

Spall, J. C., "Large-Sample Distribution of Autoregressive Processes with Time-Varying Coefficients."

Spall, J. C., and Cristion, J. A., "Weight Estimation in Neural Networks for Control."

## COLLOQUIA

27 Sep 1991—"Global Acoustics," W. H. Munk, Scripps Institution of Oceanography.

4 Oct—"Scientific Visualization with Personal Computers," Q. E. Dolecek, APL.

11 Oct—"The Dirigible and the Space Shuttle: An Historic Analogy," A. J. Dessler, Rice University.

18 Oct—"Critical Current, Grain Boundaries, and SQUIDs in the High Temperature Superconductors," P. Chaudhari, IBM Research Laboratories.

25 Oct—"Dynamics of Fractal Surfaces," F. F. Family, Emory University.

1 Nov—"Art and Physics: Parallel Visions in Space, Time and Light," L. Shlain.

8 Nov—"Ramanujan: The Man Who Knew Infinity," R. E. Kanigel, JHU.

22 Nov—"Light Emitting Porous Silicon Structures," P. C. Searson, JHU.

## AUTHOR INDEX

*Johns Hopkins APL Technical Digest*  
Volume 12 (1991)

Ali, S. W., see Coleman, J. R.

Ansley, N., see Olsen, D. E.

Artis, D. A., and Malcom, H., *The Postmission Processor for the Sonobuoy Missile Impact Locating System* **12**(4), 339.

Bankman, I. N., *Detection and Classification of Transient Signals: Sorting Neural Waveforms* **12**(2), 144.

Bargeron, C. B., see Jette, A. N.

Berghauer, M. H., see St. Ville, J. A.

Biermann, P. J., see Cohen, P. H.

Blum, N. A., Carkhuff, B. G., Charles, H. K., Jr., Edwards, R. L., Francomacaro, A. S., and Meyer, R. A., *Neural Microprobes for Multisite Recording* **12**(2), 159.

Campbell, J. N., see Meyer, R. A.

Carkhuff, B. G., see Blum, N. A.

Charles, H. K., Jr., *Guest Editor's Introduction* **12**(1), 2.

\_\_\_\_\_, *The Engineering Design, Fabrication, Testing, and Qualification Process within the Steven Muller Center for Advanced Technology* **12**(1), 4.

\_\_\_\_\_, see Blum, N. A.

Cohen, P. H., Biermann, P. J., and Uy, O. M., *Materials Development, Analysis, and Testing within the Steven Muller Center for Advanced Technology* **12**(1), 39.

Cole, T. D., *Multimeridian Photorefraction: A Technique for the Detection of Visual Defects in Infants and Preverbal Children* **12**(2), 166.

Coleman, J. R., Johnson, M. J., Shamleffer, W. H., Ali, S. W., and Skaggs, G. L., *Quality Assurance and Configuration Control within the Steven Muller Center for Advanced Technology* **12**(1), 55.

Constantikes, K. T., *Using Fractal Dimension for Target Detection in Clutter* **12**(4), 301.

Crawford, D. P., and Lee, D. G., Jr., *Computer-Aided Engineering, Design, and Information Systems and Services at the Steven Muller Center for Advanced Technology* **12**(1), 23.

Cristion, J. A., see Olsen, D. E., **12**(2), 182.

\_\_\_\_\_, see Olsen, D. E., **12**(4), 347.

Dietrich, A. E., see Feldmesser, H. S.

Eaton, H. A. C., *Magnetic Nerve Stimulation* **12**(2), 153.

Ecker, J. A., see St. Ville, J. A.

Edwards, R. L., see Blum, N. A.

Falk, P. R., see Feldmesser, H. S.

Farrell, R. A., see Freund, D. E.

Feldberg, I. E., see Olsen, D. E.

Feldmesser, H. S., Dietrich, A. E., Falk, P. R., and Strider, R. S., *Electronic Fabrication and Assembly in the Steven Muller Center for Advanced Technology* **12**(1), 30.

Fountain, G. H., *The Astro-1 Flight of the Hopkins Ultraviolet Telescope* **12**(1), 86.

Fowler, K. R., and North, R. B., *Computer-Optimized Neuro-stimulation* **12**(2), 192.

Francomacaro, A. S., see Blum, N. A.

Freund, D. E., McCally, R. L., and Farrell, R. A., *Light-Scattering Tests of Structure in Normal and Swollen Rabbit Corneas* **12**(2), 137.

