Canonical systems, Weyl coefficients and eigenvalues

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Two-dimensional canonical systems appear in many situations as they cover one-dimensional Schrödinger equations, Sturm–Liouville equations, Jacobi operators, Dirac systems and (generalised) Krein strings as special cases. In the first part of the talk I shall discuss uniform estimates for Weyl coefficients and related properties of the spectral measure. The second part of the talk deals with asymptotic properties of eigenvalues in the case when the spectrum is discrete. My focus will be on the case when the spectrum is sparse. It turns out that in this situation the results are quite different from the case of dense spectrum. In the proofs the uniform estimates of the Weyl coefficients play a crucial role.

This talk is based on joint work with Raphael Pruckner, Jakob Reiffenstein and Harald Woracek.