

1116-65-2457

Manuel A. Sanchez-Uribe*, 182 George St, Providence, RI 02912. *A finite element method for high-contrast interface problems with error estimates independent of contrast.*

We define a new finite element method for a steady state elliptic problem with discontinuous diffusion coefficients where the meshes are not aligned with the interface. We prove optimal error estimates in the L^2 norm and H^1 weighted semi-norm independent of the contrast between the coefficients. Numerical experiments validating our theoretical findings are provided. (Received September 22, 2015)