

PUBLICATIONS AND REPORTS

MEETING PAPERS PRESENTED

6th Annual Mathematical Psychology Meeting, Montreal, Canada

August 25-26, 1973

J. E. Berliner and N. I. Durlach, A Perceptual-Anchor Model for Context Coding in Intensity Perception

L. D. Braida, J. E. Berliner, R. P. Lippmann, and N. I. Durlach, Intensity Resolution in Audition

R. P. Lippmann and L. D. Braida, Maximum-Likelihood Estimation of Resolution and Bias Parameters in Identification Experiments

IAU Symposium 60 "Galactic Radio Astronomy," Maroochydore, Australia

September 2-7, 1973

R. M. Price, Continuum Radio Emission and Galactic Structure

Symposium on Nonlinear Estimation and Its Applications, San Diego, California

September 10-12, 1973

J. M. F. Moura, H. L. Van Trees, and A. B. Baggeroer, Space/Time Tracking by a Passive Observer

26th Annual Conference on Engineering in Medicine and Biology, Minneapolis, Minnesota

September 30-October 4, 1973

D. L. Sulman, O. L. Bing, S. K. Burns, and R. G. Mark, Dynamic Loading of Isolated Cardiac Muscle through Real-Time Computer Control

XXIV International Astronautical Federation Congress, Baku, USSR

October 8-15, 1973

K. F. Kunzi, D. H. Staelin, and J. W. Waters, Surface Observations by the Nimbus-5 Staellite Microwave Spectrometer

D. H. Staelin, F. T. Barath, K. F. Kunzi, R. Pettyjohn, R. Poon, J. W. Waters, and R. Wilcox, The Nimbus-5 Microwave Spectrometer Experiment

J. W. Waters, B. G. Anderson, K. F. Kunzi, and D. H. Staelin, Microwave Radiometric Observations of Stratospheric Temperatures

International Joint Conference on Pattern Recognition, Washington, D.C.

October 30-November 1, 1973

B. Blesser, R. Shillman, T. Kuklinsi, C. Cox, M. Eden, and J. Ventura, A Theoretical Approach for Character Recognition Based on Phenomenological Attributes

86th Meeting, Acoustical Society of America, Los Angeles, California

October 30-November 2, 1973

A. G. Galaitsis and U. Ingard, Nonlinear Sound Propagation in a Duct with Resonant Lining

U. Ingard, Acoustical Characteristics of an Open-Ended Duct with Flow

K. N. Stevens, Theory of Vocal-Cord Vibration and Its Relation to Laryngeal Features

MEETING PAPERS PRESENTED (continued)

15th Annual Plasma Physics Meeting, American Physical Society, Philadelphia, Pennsylvania

October 31-November 3, 1973

A. Bers and D. C. Watson, Stability Analysis for Third-Order Nonlinear Wave-Wave Interactions

F. W. Chambers, R. J. Hawryluk, and A. Bers, Pulse Evolution of Second-Order Wave-Wave Interactions

C. F. F. Karney, A. Bers, and J. L. Kulp, Nonlinear Excitation of Ion Waves near the Lower-Hybrid Frequency

M. S. Tekula and A. Bers, Current Driven Instabilities of Ion Waves at an Angle to B_0

M. L. Vianna and A. Bers, Beam-Plasma Interaction in a Longitudinal Density Gradient

D. C. Watson and A. Bers, Third-Order Nonlinear Theory of Wave-Wave Interactions

1973 IEEE Ultrasonic Symposium, U.S. Naval Post Graduate School, Monterey, California

November 5, 1973

A. Bers, Nonlinear Interactions of Acoustic Surface Waves with Electrons at Semiconductor Surfaces (invited paper)

Conference on the Anatomy and Physiology of the Stato-acoustic Nerve in Non-mammalian Vertebrates, Ames Research Center, Moffet Field, California

November 5-6, 1973

L. S. Frishkopf, Effects of Stimulation on Synaptic Body Size in Auditory Hair Cells in the Frog

M. J. Mulroy, Cochlear Anatomy of the Alligator Lizard

Third Annual Meeting, Society for Neuroscience, San Diego, California

November 7-10, 1973

L. S. Frishkopf, Discussant on a State-of-the-Art Panel, entitled "Hair Cells: A Most Stimulating and Exciting State"

NSF Conference on Optical Communication, Washington University, St. Louis, Missouri

November 13-15, 1973

J. H. Shapiro, Spatial Communication Theory for the Turbulent Atmosphere

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)

W. P. Allis and H. A. Haus, Electron Distribution in Gas Lasers (J. Appl. Phys.)

A. Bers and D. C. Watson, Stability Analysis for Third-Order Nonlinear Wave-Wave Interactions (Abstract) (Bull. Am. Phys. Soc.)

