Meeting: 1005, Newark, Delaware, SS 16A, Special Session on Probabilistic Paradigms in Combinatorics

1005-05-177 **Tom Bohman**, **Alan Frieze**, **Oleg Pikhurko** and **Clifford Smyth***
(csmyth@andrew.cmu.edu). *Thresholds for anti-Ramsey properties.*

We call an edge-coloring of a graph a k-coloing if it uses no more than k colors and k-bounded if it uses no color more than k times. We call a subgraph homogeneous if all of its edges are colored the same and heterogeneous if all of its edges are colored differently.

A classical Ramsey theorem states that for every k and every n there exists an m such that any k-edge-coloring of K_m contains a homogeneous K_n. Rodl et al. proved the following anti-Ramsey theorem: for every k and every n there exists an m such that any k-bounded edge-coloring of K_m contains a heterogeneous K_n. Furthermore the minimum such m is $O(kn^2)$ and $\Omega(kn^2/\log(n))$. Compare this to the Ramsey theorem in which the threshold is not well-understood.

Here we consider the threshold $p(H,k)$ for every k- bounded coloring $G_{n,p}$ to contain a heterogeneous H. (Received February 08, 2005)