

Space, Propulsion & Energy Sciences International Forum

March 15-17, 2011

University of Maryland, College Park, MD

<http://www.ias-spes.org/SPESIF.html>

SPESIF

IS an international technical forum organized by the [Institute for Advanced Studies in the Space, Propulsion & Energy Sciences \(IASSPES\)](#).

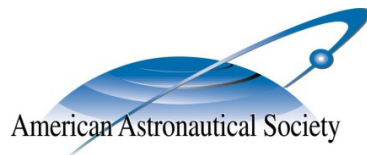
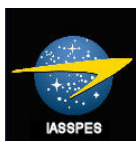
The SPESIF platform seeks to promote the exchange of information among technologists, academicians, industrialists, and program managers on technical and programmatic issues related to the Space, Propulsion and Energy Sciences.

Among its organizers, conference and session chairs, and attendees, are high-level representatives from industry, government agencies, and institutes of higher learning.

Papers approved for SPESIF are reviewed by the technical staff, Chairs and Co-Chairs and other Committee Members needed for a proper peer review.

Organizing Chair: [Glen A. Robertson](#), 265 Ita Ann Ln., Madison, AL 35757, 256-694-7941

SPESIF-2011 is organized In Co-Operation with



Space, Propulsion & Energy Sciences International Forum (SPESIF-2011)

March 15-17, 2011

“Integrating the Space, Propulsion & Energy Sciences”

The following agenda contains the integrated sessions¹ on the

8TH SYMPOSIUM ON NEW FRONTIERS IN SPACE PROPULSION
SCIENCES

3RD SYMPOSIUM ON ASTROSOCIOLOGY

4TH CONFERENCE ON FUTURE ENERGY

2ND SYMPOSIUM ON HIGH FREQUENCY GRAVITATIONAL WAVES

2ND MEETING ON FUTURE DIRECTIONS IN SPACE SCIENCE &
TECHNOLOGY

¹Separation of these forums can be found on the proceedings CD.

Registration

Registration begins at 7:30AM each morning in the lobby

Tuesday, March 15, 2011

Plenary I: (Orem C)

8:00 – 10:00AM

NEW ERA IN SPACE RESEARCH AND TECHNOLOGY

Moderator: Glen A. Robertson
[Institute for Advanced Studies in the Space, Propulsion & Energy Sciences](#)

8:00AM **Introductions**

8:15AM **NASA Innovative Advanced Concepts ([Abstract](#))**
Jay Falker ([Bio](#))
NASA, Headquarters

8:50AM **NASA Game Changing Technology ([Abstract](#))**
Harry Partridge ([Bio](#))
NASA, Headquarters

9:25AM **Example of Advanced Concept and Technology Development in Australia**
([Abstract](#))
H. David Froning ([Bio](#))
Flight Unlimited

10:00AM **Break**

Tuesday, March 15, 2011

Plenary II: (Orem C)

10:15AM – 12:15PM

FUTURE ENERGY

Moderator: Thomas Valone
[Integrity Research Institute](#), Beltsville MD

10:15AM **Introductions**

10:30AM **Ion Conducting Materials; from Terrestrial Energy Conversion and Storage to Space Based In-Situ Resource Utilization and Life Support ([Abstract](#))**
Eric D. Wachsman ([Bio](#))

11:15AM **Qualification and Quantification of Telomeric Elongation Due to Electromagnetic Resonance Exposure ([Abstract](#))**
Scott C Kelsey ([Bio](#))

12:00PM **Discussions**

12:15PM **Lunch Break**

Tuesday, March 15, 2011

(Orem C)

1:15 – 3:15PM

**FRONTIERS IN PROPULSION SCIENCE
EXPERIMENTAL RESULTS**

(Session I)

Chair: James Woodward, California State University, Fullerton, CA, 714-278-3596,
jwoodward@fullerton.edu