JOURNAL PAPERS ACCEPTED FOR PUBLICATION (continued)

- B. Blesser and F. Ives, A Reexamination of the S/N Question for Systems with Time-Varying Gain or Frequency Response (J. Audio Eng. Soc.)
- F. W. Chambers, R. J. Hawryluk, and A. Bers, Pulse Evolution of Second-Order Wave-Wave Interactions (Abstract) (Bull. Am. Phys. Soc.)
- B. Coppi and R. Pozzoli, Three-Electron Populations Model for Current-Carrying Plasmas (Plasma Phys.)
- B. Coppi and A. Taroni, Quasi-trapped Particle Orbits Due to Toroidal Plasma Modes (Plasma Phys.)
- M. Eden, Image Processing Techniques in Relation to Studies of Red Cell Shape (Nouvelle Revue Française d'Hématologie)
- C. Freed, A. H. M. Ross, and R. G. O'Donnell, Determination of Laser Line Frequencies and Vibrational-Rotational Constants of the $^{12}\text{C } ^{18}\text{O}_2$, $^{13}\text{C } ^{16}\text{O}_2$, and $^{13}\text{C } ^{18}\text{O}_2$ Isotopes from Measurements of cw Beat Frequencies with Fast HgCdTe Photodiodes and Microwave Frequency Counters (J. Mol. Spectry.)
- R. G. Gallager, Tree Encoding for Symmetric Sources with a Distortion Measure (IEEE Trans. (IT))
- L. A. Hackel, D. G. Youmans, and S. Ezekiel, Micro-Angstrom Spectroscopy (Abstract of Post-Deadline Paper presented at the Optical Society of America Spring Meeting, Denver, Colorado, March 13-16, 1973) (J. Opt. Soc. Am.)
- R. D. Hall and E. P. Lindholm, Organization of Motor and Somatosensory Neocortex in the Albino Rat (Brain Res.)
- C. W. Helstrom and R. S. Kennedy, Noncommuting Observables in Quantum Detection and Estimation Theory (IEEE Trans. (IT))
- U. Ingard and V. K. Singhal, Sound Attenuation in Turbulent Pipe Flow (J. Acoust. Soc. Am.)
- C. F. F. Karney, A. Bers, and J. L. Kulp, Nonlinear Excitation of Ion Waves by Waves near the Lower-Hybrid Frequency (Abstract) (Bull. Am. Phys. Soc.)
- Mary-Louise Kean, The Strict Cycle in Phonology (Ling. Inquiry)
- N. Y. S. Kiang and E. C. Moxon, Tails of Tuning Curves of Auditory-Nerve Fibers (J. Acoust. Soc. Am.)
- D. H. Klatt, Vowel Duration as a Function of the Syllabic Structure of a Word (Abstract) (J. Acoust. Soc. Am.)
- D. H. Klatt, Generative Theory of Segmental Duration in English (Abstract) (J. Acoust. Soc. Am.)
- R. M. Mersereau, Recovering Multidimensional Signals from Their Projections (Computer Graphics and Image Processing)
- P. C. Myers, Study of Correlations among OH, H₂CO, HI and Dust toward W 44 (Abstract) (Bull. Am. Astron. Soc.)

JOURNAL PAPERS ACCEPTED FOR PUBLICATION (continued)

- A. C. Reisz, I. I. Shapiro, J. M. Moran, G. D. Papadopoulos, B. F. Burke, K. Y. Lo, and P. R. Schwartz, W3 (OH): Accurate Relative Positions of Water-Vapor Emission Features (Astrophys. J.)
- J. H. Spencer and B. F. Burke, A Search for Radio Emission from S Andromedae (Abstract) (Bull. Am. Astron. Soc.)
- D. H. Staelin, A. H. Barrett, J. W. Waters, F. T. Barath, E. J. Johnston, P. W. Rosenkranz, N. E. Gaut, and W. B. Lenoir, Microwave Spectrometer on the Nimbus-5 Satellite: Meteorological and Geophysical Data (Science)
- K. N. Stevens and D. H. Klatt, The Role of Formant Transitions in the Voiced-Voiceless Distinction for Stops (J. Acoust. Soc. Am.)
- J. P. Sullivan and S. Ezekiel, A Two-Component Laser Doppler Velocimeter for Periodic Flow Fields (J. Phys. E.)
- M. S. Tekula and A. Bers, Current-Driven Instabilities of Ion Waves at an Angle to B_0 (Abstract) (Bull. Am. Phys. Soc.)
- M. G. R. Thomson, Resolution and Contrast in the Conventional and the Scanning High-Resolution Transmission Electron Microscopes (Optik)
- M. L. Vianna and A. Bers, Beam-Plasma Interaction in a Longitudinal Density Gradient (Abstract) (Bull. Am. Phys. Soc.)
- D. C. Watson and A. Bers, Third-Order Nonlinear Theory of Wave-Wave Interactions (Abstract) (Bull. Am. Phys. Soc.)
- T. F. Weiss, M. J. Mulroy, and D. W. Altmann, Intracellular Responses to Acoustic Clicks in the Inner Ear of the Alligator Lizard (J. Acoust. Soc. Am.)
- T. F. Weiss, M. J. Mulroy, and D. W. Altmann, Auditory Responses of Single Cells in the Inner Ear of the Alligator Lizard (Abstract) (J. Acoust. Soc. Am.)

