

## Inn'formal Probability Seminar

**Maran Mohanarangan (University of Innsbruck and  
University of Fribourg)**

“Generic Arm Separation For Planar Percolation”

**Abstract:**

Arm separation is an essential tool in critical planar percolation with numerous applications. It states that when disjoint connections cross from the center to the outer boundary of a large annulus, these connections arrive at the boundary at a macroscopic distance from each other with uniformly positive probability. I will present a new proof based on a single-scale exploration procedure, which replaces the classical multi-scale approach of Kesten. A key feature of the exploration procedure is that it works in a model-independent setting, requiring neither RSW estimates nor the FKG inequality. The single-scale nature of the proof also makes the separation result robust enough to accommodate conditionings at a macroscopic distance from the boundary, resolving a conjecture of Garban–Pete–Schramm. Joint work with Loïc Gassmann and Ioan Manolescu.

Wednesday | 27.05.2026 | 10.30  
HSB 6 | Engineering building