Gearhart, S. A., *Image Degradations of an Aerodynamically Shaped Optical Window* **12**(1), 81.

Georgopoulos, A. P., and Massey, J. T., *Biomedical Program Research: The Primate Motor System* **12**(2), 105.

Goldstein, M. H., Jr., Liu, W., and Jenkins, R. E., *Speech Processing by Real and Silicon Ears* **12**(2), 115.

Grant, D. G., *Dedication* **12**(2), 103.

Harris, J. C., see Olsen, D. E.

Huting, W. A., Warren, J. W., and Krill, J. A., *Recent Progress in Circular High-Power Overmoded Waveguide* **12**(1), 60.

Jenkins, R. E., see Goldstein, M. H., Jr.

Jette, A. N., and Bargeron, C. B., *Theory of Electron Current Image Diffraction from Crystal Surfaces at Low Energies* **12**(3), 255.

Johns, R. J., *A Perspective: Collaborative Biomedical Research: Past, Present, and Future* **12**(2), 103.

Johnson, M. J., see Coleman, J. R.

Kemelhor, R. E., *Computer-Integrated Manufacturing in China: A Trip Report and Observations* **12**(3), 284.

Kistenmacher, T. J., *Effects of Chemical Substitution on the Structural and Superconducting Properties of Some High-Critical-Temperature Copper Oxide Ceramics* **12**(3), 263.

Koschorke, G.-M., see Meyer, R. A.

Koslov, S., *Editorial* **12**(4), 300.

Krill, J. A., see Huting, W. A.

Ku, H.-C., and Rosenberg, A. P., *Pseudospectral Element Method for Computational Fluid Dynamics and Its Parallel Implementation* **12**(3), 234.

Lee, D. G., Jr., see Crawford, D. P.

Liu, W., see Goldstein, M. H., Jr.

Maier, L. L., *Writing Awards* **12**(1), 90.

\_\_\_\_\_, *Research and Development Awards* **12**(1), 95.

- Malcom, H., see Artis, D. A.  
 Massey, J. T., see Georgopoulos, A. P.  
 McCally, R. L., see Freund, D. E.  
 McIntyre, J. W., *The Advanced Range Instrumentation Aircraft/Sonobuoy Missile Impact Locating System* 12(4), 330.  
 Meyer, R. A., Koschorke, G.-M., Tillman, D. B., and Campbell, J. N., *Neural Mechanism of Abnormal Sensations after Nerve Injury* 12(2), 129.  
 Meyer, R. A., see Blum, N. A.  
 Monchick, L., *Guest Editor's Introduction* 12(3), 221.  
 ———, *Modern Quantum Kinetic Theory and Spectral Line Shapes* 12(3), 246.  
 Murphy, L. H., see Wagner, G. D.  
 North, R. B., see Fowler, K. R.  
 Olsen, D. E., Ansley, N., Feldberg, I. E., Harris, J. C., and Cristion, J. A., *Recent Developments in Polygraph Technology* 12(4), 347.  
 Olsen, D. E., Cristion, J. A., and Spaur, C. W., *Automatic Detection of Epileptic Seizures Using Electroencephalographic Signals* 12(2), 182.  
 Pace, D. K., *Seminar Gaming: An Approach to Problems Too Complex for Algorithmic Solution* 12(3), 290.  
 Potemra, T. A., *The Arctic Explorations of Fridtjof Nansen* 12(3), 275.  
 Raul, R., *Numerical Solution of Turbulent Flows* 12(3), 222.  
 Roe, C. L., *The NATO Seasparrow Surface Missile System* 12(4), 318.  
 ———, *An Operational Computer Program to Control Self Defense Surface Missile System Operations* 12(4), 323.  
 Romine, C. H., *On an Unsolved Problem of Olga Taussky* 12(3), 271.  
 Rosenberg, A. P., see Ku, H.-C.  
 Rothman, N. S., *Volume Determination Using Acoustic Resonance* 12(2), 176.  
 Shamleffer, W. H., see Coleman, J. R.  
 Skaggs, G. L., see Coleman, J. R.  
 Spaur, C. W., see Olsen, D. E.  
 Stilwell, R. K., *Satellite Applications of the Bifilar Helix Antenna* 12(1), 75.  
 Strider, R. S., see Feldmesser, H. S.  
 St. Ville, J. A., Ecker, J. A., Winget, J. M., and Berghauer, M. H., *The Anatomy of Midthigh Pain after Total Hip Arthroplasty* 12(2), 198.  
 Tillman, D. B., see Meyer, R. A.  
 Uy, O. M., see Cohen, P. H.  
 Vest, C. E., *The Effects of the Space Environment on Spacecraft Surfaces* 12(1), 46.  
 Wagner, G. D., Falk, P. R., and Murphy, L. H., *Engineering Design and Electronic Fabrication Facilities in the Steven Muller Center for Advanced Technology* 12(1), 14.  
 Warren, J. W., see Huting, W. A.  
 Williams, K. E., *Prediction of Solar Activity with a Neural Network and Its Effect on Orbit Prediction* 12(4), 310.  
 Winget, J. M., see St. Ville, J. A.

