

PUBLICATIONS

APL staff authored or co-authored the following unclassified books and technical articles that were recently published:

Abrahams J

Addition chains as test trees and a sequential variant as the Huffman problem, in *Proc. 2000 Conf. on Information Sciences and Systems, Vol. 1.*, p. FA1–6, Princeton University (2000).

Babin SM, and Thompson DR

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Benedict JR Jr

Future undersea warfare perspectives, *Johns Hopkins APL Tech. Dig.* **21**(2), 269–279 (2000).

Bernasconi PN, Rust DM, Murphy GA, and Eaton HAC

High resolution polarimetry with a balloon-borne telescope: The Flare Genesis experiment, in *High Resolution Solar Physics: Theory, Observations and Techniques*, TR Rimmele, KS Balassubramaniam, and RR Radick (eds.), *Astron. Soc. Pacific Conf. Series* **183**, pp. 279–287 (1999).

Bevan MG, Grant SM, Kotlavski KA, Lewis CL, Teagle DE, and Levick N (JHMI)

Occupant sensor's response to small female and mid-sized male crash test dummies, in *Airbag Technology 2000*, SAE International, Warrendale, PA (2000).

Biemer SM, and O'Brien DJ

An approach to Joint warfare analysis, *Johns Hopkins APL Tech. Dig.* **21**(2), 203–207 (2000).

Biermann PJ, Krantz D (MTS Corp.), Belk J (Boeing Corp.), and Troyk P (IIT)

Project summary: Applied research on remotely queried embedded microsensors, in *SPIE Proc., Smart Structures and Materials 2000: Smart Electronics and MEMS, Vol. 3990* (Mar 2000).

Biondo AC, Newman FC, Mandelberg MD, and Matthews CA (NAWC)

Enhanced representation of environmental effects on sensors, in *2000 Spring Simulation Interoperability Workshop*, CD-ROM, Orlando, FL (26–31 Mar 2000).

Bowan AF

Commentary on using generic preferences to incrementally improve plan quality, in *Proc. 2nd NASA Int. Workshop on Planning and Scheduling for Space* (Mar 2000).

Calabrese MA, Caruso PS, McNutt RL Jr, Poland AI, VanSant JT, and Wallace RA

Sun–Earth connection program strategic planning and technology requirements (2000–2025), in *Proc. IEEE 2000 Aerospace Conf., Big Sky, MT* (23 Mar 2000).

Carlson MA, Barger CB, Benson RC, Fraser AB, Phillips TE, Velky JT, Groopman JD (JHU/SHPH), Strickland PT (JHU/SHPH), and Ko HW

An automated, handheld biosensor for aflatoxin, *Biosens. Bioelectr.* **14**, 841–848 (2000).

Charles HK Jr

Thermal and mechanical stress behavior in electronic packaging, Chap. 3, in *Electronic Packaging and Interconnection Handbook*, CA Harper (ed.), McGraw Hill, New York, pp. 3.1–3.51 (2000).

Charles HK Jr, Beck TJ (JH Outpatient Ctr.), Feldmesser HS, Magee TC, Spisz TS, and Pisacane VL

Multiple projection DEXA scanner for precision bone and muscle loss measurements and analysis during prolonged spaceflight, in *Proc. Space Technology and Applications Int. Forum*, pp. 300–305 (2000).

Coolahan JE, Keane JF, and Sinex CH

SBA collaborative environment concepts for mission and product areas, in *Proc. 2000 Spring Simulation Interoperability Workshop*, CD-ROM, Orlando, FL (26–31 Mar 2000).

Dean RJ

Warfare Analysis Laboratory 2000, *Johns Hopkins APL Tech. Dig.* **21**(2), 231–237 (2000).

Eirich PL

Systems architecture for a low cost collaborative environment for SBA decision making, in *Proc. 2000 Spring Simulation Interoperability Workshop*, CD-ROM, Orlando, FL (26–31 Mar 2000).

