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The Riccati map in Random Schroedinger and RMT

We explain the relevance of the classical Riccati map in describing the spectral edge for various random Schroedinger operators in finite volume as well as for certain random matrix ensembles. In the latter case these ideas provide a new characterization of the celebrated Tracy–Widom laws of RMT in terms of the explosion probability of a given one-dimensional diffusion.

This represents joint work with both Balint Virag (Univ. Toronto) and Jose Ramirez (Univ. Costa Rica).