9th GACM
Colloquium on Computational Mechanics
for Young Scientists from Academia and Industry
September 21 to 23, 2022 in Essen, Germany
gacm German Association for Computational Mechanics

MS 12
Scientific machine learning in computational mechanics

Alexander Heinlein, Matthias Möller

TU Delft, The Netherlands

In recent years, scientific machine learning has become an established tool in computational mechanics. This includes but is not limited to

- deep neural networks for differential equations,
- data-driven modelling and simulation,
- reduced-order and surrogate modelling,
- learning-based model discovery,
- geometric deep learning,
- ...

This mini-symposium invites contributions about combining classical numerical methods with machine-learning techniques and/or using scientific machine-learning as standalone tools to solve challenging problems from all application fields in computational mechanics. We in particular welcome contributions from young researchers and/or unconventional approaches that open up new paths for machine learning in computational mechanics.

This mini-symposium aims at bringing together experts from the multidisciplinary field of scientific machine learning, enabling lively discussions and fruitful exchange of ideas. The focus should be on demonstrating novel algorithms, concepts, and modelling techniques.