

1974 Index

IEEE Transactions on Microwave Theory and Techniques

Vol MTT-22

This index covers all items—papers, correspondence, reviews, etc.—that appeared in this periodical during 1974, and items from prior years that were commented upon or corrected in 1974. The index is divided into an Author Index and a Subject Index, both arranged alphabetically.

The *Author Index* contains the primary entry for each item; this entry is listed under the name of the first author and includes coauthor names, title, location of the item, and notice of corrections and comments if any. Cross-references are given from each coauthor name to the name of the corresponding first author. The location of the item is specified by the journal name (abbreviated), year, month, inclusive pages, and microfiche code. [The microfiche code, given in parentheses following the inclusive pages, consists of four characters to be interpreted as follows: the first character identifies the microfiche number within the set of fiches for the issue; the second character identifies the row in which the first frame of the particular item is located; and the last two characters designate the position of that frame within the row.]

The *Subject Index* contains several entries for each item, each consisting of a subject heading, modifying phrase(s), first author's name, and location of the item. For information on coauthors, title, comments and corrections if any, etc., it is necessary to refer to the Author Index. Some generic subject headings are used in this index in addition to the usual technical headings, e.g., *Books* (books reviewed in this periodical), *Bibliographies* (both papers that are bibliographies and any other papers which contain more than 50 references), *Conferences* (technical meetings a substantial number of whose abstracts or papers have appeared in this periodical), and *Special Issues* (issues of this periodical devoted primarily to a specific subject). The Subject Index includes subject cross-references as required by the subject matter.

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- IEEE Microwave Theory and Techniques Society; Special issue on First International Conference on Submillimeter Waves and Their Applications; *T-MTT 74 Dec Part I 981-1120* (1A03)
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abbr. of Electroencephalography

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Microstrip circulators

ferrite circulators; broadbanding without using matching transformers. *March, Steven, T-MTT 74 Jan 71-72 (1F03) ♦*

lumped-element circulator using GdIG; temperature range from -10 to 60 C, 30% bandwidth at 1.7 GHz. *Ikushima, Ichiro, T-MTT 74 Dec 1220-1225 (4B05)*

Y-junction circulators; octave bandwidth operation. *Wu, Y. S., T-MTT 74 Oct 849-856 (1A03)*

Microstrip components

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Microstrip couplers

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Microstrip directional couplers

dielectric-overlay couplers using edge-coupled microstrip; design procedure. *Sheleg, Boris, T-MTT 74 Dec 1216-1220 (4B01)*

hybrid branchline couplers; two transmission lines connected alternately to quarter-wavelength shunt and series branches. *Schiek, Burkhard, T-MTT 74 Oct 864-869 (1B04)*

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Microstrip lines

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- multilayer microstrip analysis. *Farrar, Andrew, T-MTT 74 Oct 889-891 (1D01)*
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- Microstrip mixers**
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- Microstrip modulators**
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- Microstrip oscillators**
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- Microstrip phase shifters**
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- Microstrip resonators**
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 disk resonators; resonant frequencies calculation for rectangular and circular disk resonators. *Wolff, Ingo, T-MTT 74 Oct 857-864 (1A11)*
 full-wave analysis; accurate method for computing resonant frequencies. *Itoh, Tatsuo, T-MTT 74 Nov 946-952 (1C08)*
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- Microstrip transitions**
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- Microstrip transitions; cf.** Coaxial cable-microstrip transitions
- Microwave amplifiers; cf.** Crossed-field amplifiers; Gunn amplifiers; IMPATT amplifiers; Microwave transistor amplifiers; Parametric amplifiers; TRAPATT amplifiers
- Microwave attenuators**
 0.01-dB and 0.001-dB step attenuators having long-term stability; side-arm-switched directional coupler. *Somlo, Peter L., T-MTT 74 Sep 830-835 (1A12)*
- Microwave circuits**
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- Microwave detectors**
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- Microwave diodes**
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- Microwave diodes; cf.** Microwave amplifiers; Microwave oscillators
- Microwave dosimetry**
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- Microwave emission; cf.** Microwave radiometry
- Microwave filters**
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 waveguide filters for over-moded applications. *Ren, Chung-Li, T-MTT 74 Dec 1202-1209 (4A01)*
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- Microwave filters; cf.** Cavity-resonator filters; Diplexers; Magnetic-resonator filters; Microstrip filters; Millimeter-wave filters; Stripline filters; Transmission-line filters
- Microwave frequency converters**
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- Microwave frequency converters; cf.** Microwave mixers
- Microwave frequency synthesizers**
 octave bandwidth synthesizer with improved spectral purity; VCXO output translated to X-band using phase-locked loop. *Tipon, Paul G., T-MTT 74 Dec 1246-1254 (4D03)*
- Microwave holography**
 object-synthesized apertures; conversion of image distortion to variations in object velocity vector. *Farhat, Nabil H., T-MTT 74 May 531-535 (1D11)*
- Microwave integrated circuits**
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- Microwave integrated circuits; cf.** Microstrip; Millimeter-wave integrated circuits; Planar microwave circuits; Slot lines; Stripline
- Microwave magnetic materials; cf.** Ferrites; Garnets
- Microwave materials**
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- Microwave measurements; cf.** Slotted-line measurements
- Microwave measurements**
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- Microwave measurements; cf.** Attenuation measurement; Computer-aided microwave measurements; Conductivity measurement; Dielectric constant measurement; Impedance measurement; Microwave dosimetry; Microwave radiometry; Millimeter-wave measurements; Noise measurement; Power measurement; Scattering parameters measurement; Semiconductor device measurements
- Microwave mixers**
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 Schottky-barrier diode burnout when subjected to RF spikes. *Morris, George E., T-MTT 74 Jul 745-746 (1C11)*
- Microwave mixers; cf.** Millimeter-wave mixers
- Microwave oscillators**
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- Microwave oscillators; cf.** Avalanche diode oscillators; BARITT oscillators; Gunn oscillators; IMPATT oscillators; Millimeter-wave oscillators; Phase-locked oscillators; Transferred-electron oscillators; TRAPATT oscillators
- Microwave radiation effects**
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 brains; transducer for brain temperature measurement during exposure. *Larsen, Lawrence E., T-MTT 74 Apr 438-444 (2B14)*
- Microwave radiation hazards**
 biological systems; World Health Organization program for exposure protection. *Michaelson, Sol M., T-MTT 74 Dec 1301-1302 (5B07)*
- Microwave radiometry**
 S-band radiometer for sea surface temperature measurement; high absolute precision and accuracy. *Hardy, Walter N., T-MTT 74 Apr 382-390 (1C04)*
- Microwave radio relay**
 FM transmitter for 4-GHz band; 220-mW output, 5-W total dc input power, dc-RF signal conversion efficiency greater than 4%. *Kitahara, Yui, T-MTT 74 Dec 1305-1308 (5B11)*
 integrated-circuit repeaters for FM systems; frequency-agile portable repeaters; 3.7-4.2 GHz band, 70-MHz IF. *Raukko, William W., T-MTT 74 Dec 1231-1239 (4C02)*
 waveguide branching filter; separates 4-GHz band from combined 4-, 6-, and 11-GHz common carrier bands with loss of 0.05 dB. *Ohm, E. A., T-MTT 74 Oct 891-894 (1D03)*
- Microwave switches**
 microstrip phase shifters for UHF and S-band; comparison of switching devices, p-i-n diodes, field-effect diodes, resistive-gate switches. *Burns, Richard W., T-MTT 74 Jun 675-688 (2A01)*
- Microwave switches; cf.** Diplexers; P-i-n diode switches
- Microwave Symposium; cf.** International Microwave Symposium
- Microwave theory and techniques**
 abstracts of papers published in Japanese journals, Jun-Dec 1973. *Okoshi, T., T-MTT 74 Aug 819-820 (1E09)*
- Microwave Theory and Techniques Society; cf.** IEEE Microwave Theory and Techniques Society

