Pointwise convergence for the Schrödinger equation with orthonormal initial data

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For the one-dimensional Schrödinger equation, we will explain how to obtain maximal-in-time estimates for systems of orthonormal initial data and, as a result, certain pointwise convergence results associated with systems of infinitely many fermions. Our argument proceeds by establishing a maximal-in-space estimate for the fractional Schrödinger equation which, at the same time, addresses an endpoint problem raised by Rupert Frank and Julien Sabin. The talk is based on joint work with Sanghyuk Lee and Shohei Nakamura.