers for TE and TM modes in waveguides of arbitrary cross-section, using surface integral formulation. *Swaminathan, Madhavan*, +, *T-MTT Feb 90* 154-159†
Hermitian polynomial-based finite-element method for nonhomogeneous waveguides. *Israel, Moshe*, +, *T-MTT Sep 90* 1319-1327
high-frequency circuit model for coupled lossless and lossy waveguide structures. *Faché, Niels*, +, *T-MTT Mar 90* 252-259
mode conversion losses in highly overmoded waveguide cavity resonators using WKB method. *Burke, John M.*, +, *T-MTT Oct 90* 1503-1509
numerical solution of transmission line and hollow waveguides problems using network-model decomposition (diakoptic) method based on polygonal discretization. *Wen, Geyi*, *T-MTT Aug 90* 1086-1091
power-handling capability of rhombic waveguide; computing figure of merit based on Helmholtz equation. *Overfelt, P. L.*, +, *T-MTT Jul 90* 934-941
propagation analysis of chirowaveguides using finite-element method. *Svedin, Jan A. M.*, *T-MTT Oct 90* 1488-1496
reflection of electromagnetic waves from rough waveguides. *García-Molina, R.*, +, *T-MTT Apr 90* 445-448

Waveguides; cf. Circular waveguides; Coaxial waveguides; Corrugated waveguides; Dielectric-loaded waveguides; Dielectric waveguides; Loaded waveguides; Millimeter-wave waveguides; Multimode waveguides; Ridge waveguides; Submillimeter-wave waveguides

Wire communication; cf. Cable TV; Optical fiber communication

Wire communication cables

high-*T_c* superconducting coaxial cable with magnetically levitated inner conductor; feasibility as communications channel. *Rose, Christopher*, +, *T-MTT Feb 90* 166-177

Wire scatterers

3-D wire node for modeling thin wires in electromagnetic field problems for solution using transmission-line modeling. *Naylor, P.*, +, *T-MTT Mar 90* 328-330

Y

Yield optimization

FAST (feasible adjoint sensitivity technique) gradient-based yield optimization of nonlinear microwave circuits; FET frequency doubler example. *Bandler, John W.*, +, *T-MTT Nov 90* 1701-1710

YIG films/devices

dispersion characteristics and transverse field distributions of microstrip lines using yttrium iron garnet film; spectral-domain calculation. *Tsutsumi, Makoto*, +, *T-MTT Oct 90* 1461-1467