



University of Stuttgart
Germany



Introduction to Model Order Reduction

Motivation

The simulation of parameterized mechanical systems is computationally challenging. By exploiting the structure of the problem, **model order reduction** (MOR) can help to reduce memory requirements and computing times while preserving reasonable accuracy.

Scope

The course tackles a variety of problem settings and provides basic concepts for (linear) model order reduction of elliptic and parabolic systems and for the prediction of harmonic oscillation modes of hyperbolic systems.

Selected topics

Finite Element method • Schur complement • substructuring
Craig-Bampton scheme • dynamic condensation • projection based MOR
Galerkin projection • ONLINE/OFFLINE decomposition • Proper Orthogonal Decomposition (POD) • Proper Generalized Decomposition (PGD)

The course addresses Master students.

Start of lecture: October 15, 2018

Monday
11:30-13:00
PWR9, V9.31

COMMAS,
CE, SimTech,
ENV, ...

lecture &
computer
lab (6 ECTS)

