Workshop on
Phase separation, damage and fracture

September 21–23, 2011

Weierstrass Institute
for Applied Analysis and Stochastics
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www.wias-berlin.de/workshops/damage11

Phase separation processes, damage phenomena and crack propagation occur in many materials and devices of every day life. They can lead to a reduced functionality up to the failure of the complete structure. The knowledge and modeling of the mechanisms inducing phase separation, damage and fracture is of great importance for technological applications. In this way, predictions can be made on the life-time of the structure and material properties can be optimized.

Damage phenomena are caused by different physical processes (e.g. mechanical loading, change of temperature, chemical processes, phase separation) and take place on different time and length scales. Phenomenological damage models are often formulated by means of phase field models which are coupled with other physical processes. There are various challenges concerning the modeling, the analysis and the numerical simulation of such coupled systems.

The workshop aims to bring together researchers from mathematics and material science in order to discuss and compare different techniques and to develop new approaches in the above field. The following topics will be addressed:

- Modeling and analysis of phase separation and damage processes

- Modeling of microstructure evolution, coupling with further physical processes

- Sharp interface and crack propagation models

- Numerical issues in this field

support

Weierstrass Institute for Applied Analysis and Stochastics
DFG Research Center MATHEON

organizers

Dorothee Knees, Christiane Kraus

program

Lectures are scheduled from Wednesday morning until Friday afternoon. The lecture time is 30 min. Additionally, a poster session is planned.

conference fee

The conference fee of 40 € covers break refreshments, a conference dinner and a booklet of abstracts.
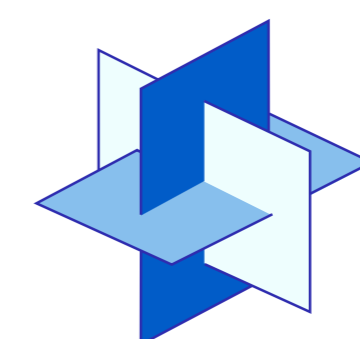
registration deadline

The deadline for registration and abstract submission is July 31, 2011.
Please use the form on
www.wias-berlin.de/workshops/damage11

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