

PUBLICATIONS AND REPORTS

MEETING PAPERS PRESENTED

Symposium on Plasma Heating in Toroidal Devices, Varenna, Italy

September 4-17, 1974

Papers in Proceedings, Editrice Compositori, Bologna, Italy, 1974

B. Coppi, D. Bhadra, and A. Sleeper, Collective Modes in a Beam Injected Plasma (pp. 159-165)

B. Coppi, R. Pozzoli, G. Rewoldt, and T. Schep, Anomalous Transport Processes in High Temperature Toroidal Plasmas (pp. 155-158)

R. Pozzoli, Splitting of the Electron Population by the Electric Field in a Toroidal Plasma (pp. 225-227)

First Conference on Medical Information Systems, Urbana-Champaign, Illinois

October 17-18, 1974

M. Eden, Some Methodological Issues in Analyzing the Diagnostic Process

Golden Anniversary Symposium, Linguistic Society of America, University of California, Berkeley, California

November 8, 1974

K. Hale, Theoretical Linguistics in Relation to American Indian Communities

1974 Winter Meeting, Linguistic Society of America, New York, New York

December 27-30, 1974

R. C. May, A Semantic Theory of Polarity: An Examination of Yet and Already

I. Sag and M. Liberman, On the Question of the Intonation of Questions

Joint Annual Meeting, American Physical Society and American Association of Physics Teachers, Anaheim, California

January 29 - February 1, 1975

Abstracts in Bull. Am. Phys. Soc., Vol. 20, No. 1, 1975

A. Bers, Symbolic Computation of Nonlinear Wave Interactions (p. 38)

U.S.-Australian Workshop on Plasma Waves, University of Sydney, Sydney, Australia

February 13, 1975

Abstracts in Proceedings

A. Bers, Ion Heating in Tokamaks by Wave Penetration and Parametric Downconversion of RF Power (pp. 5.1-5.6)

A. Bers, Three-Dimensional Stability Analysis for Coupled Waves (pp. 19.1-19.4)

A. Bers, Three-Dimensional Pulse Shapes of Laser-Plasma Instabilities (pp. 20.1-20.6)

Second International Congress in Waves and Instabilities in Plasmas, Institute for Theoretical Physics, University of Innsbruck, Innsbruck, Austria

March 17-21, 1975

A. Bers, High-Frequency Microturbulence in Tokamak Plasmas

MEETING PAPERS PRESENTED (continued)

Optical Society of America, Spring Conference on Remote Sensing of the Atmosphere,
Anaheim, California

March 19-21, 1975

Papers in Proceedings

P. W. Rosenkranz, Microwave Transmittance of the Clear Atmosphere
(pp. WB-1 - WB-4)

1975 Conference on Systems and Information Science, Johns Hopkins University,
Baltimore, Maryland

April 2-4, 1975

Abstracts in Proceedings

S. J. Dolinar, Jr., A Class of Optical Receivers Using Optical Feedback
(p. 193)

S. R. Robinson, Phase Compensation Receivers for Improved Low Visibility
Optical Communication (p. 194)

H. P. Yuen, Generalized Coherent States and Optical Communications (pp. 171-
177)

Annual Meeting on Theoretical Aspects of Controlled Thermonuclear Research,
Washington, D.C.

April 7-9, 1975

B. Coppi, F. Pegoraro, and G. Rewoldt, Resonant Ion Heating and Slide-Away
Regime in High Temperature Plasmas

89th Meeting, Acoustical Society of America, Austin, Texas

April 7-11, 1975

Abstracts in J. Acoust. Soc. Am., Vol. 57, Supplement No. 1, Spring 1975

J. Allen and D. O'Shaughnessy, Effect on Fundamental Frequency Contours
of Modality Operators (p. S2)

S. E. Blumstein and K. N. Stevens, Property Detectors for Bursts and
Transitions in Speech Perception (p. S52)

D. H. Klatt and W. E. Cooper, Perception of Vowel Duration in Sentence
Contexts (p. S47)

V. K. Singhal, Flow Noise and Self-Excitation of Pipes (p. S39)

K. N. Stevens, Quantal Configurations for Vowels (p. S70)

Jacqueline Vaissière, Nuclear Stress Rule in French (p. S1)

