



IUTAM Symposium on
Co-Simulation and Solver-Coupling

Darmstadt, Germany
September 18 – 20, 2017

www.ad.tu-darmstadt.de/iutam2017



Important Deadlines

- **Submission of Abstracts**
March 31, 2017
- **Notification of Acceptance**
April 28, 2017
- **Early Bird Registration**
June 9, 2017
- **Registration**
July 21, 2017

Symposium Organization

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Sponsors





Residential Palace (Photo: Alex Deppert)
New Baroque Castle



Mathildenhöhe (Photo: Ulrich Mathias)
Famous Art Nouveau Ensemble



Waldspirale (Photo: Alex Deppert)
Designed by Friedensreich Hundertwasser

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. Both the number of participants as well as the number of papers will be limited. The participation of specialists not presenting a paper is also explicitly encouraged. Confirmation of participation in the Symposium by the authors will be required when papers are accepted. Only confirmed presentations of registered participants will be included in the final programme. This will enable the participants to fully benefit from the contributions and discussions.

Venue

The conference will take place at the Technical University of Darmstadt, located about thirty kilometers south of Frankfurt. The Technical University of Darmstadt was founded in 1877 and is one of the most prestigious universities in Germany. The conference location will be the *Campus Lichtwiese*, 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 and Scope

Co-simulation – also called solver or simulator coupling – is a frequently used numerical technique to couple two or more solvers in time domain. One major field of application for co-simulation methods is the analysis of multi-disciplinary problems. Usually, specialized simulation codes exist for different physical disciplines, e.g. FEM codes for structural dynamics analyses, CFD codes for fluid dynamic problems or multibody codes for the dynamic analysis of mechanisms. In order to simulate a coupled multidisciplinary problem, the different codes can be coupled by means of an appropriate co-simulation approach. Simulator coupling is, for instance, successfully applied in the field of fluid/structure interaction, for coupling multibody and hydraulic systems or in the analysis of electromechanical systems. Solver coupling may, however, also be used to analyze monodisciplinary problems in order to parallelize the simulation process.

On the one hand, the symposium focuses on recent advances in the development of numerical methods for solver coupling. Of current interest are - amongst others - the following subjects:

- New explicit, implicit and semi-implicit co-simulation methods (with improved efficiency, accuracy and stability behavior),
- New approaches for realizing variable communication-time grids,
- Advances in the stability and convergence analysis of solver coupling methods.

On the other hand, the symposium intends to pick up recent developments in the practical application of co-simulation methods. Of present interest are, for instance, the following topics:

- New fields of application for solver coupling approaches,
- New developments in the parallelization of dynamic models with co-simulation techniques,
- Standardization of co-simulation interfaces, i.e. standardization of data and model exchange.

Bringing together experts in these different fields from many working groups from all over the world will enable us to review the state-of-the-art, to discuss further activities, to open problems and to promote common research initiatives for the future.

Scientific Committee

The Symposium is supervised by an International Scientific Committee:

- Jorge Ambrósio (Portugal)
- Javier Cuadrado (Spain)
- Aki Mikkola (Finland)
- Dan Negrut (USA)
- Bernhard Schweizer (Germany)
- Taichi Shiiba (Japan)
- Bernd Simeon (Germany)

IUTAM Representative:

- Peter Eberhard (Germany)

