



Probability Seminar

Title: The two-periodic Aztec diamond and matrix valued orthogonality

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Date: Wed 29th January 2020 at 2:00PM

Location: Seminar Room SCN 1.25

Abstract: I will discuss how polynomials with a non-hermitian orthogonality on a contour in the complex plane arise in certain random tiling problems. In the case of periodic weightings the orthogonality is matrix-valued. In work with Maurice Duits (KTH Stockholm) the Riemann-Hilbert problem for matrix-valued orthogonal polynomials was used to obtain asymptotics for domino tilings of the two-periodic Aztec diamond. This model is remarkable since it gives rise to a gas phase, in addition to the more common solid and liquid phases.

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