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Enriched finite-element formulations for fracture

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ABSTRACT

In recent years there has been a growing interest regarding the numerical modeling of fracture in mechanical problems. For that purpose, several innovative approaches, using element or nodal enrichment strategies, were proposed. The aim of this minisymposium is to address all these enrichment techniques, both from a theoretical and a practical perspective. The topics to be covered include, but are not limited to:

- embedded and generalised/extended finite element formulations for cracks or heterogeneities;
- modeling of material interfaces and/or microstructure of a material;
- computational efficiency, convergence and stability of enriched elements;
- new techniques to overcome convergence problems in the modeling of fracture in brittle and granular materials;
- enriched elements for coupled processes, such as corrosion, thermomechanical problems etc.;
- 3D and large scale problems.

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