

Local convergence of the FEM for the integral fractional Laplacian

Jens Markus Melenk¹ Markus Faustmann² Michael Karkulik³

For first order discretizations of the integral fractional Laplacian we provide sharp local error estimates on proper subdomains in both the local H^1 -norm and the localized energy norm. Our estimates have the form of a local best approximation error plus a global error measured in a weaker norm.

References:

- [1] <https://doi.org/10.1137/20M1343853>

¹TU Wien, Institut für Analysis und Scientific Computing
melenk@tuwien.ac.at

²TU Wien, Institut für Analysis und Scientific Computing
markus.faustmann@asc.tuwien.ac.at

³Universidad Técnica Federico Santa María, Departamento de Matemática, Valparaíso, Chile
michael.karkulik@usm.cl