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TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Bangalore Probability Seminar (HYBRID)

Title : Log-concavity in 1-d Coulomb gas ensembles

Speaker : B S Jnaneshwar (Indian Institute of Science Bengaluru)

Date : Monday, 25th September, 2023

Time : 02:00 PM (IST)

Abstract : The ordered elements in several one-dimensional Coulomb gas ensembles arising in probability and mathematical physics are shown to have log- concave distributions. Examples include the beta ensembles with convex potentials (in the continuous setting) and the orthogonal polynomial ensembles (in the discrete setting). In particular, we prove the log-concavity of the Tracy-Widom β distributions, Airy distribution, Airy-2 process. Log-concavity of last passage times in percolation is proven using their connection to Meixner ensembles. As a result we prove the log-concavity of top rows of Young diagrams under Poissonized Plancherel measure, which is Poissonized version of a conjecture of Chen.

This is ongoing joint work with Manjunath Krishnapur and Mokshay Madiman.

Venue : **Offline:** Chern Lecture Hall (ICTS)

Online: Please click the below link to join the seminar

https://us02web.zoom.us/j/88670406480

Meeting ID: 886 7040 6480