

Titchmarsh-Weyl theory for elliptic differential operators on unbounded domains

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In this talk we describe the spectral properties of selfadjoint Schrödinger operators on unbounded domains with an associated Dirichlet-to-Neumann map. In particular, a characterization of the isolated and embedded eigenvalues, the corresponding eigenspaces, as well as the continuous and absolutely continuous spectrum in terms of the limiting behaviour of the Dirichlet-to-Neumann map is obtained. Furthermore, a sufficient criterion for the absence of singular continuous spectrum is provided. The results are natural multidimensional analogues of classical facts from singular Sturm-Liouville theory.