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Interaction between the Main Crack and Dislocation in the Glass Material

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Abstract : The present study evaluates the stress and stress intensity factor during the propagation of a crack at presence of a dislocation near of crack tip. The problem is formulated using a glass material having an equivalent elasticity modulus and a Poisson ratio. In this research work, the proposed material is a plate form with a main crack in one of these ends and a dislocation near this crack, subjected to tensile stresses according to the mode 1 opening. For each distance between the two cracks, we can determine these stresses. This study is treated by finite elements method by using the software (ABAQUS) rate. It is shown here in that obtained results agreed with those determined by other researchers

Keywords : crack, dislocation, finite element, glass
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