



PROGRAM

CHAIR

Steffen Freitag, Ruhr University Bochum, Germany

FOUNDERS AND GENERAL CHAIRS

Rafi L. Muhanna, Georgia Institute of Technology, USA
Robert L. Mullen, University of South Carolina, USA

KEYNOTE SPEAKERS

Prof. Michael Beer
Leibniz University Hannover, Germany
University of Liverpool, UK
Tongji University, China

Prof. Michael Oberguggenberger
University of Innsbruck, Austria

Dr. Scott Ferson
Applied Biomathematics, USA
Stony Brook University, USA

TUESDAY JUNE 14TH, 2016 | MERCURE HOTEL (BOCHUM CITY)

18:00 – 21:00 Icebreaker Reception and Registration

WEDNESDAY JUNE 15TH, 2016 | RUHR UNIVERSITY BOCHUM

7:45	Shuttle Departs from Starlight Express (Renaissance & Ramada Hotel) to RUB
8:00	Shuttle Departs from Bochum Hbf - Main Station (MERCURE & Ibis Hotel) to RUB
8:30	Registration
9:00	Opening Remarks
9:30	Session 1, Chair: Rafi Muhanna
9:30	KEYNOTE PRESENTATION: Michael Oberguggenberger <i>Analyzing Uncertainty in Civil Engineering</i>
10:20	M. A. Valdebenito , C. A. Pérez, H. A. Jensen, M. Beer <i>Approximation Concepts for Fuzzy Analysis in Structural Dynamics</i>
10:45	Break
11:15	Session 2, Chair: Wolfgang Graf
11:15	N. Xiao, R. L. Mullen , R. L. Muhanna <i>Static Analysis of Structural Systems with Uncertain Parameters Using Probability-Box</i>
11:40	Q. Wang , Y. Liu, N. Lu <i>Reliability Assessment of Long-Span Cable-Stayed Bridges Based on a Hybrid Algorithm</i>
12:05	Á. Rózsás, M. Sýkora <i>Effect of Statistical Uncertainties on Extreme Wind Speeds</i>
12:30	A. Kučerová , J. Sýkora, E. Janouchová, D. Jarušková and J. Chleboun <i>Acceleration of Robust Experiment Design using Sobol Indices and Polynomial Chaos Expansion</i>
12:55	Lunch
14:20	Session 3, Chair: Marcos Valdebenito
14:20	A. Pospíšilová, M. Lepš <i>Multi-Objective Reliability-Based Design Optimization using Subset Simulation Enhanced by Meta-Models</i>
14:45	Y. Luo , D. Yan, N. Lu <i>Probabilistic Modeling of Fatigue Damage in Steel Box-Girder Bridges Subject to Stochastic Vehicle Loads</i>

15:10	L. Nguyen-Tuan , T. Lahmer, C. Könke, V. Bettzieche <i>Damage Identification and Uncertainties in Coupled Non-Linear Thermo-Hydro-Mechanical Problems Applied to Masonry Dams</i>
15:35	S. Ray , O. P. Yadav <i>Approximation of ECG Signals using Chebyshev Polynomials</i>
16:00	Break
16:20	Session 4, Chair: Steffen Freitag
16:20	E. Janouchová , A. Kučerová, J. Sýkora, J. Vorel, R. Wendner <i>Bayesian Calibration of Lattice Discrete Particle Model for Concrete</i>
16:45	N. Lu , M. Noori, M. Beer <i>Dynamic Reliability Assessment for Long-Span Bridges under Heavy Stochastic Traffic Flows</i>
17:10	M. Vořechovský , V. Sadílek, J. Eliáš <i>Application of Voronoi Weights in Monte Carlo Integration with a Given Sampling Plan</i>
17:35	M. E. Alalade , L. Nguyen-Tuan, F. Wuttke, T. Lahmer <i>Inverse Analysis of Coupled Hydro-Mechanical Problem in Dynamically Excited Dams</i>
18:00	Shuttle Departs to Planetarium
19:00	Music Show Planetarium Bochum
20:15	Shuttle Departs to Hotels

THURSDAY JUNE 16TH, 2016 | RUHR UNIVERSITY BOCHUM

8:15 Shuttle Departs from Starlight Express (Renaissance & Ramada Hotel) to RUB

8:30 Shuttle Departs from Bochum Hbf - Main Station (MERCURE & Ibis Hotel) to RUB

9:00 Session 5, Chair: Robert Mullen

9:00 KEYNOTE PRESENTATION: Michael Beer
Dealing with Vague and Limited Information in Uncertainty Quantification

9:50 A. M. Pownuk, O. M. Kosheleva, **V. Kreinovich**
Limitations of Realistic Monte-Carlo Techniques in Estimating Interval Uncertainty

