عنوان مقاله:

An XFEM approach in solving frictional contact problems based on the penalty formulation

محل انتشار:

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خلاصه مقاله:

One of the most important issues in solving contact mechanics problems is the numerical instabilities of the solutions. Many different methods have been proposed for stabilizing the numerical quantities. The proposed penalty formulation within the powerful XFEM methodology is capable of treating contact constraint in the whole contact segment, while ensuring the stability of numerical solution. Two types of crack segmentation have been studied. The obtained results illustrate that this formulation yields to stable contact forces on the contacting surfaces. It is shown that many inaccuracies like instabilities and unwanted interpenetrations resulted from the conventional point-to-point contact method can be avoided by the present XFEM formulation. Some examples are provided in order to illustrate the accuracy and efficiency of the proposed approach

کلمات کلیدی:

extended FEM, frictional contact, penalty method, segment to segment

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