Abstract

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"Optimal estimates of Kato–Yajima type with angular smoothing"

For the solution of the free Schrödinger equation, we obtain the optimal constants and characterise extremisers for forward and reverse smoothing estimates which are global in space and time, contain a homogeneous and radial weight in the space variable, and incorporate a certain angular regularity. The nature of extremisers is shown to be sensitive to both the dimension and the size of the smoothing index relative to the dimension. Furthermore, in four spatial dimensions and certain special values of the smoothing index, we obtain an exact identity.