10:15 Break

10:45 Session 6, Chair: Mehdi Modares

10:45 P. Longo, N. Maugeri, **G. Muscolino**, G. Ricciardi
Analysis of Truss Structures with Uncertainties: From Experimental Data to Analytical Responses

11:10 **E. D. Popova**
Interval Model of Equilibrium Equations in Mechanics

11:35 N. Xiao, **R. L. Muhanna**, F. Fedele
Structural Dynamic Response under Uncertainty - An Interval Finite Element Approach

12:00 **A. Sofi**, E. Romeo
A New Interval Finite Element Method: Computational Issues

12:25 Lunch

13:50 Session 7, Chair: Alba Sofi

13:50 **M.D. Shields**, J. Zhang
Efficient Propagation of Imprecise Probabilities

14:15 **F. Leichsenring**, W. Graf, M. Kaliske
Numerical Simulation of Wooden Structures with Polymorphic Uncertainty in Material Properties

14:40 J. Mohammadi, **M. Modares**, J. Bergerson
Structural Condition Assessment Using Imprecise Probability

15:05 Á. Rózsás, **M. Sýkora**
Propagating Snow Measurement Uncertainty to Structural Reliability by Statistical and Interval-Based Approaches

15:30 Break

16:00	Session 8, Chair: Giuseppe Muscolino
16:00	M. Imholz , M. Faes, D. Vandepitte, D. Moens <i>On the Comparison of Two Novel Interval Field Formulations for the Representation of Spatial Uncertainty</i>
16:25	M. V. Rama Rao, R. L. Muhanna, R. L. Mullen <i>Interval Finite Element Analysis of Thin Plates</i>
16:50	A. Serafinska , K. Özenç, M. Kaliske, W. Graf <i>A Fail-Safe Design Approach Based on the Fracture Mechanical Analysis and Epistemic Uncertainty Quantification</i>
17:15	Shuttle Departs to Henrichshütte
18:15	Guided Tour at Steelworks Museum Henrichshütte
20:00	Dinner at Henrichs Restaurant
23:30	Shuttle Departs to Hotels

FRIDAY JUNE 17TH, 2016 | RUHR UNIVERSITY BOCHUM

8:15 Shuttle Departs from Starlight Express (Renaissance & Ramada Hotel) to RUB

8:30 Shuttle Departs from Bochum Hbf - Main Station (MERCURE & Ibis Hotel) to RUB

9:00 Session 9, Chair: Ekaterina Auer

9:00 KEYNOTE PRESENTATION: Scott Ferson
Epistemic Uncertainty in Agent-based Modeling

9:50 L. Longpré, **O. Kosheleva**, V. Kreinovich
How to Estimate Amount of Useful Information, in Particular under Imprecise Probability

10:15 Break

10:45 Session 10, Chair: Scott Ferson

10:45 **S. Ray**, S. Ralhan
Reliable Power Flow Analysis of Systems with Uncertain Data

11:10 **E. Auer**, S. Kiel
Uses of Methods with Result Verification for Simplified Control-Oriented Solide Oxide Fuel Cell Models

11:35 S. Benferhat, **V. Kreinovich**
Why Min-Based Conditioning

12:00 **O. Kosheleva**, V. Kreinovich
Voting Aggregation Leads to (Interval) Median

12:25 Lunch

13:50 Session 11, Chair: Vladik Kreinovich

13:50 L. Valera, **M. Ceberio**
Model-Order Reduction Using Interval Constraint Solving Techniques

14:15 **B. T. Cao**, S. Freitag, G. Meschke
Real-Time Prediction of Structural Processes with Polymorphic Uncertain Data

14:40 Closing Remarks

15:00 Break

15:30 Shuttle Departs to German Mining Museum

16:15 Guided Tour at German Mining Museum Bochum

17:30 Shuttle Departs to Hotels

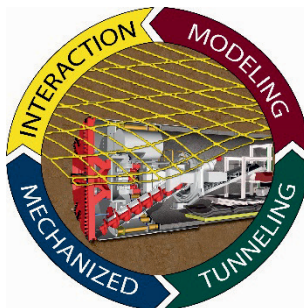
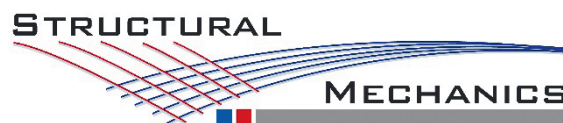


Ministerium für Innovation,
Wissenschaft und Forschung
des Landes Nordrhein-Westfalen



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SFB 837
INTERACTION MODELING IN
MECHANIZED TUNNELING