

A DUALITY APPROACH TO THE FRACTIONAL LAPLACIAN WITH MEASURE DATA

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Abstract

We describe a duality method to prove both existence and uniqueness of solutions to nonlocal problems like

$$(-\Delta)^s v = \mu \quad \text{in } \mathbb{R}^N,$$

with vanishing conditions at infinity. Here μ is a bounded Radon measure whose support is compactly contained in \mathbb{R}^N , $N \geq 2$, and $(-\Delta)^s$ is the fractional Laplace operator of order $s \in (1/2, 1)$.

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