

Pointwise convergence for the Schrödinger equation with orthonormal initial data

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For the Schrödinger equation in one dimension, we establish some sharp maximal-in-time estimates associated with orthonormal systems of initial data. Such estimates will follow from maximal-in-space estimates for fractional Schrödinger equations and thus we also address an endpoint problem raised by R. Frank and J. Sabin in their work on Strichartz estimates for orthonormal systems of initial data. Our maximal-in-time estimates allow us to deduce certain pointwise convergence results associated with systems of infinitely many fermions.