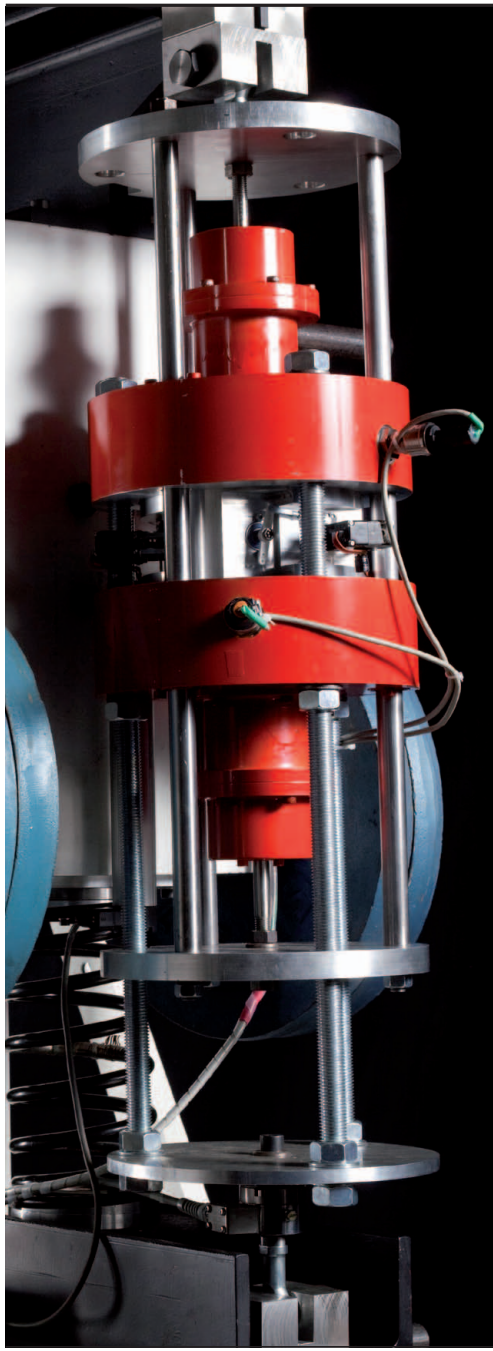

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ICUME 2015

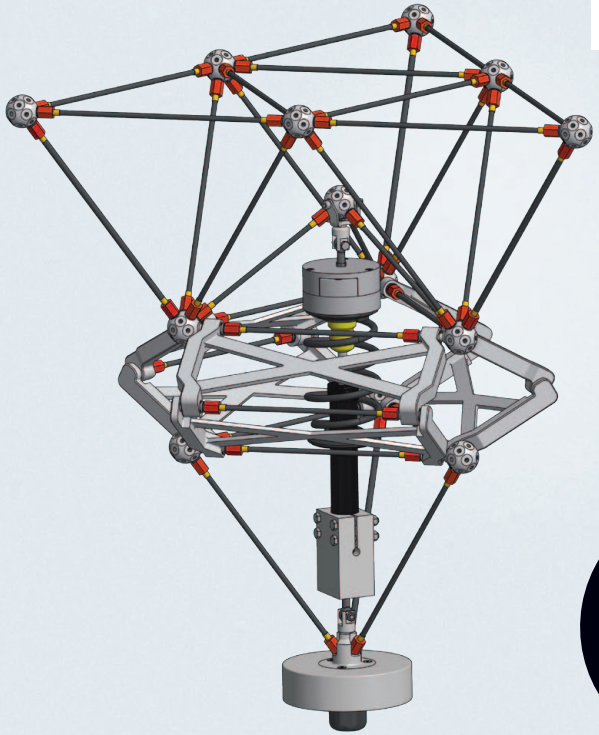
2nd International Conference on Uncertainty in Mechanical Engineering

