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 voxel 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 of the GAMM AG Data. Innovative image processing techniques for automatic phase segmentation and microstructure reconstructions are of equal importance.

TOPICS OF THE WORKSHOP

— data-supported modeling of the constitutive behavior of materials
— data-driven simulation techniques
— high-performance data-processing
— microstructure generation and analysis

OBJECTIVES OF THE WORKSHOP

— To discuss the state of the art and recent trends in computational and experimental research
— To plan the AG Data activities
— Explore possible collaborations with DGM
— Lab tours with focus on modern experimental techniques for microstructure characterization at the Helmholtz-Zentrum Geesthacht

ORGANIZERS OF THE WORKSHOP

Prof. Dr.-Ing. habil. Benjamin Klusemann  
Institute of Product and Process Innovation  
Leuphana University of Lüneburg  
Institute of Materials Research, Materials Mechanics  
Helmholtz-Zentrum Geesthacht

Dr.-Ing. Dipl.-Math. techn. Felix Fritzen  
Emmy-Noether-Group EMMA  
Institute of Applied Mechanics, University of Stuttgart
KEYNOTE SPEAKERS

— Prof. Michael Ortiz, California Institute of Technology, USA and Rheinische Friedrich-Wilhelms-Universität Bonn
— Prof. Alexander Hartmaier, Interdisciplinary Centre for Advanced Materials Simulation, Ruhr-University Bochum and Chairman DGM Executive committee

PRELIMINARY SCHEDULE

— 3rd May 2018
  10:00 h (optional) City tour Lüneburg
  12:00 h Informal get together and lunch
  13:00 h Start of workshop
  19:00 h Workshop dinner in Lüneburg

— 4th May 2018
  08:30 h Bus transfer to Geesthacht
  09:15 h Start of workshop in Geesthacht
  12:30 h Lunch
  13:30 h Lab tour Helmholtz-Zentrum Geesthacht
  16:00 h Transfer to Lüneburg/Hamburg

ABSTRACT

Please submit the abstract (max. 250 words, LaTeX and PDF) until 15.3.2018 to the email address i.kanzler@leuphana.de

The template is provided on the following website » www.mechbau.uni-stuttgart.de/EMMA/ag-data

DGM ARBEITSKREIS MIKROSTRUKTURMECHANIK

The DGM Arbeitskreises Mikrostrukturmechanik (Prof. Dr. Dr. h. c. Siegfried Schmauder) will hold its meeting on Wednesday 2.5.2018 at the Helmholtz-Zentrum Geesthacht (organized by Ingo Scheider). All participants are encouraged and invited to attend this workshop as well. The participation will be free of charge. For all participants, an optional city tour through Lüneburg will be organized on Thursday morning before the 4th Workshop of GAMM AG Data starts. More information will be made available after registration.

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