Microwave transistor amplifiers

- GaAs Schottky-barrier FET amplifiers; X-band amplifier design and performance. *Liechti, Charles A., T-MTT 74 May 510-517 (1C04)*
 power amplifiers; microstrip matching network design for L-band amplifiers. *O'Reilly, G. T., T-MTT 74 Dec 1323-1325 (5D01)*
 Schottky-barrier dual-gate FETs; variable-gain amplifiers. *Maeda, Minoru, T-MTT 74 Dec 1226-1230 (4B11)*

Microwave transistor oscillators

- phase-locked oscillators for active array antenna beam steering. *Al-Ani, A. Hag, T-MTT 74 Jun 698-703 (2B10)*

Microwave transistors

- array-radar applications; reliability testing of bipolar transistors. *Dodson, Brooks C., Jr., T-MTT 74 Dec 1239-1246 (4C10)*
 computer simulation of bipolar transistors; small-signal and noise behavior up to 12 GHz. *Hartmann, Karl, T-MTT 74 Mar 178-189 (1B14)*
 GaAs FETs; noise and scattering parameters up to 4 GHz. *Anastassiou, A., T-MTT 74 Feb 138-140 (1E04)*
 power transistor load contour mapping; computer-controlled system. *Cusack, J., T-MTT 74 Dec 1146-1152 (3B14)*

Microwave transmitters

- FM radio relay transmitter for 4-GHz band; 220-mW output power, 5-W total dc input power, dc-RF signal conversion efficiency greater than 4%. *Kitahara, Yuji, T-MTT 74 Dec 1305-1308 (5B11)*

Millimeter-wave amplifiers

- parametric amplifiers; 20-K-cooled degenerate amplifier for 46 GHz. *Edrich, Jochen, T-MTT 74 May 581-583 (2C12)*

Millimeter-wave astronomy

- molecular astronomy. *Snyder, Lewis E., T-MTT 74 Dec 1299-1300 (5B05)*
 receivers for line astronomy; heterodyne-bolometer system with noise temperature of 300 K at 230 GHz. *Phillips, T. G., T-MTT 74 Dec 1290-1292 (5A10)*
 solar observations in 20-3 mm range. *Castelli, John P., T-MTT 74 Dec 1292-1299 (5A12)*

Millimeter-wave cavity resonators

- surface roughness; surface resistance due to surface roughness at 35 GHz. *Tischer, F. J., T-MTT 74 May 566-569 (2B11)*

Millimeter-wave circulators

- Y circulators; bandwidth enlargement by loading resonators in each terminals. *Akaiwa, Yoshihiko, T-MTT 74 Dec 1283-1286 (5A03)*

Millimeter-wave communications

- guided transmission system; up- and down-converter for 60-86 GHz region using GaAs Schottky-barrier diode. *Kanmuri, Noboru, T-MTT 74 Dec 1286-1290 (5A06)*

Millimeter-wave components

- circular waveguide component mode conversion measurement using Klinger cavity technique; computerized test set. *Seip, Barry S., T-MTT 74 Oct 873-878 (1B13)*

Millimeter-wave detectors

- InSb devices based on surface channel detection. *Stannard, J., T-MTT 74 Dec 1118 (2D01)*

