

北京师范大学 随机数学研究中心

学术报告

题目: A brief introduction to determinantal point processes

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摘要: The theory of determinantal point processes was first introduced by Macchi in her studies of random Fermion Fields in 1970's. This theory has latter been extensively studied in various different mathematical areas such as Random Matrices, Random Young Diagrams, Random Holomorphic Functions, Random Graphs etc. In this course, we present an introduction to determinantal point processes, focusing on multiplicative functionals, Palm theory, conditional measures and Ghosh-Peres number rigidity. Specifically, we will try to cover the following topics.

1. Basic examples and definitions of determinantal point processes
2. Fredholm determinants and multiplicative functionals
3. Limit theorems for determinantal point processes
4. Ghosh-Peres number rigidity of determinantal point processes
5. Palm theory and conditional measures
6. Quasi-symmetries of determinantal point processes
7. Determinantal point processes and reproducing kernel Hilbert spaces of holomorphic functions
8. Lyons-Peres conjecture for determinantal point processes