ASSP
Spectrum Estimation Workshop II

November 10-11, 1983
Tampa, Florida

FAST ALGORITHMS, ARRAY PROCESSING
ACOUSTICS
DIGITAL SIGNAL PROCESSING
SPEECH/SPEAKER RECOGNITION
SPEECH PROCESSING, CODING
AUDIO
IMAGE PROCESSING
UNDERWATER ACOUSTICS, SEISMIC SIGNALS, RADAR

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## SESSION 1
**SPECTRUM ESTIMATION AND SIGNAL MODELING I**

**TIME:** 8:30 a.m. to 10:00 a.m.  
November 10, 1983  
**PLACE:** Banyan Room  
**CHAIRMAN:** J. A. Cadzow

**Spectral Characteristics of the Overdetermined Normal Equation Method for Spectral Estimation**  
D. Izraelevitz and J. S. Lim, *Massachusetts Institute of Technology*  

**SESSION 2**  
**SPECTRUM ESTIMATION AND SIGNAL MODELING II**

**TIME:** 10:30 a.m. to 12:00 p.m.  
November 10, 1983  
**PLACE:** Banyan Room  
**CHAIRMAN:** L. Marple

**ARMA System Identification via an Induced Rank Deficient Data Matrix**  
J. A. Cadzow, O. M. Solomon, and S. D. Stearns, *Arizona State University*  

**SESSION 3A**  
**SONAR I**

**TIME:** 1:00 p.m. to 2:30 p.m.  
November 10, 1983  
**PLACE:** Banyan Room  
**CHAIRMAN:** S. M. Kay

**Performance Predictions for Coherent and Incoherent Processing Techniques of Time Delay Estimation**  
G. C. Carter, R. Tremblag, and K. Scarbrough, *Naval Underwater Systems Center*

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## SESSION 3B
**SPEECH**

**TIME:** 1:00 p.m. to 2:30 p.m.  
November 10, 1983  
**PLACE:** Timberwood Room  
**CHAIRMAN:** T. P. Barnwell, III

**Autoregressive Spectral Estimation in Noise in the Context of Speech Analysis**  
R. D. Preuss and R. Yarlgadda, *Oklahoma State University*  

**Accurate Frequency Estimation at Low Signal to Noise Ratios**  
S. M. Kay, *University of Rhode Island*  

**Multi-Pulse Spectral Analysis of Speech**  
V. K. Jain, *University of South Florida*  

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J. J. Yea and D. G. Childers, University of Florida

Speech Recognition Using a Model of Peripheral Auditory System
Y. Dologlou and J. M. Dolmazon, Institut De La Communication Parlie, Cedex, France

An Experiment on Fourier Bessel Decomposition of Speech Signal
C. S. Chen and K. Gopalan, University of Akron

Application of the Wigner Distribution to Speech Processing
D. Chester, Harris Corporation; F. J. Taylor and M. Doyle, University of Florida

SESSION 4A
APPLIED SPECTRUM ANALYSIS

TIME: 3:00 p.m. to 4:30 p.m.
November 10, 1983
PLACE: Banyan Room
CHAIRMAN: D. V. Tufts

On the Accuracy of Maximum Entropy Spectral Analysis of Power-Law Processes: Simulation Studies and Application to Geographic Data
P. F. Fougere, Air Force Geophysics Laboratory

Estimation of All-Pole Parameters from Noise-Corrupted Sequences
D. P. McGinn, MIT Lincoln Laboratory; and D. H. Johnson, Rice University

Estimation of the Parameters of a Sinusoid and its Detection
Y. I. Chan and R. Israelson, Royal Military College of Canada

Analysis of the Sum of Two Gaussians Density
F. G. Saylor, TRW; V. K. Jain, University of South Florida; and G. J. Dobek, Naval Coastal Systems Center

Spectral Analysis of Speech and EGG Using Pitch Synchronous Windows Over One Period
J. N. Larar and D. G. Childers, University of Florida

Spectral Estimation Applied to Concert Hall Acoustics
R. J. Ashley, Sperry Corporation

SESSION 4B
SONAR II

TIME: 3:00 p.m. to 4:30 p.m.
November 10, 1983
PLACE: Timberwood Room
CHAIRMAN: Y. T. Chan

Signal Detection Using the Karhunen-Loeve Transform
A. Passamante and T. Hediger, Naval Air Development Center

Generation of Multi-Dimensional Stationary Discrete Random Signal with Given Probability Density and Autocorrelation Functions
W. A. Czarnecki, Institut of Technology, Warsaw, Poland

