

PUBLICATIONS

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

Ashrit RG, Kumar KR, and Kumar KK

ENSO-monsoon relationships in a greenhouse warming scenario, *Geophys. Res. Lett.* **28**(9), 1727–1730 (1 May 2001).

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Charles HK Jr

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Chin DC, Srinivasan R, and Ball RE

3-D discrimination of buried object in subsurface soil via magnetic sensors, in *Proc. Am. Control Conf.*, Arlington, VA, pp. 1369–1379 (25–27 Jun 2001).

Cole CE, and Hughes AS

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Constantine RW

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Application of computational fluid dynamics in missile engineering, *Johns Hopkins APL Tech. Dig.* **22**(3), 289–301 (2001).

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Gao RS, Del Negro LA, Swartz WH, Salawitch RJ, Lloyd SA, Proffitt MH, Fahey DW, Donnelly SG, Neuman JA, Stimpfle RM, and Bui TP

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Gauthier LR, Klimek JM, Mattes LA, Eddins CL, Barrios AL, Clemmons DE, and Walsh RF Jr

Blast instrumentation for lethality assessment, *Johns Hopkins APL Tech. Dig.* **22**(3), 355–366 (2001).

Gearhart SA

Testing the Standard Missile-2 kinetic warhead in the Guidance System Evaluation Laboratory, *Johns Hopkins APL Tech. Dig.* **22**(3), 302–310 (2001).

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East Asian winter monsoon and arctic oscillation, *Geophys. Res. Lett.* **28**(10), 2073–2076 (15 May 2001).

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- Ling SX, Le BQ, Lew AL, and Nhan E**
A study on advanced flip chip interconnect technologies for space application, in *Proc. Int. Conf. and Exhibition on High Density Interconnect and Systems Packaging*, pp. 131-136 (17-20 Apr 2001).
- Liou K, Meng C-I, Newell PT, and Lui ATY**
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Micromachined louver arrays for spacecraft thermal control radiators, in *Proc. Am. Inst. Aeronaut. Astronaut.*, pp. 1-6 (2001).
- Paranicas CP, Carlson RW, and Johnson RE**
Electron bombardment of Europa, *Geophys. Res. Lett.* **28**, 673 (2001).
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ARTEMIS: A high fidelity end-to-end TBMD federation, in *SPIE: Enabling Technology for Simulation Science V*, CD-ROM (2001).
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Navigation, communications, and control in distributed spacecraft systems, in *Proc. 4th Int. Symp. on Reducing the Cost of Spacecraft Ground Systems and Operations*, CD-ROM (26 Apr 2001).

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Photodetector noise reduction using adaptive signal processing techniques, in *Proc. ISA Aerospace Industries/Test Measurement Div. 47th Int. Instrumentation Symp.*, Denver, CO (7–11 May 2001).

Winstead NS, Schaaf RM, and Mourad PD

Synthetic aperture radar (SAR) signatures of cold-season bands over the Great Lakes, *Weather and Forecasting* 16, 315–328 (May 2001).

Wu G (JHU School of Medicine), Campbell JN (JHU School of Medicine), and Meyer RA

Effects of baseline skin temperature on pain ratings to suprathreshold temperature-controlled stimuli, *Pain* 90, 151–156 (2001).

Yamauchi M, Andersson L, Lindqvist PA, Ohtani S-I, Clemmons J, Wahlund J-E, Eliasson L, and Lundin R

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Zhu X

Matrix conditioning and the adaptive simultaneous perturbation stochastic approximation method, in *Proc. Am. Control Conf.*, Arlington, VA, pp. 1389–1395 (25–27 Jun 2001).

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Bringing science and engineering to bear on the Navy's needs, *Johns Hopkins APL Tech. Dig.* 22(3), 215–219 (2001).

PRESENTATIONS

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

Brinckerhoff WB

New technologies for miniature mass spectrometers, *Laboratoire Inter-Universitaire des Systèmes Atmosphériques (LISA)*, Université de Paris XXI, Creteil, France (4 Apr 2001).

Brinckerhoff WB, Cornish TJ, Cheng AF, McCoy TJ, and Vicenzi EP

Direct sampling TOF-MS for *in situ* analysis of planets and small bodies, *11th Goldschmidt Conf.*, Hot Springs, VA (20–24 May 2001).

Coolahan JE, and Feldman AB

Distributed simulation of integrated human function, *NSBRI Integrated Human Function Team Workshop*, San Diego, CA (12–13 Apr 2001).

