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Preface

THE MECHANICAL and structural requirements posed by new branches of technology are a great challenge and stimulus to the development of fracture problems.

The answer to many considerations of construction safety undoubtedly lies within the realm of fracture mechanics.

It reveals the importance of fracture problems in situations where the response of a material is inelastic.

These problems constituted the topics of the Euromech Colloquium 117 on "Flow and Fracture of Inelastic Materials", Jabłonna 6–9, 1979, sponsored by the Institute of Fundamental Technological Research, Polish Academy of Sciences.

The main purpose of this Colloquium was to bring together scientists who were actively engaged in studying the above mentioned problems and to focus discussions on different fracture modes.

The meeting concentrated on the theoretical and experimental analysis of fracture phenomena in cases when failure is preceded by plastic flow. Of particular interest were contributions on the constitutive equations for inelastic materials, localization of plastic deformations, thermal and strain rate effects, fracture under cyclic loading, instabilities of plastic flow, criteria of ductile fracture, dynamics of cracks and creep rupture. Original numerical methods in fracture mechanics were also considered.

The papers presented at the Colloquium were of an inventive character and contained valuable remarks.

The Editorial Board of the Archives of Mechanics kindly offered to publish a special colloquium issue of the journal in order to assemble the papers presented at the meeting which have not appeared as yet in scientific journals.

The interest of the Editorial Board in the Colloquium papers and the assistance in publishing this issue are gratefully acknowledged.

Piotr Perzyna
Chairman of the Colloquium