

MiniSymposium on Computational Failure Mechanics

To be held at the Fifth U.S. National Congress on Computational Mechanics
Wednesday-Friday, August 4-6, 1999, University of Colorado at Boulder, CO, USA

Symposium Organizers: F. ARMERO, P. STEINMANN, H.L. SCHREYER 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 including: rate dependent, nonlocal, micropolar and higher-gradient continuum theories.
- 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.
- Failure at micro-, meso- and macro-scales, and its multi-scale computational treatment.
- Probabilistic aspects of failure and their numerical implementation.
- Integration algorithms for softening plasticity/damage.

Submission 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 November 16, 1998*. Abstracts sent by Fax or regular mail will not be considered.

Abstracts may be submitted in one of three forms: (1) plain text, (2) \TeX source compatible with the Plain \TeX format, or (3) Word 6 or 7 document in Rich Text Format (RTF). Please *do not* include figures or graphics. Avoid equations in title or text. Greek letters are acceptable if the abstract is submitted in \TeX or Word. For samples of forms (1) and (2) please follow the links in

<http://civil.colorado.edu/usnccm99/Abstracts.d/Information.html>

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 January 15, 1999, 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 15, 1999. This final form is to be sent directly to the Congress e-mail address following the instructions posted on the Web site.

Although there will be no Congress Proceedings, papers presented at the MiniSymposium will be due August 4, 1999 for publication in a special issue of the International Journal of Solids and Structures, upon acceptance after passing the review process.

Please go to next page for addresses

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Congress Program and Registration Information

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