Elfouhaily TM, Thompson DR, Vandemark D, and Chapron B

Truncated Hamiltonian versus surface perturbation in nonlinear wave theories, *Waves in Random Media* **10**, 103–116 (2000).

Elliot JL, Strobel DF, Zhu X, Stansberry JA, Wasserman LH, and Franz OG

2000: The thermal structure of Triton's middle atmosphere, *Icarus* **143**, 425–428 (2000).

Franson JD

Inconsistency of local realistic descriptions of two-photon interferometer experiments, *Phys. Rev. A* **61**(1), 1–5 (2000).

Frazer RK, Newman RW, and Terry DH

Correlation of thermal stress measurements with theory for an infrared dome during wind tunnel exposure, in *Proc. 8th DoD Electromagnetic Windows Symp.*, Colorado Springs, CO (24–27 Apr 2000).

Fuchs PN (JHMI), Campbell JN (JHMI), and Meyer RA

Secondary hyperalgesia persists in Capsaicin desensitized skin, *Pain* **84**, 141–149 (2000).

Galinis W (PMS-500), Kent JA (NSWCDD/CSS), Paper JA, and Spiegel RF

DD 21 concept model for fleet battle experiment Echo, in *Proc. 2000 Spring Simulation Interoperability Workshop*, CD-ROM, Orlando, FL (26–31 Mar 2000).

Gingras RE

APL's Warfare Analysis Laboratory: Applications and accomplishments, *Johns Hopkins APL Tech. Dig.* **21**(2), 217–224 (2000).

Ho GC, Hamilton DC, Gloeckler G, and Bochsler P

Enhanced solar wind HE^{2+} associated with coronal mass ejections (CME), *Geophys. Res. Lett.* **27**, 309 (2000).

Kauderer HT

Air-directed surface-to-air missile study methodology, *Johns Hopkins APL Tech. Dig.* **21**(2), 244–250 (2000).

