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Title: A Posteriori Error Estimates with Boundary Correction for a Cut Finite Element Method.

Abstract: Unfitted finite element methods, in particular, Cut Finite Element Method (CutFEM), have been intensively studied in the last decade. The topic of this talk focuses on the residual based a posteriori error estimation for the CutFEM method applied to an elliptic model problem. We consider the problem with non-polygonal boundary and the error analysis takes into account both the geometry and data approximations on the boundary. The reliability and efficiency are theoretically proved. Moreover, constants are robust with respect to the mesh-domain intersection.