

Call for Papers



International Forum on Engineering Decision Making

Ninth Forum:

Resilient Infrastructures - Integration of Risk and Sustainability

December 7 – 10, 2016

Stoos, Switzerland



**Chair: Michael Havbro Faber,
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Theme of the ninth IFED Forum:

Resilient infrastructures – integration of risk and sustainability:

- Identification of generally applicable frameworks, methods and tools for resilience modeling and assessment
- Quantification of sustainability
- Integration of risk and sustainability for decision support

With sub-themes:

- Infrastructure systems modeling
- Life Cycle Assessment subject to uncertainty
- Metrics and indicators of sustainability
- Societal and environmental consequence modeling
- Climate change, resource use and population growth
- Policy making
- Applications

Background and motivation

The need for resilient and sustainable management of societal core functionalities has increasingly gained focus in the strategic planning of societal infrastructures over the last decade. At the same time as the pressure on societal resources is increasing and the threat of climate change is materializing - the critical infrastructures which form the backbone of key societal functionalities are getting increasingly complex and interdependent – and also to a large proportion ageing and deteriorating.

Resilience assessment of complex systems such as societal infrastructure represents a very substantial challenge. Events related to natural hazards, technical failures, human and organizational errors and malevolence repeatedly lead to devastating consequences in terms of economic losses, human safety and health, as well as damages to the qualities of the environment. There is an urgent need for generally improved knowledge, technology and organizational capacity with respect to their lifecycle management. Frameworks, methods and tools must be developed which facilitate that societal infrastructure systems resilience may be consistently assessed with due account of their mutual dependencies, the interactions they represent between applied technology, humans and organizations and nature - and not least the uncertainties associated with their performances.

General format of the IFED forums

The single-session IFED forum format brings together experts in the field of decision making, risk and reliability analysis, probabilistic modeling and representation of uncertainty who have specific interests in the themes of the forum.

The objectives of IFED forums are:

- To outline current challenges related to decision-making for uncertain futures.
- To discuss and to present possible solutions and applications.
- To develop directions for future research in the field.

Discussion, collegiality, and dialogue are the key ingredients of a successful IFED forum. The programs of the IFED forums are designed to provide plenty of opportunity to interact with sufficient time to present and discuss and venues facilitating continuation of discussions during the breaks and evenings. At the end of each IFED forum a joint conclusion is formulated by all the participants in the IFED forum.

Venue of the ninth IFED forum

The ninth IFED forum will be held at the Stoos Seminar and Wellness Hotel, in Stoos Switzerland, close to Zurich. The hotel, which is located at an altitude of 1300m, in a small village in the mountains, with car traffic prohibited, offers a tranquil alpine environment, fantastic views, fresh air, hiking and snow sport opportunities as well as indoor sports and spa facilities. This unique venue has previously hosted successful IFED forums in 2004 (the inaugural IFED forum) and 2010, see also:

<http://www.booking.com/hotel/ch/sporthotelstoos.en-us.html>

The ninth IFED forum will start with registration and a welcome reception on Wednesday December 7 in the evening. The technical program will start on Thursday in the morning and will continue till Saturday December 10, at lunch only interrupted by a hiking tour Friday afternoon. The IFED forum banquet will take place on Friday in the evening.

The registration fee for the forum includes accommodation from December 7 to December 10, all lunches, all refreshment-breaks, excursion, welcome reception and the IFED banquet. The registration fee is expected to be approximately SFR 700 for delegates and partners. Registration details and detailed directions from Zurich airport to the venue will be provided at a later date.

Notification of participation

Please indicate your interest in participating in the forum by sending – before April 1, 2016, a short e-mail (including name, affiliation, address, phone, fax and preliminary paper title) to mihf@byg.dtu.dk with the subject line including the string “IFED2016 registration”. The final programme of the conference will be available from October 2016.

Abstracts and papers

Detailed one-page abstracts of proposed papers for the forum must be submitted by June 1, 2016 to mihf@byg.dtu.dk with the subject line including the string “IFED2016 abstract”.

Invitations to present papers at the forum will be strictly based on review and acceptance of the abstracts. Notification of the results of abstract reviews will be given in August 2016. As with previous IFEDs, written papers can be distributed to delegates during the conference (i.e. authors bring copies of their paper for distribution at IFED).

Special Journal Issue publication

Following the IFED forum, authors of selected papers will be invited to submit a revised or expanded version of their IFED paper to a special issue of a selected journal.

IFED

IFED is an international organization with the mission to stimulate new initiatives in engineering decision making and risk analysis for engineering systems. It meets these objectives by organizing on a regular basis open international forums that focus on specific themes, providing a widely accessible publication of the contributions and of the conclusions of the forums.

Eight IFED forums have taken place since 2004:

2004 - Stoos (Switzerland)

Consequence Modelling in Engineering Decision Making

2006 - Lake Louise (Canada)

Decision Making Involving Spatially Distributed Systems

2007 - Port Stephens (Australia)

Optimal Strategies for Disaster and Hazard Mitigation

2009 - Hakone (Japan)

Long-term Policy Makings for Sustainable Society

2010 - Stoos (Switzerland)

Global Catastrophic Risk Management - New Insights and Challenges

2012 - Lake Louise (Canada)

Risk for Temporary Systems, Temporary Structures, and Short-Term

2013 - Port Stephens (Australia)

Uncertain futures under a changing climate

2015 - Hieizan, Enryakuji-kaikan Shiga (Japan)

Decision-Making Beyond the Engineering Community

The IFED consortium

Michael Faber, Technical University of Denmark, Denmark (current chair)

Marc Maes, University of Calgary, Canada (current vice-chair)

Kazuyoshi Nishijima, Kyoto University, Japan

Mark Stewart, University of Newcastle, Australia

Stuart Reid, University of Sydney, Australia

Ross Corotis, University of Colorado, USA

Emeritus

Jun Kanda, University of Tokyo, Japan (IFED co-founder)

IFED advisory council

Arvid Naess, Norwegian University of Science and Technology, Norway

Paolo Bazzurro, Scuola Superiore, IUSS, Italy

Denys Breysse, CDGA, France

David Elms, University of Canterbury, New Zealand

Jean Goyet, Bureau Veritas, France

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Han Vrijling, Emeritus Professor, Technical University of Delft, The Netherlands