

Speaker

Khaydar Nurligareev

Seminar

Seminar Teich

Location and Date

Aix-Marseille University, Marseille, February 26, 2021

Title

Asymptotics for the probability of labeled objects to be irreducible

Abstract

There are a number of combinatorial structures that admit, in a broad sense, a notion of irreducibility, including connected graphs and surfaces, irreducible tournaments, indecomposable permutations and so on. We are interested in the probability that a random labeled object is irreducible, as its size tends to infinity. We will show that for some classes of objects it is possible to obtain the asymptotics for these probabilities in a common manner and that asymptotic coefficients have a combinatorial meaning. More precisely, it is so when the considered combinatorial class can be described as a set or a sequence of the corresponding irreducible class, and its counting sequence grows sufficiently fast. Moreover, we will show how to obtain the asymptotic probability that a random labeled object has a given number of irreducible components, and we will indicate the combinatorial meaning of the coefficients involved in the asymptotic expansions.

This is ongoing work joint with Thierry Monteil.