Seminar on Combinatorial Computing
May 2, 2007, Wednesday, 6:30 p.m.
Room 6417, Graduate Center
365 Fifth Avenue, New York

Induced Ramsey-type theorems

Jacob Fox, Princeton University

Abstract

We present a unified approach to proving Ramsey-type theorems for graps with a forbidden induced subgraph which can be used to extend and improve the earlier results of Erdős-Hajnal, Luczak-Rödl, Nikiforov, Prömel-Rödl, and Rödl. The proofs are based on a simple lemma (generalizing one by Graham, Rödl, and Rucinski) that can be used as a replacement for Szemerédi's regularity lemma, thereby giving much better bounds. The same approach can also be used to show that pseudo-random graphs have strong induced Ramsey properties. This leads to explicit constructions for upper bounds on various induced Ramsey numbers.

Joint work with Benny Sudakov.

For further information contact János Pach at pach@cims.nyu.edu,
or visit our website
http://www.math.nyu.edu/p̃ach/public_html/combinatorics_seminar.html