Millimeter-wave filters

- diplexers; semicircular waveguide-type diplexer for millimeter-wave waveguide transmission system. *Shimada, Sadakuni, T-MTT 74 Feb 111-118 (1C05)*
 diplexers using Fabry-Perot resonators operating under oblique incidence. *Arnaud, Jacques S. A., T-MTT 74 May 486-493 (1A08)*
 Michelson interferometer-type band-splitting filter for 40-120 GHz waveguide transmission system. *Suzuki, Nobuo, T-MTT 74 May 565-566 (2B10)*
 quasi-optical bandpass filters; theory and design. *Saleh, Adel A. M., T-MTT 74 Jul 728-734 (1B08)*
 quasi-optical bandpass filters; practical considerations. *Saleh, Adel A. M., T-MTT 74 Jul 734-739 (1B14)*
 waveguide filters for over-moded applications. *Ren, Chung-Li, T-MTT 74 Dec 1202-1209 (4A01)*

Millimeter-wave frequency converters

- up- and down-converter for 60-86 GHz region using GaAs Schottky-barrier diode; repeater for guided transmission system. *Kanmuri, Noboru, T-MTT 74 Dec 1286-1290 (5A06)*

Millimeter-wave heterodyne detection

- astronomy; heterodyne-bolometer system with noise temperature of 300 K at 230 GHz. *Phillips, T. G., T-MTT 74 Dec 1290-1292 (5A10)*
 Josephson junction heterodyne detectors; 36-GHz performance. *Taur, Y., T-MTT 74 Dec 1005-1009 (1B13)*

Millimeter-wave integrated circuits

- fin-line active and passive components. *Meier, Paul J., T-MTT 74 Dec 1209-1216 (4A08)*
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 semiconductor waveguides with active devices constructed directly in waveguide. *Jacobs, Harold, T-MTT 74 Apr 411-417 (2A01)*
 waveguides; planar dielectric strip guide. *Fong, T. T., T-MTT 74 Aug 776-783 (1B08)*

Millimeter-wave isolators

- semiconductor mounted coaxially in circular waveguide in longitudinal dc field; measurements at 94 GHz. *Kanda, Motohisa, T-MTT 74 Nov 913-917 (1A03)*

Millimeter-wave lasers

- waveguide lasers. *Yamanaka, M., T-MTT 74 Dec 1117 (2C14)*

Millimeter-wave measurements

- amplitude and phase of millimeter-wave fields; simultaneous measurement. *Mathews, Neville A., T-MTT 74 Feb 140-142 (1E06)*
 circular waveguide component mode conversion measurement using Klinger cavity technique; computerized test set. *Seip, Barry S., T-MTT 74 Oct 873-878 (1B13)*
 free space field measurement using modulated-scattering technique; metallic dipole attached to vibrating nylon cord. *Mathews, Neville A., T-MTT 74 Feb 103-110 (1B11)*

Millimeter-wave mixers

- Josephson junction heterodyne detectors; 36-GHz performance. *Taur, Y., T-MTT 74 Dec 1005-1009 (1B13)*
 oversized microstrip; low-noise mixer for 5-mm band. *Meier, Paul J., T-MTT 74 Apr 450-451 (2C12)*

- Schottky-barrier diodes for 1-2 mm region; fabrication, mounting, noise. *Wrixon, Gerald T., T-MTT 74 Dec 1159-1165 (3C13)*

Millimeter-wave oscillators

- Gunn oscillators with high output power. *Ruttan, Thomas G., T-MTT 74 Feb 142-144 (1E08)*
 IMPATT oscillators; 80-GHz transmission-cavity stabilized low-noise Si diode oscillator. *Nagano, Shigemichi, T-MTT 74 Dec 1152-1159 (3C06)*
 microstrip oscillators at 30, 60, and 100 GHz. *Glance, B. S., T-MTT 74 Dec 1281-1283 (5A01)*

Millimeter-wave phase shifters

- integrated circuits; semiconductor waveguide with electronic phase shifter constructed directly in waveguide. *Jacobs, Harold, T-MTT 74 Apr 411-417 (2A01)*

Millimeter-wave receivers

- astronomy; heterodyne-bolometer system with noise temperature of 300 K at 230 GHz. *Phillips, T. G., T-MTT 74 Dec 1290-1292 (5A10)*

Millimeter-wave repeaters

- guided transmission system; up- and down-converter for 60-86 GHz region using GaAs Schottky-barrier diode. *Kanmuri, Noboru, T-MTT 74 Dec 1286-1290 (5A06)*

Millimeter-wave spectroscopy

- antiferromagnetic resonance in NiO. *Chen, C.-H., T-MTT 74 Dec 1119 (2D02)*
 water vapor in long-path absorption cell for 150-600 GHz range; Fourier spectroscopy. *Gebbie, H. A., T-MTT 74 Dec 1120 (2D03)*

Millimeter-wave waveguides

- circular waveguide component mode conversion measurement using Klinger cavity technique; computerized test set. *Seip, Barry S., T-MTT 74 Oct 873-878 (1B13)*
 open waveguide composed of two parallel concave reflectors; field distribution, relation to elliptic waveguide field distribution. *Tischer, F. J., T-MTT 74 Jul 742-743 (1C08)*
 planar dielectric strip guide for integrated circuits. *Fong, T. T., T-MTT 74 Aug 776-783 (1B08)*
 semiconductor waveguides with active devices constructed directly in waveguide. *Jacobs, Harold, T-MTT 74 Apr 411-417 (2A01)*
 surface roughness; surface resistance due to surface roughness at 35 GHz. *Tischer, F. J., T-MTT 74 May 566-569 (2B11)*

Millimeter-wave isolators

- InSb films at 87 GHz; field-displacement mode and Faraday rotation mode measurements. *Dinger, Robert J., T-MTT 74 Oct 879-880 (1C05)*

Mining industry

- electromagnetic propagation in rectangular tunnel with axial two-wire line; monofilar and bifilar modes. *Mahmoud, Samir F., T-MTT 74 Sep 845-847 (1B13)*

- Mixers; cf. Microwave mixers; Millimeter-wave mixers; Optical mixers; Submillimeter-wave mixers

Modulation; cf. Optical modulation**Moment methods**

- microstrip discontinuity inductance calculation; application to right-angle bends. *Gopinath, A., T-MTT 74 Oct 880-883 (1C06)*

