Scattering theory for some non-self-adjoint operators

Nicolas Frantz

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We consider in this talk the scattering theory for non-self-adjoint operators. After recalling some of the main objects of scattering theory and motivating the study of this theory in the non-self-adjoint case, we will consider an abstract model of non-self-adjoint operators on Hilbert spaces, of the form $H = H_0 + V$, where H_0 is a self-adjoint operator and V is a bounded operator, relatively compact with respect to H_0. We will start by recalling some results on this model. Then we will explain how the non-unitary wave operators associated to H and H_0 can be defined and we will present some of their properties. Finally we will define the notion of asymptotically completeness of the wave operators and explain the link between this notion and that of spectral singularities. Our results apply to Schrödinger's operators with complex potentials.