ICTS Probability Seminar

Title : Hyperuniform and number rigid stable matchings

Speaker : D. Yogeshwaran, Indian Statistical Institute, Bangalore

Date : Wednesday, November 28, 2018

Time : 2:15 PM

Venue : Feynman Lecture Hall, ICTS Campus, Bangalore

Abstract : We study a stable partial matching of the d-dimensional lattice with a stationary determinantal point process (which includes in particular the Poisson point process) on the d-dimensional Euclidean space with intensity larger than one. The matched points from the determinantal point process form a stationary and ergodic (under lattice shifts) point process with intensity 1 that very much resembles the determinantal point process for intensities close to 1. On the other hand, it is hyperuniform and number rigid, quite in contrast to a Poisson process. We deduce these properties by proving more general results for a stationary point process, whose so-called matching flower (determining the matching partner of a lattice point) has a certain subexponential tail behaviour. For hyperuniformity, we also additionally need to assume some mixing condition on the point process.

This is a joint work with Michael Klatt (Princeton University) and Guenter Last (Karlsruhe Institute of Technology).