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2014 APS-SCCM Officers:

Chair: William Anderson
Los Alamos National Laboratory
Phone: (505) 667-5460
Fax: (505) 667-6372
email: wvanderson@lanl.gov

Chair-Elect: Paulo Rigg
Los Alamos National Laboratory
Phone: (505) 665-5934
Fax: (505) 667-6372
email: prigg@lanl.gov

Vice-Chair: Dan Dolan
Sandia National Laboratories
Phone: (505) 284-8608
email: dhdolan@sandia.gov

Past-Chair: Tracy J. Vogler
Sandia National Laboratories
Phone: (925) 294-2082
Fax: (925) 294-1459
email: tjvogler@sandia.gov

Secretary/Treasurer:
Mark Elert
US Naval Academy
Phone: (410) 293-6636
FAX: (410) 293-2218
email: elert@usna.edu

Webmaster: E. Ray Lemar
Energetics Technology Center
Phone: (240) 461-5316
email: elemar@comcast.net



Message from the Chair

As 2014 comes to an end—and with it my tenure as Chairman of the Topical Group on Shock Compression of Condensed Matter—I want to take a moment to thank all of our members for your continued support of the Topical Group and its mission over that past year. It has been an honor to serve as your Chairman for the past year. Many members of the Topical Group have served as officers, committee members, or in various capacities associated with the upcoming Topical Conference in Tampa—and should

be commended for their hard work and dedication. As we look forward to coming year, I hope you are all planning to attend the Topical Conference in Tampa and I anticipate hearing about many exciting new results at the conference. In closing, I want to wish you all a happy and safe holiday season and productive and successful year in 2015.

Bill Anderson



During this season of giving thanks, the staff of APS and I thank you for your commitment to the Society.

You empower us. Because of you and more than 50,000 other members, APS is the leading membership organization in the United States dedicated to physics. With your membership, you strengthen our role as the voice for physics.

You inspire us. Your membership demonstrates your understanding and support of the significance of our work to advance and diffuse the knowledge of physics throughout the world.

You energize us. The opportunity to serve you and a membership that recognizes the importance of physics motivates us to carry out our mission.

Again, our sincere thanks for being an integral part of APS.

Kate Kirby, APS Executive Officer
Warm regards,

Kate

Kate P. Kirby
Executive Officer

Proposals for 2017 APS-GSCCM Conference

Proposals are now being solicited to organize the 2017 Biennial Conference on Shock Compression of Condensed Matter. Typically a team of three people is needed to organize the conference. The 2015 meeting will be held in Tampa, Florida, and successive SCCM conferences traditionally move between contrasting geographic locations, so a conference site outside the southeastern United States would be preferred. Those interested should send a short proposal to any officer of the Topical Group (see the side bar on Page 1).

