

PUBLICATIONS AND REPORTS

MEETING PAPERS PRESENTED

1974 International Conference on Submillimeter Waves, Atlanta, Georgia

June 5-7, 1974

P. Brossier and R. A. Blanken, Interferometry at 337μ on a Tokamak Plasma

D. S. Komm, R. A. Blanken, and P. Brossier, A Technique to Measure Millimeter and Submillimeter Tokamak Synchrotron Radiation Spectra

USNC/URSI Spring Meeting, Atlanta, Georgia

June 10-13, 1974

Abstract in Proceedings

J. A. Kong, Analytical Studies of Electromagnetic Problems with MACSYMA (p. 82)

VIII International Quantum Electronics Conference, San Francisco, California

June 10-13, 1974

Abstracts in Digest of Technical Papers

R. E. Grove, L. A. Hackel, F. Y. Wu, D. G. Youmans, and S. Ezekiel, Precision Molecular Beam Spectroscopy with Argon and Dye Lasers (p. 2)

H. A. Haus, C. P. Ausschnitt, and P. Hagelstein, Theory of Saturable Absorber Mode Locking (no Abstract)

P. W. Hoff, J. C. Swingle, C. K. Rhodes, C. W. Werner, and E. V. George, Dynamic Model of High-Pressure Ultraviolet Lasers (p. 48)

Gordon Research Conference, Santa Barbara, California

June 10-15, 1974

R. R. Parker, Lower Hybrid RF Heating

First Electrocochleography Conference, Albert Einstein College of Medicine, New York

June 13, 1974

N. Y. S. Kiang, E. C. Moxon, and Amy R. Kahn, The Relationship of Gross Potentials Recorded from the Cochlea to Single-Unit Activity in the Auditory Nerve

First European Congress on Thermography, Amsterdam, The Netherlands

June 17-20, 1974

A. H. Barrett and P. C. Myers, Microwave Thermography: A Method of Detecting Subsurface Thermal Patterns

17th Plenary Meeting of COSPAR, Saõ Paulo, Brazil

June 17-July 1, 1974

J. W. Waters, D. H. Staelin, K. F. Kunzi, R. L. Pettyjohn, and R. K. L. Poon, Microwave Remote Sensing of Atmospheric Temperatures from the Nimbus-5 Satellite

MEETING PAPERS PRESENTED (continued)

Second Topical Conference on RF Plasma Heating, Texas Technological University,
Lubbock, Texas

June 20-22, 1974

M. Simonutti, Jr., Numerical Solution for Linear Wave Conversion near
Lower Hybrid Resonance

Optical Society of America Meeting, Boulder, Colorado

July 9-11, 1974

Paper in Digest of Technical Papers, Topical Meeting on Optical Propagation
through Turbulence

J. H. Shapiro, Point-Ahead Limitation on Reciprocity-Tracking (pp. ThA5-1 – ThA5-4)

International Workshop on Three-Dimensional Image Reconstruction Techniques,
Brookhaven National Laboratory, Upton, New York

July 16-19, 1974

R. M. Mersereau, The Reconstruction of a Class of Signals from a Single
Projection with an Application in the Design of Digital Filters

Jason Conference, University of California, La Jolla, California

July 17-19, 1974

E. V. George, Review of Ultraviolet High-Powered Gas Lasers

Fourth International Conference on Atomic Physics, Heidelberg, Germany

July 22-26, 1974

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G. M. Carter and D. Pritchard, Differential Spin-Changing Cross Section
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D. E. Pritchard, J. Apt, and T. W. Ducas, Fine Structure of Na 4d Using
High-Resolution Two-Photon Spectroscopy (p. 317)

Eighth International Congress on Acoustics, London, England

July 23-31, 1974

A. W. F. Huggins, Temporally Segmented Speech. IV. Intelligibility Depends
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12th Annual Meeting, Association for Computational Linguistics, University of
Massachusetts, Amherst, Massachusetts

July 26-27, 1974

J. Allen and D. O'Shaughnessy, Fundamental Frequency Contours of Auxiliary
Phrases in English

Sharon Hunnicutt, Phonological Rules for a Text-to-Speech System

P. Miller, On the Automatic Creation of an ATN Grammar from a Transfor-
mational Grammar

MEETING PAPERS PRESENTED (continued)