MOSFETs

- far-infrared photoconductive detectors; voltage-tunable detector. *Goldberg, H. S., T-MTT 74 Dec 1120 (2D03)*

MSM diodes; cf. BARITT diodes**Multiconductor transmission lines**

- equivalent circuit models for three-dimensional systems. *Ruehli, Albert E., T-MTT 74 Mar 216-221 (1E10)*
 Green's matrix analysis of arbitrarily terminated lossy lines with excitation applied at arbitrary point. *Gruner, L., T-MTT 74 Sep 837-839 (1B07)*
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 TEM modes on *n*-wire line; power division ratios. *Nagai, Nobuo, T-MTT 74 Apr 353-359 (1A03)*

Multiconductor transmission lines; cf. Coupled transmission lines**Multiplexing; cf. Diplexers; FDM****N****Negative-resistance diodes**

- microwave measurement of large-signal characteristics; injection-locking technique. *Young, J. C. T., T-MTT 74 Dec 1320-1323 (5C12)*

Nernst effect

- submillimeter-wave magnetospectroscopy in tellurium using Nernst effect. *von Ortenberg, M., T-MTT 74 Dec 1081-1085 (2A06)*

Network analysis; cf. Scattering parameters

- Networks; cf. Active networks; Cascade networks; Distributed networks; Filters; Lossy networks; Nonreciprocal networks; Two-port networks

Nickel oxides

- antiferromagnetic resonance in NiO doped with Fe²⁺ and Co²⁺; far-infrared Fourier spectroscopy. *Becker, C. R., T-MTT 74 Dec 1119 (2D02)*
 antiferromagnetic resonance; submillimeter-wave Fourier spectroscopy and millimeter-wave spectroscopy. *Chen, C.-H., T-MTT 74 Dec 1119 (2D02)*

Nickel tungstates

- antiferromagnetic resonance studies in 7.5-500 cm⁻¹ range; low-frequency excitations in NiWO₄ and CoWO₄. *Eremenko, V. V., T-MTT 74 Dec 1069-1072 (1G07)*

Noise

- IEEE Microwave Theory and Techniques Society 1974 National Lecture on low-noise reception and technology. *Okwit, Seymour, T-MTT 74 Dec 1130 (3A12)*

- Noise; cf. Amplifier noise; Atmospheric noise; Oscillator noise; Semiconductor noise

Noise generators

- gas discharge noise sources; microwave noise temperatures. *Olson, Keith W., T-MTT 68 Sep 640-645 ♦*

Noise measurement

- cosmic background measurements in 7-10 cm⁻¹ atmospheric window. *Dall'Oglio, G.*, T-MTT 74 Dec 1120 (2D03)
- cosmic background measurements in 3 mm-300 μ m range using balloon-borne liquid-helium-cooled polarizing interferometer. *Robson, E. I.*, T-MTT 74 Dec 1120 (2D03)
- microwave oscillators; FM noise measurement using YIG discriminator. *Watanabe, Kenzo*, T-MTT 74 Apr 444-446 (2C06)
- submillimeter-wave atmospheric noise, 300-3000 μ m region. *Corsi, S.*, T-MTT 74 Dec 1036-1041 (1E02)

Nonhomogeneously loaded waveguides

- ferrite-loaded guides; scattering matrix for single-aperture and double-aperture discontinuities. *Bernues, Francisco J.*, T-MTT 74 Dec 1187-1193 (3E13)
- lossy dielectric loading; shooting method analysis. *McIntosh, R. E.*, T-MTT 74 Nov 952-954 (1C14)
- numerical analysis using transmission-line matrix. *Johns, Peter B.*, T-MTT 74 Mar 209-215 (1E03)
- numerical method based on discretization of Maxwell's equation in integral form. *Albani, M.*, T-MTT 74 Apr 446-450 (2C08)
- variation-iteration method of analysis. *Laloux, Auguste A.*, T-MTT 74 Mar 229-236 (1F09)

Nonhomogeneous media

- biological bodies; electromagnetic fields induced inside heterogeneous bodies of irregular shape. *Livesay, Donald E.*, T-MTT 74 Dec 1273-1280 (4F02)

Nonreciprocal electromagnetic propagation; cf. Ferrite-loaded waveguides; Semiconductor-loaded waveguides**Nonreciprocal networks**

- magnetic-resonator circuits; theoretical analysis. *Igarashi, Mitsuru*, T-MTT 74 Sep 821-829 (1A03)

Nonreciprocal transmission lines

- periodically loaded with metallic diaphragms; phase-shifter applications. *Kharadly, M. M. Z.*, T-MTT 74 Jun 635-640 (1D07)

Nonuniform transmission lines

- exponential lines; normalized input impedance graphs. *Arnold, Robert P.*, T-MTT 74 Nov 964-965 (1D12)
- scattering parameters and admittance. *Berquist, A.*, T-MTT 72 Aug 557-558 (2B12) ♦

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- branching filter using tapered guide; separates 4-GHz band from combined 4-, 6- and 11-GHz common carrier bands. *Ohm, E. A.*, T-MTT 74 Oct 891-894 (1D03)
- rectangular guides with continuously varying cross section; synthesis method. *Grüner, Konrad*, T-MTT 74 Mar 317-322 (3A01)

Nuclear fusion devices; cf. Tokamaks**Numerical methods**

- cavities and waveguides of arbitrary shape, homogeneously or nonhomogeneously filled; discretization of Maxwell's equations in integral form. *Albani, M.*, T-MTT 74 Apr 446-450 (2C08)
- microstrip discontinuities; Galerkin's method applied in Fourier transform domain. *Rahmat-Samii, Yahya*, T-MTT 74 Apr 372-378 (1B08)
- microstrip dispersion characteristics; spectral-domain analysis of shielded microstrip. *Itoh, Tatsuo*, T-MTT 74 Oct 896-898 (1D08)
- microwave circuits; modeling of passive devices. *Silvester, P.*, T-MTT 74 Mar 190-201 (1C12)
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- apertures; Gaussian wave beam transmission through two consecutive apertures. *Tanaka, Kazumasa*, T-MTT 74 Feb 81-86 (1A03)

