

Topology and shape optimization for AM-ready design

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Additive Manufacturing (AM) and Topology Optimization (TO) may constitute a perfect marriage. AM provides the geometrical freedom to realize efficient but complex geometries coming out of TO. Nevertheless, the couple must adapt to each other's weak or challenging points. Also, the complex and multidisciplinary nature of design for AM need a wide range of developments requiring involvement of mathematicians, applied mechanics and numerical specialists. Outstanding topics include but are not limited to:

- Efficient/simplified AM modelling schemes for incorporation in TO and shape optimization
- Design-rule based constraints and their incorporation in TO and shape optimization
- Post-processing of TO results for AM
- Automated support design
- Automated infill strategies
- Including process settings and anisotropies in TO
- Multifunctional design for AM
- How to meet industrial requirements (computation time, resolution)

The Invited Session aims at bringing together researchers and developers from academia and industry to discuss state-of-the-art and future needs in this rapidly growing field.