

A high order hybrid mimetic discretization on curvilinear quadrilateral meshes for complex geometries

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Summary

1 Introduction

- Hybrid finite element methods
- Mimetic discretization

Hybrid finite element method

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This study concerns with a crack emanating from a corner of a square hole in an infinite plate subjected to internal pressure by means of a boundary element method which consists of the constant displacement discontinuity element presented by Crouch and Starfield and the crack tip displacement discontinuity elements proposed by the author.

In the boundary element implementation the left or the right crack tip displacement discontinuity element is placed locally at corresponding left or right crack tip on top of the constant displacement discontinuity elements that cover the entire crack surface and other boundaries.

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Mimetic discretization

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