

# Abstract

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## “Resonances of metastable molecular systems”

*Work in collaboration with André Martinez*

We study metastable states associated to a complex resonance  $\rho$  describing the predissociation phenomena of a molecular system in the Born-Oppenheimer approximation. We show that when the semiclassical parameter  $h$  is small enough, the survival amplitude,

$$\langle e^{-itH}\varphi, \varphi \rangle \sim e^{-it\rho}b(\varphi, h) + r(t, \varphi, h), \quad t > 0$$

for a given initial state  $\varphi$ . Where  $b(\varphi, h) = 1 + \mathcal{O}(h^\mu)$  and the remainder term  $r(t, \varphi, h) = h^\nu \mathcal{O}(t^{-k})$  for some constant  $\mu, \nu, k > 0$ .