

P U B L I C A T I O N S   A N D   R E P O R T S

M E E T I N G   P A P E R S   P R E S E N T E D

Third Interdisciplinary Workshop on Inversion of Radiometric Measurements,  
Tallahassee, Florida

February 26-27, 1968

D. H. Staelin, Recent Progress in Inversion of Microwave Data (invited)

J. W. Waters, A Nonlinear Inversion Technique and Its Application to  
Microwave Determination (invited)

Symposium on Brain Research and Human Behavior, organized by UNESCO in  
cooperation with the International Brain Research Organization (IBRO), Unesco  
House, Paris

March 11-15, 1968

W. A. Rosenblith, Brain Function and Human Progress (invited)

Conference on Fluctuations in Superconductors, Monterey, California

March 13-15, 1968

M. W. P. Strandberg, Superconducting Bolometers : Detection of Ambient  
Acoustic Noise (invited)

Spring Meeting, Optical Society of America, New York

March 14, 1968

W-H. Lee, Sampled Fraunhofer Hologram Generated by Computer

Physical Electronics Conference, University of Minnesota, Minneapolis, Minnesota

March 18-20, 1968

D. L. Fehrs and R. E. Stickney, Contact-Potential Measurements of the  
Adsorption of Cs, K, and Na on (110) Ta

Society of Photo-optical Instrumentation Engineers : Seminar on Modulation Transfer  
Functions, Boston, Massachusetts

March 21-22, 1968

T. S. Huang, Modulation Transfer Function of Anisoplanatic Optical Systems

New York State Section, American Physical Society, Symposium on "Physics of Life  
Processes," Syracuse, New York

March 29-30, 1968

W. T. Peake, Physics of Signal Transmission in the Auditory System (invited)

126th Meeting, American Astronomical Society, Charlottesville, Virginia

April 1-4, 1968

P. G. Mezger, B. F. Burke, E. C. Reifenstein, and T. L. Wilson, Wideband  
Spectroscopy of  $109\alpha$  Radio Recombination Lines

J. M. Moran, B. F. Burke, A. H. Barrett, O. Rydbeck, B. Hansson, A. E. E.  
Rogers, J. A. Ball, and D. D. Cudaback, Long Baseline OH Interferometry

E. C. Reifenstein, T. L. Wilson, B. F. Burke, and P. G. Mezger, H II Regions  
and Galactic Dynamics

S. H. Zisk, The Appearance of Some Extragalactic Radio Sources at 234 MHz

MEETING PAPERS PRESENTED (continued)

Ninth Symposium on the Engineering Aspects of Magnetohydrodynamics, Tullahoma, Tennessee

April 3-5, 1968

R. Decher and J. L. Kerrebrock, Electrode Wall End-Loop Shorting in a Nonequilibrium MHD Generator

Forty-ninth Annual Meeting, American Geophysical Union, Washington, D. C.

April 8-11, 1968

J. B. De Wolf and G. Fiocco, Frequency Spectrum of Laser Echoes from Atmospheric Constituents

USNC/URSI-IEEE Spring Meeting, National Academy of Sciences, Washington, D. C.

April 9-12, 1968

J. I. Glaser, Low-Loss Zenneck-type Waves in Tunnels

Polytechnic Institute of Brooklyn, Microwave Research Institute, Symposium on Turbulence of Fluids and Plasmas, New York

April 16-18, 1968

K. Chung and D. J. Rose, Low-Frequency Fluctuations in the Weakly Turbulent Hollow Cathode Arc Plasma

J. A. Davis and A. Bers, Nonlinear Aspects of the Beam-Plasma Interaction

T. H. Dupree, Introduction to Basic Phenomena of Turbulence in Plasmas

NATO Advanced Study Institute, Roraas, Norway

April 17-26, 1968

W. M. Manheimer, Weak Turbulence Theory of Velocity Space Diffusion in a Magnetic Field

American Otological Society Centennial Meeting, Hollywood Beach, Florida

April 18-20, 1968

N. Y. S. Kiang, A Survey of Recent Developments in the Study of Auditory Physiology

Thirty-ninth Annual Meeting, Eastern Psychological Association, Washington, D. C.

