

Zero resonant states for the Schrödinger operator

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The Schrödinger operator on the whole space \mathbb{R}^d gives rise to a dispersive equation, meaning that the mass of the solution spreads towards infinity, and these dispersive properties are tightly linked to its spectrum. Resonances can be seen as a generalisation of eigenvalues: they are complex numbers for which the eigenvalue equation admits a non L^2 solution. Their dynamical interpretation is that the imaginary part of a resonance determines the speed of dispersion of a resonant state. In this talk we will analyze resonances in zero, which are known to be an obstacle to dispersion. For a rather general class of potentials we will see when zero is a resonance or an eigenvalue and some properties of the associated state.

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