$S_t \circ c(h)(a_s)_{ti} c(s) + \mathfrak{S}_e m^i n(a_r)$

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Diffusion at the random matrix hard edge

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Time and Place: Friday March 7, 2008; 3:00–4:00 p.m.; LCB 219

The "hard" edge refers to the behavior of the minimal eigenvalues of a (natural) one-parameter generalization of Gaussian sample covariance matrices. We show that, in the large dimensional limit, the law of these points are shared by that of the spectrum of a certain random second-order differential operator. The latter may be viewed as the generator of a Brownian motion with white noise drift. By a Riccati transformation, we get a second diffusion description of the hard edge in terms of hitting times. (Joint work with J. Ramirez.)