V. W. Zue, Acoustic Phonetic Data Base for the Study of Selected English
Consonants, Consonant Clusters, and Vowels (p. S34)

Fifth International Symposium on Molecular Beams, Nice, France

April 7-12, 1975

Abstracts in Proceedings

D. E. Pritchard, Molecular Beams without Molecular Beams Machines (p. A-0)

11th Regional Meeting of the Chicago Linguistic Society, Chicago, Illinois

April 17-20, 1975

W. E. Cooper and J. R. Ross, World Order

MEETING PAPERS PRESENTED (continued)

I. A. Sag and M. Liberman, The Intonational Disambiguation of Indirect Speech

V Annual Communication Workshop sponsored by IEEE Communication Society, Gleneden Beach, Oregon

April 21-23, 1975

J. H. Shapiro, Communication Theory and Atmospheric Optics (invited paper)

International Symposium on Circuits and Systems, Newton, Massachusetts

April 21-24, 1975

Papers in Proceedings (IEEE Catalog Number 75CHO937-3CAS)

R. M. Mersereau, D. B. Harris, and H. S. Hersey, An Efficient Algorithm for the Design of Equiripple Two-Dimensional FIR Digital Filters (pp. 443-446) (invited paper)

International Symposium on Cancer Therapy by Hyperthermia and Radiation, Washington, D.C.

April 28-30, 1975

A. H. Barrett and P. C. Myers, Microwave Thermography: Noninvasive Sensing of Subcutaneous Temperatures

Spring Meeting, American Physical Society, Washington, D.C.

April 28-May 1, 1975

Abstracts in Bull. Am. Phys. Soc. 20, (1975)

G. Bekefi and T. J. Orzechowski, Impedance of a Field-Emission Diode in a Crossed Magnetic Field (p. 584)

G. M. Carter and D. E. Pritchard, Evidence for Molecular J-J Coupling in the Neutral States of KI (p. 730)

B. Coppi, The Problem of Electrical Resistivity in High Temperature Plasmas (p. 543) (invited paper)

B. Coppi et al., Confinement and Heating of High and Low Density Plasmas in Alcator (p. 657)

B. Coppi, L. Pieroni, and S. Segre, Electron Slide-Away Regime in High Temperature Plasmas (p. 705)

T. W. Ducas, M. G. Littman, R. R. Freeman, and D. Kleppner, Production and Detection of Highly Excited States of Na (p. 680)

R. R. Freeman, The Origins of the g Factor Shift in Alkali-Rare Gas van der Waals Molecules (p. 730)

E. V. George, Kinetic Modeling of High Pressure Ultraviolet Lasers (p. 569) (invited paper)

M. G. Littman, T. W. Ducas, and D. Kleppner, Lifetime Measurements in the A-State of Na₂ (p. 730)

T. J. Orzechowski and G. Bekefi, Plasma Motion in a Field-Emission Diode Subjected to a Crossed Magnetic Field (p. 584)

F. Pegoraro, B. Coppi, and G. Rewoldt, Electrical Resistivity and Collective Modes in High Temperature Plasmas (p. 704)

W. D. Phillips, W. E. Cooke, Francine E. Wright, J. D. McKenzie, and D. Kleppner, Magnetic Moment in the Proton in H₂O (p. 609)

MEETING PAPERS PRESENTED (continued)

G. Rewoldt, B. Coppi, and T. Schep, Plasma Decontamination and Energy Transport Due to Impurity Driven Modes (p. 724)

Seminar, State University of New York at Buffalo, Buffalo, New York

May 2, 1975

A. V. Oppenheim, Digital Processing of Speech

1975 IEEE MTT-S International Microwave Symposium, Palo Alto, California

May 12-14, 1975

Papers in Proceedings (IEEE Catalog Number 75CH0955-5MTT)

