

On the solvability of some systems of integro-differential equations with anomalous diffusion in two dimensions

Vitali Vougalter, University of Toronto

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Abstract

The work deals with the existence of solutions of a system of integro-differential equations in the case of the anomalous diffusion with the negative Laplacian in a fractional power in two dimensions. The proof of existence of solutions relies on a fixed point technique. Solvability conditions for elliptic operators without Fredholm property in unbounded domains are used.