عنوان مقاله:

Numerical Analysis of an Edge Crack Isotropic Plate with Void/Inclusions under Different Loading by Implementing XFEM

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خلاصه مقاله:

In the present work, the effect of various discontinuities like voids, soft inclusions and hard inclusions of the mixed-mode stress intensity factor (MMSIF), crack growth and energy release rate (ERR) of an edge crack isotropic plate under different loading like tensile, shear, combine and exponential by various numerical examples is investigated. The basic formulation is based on the extended finite element method (XFEM) through the M interaction approach using the level set method. The effect of single and multi voids and inclusions with position variation on MMSIF and crack growth are also investigated. The presented results would be applicable to enhancing the better fracture resistance of cracked structures and various loading conditions.

کلمات کلیدی:

XFEM, MMSIF, Void/Inclusion, Edge Crack, Crack Propagation, ERR

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