TECHNISCHE UNIVERSITÄT DARMSTADT

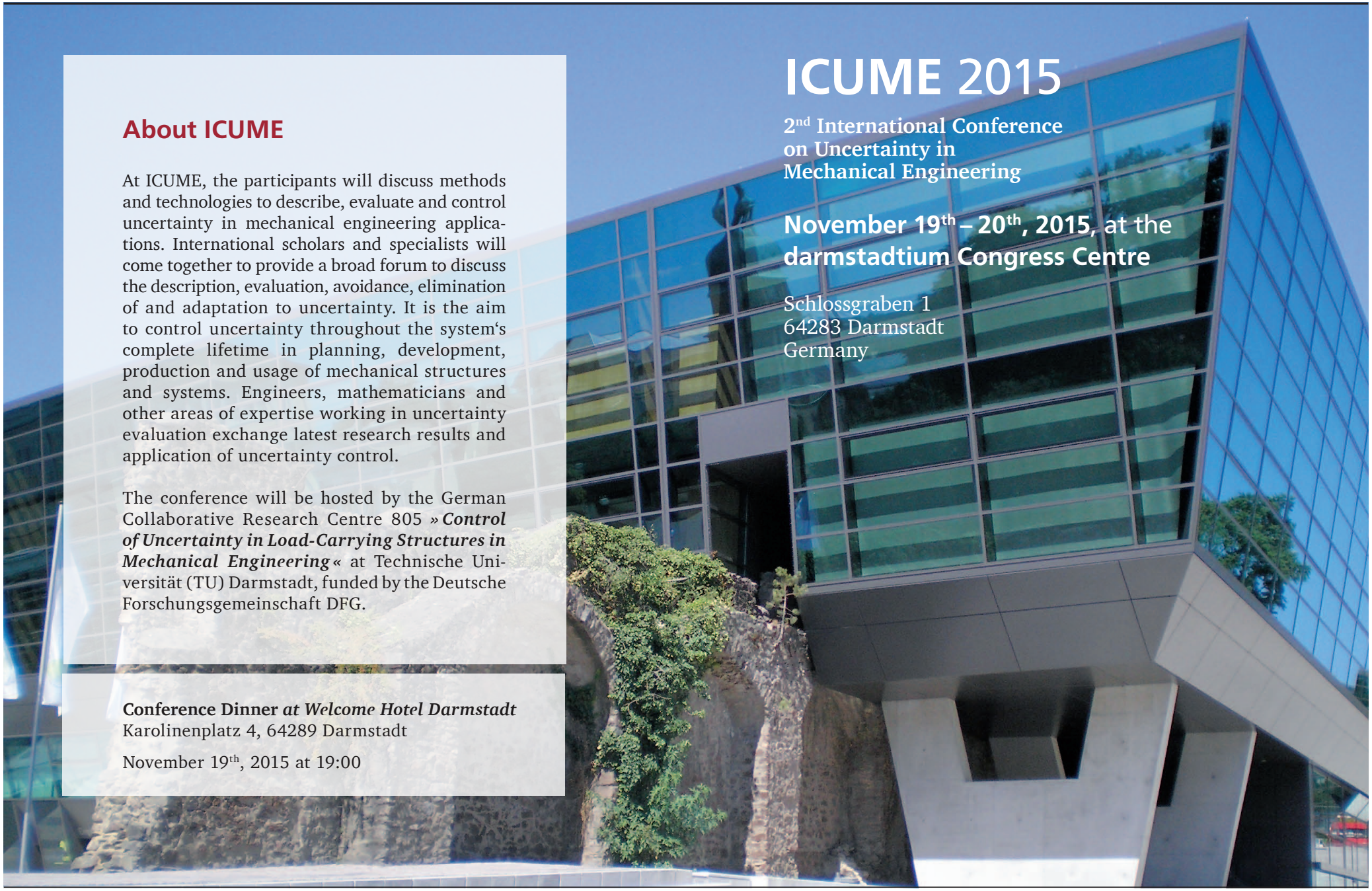
SFB 805
Control of Uncertainty in Load-Carrying Structures in Mechanical Engineering

