PUBLICATIONS

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

Ali Z (Johns Hopkins Medical Inst.), Ringkamp M (Johns Hopkins Medical Inst.), Hartke TV (Johns Hopkins Medical Inst.), Chien HF (Johns Hopkins Medical Inst.), Flavahan NA (Johns Hopkins Medical Inst.), Campbell JN (Johns Hopkins Medical Inst.), and Meyer RA
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PRESENTATIONS

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

Badesha SS, Heyler GA, Sharer PJ, and Strikwerda TR
Development of formation deployment and initialization concepts, presented at NASA Goddard Space Flight Center, Greenbelt, MD (18–20 May 1999).

Betenbaugh TM
Mechanical flight qualification testing of the Advanced Composition Explorer Observatory, *Spacecraft and Launch Vehicle Dynamics Environments Workshop*, El Segundo, CA (8–10 Jun 1999).

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Evolution of vortices generated by the collapse of a stratified turbulent wake, *IUGG-99, Workshop on Rotating & Stratified Flows*, Birmingham, UK (27 Jul 1999).

Cheng A, and Paranicas C
Europa's particles and fields environment, presented to the National Research Council Task Group on the Forward Contamination of Europa, Washington, DC (5 April 1999).

Cole TD
Laser Vibrometry Sensor (LVS) application to the remote detection of speech (eavesdropping), presented to John Sheridan, DEA Office of Investigative Technology (11 Jun 1999).

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The DoD Resource Repository (DIRR) for simulation-based acquisition—Some implementation issues for consideration, *MSAR/MEL User Conf.*, Fairfax, VA (28–29 Apr 1999).

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A business case for simulation-based acquisition (SBA)—Some issues for consideration, *1999 Summer Computer Simulation Conf.*, Chicago, IL (11–15 Jul 1999).

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Applicability of distributed/interoperable simulation to integrated human function, *Integrated Human Function Workshop*, Houston, TX (13–14 Jul 1999).

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A technology path to distributed remote sensing, *2nd IAA Symp. on Small Satellites for Earth Observation*, Berlin, Germany (14 Apr 1999).

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Multi-dimensional risk analysis/management tool (MD-RAM), *15th Annual NDIA Security and Technology Symp.*, Norfolk, VA (14–17 Jun 1999).

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Miniaturization of space electronics, *NASA/GSFC Colloquium* (5 Apr 1999).

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Dynamic assessment of a miniaturized spaceborne command and data handling in your palm (C&DHIYP), *InterPACK'99*, Lahaina, HI (13–18 Jun 1999).

Lui ATY
Intercalibration of substorm onset identifiers, *GEM Workshop*, Snowmass, CO (21–25 Jun 1999).

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Non-MHD behavior in near-Earth dipolarizations, *GEM Workshop*, Snowmass, CO (21–25 Jun 1999).

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Xylophone bar magnetometer, *ISA Aerospace Industries Div./Test Measurement Div. 45th Int. Instrumentation Symp.*, Albuquerque, NM (6 May 1999).

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Electromagnetics of Europa and Ganymede, invited paper presented at California Institute of Technology, Space Radiation Laboratory, Pasadena, CA (4 Mar 1999).

Perschy JA
Common processor design for the TIMED spacecraft, *1999 Government Microcircuit Applications Conf.* (poster session) Monterey, CA (8–11 Mar 1999).

Pittman TB, and Franson JD
Quantum logic gates using photon exchange interactions, *Quantum Electronics and Laser Science Conf. '99*, Baltimore, MD (23–28 May 1999).

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Extracting geophysical parameters from synthetic aperture radar, *The Johns Hopkins University Center for Environmental and Applied Fluid Mechanics Seminar*, Baltimore, MD (23 Apr 1999).

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Session 9 Satellite Case Study (ACE), Lecture, *Applied Technology Institute Course, Space II*, NASA Goddard Space Flight Center, Greenbelt, MD (24–28 May 1999).

Zhu X, Yee JH, Lloyd SA, and Strobel DF
Numerical modeling of chemical-dynamical coupling in the upper stratosphere and mesosphere, *AGU Chapman Conf.: Atmosphere Sciences Across the Stratopause*, Annapolis, MD (19–22 Apr 1999).