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- far-infrared generation by phase-matched mixing in planar dielectric waveguide; step-tunable source for 70 μ m-7mm range. *Thompson, David E.*, T-MTT 74 Dec 995-1000 (1B03)

Optical modulation; cf. Electrooptic modulation**Optical pumping**

- far-infrared CH₃OH laser pumped by laser; rate equations. *Henningsen, J. O.*, T-MTT 74 Dec 1119 (2D02)
- far-infrared gas lasers; rate equation model. *Tucker, J. R.*, T-MTT 74 Dec 1117 (2C14)
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- submillimeter lasers; pumping far from molecular absorptions; lasing between vibrational levels with overtone pumping. *Fetterman, H. R.*, T-MTT 74 Dec 1118 (1D01)
- submillimeter-wave generation and amplification using quantum paramagnetic amplifier pumped by optical source. *Arora, R. K.*, T-MTT 74 Dec 1119 (2D02)
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- ring resonators; modes and losses in four-mirror ring resonator. *Checcacci, P. F.*, T-MTT 74 Jul 751-752 (1D03)

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- computer-aided circuit design; survey of recent methods. *Charalambous, Christakis*, T-MTT 74 Mar 289-300 (2C13)
- computer oriented technique using exact algebraic partial derivatives. *Branner, George R.*, T-MTT 74 Mar 336-339 (3B06)
- nonlinear objective function subject to nonlinear inequality constraints; computer program. *Schenk, K. F.*, T-MTT 74 Mar 343-344 (3B13)

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- microwave solid-state oscillators; temperature stabilization using ceramic dielectric with negative temperature coefficient loaded in parallel with diode package. *Kondo, A.*, T-MTT 74 Nov 970-972 (1E04)

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- low-noise room-temperature 12-GHz amplifier using varactor diodes; 26-dB gain, 660-MHz bandwidth. *Lacey, S. D.*, T-MTT 74 Dec 1329-1331 (5D07)
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- IMPATT diode networks; subharmonic oscillations in periodically driven networks, threshold conditions. *Peterson, Dean F.*, T-MTT 74 Aug 784-790 (1C02)
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- active array using phase-locking method for beam steering. *Al-Ani, A. Hag*, T-MTT 74 Jun 698-703 (2B10)
- active element, phase-locked loop avalanche diode oscillator; X-band integrated circuit. *Salmon, J.*, T-MTT 74 Apr 464-466 (2D12)
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- Phase-locked loops**
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IMPATT oscillators; self-mixing oscillator for Doppler radar applications. *Gupta, Madhu-Sudan, T-MTT 74 Jan 37-43 (1C11)*

IMPATT pumped S-band parametric amplifier; noise measurements. *Smith, Thane, T-MTT 74 Dec 1331-1333 (5D09)*

microwave point-contact diodes under RD and dc excitations; low-frequency noise spectra. *Lipkin, Y., T-MTT 74 Aug 793-796 (1C11)*

Semiconductor phase shifters; cf. Diode phase shifters**Semiconductor switches; cf. Semiconductor diode switches****Semiconductor waveguides**

far-infrared generation by phase-matched mixing in planar dielectric waveguide; step-tunable source for 70 μ m-7mm range. *Thompson, David E., T-MTT 74 Dec 995-1000 (1B03)*

GaAs waveguides for 10.6 μ m; low-loss two-dimensional epitaxial waveguides. *Sopori, B. L., T-MTT 74 Jul 754-755 (1D06)*

millimeter-wave waveguides; active devices constructed directly in semiconductor waveguide. *Jacobs, Harold, T-MTT 74 Apr 411-417 (2A01)*

Sensitivity analysis

computer oriented technique using exact algebraic partial derivatives. *Branner, George R., T-MTT 74 Mar 336-339 (3B06)*

microwave circuits; computer methods. *Monaco, Vito A., T-MTT 74 Mar 249-263 (2A01)*

Silicon devices

far-infrared bolometer detectors using compensated n-type Si at liquid-helium temperatures. *Summers, C. J., T-MTT 74 Dec 1009-1013 (1C03)*

far-infrared Si photoconductive detectors; long-wavelength limit of 400 μ m. *Norton, P., T-MTT 74 Dec 1118 (2D01)*

waveguides with active devices constructed directly in semiconductor guide; millimeter-wave applications. *Jacobs, Harold, T-MTT 74 Apr 411-417 (2A01)*

Silicon diodes

IMPATT diodes; pulsed operation of double-drift diodes in 8.5-18 GHz region. *Pfund, George, T-MTT 74 Dec 1134-1140 (2B02)*

millimeter-wave IMPATT oscillators; transmission-cavity-stabilized 80-GHz low-noise oscillator. *Nagano, Shigemichi, T-MTT 74 Dec 1152-1159 (3C06)*

Slot antennas

impedance matching; automatic broadband technique that locates discontinuity, measures reflection coefficient, determines location and dimensions of matching element. *Gordy, R. S., T-MTT 74 Aug 799-801 (1D03)*

Slot lines

double-substrate slot line; relative wavelength and characteristic impedance. *Cohn, Seymour B., T-MTT 71 Sep 773-774 (1D11) ♦*

Slot-line transitions

coax-slot and microstrip-slot transitions. *Knorr, Jeffrey B., T-MTT 74 May 548-554 (2A07)*

Slotted-line measurements

signal introduced across slotted-line probe; errors in VSWR and phase. *Barbero, Jesus, T-MTT 74 Oct 887-889 (1C13)*