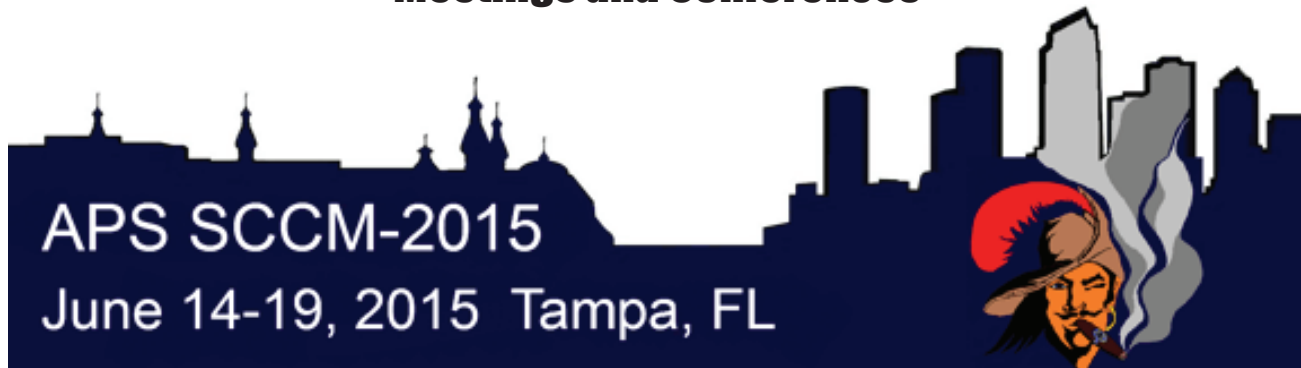
Bill Anderson
GSCCM Chair

<http://www2.supsi.ch/cms/dymat2015/>

GSCCM Special Session at APS March Meeting, 2016

Traditionally, the GSCCM hosts a special session at the APS March meeting during even calendar years. We are looking for a team of two people to organize such a session for the 2016 March meeting. Please submit your interest in doing so to Chair-Elect, Paulo Rigg at prigg@lanl.gov

Meetings and Conferences



19th American Physical Society Shock Compression of Condensed Matter Biennial International Conference Tampa, FL June 14-19, 2015

Call for Abstracts

On behalf of the APS Topical Group on Shock Compression of Condensed Matter, we invite you to submit abstracts to the 19th Biennial APS Conference on Shock Compression of Condensed Matter (SCCM-2015), which will be held June 14-19, 2015 in Tampa, Florida.

This conference is the premier interdisciplinary forum for discussion of world-wide efforts in exploring fundamental science and applications of matter at extreme conditions including shock-induced physics and chemistry, energetic materials and detonation phenomena. The conference will include oral presentations as well as a poster session. In addition, a day-long student symposium will take place on Sunday, June 14, 2015. The SCCM-2015 conference proceedings will be published as open-access papers by the American Institute of Physics. Further information can be found at the SCCM-2015 conference web site <http://msl.cas.usf.edu/sccm-2015>.

Abstracts are solicited for the following technical areas and focus topics:

1. Detonation and shock-induced chemistry
2. Energetic and reactive materials
3. Equations of state
4. Experimental developments
5. First-principles and molecular dynamics
6. Geophysics and planetary science

7. Grain scale to continuum modeling
8. High energy physics/warm dense matter
9. Inelastic deformations, fracture and spall
10. Materials strength
11. Particulate, porous and composite materials
12. Phase transitions
13. Soft matter
14. Focus Topic 1: Turbulence and mixing
15. Focus Topic 2: Velocimetry diagnostics development
16. Focus Topic 3: X-ray free electron lasers and materials

Abstracts should be submitted online through the APS web site:

<http://www.aps.org/meetings/meeting.cfm?name=SHOCK15>.

Further instructions are on the SCCM-2015 conference website:

http://msl.cas.usf.edu/sccm-2015/submit_abstract.html.

We invite you to participate in the SCCM-2015 conference and to submit your abstracts before the deadline of January 30th, 2015. We look forward to receiving your abstract and seeing you in Tampa, Florida!

Ivan Oleynik, Suhithi Peiris, Ramon Ravelo
SCCM-2015 Co-Chairs



**19th American Physical Society Shock Compression of Condensed Matter
Biennial International Conference
Tampa, FL June 14-19, 2015**

Early Career and Student Symposium

We are proud to announce that the SCCM 2015 conference will feature an Early Career and Student Symposium, to be held on Sunday, June 14th, just before the start of the main meeting. The symposium will feature:

- A full-day scientific program, including talks and posters from graduate students, post-docs and early career researchers.
- A networking lunch, which will be attended by invited researchers from the national labs and academia (lunch provided).
- An informal evening social outing to allow the younger members of SCCM to meet each other in a casual setting (attendees will be responsible for their own costs for this event)

Awards: To support attendance, SCCM is happy to announce the availability of Travel Awards and a single Early Career Award.