April 18-20, 1968

P. A. Kolers, Grammatical 'Prediction' in Reading

R. D. Hall and A. A. Borbély, Acoustically Evoked Potentials in the Rat during Sleep and Waking

Seminar on Waves, Instabilities and Nonlinear Effects in Plasmas (sponsored by U.S. - Japan Cooperative Science Program), Tokyo, Japan

April 22-26, 1968

A. Bers, Invited Lectures :

Nonlinear Effects in Plasma Waves II

Theory of Instabilities in Hot-Electron Plasmas

Computer Experiments (informal)

Plasma Turbulence (informal)

MEETING PAPERS PRESENTED (continued)

International Reading Association Convention, Boston, Massachusetts

April 22-23, 1968

P. A. Kolers, Reading Is Only Incidentally Visual (invited)

Spring Joint Computer Conference, Atlantic City, New Jersey

April 30 - May 2, 1968

F. F. Lee, Machine-to-Man Communication by Speech. Part I : Generation of Segmental Phonemes from Text

J. Allen, Machine-to-Man Communication by Speech. Part II : Synthesis of Prosodic Features of Speech by Rule

Annual Meeting on Theoretical Aspects of Controlled Thermonuclear Fusion, Lawrence Radiation Laboratory, University of California, Berkeley

May 6-7, 1968

A. Bers and J. A. Davis, Nonlinear Dynamics of the Beam-Plasma Interaction

Symposium on Error Correcting Codes (sponsored by the Mathematics Research Center, U.S. Army), University of Wisconsin, Madison, Wisconsin

May 6-8, 1968

J. L. Massey, Some Algebraic and Distance Properties of Convolutional Codes

Spring Meeting, Society for Experimental Stress Analysis, Albany, New York

May 7-10, 1968

W. A. Rosenblith, Sensory Communication (invited)

Department of Electrical Engineering, Washington University, St. Louis, Missouri

May 8, 1968

W. M. Siebert, Signals and Noise in Primary Auditory Neurons (invited)

1968 International Quantum Electronics Conference, Miami, Florida

May 14-17, 1968

T. J. Bridges, H. A. Haus, and P. W. Hoff, Step Response of Laser Amplifiers and Small-Signal Measurement of CO<sub>2</sub> Laser Linewidth

S. Ezekiel and R. Weiss, A Molecular Beam Reference for Laser Frequency Stabilization

Panel on Remote Atmospheric Probing, Committee on Atmospheric Sciences, National Academy of Sciences, Chicago, Illinois

May 16, 1968

D. H. Staelin, Passive Remote Sensing at Microwave Wavelengths (invited)

Seventy-fifth Meeting, Acoustical Society of America, Ottawa, Ontario, Canada

May 21-24, 1968

J. E. Berliner and N. I. Durlach, Short-Term Memory in Intensity Discrimination

L. D. Braida, Equivalence between Magnitude Estimation and Absolute Identification for Sound Intensity

MEETING PAPERS PRESENTED (continued)

- H. S. Colburn, New Model of Binaural Hearing
- N. I. Durlach and L. D. Braida, Perception of Intensity Relations
- R. M. Farrell, C. T. Pynn, and L. D. Braida, Determination of Intensity Discrimination and Detection Capabilities by Absolute Identification Procedures
- J. L. Goldstein and N. Y. S. Kiang, Neural Correlates of the Aural Combination Tone  $2f_1 - 2f_2$
- A. J. M. Houtsma, Discrimination of Frequency Ratios
- M. Nomoto, Computer Simulation of Sharpening Effects on Response Areas of Single Auditory Units
- K. N. Stevens, Acoustic Correlates of Place of Articulation for Consonants
- M. L. Wiederhold and N. Y. S. Kiang, Electrical Stimulation of the Crossed Olivocochlear Bundle : Its Effect on Spontaneous Firings of Auditory-Nerve Fibers

JOURNAL PAPERS ACCEPTED FOR PUBLICATION

(Reprints, if available, may be obtained from the Document Room, 26-327, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139)

- J. M. Andrews, Jr. and M. W. P. Strandberg, Effect of Phonon Dispersion on Heat Pulse Shape (Phys. Rev.)
- C. D. Bell and D. Babitch, A Systems Analysis of the Cesium Beam Atomic Clock (IEEE Trans. (IM))
- T. J. Bridges, H. A. Haus, and P. W. Hoff, Step Response of Laser Amplifiers and Small-Signal Measurement of CO<sub>2</sub> Laser Linewidth (J. Quant. Electronics)
- J. L. Coggins and R. E. Stickney, Adsorption Studies Based on Thermionic Emission Measurements : I. Cesium on Single-Crystal Tungsten (Surface Sci.)
- F. DeMartini, C. H. Townes, T. K. Gustafson, and P. L. Kelley, Self-Steepening of Light Pulses (Phys. Rev.)
- P. Elias, Bounds on the Performance of Optimum Quantizers (IEEE Trans. (IT))
- W. Engelmaier and R. E. Stickney, Adsorption Studies Based on Thermionic Emission Measurements : II. Oxygen on Single-Crystal Tungsten (Surface Sci.)
- G. Fiocco and J. B. De Wolf, Frequency Spectrum of Laser Echoes from Atmospheric Constituents and Determination of the Aerosol Content of Air (J. Atmospheric Sci.)
- W. Greaves, and R. E. Stickney, Adsorption Studies Based on Thermionic Emission Measurements : III. Oxygen on Polycrystalline W, Mo, Ta, and Re (Surface Sci.)
- T. S. Huang and O. J. Tretiak, A Pseudorandom Multiplex System for Facsimile Transmission (IEEE Trans. (Com. T.))
- M. Hudis, K. Chung, and D. J. Rose, Ion Temperature Charge Exchange and Coulomb Collisions in an Argon Plasma Column (J. Appl. Phys.)
- P. G. Katona, J. W. Poitras, N. Pantalakis, E. W. Jensen, and G. Octo Barnett, Deterministic Nature of Baroreceptor Firing (Am. J. Physiol.)

