ALEX BLOEMENDAL, Harvard University
Continuum limits of spiked random matrices

The top eigenvalues of finite-rank perturbed random matrices are known to exhibit a phase transition in the large size limit. I will discuss joint work with B. Virág in which we identify the limiting behaviour near the transition. It can be understood in terms of a continuum random Schrödinger operator on the half-line, with boundary condition depending on the perturbation; we derive another characterization in terms of a linear PDE related to Dyson's Brownian motion. In the complex case we recover known Painlevé representations for these deformations of the Tracy-Widom distribution.