Darrin MA

Microsystems in our life: Machines on the head of a pin, *AIAA Baltimore Section Annual Awards Dinner* (22 Apr 2001).

Feldman A

MALDI-TOF-MS detection of aerosolized biological spores in the presence of environmental clutter, *49th ASMS Conf. on Mass Spectrometry and Allied Topics*, Chicago, IL (May 2001).

Feldman A

A fast computer simulation technology for representing cardiac electrical activity and its applications to the analysis of arrhythmia mechanisms and therapeutic interventions, *Assoc. for the Advancement of Medical Instrumentation Mtg.*, Seattle, WA (Jun 2001).

Foster RC, Mourad PD, Winstead NS, and Vachon PW

Analysis of SAR imagery during the ONR/SHOWEX program, *11th Conf. on the Interaction of the Sea and Atmosphere*, American Meteorological Society, San Diego, CA (14–18 May 2001).

Franson JD

Quantum communications, *Quantum Electronics and Laser Sci. Conf.*, Baltimore, MD (6–11 May 2001).

Franson JD

Perturbation theory for quantum-mechanical observables, *7th Int. Conf. on Squeezed States and Uncertainty Relations*, Boston, MA (4–8 Jun 2001).

Franson JD

Quantum communications, *Int. Conf. on Quantum Information*, Rochester, NY (10–13 Jun 2001).

Grossman KR, Frazer RK, Bamberger RJ, and Miragliotta JA

Optical technique to sense thermal stress in sapphire, *SPIE Aerosense 2001*, Orlando, FL (Apr 2001).

Hall M

Developing solutions using JavaServer Pages technology and servlets, *JavaOne 2001*, San Francisco, CA (Jun 2001)

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

Composition and onset study for ³He-enhanced impulsive solar energetic particle events, *SOHO-ACE Workshop* (Mar 2001).

Kolodner MA, Murphy PK, Hume EE Jr, and McMorro DJ

Near-real-time target ID applications via an interface between MODTRAN4 and MM5 weather forecast data, *24th Annual Review of Atmospheric Transmission Models*, Hanscom AFB, MA (6–8 Jun 2001).

Lario D, MacLennan CG, Roelof EC, Hawkins SE III, and Ho GC

High-latitude Ulysses observations of the H/He intensity ratio under solar minimum and solar maximum conditions, *SOHO-ACE Workshop* (Mar 2001).

Ling SX

A study on advanced flip chip interconnect technologies for space application, *2nd Annual High-Density Interconnect and Systems Packaging Conf. and Exhibition*, Santa Clara, CA (17–20 Apr 2001).

Lloyd SA

Total ozone measurements by satellites, sondes and spectrometers at Fairbanks (TOMS3-F) ozone intercomparison campaign, *Atmospheric Chemistry Seminar*, Dept. of Meteorology, University of Maryland, College Park (23 Feb 2001).

Lloyd SA

Total ozone measurements by satellites, sondes and spectrometers at Fairbanks (TOMS3-F) ozone intercomparison campaign, *Atmospheric Chemistry Branch Seminar*, NASA Goddard Space Flight Center, Greenbelt, MD (1 Mar 2001).

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Total ozone measurements by satellites, sondes and spectrometers at Fairbanks (TOMS3-F) ozone intercomparison campaign, *Int. Arctic Research Center Mtg.*, University of Alaska at Fairbanks (19 Mar 2001).

