

## Computational Failure Mechanics

MiniSymposium dedicated to Howard L. Schreyer

on the occasion of his 60<sup>th</sup> birthday

To be held at the Sixth U.S. National Congress on Computational Mechanics  
Wednesday-Saturday, August 1-4, 2001, Hyatt Regency Dearborn Michigan, USA

Congress Website: <http://www.usnccm.org>

Organizers: F. ARMERO, P. STEINMANN, AND K. WILLAM

During this last decade, there have been important advances regarding the characterization of the final stages of the deformation of materials. However, many theoretical and computational challenges remain open to a large extent in the analysis and numerical simulation of the failure of solids and structures. The goal of this MiniSymposium is to provide a forum for the presentation and discussion of the different approaches to handle these problems.

### Contributions are solicited in the following areas:

- Damage and plasticity models for failure prediction.
- Mathematical characterization of strain localization in inelastic materials.
- Regularization techniques: rate dependent, nonlocal, micropolar and higher-gradient continua.
- Discontinuous and decohesive approaches.
- Numerical simulation of discrete fracture and fragmentation.
- Finite elements incorporating singularities.
- Adaptive finite element techniques for the resolution of failure.
- Failure analysis using meshfree methods.
- Characterization of failure in coupled settings (adiabatic shear banding and porous media).
- Failure and collapse in dynamic and impact problems.
- Multiscale failure analysis at micro-, meso- and macro-scales.
- Probabilistic aspects of failure and their numerical implementation.
- Integration algorithms for softening plasticity/damage.

### Instructions:

If you are interested in contributing to this MiniSymposium, please submit a one-page abstract of up to 400 words *by e-mail* to P. Steinmann (European contributions) or F. Armero (US and elsewhere contributions) as listed below *by January 31, 2001*. Abstracts sent by Fax or regular mail will not be considered.

The preferred format of the abstract is Adobe PDF. Alternate formats include: (1) plain text, (2) LaTeX format, or (3) Word document. Graphics are permitted only if you submit a PDF file. If the abstract is co-authored it must identify the e-mail of the corresponding author. All subsequent correspondence will take place by e-mail.

Abstracts deemed to fit the scope and objectives of the Symposium will be communicated to the Congress organizers by March 15, 2001, and notification of acceptance will be given by e-mail to the corresponding author. A final version for inclusion in the printed book of Abstracts may be submitted before May 31, 2001. This final form is to be sent directly to the Congress e-mail address following the instructions posted on the congress website.

Although there will be no Congress Proceedings, papers presented at the MiniSymposium will be due August 1, 2001 for publication in a special issue of a leading journal dedicated to Howard L. Schreyer on the occasion of his 60<sup>th</sup> birthday.

**MiniSymposium Organizer Addresses:**

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