D. H. Staelin, Passive Microwave Sensing of the Earth (pp. 20-22)

13th Symposium on Electron, Ion, and Photon Beam Technology, Sponsored by IEEE Group on Electron Devices and American Vacuum Society, Colorado Springs, Colorado

May 21-23, 1975

N. D. Wittels, A Unipotential Lens with Electron-Transparent Electrodes

6^{èmes} Journées d'Etude sur la Parole, Toulouse, France

May 28-30, 1975

Papers in Proceedings

Jacqueline Vaissière, Caracterisation des Variations de la Frequence du Fondamental dans les Phrases Françaises (pp. 39-50)

XVIIIth COSPAR Meeting, Varna, Bulgaria

May 29 - June 7, 1975

D. H. Staelin, W. H. Ledsham, R. L. Pettyjohn, P. W. Rosenkranz, R. K. L. Poon, and J. W. Waters, Microwave Sensing of Atmospheric Temperature and Humidity from Satellites

Seventh Conference on Numerical Simulation of Plasmas, Courant Institute, New York University, New York

June 2-4, 1975

Papers in Proceedings

A. Bers and A. Reiman, Nonlinear Interaction of Three Wave Packets in Time and Space (pp. 192-195)

A. Reiman and A. Bers, Stability Analysis of a Finite Difference Scheme Using Symbolic Computation (pp. 188-191)

Fifth International Conference on Atomic Masses and Fundamental Constants, Paris, France

June 2-6, 1975

Papers in Proceedings

L. A. Hackel, D. G. Youmans, and S. Ezekiel, Molecular Beam Stabilized Argon Laser (p. 24)

W. D. Phillips, W. E. Cooke, and D. Kleppner, Magnetic Moment of the Proton in H_2O in Units of the Bohr Magneton (p. 60)

MEETING PAPERS PRESENTED (continued)

Department of Atmospheric Physics, University of Leningrad, USSR

June 10, 1975

D. H. Staelin, Microwave Sounding of the Terrestrial Atmosphere (invited lecture)

Main Geophysical Observatory, Leningrad, USSR

June 11, 1975

D. H. Staelin, Systems for Measurement of Atmospheric Pollution and the Problem of Dynamic Control (invited lecture)

APL 75 Congress, University of Pisa, Pisa, Italy

June 11-13, 1975

P. Penfield, Jr., An APL Interpreter Written in APL

Institute of Physics, University of Leningrad, USSR

June 12, 1975

D. H. Staelin, Radio Astronomy of the Planet Earth (invited lecture)

Arctic and Antarctic Research Institute, Leningrad, USSR

June 17, 1975

D. H. Staelin, Microwave Observations of Ice and Snow (invited lecture)

Second Laser Spectroscopy Conference, Megève, France

June 23-28, 1975

K. N. Casleton, L. A. Hackel, and S. Ezekiel, Magnetic Octupole Interaction in I_2

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.)

- G. Bekefi and C. Deutsch, A Spectroscopic Look at Plasma Turbulence (Comments on Plasma Physics and Controlled Fusion)
- M. J. Cardillo, M. Balooch, and R. E. Stickney, Detailed Balancing and Quasi Equilibrium in the Adsorption of Hydrogen on Copper (Surface Sci.)
- N. Chomsky and J. J. Katz, On Innateness: A Reply to Cooper (Philos. Rev., Vol. LXXXIV, No. 1, pp. 70-87, January 1975)
- N. Chomsky, Questions of Form and Interpretation (Ling. Anal., Vol. 1, No. 1, pp. 75-109, 1975)
- B. Coppi and D. Bhadra, Collective Modes in a Homogeneous Beam-Injected Plasma (Phys. Fluids 18, 692-698 (1975))
- B. Coppi and A. Taroni, Scattering of Toroidal Orbits by Standing Even Modes (Plasma Phys.)

