

Fracture: interface models and phase field approaches

Organizers:

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The objective of this mini-symposium is to provide a forum for the in depth discussion of new and recent methods for the description of fracture phenomena at different scales and in different materials. Specifically, the focus will be on the treatment of fracture surfaces as spatially diffuse interfaces, localized damage zones or pre-defined paths of discontinuities. Topics of interest include amongst other

- Regularizations and approximations of crack discontinuities
- Phase-field approaches to brittle and ductile fracture
- Variational and multiscale models for fracture
- Adhesion of solids
- Modeling of friction and adhesion at the interface between materials

Special attention shall be devoted to techniques that combine continuous and discontinuous models and provide a realistic description of the entire failure process from the initial diffuse stage to fully localized rupture. In particular, applications to enhanced structured and composite materials, characterized by internal length scales and exhibiting non-local behaviors fit the topics of the minisymposium.

Contributions are welcome both on theoretical, numerical and experimental aspects from scientists working in mathematics and mechanics.