1023-81-1732 **Maciej Zworski*** (zworski@math.berkeley.edu), Mathematics Department, University of California, Berkeley, CA 94720, and **Stephane Nonnenmacher**, Service de Physique Théorique, CEA, Saclay, 91191 Gif-sur-Yvette, France. *Quantum decay rates in chaotic scattering.*

In this talk we consider a model of chaotic scattering by studying the semiclassical operator

$$P_0(h) = -h^2\Delta_g + V(x)\,, \quad x \in \mathbb{R}^2$$

We show that, if the corresponding classical flow is hyperbolic, and if the dimension of the trapped set on the energy surface is smaller than 2 then there is a gap between the resonances of $P(h)$ near that energy and the real axis. In other words, the quantum decay rate is bounded from below if the classical repeller is sufficiently *filamentary*. The size of the gap is specified using the topological pressure and that concept is used to formulate the result in higher dimensions. (Received September 26, 2006)