funded by DFG

November 19th – 20th, 2015



Deadline Registration
November 12th, 2015
www.icume.de



ICUME 2015

2nd International Conference on Uncertainty in Mechanical Engineering

November 19th – 20th, 2015, at the **darmstadtium Congress Centre**

Schlossgraben 1
64283 Darmstadt
Germany

About ICUME

At ICUME, the participants will discuss methods and technologies to describe, evaluate and control uncertainty in mechanical engineering applications. International scholars and specialists will come together to provide a broad forum to discuss the description, evaluation, avoidance, elimination of and adaptation to uncertainty. It is the aim to control uncertainty throughout the system's complete lifetime in planning, development, production and usage of mechanical structures and systems. Engineers, mathematicians and other areas of expertise working in uncertainty evaluation exchange latest research results and application of uncertainty control.

The conference will be hosted by the German Collaborative Research Centre 805 ***»Control of Uncertainty in Load-Carrying Structures in Mechanical Engineering«*** at Technische Universität (TU) Darmstadt, funded by the Deutsche Forschungsgemeinschaft DFG.

Conference Dinner ***at Welcome Hotel Darmstadt***
Karolinenplatz 4, 64289 Darmstadt

November 19th, 2015 at 19:00

Photo: Carlos Delgado/wikipedia.de

19TH

November 19TH, 2015

	Europium 2 Room 3.03/3.04		Hassium Room 3.02	
9:00 – 9:30	**Opening**/Keynote	*P.F. Pelz (TU Darmstadt)*		
	Uncertainty in Mechanical Engineering P.F. PELZ			
9:30 – 9:50	Statistical Consideration of Uncertainties in Bolted Joints of the Drive Train of Sheet-Fed Offset Printing Presses	*N. Norrick (Heidelberger Druckmaschinen AG)*		
9:50 – 10:10	Localized Discrete Modelling of Contact Interfaces to Predict the Dynamic Behaviour of Assembled Structures under Random Excitation	*A. Sharma, W. Mueller-Hirsch (Robert Bosch GmbH), S. Herold (Fraunhofer LBF) and T. Melz (Fraunhofer LBF, TU Darmstadt)*		
10:10 – 10:30	Variability in Composite Materials Properties	*A. Vanaerschot, S. Lomov, D. Moens and D. Vandepitte (KU Leuven)*		
10:30 – 11:10	*Coffeebreak/Poster Display*			
	Uncertainty in High Precision Manufacturing Process E. ABELE		**Uncertainty Quantification** M. KOHLER	
11:10 – 11:40	You See What You Get – The Precision of the Power Train Starts with the Cutting Edge	*D. Kammermeier (Kennametal Shared Services GmbH)*	11:10 – 11:40 Nonparametric Estimation of a Maximum of Quantiles	*A. Krzyzak (Concordia University Montreal)*
11:40 – 12:00	Uncertainty of Additive Manufactured Ti-6Al-4V: Chemistry, Microstructure and Mechanical Properties	*D. Greitemeier, C. Dalle Donne, A. Schoberth, M. Jürgens (Airbus Group Innovations), J. Eufinger (Fraunhofer LBF) and T. Melz (Fraunhofer LBF, TU Darmstadt)*	11:40 – 12:00 Analysis of the Effect of Uncertain Clamping Stiffness on the Dynamical Behaviour of Structures Using Interval Field Methods	*M. Imholz, D. Vandepitte and D. Moens (KU Leuven)*
12:00 – 12:20	Control of Uncertainty in High Precision Cutting Processes: Reaming of Valve Guides in a Cylinder Head of a Combustion Engine	*C. Bölling, S. Güth and E. Abele (TU Darmstadt)*	12:00 – 12:20 Methodical Approaches to Describe and Evaluate Uncertainty in the Transmission Behavior of a Sensory Rod	*C.M. Melzer, M. Krech, L. Kristl, T. Freund, A. Kuttich, M. Zocholl, P. Groche, M. Kohler (TU Darmstadt) and R. Platz (Fraunhofer LBF)*
