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Biased doubly periodic Aztec diamond and an elliptic curve

Monday, May 23, 2022 10:15 AM (45 minutes)

I will report on a recent joint work with Alexei Borodin on the biased doubly periodic Aztec diamond. Our main result is a double integral formula for the correlation kernel, in which the integrand is expressed in terms of a linear flow on an elliptic curve. For special choices of parameters the flow is periodic, and this allows us to perform a saddle point analysis for the correlation kernel. I will discuss how, in these periodic cases, one can compute the local correlations in the smooth disordered (or gaseous) region.

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