- Lui ATY**
Multipoint measurements of substorm phenomena and their comparison with substorm models, *Sheffield Space Plasma Mtg.*, Sheffield, England (24–26 Apr 2001). (Invited)
- McLeod RB**
Electronic logging in support of operations analysis, *Military Operations Research Society Symp.*, Annapolis, MD (13 Jun 2001).
- Meng C-I**
University partnering for operational support (UPOS), *Space Weather Week Conf.*, Boulder, CO (30 Apr–1 May 2001).
- Meng C-I, and Liou K**
On the onset-associated phenomena as constraints for substorm mode, the Sun and the heliosphere, *XXVI European Geophysical Soc. General Assembly*, Nice, France (23 Mar–1 Apr 2001).
- Meng C-I, and Newell PT**
Review of observation indicating impulsive magnetosheath plasma penetration into LLBL, *AGU Chapman Conf. on the Low Latitude Boundary Layer and Its Dynamic Interaction with Solar Wind*, New Orleans, LA (16–20 Apr 2001).
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The university partnering for operational support (UPOS), *XXVI European Geophysical Soc. General Assembly*, Nice, France (23 Mar–1 Apr 2001).
- Monaldo FM**
Comparison of radarsat SAR-derived winds with buoy and model measurements, *11th Conf. on the Interaction of the Sea and Atmosphere*, American Meteorological Society, San Diego, CA (14–18 May 2001).
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Galileo EPD ion spectra near Io, *Magnetospheres of the Outer Planets Conf.*, Boulder, CO (Jun 2001).
- Potember RS**
Food safety initiative at APL, *US Army Soldier and Biological Chemical Command Advance Planning Briefing of Industry and Exhibition*, Sparks, NV (22–24 May 2001).
- Potember RS, and Matsuzawa M**
Geometric control of neurons and the formation of synaptic connections *in vitro*, *4th Int. Symp. on Frontiers in Biomedical Polymers*, Williamsburg, VA (16–19 May 2001).
- Prockter LM, Pappalardo R, Figueredo P, and Schenk P**
Regional-scale folds on Europa, *Jupiter Conf.*, Boulder, CO (Jun 2001).
- Roberts JC, and Biermann PJ**
A comparison of frilling resistance in animal, human and bone substitute materials, *American Assoc. of Medical Instrumentation (AAMI) Mtg.*, Baltimore, MD (9–12 Jun 01).
- Roberts JC, Biermann PJ, and Corvelli AA**
Application of composite materials to orthopaedic and reconstructive bone replacement, *American Assoc. of Medical Instrumentation (AAMI) Mtg.*, Baltimore, MD (9–12 Jun 01).
- Rust DM, Bernasconi PN, Georgoulis MK, Shine RA, and Schmieder B**
Emerging flux as seen with the Flare Genesis Experiment, *Science Definition Workshop on High-Resolution Solar Magnetography from Space*, Natl. Space Sci. Tech. Ctr., Univ. of Alabama, Huntsville (3 Apr 2001).
- Spisz TS, Barnum BH, Hume EE, Babin SM, and Stoyanov BJ**
Forecasting radar ducting using RADMAPS and the MM5 weather model, *MSS 47th Annual Tri-Services Radar Symp.*, JHU/APL, Laurel, MD (23 May 2001).
- Spisz TS, Barnum BH, Hume EE, Babin SM, and Stoyanov BJ**
Forecasting radar ducting using RADMAPS and the MM5 weather model, *Battlespace Atmospheric and Cloud Impacts on Military Operations Conf.* 2001, Fort Collins, CO (10–12 Jul 2001).
- Stadter PA**
Expanding Earth and space science through distributed spacecraft systems, *NASA Goddard Space Flight Center Technology Showcase*, Greenbelt, MD (14–16 Jun 2001). (Invited poster presentation)
- Stockbridge RD**
A measure of radar signature similarity for different radar targets using predictions and measurements, *Missile Space Intelligence Center Mtg.* (13 Mar 2001).
- Stockbridge RD**
A procedure to quantify the extent of radar signature similarity between a TBM threat and a candidate threat surrogate, *2001 DIA/MSIC Theater Ballistic Missile Signatures Conf.*, Huntsville, AL (22–24 May 2001).
- Stockbridge RD**
A canon for the representation of multidimensional arrays in the APL2 computing language, *APL 2001 Mtg.*, Yale Univ., New Haven, CT (25–28 Jun 2001).
- Swartz WH, Yee J-H, Vervack RJ Jr, Lloyd SA, and Newman PA**
Photochemical ozone loss in the arctic lower stratosphere determined by stellar occultation observations during the SOLVE Campaign, University of Maryland, Greenbelt (11 May 2001).
- Swartz WH, Yee J-H, Vervack RJ Jr, Lloyd SA, and Newman PA**
Photochemical ozone loss in the arctic as determined by MSX/UVISI stellar occultation observations during the 1999–2000 winter, *Atmospheric Chemistry Colloquium for Emerging Senior Scientists I*, Brookhaven National Laboratory, Upton, NY (16 Jun 2001).
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Photochemical ozone loss in the arctic as determined by MSX/UVISI stellar occultation observations during the 1999–2000 winter, *Atmospheric Chemistry Gordon Research Conf.*, Newport, RI (19 Jun 2001).
- Takahashi K, Toth BA, Olson JV, and Wilkinson D-L**
Near real time Kp estimate using ground magnetometer data, *Space Weather Week Conf.*, Boulder, CO (1–4 May 2001).
- Thompson DR**
SAR wind maps in support of CBLAST, *ONR CBLAST-low Workshop*, Woods Hole Oceanographic Inst., Woods Hole, MA (7 May 2001). (Invited)
- Thompson DR**
High-resolution wind mapping with synthetic aperture radar, *Seminar*, Institute for Coastal Processes, Research Center Geesthacht, Geesthacht, Germany (23 May 2001). (Invited)
- Thompson DR**
Use of SAR imagery with QUICKSCAT wind directions for coastal wind mapping, *Seminar*, Oceanography Institute, University of Hamburg, Hamburg, Germany (29 May 2001). (Invited)
- Thompson MW, and D'Alessio SM**
An overview of the DCR programme, *TTCP WTP-4 Technical Workshop*, 21st Century Propulsion Systems, Fort Halstead, UK (26 Apr 2001).
- Webb S, Schneider W, Darrin M, Boone B, and Luers P (NASA)**
Infrared communications for small spacecraft: From a wireless bus to cluster concepts, *SPIE 15th Annual Int. Symp. on Aerospace/Defense Sensing, Simulation, and Controls*, Orlando, FL (16–20 Apr 2001).
- Wenstrand DS, Smith DG, and Cutchis PN (Biostar Inc.)**
Far forward life support system prototype, *SPIE Aerosense 2001*, Orlando, FL (16 Apr 2001).

