

# Discrete Painlevé equations in random partitions and planar maps

*Tuesday, June 4, 2024 9:30 AM (50 minutes)*

The aim of this talk is to explain the connections between the discrete Painlevé I-II equations and certain random and combinatoric models. In the first part of the talk, we will start from a classical result by Borodin, which allows us to calculate the probability distributions of the first parts of random partitions with Poissonized Plancherel measure via a recurrence relation using solutions of the discrete Painlevé II equation. Then, we will see a generalization of this result, that we proved with T. Chouateau, in the case of the so-called “multicritical” Schur measures. In the second part, we will discuss instead the appearance of the discrete Painlevé I equation in the context of counting problems for planar quadrangulation with given geodesic distance and how to explain it from an orthogonal polynomials perspective (work in progress with J. Bouttier).

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