BI-CO MATHEMATICS COLLO

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" Limit Theorems for Longest Monotone Subsequences in Random Mallows Permutations"

The longest increasing subsequence (LIS) of a uniformly random permutation is a well studied problem. Vershik-Kerov and Logan-Shepp first showed that asymptotically the typical length of the LIS is 2sqrt(n). This line of research culminated in the work of Baik-Deift-Johansson who related this length to the GUE Tracy-Widom distribution.

We study the length of the LIS of random permutations drawn from the Mallows measure, introduced by Mallows in connection with ranking problems in statistics. We prove limit theorems for the LIS for different regimes of the parameter of the distribution.

Relevant background for the talk will be introduced as needed.

This is joint work with Ron Peled and Riddhi Basu.