JOURNAL PAPERS ACCEPTED FOR PUBLICATION (continued)

- D. E. Dudgeon, Two-Dimensional Recursive Filter Design Using Differential Correction (IEEE Trans., Vol. ASSP-23, No. 3, pp. 264-267, June 1975)
- T. H. Dupree, C. Wagner, and W. M. Manheimer, Observation of Clumps in Simulation Plasma (Phys. Fluids)
- P. Elias, Distinguishable Codeword Sets for Shared Memory (IEEE Trans. (IT))
- J. A. Fodor, Special Sciences (or: The Disunity of Science as a Working Hypothesis) (Synthese 28, 97-115 (1974))
- D. A. Godfrey, N. Y. S. Kiang, and Barbara E. Norris, Single Unit Activity in the Postventral Cochlear Nucleus of the Cat (J. Comp. Neurol.)
- D. A. Godfrey, N. Y. S. Kiang, and Barbara E. Norris, Single Unit Activity in the Dorsal Cochlear Nucleus of the Cat (J. Comp. Neurol.)
- M. S. Gupta, Applications of Electrical Noise (Proc. IEEE)
- M. S. Gupta, A Nonlinear Equivalent Circuit for IMPATT Diodes (Solid-State Electron.)
- M. S. Gupta, Definition of Instantaneous Frequency and Frequency Measurability (Am. J. Phys.)
- K. Hale, Counterexamples and Explanations in Navajo Linguistics: Phonology (Navajo Lang. Rev. 1:4, 175-202 (1974))
- K. Hale, Counterexamples and Explanations in Navajo Linguistics: Syntax (Navajo Lang. Rev. 2:1, 29-60 (1975))
- K. Hale and Lorraine Honie, On the Comparison of Languages (Navajo Lang. Rev. 1:2, 85-93 (1974))
- K. Hale and P. R. Platero, Aspects of Navajo Anaphora: Relativization and Pronominalization (Navajo Lang. Rev. 1:1, 9-28 (1974))
- R. D. Hall, Choice Times and Spence's Discrimination Learning Theory (Learn. and Motiv. 6, 202-216 (1975))
- H. A. Haus, Theory of Modelocking with a Fast Saturable Absorber (J. Appl. Phys.)
- H. A. Haus, A Theory of Forced Modelocking (J. Quant. Electron., Vol. QE-11, No. 7, pp. 323-330, July 1975)
- A. W. F. Huggins, On Isochrony and Syntax (J. Phonetics)
- B. H. Hui and T. H. Dupree, Computer Experiments on Clump Formation in Plasma (Phys. Fluids 18, 235-242 (1975))
- U. Ingard and V. K. Singhal, The Effect of Flow on the Acoustic Resonances of an Open-Ended Duct (J. Acoust. Soc. Am.)
- N. Y. S. Kiang, D. A. Godfrey, Barbara E. Norris, and Susan E. Moxon, A Block Model of the Cat Cochlear Nucleus (J. Comp. Neurol.)
- D. H. Klatt, Vowel Lengthening Is Syntactically Determined in a Connected Discourse (J. Phonetics)

JOURNAL PAPERS ACCEPTED FOR PUBLICATION (continued)

