PUBLICATIONS

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

Awadallah RS, Gehman JZ, Kuttler JR, and Newkirk MH

Baker JBH, Zhang Y, Greenwald RA, Paxton LJ, and Morrison D
Height-integrated Joule and auroral particle heating in the night side high-latitude thermosphere, Geophys. Res. Lett. 31(9), L09807 (2004).

Bernasconi PN, Eaton HA, Foukal P, and Rust DM

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Did life exist on Mars? Search for organic and inorganic signatures, one of the goals for Sample Analysis at Mars (SAM), Adv. Space Res. 33, 2240–2245 (2004).

Carbary JF, Morrison D, and Remick GJ
Evidence for bimodal particle distribution from the spectra of polar mesospheric clouds, J. Geophys. Res. 31(13), L13108 (2004).

Carbary JF, Sotirelis T, Newell PT, and Meng C-I
Correlation of LBH intensities with precipitating particle energies, J. Geophys. Res. 31(13), L13801 (2004).

Choo TH, and Skura JP
SciBox: A software library for rapid development of science operation simulation, planning, and command tools, Johns Hopkins APL Tech. Dig. 25(2) 154–162 (2004).

Cosgrove SE, Jenckes MW, Kohri K, Hsu EB, Green G, Feuerstein CJ, Catlett CL, Robinson KA, and Bass EB

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Photolysis frequency of O3 to O(1D): Measurements and modeling during the international photolysis measurement and modeling intercomparison (IPMMI), J. Geophys. Res. 109(A10), D10S09 (2004).

Kil H, DeMajistre R, and Paxton LJ


Land HB III, Eddins CL, and Klimek JM

Lario D, and Simnett GM

Le G, Russell CT, and Takahashi K

Liang J, Sofko GJ, Donovan EF, Watanabe M, and Greenwald RA
Convection dynamics and driving mechanism of a small storm during dominantly IMF By+, Bz+ conditions, Geophys. Res. Lett. 31(8), L08834 (2004).


Marchaudon A, Cerisier J-C, Greenwald RA, and Sofko GJ

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Spall JC

The following papers appeared in conference proceedings available on CD-ROM:

Hawthorne RC, Neighhoff TM, Patrone DS, and Scheidt DH

McGrath BE

Nedungadi A, and Van Wie DM

Roberts JC, Biermann PJ, O’Connor JV, Cain RP, Carkhuff BG, and Merkle AC
Modeling the effects of ballistic impact on a human torso, 11th Int. Conf. on Composites Engineering, Hilton Head, SC, pp. 52–53 (Aug 2004).

Simon DH, and Land HB

Stadter PA
Decision level identity fusion in exo-atmospheric target discrimination for ballistic missile defense, Natl. Sympt. on Sensor and Data Fusion, JHU/APL, Laurel, MD (Jun 2004).

Van Wie DM, and Nedungadi A

**PRESENTATIONS**

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

Desai MI

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Dunham D

Franson JD
Quantum computing using single photons and the Zeno effect, Second Feynman Festival, College Park, MD (Aug 2004).

Franson JD, Jacobs BC, and Pittman TB
Quantum computing using linear optics and the Zeno effect, Seventh Int. Conf. on Quantum Communication, Measurement, and Computing, Glasgow, Scotland (Jul 2004).

Fry RL

Hawley PA, and Urban TJ

Leuschen C, and Raney RK

McCally RL, Freund DE, Bonney-Ray J, Grebe R, DeLaCruz A, and Green WR

McNamee JP
Cross-language information retrieval: 4 years of experiments at CLEF, invited talk at the National Security Agency, Fort Meade, MD (Jul 2004).

McNutt RL Jr

Patterson S, Palumbo NF, Schuh JR, and Sullins GA
Hybrid control-theoretic swarm-on-swarm technology development, Briefing to Capt. Chris Earl, Special Assist. to the Director for Operational Liaison, DARPA, Arlington, VA (Aug 2004).

Paulhamus BL, Burke MJ, and Henly JM

Sandwell DT, Smith WHF, and Raney RK
Bathymetry from space, ENVISAT Team Mtg., European Space Agency, Salsburg, Austria (Aug 2004).

Sikora TD, Young GS, and Winstead NS

Spall JC
Key issues in stochastic search, Performance Metrics Symp., Gaithersburg, MD (Aug 2004).

Spall JC
Theoretical comparisons of algorithms, Performance Metrics Symp., Gaithersburg, MD (Aug 2004).

Urban TJ, and Hawley PA
An object-oriented simulation context to support M-on-N engagements, AIAA Modeling and Simulation Technologies Conf. and Exhibit, Providence, RI (Aug 2004).