- 1:15PM** **On the Nature of the Propulsive Force of Asymmetric Capacitors in the Atmosphere** ([Abstract](#))
Alexandre A Martins (Student-[Bio](#)) and Mario J Pinheiro ([Bio](#))
- 1:45PM** **New Directions in Electromagnetism for Propulsion and Power** ([Abstract](#))
H David Froning ([Bio](#)) and Terence W Barrett
- 2:15PM** **Possible Mach Effects in Bodies Accelerated by Non-Uniform Magnetic Fields** ([Abstract](#))
Nembo Buldrini ([Bio](#))
- 2:45PM** **Mach Effects: Recent Experimental Results** ([Abstract](#))
James F Woodward ([Bio](#))
- 3:15PM** **Break**

3:30 – 4:30 pm

**ADVANCES IN CONTEMPORARY PROPULSION SCIENCES
&
ADVANCED TECHNOLOGIES, CONCEPTS, AND TECHNIQUES FOR SPACE
APPLICATION**

Chair: John Cole, Huntsville, AL, (256) 882-0492, john.cole.hsv@gmail.com
Co-Chair: Chuck Suchomel, USAF WPAFB, OH, 937-904-8653,
charles.suchomel@wpafb.af.mil

(Session I)

- 3:30PM** **VASIMR Human Mission to Mars** ([Abstract](#)) **Will not Attend**
Andrew V Ilin ([Bio](#)), Leonard D. Cassady, Tim W Glover and Franklin R Chang
Diaz

Tuesday, March 15, 2011

(Orem C)

4:00PM **Hydrogen Storage Methods for Microthrusters** ([Abstract](#))
Xiaoling Yang (Bio), George H Miley, Nie Luo, Barbara Betti and Francesco
Nasuti

LECTURE SERIES I

4:30 – 5:30 pm

4:30 PM **The Morningstar Energy Box** ([Abstract](#))
Paul A Murad (Bio), Morgan J Boardman and John Brandenburg

Tuesday, March 15, 2011

(Orem A)

1:15 – 3:15PM

**ASTROSOCIOLOGY: DEFINITION, SCOPE
&
RELEVANCE/ASTROSOCIOLOGY IN THE CLASSROOM**

Chair: Jim Pass, Astrosociology Research Institute, Huntington Beach, CA, (714) 317-6169;
jpass@astrosociology.org

1:15PM **Report on the Progress of Astrosociology** ([Abstract](#))

Jim Pass ([Bio](#))

1:45PM **Negotiations between Utopia and Dystopia in Iain M Banks's Culture
Sequence** ([Abstract](#))

Simone Caroti ([Bio](#))

SCIENCE FICTION AND SCIENTIFIC ACTUALITY

Chair: John M. (Jay) Falker, NASA-HQ, Washington, DC, 202-358-4545; jfalker@nasa.gov

2:15PM **Space and the Evolution of Political Identity in Science Fiction** ([Abstract](#))

Laura M Delgado (Student) ([Bio](#))

SPACE POLICY AND SPACE LAW IN A SOCIETAL CONTEXT

Chair: Christopher M. Hearsey, University of North Dakota, (818) 209-7029;
outer.space.analysis@gmail.com

2:45PM **The Nexus between Law and Astrosociology** ([Abstract](#))

Christopher Hearsey ([Bio](#))

3:15PM **Break**

Tuesday, March 15, 2011

(Orem A)

3:30 – 5:30PM

SPACE SOCIETIES/THE SETTLEMENT OF SPACE ENVIRONMENTS

Chair: Jim Pass, Astrosociology Research Institute, Huntington Beach, CA, (714) 317-6169;
jpass@astrosociology.org

3:30PM **Astrosociology and the Capacity of Major World Religions to Contextualize
the Possibility of Life Beyond Earth ([Abstract](#))**
Eric M McAdamis ([Bio](#))

SPACEFARING SOCIETIES

Chair: Jim Pass, Astrosociology Research Institute, Huntington Beach, CA, (714) 317-6169;
jpass@astrosociology.org

4:00PM **An Astrosociological Perspective on Space-Capable vs Spacefaring Societies
([Abstract](#))**
Jim Pass ([Bio](#))

ASTROSOCIOLOGY: OVERVIEW EFFECT

Chair: Jim Pass, Astrosociology Research Institute, Huntington Beach, CA, (714) 317-6169;
jpass@astrosociology.org

4:30PM **Analyzing Distinctive Elements in Astrosociology: the Interplay between
Ecologies and Environments ([Abstract](#))**
Christopher Hearsey ([Bio](#))

