Undergraduate Math Club
Winter 2005
2nd floor Nesbitt Common Room
February 10, 4:10-5:00pm
(free pizza and pop, as always)

The Longest Increasing Subsequence in a Random Permutation

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Abstract

Given a permutation, say 4236517, the string 2357 is the longest increasing subsequence (of length 4). In the 1960s, Ulam asked what is the typical length of the longest increasing subsequence of a random permutation of size N as N grows to infinity. This combinatorial/probabilistic question is related to card games, the airline boarding problem, and a maximization problem in a random environment. We will discuss why this question is interesting, what we know about it, and some history of the problem.