## TITLE INDEX

*Johns Hopkins APL Technical Digest*  
 Volume 12 (1991)

## BIOMEDICAL ENGINEERING

- The Anatomy of Midthigh Pain after Total Hip Arthroplasty* 12(2), 198. St. Ville, J. A., Ecker, J. A., Winget, J. M., and Berghauer, M. H.  
*Automatic Detection of Epileptic Seizures Using Electroencephalographic Signals* 12(2), 182. Olsen, D. E., Cristion, J. A., and Spaur, C. W.  
*Biomedical Program Research: The Primate Motor System* 12(2), 105. Georgopoulos, A. P., and Massey, J. T.  
*Computer-Optimized Neurostimulation* 12(2), 192. Fowler, K. R., and North, R. B.  
*Dedication* 12(2), 103. Grant, D. G.  
*Detection and Classification of Transient Signals: Sorting Neural Waveforms* 12(2), 144. Bankman, I. N.  
*Light-Scattering Tests of Structure in Normal and Swollen Rabbit Corneas* 12(2), 137. Freund, D. E., McCally, R. L., and Farrell, R. A.  
*Magnetic Nerve Stimulation* 12(2), 153. Eaton, H. A. C.  
*Multimeridian Photorefraction: A Technique for the Detection of Visual Defects in Infants and Preverbal Children* 12(2), 166. Cole, T. D.  
*Neural Mechanisms of Abnormal Sensations after Nerve Injury* 12(2), 129. Meyer, R. A., Koschorke, G.-M., Tillman, D. B., and Campbell, J. N.  
*Neural Microprobes for Multisite Recording* 12(2), 159. Blum, N. A., Carkhuff, B. G., Charles, H. K., Jr., Edwards, R. L., Francomacaro, A. S., and Meyer, R. A.  
*A Perspective: Collaborative Biomedical Research: Past, Present, and Future* 12(2), 103. Johns, R. J.  
*Speech Processing by Real and Silicon Ears* 12(2), 115. Goldstein, M. H., Jr., Liu, W., and Jenkins, R. E.  
*Volume Determination Using Acoustic Resonance* 12(2), 176. Rothman, N. S.

## COMPUTATIONALLY INTENSIVE RESEARCH

- Effects of Chemical Substitution on the Structural and Superconducting Properties of Some High-Critical-Temperature Copper Oxide Ceramics* 12(3), 263. Kistenmacher, T. J.  
*Guest Editor's Introduction* 12(3), 221. Monchick, L.

