

Meeting Location

The IUTAM Symposium on Integrated Computational Structure-Material Modeling of Deformation and Failure Under extreme Conditions will be hosted by Johns Hopkins University (JHU) Whiting School of Engineering. JHU was established as the first research university in the USA in 1876. JHU is organized into ten divisions on campuses in Maryland and Washington D.C. with international centers in Italy, China and Singapore.

The Krieger School of Arts and Sciences, the Whiting School of Engineering and the School of Education are based at the Homewood campus in Northern Baltimore. The schools of Medicine, Nursing and Public Health share a campus in East Baltimore with The Johns Hopkins Hospital. The Carey Business School in the heart of Baltimore's inner harbor, Harbor East. The Applied Physics Laboratory (APL) is the nation's largest university affiliated research center. Located in Laurel, Maryland, for more than 70 years, APL supports national security and pursues space science exploration of the Solar system.

Baltimore is the largest city in Maryland with 1.5 million people in the metro area. Located on the Chesapeake Bay, the city is a melting pot of cultures and neighborhoods. Due to its past history as a major US seaport since the 18th century, and the importance of this city during the war of 1812, this 'Charm City' offers many interesting historical sites for visitors. Birthplace to Babe Ruth, Tom Clancy, Frank Zappa and John Walters. This city still remains a relatively undiscovered jewel with a rich history.

The centrally located inner harbor allows easy access to restaurants within the many diverse neighborhoods in the city such as Harbor East, Canton, Fells Points, Butcher's Hill, Federal Hill, Hampden and Clipper Mill. Baltimoreans take great pride in their city, boasting one of the most remarkable transformations in history. Yet they continue to welcome and amaze visitors with their 'down to earth, small town' spirit and hospitality.

Travel and Accessibility

With its central location on the US East Coast, Baltimore is easy to reach by your choice of transportation – highway, rail through Penn Station Baltimore, air via BWI, Dulles or National Reagan airports. It is within an hour's drive from Washington DC and within four hours or less of such major cities as New York City and Philadelphia. BWI Marshall is Maryland's modern, user friendly airport with more than 700 daily domestic and international flights serving more than 75 cities nonstop. Amtrak offers attractive rail fare discounts for seniors, children, students and meeting/conference attendees. Amtrak has service from 500 locations in 48 states with 80 trains each day stopping at Baltimore's downtown Penn Station.

Symposium Venue and Accommodations

The official symposium venue and hotel is the Royal Sonesta Harbor Court Baltimore.



Courtesy of 'Royal Sonesta Inner Harbor Hotel'

Royal Sonesta Harbor Court
550 Light St, Baltimore MD 21202
(410) 234 0550

<http://www.sonesta.com/baltimore>



IUTAM Symposium on Integrated Computational Structure-Material Modeling of Deformation and Failure Under Extreme Conditions



Courtesy of 'Visit Baltimore'

Location: Royal Sonesta Harbor Court
Baltimore, Maryland, USA
Date: June 19 -22, 2016



Baltimore, Maryland, USA



US Association of Computational Mechanics
(USACM)

Acknowledgment to USNC/TAM

Symposium Chair: Somnath Ghosh

Important Dates:

Early Registration: TBD
Final Registration: TBD

**Contact Information
for Symposium Administrative
Matters:**

USACM Secretariat:

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Courtesy of 'Visit Baltimore'

Scope of Symposium

This IUTAM symposium will address state of the art topics and emerging issues in the area of *Integrated Computational Structure-Material Modeling of Deformation and Failure under Extreme Conditions*. It will bring together experts in the complementary fields of Computational and Experimental Mechanics, and Materials Science to discuss multidisciplinary approaches for integrating modeling and simulation, characterization and experiments to predict non-homogeneous deformation and failure in heterogeneous materials including metals, ceramics and composites. It will focus on different material classes and cover a range of spatial and temporal scales needed for physics-based modeling of deformation and failure. Effective methods of coupling multiple scales in regions of homogeneous and localized deformation leading to intense damage and failure will be discussed. Use of probabilistic mechanics, incorporating data from imaging into modeling capabilities through uncertainty characterization of material structure, uncertainty identification in material properties, mapping material structure uncertainty to structural performance will be discussed as essential ingredients of robust modeling process. This conversation will take place with a goal of developing a 10 year vision and plan for advancing the field to enable solving these technological, economic and social challenges.

Technical Topics

The symposium will be broken down into 4 different thematic parts. The technical focus will be on understanding and predicting extreme and rare events in material response, e.g. fatigue, failure, impact, blast, etc. It will address research needs in the technically complementary areas of:

1. Physics-based multi-scale model development
2. Multi-scale data acquisition, characterization and experiments at different scales
3. Probabilistic modeling & uncertainty quantification
4. Structure-material integration and design

**Organizing and Scientific
Committee**

Prof. Somnath Ghosh
(*Symposium Chair*)
Johns Hopkins University
Baltimore, MD, USA

Dr. Curt A. Bronkhorst
Los Alamos National Laboratories
Los Alamos, NM, USA

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Prof. Pedro Camanho
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Prof. Zhuo Zhuang
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