

Eigendamage An Eigendeformation Model for Cohesive Fracture

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Abstract

We propose a novel approximation scheme within the variational theory of fracture which approximates the energy functional of a body by a family of non-local functionals depending on a small parameter and two fields: the displacement field and an eigendeformation field which, in particular, describes damaged regions of the body. This extends previous work (joint with F. Fraternali, M. Ortiz) on brittle materials to materials undergoing cohesive fracture.