- Malcom, H., see Artis, D. A.
- Massey, J. T., see Georgopoulos, A. P.
- McCally, R. L., see Freund, D. E.
- McIntyre, J. W., *The Advanced Range Instrumentation Aircraft/Sonobuoy Missile Impact Locating System* 12(4), 330.
- Meyer, R. A., Koschorke, G.-M., Tillman, D. B., and Campbell, J. N., *Neural Mechanism of Abnormal Sensations after Nerve Injury* 12(2), 129.
- Meyer, R. A., see Blum, N. A.
- Monchick, L., *Guest Editor's Introduction* 12(3), 221.
- \_\_\_\_\_, *Modern Quantum Kinetic Theory and Spectral Line Shapes* 12(3), 246.
- Murphy, L. H., see Wagner, G. D.
- North, R. B., see Fowler, K. R.
- Olsen, D. E., Ansley, N., Feldberg, I. E., Harris, J. C., and Cristion, J. A., *Recent Developments in Polygraph Technology* 12(4), 347.
- Olsen, D. E., Cristion, J. A., and Spaar, C. W., *Automatic Detection of Epileptic Seizures Using Electroencephalographic Signals* 12(2), 182.
- Pace, D. K., *Seminar Gaming: An Approach to Problems Too Complex for Algorithmic Solution* 12(3), 290.
- Potemra, T. A., *The Arctic Explorations of Fridtjof Nansen* 12(3), 275.
- Raul, R., *Numerical Solution of Turbulent Flows* 12(3), 222.
- Roe, C. L., *The NATO Seasparrow Surface Missile System* 12(4), 318.
- \_\_\_\_\_, *An Operational Computer Program to Control Self Defense Surface Missile System Operations* 12(4), 323.
- Romine, C. H., *On an Unsolved Problem of Olga Taussky* 12(3), 271.
- Rosenberg, A. P., see Ku, H.-C.
- Rothman, N. S., *Volume Determination Using Acoustic Resonance* 12(2), 176.
- Shamleffer, W. H., see Coleman, J. R.
- Skaggs, G. L., see Coleman, J. R.
- Spaur, C. W., see Olsen, D. E.
- Stilwell, R. K., *Satellite Applications of the Bifilar Helix Antenna* 12(1), 75.
- Strider, R. S., see Feldmesser, H. S.
- St. Ville, J. A., Ecker, J. A., Winget, J. M., and Berghauer, M. H., *The Anatomy of Midthigh Pain after Total Hip Arthroplasty* 12(2), 198.
- Tillman, D. B., see Meyer, R. A.
- Uy, O. M., see Cohen, P. H.
- Vest, C. E., *The Effects of the Space Environment on Spacecraft Surfaces* 12(1), 46.
- Wagner, G. D., Falk, P. R., and Murphy, L. H., *Engineering Design and Electronic Fabrication Facilities in the Steven Muller Center for Advanced Technology* 12(1), 14.
- Warren, J. W., see Huting, W. A.
- Williams, K. E., *Prediction of Solar Activity with a Neural Network and Its Effect on Orbit Prediction* 12(4), 310.
- Winget, J. M., see St. Ville, J. A.

## TITLE INDEX

*Johns Hopkins APL Technical Digest*  
Volume 12 (1991)

## BIOMEDICAL ENGINEERING

- The Anatomy of Midthigh Pain after Total Hip Arthroplasty* 12(2), 198. St. Ville, J. A., Ecker, J. A., Winget, J. M., and Berghauer, M. H.
- Automatic Detection of Epileptic Seizures Using Electroencephalographic Signals* 12(2), 182. Olsen, D. E., Cristion, J. A., and Spaar, C. W.
- Biomedical Program Research: The Primate Motor System* 12(2), 105. Georgopoulos, A. P., and Massey, J. T.
- Computer-Optimized Neurostimulation* 12(2), 192. Fowler, K. R., and North, R. B.
- Dedication* 12(2), 103. Grant, D. G.
- Detection and Classification of Transient Signals: Sorting Neural Waveforms* 12(2), 144. Bankman, I. N.
- Light-Scattering Tests of Structure in Normal and Swollen Rabbit Corneas* 12(2), 137. Freund, D. E., McCally, R. L., and Farrell, R. A.
- Magnetic Nerve Stimulation* 12(2), 153. Eaton, H. A. C.
- Multimeridian Photorefraction: A Technique for the Detection of Visual Defects in Infants and Preverbal Children* 12(2), 166. Cole, T. D.
- Neural Mechanisms of Abnormal Sensations after Nerve Injury* 12(2), 129. Meyer, R. A., Koschorke, G.-M., Tillman, D. B., and Campbell, J. N.
- Neural Microprobes for Multisite Recording* 12(2), 159. Blum, N. A., Carkhuff, B. G., Charles, H. K., Jr., Edwards, R. L., Francomacaro, A. S., and Meyer, R. A.
- A Perspective: Collaborative Biomedical Research: Past, Present, and Future* 12(2), 103. Johns, R. J.
- Speech Processing by Real and Silicon Ears* 12(2), 115. Goldstein, M. H., Jr., Liu, W., and Jenkins, R. E.
- Volume Determination Using Acoustic Resonance* 12(2), 176. Rothman, N. S.

## COMPUTATIONALLY INTENSIVE RESEARCH

- Effects of Chemical Substitution on the Structural and Superconducting Properties of Some High-Critical-Temperature Copper Oxide Ceramics* 12(3), 263. Kistenmacher, T. J.
- Guest Editor's Introduction* 12(3), 221. Monchick, L.

