Jacobi Matrices and Asymptotic Fluctuations in Random Matrix Theory

We shall review some interesting connections between spectral properties of Jacobi matrices and asymptotic fluctuations of eigenvalue ensembles of random matrices. In particular, we shall discuss how a local Law of Large Numbers is connected to properties of generalized eigenfunctions and how Central Limit Theorems (both global and local) can be interpreted in the context of the perturbation theory of Schrödinger operators.

This is based on joint works with Maurice Duits.