Speaker

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Seminar

SoS — Structures on Surfaces (online)

Location and date

France – Luxembourg, June 25, 2021

Title

Asymptotic probability of connected surfaces

Abstract

There are different ways to generate a random surface using a collection of polygons. We are interested in the probability that the obtained surface is connected, as the number of polygons tends to infinity. We will show that the asymptotics for these probabilities can be obtained in a common manner and that asymptotic coefficients have a combinatorial meaning. In particular, in the case of square tile surfaces the coefficients are indecomposable permutations, while for the combinatorial map model they count indecomposable perfect matchings. Moreover, we will show how to get the asymptotic probability that a random surface has a given number of connected components, and we will indicate the combinatorial meaning of the coefficients involved in these asymptotic expansions.

This is ongoing work joint with Thierry Monteil.