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- Ravitz AD**
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- Roberts JC**
Computational and experimental models of the human torso for ballistic impact and blast, *ARMOR 2003*, St. Petersburg, Russia (Oct 2003).
- Rust DM**
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- Thompson DR, Linstrom LA, Gasparovic RF, and Elfouhaily TM**
Doppler analysis of GPS sea reflections, *Workshop on Waves and Operational Oceanography, French Hydrographic and Oceanographic Service (SHOM)*, Brest, France (Jun 2003).
- Thompson DR, Linstrom LA, Gasparovic RF, and Elfouhaily TM**
Delay/Doppler analysis of GPS sea reflections, *Workshop on Oceanography Using Reflected GPS*, Barcelona, Spain (Jul 2003).
- Vandegriff JD, and Choo TH**
Tools and ideas for achieving mission independent data interoperability in space physics, *Raytheon Sci. Data Center Symp.*, College Park, MD (May 2003).

Voo LM, Merkle AC, and Kleinberger M

Effective head restraint height in whiplash injury prevention, 2003 *Int. Mechanical Engineering Congress and Exposition*, Washington, DC (15–21 Nov 2003).

Wagstaff KL, and Bell JF III

Automated analysis of Mars multispectral observations, 6th *Int. Conf. on Mars*, Pasadena, CA (Jul 2003).

Wesolek DJM, Champion JL, Herrero FA, Osiander R, Champion RJ, and Darrin MA

A micro-machined flat plasma spectrometer (FlaPS), *SPIE Photonics West*, San Jose, CA (Jan 2004).

Zanetti LJ, Fox NJ, Mauk BH, Mitchell DG, C:son Brt P, Anderson BJ, Korth H, and Carr SS

Connections within Geospace, Living With a Star Response II, 84th *Ann. Am. Meteorological Soc. Mtg.*, Seattle, WA (Jan 2004).

The following papers were presented at the *Joint Assembly of the European Geophys. Soc.*, Nice, France (Apr 2003):

C:son Brandt P, Roelof EC, DeMajistre R, Lui ATY, Mitchell DG, Anderson BJ, Ohtani S, and Fok M-C

Storm-time ion pressure distribution of the inner magnetosphere.

Haine TW, Eyink G, and Lea D

Linear response formalism and ensemble adjoint methods for climate sensitivity.

Lui ATY

Analogy between the dynamic magnetosphere and a self-organized critical system.

Newell P, Liou K, Skura JP, and Meng C-I

The distribution of auroral power increases and decreases.

Sotirelis T, Ruohoniemi JM, Newell PT, Barnes RJ, Skura JP, and Meng C-I

Comparing SuperDARN and DMSP auto-sensing of the auroral oval.

Weiss MB, Barnes WC, Morrison DD, Paxton LJ, and Barnes RJ

Using XML to perform a web-based interrogation of large-scale space physics data sets focusing on TIMED and SuperDARN data.

Yumoto K, Uozumi T, Yamaguchi R, Kawano H, Liou K, and Meng C-I

Role of Pi 2 pulsations in substorm process.

The following papers were presented at the 34th *Am. Astron. Soc. Solar Physics Div. Mtg.*, JHU/APL, Laurel, MD (16–20 Jun 2003):

Bernasconi PN, Foukal P, and Rust DM

The solar bolometric imager: Characteristics and performance.

LaBonte BJ, and Rust DM

An automated system for detecting sigmoids in solar x-ray images.

Rust DM

Evidence for flux ropes in the solar corona.

The following papers were presented at the 5th *Int. Symp. on Reducing the Cost of Spacecraft Ground Systems*, Pasadena, CA (Jul 2003).

Choo TH, and Skura JP

Science planning tool box.

Hauck TF, and Finnigan JV

Use of the ground support equipment operating system (GSESOS) software on the MESSENGER mission: A case study.

McKerracher PL, Tillman DS, Furrow RM, and Herrera LR

Complete ground software re-use: The common ground approach to a re-usable, shared ground system.

Stratton WC, Krupiarz CJ, Frangos CM, Harrison JJ, and Holland DB

Reuse of the Jet Propulsion Laboratory (JPL) Consultative Committee on Space Data Systems (CCSDS) file delivery protocol (CFDP)

software in the Applied Physics Laboratory MESSENGER common ground system.

The following papers were presented at the *AGU Fall Mtg.*, San Francisco, CA (8–12 Dec 2003):

Carbary J, Sotirelis T, and Meng C-I

Correlation between DMSP particle data and polar image intensities.

