Combinatorics Seminar

A variation of the Ramsey problem: (p,q)-colorings

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Abstract: For fixed integers p and q, let $f(n, p, q)$ denote the minimum number of colors needed to color all of the edges of the complete graph K_n such that no clique of p vertices spans fewer than q distinct colors. Any edge-coloring with this property is known as a (p, q)-coloring. In this talk I will present a recent result showing that $f(n, 5, 5) \le n^{1/3+o(1)}$ as $n \to \infty$ by giving an explicit $(5, 5)$-coloring. This improves upon the best known probabilistic upper bound of $O\left(n^{1/2}\right)$ given by Erdos and Gyarfas, and comes close to matching the best known lower bound $\Omega\left(n^{1/3}\right)$.

Monday, March 27 at 2:00 PM in SEO 612