Determinantal Processes

A Determinantal Process is a random selection of points of a given set such that its law can be described by a certain determinantal formula for some matrix resp. operator. Such processes arise in various different mathematical areas such as random matrix theory, combinatorics, random analytic functions and representation theory. The seminar will treat the most important examples together with aspects of a general theory.

Topics/Talks

1. Introduction & Non-Intersecting Random Walks (A 4.3.1 – 4.3.3)
2. Existence and Construction of Determinantal Processes (A 4.5 & A 4.5)
3. Eigenvalues of Random Matrix Ensembles (E)
4. Uniform Spanning Trees and Forests (D)
5. Zeros of Hyperbolic Gaussian Analytic Functions (F)
6. Permanental Processes (A 4.9)
7. Eynard-Mehta-Theorem (cf. G Sect. 4)
8. Dimer Models (G Sect. 4 and H)
9. Asymptotics of Plancherel Measures (I)
10. Exterior Algebra and Stochastic Domination (C)

References


If you are interested to participate write an email to renesse@uni-leipzig.de.