Global universality in periodic random plane partitions

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Abstract

It is known due to Kenyon and Okounkov that the height function of a volume constrained random plane partition converges to a deterministic Lipschitz function. It was conjectured that the fluctuations from this limiting function can be identified with the Gaussian free field with a suitable complex structure. In this talk, I will discuss a broad family of models under which this conjecture holds, which contains the q^{vol} plane partition and periodically weighted variants. This family also includes variations of the q^{vol} plane partition which exhibit beta type interactions analogous to those of the beta ensembles in random matrix theory.