

MR648532 (83g:81018) 81C05 (35J10 35S05)

Weinstein, Alan; Zelditch, Steven

Singularities of solutions of some Schrödinger equations on \mathbf{R}^n .

Bull. Amer. Math. Soc. (N.S.) **6** (1982), no. 3, 449–452.

This is an announcement of a publication improving on the second author's Ph.D. Thesis ["Reconstruction of singularities for solutions of Schrödinger equations", Ph.D. Thesis, Univ. California, Berkeley, Calif., 1981] and a paper by the first author ["A symbol class for some Schrödinger equations on \mathbf{R}^n ", *Amer. J. Math.*, to appear]. It deals with Schrödinger's equation

$$2i\hbar\partial\psi/\partial t = \left[\sum_j (-\hbar^2\partial^2/\partial x_j^2 + \omega_j^2 x_j^2) + 2V(x) \right] \psi;$$

for each $m \geq 0$ the derivatives of order m of V decrease at infinity at least as fast as $|x|^{-m}$. Such a V has influence neither on the WF of the solution to the Cauchy problem, nor on the hyperplanes containing the singular support of the fundamental solution (i.e., the propagator) when they exist, i.e., when, for some j , $\hbar\omega_j/\pi$ is an integer. It is proven by means of the "bi-symbol" of pseudodifferential operators.

Reviewed by *Jean Leray*

© Copyright American Mathematical Society 1983, 2006