Second International Joint Conference on Pattern Recognition, Copenhagen, Denmark
August 13-15, 1974

Reprints in Proceedings (IEEE catalog Number 74CHO885-4C)

C. Cox, B. Blesser, and M. Eden, The Application of Type Font Analysis to Automatic Character Recognition (pp. 226-232)

R. J. Shillman, T. T. Kuklinski, and B. A. Blesser, Experimental Methodologies for Character Recognition Based on Phenomenological Attributes (pp. 195-201)

I. T. Young, The Prediction of Performance in Multi-Class Pattern Classification (pp. 56-59)

18th Annual Technical Meeting, Society of Photo-optical Instrumentation Engineers, San Diego, California

August 19-23, 1974

S. Ezekiel, Ultrahigh-Resolution Laser Spectroscopy

R. E. Grove, F. Y. Wu, and S. Ezekiel, Frequency Stabilization of a cw Dye Laser

L. A. Hackel, D. G. Youmans, and S. Ezekiel, Precision Measurement of Hyperfine Structure in I_2

P. D. Henshaw and S. Ezekiel, A New High-Resolution Holographic Contouring Method

143rd Meeting, American Astronomical Society, Rochester, New York

August 20-23, 1974

Abstracts in Bull. Am. Astron. Soc., Vol. 6, No. 3, 1974

A. H. Barrett, P. Ho, and R. N. Martin, High-Resolution Spectra of Methanol Emission in the Orion K-L/B-N Source (p. 341)

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IEEE International Conference on Engineering in the Ocean Environment, Halifax, Nova Scotia

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A. B. Baggeroer, High-Resolution Velocity/Depth Spectra Estimation for Seismic Profiling

1974 Summer School on Circuit Theory, Prague, Czechoslovakia

September 2-6, 1974

A. V. Oppenheim, Current Research in Digital Signal Processing at M. I. T.

American Chemical Society Meeting, Atlantic City, New Jersey

September 8-13, 1974

R. R. Freeman, E. M. Mattison, D. E. Pritchard, and D. Kleppner, Alkali Hyperfine Shift in the van der Waals Molecule KAr

MEETING PAPERS PRESENTED (continued)

URSI Specialist Meeting on Microwave Scattering and Emission from the Earth,
Berne, Switzerland

September 23-26, 1974

- J. A. Kong, Theoretical Models for Microwave Remote Sensing of Ice and Snow
K. F. Kunzi, D. H. Staelin, and J. W. Waters, Earth Surface Emission
Measured with the Nimbus-5 Microwave Spectrometer

1974 Annual Meeting, Optical Society of America, Houston, Texas

October 15-18, 1974

Abstracts in J. Opt. Soc. Am. 64 (1974)

- S. D. Fantone and J. A. Kong, Scattering of TM Waves by a Surface Deformation on Uniaxial-Slab Waveguide (p. 1364)
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National Electronics Conference, Chicago, Illinois

October 16-18, 1974

Proceedings, Vol. XXIX, pp. 349-352

- I. T. Young, An Introduction to Statistical Pattern Recognition

16th Annual Plasma Physics Meeting, American Physical Society, Albuquerque,
New Mexico

October 28-31, 1974

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- U. Ascoli-Bartoli, L. Pieroni, S. Segré, and T. Howard, Thomson Scattering Diagnostics on Alcator (p. 972)
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American Association of Phonetic Sciences Meeting, St. Louis, Missouri
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D. H. Klatt, A Factor Analysis of Stressed Vowel Duration in a Connected Discourse

88th Meeting, Acoustical Society of America, St. Louis, Missouri
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- J. Allen and D. O'Shaughnessy, Fundamental-Frequency Contours of Auxiliary Phrases in English (p. S32)
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- Sarah J. Bell, Two Consequences of Advancement Rules in Cebuano (pp. 257-264)
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- P. Kiparsky, A Note on the Vowel Features (pp. 162-171)
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- A. M. Rivas, Nasalization in Guaraní (pp. 134-143)

