universität innsbruck

Department of Mathematics

Inn'formal Probability Seminar

Lukas Lüchtrath (WIAS Berlin)

"Locality of phase transition for the contact process on random graphs."

Abstract:

In this talk, we introduce a new perspective on the asymptotic regimes of fast and slow extinction for the contact process on locally convergent sequences of sparse finite graphs. We begin with a careful introduction to local convergence in random graphs. We then use this framework to characterise the fast/slow extinction phase boundary in terms of the existence of a metastable density, a notion that is particularly well suited to local-convergence techniques. This approach yields general conditions under which the critical threshold coincides with the survival/extinction threshold in the local limit. Combined with recent results of Nam, Nguyen, and Sly (2022), our methods imply that, for sparse configuration models, the fast/slow extinction threshold coincides with the survival/extinction threshold on the limiting Galton–Watson tree.

The talk is based on joint work with Benedikt Jahnel and Christian Mönch.

Tuesday | 09.06.2026 | 13.45
HSB 4 | Architecture building