



Scientific and technical organization

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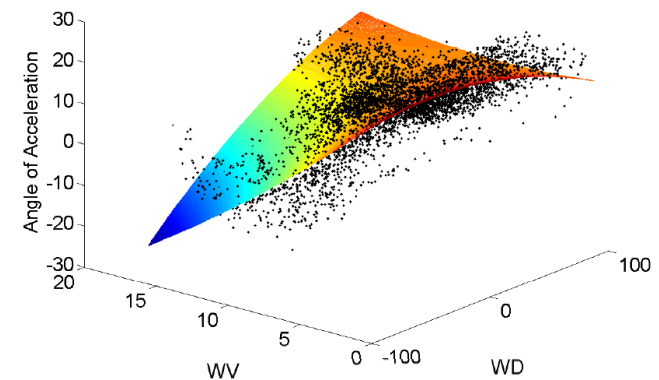
DFG Deutsche
Forschungsgemeinschaft

GRK1462
Summer School

Uncertainty in Modeling

5th - 8th September, 2016
Weimar, Germany

www.uni-weimar.de/grk1462



Uncertainty in Modeling

Modeling is an integral part of most engineering disciplines. There is a broad wealth of modeling techniques that can be considered; the model selection depends on several factors, such as the objective of the analysis and the knowledge about the structure.

However, no matter how elaborate a modeling technique could be, uncertainties in modeling are always present due to the variation of structural parameters. Hence, it is useful to develop methods for assessing the quality of the selected models, using the response data from structures. Moreover, drawing from the theory of structural mechanics, there is strong interaction between the models. Therefore, the coupling quality between the models is also an important matter.

The uncertainty of current modeling techniques is the main focus of the summer school. The terminology covers the following topics:

- Modeling uncertainty in civil and structural engineering;
- Modeling uncertainty in materials science;
- Models in structural health monitoring;
- Reliable infrastructures;
- Model calibration, verification and validation;
- Model updating and optimization;
- Assessment of modeling quality and of data quality;
- Model coupling and coupling uncertainty.

Monday, 5th Sept. 2016

9:00 - 9:15	Opening Uncertainty propagation using polynomial chaos expansion B. Sudret
10:30 - 11:00	Communication break
11:00 - 12:30	Uncertainty quantification platform UQLab B. Sudret
	Lunch break
13:30 - 15:00	Model Calibration, Validation and Uncertainty Quantification in Scientific Computing Sez Atamturktur
15:00 - 15:30	Communication break
15:30 - 17:00	Model Calibration, Validation and Uncertainty Quantification in Scientific Computing Sez Atamturktur
17:00	<i>Sightseeing tour Weimar</i>

Tuesday, 6th Sept. 2016

9:00 - 10:30	Adaptive surrogate modelling in the context of structural reliability J.M. Bourinet
10:30 - 11:00	Communication break
11:00 - 12:30	... Bochum
	Lunch break
13:30 - 19:00	Excursion
19:00	<i>Summer School Dinner</i>

Wednesday, 7th Sept. 2016

9:00 - 10:30	COSSAN-X M. Broggi
10:30 - 11:00	Communication break
11:00 - 12:30	... A. Kareem
	Lunch break
13:30 - 15:00	Computational Methods for Fractures and Application to the Design of New Materials X. Zhuang
15:00 - 15:30	Communication break
15:30 - 17:00	... WEIMAR & Vienna
17:00	<i>Closing</i>

A technical excursion is planned to visit outstanding civil engineering structures in Thuringia.

