

Numerical methods for Additive Manufacturing

Scientific area: Industrial Applications and Challenges

Additive Manufacturing (AM) technologies are undergoing exponential growth in many engineering fields, from aerospace to biomedical applications, from fashion to the food industry. The main benefit of this technology is the possibility to design the product such that it is optimized for a specific function. The manufacturing constraints are dramatically reduced and the designer can finally focus on the intended application of the part rather than on its manufacturability.

As a direct consequence of AM diffusion, there is an increasing necessity of a deeper understanding of the complex process-structure-property relationships occurring in AM to optimize the manufacturing process parameters as well as to generate an optimal design of 3D printed structures. This Symposium aims at presenting and discussing the most recent results in the field of AM. It addresses, but is not limited to, the following topics:

1. AM material modelling
2. Topology optimization and AM design
3. Advanced numerical techniques for AM
4. AM product simulations
5. AM process simulations
6. Uncertainty Quantification

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