

The Expected Number of Distinct Consecutive Patterns in a Random Permutation

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Let π_n be a uniformly chosen random permutation on $[n]$. Using an analysis of the probability that two overlapping consecutive k -permutations are order isomorphic, we show that the expected number of distinct consecutive patterns in π_n is $\frac{n^2}{2}(1 - o(1))$. This exhibits the fact that random permutations pack consecutive patterns near-perfectly.

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