5:00PM **OPEN**

Wednesday, March 16, 2011

(Orem C)

8:00 – 10:00AM

**FRONTIERS IN PROPULSION SCIENCE
THEORIES, MODELS AND CONCEPTS**

Chair: Martin Tajmar, Austrian Research Centers GmbH - ARC, Seibersdorf, Austria, +43-50550-3142, martin.tajmar@arcs.ac.at

Co-Chair: Ben Solomon, Interstellar Space Exploration Technology Initiative, P.O. Box 831, Evergreen, CO 80437, 303-618-2800; benjamin.t.solomon@iSETI.us

- 8:00AM** **Vortex Formation in the Wake of Dark Matter Propulsion** ([Abstract](#))
Glen A Robertson ([Bio](#)) and Mario J Pinheiro ([Bio](#))
- 8:30AM** **The Chameleon Hypothesis, Contextual Cosmos, and Prospects for Novel forms of Energy Generation** ([Abstract](#))
Don Reed ([Bio](#))
- 9:00AM** **Physics of Extreme Gravitomagnetic and Gravity-Like Fields for Novel Space Propulsion and Energy Generation** ([Abstract](#))
Walter Dröscher and Jochem Hauser ([Bio](#))
- 9:30AM** **Reverse Engineering Podkletnov's Experiments** ([Abstract](#))
Benjamin T Solomon ([Bio](#))
- 10:00AM** **Break**

10:15 – 11:15AM

- 10:15AM** **Progress in an Antigravity Mechanism using rotating masses** ([Abstract](#))
Christopher Provatidis ([Bio](#))

LECTURE SERIES II

11:15AM – 12:15PM

- 11:15AM** **A Matter of Definition** ([Abstract](#))
Greg Volk ([Bio](#))
- 12:15PM** **Lunch Break**

Wednesday, March 16, 2011

(Orem C)

1:15 – 3:15 pm

**ADVANCES IN CONTEMPORARY PROPULSION SCIENCES
&
ADVANCED TECHNOLOGIES, CONCEPTS, AND TECHNIQUES FOR SPACE
APPLICATION**

(Session II)

Chair: Chuck Suchomel, USAF WPAFB, OH, 937-904-8653, charles.suchomel@wpafb.af.mil

Co-Chair: John Cole, Huntsville, AL, (256) 882-0492, john.cole.hsv@gmail.com

1:15PM **Combined hybrid nuclear system for energy and propulsion ([Abstract](#))**

Liviu Popa-Simil ([Bio](#))

1:45PM **Sling-on-a-Ring: Structure for an Elevator to LEO ([Abstract](#))**

Andrew Meulenberg ([Bio](#)) and Timothy Poston

2:15PM **Electromagnetic Catapult Assisted Horizontal Launch ([Abstract](#))**

George Scelzo ([Bio](#)), William Dawson, Ken House and Ron Litchford

2:45PM **Nano-hetero structure applications in beamed power and space energy
harvesting ([Abstract](#))**

Liviu Popa-Simil ([Bio](#))

3:15PM **Break**

3:30 – 5:30PM

**FRONTIERS IN PROPULSION SCIENCE
EXPERIMENTAL RESULTS**

(Session II)

Chair: James Woodward, California State University, Fullerton, CA, 714-278-3596,
jwoodward@fullerton.edu

3:30PM **Electromagnetic Radiation Experiments with Transmitting, Contra-Wound,
Toroidal Coils ([Abstract](#))**

H. David Froning ([Bio](#)), George W Hathaway and Blair Cleveland

4:00PM **Experiments with Coler Magnetic Current Apparatus ([Abstract](#))**

Thorsten Ludwig ([Bio](#))

Wednesday, March 16, 2011

(Orem C)

4:30PM **On the propulsive force developed asymmetric capacitors in a vacuum**

[\(Abstract\)](#)

Alexandre A Martins (Student - [Bio](#)) and Mario J Pinheiro ([Bio](#))

STUDENT PRESENTATION

5:00PM **Theoretical and Experimental Searches for the Podkletnov Effect ([Abstract](#))**

Hamilton Carter ([Bio](#))

Wednesday, March 16, 2011

(Orem A)