The following papers were presented at the Solar, Heliospheric, and Interplanetary Environment (SHINE) Workshop, Big Sky, MT (Jun 2004):

Georgoulis MK, and LaBonte BJ
Reconstruction of a magnetohydrodynamic velocity field vector in solar active regions from a pair of vector magnetograms.

Georgoulis MK, and Rust DM
A comprehensive array of diagnostic tools for vector magnetogram analysis in solar active regions.

Hagerty DK, and Roelof EC
Effective drift velocity and initiation times of interplanetary type-III radio bursts.

**COLLOQUIA**

The following topics were presented at the weekly APL Colloquium in 2004:

**4 Oct**
Why Net-Centric? J Stenbit, Former CIO and Assistant Secretary of Defense (C3I)

**15 Oct**
The War at Midpassage: Where Do We Go from Here? M Vlahos, APL
29 Oct
Confronting Long-Term Fiscal Challenges, P Heller, Int. Monetary Fund

12 Nov
Diamonds, Weapons and Passports: The Strategic Challenge of Failed States to U.S. National Security, D Farah, author and journalist

19 Nov
Search for Extraterrestrial Intelligence: Pulling Signals out of Cosmic Noise, J Tarter, SETI Institute

3 Dec
Cassini at Saturn: Wonders of the Giant Planet Revisited, S Krimigis, APL

10 Dec
Scenarios and Design Cognition, J Carroll, Pennsylvania State University

17 Dec
Low Energy Nuclear Reactions: Problems, Progress and Prospects, D Nagel, George Washington University


Anderson CW, Kerechanin CW II, DeCicco DJ, and Vojtech GL
Expandable Sensor Array, 6801475 (5 Oct)

Anderson CW, Scholl PF, Chappell RG, Bryden WA, Ko HW, and Ecelberger SA

Asher MS, Linstrom LA, Henderson RL, and Duven DJ
Weak Signal and Anti-jamming Global Positioning System Receiver and Method Using Full Correlation Grid, 6724343 (20 Apr)

Bade PR, Kahn SA, and Verven DM
System, Method, and Computer Program Product for High Speed Backplane Messaging, 6792513 (14 Sep)

Bankman IN, and Ison LW
Method and System for Detecting Small Structures in Images, 6738500 (18 May)

Biermann PJ, Roberts JC, Cain RP, Carkhuff BG, and Kleinberger M
Instrumented Torso Model, 6769286 (3 Aug)

Blodgett DW
Method and Apparatus for Selecting Trees for Harvest, 6829938 (14 Dec)

Bryden WA
Pulsed Laser Sampling for Mass Spectrometer System, 6734423 (11 May)

Cain RP, Carkhuff BG, and Bacon JM
Techniques for Monitoring Health of Vessels Containing Fluids, 6834556 (28 Dec)

Cain RP, Carkhuff BG, and Uly OM
Self-Monitoring Controller for Quartz Crystal Microbalance Sensors, 6706977 (16 Mar)

Champion JL, Oslander R, Givens RB, Wickenden DK, Jablonski DG, Higbie JH, Radcliffe ST, Darrin MAG, Kistennacker TJ, and Oursler DA
Lorentz Force Driven Mechanical Filter/Mixer Designs for RF Applications, 6819103 (16 Nov)

Charles HK Jr, Beck TJ, Feldmesser HS, and Magee TC
Techniques for Deriving Tissue Structure from Multiple Projection Dual-Energy X-ray Absorptiometry, 6816564 (9 Nov)

Cusick RT, Walsh RF, and Wickenden DK
Sensor Array System for Position Detection, 6727511 (27 Apr)

Eaton HAC
Single Event Upset Immune Logic Family, 6753694 (22 Jun)

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Single Event Upset Immune Logic Family, 6756809 (29 Jun)

Franson, JD
Optical Method for Quantum Computing, 6678450 (13 Jan)

Greenberg RS, Cristion JA, Moses EJ, and Sternberger WI
Apparatus and Method for Non-Invasive, Passive Fetal Heart Monitoring, 6731498 (15 Jun)

Hayek CS, and Doss OW III
Threat Identification for Mass Spectrometer System, 6822222 (23 Nov)

Heisler RR, and Radliff CL
Rapid Prototype Wind Tunnel Model and Method of Making Same, 6796171 (28 Sep)

Higbie JH
Integrated Adaptive Antenna Array and Adaptive Locally Optimum Detection System, 6735427 (11 May)