- L. M. Lidsky, Fission-Fusion Systems: Hybrid, Symbiotic, and Augean (Nucl. Fusion)
- Paula Menyuk and Mary Klatt, Voice Onset Time in Consonant Cluster Production by Children and Adults (J. Child Language)
- P. C. Myers, Molecule-Dust Correlations in Dark Cloud Khavtassi 3 (Astrophys. J.)
- Ellavina Perkins, The Navajo Particle of Constituent Negation (Navajo Lang. Rev. 1:2, 53-62 (1974))
- P. W. Rosenkranz, Shape of the 5 mm Oxygen Band in the Atmosphere (IEEE Trans., Vol. AP-23, No. 4, pp. 498-506, July 1975)
- C. L. Searle, L. D. Braida, D. R. Cuddy, and M. F. Davis, Binaural Pinna Disparity: Another Auditory Localization Cue (J. Acoust. Soc. Am. 57, 448-455 (1975))
- D. H. Staelin, A. L. Cassel, K. Kunzi, R. L. Pettyjohn, R. K. L. Poon, and P. W. Rosenkranz, Microwave Atmospheric Temperature Sounding: Effects of Clouds on the Nimbus-5 Satellite Data (J. Atmos. Sci.)
- K. N. Stevens and Sheila E. Blumstein, Quantal Aspects of Consonant Production and Perception: A Study of Retroflex Stop Consonants (J. Phonetics)
- W. D. Stratton, Intonation Feedback for the Deaf through a Tactile Display (The Volta Rev., pp. 26-35, January 1974)
- D. E. Troxel, Serial Interfaces for Minicomputers (IEEE Trans. (C))
- D. E. Troxel, Computer Editing of News Photos (IEEE Trans. (SMC))
- L. Tsang, E. Njoku, and J. A. Kong, Microwave Thermal Emission from a Stratified Medium with Nonuniform Temperature Distribution (J. Appl. Phys.)
- I. L. Ver, R. M. Brown, and N. Y. S. Kiang, Low-Noise Chambers for Research in Auditory Physiology (J. Acoust. Soc. Am.)
- I. T. Young and Stephanie E. Sher, A Measurement Technique for Cell Adhesiveness (Blood)

LETTERS TO THE EDITOR ACCEPTED FOR PUBLICATION

- A. H. Barrett, P. Ho, and R. N. Martin, Time Variations and Spectral Structure of the Methanol Maser in Orion A (Astrophys. J. Letters)
- B. Coppi and G. Rewoldt, Trapped Electron Instabilities Driven by Magnetic Curvature Drifts (Phys. Letters A)
- R. H. Domnitz, A Headphone Monitoring System for Binaural Experiments below 1 kHz (J. Acoust. Soc. Am.)
- T. W. Ducas, M. G. Littman, R. R. Freeman, and D. Kleppner, Stark Ionization of High Lying States of Sodium (Phys. Rev. Letters)
- N. J. Fisch and A. Bers, On Resonance Broadening for Wave-Particle and Wave-Wave Turbulence (Phys. Rev. Letters)

LETTERS TO THE EDITOR ACCEPTED FOR PUBLICATION (continued)

- V. Nedzelnitsky and T. F. Weiss, Intracochlear Sound Pressure Measurements: Consequences for Middle and Inner Ear Sound Transmission (Nature)
- L. Pieroni and S. E. Segre, Observations of Non-Maxwellian Electron Distribution Functions in the Alcator Devices by Means of Thomson Scattering and Their Interpretation (Phys. Rev. Letters 34, 928-930 (1975))
- L. Tsang and J. A. Kong, Application of the Radio-Frequency Interferometry Method to a Stratified Anisotropic Medium (IEEE Trans. (AP))
- H. P. Yuen, Two-Photon Stimulated Emission and Pulse Amplification (Appl. Phys. Letters 26, 505-507 (1975))

TECHICAL REPORTS PUBLISHED

(These and previously published technical reports, if available, may be obtained from the Document Room, 36-412, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139)

