

DREXEL ANALYSIS SEMINAR

November 11, 2022

2-3 PM, Korman 245

Speaker: Omesh Dwivedi (Drexel)

Title: Jacobi–Trudi Determinants in Finite Fields

Abstract: Given a partition λ and a finite field \mathbb{F}_q , what is the probability that the Jacobi–Trudi determinant corresponding to λ vanishes on a randomly chosen tuple of elements of \mathbb{F}_q ? When λ is a staircase, a hook or a rectangle, this probability has been shown to be $\frac{1}{q}$ by Anzis et al in 2018. We investigate this probability for skew partitions such as ribbons, as well as more complex partitions such as p -shifted n -staircases and block staircases, which together generalize the class of partitions of the form of arithmetic progressions. Finally, we also generalize our results to matrices that are structurally similar to these Jacobi–Trudi Determinants. This is joint work with Jonah Blasiak and Darij Grinberg.