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Fifth Conference on Plasma Physics and Controlled Nuclear Fusion Research,
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G. Bekefi, T. J. Orzechowski, and J. Golden, Magnetic Insulation and Its Application to Pulsed High-Voltage Ion Diodes

A. Bers, J. L. Kulp, and C. F. F. Karney, Symbolic Computation of Nonlinear Wave Interactions Applied to a Study of Lower Hybrid Heating of Tokamak Plasmas

B. Coppi, R. Pozzoli, G. Rewoldt, and T. Schep, Anomalous Transport Processes in High-Temperature Toroidal Plasmas

R. D. Hazeltine, A. A. Ware, D. J. Sigmar, S. P. Hirshman, J. E. McCune, E. C. Crume, J. T. Hogan, and J. F. Clarke, Electrostatic Trapping of High-Z Impurity Ions and α -Particle Transport in Tokamak Plasmas

D. J. Sigmar, S. P. Hirshman, J. E. McCune, J. F. Clarke, and E. C. Crume, Alpha Particle Diffusion in Tokamak Reactor

Sixth Conference on Aerospace and Aeronautical Meteorology, El Paso, Texas

November 12-15, 1974

Preprint Volume (published by Am. Meteorol. Soc., Boston, Mass.), pp. 216-221

Abstract in Bull. Am. Meteorol. Soc. 55, 897 (1974)

D. H. Staelin, Review of Nimbus-5 Microwave Spectrometer Results

Semiannual NSF Grantee-User Meeting on Optical Communication Systems, University of Illinois, Urbana, Illinois

November 14-15, 1974

J. H. Shapiro, Optical Propagation and Communication through Atmospheric Turbulence

American Physical Society Meeting, Chicago, Illinois

December 2-4, 1974

Abstracts in Bull. Am. Phys. Soc. 19, (1974)

J. Apt, W. D. Phillips, and D. E. Pritchard, Velocity Selection by Doppler Shift: Application to $\text{Na}^*3P \rightarrow \text{Cs}$, Rb Excitation Transfer (p. 1197)

S. Ezekiel, Molecular Beam Spectroscopy with Lasers (invited) (p. 1182)

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144th Meeting, American Astronomical Society, University of Florida, Gainesville, Florida

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P. C. Crane and R. M. Price, A Radio Survey of the Nuclei of Spiral Galaxies (p. 442)

J. M. Moran, K. Y. Lo, R. C. Walker, B. F. Burke, K. J. Johnston, G. L. Madder, S. H. Knowles, E. O. Hulburt, and G. D. Papadopoulos, VLBI Studies of H₂O Maser Sources (p. 436)

P. C. Myers, A Search for Continuum Radiation from Dust Clouds (p. 436)

R. C. Walker, K. Y. Lo, B. F. Burke, J. M. Moran, and K. J. Johnston, VLBI Observations of Cygnus A (p. 461)

1974 Fall Annual Meeting, American Geophysical Union, San Francisco, California,

December 12-17, 1974

Abstract in EOS Trans. American Geophysical Union, Vol. 56, No. 12, December 1974

D. O. Overskei and P. A. Politzer, Plasma Behavior in the Vicinity of a Magnetic Neutral Line (p. 1168)

JOURNAL PAPERS ACCEPTED FOR PUBLICATION

(Reprints, if available, may be obtained from the Document Room, 36-412, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139. Pages are indicated for papers already published.)

J. Allen, Computer Architecture for Signal Processing (Proc. IEEE)

M. Balooch, M. J. Cardillo, D. R. Miller, and R. E. Stickney, Molecular Beam Study of the Apparent Activation Barrier Associated with Adsorption and Desorption of Hydrogen on Copper (Surface Sci. 46, 358-392 (1974))

R. A. Blanken, P. Brossier, and D. S. Komm, A Technique to Measure Submillimeter Tokamak Synchrotron Radiation Spectra (IEEE Trans., Vol. MTT-22, No. 12, pp. 1057-1060, December 1974)

B. Blesser, R. Shillman, T. Kuklinski, C. Cox, M. Eden, and J. Ventura, A Theoretical Approach for Character Recognition Based on Phenomenological Attributes (Int. J. Man-Machine Studies 6, 701-714 (1974))