- A limited number of Travel Awards are available to cover the cost of conference registration and partial travel costs. Up to \$750 will be awarded per person, as funding permits. To apply, participants should fill out an application (available at http://msl.cas.usf.edu/sccm-2015/student_program.html) and request a letter of recommendation from their supervisor. Both may be sent to Dylan Spaulding (dylanspaulding@fas.harvard.edu) with the subject line "SCCM Travel + Your Name".
- The SCCM Early Career Award will be given to recognize outstanding work by either a current graduate student or researcher within two years of

completing their PhD. Nominations for the award are invited from the entire community and should include at least two letters of support and an example of recent work (publication, recent conference proceedings, poster or abstract). The recipient will be recognized at the conference and will give an oral presentation on their work. The recipient will be chosen from the nominations by a committee of SCCM members. Nominations should be sent to David Moore (moored@lanl.gov) with the subject line "SCCM Early Career Award Nomination".

Rooming Availability: Participants in the Early Career Symposium who are willing to share rooms may request up to two nights of accommodation in the conference hotel free of charge. A number of double-accommodation rooms are available to help offset travel costs and will be awarded on a first-come-first-served basis to those who request it as availability permits. If you would like to be considered, please indicate this in your symposium application (available at http://msl.cas.usf.edu/sccm-2015/student_program.html)

Ivan Oleynik, Suhithi Peiris, Ramon Ravelo
SCCM-2015 Co-Chairs

Contact for Student Symposium
Dylan Spaulding (dylanspaulding@fas.harvard.edu)
E-mail Subject: "SCCM Travel + Your Name"

Contact for SCCM Early Career Award
David Moore(moored@lanl.gov)
E-mail Subject: "SCCM Early Career Award Nomination"

Meetings and Conferences



13th Hypervelocity Impact Symposium April 26-30, 2015 • Boulder, Colorado USA

<http://hvis2015.mst.edu/>

Review Manuscripts are DUE NOW!

Dear Colleagues,

On behalf of the Board of Directors of the Hypervelocity Impact Society, the planning committee is pleased to announce the 13th Hypervelocity Impact Symposium to be held April 26 – 30, 2015 in Boulder, Colorado, USA.

The Hypervelocity Impact Symposium (HVIS) is a biennial event organized by the Hypervelocity Impact Society that serves as the principal forum for the discussion, interchange, and presentation of the physics of high- and hypervelocity impact and related technical areas. It is intended for scientists, engineers, and technical managers from academia, industry, government, and defense programs. The HVIS Symposia have a long-standing international reputation as a catalyst for stimulating research in this area through a wealth of oral and poster presentations, and commercial exhibits. The Symposium’s proceedings are the major archival source of papers published in this field.

Abstract submission and review process has been completed on over 140 submissions. Authors are now preparing their full draft manuscript(s) for peer-review. Accepted papers will be presented during the conference in one of the following areas:

Symposium Topics

- Hypervelocity Phenomenology Studies
- High-Velocity Launchers and Diagnostics
- Spacecraft Meteoroid/Debris Shielding and Failure Analyses
- Material Response (including EOS)

- Fracture and Fragmentation
- High-Velocity Penetration Mechanics and Target Response
- Armor/Anti-Armor and Ballistic Technology
- Analytical and Numerical Methodologies
- Theoretical/applied mechanics relevant to hypervelocity impact

Special Session

- Asteroid Impact and Planetary Defense Technology

Symposium Co-Chairs are William Schonberg (Missouri S&T) and Timothy Maclay (Celestial Insight) Technical Program Chairs are Joel Williamsen (IDA) and Steve Evans (NASA)

Important Dates

February 04, 2014
Call for Abstracts Issued

May 23, 2014
Abstract Submission Due

July 11, 2014
Notification of Abstract Acceptance

Who Should Attend?

Scientists, engineers and technical managers from academia, industry, government and defense programs.

