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On Formally Self-Adjoint Schrödinger operators with real potential

In this talk we shall introduce our latest paper and related to it. The aim of our paper is to construct a family of unique solutions to Schrödinger evolution equation. A Schrödinger operator, (not self-adjoint but) formally self-adjoint, generates a (not unitary but) contraction semigroup. Our class of potentials U in Schrödinger equation is wide enough : the real measurable potential U should be locally essentially bounded except a closed set of measure zero. To prove this we construct an abstract theory of convergence of C_0 -semigroup in Hilbert space. A bounded C_0 -semigroup is not necessarily equi-continuous with respect to the weak topology but equi-continuous with respect to the locally convex topology. In order to apply Hille-Yosida or Trotter-Kato Theorem, the equi-continuity of semigroups is necessary.

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