

## CONTACT

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If you would like to participate in the symposium, please register by **November 24, 2021** at the latest.



The online registration form can be found here:

[www.frascal.research.fau.eu/events-2/1st-frascal-virtual-symposium/](http://www.frascal.research.fau.eu/events-2/1st-frascal-virtual-symposium/)

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Research Training Group  
GRK 2423

# Fracture across Scales

## 1st (virtual) FRASCAL Symposium

Friday, November 26, 2021

Online



**FRASCAL**  
  
**GRK 2423**

# INVITED LECTURERS

## Bernd Meyer

Computational  
Chemistry



*Chemistry at the  
Crack Tip*

## Paul Steinmann

Applied Mechanics



*Configurational  
Fracture/  
Surface Mechanics*

## Sebastian Pfaller

Applied Mechanics



*Fracture in  
Thermoplastics:  
Discrete-to-  
Continuum*

## Erik Bitzek

General Material  
Properties



*Atomistics of  
Crack-Heterogeneity  
Interactions*

## Stefano Zapperi

Materials Simulation



*Mechanical  
Metamaterials*

## Sigrid Leyendecker

Applied Dynamics



*Adaptive Dynamic  
Fracture  
Simulation*

Within the framework of this symposium, the principal advisors of the GRK 2423 FRASCAL projects will contribute their own insights into the fracture problem from a higher-level perspective in six presentations and provide a basis for stimulating discussions and interaction with colleagues from around the world.

# PROGRAMME

**09:15 – 09:20 WELCOME & INTRODUCTION**

**09:20 – 10:05 Bernd Meyer**

*Implications of Local Atomic Relaxations at the Crack Tip and the Inner Surfaces on Crack Propagation*

**10:05 – 10:50 Paul Steinmann, Andrew McBride, Ali Javili**

*Fracture Simulations by Peridynamics Revisited: A Continuum-Kinematics-Inspired Approach*

**10:50 – 11:05 BREAK**

**11:05 – 11:50 Stefano Zapperi**

*Predicting the Failure of Silica Glasses*

**11:50 – 13:00 BREAK**

**13:00 – 13:45 Erik Bitzek**

*Atomistic Simulations of Crack-Microstructure Interactions in Metals*

**13:45 – 14:30 Sebastian Pfaller**

*Multiscale Simulation of Polymer Fracture: Current Advancements and Challenges*

**14:30 – 14:45 BREAK**

**14:45 – 15:30 Sigrid Leyendecker**

*Towards Variational Multirate Integration for Dynamics on Different Time Scales in a Phase Field Model of Fracture*