Title:

New Approaches for Modelling and Identification of Localization Phenomena

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Abstract:

Localization phenomena are frequently observed and analysed within the structural mechanics and mechanics of materials. Examples include crack branching and crack spiders formation for brittle materials subjected to dynamic loading, crushing of foams under compression, strain localization in the course of inelastic deformation of metals and alloys, crazes and fibrils in polymeric materials, etc. In the last years many advances and new results in modelling and identification of localization phenomena were established, in particular:

- Gradient enhanced and phase field models for localization phenomena of plasticity, damage and fracture
- Peridynamics modelling of damage and fracture
- Innovative numerical techniques to treat localization problems
- New experimental methods, such as DIC, for analysis and identification of localization phenomena