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NUMERICAL MODELING OF DAMAGE EVOLUTION AND PROPAGATING DISCONTINUITIES IN SOLIDS AT FAILURE

CHRISTIAN LINDER[*], EKKEHARD RAMM[†]

[*] Civil and Environmental Engineering Department, Stanford University, USA
linder@stanford.edu
[†] Institute of Structural Mechanics, University of Stuttgart, Germany
ramm@ibb.uni-stuttgart.de

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ABSTRACT

The objective of this minisymposium concentrates on the development of models and numerical techniques for simulating failure in solids as well as exploring the various physical phenomena in fracture processes.

The following selected keywords serve exemplary as guideline for potential contributions:

- cohesive, embedded, and extended finite element formulations
- phase field models of diffusive damage evolution
- discrete element and particle methods
- crack propagation and shear band evolution techniques
- atomistic simulations of solids at failure
- scale bridging techniques and homogenization methods
- failure in materials with electric, magnetic, or chemical coupling
- failure and self-healing mechanisms in biological materials