

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

Department of Mathematics, University of Utah



Beta ensembles, stochastic Airy spectrum, and a diffusion

José Ramírez
University of Costa Rica



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Joint work with B. Rider and B. Virag. We prove that the largest eigenvalues of the general beta ensembles of Random Matrix Theory, properly centered and scaled, converge in distribution to the law of the low lying eigenvalues of a random operator of Schrödinger type. Based on this convergence, we provide a new characterization of the Tracy-Widom type laws in terms of the explosion/non-explosion of a one-dimensional diffusion. The proofs rely on the associated tri-diagonal matrix models, and thus on earlier work of A. Edelman, I. Dumitriu, and B. Sutton.