P. Brossier and R. A. Blanken, Interferometry at 337 μ m on a Tokamak Plasma (IEEE Trans., Vol. MTT-22, No. 12, 1053-1056, December 1974)

G. M. Carter and D. Pritchard, Evidence for a Molecular J-J Coupling Scheme for KI Neutral Potentials (J. Chem. Phys.)

S. H. Chung, J. Y. Lettvin, and S. R. Raymond, The CLOOGE: A Simple Device for Interspike Interval Analysis (J. Physiol. 239, 63-66P (1974))

R. E. Crochiere, A New Statistical Approach to the Coefficient Word Length Problem for Digital Filters (IEEE Trans. (CT))

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- R. E. Crochiere and A. V. Oppenheim, Analysis of Linear Digital Networks (Proc. IEEE (Special Issue))
- D. E. Dudgeon, Recursive Filter Design Using Differential Correction (IEEE Trans., Vol. ASSP-22, No. 6, 443-448, December 1974)
- P. Elias, Minimum Times and Memories Needed to Compute the Values of a Function (J. Comp. Syst. Sci., Vol. 9, No. 2, pp. 196-212, October 1974)
- P. Elias, Universal Codeword Sets and Representations of the Integers (IEEE Trans. (IT))
- P. Elias and R. Flower, The Complexity of Some Simple Retrieval Problems (J. ACM)
- R. A. Gahl, The Shaking Dance of Honeybee Workers: Evidence for Age Discrimination (Anim. Behav.)
- R. G. Gallager, Capacity and Coding for Degraded Broadcast Channels (in Russian) (Problemy Peredachii Informatsii 10, 3-14 (1974))
- R. G. Gallager and D. C. Van Voorhis, Optimal Source Codes for Geometrically Distributed Integer Alphabets (IEEE Trans. (IT))
- G. H. Granlund, Statistical Analysis of Chromosome Characteristics (Pattern Recognition 6, 115-126 (1974))
- R. E. Grove, F. Y. Wu, and S. Ezekiel, Frequency Stabilization of a cw Dye Laser (Opt. Eng. 13, 531-533 (1974))
- M. S. Gupta, A Simple Approximate Method of Estimating the Effect of Carrier Diffusion in IMPATT Diodes (Solid-State Electron.)
- P. D. Henshaw and S. Ezekiel, High-Resolution Holographic Contour Generation with White Light Reconstruction (Opt. Commun., Vol. 12, No. 1. 39-42, September 1974)
- H. Kildal, R. S. Eng, and A. H. M. Ross, Heterodyne Measurements of $^{12}\text{C}^{16}\text{O}$ Laser Frequencies and Improved Dunham Coefficients (J. Mol. Spectry. 53, 479-488 (1974))
- D. S. Komm, R. A. Blanken, and P. Brossier, Fast-Scanning Far Infrared Fabry-Perot Interferometer (Appl. Opt.)
- Y. Y. Lau and R. J. Briggs, Wave Packet Description of Inhomogeneous Plasma Instabilities (Nucl. Fusion)
- P. Mellema, A Brief against Case Grammar (Foundations of Language 11, 39-76 (1974))
- R. M. Mersereau and D. E. Dudgeon, Representation of Two-Dimensional Sequences as One-Dimensional Sequences (IEEE Trans., Vol. ASSP-22, No. 5, pp. 320-325, October 1974)
- R. M. Mersereau and D. E. Dudgeon, Two-Dimensional Digital Filtering (Proc. IEEE (Special Issue))

