Lower bounds on the lowest spectral gap of singular potential Hamiltonians

Donje ocjene na spektralne razmake za Hamiltonove operatore sa singularnim potencijalima

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Abstract: We analyze Schr\"odinger operators whose potential is given by a singular interaction supported on a sub-manifold of the ambient space. Under the assumption that the operator has at least two eigenvalues below its essential spectrum we derive estimates on the lowest spectral gap. In the case where the sub-manifold is a finite curve in two dimensional Euclidean space the size of the gap depends only on the follwing parameters: the lenght and maximal curvature of the curve, the radius of a ball which contains it, and a compact sub-interval of the open, negative energy half-axis which contains the two lowest eigenvalues.