8:00 – 10:00AM

SOLAR AND SPACE SOLAR POWER

Chair: Thomas Valone Integrity Research Institute, Beltsville MD 20705, 301-220-0440;
IRI@starpower.net

Co-Chair: Len Danczyk, Energetics Technology, LLC, Santa Barbara, CA 93109-1506, 805-966-1234; Len@energeticstech.com

8:00AM **Terrestrial Micro Renewable Energy Applications of Space Technology**
([Abstract](#))

Narayanan Komerath ([Bio](#))

8:30AM **Sandwich Module Development for Space Solar Power** ([Abstract](#))

Paul Jaffe ([Bio](#))

ADVANCED NUCLEAR ENERGY

9:00AM **Modeling of Selected Ceramic Processing Parameters Employed in the Fabrication of $^{238}\text{PuO}_2$ Fuel Pellets** ([Abstract](#))

R. A. Brockman (Bio), D. P. Kramer, C. D. Barklay, D. Cairns-Gallimore, J. L. Brown, J. C. Huling and C. E. Van Pelt

9:30AM **Enhanced Singular Wave Reactor For Surface Power** ([Abstract](#))

Liviu Popa-Simil ([Bio](#))

10:00AM **Break**

10:15 – 12:15AM

10:15AM **Extensions to Physics: Low-Energy Nuclear Reactions** ([Abstract](#))

Andrew Meulenber ([Bio](#)) and K P Sinha

10:45AM **Deuteron Driven Fast Ignition of Pre-compressed Fuel: An Estimation of Energy Enhancement** ([Abstract](#))

George H Miley (Bio), Xiaoling Yang (Bio), Kirk A Flippo, Heinrich Hora

11:15AM **The Progress of Low Energy Nuclear Reaction Study at University of Illinois at Urbana-Champaign** ([Abstract](#))

Xiaoling Yang (Bio), George H Miley (Bio), Heinrich Hora

11:45AM **OPEN**

12:15PM **Lunch Break**

Wednesday, March 16, 2011

(Orem A)

1:15 – 3:15PM

SPACE AND SOCIETY: A CULTURAL HISTORY OF THE SPACE AGE, 1900-2009

Chair: Theodore Swanson, NASA Goddard Space Flight Center, Greenbelt, MD 20771, (301) 286-7854; Ted.Swanson@nasa.gov

Co-Chair: Bob Zimmerman, Space Author, 301-937-0394; zimmerman@nasw.org

- 1:15PM** **Space exploration: The dreams of the first half of the century vs the reality of the second half** ([Abstract](#))
Bob Zimmerman ([Bio](#))
- 1:45PM** **The Death of Rocket Science in the 21st Century** ([Abstract](#))
Glen A Robertson ([Bio](#)) and Darryl W Webb ([Bio](#))
- 2:15PM** **Identifying Sociological Factors for the Success of Space Exploration**
([Abstract](#))
Charles A Lundquist ([Bio](#))
- 2:45PM** **How We Remember Apollo** ([Abstract](#))
Roger D. Launius ([Bio](#))
- 3:15PM** **Break**

3:30 – 5:30PM

OTHER FUTURE ENERGY SOURCES

Chair: Thomas Valone Integrity Research Institute, Beltsville MD 20705, 301-220-0440; IRI@starpower.net

Co-Chair: Len Danczyk, Energetics Technology, LLC, Santa Barbara, CA 93109-1506, 805-966-1234; Len@energeticstech.com

- 3:30PM** **A Hyper-efficient Inverter Driven By Positive EMF In Combination with Transient Phenomenon** ([Abstract](#))
Osamu Ide ([Bio](#))
- 4:00PM** **The Flow of Energy** ([Abstract](#))
Frank Znidarsic ([Bio](#)) and Glen A Robertson ([Bio](#))
- 4:30PM** **Department of Energy (DOE) R&D Programs** ([Abstract](#))
Dave Goodwin ([Bio](#))
- 5:00PM** **Water Electrolyzers and Zero-Point Energy** ([Abstract](#))
Moray B King ([Bio](#))

Wednesday, March 16, 2011

(Orem B)

Banquet Dinner Speaker

Time (TBD)

**The Frontiers of Energetics and Space Propulsion;
The “Responsibly Imaginable”**

Dennis M. Bushnell ([Bio](#))