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Carbary JF, Liou K, Lui ATY, Newell PT, Meng C-I, Brittnacher M, and Parks G
"Blob" analysis of auroral substorm dynamic.

Cheng A, Farquhar R, Veverka J, Yeomans D
NEAR team, The NEAR mission: Where we have been and where we are going?

Dwyer JR, Mason GM, Mazur JE, Gold RE, and Krimigis SM
Variability of elemental and isotopic solar energetic particle composition as measured by ACE.

Haggerty DK, Roelof EC, Hawkins SE III, Smith CW, and Tokar RL
Observations of upstream events at the L1 point by the ACE Spacecraft.

Hamilton DC, Hill ME, Decker RB, and Krimigis SM
ACR response in the outer heliosphere to the onset of the new solar cycle.

Higuchi T, and Ohtani S-I
Statistical characteristics of nightside field-aligned currents.

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NEAR'S near infrared spectrometer at the Eros flyby.

Ku H, and Sibeck DG
Three-dimensional MHD simulations of the magnetosheath plasma and magnetic field.

Lagg A, Mauk BH, McEntire RW, and Williams DJ
Energetic ions at Jupiter: Evidence for a neutral gas torus at Europa's orbit.

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Possible evidence for current disruption to be a self-organized critical phenomenon.

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What is the physics of magnetic storms?: History and main problems.

Lui ATY, Liou K, Newell PT, Meng C-I, Parks, G, Mukai T, Tsuruda, K, Kokubun S, and Stauning P
Ionospheric signatures of bursty bulk flows in the mid-tail region.

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Special forms in 3He-rich solar particle events.

McNutt RL Jr., Lyon J, Goodrich CC, and Wiltberger M
The solar wind/VLISM interaction problem: Dependence on charge-exchange formulations.

Morrison D, Carbary JF, Romick GJ, Paxton LJ, and Meng C-I
Middle ultraviolet imager observations of the distributions of polar mesospheric clouds.

Nosé M, Lui ATY, Ohtani S-I, McEntire RW, Williams DJ, and Kokubun S
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Tail current intensification prior to current disruption.

Romick GJ, Yee J-H, Morgan MF, and Morrison D
Vibrational and rotational altitude distributions of molecular nitrogen ions in sunlight at altitudes above 300km.

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Sibeck D, Kokubun S, Kudela K, Lazarus A, Lepping R, Lin R, Mukai T, Phan T, Romanov S, Safrankova J, and Williams D
The foreshock's effect on solar wind input into the magnetosphere.

Wing S, and Newell PT
Plasma sheet plasma pressure contribution to Birkeland currents.

Yahnin A, Sergeev V, Kubyshkina M, Borodkova N, Bosinger T, Pulkinnen T, Liou K, C. Meng, Newell PT, Angelopoulos V, Kokubun S, and Mukai T
Substorm onset as observed from the ground and space.

Yee J-H, DeMajistre R, Morgan MF, Vervack RJ, Carbary JF, Morrison D, Romick GJ, Anderson DE, Paxton LJ, Meng C-I, and Kumar CK
Spacebased remote sensing of ozone using stellar occultation techniques.

The following papers were presented at the 1999 American Control Conference, San Diego, CA (2–4 Jun 1999).

Chin DC, Spall JC, and Smith R
Evaluation of system-wide traffic signal control using stochastic optimization and neural networks.

Maryak JL, and Chin DC
Efficient global optimization using SPSA.

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Adaptive model fitting with time-varying input variables.

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A constrained simultaneous perturbation stochastic approximation algorithm based on penalty functions.

COLLOQUIA

The following topics were recently presented at the weekly APL Colloquium:

1 October 1999
Innovative Battery Technologies, JJ Suter, APL

8 October 1999
Future of the Physical Sciences: A View from Washington, RA Eisenstein, National Science Foundation

15 October 1999
Physics from Fisher Information, R Frieden, University of Arizona

22 October 1999
Annotating Whole Genomes, S Salzberg, Institute for Genomic Research

29 October 1999
Computers with Common Sense, DB Lenat, Cycorp