

Discrete Mathematics Seminar

Time: Friday, 16 July 2010, 2:00-3:00 PM

Room: 238 Derrick Hall

Title: A counterexample to the Alon-Saks-Seymour conjecture and related problems

Speaker: Hao Huang, Mathematics Department, UCLA

Abstract:

Consider a graph obtained by taking an edge disjoint union of k complete bipartite graphs, Alon, Saks, and Seymour conjectured that such graphs have chromatic number at most $k+1$. This well known conjecture remained open for almost twenty years. In this talk, we will show a counterexample to this conjecture. This construction will also lead to some related results in combinatorial geometry and communication complexity. In particular, it implies a nontrivial lower bound of the non-deterministic communication complexity of the "clique versus independent set" problem.

This is joint work with Benny Sudakov.