Slow-wave structures

microstrip meander-line slow-wave structures; dispersion and field analysis. *Weiss, Jerald A., T-MTT 74 Dec 1194-1201 (3F06)*

Smith chart

transmission line impedance matching; complex load impedance matching to resistive source impedance when characteristic impedance is unknown, using Smith chart. *Arnold, R. M., T-MTT 74 Nov 977-978 (1E11)*

Solar radiation

millimeter-wave observations in 20-3 mm range. *Castelli, John P., T-MTT 74 Dec 1292-1299 (5A12)*

submillimeter-wave solar brightness temperature measurement using balloon-borne lamellar-grating interferometer; 100-500 μ m. *Stettler, P., T-MTT 74 Dec 1119-1120 (2D02)*

submillimeter-wave spectroscopy using airborne Michelson interferometer in lower stratosphere; 200-700 μ m. *Mankin, W. G., T-MTT 74 Dec 1119 (2D02)*

Sparse-matrix methods

microwave circuit analysis. *Bonfatti, Flavio, T-MTT 74 Mar 264-269 (2B02)*

Special issues

- computer-oriented microwave practices. *T-MTT 74 Mar* 153-342 (1A03)
 International Microwave Symposium; selected papers from June 1974 symposium. *T-MTT 74 Dec Part II* 1122-1340 (3A04)
 phase shifters for phased arrays. *T-MTT 74 Jun* 589-708 (1A03)
 submillimeter waves and applications; papers and abstracts from First International Conference, Jun 1974. *T-MTT 74 Dec Part I* 981-1120 (1A03)

Spectroscopy; cf. Infrared spectroscopy; Magnetospectroscopy; Millimeter-wave spectroscopy; Submillimeter-wave spectroscopy

Spin-flip lasers

- far-infrared generation by difference frequency mixing in InSb of spin-flip Raman laser radiation; continuously tunable source. *Nguyen, V.-T., T-MTT 74 Dec* 1117 (2C14)

Spiral waveguides

- finite-element analysis. *Daly, Peter, T-MTT 74 Mar* 202-209 (1D10)

Spontaneous emission

- Dicke superradiance in submillimeter-wave region. *Bowden, C. M., T-MTT 74 Dec* 1119 (2D02)

Square waveguides

- ridged guides; modal characteristics of quadruple-ridged guides. *Chen, M. H., T-MTT 74 Aug* 801-804 (1D05)

Stellarators

- plasma diagnostics; far-infrared collective HCN-laser scattering. *Gehre, O., T-MTT 74 Dec* 1061-1064 (1F13)

Stratified media

- ferrite slab adjacent to semiconductor; magnetostatic surface waves in ferrite slab. *Masuda, Masamitsu, T-MTT 74 Feb* 132-135 (1D12)
 microstrip; multilayer microstrip analysis. *Farrar, Andrew, T-MTT 74 Oct* 889-891 (1D01)

Strip conductors

- above dielectric-coated conducting plane surface waveguide; impedance and scattering properties. *Gillespie, Edmond A., T-MTT 73 Jun* 413-419 (2B02) ♦

Stripline circulators

- ferrite latching circulator with finite gap. *El-Shandwily, M. E., T-MTT 74 Jan* 57-60 (1E03)

- ferrite material replaced in part by dielectric material. *Helszajn, Joseph, T-MTT 74 Apr* 400-410 (1D08)

- Y-circulators below resonance; insertion loss dependence on ferrite loss parameters. *Cattarin, Giuseppe, T-MTT 74 Jul* 752-754 (1D04)

- Y-junction circulators; octave bandwidth operation. *Wu, Y. S., T-MTT 74 Oct* 849-856 (1A03)

Stripline discontinuities

- numerical modeling. *Silvester, P., T-MTT 74 Mar* 190-201 (1C12)

Stripline filters

- channel-dropping filter using hairpin bandpass filter and folded-line bandstop filter. *Cristal, Edward G., T-MTT 74 May* 499-504 (1B07)

- combine-type filters; design approach. *Vincze, Arpad D., T-MTT 74 Dec* 1171-1181 (3D11)

- folded-line and hybrid folded-line bandstop filters. *Dupuis, Paul A., T-MTT 74 Dec* 1312-1316 (5C04)

- hairpin-line and hybrid hairpin-line/half-wave parallel-coupled-line filters. *Gysel, Ulrich H., T-MTT 74 May* 523-531 (1D03)

Striplines

- capacitance and charge distribution calculation for structures with electric or magnetic walls, including dielectric-supported air-strip line. *Costamagna, Eugenio, T-MTT 73 Mar* 155-156 (1E01) ♦

- multiconductor lines placed symmetrically between two parallel ground planes with or without side walls; characteristic immittance matrix computation. *Limner, L. J. Peter, T-MTT 74 Nov* 930-937 (1B06)

Submillimeter-wave amplifiers

- quantum paramagnetic amplifier/generator pumped by optical source. *Arora, R. K., T-MTT 74 Dec* 1119 (2D02)

Submillimeter-wave antennas

- astronomy; reflecting telescope design to minimize diffraction losses and sidelobes. *Beckman, J. E., T-MTT 74 Dec* 1113-1114 (2C10)

- phased array of waveguide lasers. *Corcoran, Vincent J., T-MTT 74 Dec* 1103-1107 (2B14)

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- reflecting telescope design to minimize diffraction losses and sidelobes. *Beckman, J. E., T-MTT 74 Dec* 1113-1114 (2C10)

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- blackbody reference standard. *Carli, B., T-MTT 74 Dec* 1094-1099 (1B05)

- GaAs photoconductive detectors; dc-biased and microwave-biased detectors. *Crowley, J. D., T-MTT 74 Dec* 1118 (2D01)

