Chair of Applied Mechanics
Department of Mechanical Engineering
Technical University of Munich

TLIT

Non-intrusive Reduced Order Modelling of Structures in Nonlinear Vibration

Semester Thesis/Master's Thesis

Dynamic simulations of 3D high-fidelity FE models for structural components are computationally intensive. Reduced Order Modelling (ROM) techniques offer significant cost reduction while maintaining accuracy. However, most ROM techniques require intrusive implementation, necessitating specific FE software. Non-intrusive ROM, on the other hand, can be applied using any commercial software, making them more practical for industrial use. The goal is to implement non-intrusive ROM for fast and accurate structural vibration simulation.
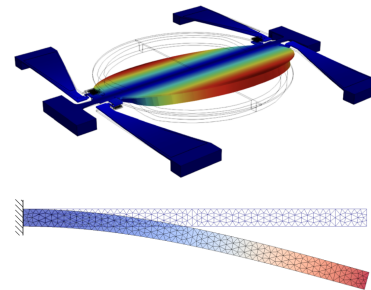
Topics
- Learn nonlinear ROM
- Evaluate accuracy and convergence
- Implement non-intrusive ROM in Abaqus
- Compare with other techniques

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