15th International ASTM/ESIS Symposium on Fatigue and Fracture Mechanics

Abstracts are invited for the 15th International ASTM/ESIS Symposium on Fatigue and Fracture Mechanics (40th ASTM National Symposium on Fatigue and Fracture Mechanics) to be held May 20-22, 2015. Sponsored by ASTM Committee E08 on Fatigue and Fracture, the symposium will be held at the Marriott Anaheim in Anaheim, CA, in conjunction with the May standards development meetings of Committee.

This symposium is intended to provide a forum for researchers and technologists from the academic, industrial and government sectors to share, discuss, and debate the latest improvements in the science, technology, and applications of fatigue and fracture. Experimental, analytical, and computational perspectives are all equally appropriate for discussion, especially given the reality that the improved understanding being sought will most likely come from a synergistic combination of advances in all three perspectives. Broad, international participation is also sought to make this a powerful forum to identify recent advances in fatigue and fracture and propel the worldwide community to develop more accurate models, experimental methods, analytical insights, and computational simulation capabilities to better predict and characterize the fatigue and fracture behavior of materials and structures.

Submittals focusing on any and all areas of the science, technology, and applications of fatigue and fracture mechanics concepts are therefore solicited and encouraged. Areas of particular interest, that could potentially form thematic tracks within the overall symposium, include:

- Residual stress effects on service life and fatigue/fracture models and experiments
- Probabilistic methods for fatigue and fracture prediction

- Verification and validation of fatigue and fracture models
- Advanced experimental techniques that stretch the current test methods and standards for fatigue and fracture characterization and could lead to new and improved approaches
- Improvements in the state-of-the-art for predicting remaining usable life and/or the onset of a fracture-related failure event
- Multi-axial and mixed mode fatigue and fracture testing and prediction
- Fatigue and fracture of components and structures produced using novel manufacturing methods
- Environmentally assisted fatigue and fracture testing and prediction
- Fatigue and fracture of medical devices

The language of the symposium will be English.

For more information please visit:

<http://www.astm.org/E08ASTM-ESISMay2015>, click on Go to Abstract Submittal Format the top of the page, and you will be prompted through the submission process.

Additional information on the symposium is available from the Symposium Co-Chairs:

- Dr. Markus Heinemann, Alcoa Technical Center, Alcoa Center, PA, USA/e-mail: markus.heinemann@alcoa.com; phone: +1-724-337-2657
- Prof. Steve R. Daniewicz, Mississippi State University, MS, USA/ e-mail: daniewicz@me.msstate.edu; phone: +1-662-325-7322
- Prof. Stefano Beretta, Politecnico di Milano, Milano, ITALY/ e-mail: stefano.beretta@polimi.it; phone: +39-02-2399-8246

European Conference on Fracture

June 20-24, 2016

Catania, Italy



Important Dates

Conference registration from

September 01, 2015

Abstract submission deadline

October 01, 2015

Notification of acceptance

December 01, 2015

Submission of full paper

January 31, 2016

Early bird registration and Author registration
deadline for conference paper publication