LETTERS TO THE EDITOR ACCEPTED FOR PUBLICATION

- R. H. Bolt, F. S. Cooper, E. E. David, Jr., P. B. Denes, J. M. Pickett, and K. N. Stevens, Speaker Identification by Speech Spectrograms: Some Further Observations (J. Acoust. Soc. Am.)
- B. Coppi, Plasma Modes Due to Impurity and Magnetically Trapped Ions (Phys. Rev. Letters)
- B. Coppi and T. J. Schep, Collisional Impurity Modes (Phys. Letters A)
- R. R. Parker and A. L. Throop, Observation of Parametric Instability Induced by Beam-Plasma Interaction (Phys. Rev. Letters)
- D. G. Ruben, S. G. Kukolich, L. A. Hackel, and S. Ezekiel, Laser-Molecular Beam Measurement of Hyperfine Structure in the I_2 Spectrum (Chem. Phys. Letters)

TECHNICAL 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)

487 Nicholas Pippenger, The Complexity Theory of Switching Networks

SPECIAL PUBLICATIONS

- B. Blesser and F. Ives, A Re-examination of the S/N Question for Systems with Time-Varying Gain or Frequency Response (Proc. 42nd Convention of Audio Engineering Society, Los Angeles, California, May 2-5, 1972), pp. 1-10
- B. Blesser, R. Shillman, T. Kuklinski, C. Cox, M. Eden, and J. Ventura, A Theoretical Approach for Character Recognition Based on Phenomenological Attributes (Proc. International Joint Conference on Pattern Recognition, Washington, D.C., October 30-November 1, 1973), pp. 33-40
- L. A. Hackel, D. G. Youmans, and S. Ezekiel, Molecular Beam Stabilized Laser (Proc. 27th Annual Symposium on Frequency Control, Cherry Hill, New Jersey, June 12-14, 1973)
- L. A. Hackel, D. G. Youmans, and S. Ezekiel, Laser-Molecular Beam Techniques for High-Resolution Spectroscopy (Proc. Fourth International Conference on Molecular Beams, Cannes, France, July 9-12, 1973)
- N. Y. S. Kiang, D. K. Morest, D. A. Godfrey, J. J. Guinan, Jr., and E. C. Kane, Stimulus Coding at Caudal Levels of the Cat's Nervous System. I. Response Characteristics of Single Units, in A. R. Møller (Ed.), Basic Mechanisms in Hearing (Academic Press, Inc., New York, 1973), pp. 455-478
- D. H. Klatt, Acoustic Theory of Terminal Analog Speech Synthesis (Proc. 1972 International Conference on Speech Communication and Processing, Boston, Massachusetts, April 24-26, 1972), pp. 131-135
- D. K. Morest, N. Y. S. Kiang, E. C. Kane, J. J. Guinan, Jr., and D. A. Godfrey, Stimulus Coding at Caudal Levels of the Cat's Nervous System. II. Patterns of Synoptic Organization, in A. R. Møller (Ed.), Basic Mechanisms in Hearing (Academic Press, Inc., New York, 1973), pp. 479-496
- P. Penfield, Jr., Proposed Notation and Implementation for Derivatives in APL (Proc. Fifth International APL Users' Conference, Toronto, Ontario, Canada, May 15-18, 1973), pp. 12:1-12:5
- P. Penfield, Jr., MARTHA User's Manual (The M.I.T. Press, Cambridge, Mass, 1971)
- K. N. Stevens and D. H. Klatt, Current Models of Sound Sources for Speech (Proc. International Symposium on Ventilatory and Respiratory Control Systems, London, England, January 24, 1972)
- D. G. Youmans, L. A. Hackel, and S. Ezekiel, Long-Term Frequency Stabilization Using a Molecular Beam Reference (Proc. Fourth International Conference on Molecular Beams, Cannes, France, July 9-12, 1973)