12:20 – 12:40	Control of Uncertainty Based on Machining Strategies during Reaming	*S. Güth, A. Bretz, C. Bölling, A. Baron and E. Abele (TU Darmstadt)*	12:20 – 12:40 Using Particle Filters to Analyse the Credibility in Model Predictions	*P.L. Green (University of Liverpool)*
12:40 – 13:40	*Lunch/Poster Display*		12:40 – 13:40 *Lunch/Poster Display*	
	Improved Product Quality by Online Monitoring and Closed-loop Control of Manufacturing Processes P.GROCHE		**Modular Design and Scaling for Reduced Uncertainties in the Design Process** H. KLOBERDANZ	
13:40 – 14:10	Cope with Uncertainties in Sheet Metal Forming Processes – Classification and Methodologies	*J. Cao (Northwestern University)*	13:40 – 14:10 Robust Design Strategies for Reducing Uncertainty and its Impact	*J. T. Howard (Technical University of Denmark)*
14:10 – 14:30	Orbital Forming of Flange Parts under Uncertainty	*S. Calmano, D. Hesse, F. Hoppe, P. Traidl, J. Sinz and P. Groche (TU Darmstadt)*	14:10 – 14:30 Uncertainty in Product Modelling within the Development Process	*J. Würtenberger, S. Gramlich, T. Freund, J. Lotz, M. Zocholl and H. Kloberdanz (TU Darmstadt)*
14:30 – 14:50	Data-Based Support in the Development of Press Systems Using the Example of Sheet Metal Forming	*J. Sinz, D. Hesse, S. Öchsner and P. Groche (TU Darmstadt)*	14:30 – 14:50 Uncertainty Scaling – Motivation, Method and Example Application to a Load Carrying Structure	*A. Vergé, J. Lotz, H. Kloberdanz and P.F. Pelz (TU Darmstadt)*
14:50 – 15:10	Proved Quality by Online Monitoring and Closed-Loop Control of Pin Insertion	*M. Erhardt, C. Kaschube and M. Menacher (Robert Bosch GmbH)*	14:50 – 15:10 An Approach to Using Elemental Interfaces to Assess Design Clarity	*T. Freund, J. Würtenberger, H. Kloberdanz and P. Blakaj (TU Darmstadt)*
15:10 – 15:50	*Coffeebreak/Poster Display*		15:10 – 15:50 *Coffeebreak/Poster Display*	
	Modelling Uncertainty Information by Means of Semantics R. ANDERL		**Optimization under Uncertainty** M.E. PFETSCH, S. ULBRICH	
15:50 – 16:20	Semantic Technologies for the Closed Loop Lifecycle Management of Intelligent Products	*D. Kiritsis (École Polytechnique Fédérale de Lausanne)*	15:50 – 16:20 Robust Optimization for Nonlinear Dynamic Systems	*M. Diehl (University of Freiburg)*
16:20 – 16:40	Representation of Human Behaviour for the Visualization in Assembly Design	*M. Zocholl, F. Heimrich, M. Oberle, J. Würtenberger, R. Bruder and R. Anderl (TU Darmstadt)*	16:20 – 16:40 Robust Truss Topology Design with Beam Elements via Mixed Integer Nonlinear Semidefinite Programming	*T. Gally, C.M. Gehb, P. Kolvenbach, A. Kuttich, M.E. Pfetsch and S. Ulbrich (TU Darmstadt)*
16:40 – 17:00	Modeling, Querying and Rating Uncertain Information	*K. Reichenberger (intelligent views GmbH)*	16:40 – 17:00 Impact of Physical Parameters in the Operation of Gas Networks	*F. Liers (Friedrich-Alexander-Universität Erlangen-Nürnberg)*
19:00	***CONFERENCE DINNER** at Welcome Hotel Darmstadt*		19:00 ***CONFERENCE DINNER** at Welcome Hotel Darmstadt*	