*Chief Scientist
NASA Langley Research Center
dennis.m.bushnell@nasa.gov*

Presentation surveys the Frontiers of Energetics going forward and considers potential applications to space exploration and propulsion. The basis of space utilization and exploration, beyond the current positional “Earth Utilities” and small robotic science studies, is Energetics. Obviously we have reached the plateau for Chemical Propulsion. Beyond Chemical lies a territory which is partially known [fission Nuc] and largely unknown. Brief considers this “terra incognita” including SBER, LENR, Metallic H₂, Aneutronic IECF/ P-B11, Atomic species, “Cold Fast Compression”, Isomers, “Compact Reactor and Positrons. Also considered is the emerging option[s] of energy beaming, separating propulsive mass [which can be scavenged insitu] and stored/ beamed energy. Methods which might reduce the beam divergence issues are considered, as is High Thrust MHD. Overall – a large and growing number of options should be seriously studied and triaged to determine their efficacy including their real performance possibilities, operability, cost[s] and safety. In the NASA TRL Parlance these are mostly still at TRL 1 [or less], require investment/ evaluation – to enable Space writ large.

Thursday, March 17, 2011
(Orem C)

8:00 – 9:30AM

NEW DIRECTIONS IN ASTROPHYSICS/PARTICLE PHYSICS

Chair: Bernd Binder, Quanics, Salem, BW, Germany, ++497553827390; binder@quanics.com

- 8:00AM** **Nuclear and Crystal State Aspects of Overlapping Holographic Phase Patterns** ([Abstract](#))
Bernd Binder ([Bio](#))
- 8:30AM** **A New Model for Matter, Space and Energy** ([Abstract](#))
Mark AB Garstin ([Bio](#)) **Will not attend**
- 9:00AM** **Recurrent Anholonomy in Curved Space Navigation Solved by the Riemann Zeta Function** ([Abstract](#))
Bernd Binder ([Bio](#))
- 9:30AM** **Study of Gravity (part 2)** ([Abstract](#))
Mike Gamble ([Bio](#))
- 10:00AM** **Break**

10:15 – 12:15AM

HIGH-FREQUENCY GRAVITATIONAL WAVES

Chair: Bob Baker, Playa del Rey, CA 90293, 310-823-4143; drrobertbaker@gravwave.com

- 10:15AM** **Estimate of Diffraction from Gaussian Beam in Li-Baker HFGW Detector** ([Abstract](#))
R. Clive Woods ([Bio](#))
- 10:45AM** **The Li-Baker High-Frequency Gravitational Wave Detector** ([Abstract](#))
Robert M L Baker, Jr ([Bio](#))
- 11:15AM** **Celeration parameter $Q(z)$ and the Role of Nucleated GW Gravition Gas in the Development of Dark Energy Alternatives** ([Abstract](#))
Andrew Beckwith ([Bio](#))
- 11:45AM** **Can a Massive Graviton be a Stable Particle?** ([Abstract](#))
Andrew Beckwith ([Bio](#))
- 12:15PM** **Lunch Break**

Thursday, March 17, 2011

(Orem C)

1:15 – 3:15PM

UNCONVENTIONAL PHYSICAL PRINCIPLES AND GRAVITATIONAL MODELS

Chair: Paul Murad, Vienna, VA, (703) 759-2028, ufoguypaul@yahoo.com

Co-Chair: John Brandenburg, ORBITEC, Madison, WI, 608-229-2790,
brandenburgj@orbitec.com

- 1:15PM** **Experimental and Theoretical Progress on the GEM Theory** ([Abstract](#))
John E Brandenburg (Bio)
- 1:45PM** **The Voyager Anomaly and the GEM theory** ([Abstract](#))
John E Brandenburg (Bio)
- 2:15PM** **An Experiment in Synchronicity** ([Abstract](#))
Shelley Thomson (Bio)
- 2:45PM** **Replicating Pulsar Behavior to Create a Future Space Propulsor** ([Abstract](#))
Paul Murad (Bio)
- 3:15PM** **Break**

