

Abstract

This study is dedicated to modeling cracks in plane problems by applying the recent technique analysis-suitable T-splines in the extended isogeometric analysis. A new local refinement algorithm is integrated for increasing the solution accuracy and reducing the excessive propagation of control points. However the singular fields near a crack tip are reproduced by the crack tip enrichment functions, and the Heaviside function is used to represent crack discontinuity. The results accuracy is tested by evaluation the mixed mode stress intensity factors which are computed by means of the interaction integral approach (M -integral). The obtained results are compared with the analytical methods.