- Modern Quantum Kinetic Theory and Spectral Line Shapes* **12**(3), 246. Monchick, L.  
*Numerical Solution of Turbulent Flows* **12**(3), 222. Raul, R.  
*On an Unsolved Problem of Olga Taussky* **12**(3), 271. Romine, C. H.  
*Prediction of Solar Activity with a Neural Network and Its Effect on Orbit Prediction* **12**(4), 310. Williams, K. E.  
*Pseudospectral Element Method for Computational Fluid Dynamics and Its Parallel Implementation* **12**(3), 234. Ku, H.-C., and Rosenberg, A. P.  
*Theory of Electron Current Image Diffraction from Crystal Surfaces at Low Energies* **12**(3), 255. Jette, A. N., and Barger, C. B.  
*Using Fractal Dimension for Target Detection in Clutter* **12**(4), 301. Constantines, K. T.

## ENGINEERING AND FABRICATION

- Computer-Aided Engineering, Design, and Information Systems and Services at the Steven Muller Center for Advanced Technology* **12**(1), 23. Crawford, D. P., and Lee, D. G., Jr.  
*The Effects of the Space Environment on Spacecraft Surfaces* **12**(1), 46. Vest, C. E.  
*Electronic Fabrication and Assembly in the Steven Muller Center for Advanced Technology* **12**(1), 30. Feldmesser, H. S., Dietrich, A. E., Falk, P. R., and Strider, R. S.  
*Engineering Design and Electronic Fabrication Facilities in the Steven Muller Center for Advanced Technology* **12**(1), 14. Wagner, G. D., Falk, P. R., and Murphy, L. H.  
*The Engineering Design, Fabrication, Testing, and Qualification Process within the Steven Muller Center for Advanced Technology* **12**(1), 4. Charles, H. K., Jr.  
*Guest Editor's Introduction* **12**(1), 2. Charles, H. K., Jr.  
*Materials Development, Analysis, and Testing within the Steven Muller Center for Advanced Technology* **12**(1), 39. Cohen, P. H., Biermann, P. J., and Uy, O. M.  
*Quality Assurance and Configuration Control within the Steven Muller Center for Advanced Technology* **12**(1), 55. Coleman, J. R., Johnson, M. J., Shamleffer, W. H., Ali, S. W., and Skaggs, G. L.

## MISSILE SYSTEMS

- The Advanced Range Instrumentation Aircraft/Sonobuoy Missile Impact Locating System* **12**(4), 330. McIntyre, J. W.  
*Image Degradations of an Aerodynamically Shaped Optical Window* **12**(1), 81. Gearhart, S. A.,  
*The NATO Seasparror Surface Missile System* **12**(4), 318. Roe, C. L.  
*An Operational Computer Program to Control Self Defense Surface Missile System Operations* **12**(4), 323. Roe, C. L.  
*The Postmission Processor for the Sonobuoy Missile Impact Locating System* **12**(4), 339. Artis, D. A., and Malcom, H.  
*Recent Progress in Circular High-Power Overmoded Waveguide* **12**(1), 60. Huting, W. A., Warren, J. W., and Krill, J. A.

## SPACE SCIENCE AND TECHNOLOGY

- The Astro-1 Flight of the Hopkins Ultraviolet Telescope* **12**(1), 86. Fountain, G. H.  
*Satellite Applications of the Bifilar Helix Antenna* **12**(1), 75. Stilwell, R. K.

## OTHER TOPICS

- The Arctic Explorations of Fridtjof Nansen* **12**(3), 275. Potemra, T. A.  
*Author and Title Indexes: 1991* **12**(4), 360.  
*Computer-Integrated Manufacturing in China: A Trip Report and Observations* **12**(3), 284. Kemelhor, R. E.  
*Editorial*, **12**(4), 300. Koslov, S.  
*Patents* **12**(1), 99.  
*Publications and Presentations* **12**(3), 297.  
*Publications, Presentations, and Colloquia* **12**(1), 96.  
*Publications, Presentations, and Colloquia* **12**(2), 215.  
*Publications, Presentations, and Colloquia* **12**(4), 358.  
*Recent Developments in Polygraph Technology* **12**(4), 347. Olsen, D. E., Ansley, N., Feldberg, I. E., Harris, J. C., and Cristion, J. A.  
*Research and Development Awards* **12**(1), 95. Maier, L. L.  
*Seminar Gaming: An Approach to Problems Too Complex for Algorithmic Solution* **12**(3), 290. Pace, D. K.  
*Writing Awards* **12**(1), 90. Maier, L. L.