- GaAs photoconductor with cryogenic preamplifier; 100-400 μm . *Kunz, L. W., T-MTT 74 Dec* 1118 (2D01)

- Josephson junction bolometers. *Clarke, J., T-MTT 74 Dec* 1118-1119 (2D01)

- pyroelectric detectors; noise equivalent power measurements on TGS detectors at 10.6 μm , 337 μm , and 3 cm. *Baynham, A. C., T-MTT 74 Dec* 1120 (2D03)

Submillimeter-wave detectors; cf. Infrared detectors**Submillimeter-wave filters**

- metallic mesh interference filters for 50-1000 μm range; low-pass and bandpass filters. *Holah, G. D., T-MTT 74 Dec* 1117 (2C14)

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- Dicke superradiance in submillimeter-wave region. *Bowden, C. M., T-MTT 74 Dec* 1119 (2D02)

- energy modulation of electron beam by laser; inverse Cerenkov effect. *Piestrup, M., T-MTT 74 Dec* 1117 (1C14)

- Josephson junction parametric oscillators; parametric amplification at 1.6 mm. *Levinson, M. T., T-MTT 74 Dec* 1117 (2C14)

- Josephson junction source; frequencies up to 30 cm^{-1} . *Elsey, R. K., T-MTT 74 Dec* 1117 (2C14)

- phase-matched mixing in planar dielectric waveguide; step-tunable source for 70 μm -7mm range. *Thompson, David E., T-MTT 74 Dec* 995-1000 (1B03)

- quantum paramagnetic amplifier/generator pumped by optical source. *Arora, R. K., T-MTT 74 Dec* 1119 (2D02)

- relativistic electron beams; 100 kW in 390-540 μm range. *Granatstein, V. L., T-MTT 74 Dec* 1000-1005 (1B08)

- Submillimeter-wave generation**; cf. Submillimeter-wave lasers

Submillimeter-wave heterodyne detection

- Schottky diodes as heterodyne detectors and harmonic mixers. *Fetterman, H. R., T-MTT 74 Dec* 1013-1015 (1C07)

Submillimeter-wave interferometry

- Michelson interferometer with frustrated total reflection beamsplitter. *Daehler, M., T-MTT 74 Dec* 1119 (2D02)

- plasma diagnostics on tokamak plasmas; 337- μm Mach-zender interferometer. *Brossier, P., T-MTT 74 Dec* 1053-0056 (1F05)

- plasma diagnostics on tokamak plasmas; 337- μm interferometer. *Veron, D., T-MTT 74 Dec* 1117 (1C14)

- tokamak synchrotron radiation spectra measurement using Fabry-Perot wire-mesh interferometer. *Blanken, R. A., T-MTT 74 Dec* 1057-1060 (1F09)

Submillimeter-wave lasers

- CF_3CH_3 lasers; assignment of optically pumped lines to pure rotation transitions. *Duxbury, G., T-MTT 74 Dec* 1108-1109 (2C05)

- CH_3F lasers for plasma diagnostic applications; megawatt-level, 30-MHz linewidth at 496 μm . *Brown, Fielding, T-MTT 74 Dec* 1112-1113 (2C09)

- CH_3F laser using transverse optical pumping; tunable 496- μm laser. *Brown, F., T-MTT 74 Dec* 1117 (2C14)

- D_2O lasers. *Keilman, F., T-MTT 74 Dec* 1118 (1D01)

- HCN 337- μm CW lasers; gain saturation, emission line shape, and power. *Belland, P., T-MTT 74 Dec* 1118 (2D01)

- HCN laser plasma modulation; pulse generation. *Tait, G. D., T-MTT 74 Dec* 1109-1111 (2C06)

- HCN lasers; diagnostics of laser plasma. *Schötzau, H. J., T-MTT 74 Dec* 1118 (2D01)

- HCN lasers; plasma effects in pulsed lasers. *Turner, R., T-MTT 74 Dec* 1118 (2D01)

- HCN lasers; transversely excited 337- μm laser with 1-kW output power. *Adam, B., T-MTT 74 Dec* 1118 (2D01)

- optical pumping far from molecular absorptions; lasing between vibrational levels with overtone pumping. *Fetterman, H. R., T-MTT 74 Dec* 1118 (1D01)

- optical pumping of gases; high-power lasers. *Plant, Thomas K., T-MTT 74 Dec* 988-990 (1A10)

- optical pumping of polar molecules by infrared lasers. *Chang, T. Y., T-MTT 74 Dec* 983-988 (1A05)

- plasma interactions with intense submillimeter-wave radiation. *Lax, B., T-MTT 74 Dec* 1049-1052 (1F01)

- quantum paramagnetic amplifier/generator pumped by optical source. *Arora, R. K., T-MTT 74 Dec* 1119 (2D02)

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- Schottky diodes as heterodyne detectors and harmonic mixers. *Fetterman, H. R., T-MTT 74 Dec* 1013-1015 (1C07)

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Submillimeter-wave propagation

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- spectroradiometers using n-type InSb detectors; 2-0.2 mm region. *Vystavkin, A. N., T-MTT 74 Dec* 1041-1046 (1E07)

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- special issue foreword. *Button, Kenneth J., Guest ed., T-MTT 74 Dec* 981-982 (1A03)

Submillimeter-wave spectroscopy

- Alfvén wave transmission study of bismuth at 311 μm and 337 μm . *Verdun, H. R., T-MTT 74 Dec* 1120 (2D03)

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- autocorrelation functions describing random rotation of symmetric molecules; Coriolis coupling effects. *Müller, K., T-MTT 74 Dec* 1119 (2D02)

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- cyclotron resonance in metals; 4-mm measurements compared with 220-mm measurements. *Peech, J., T-MTT 74 Dec* 1120 (2D03)

