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*On the adiabatic behaviour of a bound state when diving into the continuous spectrum*

The survival probability of a bound state is studied when an external potential varies smoothly and adiabatically in time. The initial state corresponds to a discrete eigenvalue which dives into the continuous spectrum and re-emerges from it as the potential is varied in time and finally returns to its initial value. The main result is that the survival probability of this bound state vanishes in the adiabatic limit. The methods used in the proof are quite robust and may be adopted to cover a large class of operators, including Schrödinger and Dirac operators. This talk is based on joint work with H. Cornean, A. Jensen and Gh. Nenciu.