TRACY-WIDOM FLUCTUATIONS IN 2D RANDOM SCHROEDINGER OPERATORS

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We construct a random Schroedinger operator on a subset of the hexagonal lattice and study its smallest positive eigenvalues. Using an asymptotic mapping, we relate them to the partition function of the directed polymer model on the square lattice. For a specific choice of the edge weight distribution, we obtain a model known as the log-Gamma polymer, which is integrable. Recent results about the fluctuations of free energy for the log-Gamma polymer allow us to prove Tracy-Widom type fluctuations for the smallest eigenvalue of the random Schroedinger operator. Joint with Balint Virag.