Title: Resonances over a potential well in an island.

Abstract: Recent work with M. Zerzeri. Let $V : \mathbf{R}^n \to \mathbf{R}$ be a sufficiently analytic potential which tends to 0 at infinity. Assume that for an $E > 0$ we have $V^{-1}(]-\infty, E[) = U(E) \cup S(E)$, where $\overline{U(E)} \cap \overline{S(E)} = \emptyset$, with $U(E)$ connected and bounded (the well) and $S(E)$ connected (the sea). The distribution of the resonances of $-h^2\Delta + V$ near E has been thoroughly studied since more than 30 years. If we increase E a natural scenario is that the decomposition persists until the closures of $U(E)$ and $S(E)$ intersect at a critical energy $E = E_0$. Under some natural assumptions we show that near E_0 most of the resonances are close to the real axis and obey a Weyl law. In one dimension there are more detailed results (Fujiie-Ramond '98).