Keane JF, Kohri K, Amann DW, and Clark DL

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Developing battlefield-supportable systems through interactive seminars: A biological defense system example, *Johns Hopkins APL Tech. Dig.* 21(2), 256–260 (2000).
- Kohri D, and Amann DW**
Ballistic Missile Defense WALEXs: Collaborative examination of requirements, *Johns Hopkins APL Tech. Dig.* 21(2), 238–243 (2000).
- Ku HC, and Sibeck DG**
Flux transfer events produced by the onset of merging at multiple X lines, *J. Geophys. Res.* 105(A2), 2657–2676 (Feb 2000).
- Liou K, Meng C-I, Newell PT, Takahashi K, Ohtani S-I, Lui ATY, Brittnacher M, and Parks G**
Evaluation of low-latitude Pi2 pulsations as indicators of substorm onset using Polar ultraviolet imagery, *J. Geophys. Res.* 105(A2), 2495–2506 (Feb 2000).
- Mechtel DM (US Naval Acad.), Charles HK Jr, and Franco-macaro AS**
Poled polyimides: Applications in multichip modules and lightguides, in *Proc. ASME 1999 Workshop on Polymeric Materials for Microelectronics and Photonic Applications*, pp. 27–37 (1999).
- Mehoke DS**
Thermal design and flight operation of the MSCNiH₂ battery, in *Proc. 11th Aerospace Thermal Technology Workshop, Vol. 1* (1–3 Mar 2000).
- Morris MK, Zurvalec PH, and Burgan MW**
Teaming in a publications group, in *Proc. 46th Annual Conf., Society for Technical Communication*, Cincinnati, OH, pp. 160–163 (1999).
- Mou ZG, Duong L, Donohue D, and Ku HC**
Distributed architecture for high-performance computing, in *Proc. HPC 2000*, Maui, HI, pp. 399–410 (2000).
- Nolen JM**
The WALEX process, *Johns Hopkins APL Tech. Dig.* 21(2), 225–230 (2000).
- Pace DK**
Simulation verification and validation (V&V) in engineering education, in *Proc. Int. Conf. on Simulation & Modeling in Engineering Education*, San Diego, CA, pp. 97–102 (23–27 Jan 2000).
- Pace DK**
Simulation conceptual model development, in *Proc. Spring 2000 Simulation Interoperability Workshop*, Orlando, FL, CD-ROM (26–31 Mar 2000).
- Pace DK, and Gingras RE**
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- Pavalko WJ, Chevli KR, and Monius MF**
Theater Ballistic Missile Defense analyses, *Johns Hopkins APL Tech. Dig.* 21(2), 261–268 (2000).
- Piatko CD, Rushmeier HE (IBM TJ Watson Res. Ctr., NY), and Rogowitz BE (IBM TJ Watson Res. Ctr., NY)**
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- Porter DL, and Thompson DR**
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- Raney RK, and Porter DL**
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- Robinson AR, Bellingham J, Chryssostomidis C, Dickey TD, Holliday DV, Levine E, Patrikalakis N, Porter DL, Rothschild BJ, Schmidt H, Serman K, and Atwood DK**
Real-time forecasting of the multiscale, interdisciplinary coastal ocean with the Littoral Ocean Observing and Predicting System (LOOPS), *EOS Trans. Am. Geophys. Union* 81(1) (24 Jan 2000).
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Numerical study on the along-track interferometric radar imaging mechanism of oceanic surface currents, *IEEE Trans. Geosci. Remote Sens.* 38, 446–458 (2000).
- Scholl PF, Barger CB, Phillips TE, Wong T (Army Res. Lab), Abubaker S (JHU SHPH), Groopman JD (JHU SHPH), Strickland PT (JHU SHPH), and Benson RC**
Immunoaffinity-based phosphorescent sensor platform for the detection of bacterial spores, in *Proc. SPIE, Paper BO*, San Jose, CA, pp. 3913–3925 (Jan 2000).
- Sibeck DG, Prech L, Safrankova J, and Nemecek Z**
Two-point measurements of the magnetopause: Interball observations, *J. Geophys. Res.* 105(A1), 237–244 (Jan 2000).
- Sibeck DG, Phan T-D, Lin RP, Lepping RP, Mukai T, and Kokubun S**
A survey of MHD waves in the magnetosheath: International Solar Terrestrial Program observations, *J. Geophys. Res.* 105(A1), 129–138 (Jan 2000).
- Silver D, and Geyer O (Carmel Medical Ctr., Israel)**
Pressure-volume relation for the living human eye, *Current Eye Res.* 20(2), 115–120 (2000).
- Sinex CH**
The role of modeling and simulation in controlling logistics systems, in *Proc. 2000 Spring Simulation Interoperability Workshop*, CD-ROM, Orlando, FL (26–31 Mar 2000).
- Sinex CH, Basile SA, Sellers WA, Kerchner DW, and Gion TC**
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- Skolnick FR, and Wilkins PG**
Laying the foundation for successful systems engineering, *Johns Hopkins APL Tech. Dig.* 21(2), 208–216 (2000).
- Stadter PA, and Bose NK (Penn. State Univ., Dept. of Elect. Eng.)**
Neuro-fuzzy computing: Structure, performance measure and applications, Chap. 14, in *Soft Computing for Image Processing*, SK Pal, A Ghosh and MK Kundu (eds.), Springer-Verlag, Heidelberg, pp. 337–374 (2000).
- Thompson DR, Monaldo FM, Porter DL, and Plueddemann AJ**
SAR imagery and *in situ* surface wave observations during the passage of hurricane Edouard, *EOS Trans. Am. Geophys. Union* 81(1) (24 Jan 2000).
- Wang I-J, and Spall JC**
Stochastic optimization with inequality constraints using simultaneous perturbations and penalty functions, in *Proc. 2000 Conf. on Information Sciences and Systems, Vol. 1*, pp. WP2-1–WP2-5, Princeton University (2000).

