

Large time evolution for semigroups of nonlocal Schrödinger operators

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We study the large time evolution properties of semigroups corresponding to nonlocal Schrödinger operators $H=-L+V$.

Kinetic terms L are homogeneous pseudodifferential operators that generate Levy processes with direct jump property (DJP) in \mathbb{R}^d , and V are sufficiently regular (possibly signed) confining potentials. This class includes both fractional and relativistic Schrödinger operators. We give sharp two-sided large time estimates of heat kernels of the operators H .

In my talk, I will present this result and discuss some of its direct applications. This is a joint work with R. Schilling from TU Dresden.