INTERACTING PARTICLE APPROXIMATION FOR NONLOCAL QUADRATIC EVOLUTION PROBLEMS

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Abstract: The existence of McKean's nonlinear jump Markov processes and related Monte Carlo type approximation schemes by interacting particle systems (propagation of chaos) are studied for a class of multidimensional doubly nonlocal evolution problems with a fractional power of the Laplacian and a quadratic nonlinearity involving an integral operator. Asymptotically, these equations model the evolution of density of mutually interacting particles with anomalous (fractal) Lévy diffusion.

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