

Titel: Edge of beta ensembles and the stochastic Airy semigroup

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Abstract:

Beta ensembles arise naturally in random matrix theory as a family of point processes, indexed by a parameter β , which interpolates between the eigenvalue processes of the Gaussian orthogonal, unitary and symplectic ensembles (GOE, GUE and GSE).

It is known that, under appropriate scaling, the locations of the rightmost points in a beta ensemble converge to the so-called Airy(β) process.

However, very little information is available on the Airy(β) process except when $\beta=2$ (the GUE case).

I will explain how one can write a distribution-determining family of observables for the Airy(β) process in terms of a Brownian excursion and a Brownian motion. Along the way, I will introduce the semigroup generated by the stochastic Airy operator of Ramirez, Rider and Virag.

Based on joint work with Vadim Gorin