Weir RC, and Frazer RK

Useful analytic representation of natural precipitation, in *Proc. 8th DoD Electromagnetic Windows Symp.*, Colorado Springs, CO (24–27 Apr 2000).

Zimm AD

Desert Storm, Kosovo, and “Doctrinal Schizophrenia,” *Strategic Rev.* XXVIII(1), 32–39 (2000).

PRESENTATIONS

APL staff were among those who gave the following unclassified presentations:

Baker DN, Bagenal F, Carovillano RL, Kron RG, Paulikas GA, Raney RK, and Rustin PL Jr

Assessment of mission size trade-offs for Earth and space science missions, *Space Studies Board Mtg.*, National Research Council (Mar 2000).

Bernasconi PN, Rust DM, Eaton HAC, and Murphy GA

Balloon-borne telescope for high-resolution solar imaging and polarimetry, *SPIE Int. Symp. on Astronomical Telescopes and Instrumentation 2000*, Munich, Germany (28 Mar 2000).

Bevan MG, Grant SM, Kotlavski KA, Lewis CL, Teagle DE, and Levick N (JHMI)

Occupant sensor’s response to small female and mid-sized male crash test dummies, *SAE 2000 World Congress Mtg.*, Detroit, MI (8 Mar 2000).

Biermann PJ, Krantz D (MTS Corp.), Belk J (Boeing Corp.), and Troyk P (IIT)

Project summary: Applied research on remotely queried embedded microsensors, *SPIE Smart Structures and Materials 2000*, Newport Beach, CA (5–9 Mar 2000).

Biondo AC, Mandelberg MD, Newman FC, and Matthews C (NAWC TSD)

Enhanced representation of environmental effects on sensors, *Spring 2000 Simulation Interoperability Workshop*, Orlando, FL (27–31 Mar 2000).

Bowan AF

Commentary on using generic preferences to incrementally improve plan quality, *2nd NASA Int. Workshop on Planning and Scheduling for Space*, San Francisco, CA (16–18 Mar 2000).

Charles HK Jr, Beck TJ (JH Outpatient Ctr.), Feldmesser HS, Magee TC, Spisz TS, and Pisacane VL

Multiple projection DEXA scanner for precision bone and muscle loss measurements and analysis during prolonged spaceflight, *Space Technology and Applications Int. Forum*, Albuquerque, NM (30 Jan–3 Feb 2000).

Coolahan JE

Simulation based acquisition architecture concepts, *Simulation Based Acquisition Conf.*, London, UK (1–2 Mar 2000).

Cornish TJ

Development of miniature time-of-flight mass spectrometers for field-portable and remote applications, *Mass Spectrometry Discussion Group of the Greater Washington Area* (featured speaker), Columbia, MD (14 Feb 2000).

Decker RB, Paranicas CP, Paularena K, and Richardson J

Recurrent intensity increases of ions 40–4000 keV and plasma disturbances measured by *Voyager 2*, *Voyager Symp.*, Jet Propulsion Laboratory, Pasadena, CA (6 Mar 2000).

Frazer RK, Newman RW, and Terry DH

Correlation of thermal stress measurements with theory for an infrared dome during wind tunnel exposure, *8th DoD Electromagnetic Windows Symp.*, Colorado Springs, CO (24–27 Apr 2000).

Hawkins III SE, Roelof EC, Gold RE, Haggerty DK, and Ho GC

A survey of ~38–315 keV electron events with beam-like anisotropies, *ACE-2000*, Indian Wells, CA (5–7 Jan 2000).

Ho GC, Roelof EC, Gold RE, Krimigis SM, Mason GM, Dwyer JR, and Mazur JE

Heavy ions and energetic electrons in He enhanced SEP, *ACE-2000*, Indian Wells, CA (5–7 Jan 2000).