Wenstrand DS, Smith DG, and Cutchis PN (Biostar Inc.)
Far forward life support system, *AAMI Conf. and Expo*, Baltimore, MD (9–12 Jun 2001).

Wienhold PD
The effect of shelf life on the bond strength of etched filled PTFEPO board materials, *Int. SAMPE Symp. and Exhibition*, Long Beach, CA (7–10 May 2001).

Wing SP, and Newell PT
Assimilating multi-point measurements in ionosphere and magnetosphere, *Sheffield Space Plasma Mtg.: Multi-point Measurements Versus Theory*, Sheffield, UK (24–26 Apr 2001). (Invited)

Wing SP, and Newell PT
LLBL contribution to the plasma sheet ions, *AGU Chapman Conf. on the Low-Latitude Boundary Layer and Its Dynamic Interaction with the Solar Wind and Magnetosphere*, New Orleans, LA (16–20 Apr 2001). (Invited)

Wing SP, Newell PT, and Ruohoniemi JM
Double cusp, *British Antarctic Survey (BAS) Mtg.*, Cambridge, UK (27 Apr 2001).

Winstead NS, and Monaldo FM
Observing mesoscale and microscale atmospheric phenomena using synthetic aperture radar (SAR), *Illinois State Water Survey Mtg.*, Urbana-Champaign, IL (4 Apr 2001). (Invited)

Zakar E, Polcawich R, Dubey M, Piekarz R, Conrad J, Piekaski B, Hollis M (ARL), Wickenden D, Champion J, and Porter D (EC III)
Fabrication and testing of a PZT thin film high pressure sensor, *13th Int. Symp. on Integrated Ferroelectrics*, Colorado Springs, CO (11–14 Mar 2001).

The following papers were presented at the *4th Int. Symp. on Reducing the Cost of Spacecraft Ground Systems and Operations*, JHU/APL, Laurel, MD (25 Apr 2001):

Gemeny SE
Autonomous ground station support for spacecraft.

Harvey RJ
Implementation of an autonomous spacecraft designed to reduce life-cycle cost.

Holdridge ME
NEAR soft landing: Even little teams can do big things.

Stadter PA
Navigation, communications, and control in distributed spacecraft systems.

The following papers were presented at the *ISA Aerospace Industries/ Test Measurement Division 47th Int. Instrumentation Symp.*, Denver, CO (7–11 May 2001).

Gauthier LR
Latency model for optical signal detection.

Gauthier LR, and Wesner-Barrios AL
Damping gyrometer.

Grossman KR, Frazer RK, Bamberger RJ, and Miragliotta JA
Non-contact stress measurement in sapphire.

Wesner-Barrios AL
Photodetector noise reduction using adaptive signal processing techniques.

