

Bauhaus Summer School

023

"Model Validation and Simulation"  
Graduate Courses for Structural Engineering  
Applications

Schriftenreihe des Instituts  
für Konstruktiven Ingenieurbau  
Bauhaus-Universität Weimar



Bauhaus Summer School

# **"Model Validation and Simulation"**

Graduate Courses for Structural  
Engineering Applications

6th – 17th August 2012

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## Foreword

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The past decade has seen a rapid development of numerical methods and sophisticated modelling in different areas of civil engineering, especially in constructions for a sustainable environment. Both scientific approaches and practical solutions using recent developments of data acquisition and data management related to structural engineering and earth sciences are of major interest. Advanced education has to consider that most of the challenging future constructions will require further theoretical and practical developments in a close collaboration of engineering practice and research. The Bauhaus Summer School series provides an international forum for such an exchange of methods and skills related to the interaction between different disciplines of modern engineering science.

The 2012 civil engineering course was held in August over two weeks at Bauhaus-Universität Weimar. The overall aim was the exchange of research and modern scientific approaches in the field of model validation and simulation between well-known experts acting as lecturers and active students. Besides these educational intentions the social and cultural component of the meeting has been in the focus. 48 graduate and doctoral students from 20 different countries and 22 lecturers from 12 countries attended this summer school. Among other aspects, this activity can be considered successful as it raised the sensitivity towards both the significance of research in civil engineering and the role of intercultural exchange.

This volume summarizes and publishes some of the results: abstracts of key note papers presented by the experts and selected student research works. The overview reflects the quality of this summer school. Furthermore the individual contributions confirm that for active students this event has been a research forum and a special opportunity to learn from the experiences of the researchers in terms of methodology and strategies for research implementation in their current work. On behalf of the Faculty of Civil Engineering, Bauhaus-Universität



Weimar, I would like to thank everyone for their contribution to the scientific content, the social events, the organization and the realization of the Bauhaus Summer School 2012. Particular thanks to all the lecturers who spent part of their annual leave to come to Weimar, to Frank Werner and Jochen Schwarz as the initiators, to Lars Abrahamczyk and Daniela Raddi for the excellent organization. In addition, the Faculty of Civil Engineering is extremely grateful for the sponsorship from German Academic Exchange Service (DAAD). The successful Bauhaus Summer School 2012 and this book would not have been possible without this generous financial support.

Weimar, April 2013  
Karl J. Witt, Dean of the Faculty

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