Mehoke DS

Thermal design and flight operation of the MSC NiH₂ battery, *11th Aerospace Thermal Technology Workshop*, El Segundo, CA (1–3 Mar 2000).

Paranicas CP, Decker RB, and Cheng AF

The radiation environment of icy solar system objects, *Photolysis and Radiolysis of Outer Solar System Ices Conf.*, JHU/APL, Laurel, MD (27 Mar 2000).

Porter DL, Raney RK, and Gasparovic RF

WITTEX-Wide, *U.S. Navy Standing Acquisition Coordination Team Mtg.*, Washington, DC (8 Feb 2000).

Raney RK

Antenna aspect ratio trade-offs for CryoSat, *CryoSat Science Advisory Group Mtg.*, ESA ESTEC, Noordwijk, The Netherlands (8 Mar 2000).

Raney RK

CryoSat and the National Ice Center, *Invited Seminar*, National Ice Center, NOAA, Suitland, MD (1 Mar 2000).

Rust DM

Forecasting coronal mass ejections (CMEs) by analyses of solar images, *Chapman Conf. on Space Weather: Progress and Challenges in Research and Applications*, Clearwater, FL (20–24 Mar 2000).

Rust DM

Conference summary—Theory, *Int. Conf. on Solar Eruptive Events*, Washington, DC (6 Mar 2000).

Rust DM

The necessity of filament eruptions, *Int. Conf. on Solar Eruptive Events*, Washington, DC (6 Mar 2000).

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The Sun, the other Y2K problem, *American Meteorological Soc. Washington, DC Chapter Mtg.*, Silver Spring, MD (15 Mar 2000).

Scholl PF, Barger CB, Phillips TE, Wong T (Army Res. Lab), Abubaker S (JHU SHPH), Groopman JD (JHU SHPH), Strickland PT (JHU SHPH), and Benson RC

Immunoaffinity based phosphorescent sensor platform for the detection of bacterial spores, *SPIE Mtg.*, San Jose, CA (26–28 Jan 2000).

Srinivasan R, Phillips TE, Barger CB, Carlson MA, Schemm ER, and Saffarian HM

Embedded micro-sensor for monitoring pH in concrete structures, *SPIE 7th Int. Symp. on Smart Structures and Materials*, Newport Beach, CA (5–9 Mar 2000).

Stadter PA

Challenges in distributed spacecraft systems, *National Security Space Architect Satellite Operations Transition Planning Team Mtg.*, NASA/GSFC, Greenbelt, MD (16 Feb 2000).

Stadter PA, Bristow JO (NASA/GSFC), and Leitner JA (NASA/GSFC)

Expanding Earth and space science through distributed spacecraft systems, *Living with a Star Workshop*, NASA/GSFC, Greenbelt, MD (10–12 May 2000).

Weir RC, and Frazer RK

Useful analytic representations of natural precipitation, *8th DoD Electromagnetic Windows Symp.*, Colorado Springs, CO (24-27 Apr 2000).

Wickenden DK, Davis B (ARL), and Dubey M (ARL)

An extremely sensitive MEMS magnetometer for use as an orientation sensor, *MEMS DoD-Wide Mtg.*, Atlanta, GA (12 Jan 2000).

COLLOQUIA

The following topics were recently presented at the weekly APL Colloquium (*part of the Millennial Challenges: Colloquium 2000 series):

28 April 2000*

DARPA in the 21st Century, FL Fernandez, DARPA

12 May 2000

Water on Mars: Recent Results on Oceans and Polar Deposits, JW Head, Brown University

19 May 2000

First Results from the Chandra X-Ray Observatory, CR Canizares, MIT

2 June 2000

Intelligent Web Searching, J Mayfield, APL

9 June 2000*

Transportation in the 21st Century, RE Skinner Jr, Transportation Research Board