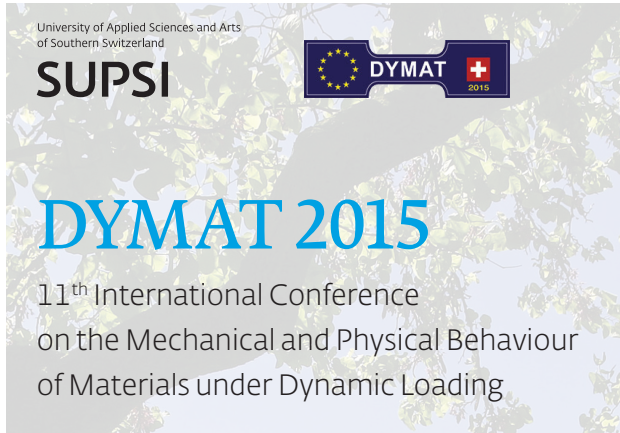
February 29, 2016

Main Topics

- Analytical, computational and physical Models;
- Biomaterials and Wood Fracture and Fatigue;
- Biomechanics; Ceramics Fracture and Damage;
- Composites;
- Computational Mechanics;
- Concrete & Rocks;
- Creep Fracture;
- Damage Mechanics;
- Damage and fracture in materials under dynamic loading;
- Durability of structures;
- Environmentally Assisted Fracture;
- Failure Analysis and Case Studies;
- Fatigue - Crack Growth (all materials);
- Fatigue Resistance of metals;
- Fatigue of Metals – Very High Cycle;
- Failure Analysis and Forensic Engineering;
- Fractography and Advanced metallography;
- Fracture and Fatigue at Atomistic and Molecular Scales;
- Fracture and fatigue testing systems;
- Fracture under Mixed-Mode and Multiaxial Loading;
- Fracture vs. Gradient Mechanics;
- Functional Gradient Materials;

- Impact & Dynamics;
- Fundamentals of cohesive zone models;
- History of Fracture Mechanics and Fatigue;
- Innovative Alloys;
- Linear and Nonlinear Fracture Mechanics;
- Materials mechanical behavior and image analysis;
- Mesomechanics of Fracture;
- Micromechanisms of Fracture and Fatigue;
- Multi-physics and multi-scale modelling of cracking in heterogeneous materials;
- Multiscale Experiments and Modeling;
- Nanostructured Materials; Nondestructive Examination;
- Physical Aspects of Brittle Fracture;
- Physical Aspects of Ductile Fracture;
- Polymers Fracture and Fatigue;
- Probabilistic Fracture Mechanics;
- Reliability and Life Extension of Components;
- Repair and retrofitting: modelling and practical applications;
- Sandwiches, Joints and Coatings;
- Smart Materials;
- Structural Integrity;
- Temperature Effect;
- Thin Films

<http://www.ecf21.eu/site/>



September 7 - 11, 2015
Lugano, Switzerland

<http://www2.supsi.ch/cms/dymat2015/>

News and Events

Faculty Position Available, Johns Hopkins University

Mechanical Engineering – Dynamic Behavior of Materials and Structures.

All applications should be submitted to: <https://academicjobsonline.org/ajo?joblist-1725>. The electronic application should include a cover letter describing the principal expertise and accomplishments of the applicant, a curriculum vita, 1-2 page teaching statement, 2-3 page statement of research including research directions and future plans, and two representative journal publications. Candidates applying for the position of Assistant Professor should also enter the names and contact information of at least three (3) references in the online application system. Candidates applying for Associate or full Professor positions should not provide any contact information for references in their application materials and should not enter any reference information in the online application system. The application package should be received by January 20, 2015 for full consideration. However, applications will be accepted until the position is filled. Johns Hopkins University is committed to building a diverse environment; women and minorities are strongly encouraged to apply. The Johns Hopkins University is an EEO/AA Employer.

–Mark Elert

Post-Doctoral Position, Los Alamos National Laboratory

Job Title: Fracture Mechanics Postdoc

Job: IRC36359

Organization Name: XTD-NTA/Nuclear Threat Assessment

Brief Description:

We are seeking a candidate to study theoretical aspects of fracture mechanics of brittle materials and composites, with an emphasis on developing and applying theoretical fracture concepts to aid in the evolution of compaction models for brittle particulate materials. Specifically, the project involves utilizing measurements and calculations of the compression and fracture response of idealized granular systems at low-strain-rates, and developing a framework capable of capturing the relevant deformation and fracture mechanisms at both low-and high-strain-rates. The postdoc will work collaboratively to integrate the appropriate meso-scale fracture theory into a bulk-level compaction model.