JOURNAL PAPERS ACCEPTED FOR PUBLICATION (continued)

- R. S. Kennedy and E. V. Hoversten, On the Atmosphere as an Optical Communication Channel (IEEE Trans. (IT))
- N. Y. S. Kiang, A Survey of Recent Developments in the Study of Auditory Physiology (Ann. Otol. Rhinol. Laryngol.)
- D. H. Klatt, Confusions in Short-Term Memory between English Consonants (J. Acoust. Soc. Am.)
- P. A. Kolers, The Whorfran Hypothesis (Psychol. Today)
- H. C. Koons and G. Fiocco, Measurements of the Density and Temperature of Electrons in a Reflex Discharge by Scattering of CW Ar<sup>+</sup> Laser Light (J. Appl. Phys.)
- S. G. Kukolich, Hyperfine Structure of N<sup>15</sup>H<sup>3</sup> (Phys. Rev.)
- S. H. Kyong and E. P. Gyftopoulos, A Direct Method for a Class of Optimal Control Problems (IEEE Trans. (AC))
- G. Lampis and S. C. Brown, Afterglow Measurements of a Laser Breakdown Plasma (Phys. Fluids)
- L. M. Lidsky and D. Colombant, A High-Power Windowless Gas Target (IEEE Trans. (NS))
- W. M. Manheimer, Weak Turbulence Theory of Velocity Space Diffusion in a Magnetic Field (Phys. Fluids)
- Paula Menyuk, Children's Learning and Reproduction of Grammatical and Nongrammatical Phonological Sequences (J. Child Develop.)
- J. M. Moran, B. F. Burke, A. H. Barrett, O. E. H. Rydbeck, B. Hansson, A. E. E. Rogers, J. A. Ball, and D. C. Cudaback, Long Baseline OH Interferometry (Abstract) (Astron. J.)
- A. V. Oppenheim, R. W. Schafer, and T. G. Stockham, Jr., The Nonlinear Filtering of Multiplied and Convolved Signals (Proc. IEEE)
- E. C. Reifenstein, T. L. Wilson, B. F. Burke, and P. G. Mezger, H II Regions and Galactic Dynamics (Abstract) (Astron. J.)
- T. F. Weiss and W. A. Rosenblith, Some Prefatory Editorial Remarks (Proc. IEEE (Special Issue on Studies of Neural Elements and Systems))
- S. H. Zisk, The Appearance of Some Extragalactic Radio Sources at 234 MHz (Astron. J.)

LETTERS TO THE EDITOR ACCEPTED FOR PUBLICATION

- J. A. Ball and D. H. Staelin, Classification of OH Radio Emission Sources (Astrophys. J.)
- J. W. Gadzuk, Screening of a Point Impurity in the Surface Region of a Gas (Solid State Commun.)
- R. H. Katyl, Bolometer Power Detector for a Spectrum Analyzer (Rev. Sci. Instr.)

LETTERS TO THE EDITOR ACCEPTED FOR PUBLICATION (continued)

- H. C. Koons and G. Fiocco, Anisotropy of the Electron Velocity Distribution in a Reflex Discharge Measured by Continuous-Wave Laser Scattering (Phys. Letters)
- J. M. Moran, B. F. Burke, A. H. Barrett, A. E. E. Rogers, J. A. Ball, J. C. Carter and D. D. Cudaback, The Structure of the OH Source in W3 (Astrophys. J.)
- D. E. Nelsen, Comments on 'On the Intrinsic Time Variance of Fast Timing Circuits Using Tunnel Diodes' by A. Barna (Proc. IEEE)
- P. Penfield, Jr., New Paradox in Circuit Theory (Proc. IEEE)
- R. L. Vold, J. S. Waugh, M. P. Klein, and D. E. Phelps, Measurement of Spin Relaxation in Complex Systems (J. Chem. Phys.)

