

## EMERGING METHODS FOR LARGE-SCALE AND ROBUST MULTIDISCIPLINARY OPTIMISATION (MDO) FOR INDUSTRIAL APPLICATIONS

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### ABSTRACT

Description: Scalability is a key challenge in today's engineering design optimization. Practical scenarios for industrial application are usually heterogeneously composed and include high-fidelity simulation methods such as coupled CFD-CSM analyses run on HPC computing environments. The efficient computation of sensitivity derivatives has been successfully demonstrated in the past, often with a strong focus on disciplinary adjoint tools.

This minisymposium aims to review the state of the art in integrating the advances in efficient disciplinary sensitivity methods into large scale, complex, and/or coupled industrial scenarios.

In particular, contributions are invited on

- robust design,
- uncertainty treatment,
- frameworks, geometry modelling and tool integration for large-scale MDO,
- Surrogate and reduced-order modelling for MDO,
- Fusion of data-driven techniques, machine learning and classical methods for large-scale optimization.