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Existence of stationary solutions for some integro-differential equations with anomalous diffusion

The work deals with the existence of solutions of an integro-differential equation arising in population dynamics in the case of anomalous diffusion involving the negative Laplace operator raised to a certain fractional power. The proof of existence of solutions is based on a fixed point technique. Solvability conditions for non-Fredholm elliptic operators in unbounded domains along with the Sobolev inequality for a fractional Laplacian are being used.