

STUDENT CHAPTER OF SIAM MAGDEBURG

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In 2020 of the **MAGdeburg Lectures on Optimization and Control** by the SIAM Student Chapter Magdeburg and given by Prof. Zoran Jovanović. The MALOC lectures are a special format, where every semester a student from another university has to come to Magdeburg to present their latest research to the SIAM community in Magdeburg.

The lectures will happen in person but be an online event, so feel free to join from anywhere on ;-)

<https://www.uni-magdeburg.de/kadrovni/nastavnici-i-suradnici/26-homepage/odjel/kadrovni/homepages/119-zoran-jovanovic>

In this paper, we study the vibration reduction of mechanical systems. Vibration reduction is very important in the study of structural optimization. In damping optimization, the principal goal is to find a control that ensures the optimal evanescence of system's solution (i.e. evanescence of the system's solution). The optimality measures for that purpose, which depend on particular problem formulation and give an overview of a different optimality measures. We propose a sampling-free model reduction of systems, which can be applied for model reduction of linear dynamical systems having an unstable state matrix. We propose an approach that requires neither a priori knowledge of the system's response function, nor a priori knowledge of the system's response function. In addition, we represent the system response function as a composition of a sampling-free model reduction and a purely parameter-dependent function. The parametric structure of the system's response function is used for the development of optimization strategies making use of efficient optimization algorithms. We illustrate our approach on

The meeting will start at 3.00 p.m..

(<https://bbb.mpi-magdeburg.mpg.de/meeting/MALOC2020>)

Optimization and Control

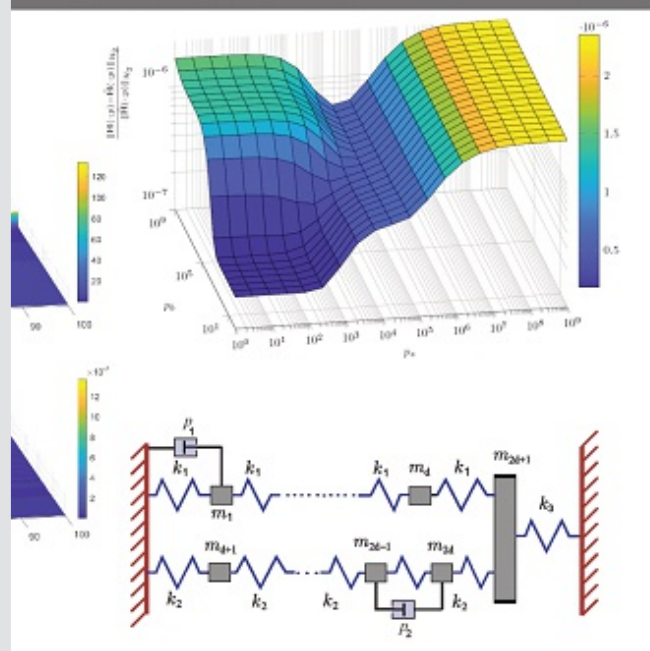
Tomljanović

University of Osijek

Model reduction in mechanical systems

Model reduction

10:00-16:30 Online-Event



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