

1136-65-176

Hengguang Li* (li@wayne.edu), Department of Mathematics, Wayne State University, Detroit, MI 48202. *New Finite Element Methods for 3D Anisotropic Singular Solutions.*

We discuss a new construction of 3D anisotropic meshes to improve the finite element approximation of elliptic boundary value problems with singular solutions from the non-smoothness of the domain. These meshes can violate the maximum angle condition. We derive optimal error estimates for the proposed method. (Received January 12, 2018)