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Waveguide discontinuities

- ferrimagnetic circular cylinder in rectangular guide; scattering properties. *Okamoto, Nobuo, T-MTT 71 Jun 521-527 (1C09)* ♦
- ferrite-loaded guides; scattering matrix for single-aperture and double-aperture discontinuities. *Bermes, Francisco J., T-MTT 74 Dec 1187-1193 (3E13)*
- impedance matching; automatic broadband technique that locates discontinuity, measures reflection coefficient, determines location and dimensions of matching element. *Gordy, R. S., T-MTT 74 Aug 799-801 (1D03)*
- narrow conducting strip inserted vertically into guide; variational analysis. *Chang, Kai, T-MTT 74 May 536-541 (1E02)*
- nonuniform guides with continuously varying cross section; synthesis method. *Grüner, Konrad, T-MTT 74 Mar 317-322 (3A01)*
- numerical modeling. *Silvester, P., T-MTT 74 Mar 190-201 (1C12)*
- numerical solution; boundary relaxation method. *Mur, G., T-MTT 74 Jan 54-57 (1D14)*

Waveguide discontinuities; cf. Loaded waveguides; Transmission-line discontinuities; Waveguide junctions**Waveguide filters; cf. Microwave filters****Waveguide junctions**

- dielectric-loaded waveguide phase shifters; impedance matching for partially filled waveguide phase shifters. *Chang, C. T. M., T-MTT 74 May 481-485 (1A03)*
- impedance match checker; instrument for measuring degree of mismatch in waveguide and coaxial systems. *Hollway, D. L., T-MTT 74 May 560-561 (2B05)*
- lossy junctions; dissipation and scattering matrices in terms of eigenvalues of dissipation matrix. *Helszajn, Joseph, T-MTT 72 Nov 779-782 (2B10)* ♦
- side-slab-filled and empty rectangular guides; equivalent circuit parameters; computer program description. *Chang, C. T. M., T-MTT 74 May 585 (2D02)*

Waveguide lasers

- phased array of far-infrared and submillimeter-wave waveguide lasers. *Corcoran, Vincent J., T-MTT 74 Dec 1103-1107 (2B14)*
- submillimeter and millimeter lasers. *Yamanaka, M., T-MTT 74 Dec 1117 (2C14)*
- Submillimeter-wave lasers. *Hodges, D. T., T-MTT 74 Dec 1118 (1D01)*

Waveguide mounts

- Gunn oscillators; dependence of power generation variation with tuning on harmonics due to diode nonlinearity. *Bastida, Ezio M., T-MTT 74 Aug 796-798 (1C14)*
- Gunn oscillators; impedance characterization of two-post mounting structure for varactor-tuned oscillators. *El-Sayed, Osman L., T-MTT 74 Aug 769-776 (1B01)*

Waveguide obstacles; cf. Waveguide discontinuities**Waveguides**

- impedance boundary conditions on walls; propagation characteristics. *Dybal, Robert B., T-MTT 71 Jan 2-9 (1B04)* ♦
- numerical method for homogeneously or nonhomogeneously filled guides of arbitrary cross section; discretization of Maxwell's equations in integral form. *Albani, M., T-MTT 74 Apr 446-450 (2C08)*
- numerical modeling. *Silvester, P., T-MTT 74 Mar 190-201 (1C12)*
- numerical solution of hollow waveguide problem; tabulation of methods. *Ng, Fook Loy, T-MTT 74 Mar 322-329 (3A06)*
- open waveguide composed of two parallel concave reflectors; field distribution, relation to elliptic waveguide field distribution. *Tischer, F. J., T-MTT 74 Jul 742-743 (1C08)*
- periodic structure consisting of equally spaced perfectly conducting rings surrounded by conducting pipe; hybrid mode propagation. *Garault, Yves, T-MTT 74 Feb 92-99 (1A14)*
- polar geometry guides; finite-element analysis of circular, sector, double-ridged circular, and spiral guides. *Daly, Peter, T-MTT 74 Mar 202-209 (1D10)*
- random coupling of two waves traveling in opposite directions; average output power of incident wave. *Morrison, John A., T-MTT 74 Feb 126-130 (1D06)*
- underground tunnel with axial two-wire line; monofilar and bifilar modes. *Mahmoud, Samir F., T-MTT 74 Sep 845-847 (1B13)*
- Waveguides; cf. Beam waveguides; Circular waveguides; Conical waveguides; Corrugated waveguides; Dielectric-loaded waveguides; Dielectric waveguides; Electromagnetic surface waveguides; Elliptical waveguides; Ferrite-loaded waveguides; Microstrip lines; Millimeter-wave waveguides; Nonhomogeneously loaded waveguides; Nonuniform waveguides; Optical waveguides; Ridge waveguides; Semiconductor-loaded waveguides; Semiconductor waveguides; Square waveguides; Striplines; Submillimeter-wave waveguides**

Wave scattering; cf. Electromagnetic scattering**World Health Organization**

- microwave exposure protection program. *Michaelson, Sol M., T-MTT 74 Dec 1301-1302 (5B07)*

Y**YIG**

- magnetostatic surface waves propagating in direction of external dc magnet field; effect of surface metallization. *Kawasaki, Kiyohiro, T-MTT 74 Apr 391-394 (1C13)*
- magnetostatic surface-wave interaction with drifting carriers in semiconductor. *Kawasaki, Kiyohiro, T-MTT 74 Nov 918-924 (1A08)*
- magnetostatic surface-wave passband control by spacing metal plate apart from ferrite surface. *Kawasaki, Kiyohiro, T-MTT 74 Nov 924-929 (1A14)*

YIG devices

- microwave oscillator noise measurement using YIG discriminator. *Watanabe, Kenzo, T-MTT 74 Apr 444-446 (2C06)*
- nonreciprocal filters and circulators; theoretical analysis. *Igarashi, Mitsuru, T-MTT 74 Sep 821-829 (1A03)*