

# Random domino tilings of the Aztec diamond

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## Abstract

The Aztec diamond is a tiling model popular for its association with combinatorics and statistical physics. A randomly chosen (i.e. from the uniform distribution) tiling for a large Aztec diamond will exhibit both a well-ordered and a disordered region with high probability. The fluctuations between these two regions are described by the Tracy–Widom GUE distribution of random matrix theory.

In the current talk we will look at a generalized measure on tilings of the Aztec diamond, and see that the boundary fluctuations are still described by the Tracy–Widom GUE distribution. We will cover the necessary background from random matrix theory, as well as a few related random growth models.