

Random lozenge waterfall: dimensional collapse of Gibbs measures

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I will discuss a recent work with Alisa Knizel on a two-parameter family of random lozenge tilings of the hexagon related to the q -Racah orthogonal polynomials. Namely, these polynomials power the determinantal correlation kernel of the tilings. The model is a generalization of the uniform and q -weighted random tilings and displays new interesting behavior compared to the former. Of particular interest is the so-called waterfall region, where two-dimensional pure states collapse into one dimension, and feature a new mysterious two-periodic determinantal process on $\mathbb{Z}$.

In Special Session 15 on Integrable Probability and KPZ Universality at the Mathematical Congress of the Americas 2025.