Talk announcement

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Structural optimization: past and recent advances

Structural optimization is an essential aspect of engineering that has undergone significant advancements in the past few decades. This talk reviews the past and recent advances in the field of structural optimization, with a focus on sizing optimization, shape optimization, and topology optimization as the current approaches, and dehomogenization as a new approach. With the use of adjoint methods, gradient-based optimization algorithms and homogenization techniques, the structural problem, formulated as a PDE-constrained optimization problem,will be solved using proper numerical techniques including finite elements and level-set methods. Different numerical examples will be presented to demonstratethe effectiveness of the different approaches discussed andtheir practical applications in solving real-world engineeringproblems.