Craven JD, Strickland DJ, Meier RR, Crowley G, Christensen AB, Paxton LJ, Morrison D, Avery SK, Meng C-I, Straus PR, Swenson CM, and Walterscheid RL

Search for thermospheric composition changes in the morning sector near local midnight in association with intense substorm activity.

Henderson MG, Skoug R, Thomsen MF, Borovsky J, Reeves GD, Immel TJ, Mende SB, and Lui ATY

Magnetospheric and auroral activity during sawtooth events: Energy flow through the MIA system during periodic magnetospheric disturbances.

Henderson S, Swenson C, Straus P, Kil H, Christensen A, Paxton L, Morrison D, Crowley G, Meier R, Craven J, Strickl D, Meng C, Walterscheid R, and Avery S

Automatic detection of equatorial plasma bubbles in GUVI data.

Hill ME, Krimigis SM, Hamilton DC, Decker RB, and Roelof EC

Composition and spectral evolution of energetic ions at Voyager 1 in the vicinity of the solar wind termination boundary.

Hori T, Lui ATY, Ohtani S, C:son Brandt P, McEntire RW, Maezawa K, Mukai T, and Hayakawa H

Storm-time convection in the near-Earth plasma sheet.

Immer EA, Daley RA, Fortner BI, Jen JS, Steele JR, Stock JA, and LaBonte BJ

Living With a Star scientific resource access system: A concept for getting the information to do science.

Krimigis SM, Decker RB, Hill ME, Roelof EC, Armstrong TP, Gloecker G, Hamilton DC, and Lanzerotti LJ

Evidence that Voyager 1 exited the solar wind at ~85 AU and re-entered at ~87 AU in August 2002 and February 2003.

Liou K, Ruohoniemi JM, Newell PT, and Meng C-I

The theta aurora and ionospheric flow convection: Polar ultraviolet imager and SuperDARN radar observations.

Meier RR, Strickl DJ, Picone JM, Christensen AB, Paxton LJ, Morrison D, Kil H, Bishop J, Drob D, Craven JD, Crowley G, Walterscheid RL, Avery S, and Meng C-I

Retrieval of thermospheric temperature and N₂, O, and O₂ concentrations from GUVI limb scans.

Meng C-I

Transitioning from space physics research to space weather application at The Johns Hopkins University Applied Physics Laboratory.

Newell PT, Ruohoniemi JM, and Meng C-I

Maps of precipitation by source region, binned by IMF, with convection streamlines.

Paxton LJ, Zhang Y, Crowley G, DeMajistre R, Kil H, Kusterer T, Morrison D, Wolven B, Meng C-I, Christensen AB, Weiss M, and Wood W

Space weather in the ITM: The May-June 2003 storm and NASA TIMED/GUVI observations and TIMEGCM model results.

Wolven B, Morrison D, Paxton L, Zhang Y, Kil H, Meng C-I, and Christensen AB

FUV spectroscopy of the dayglow and aurora from the TIMED/GUVI sensor.

Yoon PH, and Lui ATY

Lower-hybrid-drift and modified-two-stream instabilities in current sheet equilibrium.

Zetzer JI, Erlson RE, Gavrilov BG, Kiselev YN, Lynch KA, Meng C-I, Pfaff RF, Poklad YV, Rybakov VA, and Stenbaek-Nielsen H
Moving of the high-speed plasma jet through the ionosphere of the different density: Optical and radiation effects.

Zhang Y, Meng C-I, Paxton LJ, Morrison D, Wolven B, Kil H, Newell P, Wing S, and Christensen AB
Optical signature of polar cusp during southward IMF B_z observed by TIMED/GUVI and DMSP.

The following papers were presented at the *Embedded Systems Conf.*, San Francisco, CA (Mar 2004):

Fowler KR
Build vs. buy: Custom, COTS, and caveats.

Fowler KR
Fantastic failures.

Fowler KR
Mission-critical and safety-critical development.

Fowler KR
Noise and shielding.

The following papers were presented at the *XXXV Lunar and Planetary Science Conf.*, League City, TX (15–19 Mar 2004):

Agrawal A, and Barnouin-Jha OS
Modeling lateral and vertical mixing by impact cratering with applications for the Moon (1975 pdf).

Baloga SM, Glaze LS, and Spudis PD
A model for the origin of the dark ring at Orientale basin (1035 pdf).

