

ORGANISERS

Capriccio Group

**Sebastian
Pfaller**



*Multiscale
Simulations of
Polymers*

**Maximilian
Ries**



*Interphases
in Polymer
Nanocomposites*



**Wuyang
Zhao**



*Multiscale
Fracture
Simulations*

**Lukas
Laubert**



*Modelling of
Bio-based
Polymers*

**Felix
Weber**



*Fracture
in Molecular
Systems*

Head of the Capriccio Group

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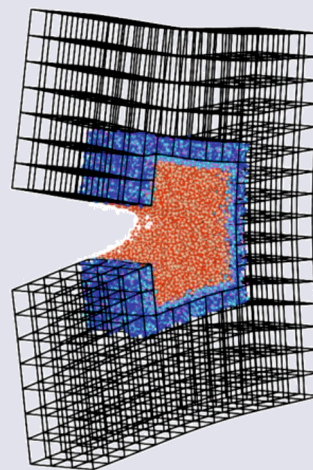
REGISTRATION

If you would like to attend the 2nd Capriccio Special Seminar, please register here:



www.capriccio.research.fau.eu/2024/04/06/css02/

*We are looking forward
to welcoming you!*



Friedrich-Alexander-Universität
Technische Fakultät

Capriccio Group

2nd virtual Capriccio Special Seminar



**Approaching Fracture in
Experiments, Modelling,
and Simulations
across the Scales**

April - July 2024

Online via Zoom



INVITED LECTURERS

Sylvain Patinet

Laboratoire PMMH, ESPCI, France



plasticity and failure in disordered materials

Michael Falk

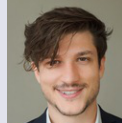
Johns Hopkins Whiting School of Engineering, USA



mechanics in driven non-equilibrium systems, shear transformation zone theory

Tobias Laschütza

Karlsruher Institut für Technologie (KIT), Germany



fracture and damage mechanics, material models for polymer materials

Eran Bouchbinder

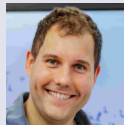
Weizmann Institute of Science, Israel



non-equilibrium, condensed-matter & basic glass physics, amorphous plasticity, dynamic fracture

Franz Bamer

RWTH Aachen, Germany



mechanics and failure of organic glasses across the scales

Samit Roy

University of Alabama, USA



multi-scale multi-physics modeling and performance prediction

Frederik van Loock

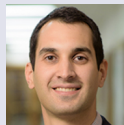
Eindhoven University of Technology, The Netherlands



processing and mechanics of polymer-based materials

Sinan Keten

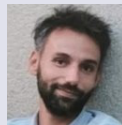
Northwestern University, USA



nanostructured polymeric materials

David Richard

Université Grenoble Alpes, Université Gustave Eiffel, France



phase transition and failure mechanisms in amorphous solids

PROGRAMME

In the 2nd Capriccio Special Seminar (CSS), we aim to establish a link between experimental observations and numerical analyses focusing on the physics of fracture in glassy materials, including inorganic and polymeric glasses as well as polymer composites. The seminar will cover recent advances in modeling, simulation, and experimental investigation of phenomena at various length and time scales, from the micro to the macro scale.

This event is a series of weekly talks by experts tackling the aforementioned issues from experimental and numerical viewpoints.

Thursday, April 25th, 2024, 4:00 - 5:30 pm (CEST)

Sylvain Patinet

Numerical modeling of plasticity in amorphous solids

Thursday, May 2nd, 2024, 4:00 - 5:30 pm (CEST)

Michael Falk

Toward predicting mechanical response and failure in additively manufactured metallic glass parts

Thursday, May 16th, 2024, 4:00 - 5:30 pm (CEST)

Tobias Laschütza

Studying cyclic mode I crack growth with a molecular dynamics informed continuum micromechanical crazing model

Thursday, May 23rd, 2024, 4:00 - 5:30 pm (CEST)

Eran Bouchbinder

The key roles played by quenched disorder in resolving 3D fracture puzzles

PROGRAMME

Thursday, June 13th, 2024, 4:00 - 5:30 pm (CEST)

Franz Bamer

Mechanics of network glasses

Thursday, June 27th, 2024, 4:00 - 5:30 pm (CEST)

Samit Roy

To be announced

Thursday, July 04th, 2024, 4:00 - 5:30 pm (CEST)

Frederik van Loock

Amorphous plasticity at the mesoscale: Development of a shear transformation zone-based numerical model

Thursday, July 11th, 2024, 4:00 - 5:30 pm (CEST)

Sinan Keten

Molecular investigations of fracture in polymer and nanoparticle networks

Thursday, July 18th, 2024, 4:00 - 5:30 pm (CEST)

David Richard

To be announced

The 90 minutes Zoom-seminars comprise a 45 minutes talk and a subsequent discussion to allow scientific exchange.