Spectral asymptotics for perturbed spherical Schrödinger operators and applications to quantum scattering

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We find the high energy asymptotics for the singular Weyl–Titchmarsh m-functions and the associated spectral measures of perturbed spherical Schrödinger operators (also known as Bessel operators). We apply this result to establish an improved local Borg–Marchenko theorem for Bessel operators as well as uniqueness theorems for the radial quantum scattering problem with nontrivial angular momentum.

The talk is based on a joint work with G. Teschl.