

DREXEL ANALYSIS SEMINAR

May 17, 2013

3-3:50 PM, Korman 245

Speaker: Pawel Hitczenko

Title: Weighted random staircase tableaux, asymmetric exclusion process, and generalized Eulerian polynomials.

Abstract: Staircase tableaux are a relatively new combinatorial structure introduced by Sylvie Corteel and Lauren Williams in the context of the asymmetric exclusion process (ASEP) and Askey–Wilson polynomials. Since then, their purely combinatorial properties have gained considerable interest.

I will consider a general model in which symbols that appear in tableaux may have arbitrary positive weights. I will present some results concerning the limiting laws for the number of appearances of symbols on the diagonal of a random staircase tableau. They generalize and subsume earlier results that were obtained for specific values of the weights.

One advantage of this generality is that one may let the weights approach extreme values of zero or infinity which covers further special cases appearing earlier in the literature. Furthermore, our generality allows us to analyze the structure of a random staircase tableau and I will present some results in this direction.

The talk is based on a joint work with Svante Janson, Uppsala University (<http://arxiv.org/abs/1212.5498>) and extends earlier work with Sandrine Dasse-Hartaut (<http://arxiv.org/abs/1202.3092>).