

Nonintersecting Brownian interfaces and Wishart random matrices

Celine Nadal

ENS/LPTMS Orsay

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Abstract.

We study a system of N nonintersecting $(1+1)$ -dimensional fluctuating elastic interfaces ('vicious walkers') at thermal equilibrium, in presence of a substrate that induces an external confining potential for each interface. We show that, at zero temperature and with an appropriate choice of the potential, the joint probability distribution of the heights of the interfaces can be mapped to the joint distribution of the eigenvalues of a Wishart random matrix. Exploiting this analogy to random matrix, we compute some statistical properties of the interfaces in our model.