

Thematic scope

In mechanics of materials, high fidelity and simplified simulation models are developed for applications including transportation, energy production, or manufacturing.

Model order reduction methods aim to speed-up simulations while controlling the accuracy and, at the same time, paying attention to additional parameters.

Examples include but are not limited to

- multiscale and/or multiphysics problems,
- uncertain parameters (e.g. geometric/constitutive),
- pronounced nonlinearities (e.g. plasticity, contact),
- path-dependency via history variables or
- random defects (e.g. in damage prediction or fatigue).

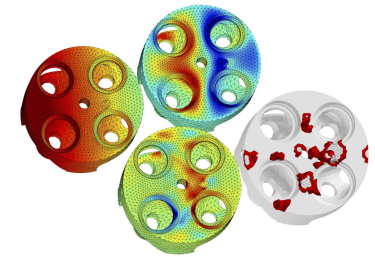
The control of the accuracy and robustness remains a delicate topic in nonlinear reduced order models, especially in the presence of path-dependency. Therefore error estimation and error control constitute a major topic of the colloquium.

Additionally, recent developments making extensive use of data emerging from experiments or from simulations are of particular interest for Reduced Order Models (ROM). They form the second key topic of the colloquium.

Objectives

The EUROMECH Colloquium 597 aims to gather specialists from the fields of mechanics of materials, physics, applied mathematics and data science. Contributions related to the two key topics error estimation/error control and DATA in ROM are particularly welcomed.

Supplementing the two key topics, contributions representing the variety of ROM in Mechanics of Materials and showcasing demanding problem settings and the associated challenges are cordially invited.

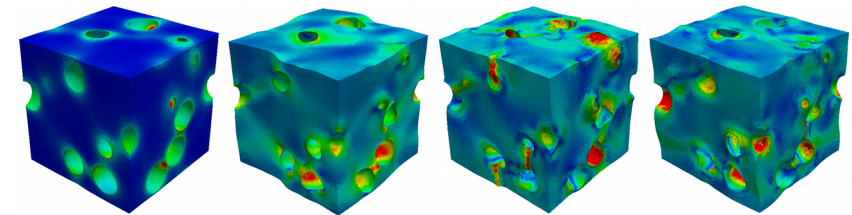


Example topics are tensor based approximations, machine learning, proper orthogonal decomposition, (goal-oriented) error control, hyper-reduction, empirical interpolation method, empirical cubature and nonlinear homogenization.

Author information

The scientific program comprises oral presentations and a poster session. Scientists are strongly encouraged for dual participation (presentation and poster; one abstract suffices).

For abstract submission please refer to the colloquium website including [LaTeX templates](#) [author instructions](#) (597.euromech.org/).



Chairpersons

Dr.-Ing. Felix Fritzen

Efficient Methods for Mechanical Analysis
Institute of Applied Mechanics (CE)
University of Stuttgart, Pfaffenwaldring 7
70569 Stuttgart, GERMANY
Phone +49-711-685-66283
felix.fritzen@mechbau.uni-stuttgart.de

Prof. David Ryckelynck

Centre des Matériaux - MINES ParisTech
CNRS UMR 763363, 65 rue Henry
DESBRUERES, BP 87
F-91003 Evry cedex, FRANCE
Phone +33 1 60 76 31 71
David.Ryckelynck@mines-paristech.fr



University of Stuttgart
Germany



Conference venue

The colloquium takes place in Bad Herrenalb (Germany) which is a spa town in the closer surroundings of Karlsruhe. The venue can easily be reached by public transportation via Karlsruhe from all major cities in Germany, from Paris (TGV, 2,5h) or from Frankfurt international airport (approx. 2h).



Being situated in the Black Forest, Bad Herrenalb provides options for hiking and for sports including cycling, rope climbing and golf. A thermal bath is found in the center of Bad Herrenalb in walking distance (visit also www.badherrenalb.de). The workshop itself takes place in the "Haus der Kirche" (www.hdk.ev-akademie-baden.de).

Registration fees

The conference fee covers the accommodation (three nights) including all meals, coffee breaks and the conference banquet. For Non-EUROMECH members, the fee comprises a one year membership.

registration fee	380 €
reduced fee (up to PhD student)	250 €
discount for EUROMECH members	minus 30 €
late registration (after 31.05.2018)	plus 150 €
cancellation fee	150 €

Important dates

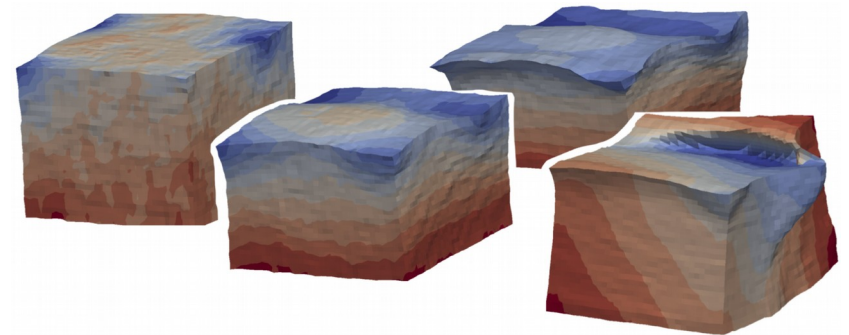
Abstract submission	15.04.2018
Notification of acceptance	30.04.2018
Deadline for registration	15.05.2018
Payment of registration fee	15.06.2018
Publication of preliminary program	15.06.2018

**EUROPEAN
MECHANICS
SOCIETY**

EUROMECH Colloquium 597 on

Reduced Order Modeling in Mechanics of Materials

August 28-31, 2018 ▪ Bad Herrenalb ▪ GERMANY



euomech597@simtech.uni-stuttgart.de
597.euomech.org

The generous support by EUROMECH and by Deutsche Forschungsgemeinschaft (DFG-FR2702/6) is acknowledged.