

Simulation-based optimization considering dynamic systems and/or uncertainty

**Alexander Düster^a, Benedikt Kriegesmann^a, Thomas Rung^a,
Robert Seifried^a, Martin Siebenborn^b, Kathrin Welker^c**

^a Hamburg University of Technology

^b Universität Hamburg

^c Helmut-Schmidt-Universität/University of the Armed Forces Germany

Design optimization in structural mechanics and fluid dynamics is nowadays widely applied in academia and industry. However, industrial applications still mainly apply simulation based optimization strategies to linear (uncoupled) problems or nonlinear steady state operations. The optimization of highly dynamic and/or nonlinear phenomena, the consideration of multiphysics and the treatment of uncertainty are still a challenge.

The mini-symposium aims to bring together experts in the field of shape or topology optimization with applications in fluid dynamics, structural mechanics or coupled problems. We aim to exchange ideas and discuss latest achievements on efficient optimization strategies for (a) transient problems and (b) dynamical systems, for optimization (c) under uncertainty, and for novel approaches to (d) CAD-free shape optimization methods.