

## Scope of the GAMM AG DATA

The GAMM AG Data aims at coordinating the activities of the members of the International Association of Applied Mathematics and Mechanics (GAMM) in the field of data-based modeling, simulation and analysis in the context of microstructured materials.

In recent years, the field of imaging based experimental methods has experienced significant technological improvements. For instance, the quality and the speed of computed tomography based imaging techniques have advanced considerably, while at the same time, X-ray computed tomography devices are now available in many research facilities. By virtue of the obtained three-dimensional images, microstructures of modern natural and artificial materials can be analyzed and used directly in numerical simulations. Incorporating three dimensional microstructure data is, however, highly non-trivial from a numerical point of view. Special data-processing techniques that are able to operate on billions of unknowns, are required. Developing algorithms and data processing techniques for processing three-dimensional data sets constitute major topics within the GAMM AG Data. Innovative image processing techniques for automatic phase segmentation and microstructure reconstructions are of equal importance.

## Objectives of this workshop

- To discuss the state of the art and recent trends in data-driven approaches
- Extensive online poster sessions, allowing detailed discussions and exchanges

## Topics of this workshop

- data-supported modeling of the constitutive behavior of materials
- data-driven simulation techniques
- machine learning tools for materials engineering
- high-performance data-processing
- microstructure generation, simulation and analysis, e.g., via machine learning or AI tools

# 12th GAMM AG Data Workshop

Online (ZOOM)

Dec 18, 2024



## Preliminary schedule

The workshop is planned to take place on Dec 18 from 09:00 until 13:00, including talks (20 – 25 min each) and a get-together afterwards (via Gather Town), providing the possibility for extensive discussions/interactions.

## Dates

Abstract Submission:	Dec 13, 2024
Registration	Dec 16, 2024
Online Workshop:	Dec 18, 2024



University of Stuttgart  
Institute of Applied Mechanics (CE)

## Organizers of the workshop

*Prof. Dr.-Ing. Benjamin Klusemann*  
Institute for Production Technology  
and Systems  
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Institute of Material  
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## Abstract & Registration

Please submit your abstract (max. 250 words PDF) until Dec 13 to the email address

[benjamin.klusemann@leuphana.de](mailto:benjamin.klusemann@leuphana.de)

The template is provided on the following website  
<https://www.mib.uni-stuttgart.de/dae/ag-data>

For registration, please send an email until Dec 16, 2024 to

[benjamin.klusemann@leuphana.de](mailto:benjamin.klusemann@leuphana.de)

Please provide the following information

- Title, Name, First Name:
- Institution:

**Participation is free of charge!**