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On dynamics of quantum states generated by the Cauchy problem for the Schrödinger equation with degeneration on the half-line. (English) Zbl 1151.35417

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Summary: The paper considers the Cauchy problem for the Schrödinger equation with operator degenerate on the semiaxis and the family of regularized Cauchy problems with uniformly elliptic operators whose solutions approximate the solution of the degenerate problem. The author studies the strong and weak convergences of the regularized problems and the convergence of values of quadratic forms of bounded operators on solutions of the regularized problems when the regularization parameter tends to zero.

MSC:

35Q40 PDEs in connection with quantum mechanics

35B25 Singular perturbations in context of PDEs

81Q05 Closed and approximate solutions to the Schrödinger, Dirac, Klein-Gordon and other equations of quantum mechanics

Cited in **3** Documents

Full Text: [DOI](#)

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