

A Posteriori Error Analysis for a Boundary Element Method with Nonconforming Domain Decomposition

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Abstract

We present and analyze an a posteriori error estimator based on mesh refinement for the solution of the hypersingular boundary integral equation governing the Laplacian in three dimensions. The discretization under consideration is a non-conforming domain decomposition method based on the Nitsche technique. Assuming a saturation property, we establish quasi-reliability and efficiency of the error estimator in comparison with the error in a natural (non-conforming) norm. Numerical experiments with uniform and adaptively refined meshes confirm our theoretical results.