- 488 Richard A. Flower, An Analysis of Optimal Retrieval Systems with Updates

SPECIAL PUBLICATIONS

- U. Ascoli-Bartoli, G. Bosia, G. Boxman, P. Brossier, B. Coppi, L. DeKock, B. Meddens, B. Montgomery, A. Oomens, L. Ornstein, R. Parker, L. Pieroni, S. Segre, R. Taylor, P. van der Laan, and R. Van Heyningen, High and Low Current Density Plasma Experiments within the M. I. T. Alcator Program (Proc. Fifth Conference on Plasma Physics and Controlled Nuclear Fusion Research, Tokyo, Japan, November 11-15, 1974) (International Atomic Energy Agency, Vienna, 1975), pp. 191-203
- A. B. Baggeroer, High Resolution Velocity/Depth Spectra Estimation for Seismic Profiling (Proc. IEEE International Conference on Engineering in the Ocean Environment, Halifax, Nova Scotia, August 21-23, 1974), IEEE Publication 74CHO873-0 OCC, Vol. 2, pp. 201-211
- A. H. Barrett and P. C. Myers, Microwave Thermography: A Method of Detecting Subsurface Thermal Patterns, in Bibliotheca Radiologica, Vol. 6 (S. Karger Publishers, Basel, Switzerland)
- G. Bekefi, Collective Emission Processes in Unmagnetized Plasmas, in C. DeWitt and J. Peyraud (Eds.), Plasma Physics (Gordon and Breach Science Publishers, New York, London, Paris, 1975), pp. 3-111
- A. Bers, Linear Waves and Instabilities, in C. DeWitt and J. Peyraud (Eds.), Plasma Physics (Gordon and Breach Science Publishers, New York, London, Paris, 1975), pp. 113-215
- B. Coppi, R. Pozzoli, G. Rewoldt, and T. Schep, Anomalous Transport Processes in High Temperature Toroidal Plasmas (Proc. Fifth Conference on Plasma Physics and Controlled Nuclear Fusion Research, Tokyo, Japan, November 11-15, 1974) (International Atomic Energy Agency, Vienna, 1975), pp. 549-558

SPECIAL PUBLICATIONS (continued)

- 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 (Proc. Fifth Conference on Plasma Physics and Controlled Nuclear Fusion Research, Tokyo, Japan, November 11-15, 1974) (International Atomic Energy Agency, Vienna, 1975), pp. 589-603
- M. Liberman and I. Sag, Prosodic Form and Discourse Function, in M. W. LaGaly, R. A. Fox, and A. Bruck (Eds.), Papers from the Tenth Regional Meeting of the Chicago Linguistic Society, Chicago, Illinois, April 19-21, 1974, pp. 416-427
- W. F. Mecklenbräuker and R. M. Mersereau, Efficient Design and Implementation for Two-Dimensional FIR Digital Filters Designed Using Generalized McClellan Transformations (Proc. IEEE Electronics and Aerospace Systems Conference, Washington, D.C., September 29 - October 1, 1975), ESCON '75 Record
- R. T. Oehrle, Some Remarks on the Painting of Rembrandt, in M. W. LaGaly, R. A. Fox, and A. Bruck (Eds.), Papers from the Tenth Regional Meeting of the Chicago Linguistic Society, Chicago, Illinois, April 19-21, 1974, pp. 504-516
- A. Oppenheim, G. Kopec, and J. Tribolet, Homomorphic Prediction (Proc. IEEE Electronics and Aerospace Systems Conference, Washington, D.C., September 29 - October 1, 1975), ESCON '75 Record
- D. M. Perlmutter and J. Oresnik, Einzelsprachliche Regeln und Erklärung in der Syntax, in D. Perlmutter and F. Kiefer (Eds.), Syntax und Generative Grammatik (Athenaion, Frankfurt, Germany, 1974), pp. 161-230
- D. M. Perlmutter, On Teaching Syntactic Argumentation, in F. P. Dinneen, S. J. (Ed.), Linguistics: Teaching and Interdisciplinary Relations (Papers from Georgetown University Round Table on Languages and Linguistics 1974), pp. 83-92
- J. R. Ross, There, There, (There, (There, (There, ...))), in M. W. LaGaly, R. A. Fox, and A. Bruck (Eds.), Papers from the Tenth Regional Meeting of the Chicago Linguistic Society, Chicago, Illinois, April 19-21, 1974, pp. 569-586
- J. R. Ross, Where to Do Things with Words, in J. P. Kimball (Ed.), Syntax and Semantics, Vol. 3 (Academic Press, New York, San Francisco, London, 1974), pp. 233-256