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Formulation of a triangular finite element with an embedded interface via isoparametric mapping. (English) [Zbl 1052.74053](#)

Comput. Mech. 27, No. 6, 463-473 (2001).

Summary: This paper presents the formulation of a triangular finite element with an embedded interface, designed for simulation of discrete crack propagation. The element is developed within a displacement-based framework. Linear interpolation of displacement discontinuities along the internal interface is assumed in order to ensure compatibility across inter-element boundaries. The proper representation of rigid body motions and the solvability of the discretised mechanical problem are specifically addressed. Finally, the element performance is compared with some alternative proposals.

MSC:

74S05 Finite element methods applied to problems in solid mechanics

74R10 Brittle fracture

Cited in **1** Review
Cited in **7** Documents

Keywords:

[crack propagation](#)

Full Text: [DOI](#)