# Call for Papers

## Important Deadlines

- **Submission of Abstracts until**
  December 4, 2017
- **Notification of Acceptance**
  January 26, 2018
- **Early Bird Registration until**
  March 16, 2018
- **Registration for Speakers until**
  April 27, 2018

## Symposium Organization

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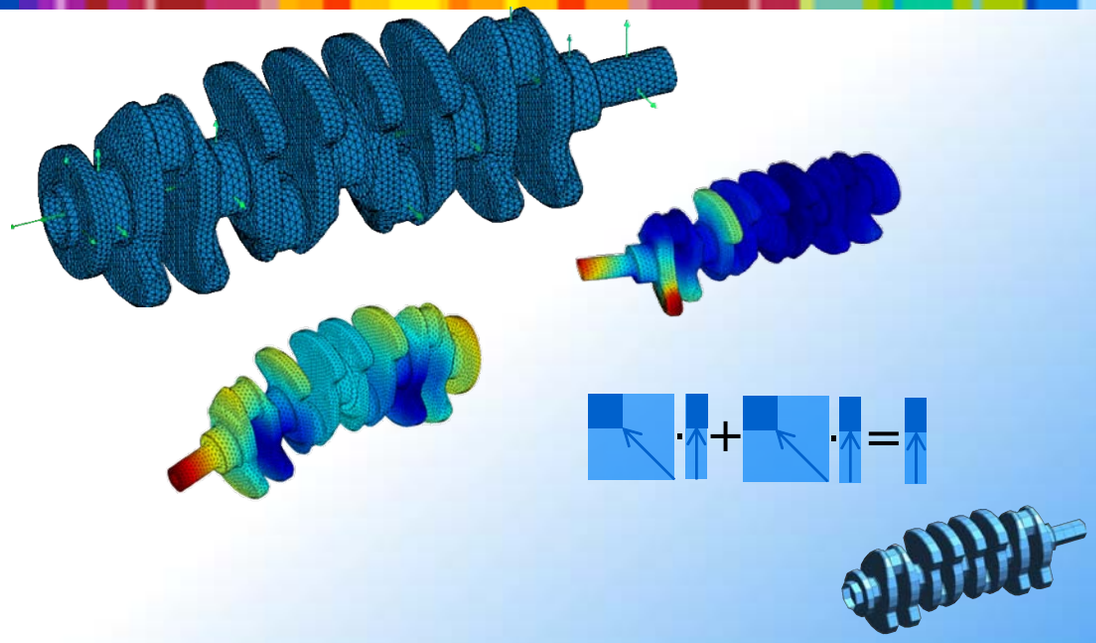

IUTAM Symposium on

# Model Order Reduction of Coupled Systems (MORCOS 2018)

Stuttgart, Germany
**May 22 – 25, 2018**

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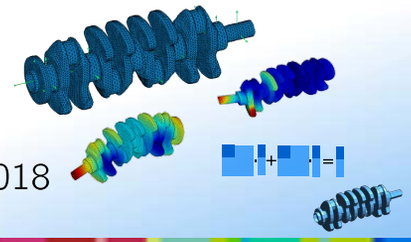

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## Call for Papers

Authors wishing to contribute to the Symposium are invited to submit a two-page abstract, clearly stating the objectives, results and conclusions of the work to be discussed in the presentation. The number of participants will be limited and preference will be given to active researchers in the field. Confirmation of participation in the Symposium by the authors will be required upon acceptance of papers. Only confirmed presentations of registered participants will be included in the final program. This will enable the participants to fully benefit from the contributions and discussions.

## Venue

The conference will take place at the University of Stuttgart, located in the southwest of Germany. The University of Stuttgart was founded in 1829 and is one of the major technically orientated universities in Germany. The conference location will be the campus of the University of Stuttgart in Vaihingen which can easily be reached by public transportation.

## Social Program

The scientific program will be complemented by several social events. Besides a Get-Together and a reception, an excursion with conference dinner will be organized.

## Objectives

For the understanding and development of **complex technical systems** like the

- automotive/aeronautic systems,
- bionic systems,
- mechatronic systems,
- human body,
- civil structures,
- material modeling, or
- multiscale systems,

an integrated, multiphysics, and multidisciplinary point of view is essential. The combination of different physical domains or different subcomponents can increase functionality, allow optimization, and reduce cost. Nowadays, many problems can be solved by simulation within one physical domain, e.g. by using the well-known FE method, where the models can have more than $10^7$ degrees of freedom, based on the meshing of 3D-data from design or CT-scans. However, for correct prediction, optimization, and control of nowaday's complex systems the different simulation domains respectively substructures need to be connected with each other. Frequently, this combination is only possible by using advanced and modern **reduced order models** where the large scale system is approximated with a system of much smaller dimension. Here the most dominant features, **input-output behavior**, **passivity**, **stability**, etc. of the large-scale system are to be retained in the small scale system as much as possible. E.g., parametrized PDEs describing fluids are approximated by Reduced Basis methods which allows an efficient online evaluation based on the current coupling conditions.

## Aims

We aim to bring together renowned experts as well as young promising researchers from **Engineering**, **Mathematics**, and **Computer Science** from the **academic** and **industrial** field. To identify, explore and compare the potentials, challenges, and limitations of recent advances and new approaches in the specific framework of the dynamical and statical analysis of coupled systems with the help of e.g.

- data and system based model order reduction techniques,
- reduced bases,
- interface reduction,
- surrogate modelling,
- tensor-based techniques

Keynote presentations are given by: David Knezevic (Akselos, Cambridge USA), Tommaso Tamarozzi (KU Leuven/Siemens PLM, Belgium), Olivier Brüls (University of Liege, Belgium), Kathrin Smetana (University of Twente, Netherlands)

## Scientific Committee

The Symposium is supervised by:

- Francisco Chinesta, France
- Joerg Fehr, Germany (Chairman)
- Bernard Haasdonk, Germany (Co-Chairman)
- Gianluigi Rozza, Italy
- Anthony Patera, USA
- Will Schilders, Netherland
- Taichi Shiiba, Japan

IUTAM Representative:

- Peter Eberhard, Germany