Jablonski DG, Ko HW, Oursler DA, Smith DG, and White DM
System and Method of Radar Detection of Non-Linear Interfaces, 6765527 (20 Jul)

Lawrence DS, and Sample JL
Cortisol Sensor, 6833274 (21 Dec)

Lee DM, Francomacaro AS, Lehtonen SJ, and Charles HK Jr
Method for Electroless Gold Plating of Conductive Traces on Printed Circuit Boards, 6733823 (11 May)

McLoughlin MP, and Carlson MA
Integrated Fluidics System for Simplified Analysis of Aerosolized Biological Particles and Particle Detection Ticket Thereof, 6796164 (28 Sep)

Miragliotta JA, Grossman KR, Frazer RK, and Bamberger RJ Jr
A Non-Contact Optical Technique to Monitor Surface Stress in Sapphire Windows, 6763727 (20 Jul)

Murphy JC
Apparatus and Methods Using Mechanical Resonators to Enhance Sensitivity in Lorentz Force Magnetometers, 6812696 (2 Nov)

Murphy KE
Light Detection and Ranging (LIDAR) Mapping System, 6711475 (23 Mar)

Murray GM
Molecularly Imprinted Polymer Solution Anion Sensor, 6749811 (15 Jun)

Murray GM
Polymer Based Permeable Membrane for Removal of Ions, 6780323 (24 Aug)

Nelson CV
Compact, Autonomous Robotic Detection and Identification (CARD) Sensor System of Unexploded Ordnance Site Remediation, 6809520 (26 Oct)

Nelson CV
Portable Metal Detection and Classification System, 6791329 (14 Sep)

Nelson CV, and Jacobs BC
Magnetic Sensor System for Fast Response, High Resolution, High Accuracy, Three Dimensional Position Measurements, 6789043 (7 Sep)

Paschalidis NP
Remote Input/Output (RIO) Smart Sensor Analog-Digital Chip, 6744376 (1 Jan)

Penn JE
Broadband, Four-bit, MMIC Phase Shifter, 6806792 (19 Oct)
Pittman TB, Franson JD, and Jacobs BC
Techniques for Performing Logic Operations Using Quantum States of Single Photons, 6741374 (25 May)

Smith GA Jr, Peacock GS, and Vojtech GL Jr
Techniques for Distributed Machinery Monitoring, 6687654 (3 Feb)

Wireless Multi-Functional Sensor Platform, System Containing Same and Method for Its Use, 6796187 (28 Sep)

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Methods of Producing Electrodes and Methods of Using Such Electrodes to Accumulate and Detect Analytes, 6805789 (19 Oct)

Long-Life Conductivity Sensor System and Method for Using Same, 6828808 (7 Dec)

Stadter PA, and Devereus WS
Integrated Navigation and Communication System for Use in Distributed Spacecraft Systems, 6721658 (13 Apr)

Zinger WH, and Krill JA
Software Protection for Single and Multiple Microprocessor Systems, 6836847 (28 Dec)

FOREIGN PATENTS (2004)

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Automated Risk Management Infrastructure for Healthcare, 20025782 (South Africa) (31 Mar)

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Ion Reflection Comprising a Flexible Printed Circuit Board, ZL200112434.6 (China) (26 May)

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Method of Making an Ion Reflection Comprising a Flexible Circuit Board, 771422 (Australia) (1 Jul)

Flower RW
Methods and Apparatus for Improved Visualization of Choroidal Blood Flow and Aberrant Vascular Structures in the Eye Using Fluorescent Dye Angiography, 3626735 (Japan) (10 Dec)

Francomacaro AS, Mchettel DM, and Charles HK Jr
Improving Multi-Chip Module Testability Using Pooled-Polymer Interlayer Dielectrics, 99812161.4 (China) (2 Feb)

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Multi-Chip Module Testability Using Pooled-Polymer Interlayer Dielectrics, 1121602 (Europe) (7 Apr)

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Multi-Chip Module Testability Using Pooled-Polymer Interlayer Dielectrics, 1121602 (United Kingdom) (7 Apr)

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Integrated Power Source, MY-117850-A (Malaysia) (30 Aug)

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Steerable Three-Dimensional Magnetic Field Sensor System for Detection and Classification of Metal Targets, 773887 (Australia) (23 Sep)

Nelson CV, Smith DG, and Cooperman CB
Electromagnetic Target Discriminator Sensor System and Method for Detecting and Identifying Metal Targets, 12662446 (Europe) (6 Oct)

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Electromagnetic Target Discriminator Sensor System and Method for Detecting and Identifying Metal Targets, 12662441 (Germany) (6 Oct)

Olsen DE
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