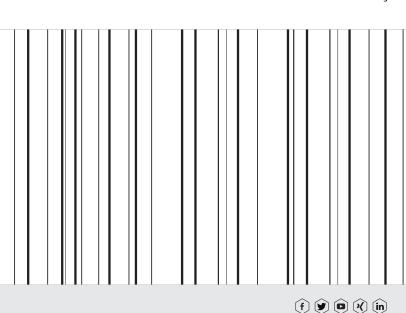




# 4<sup>TH</sup> WORKSHOP OF THE GAMM AG DATA Lüneburg/Geesthacht May 3 – 4, 2018



» www.leuphana.de/ppi

# GAMM ACTIVITY GROUP DATA-DRIVEN MODELING AND NUMERICAL SIMULATION OF MICROSTRUCTURED MATERIALS

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.



### 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

## **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

#### VENUE

May 3<sup>rd</sup> Leuphana University of Lüneburg Universitätsallee 1, C 40.704 (Central Building) 21335 Lüneburg

#### May 4<sup>th</sup>

(bus transfer will be offered free of charge) Helmholtz-Zentrum Geesthacht Max-Planck-Straße 1, Building 27, Großer Hörsaal 21502 Geesthacht

HOW TO GET TO THE UNIVERSITY
» www.leuphana.de/en/services/travel-directions

#### Helmholtz-Zentrum Geesthacht Zentrum für Material- und Küstenforschung

# **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

### PRELIMARY SCHEDULE

| — 3 <sup>rd</sup> 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           |
| — 4 <sup>th</sup> 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 Geetshacht (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 4<sup>th</sup> Workshop of GAMM AG Data starts. More information will be made available after registration.

REGISTRATION Please register by email until 30.3.2018 to i.kanzler@leuphana.de

Please provide the following information

- Title, Name, First Name
- Institution, Postal address
- Telefon

#### CONFERENCE FEE

The workshop fee of EUR 100 covers workshop participation, printed program / book of abstracts, coffee breaks, workshop dinner, lunches.

Please transfer the amount by April 1st, 2018 latest, to the following account: Bank: Norddeutsche Landesbank Account holder: Leuphana Universität Lüneburg BIC / SWIFT: NOLADE2H IBAN: DE64 2505 0000 0106 0322 61 Reference line: GAMM AG Data, In favor of: 84400022

# The abstract submission deadline has been extended to 15.03.18!

| 15.3.2018   |
|-------------|
| 19.3.2018   |
| 30.3.2018   |
| 3.54.5.2018 |
|             |



Leuphana University of Lüneburg Prof. Dr.-Ing. habil. Benjamin Klusemann Institute of Product and Process Innovation Volgershall 1

21339 Lüneburg, Germany Fon 04131-677-5141, Fax 04131-677-5300 benjamin.klusemann@leuphana.de