For more information, contact D. Anthony Fredenburg (dafreden@lanl.gov)

Announcement

Dear Colleagues,

The *Journal of the Dynamic Behavior of Materials* (<http://springer.com/40870>) is now accepting manuscripts with a first issue scheduled for the first quarter of 2015. This new journal is being started to address what many of us see as the lack of a single “home” for publishing research in this area. The lead editor is Eric Brown from LANL who has been an active member of GSCCM for several years. Others from the group serving as associate editors include:

Prof. Neil K. Bourne, The University of Manchester (Fellow APS and IOP)

Dr. Ellen K. Cerreta, Los Alamos National Laboratory

Dr. Robert S. Hixson, National Security Technologies (Fellow APS)

Dr. Jennifer L. Jordan, Arlington, VA

Dr. Tracy J. Vogler, Sandia National Laboratories

Those serving on the advisory board include:

Prof. Yogendra Gupta, Washington State University (Fellow APS)

Prof. Naresh Thadhani, Georgia Institute of Technology (Fellow ASM and APS)

As you might guess from the title of the journal, the scope of the journal is all research dealing with how materials behave under dynamic loading including rates associated with impact and penetration, experimental regimes accessed by experimental techniques such as the Hopkinson bar, and the shock regime. Experimental, numerical, and theoretical studies as well as combinations of these are welcome. It is our hope that the JDBM will be an important place for research published by members of the GSCCM.

We hope that you will consider submitting your research to JDBM as we work to make it an asset to the scientific community.

–Tracy Vogler



Bookshelf

Books, Proceedings, and Other Newsletters

*Dynamic Behavior of Materials, Volume 1
Proceedings of the 2014 Annual Conference on
Experimental and Applied Mechanics*
Editors: Bo Song, Daniel Casem, and Jamie Kimberley
ISBN: 9783319069944 (print) 9783319069951 (ebook)

*Explosion, Shock Wave, and High-Energy
Reaction Phenomena II
Proceedings of the International Symposium on
Explosion, Shock Wave, and High Energy Reaction
Phenomena, March 27-29, 2013, Okinawa, Japan*
Editors: S. Itoh, J. Matsue, and K. Hokamoto
ISBN: 9783037858264 (print) 9783038262077 (ebook)

Introduction to Adiabatic Shear Localization
Authors: Bradley Dodd and Yilong Bai
ISBN: 9781783264322

*Materials in Mechanical Extremes:
Fundamentals and Applications*
Author: Neil Bourne
ISBN: 9781107023758

*Proceedings of the Hopkinson Centenary Conference,
September 9-11, 2014, Cambridge, UK*
Editor: Stefan Hiermaier
ISBN: 9783000467394

*Projectile Impact
Modeling Techniques and Target Performance
Assessment*
Editor: S. Syngellakis
ISBN: 9781845648794

Structures Under Shock and Impact XIII
Proceedings of the 13th International Conference of
Structures under Shock and Impact
Editor: G. Schleyer
ISBN: 9781845647964

Ultrasonic Guided Waves in Solid Media
Author: Joseph L. Rose
ISBN: 9781107048959

American Physical Society
One Physics Ellipse
College Park, MD 20740
www.aps.org

APS GSCCM
www.shockphysics.org

Editorial Staff

Eric Chisolm, Los Alamos National Laboratory
(echisolm@lanl.gov)

Sunil Dwivedi,* Georgia Institute of Technology
(sunil.dwivedi@mse.gatech.edu)

Eric Herbold, Lawrence Livermore National Laboratory
(herbold1@llnl.gov)

Kevin Vandersall, Lawrence Livermore National Laboratory
(vandersall1@llnl.gov)

*Lead for this and next issues

Please send any questions or comments about the newsletter to any of the editors.

Special thanks to Kerry Johnson and Nancy Bennett-Karasik of APS Special Publications.

The APS Topical Group on Shock Compression of Condensed Matter (GSCCM) was founded in 1984 to promote the development and exchange of information on the dynamic high-pressure properties of materials. The Topical Group sponsors biennial technical meetings on shock compression and detonation physics research, including experimental, theoretical and computational studies, and new experimental methods and developments