

Combinatorics of permutations

Jacob Fox
MIT

Thursday, January 30, 2014
008 Kemeny, 4:00PM
(Tea: 300 Kemeny, 3:30 pm)

Abstract

For a permutation p , let $S_n(p)$ be the number of permutations on n letters avoiding p . A decade ago, Marcus and Tardos proved the celebrated Stanley–Wilf conjecture that, for each permutation p , $S_n(p)^{1/n}$ tends to a finite limit $L(p)$. Backed by numerical evidence, it has been conjectured by various researchers over the years that $L(p)$ is on the order of k^2 for every permutation p on k letters. We disprove this conjecture, showing that $L(p)$ is exponential in a power of k for almost all permutations p on k letters. The proof uses ideas from extremal and probabilistic combinatorics.

This talk should be accessible to graduate students.