20TH

Europium 2 Room 3.03/3.04

Hassium Room 3.02

November 20TH, 2015

9:00 – 9:20	**Opening**	*P.F. Pelz (TU Darmstadt)*		
	Uncertainty in Mechanical Engineering P.F. PELZ			
9:20 – 9:40	Fluid-Structure Interaction Simulation of an Aortic Phantom with Uncertain Young's Modulus Using the Polynomial Chaos Expansion	*J. Kratzke (Heidelberg University), M. Schick (Heidelberg Institute for Theoretical Studies) and V. Heuveline (Heidelberg Institute for Theoretical Studies, Heidelberg University)*		
09:40 – 10:00	Investigation of Uncertainty Sources of Piezoresistive Silicon Based Stress Sensor	*A. Palczynska (Robert Bosch GmbH), F. Schindler-Saefkow (Fraunhofer ENAS), P. Gromala (Robert Bosch GmbH), K. Kreyßig, S. Rzepka (Fraunhofer ENAS), D. Mayer (Fraunhofer LBF) and T. Melz (Fraunhofer LBF, TU Darmstadt)*		
10:00 – 10:40	*Coffeebreak/Poster Display*			
	Uncertainty of Structural Dynamic Improvement in Light Weight Design T. MELZ, R. PLATZ		**Binary Decisions under Uncertainty** U. LORENZ	
10:40 – 11:10	Data-driven Decision Making under Uncertainty	*S. Atamturktur (Clemson University)*	**10:40 – 11:10**	Theory, Technology, System Optimization	*J. Wolf (Tesyo GmbH)*
11:10 – 11:30	Comparison of a New Passive and Active Technology for Vibration Reduction of a Vehicle under Uncertain Load	*P. Hedrich, F.J. Cloos, J. Würtenberger and P.F. Pelz (TU Darmstadt)*	**11:10 – 11:30**	Developing a Control Strategy for Booster Stations under Uncertain Load	*P. Pöttgen, T. Ederer, L.C. Altherr and P.F. Pelz (TU Darmstadt)*
11:30 – 11:50	Model Verification and Validation of a Piezo-Elastic Support for Passive and Active Structural State Control of Beams with Circular Cross-Section	*B. Götz, M. Schaeffner, R. Platz (Fraunhofer LBF) and T. Melz (Fraunhofer LBF, TU Darmstadt)*	**11:30 – 11:50**	Multicriterial Optimization of Technical Systems Considering Multiple Load and Availability Scenarios	*L.C. Altherr, T. Ederer, P. Pöttgen, U. Lorenz (University of Siegen) and P.F. Pelz (TU Darmstadt)*
11:50 – 12:10	Opportunities and Limitations of Structural Intensity Calculation Regarding Uncertainties in the NVH Design of Complex Vehicle Body Structures	*T. Stoewer, J. Ebert (BMW) and T. Melz (Fraunhofer LBF, TU Darmstadt)*	**11:50 – 12:10**	Incorporating Ergonomic Aspects into Quantitative Planning	*A. Otto (University of Siegen)*
12:10 – 13:10	*Lunch/Poster Display*			
	Uncertainty of Human-Machine System R. BRUDER			
13:10 – 13:40	Uncertainty as Resources for Human System Integration and Design	*K. Sato (Illinois Institute of Technology)*		
13:40 – 14:00	A Contribution to the Experimental Investigation of Uncertainties in the Decision Making of Tower Controllers	*L. Meyer (TU Dresden)*		
14:00 – 14:20	Investigation of the Human Impact on the Landing of an Airplane	*M. Oberle (TU Darmstadt)*		
14:30 – 14:45	**Closing Remarks**	*P.F. Pelz (TU Darmstadt)*		