

Inn'formal Probability Seminar

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“The double dimer model and Gaussian free field”

Abstract

The double dimer model (DDM) on a planar graph is a model of random loops, and the Gaussian free field (GFF) is a model of a height function. The first part of this talk will be an introduction to these two models. The two models are linked by a conjecture that the DDM loops converge in the scaling limit to loops in the continuum, which are level lines of the GFF. We show that certain crossing probabilities in the DDM can be computed exactly, and that analogous computations can be done for the metric graph GFF, a discrete analogue of the GFF. These computations yield the same result, giving some evidence of the aforementioned conjecture. The second part of the talk will outline this result.

Joint work with Marcin Lis

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SR 609 | civil engineer building