A Non-Linear Iterative Technique for High-Resolution Spectral Estimation
J. L. Berrou and R. A. Waggstaff, Naval Oceanographic Activity

A Gram-Schmidt Decomposition Spectrum Analysis Technique
F. K. Hung, R. W. Herring, and R. M. Turner, Communications Research Centre, Canada

Fourier-Ratio Technique for Pole Estimation in Random-Process Modeling
D. H. Friedman, Rutgers University

Implementation Issues in Two Dimensional Convolution
T. Doyle and J. O. Normile, Trinity College, Dublin, Ireland

SESSION 5
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TIME: 8:30 a.m. to 10:00 a.m.
November 11, 1983
PLACE: Banyan Room
CHAIRMAN: B. Friedlander

Maximum Entropy Spectrum Estimation
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A New SVD Based Algorithm for ARMA Spectral Estimation
K. S. Arun and S. Y. Kung, University of Southern California

Fast Algorithms for Spectral Estimation and Spline Interpolation of Non-Bandlimited Random Signals
R. J. P. de Figueiredo, Rice University

Time Series Identification: An Annihilation Filter Approach
J. A. Cadzow and T. J. Broner, University of Arizona
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TIME: 10:30 a.m. to 12:00 p.m.
November 11, 1983
PLACE: Banyan Room
CHAIRMAN: G. C. Cater

Pseudo-Wigner Estimators
P. Flandrin, Laboratoire de Traitement du Signal, Cedex, France; and W. Martin, Botanisches Inst. der Univ., Bonn, Germany

Algorithms for Full Wave-Form Sonic Logging
T. W. Parks, Rice University; C. F. Morris, and J. H. McClellan, Schlumberger Well Services

Determining the Number of Signals by Information Theoretic Criteria
M. Wax and T. Kailath, Stanford University

Spectrum Analysis Techniques to Multisource Range Estimation
G. R. Swope, Naval Underwater Systems Center

Some New Approaches to One and Two Dimensional Power Spectrum Estimation
C. L. Byrne and R. M. Fitzgerald, U.S. Naval Research Laboratory

Wavefront Tracking Through Adaptive Linear Prediction
G. Gonzalez and J. D’Alvano, Departamento Electronica y Circuitos, Caracas, Venezuela

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S. J. Orfanidis and L. M. Vail, Rutgers University

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TIME: 1:00 p.m. to 2:30 p.m.
November 11, 1983
PLACE: Banyan Room
CHAIRMAN: D. G. Childers

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C. L. Nikias and M. R. Raghuveer, University of Connecticut

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S. R. Parker and A. H. Kayran, Naval Postgraduate School

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M. A. Atashroo and M. Moore, Martin Marietta Corporation

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H. Knutsson, R. Wilson, and G. H. Granlund, Linköping University, Sweden

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J. I. Lacoume, C. Lamotte, N. Martin, M. Gharbi, and R. Leduc, Centre d’Etude des Phénomènes Aléatoires et Géophysiques, St. Martin D’Hères, France

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November 11, 1983
PLACE: Timberwood Room
CHAIRMAN: I. Griffiths

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R. Kumaresan, University of Rhode Island; B. P. Agrawal and M. R. Sridhar, GTE Business Communications

Finite Register Length Effects in Adaptive LMS Filter
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Online Techniques for Adaptive Two Dimensional Filtering and Estimation
J. Norman and T. Doyle, University of Dublin, Ireland

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C. Nadeu and M. Bertran, E.T.S.E. Telecomunicacio' Universitat Politècnica de Barcelona, Spain

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S. Sjöberg, Applied Electronics Chalmers University of Technology, Sweden

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N. J. Grossbard, Boston College

Recursive Two-Dimensional Spectral Factorization
L. F. Chaparro, University of Pittsburgh
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**TIME:** 3:00 p.m. to 4:30 p.m.  
November 11, 1983

**PLACE:** Banyan Room

**CHAIRMAN:** G. J. Dobeck

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Y. H. Hu, Southern Methodist University  
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†Manuscript not available for publication.

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**TIME:** 3:00 p.m. to 4:30 p.m.  
November 11, 1983

**PLACE:** Timberwood Room

**CHAIRMAN:** W. F. Gabriel

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**SESSION 9**
PANEL DISCUSSION

**TIME:** 5:00 p.m. to 6:30 p.m.  
November 11, 1983

**PLACE:** Banyan Room

**CHAIRMAN:** C. Gueguen and L. Marple

**THEME:** Past, President and Future of Spectrum Estimation Interrelationships to: Speech, Sonar, Radar, Comm., Geoph., VLSI, etc.