

DISCRETE SPECTRUM INDUCED BY GEOMETRIC PERTURBATIONS OF SOFT WAVEGUIDES

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Abstract

The talk topic is bound states coming from geometric perturbations of systems that may be regarded as a soft version of a straight quantum waveguides. We focus on two particular examples. One is a two-dimensional Schrödinger operator with the potential in the form of a channel of fixed profile built over a curve which is not straight but it is straight outside a compact. The second one concerns a sort of soft waveguide with a longitudinal periodic structure, specifically an array of potential wells. Here we again consider perturbations which preserve the array structure outside a compact region and in this case we allow for higher dimensions. We also mention some open problems.