SPECIAL PUBLICATIONS

- S. H. Chung, Neurophysiology of the Visual System (in Recognizing Patterns, Paul A. Kolers and Murray Eden (ed.). The M.I.T. Press, Cambridge, Mass., pp. 82-101)
- M. Eden, Handwriting Generation and Recognition (in Recognizing Patterns, Paul A. Kolers and Murray Eden (eds.), op. cit., pp. 138-154)
- M. Eden, Other Pattern Recognition Problems and Some Generalizations (in Recognizing Patterns, Paul A. Kolers and Murray Eden (eds.), op. cit., pp. 196-225)
- M. Halle and S. J. Keyser, What We Do When We Speak (in Recognizing Patterns, Paul A. Kolers and Murray Eden (eds.), op. cit., pp. 64-80)
- P. A. Kolers, Some Psychological Aspects of Pattern Recognition (in Recognizing Patterns, Paul A. Kolers and Murray Eden (eds.), op. cit., pp. 4-61)
- S. J. Mason and J. K. Clemens, Character Recognition in an Experimental Reading Machine for the Blind (in Recognizing Patterns, Paul A. Kolers and Murray Eden (eds.), op. cit., pp. 156-167)
- W. M. Siebert, Stimulus Transformations in the Peripheral Auditory System (in Recognizing Patterns, Paul A. Kolers and Murray Eden (eds.), op. cit., pp. 104-133)
- J. J. Katz, The Logic of Questions (Proc. 3rd International Congress for Logic, Methodology, and Philosophy of Science, North-Holland Publishing Company, Amsterdam, The Netherlands, 1968)
- J. L. Kerrebrock, M. A. Hoffman, G. C. Oates, and R. Decher, A Large Nonequilibrium MHD Generator (Proceedings of the Symposium - Electricity from MHD, SM-74/163, Vol. 2, Salzburg, Austria, July 1966)
- W. L. Kilmer, W. S. McCulloch, and J. Blum, Some Mechanisms for a Theory of the Reticular Formation (in Systems Theory and Biology, M. D. Mesarovic' (ed.), Springer-Verlag, New York, 1968, pp. 286-375)
- W. L. Kilmer, W. S. McCulloch, and J. Blum, An Embodiment of Some Vertebrate Command and Control Principles (Currents in Modern Biology 2, 79-95 (1968). North-Holland Publishing Company, Amsterdam, The Netherlands)

SPECIAL PUBLICATIONS (continued)

- P. Kiparsky, Linguistic Universals and Linguistic Change (in Universals in Linguistic Theory, edited by Ennon Bach and Robert Harms. Holt, Rhinehart, and Winston, New York, 1968)
- P. Kiparsky, Metrics and Morphophonemics in the Kalevala (in Studies Presented to Roman Jakobson by His Students, Charles Gribble (ed.). Slavica Publishers, Cambridge, Mass., 1968, pp. 137-148)
- F. F. Lee, Machine-to-Man Communication by Speech. Part I: Generation of Segmental Phonemes from Text (Proc. Spring Joint Computer Conference, Atlantic City, New Jersey, April 30 - May 2, 1968)
- J. Allen, Machine-to-Man Communication by Speech. Part II: Synthesis of Prosodic Features of Speech by Rule (Proc. Spring Joint Computer Conference, Atlantic City, New Jersey, April 30 - May 2, 1968)
- Paula Menyuk, Theories of Language Acquisition and Practices in Therapy (ASHA, May 1968)
- W. S. McCulloch, E. Craighill, J. Blum, and D. Peterson, On a Cybernetic Theory of the Reticular Formation (Cybernetic Problems in Bionics. Gordon and Breach Science Publishers, Inc., London, 1968)
- W. S. McCulloch, W. L. Kilmer, R. Moreno-Diaz, and J. Simões da Fonseca, Logic and Closed Loops for a Computer Junket to Mars (Proceedings on Neural Networks, Springer-Verlag, Heidelberg, 1968)
- C. A. McNary and W. D. Jackson, Brayton Cycle MHD Power Generation (Electricity from MHD, Vol. II, p. 739, I. A. E. A., Vienna, 1966)
- D. Steiner and E. P. Gyftopoulos, An Equation for the Prediction of Bare Work Function. (Report on Twenty-seventh Conference on Physical Electronics, Massachusetts Institute of Technology, Cambridge, Mass., March 20-22, 1967, pp. 160-168)
- O. J. Tretiak, Touching and Overlapping Chromosomes (Ann. New York Acad. Sci. Proceedings of a conference on "Data Extraction and Processing of Optical Images in the Medical and Biological Sciences," New York, June 5-7, 1967)