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- P. B. Montandon, N. D. Megill, Amy R. Kahn, W. T. Peake, and N. Y. S. Kiang, Recording Auditory-Nerve Potentials as an Office Procedure (Ann. Otol. Rhinol. Laryngol.)
- P. B. Montandon, N. T. Shepard, Elizabeth M. Marr, W. T. Peake, and N. Y. S. Kiang, Auditory-Nerve Potentials from Ear Canals of Patients with Otologic Problems (Ann. Otol. Rhinol. Laryngol.)
- E. Newman, Scanning Electron Microscopy of the Cortex of the Ciliate Stentor coeruleus. A View from the Inside (J. Protozool.)
- G. D. Papadopoulos, A Statistical Technique for Processing Radio Interferometer Data (IEEE Trans., Vol. AP-23, No. 1, pp. 45-53, January 1975)
- D. E. Robinson, S. Lees, and L. Bess, Near Field Transient Radiation Patterns for Circular Pistons (IEEE Trans., Vol. ASSP-22, No. 6, pp. 395-403, December 1974)
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- A. H. M. Ross, R. S. Eng, and H. Kildal, Heterodyne Measurements of $^{12}\text{C}^{18}\text{O}$, $^{13}\text{C}^{16}\text{O}$, and $^{13}\text{C}^{18}\text{O}$ Laser Frequencies and Mass Dependence of Dunham Coefficients (Opt. Commun. 12, 433-438 (1974))
- J. R. Ross, More on -ER- Globality (Foundations of Language 12, 269-270 (1974))
- I. A. Sag, The Grassmann's Law Ordering Pseudoparadox (Ling. Inquiry, Vol. V, No. 4, pp. 591-607, Fall 1974)
- J. J. Schuss and R. R. Parker, Behavior of Electron-Emitting Plasma Probes in the Space-Charge-Limited Regime (J. Appl. Phys. 45, 4778-4783 (1974))
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- I. T. Young, D. Levinstone, M. Eden, B-K. Tye, and D. Botstein, Alignment of Partial Denaturation Maps of Circularly Permuted DNA by Computer (Appendix to B-K. Tye, J. A. Huberman, and D. Botstein, Non-random Circular Permutation of Phage P22 DNA) (J. Mol. Biol. 85, 501-532 (1974))
- I. T. Young and I. L. Paskowitz, Localization of Cellular Structures (IEEE Trans., Vol. BME-22, No. 1, pp. 35-40, January 1975)
- H. P. Yuen, R. S. Kennedy, and M. Lax, Optimum Testing of Multiple Hypotheses in Quantum Detection Theory (IEEE Trans. (IT))
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- B. Coppi and G. Rewoldt, Fluid-like Instability of Trapped Electrons in Confined Plasmas (Phys. Letters A 49, 36-38 (1974))
- B. Coppi and G. Rewoldt, New Trapped Electron Instability (Phys. Rev. Letters 33, 1329-1332 (1974))
- D. E. Dudgeon, The Existence of Cepstra for Two-Dimensional Rational Polynomials (IEEE Trans. (ASSP))
- R. R. Freeman, E. M. Mattison, D. E. Pritchard, and D. Kleppner, Alkali-Metal Hyperfine Shift in the van der Waals Molecule KAr (Phys. Rev. Letters 33, 397-399 (1974))
- Mary-Louise Kean, Re: "An Argument Against the Principle of Simultaneous Application of Phonological Rules (Ling. Inquiry, Vol. IV, No. 4, pp. 541-545, Fall 1973)
- M. G. Littman, Precise Calibration Method for Time-to-Amplitude Converter (Rev. Sci. Instr. 45, 1608-1609 (1974))
- R. M. Mersereau, An Algorithm for Performing an Inverse Chirp Z-Transform (IEEE Trans., Vol. ASSP-22, No. 5, pp. 387-388, October 1974)
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- W. D. Phillips and D. Pritchard, Velocity Selection by Doppler Shift: A General Method for Studying Excited State Collisions (Phys. Rev. Letters 33, 1254-1257 (1974))
- N. Pippenger, On the Complexity of Strictly Nonblocking Concentration Networks (IEEE Trans, Vol. COM-22, No. 11, pp. 1890-1892, November 1974)
- C. A. Primmerman, L. M. Lidsky, and P. A. Politzer, Trapped Electron Mode in Cylindrical Geometry (Phys. Rev. Letters 33, 957-960 (1974))
- J. H. Shapiro, Signal Processing for a Signal with Poisson Noise: Comments (Appl. Opt. 13, 2462-2463 (1974))
- D. J. Sigmar, J. F. Clarke, R. V. Neidigh, and K. L. Vander Sluis, The Hot Ion Distribution Function in the Oak Ridge Tokamak (Phys. Rev. Letters 33, 1376-1379 (1974))
- H. P. Yuen, Generalized Coherent States and the Statistics of Two-Photon Lasers (Phys. Letters A)

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