

## عنوان مقاله:

in a Finite Cracked Plate IEstimation of KUsing J-Integral

## محل انتشار:

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## خلاصه مقاله:

The stress intensity factor (SIF) is important parameter of linear elastic fracture mechanics (LEFM) for conjecture the life of cracked structure. For the structure contains crack with singular stress field, stress intensity measured using SIF. The SIF calculated using stress and strain analysis and/or using strain energy release rate in during crack propagation. In this research, defined equations for J-integral according to displacement vector in Finite Element at 2D, which stress intensity factor in opening mode (KI) calculated using of this J-integral. Then these parameters (J-integral and KI) performed on some numerical examples. The coding of J-integral and KI calculation was written in MATALB software. Numerical examples contain studding of cracked finite plate in two crack situation (one side edge and central crack) composed of homogeneous material in linear elasticity and used eight-node quadratic elements for meshing. In the defining of equations for J-Integral, no calculation of stress and strain, stress intensity factor evaluated directly using nodes displacement that is new approach

## کلمات کلیدی:

fracture mechanics, J-integral, stress intensity factor, eight-node quadratic element, MATLAB

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/536755>

