

MSRI  Berkeley
University of California



MSRI/Evans Talk

MONDAY, OCTOBER 18, 2010
4:10PM; 60 EVANS HALL
UNIVERSITY OF CALIFORNIA, BERKELEY

“COULOMB GASES, RANDOM MATRICES AND BEYOND.”

Jinho Baik
(University of Michigan)

The eigenvalues of a Hermitian matrix with random iid Gaussian entries exhibit repulsions from each other. Such repulsion is exactly that of electric charges of same sign confined on the real line in the plane. This Coulomb gas formula of the eigenvalues is crucial in evaluating the limiting statistics of the eigenvalues explicitly. What is interesting is that such Coulomb gas formula also arises in many other probabilistic/combinatorial problems such as random tiling and last passage percolation.

We survey some of these models, and then discuss briefly the question of universality when such Coulomb gas formula is no longer available

Refreshments at a nearby establishment immediately following the talk!
Graduate students and Postdoctoral Fellows are particularly welcome.

<http://www.msri.org>