The following papers were presented at the *American Geophysical Union 2001 Spring Mtg.*, Boston, MA (29 May–2 Jun 2001):

Bernasconi PN, Rust DM, Georgoulis MK, LaBonte BJ, and Schmieder B
Peculiar moving magnetic features observed with the Flare Genesis Experiment.

Brandt PC
ENA imaging of a narrow flow channel from the plasmashet.

Brandt PC
IMAGE/HENA: On the storm-substorm relationship during the main phase.

Brandt PC
IMAGE/HENA: Observation of plasmashet?

Carbary JF, Morrison D, and Romick GJ
Latitude variation in light scattered from polar mesospheric clouds.

Georgoulis MK, Rust DM, and Bernasconi PN
Bombs in a solar active region: Statistical properties and implications.

Haggerty DK, and Roelof EC
There are two populations of energetic electrons associated with CMEs.

Ho GC, Mason GM, Roelof EC, Gold RE, Dwyer JR, and Mazur JE
Composition variations of hydrogen, helium, and iron ions during large solar energetic particle events.

Lui ATY
Relative roles of substorm and convection in storms from ENA observation during a storm main phase.

Paranicas CP, Mauk BH, Ratliff JM, Carlson RW, and Johnson RE
Ion and electron radiolysis of Europa's surface.

Roelof EC, and Haggerty DK
What do we mean by a "coronal injection time" for 40–300 keV electrons, and how is it related to the launch of CMEs?

Rust DM, Bernasconi PN, Georgoulis MK, LaBonte BJ, and Schmieder B
Sunspot formation from emerging flux ropes: Observations from Flare Genesis.

Simnett GM, Roelof EC, and Haggerty DK
What have impulsive near-relativistic electron events to do with CMEs?

Takahashi K, Denton RE, and Gallagher D
Mass density models based on the frequency of observed standing Alfvén waves: AMPTE/CCE results for $L = 6-10$.

Takahashi K, Toth BA, Olson V, and Wilkinson D-L
An automated procedure for near-real-time K_p estimates.

The following papers were presented at the *69th Military Operations Research Society Symp.*, Annapolis, MD (13 Jun 2001):

Avila RD, and Botto DJ
Procedure for identification of potentially observable events.

Kujawa WF, Kroshl WM, and Sullivan KA
Cost estimation of future UUV systems for MCM.

McLeod RB
Electronic logging in support of operations analysis.

St. George VR
Port characterization and countermeasures databases.

Zawada FA, Barnum BH, and Spisz T
Forecasting tropospheric radar ducting using RADMAPS and the MM5 weather model.

The following papers were presented at the *2001 American Control Conf.*, Arlington, VA (25–27 Jun 2001):

Chin DC, Srinivasan R, and Ball RE
3-D discrimination of buried object in subsurface soil via magnetic sensors.

Hill SD
Discrete optimization via SPSA.

Maryak JL, and Chin DC

Global random optimization by simultaneous perturbation stochastic approximation.

Stark DR, and Spall JC

Computable bounds on the rate of convergence in evolutionary computation.

Zhu X

Matrix conditioning and adaptive simultaneous perturbation stochastic approximation method.

COLLOQUIA

The following topics were recently presented at the weekly APL Colloquium (*part of "The New Critical Challenge: War on Terrorism" series):

5 October 2001

Hypersonic Air Breathing Propulsion for Future Flight Vehicles, PJ Waltrup, APL

12 October 2001

Smaller, Faster, Cheaper: From Transistors to Artificial Microstructures, CJ Lobb, University of Maryland

19 October 2001

Change and Continuity in Terrorism, B Hoffman, The Rand Corp.

26 October 2001

The Discovery and Salvage of DAKAR, DW Jourdan, Nauticos Corp.

2 November 2001

Changing Directions in U.S. Defense Policy, MO Wheeler, Science Applications Intl. Corp.

5 November 2001

Upcoming Upheavals—Understanding Today's Threat,* M Vlahos, APL

9 November 2001

Advanced Electro-Optic Technologies for Ballistic Missile Defense, WR Dyer, BMDO

16 November 2001

Jupiter's Galilean Satellites, M McGrath, STScI

29 November 2001

Why Bin Laden?,* M Deeb, JHU School of Advanced International Studies

7 December 2001

On Environmental Limits to Sonar Performance, N Owsley, ONR

14 December 2001

RDT&E in Navy Programs: Optics in ADSD, DD Duncan, APL

19 December 2001

Post-War Afghanistan and Its Region,* S. Frederick, JHU School of Advanced International Studies