Alon, Noga; Friedgut, Ehud

On the number of permutations avoiding a given pattern. (English) [Zbl 0948.05003]

R. P. Stanley and H. Wilf [see, e.g., M. Bóna, J. Comb. Theory, Ser. A 85, No. 1, 96-104 (1999; Zbl 0919.05002)] conjectured that for the number $F(n, \sigma)$ of $n$-permutations avoiding (not containing) a given permutation $\sigma$ there exists a constant $c = c(\sigma)$ such that $F(n, \sigma) \leq c^n$ for all $n$. Using results about generalized Davenport-Schinzel sequences, the authors prove a slightly weaker statement: $F(n, \sigma) \leq c^n\gamma^*(n)$, where $\gamma^*(n)$ is an extremely slowly growing function, related to the Ackermann hierarchy. They also prove that the conjecture holds for every permutation which consists of an increasing subsequence followed by a decreasing one, or vice versa.

Reviewer: I. Strazdins (Riga)

**MSC:**

05A05 Permutations, words, matrices
05A20 Combinatorial inequalities

**Keywords:**

pattern; permutation; Davenport-Schinzel sequences

**Full Text:** DOI Link

**References:**


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