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ANNOUNCEMENTS

FOURTH INTERNATIONAL CONFERENCE ON NUMERICAL METHODS IN FRACTURE MECHANICS

La Mansion del Rio Hotel, San Antonio, Texas, U.S.A., 22–26 *March* 1987

Organizing committee

A. R. Luxmoore,	University College Swansea, U.K.
D. R. J. Owen,	University College Swansea, U.K.
M. F. Kanninen,	Southwest Research Institute, U.S.A.

Invited lectures

S. N. Atluri,	Georgia Institute of Technology, U.S.A.
R. S. Barsoum,	Army Materials Technology Lab, U.S.A.
Z. P. Bazant,	Northwestern University, U.S.A.
D. Broek,	FractuResearch, U.S.A.
J. L. Chaboche,	ONERA, France
G. T. Hahn,	Vanderbilt University, U.S.A.
J. W. Hutchinson,	Harvard University, U.S.A.
A. R. Ingraffea,	Cornell University, U.S.A.
J. F. Knott,	Cambridge University, U.K.
R. M. McMeeking,	University of California at Santa Barbara, U.S.A.
J. T. Oden	University of Texas at Austin, U.S.A.

Objectives

The objective of the conference is to consolidate the recent advances made in numerical fracture mechanics since the last conference held in this series at Swansea in 1984. Numerical techniques, such as the finite element and boundary integral methods, are extensively employed in crack growth and fracture predictions and very often offer the only means of solution for practical engineering problems. It is, therefore, essential to ascertain that such techniques accurately model the fracture process. In order to accomplish the modeling properly, the numerical analyst must have an appreciation of the physical nature of these processes, especially for non-linear material behavior and dynamic situations. Because the combination of numerical and experimental work is so important, in addition to in-depth treatments of current computational techniques, this conference particularly aims to bring the computational community together with the leading fracture mechanics researchers.

The conference will act as a forum for engineers and scientists from diverse disciplines in order that a cross-fertilization of ideas can be effected. It will address the theoretical bases and the practical techniques involved in the computation of crack initiation, subcritical growth, stable growth, rapid propagation and arrest, and will encompass linear elastic, elastic–plastic, viscoplastic and dynamic conditions. Papers describing the practical application of numerical fracture mechanics technology to metallic, polymeric or composite materials, and that perform and verify engineering structural integrity assessments of all kinds, will also be welcome.

A minimum of eight technical sessions are envisaged, each initiated with an invited lecture by a distinguished contributor to that particular aspect of the subject. The presented papers will be collected in a proceedings volume that will be provided to the participants at the time of the conference. A work-in-progress session that will provide an opportunity for current research and applications to be discussed without publication is also planned.

The spectrum of interest of contributors will be integrated within the following subject groups.

LINEAR ELASTIC FRACTURE MECHANICS will include efficient approaches for linear elastic boundary value problems, innovative numerical and graphics techniques, boundary element approaches, and singular element formulations.

NON-LINEAR FRACTURE ANALYSIS will include elastic–plastic and viscoplastic approaches to fracture prediction in elastomers and in ductile materials under stable and unstable crack growth conditions with the further possibility of large deformation behavior.

FATIGUE CRACK GROWTH will include methods that can cope with fatigue induced cracking in spectrum loadings, and combined fatigue and environmentally affected cracking.

DYNAMIC FRACTURE PROBLEMS will include numerical modeling of fundamental fracture mechanisms and the associated development of efficient numerical solution techniques for crack initiation under intense and rapidly applied loadings, and to rapid crack propagation and crack arrest.

DISCRETE MODELING will include applications of new and innovative computational methods for ceramics and other brittle materials, fiber reinforced composites, concrete, rock, and cracking in weldments, and other multi-phase materials.

CREEP CRACKING AND RUPTURE SIMULATION will include both continuous damage concepts and macroscopic fracture models for materials exhibiting time, temperature, and environmentally influenced behavior.

PRACTICAL APPLICATIONS in which numerical techniques are employed for fracture assessment in practical situations, such as aerospace vehicles, nuclear pressure vessels and piping, cryogenic storage tanks, gas transmission pipelines, armor and anti-armor devices, and railroad wheels and track.

For the convenience of North American researchers, further information can be obtained from: M. F. Kanninen, Engineering and Materials Sciences Division, Southwest Research Institute, PO Drawer 28510, San Antonio, TX 78284, U.S.A. (Tel. 512-522-3248).

IUTAM/ICM SYMPOSIUM YIELDING, DAMAGE AND FAILURE OF ANISOTROPIC SOLIDS ANTONI SAWCZUK IN MEMORIAM

Grenoble (France), 24–28 *August* 1987

Scientific committee

Prof. J. P. Boehler (France), Co-Chairman
Dr V. Tvergaard (Denmark), Co-Chairman
Prof. P. Germain (France)
Prof. Z. Hashin (Israël)
Prof. H. Lippmann (F.R.G.)
Prof. E. T. Onat (U.S.A.)
Prof. Y. S. Podstrigach (U.S.S.R.)
Prof. A. J. M. Spencer (U.K.)
Dr R. Talreja (Denmark)
Prof. J. Willis (U.K.)

Scope and purpose

Natural materials such as soils, rocks, bones and wood, as well as artificial materials such as metals, fibre-reinforced composites and laminates, possess innate or deformation induced *oriented* microstructures, which give rise to evolving anisotropy in macroscopic behaviour, up to failure. The inelastic behaviour of such anisotropic solids, in the presence of yielding, damage and failure, is of importance in modern technology and therefore has attracted increasing research interest in constitutive laws, methods of analysis, experiments and design.

The various types of natural and deformation induced anisotropies influence, in an