3:30 – 4:30PM

FAR TERM SPACE TRANSPORT/ENVIRONMENT MODELS AND THEORIES

Chair: Ray Lewis, Pennsylvania State University, Boalsburg, PA, 814-466-6187, r3l@psu.edu

- 3:30PM** **Consequences of Unusual Behavior in Einstein's Field Equations for
Advanced Propulsion Schemes** ([Abstract](#))
Paul Murad (Bio)
- 4:00PM** **Can the Universe be Represented a Superposition of Space-Time Manifolds?**
([Abstract](#))
Raymond Jensen (Bio)

4:30 – 5:30PM

LECTURE SERIES III

- 4:30AM** **Advanced Space Nuclear Reactors from Fiction to Reality** ([Abstract](#))
Liviu Popa-Simil ([Bio](#))

Thursday, March 17, 2011

(Orem A)

8:00 – 10:00AM

ENABLING TECHNOLOGIES FOR SURFACE SCIENCE

Chair: Pamela E. Clark, NASA – GSFC, Greenbelt, MD 20771, 301-286-7457,
pamela.e.clark@nasa.gov

- 8:00AM** **Small Cold Temperature Instrument Packages** ([Abstract](#))
P. E. Clark ([Bio](#)), P. S. Millar, P. S. Yeh, S. Feng, D. Brigham and B. Beaman
- 8:30AM** **A New Paradigm for Robotic Rovers** ([Abstract](#))
P. E. Clark ([Bio](#)), S. A. Curtis and M. L. Rilee
- 9:00AM** **Breakthrough X-ray Analysis Tool for Unprepared Samples** ([Abstract](#))
Z. Arzoumanian, P. E. Clark ([Bio](#)) and K. Gendreau
- 9:30AM** **QM Power**
P. J. Piper ([Bio](#))
- 10:00AM** **Break**

10:15AM – 12:15PM

**TRANSFORMATIONAL TECHNOLOGIES TO EXPEDITE SPACE ACCESS AND
DEVELOPMENT**

Chair: John Rather, Rather Creative Innovations Group, Inc., 313-549-5034;
jrather@RCIGinc.com
Co-Chair: James Powell, Maglev-2000, LLC, 631-744-3707; jamesrpowell32@gmail.com

- 10:15PM** **LEO-Ring-Based Communications Network** ([Abstract](#))
A. Meulenberg ([Bio](#)) and Tat-Chee Wan
- 10:45PM** **Enabling Exploration Through Automated Manufacture** ([Abstract](#))
Jeremiah J Hansen ([Bio](#))
- 11:15PM** **A Development and Test Program for the Generation-1 Maglev Launch
System** ([Abstract](#))
James Powell ([Bio](#)), George Maise and John Rather ([Bio](#))
- 12:15PM** **A Development and Test Program for the Magnetically Inflated Cable (MIC)
Large Space Structures System** ([Abstract](#))
James Powell ([Bio](#)), George Maise and John Rather ([Bio](#))

Thursday, March 17, 2011

(Orem A)

12:15PM Lunch Break

1:15 – 2:15 PM

OTHERS

Chair: TBD

1:15PM **Lunar Surface Thermal Radiator: Performance Evaluation and Thermal Analysis** ([Abstract](#))

Ching-fen Tsai (Bio), John Tran, Julian Prabhu, and Sri K Iya ...

1:45PM **What we Know about Excess Heat in Cold Fusion Experiments** ([Abstract](#))
Scott R Chubb (Bio)

1:45 – 3:15 PM

MEDICAL ASTROSOCIOLOGY

Chair: Jim Pass, Astrosociology Research Institute, Huntington Beach, CA, (714) 317-6169;
jpass@astrosociology.org

2:15PM **Human Motivations for Long-Term Confined Habitation in Remote High Risk Areas & Training: An Astrosociological Approach** ([Abstract](#))

Melvin S Marsh (Student - [Bio](#)) and Vadim Y Rygalov

2:45PM **Deviance in Space Habitats: A Preliminary Look at Health and Safety Violations** ([Abstract](#))

Jim Pass ([Bio](#))

3:15PM Break

3:30 – 5:30PM

ASTROSOCIOLOGY (Reserved)

3:30PM **OPEN**

4:00AM **OPEN**

4:30PM **OPEN**

5:00AM **OPEN**