Barnouin-Jha OS, and Bulmer MH
Constraining flow dynamics of mass movements on Earth and Mars (1588 pdf).

Bugiolacchi R, Spudis PD, and Guest JE
Lava flows in Mare Nubium and Mare Cognitum: A geological history based on analysis of multispectral data (1507 pdf).

Bussey DBJ, Robinson MS, Fristad K, and Spudis PD
Permanent sunlight at the lunar poles (1387 pdf).

Carr SS, and Hume EE
Macroscopic voids in small asteroids: Effects of cohesion (1350 pdf).

Collins GC, Prockter LJ, Fontaine R, Farrar KS, and Murchie SL
Comparison on methods to determine furrow system centers on Ganymede and Callisto (1809 pdf).

Crawford DA, and Barnouin-Jha OS
Computational investigations of the Chesapeake Bay impact structure (1757 pdf).

Elphic RC, Lawrence DJ, Feldman WC, Bussey DBJ, Spudis PD, and Lucey PG
On the search for water at the lunar poles: Results of forward modeling of permanently shaded areas and lunar prospector measurements (2147 pdf).

Farrand WH, Merenyi E, Murchie SL, Barnouin-Jha OS, and Johnson J
Mapping rock and soil units in the MPF SuperPan using a Kohonen self-organizing map (1916 pdf).

Fristad KD, Bussey DBJ, Robinson MS, and Spudis PD
Ideal landing sites near the lunar poles (1582 pdf).

Gaddis L, Tanaka K, Hare T, Skinner J, Hawke BR, Spudis PD, Bussey DBJ, Pieters C, and Lawrence D
A new lunar geologic mapping program (1418 pdf).

Hackwill T, Guest J, and Spudis PD
Basalts in Mare Humorum and S. E. Procellarum (1062 pdf).

Hawke BR, Gillis JJ, Giguere TA, Blewett DT, Lawrence DJ, Lucey PG, Smith GA, Spudis PD, and Taylor GJ
Remote sensing and geologic studies of the Balmer region of the Moon (1190 pdf).

Hosaka K
Scattered light remediation and recalibration of NEAR Shoemaker's NIS global dataset at 433 Eros (1579 pdf).

Jackson NW, Spudis PD, and Carter BD
Preliminary findings of a study of the lunar global megaregolith (1055 pdf).

Lederer SM, Domingue DL, Vilas F, Abe M, Farnham TL, Jarvis KS, Lowry SC, Ohba Y, Weissman PR, French LM, Fukai H, Hasegawa S, Ishiguro M, Larson SM, and Takagi Y
Characterization of the surface properties of MUSES-C/Hayabusa spacecraft target asteroid 25143 Itokawa (2058 pdf).

Murchie SL, Barnouin-Jha OS, Barnouin-Jha K, Bishop J, Johnson J, McSween H, and Morris R
Old-desert varnish-like coatings and young breccias at the Mars Pathfinder landing site (1740 pdf).

Prockter L
Europa at the highest resolution: Implications for surface processes and landing sites (1714 pdf).

Spudis PD, Jackson N, Baloga S, Bussey DBJ, and Glaze L
The composition of the lunar megaregolith: Some initial results from global mapping (1512 pdf).

COLLOQUIA

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

9 January
Force Transformation, VADM AK Cebrowski, USN (ret.), Director, Force Transformation, Office of the Secretary of Defense

16 January
Understanding Aviation Security Issues Using Operations Research Models and Analysis, SH Jacobson, University of Illinois, Urbana

23 January
Enforcing US Foreign Policy from the Edge of Space, Major General RF Behler, USAF (ret.), JHU/APL

30 January
System X: Building the Virginia Tech Supercomputer, S Varadarajan, Virginia Tech

6 February
Black History Month Lecture: $E^3 = \text{Egypt, Engineering and Education}$, E Barksdale, Barksdale Solutions

20 February
South Asia on the Edge, S Khilnani, JHU/SAIS

27 February
The New Brain: The Role of Technology in Changing Our Concepts About Neuroscience, R Restak, Neurology Associates

5 March
The Future of Trans-Atlantic Relations: Thinking Beyond NATO
W Merry, American Foreign Policy Council

19 March
Security Issues in Electronic Voting, A Rubin, JHU/Homewood

26 March
Trans-Atlantic Radio Controlled Model Flight, M Hill, JHU/APL (ret.)