



Karlstad Applied Analysis Seminar (2026)

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On the existence of stationary solutions for certain systems of integro-differential equations with the double scale anomalous diffusion

Abstract

The work deals with establishing the solvability of a system of integro-differential equations in the situation of the double scale anomalous diffusion. Each equation of such system involves the sum of the two negative Laplace operators raised to two distinct fractional powers in the space of three dimensions. The proof of the existence of solutions is based on a fixed point technique. We use the solvability conditions for the non-Fredholm elliptic operators in unbounded domains.