

Title:

Data-driven mechanics for inelastic material behaviours - recent advances and perspectives

Organizers:

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Abstract:

This invited session deals with data-driven approaches concentrating on the inelastic behaviour of materials in solid mechanics. Therefore, all topics focusing on the processing and usage of large data sets for finite element simulations are kindly invited. Especially, when it comes to time-dependent or path-dependent material behaviour, the challenge of creating and using data sets becomes more crucial. Central questions to be addressed during this session are how to identify suitable history variables from experimental measurements and what is the best and most efficient way to use these data sets in simulations. The session focusses on but is not limited to approaches which try to circumvent the step of material modelling by using the data directly in computations. Presentations and discussions about related machine learning approaches are highly welcome.