

1059-60-121

Dan Romik*, UC Davis. *The oriented swap process.*

In the oriented swap process, particles numbered 1 through N are arranged on the integer lattice, originally in increasing order. Subsequently, each pair of adjacent particles try to swap with exponential rate 1 and independently of all other pairs, succeeding iff the particle to the left has a lower index than the particle to the right. I will discuss the recent analysis of the asymptotic behavior of this interacting particle system in joint work with Omer Angel and Alexander Holroyd. The Tracy-Widom distribution from random matrix theory appears as the limiting distribution of the "finishing times" of individual particles. An interesting open question, whose answer will also probably come from random matrix theory, is to find the limiting distribution of the termination time of the entire system. (Received February 21, 2010)