

# COMBINATORICS SEMINAR

## EXPANSION OF $H$ -FREE GRAPHS AND ITS APPLICATIONS

BENNY SUDAKOV  
Princeton University

### ABSTRACT:

Let  $G$  be a graph which contains no subgraphs isomorphic to fixed bipartite graph  $H$ . Using well known results from Extremal Graph theory, one can show that such  $G$  has certain expansion properties, i.e., all small subsets of  $G$  have large boundary.

This simple observation appears to be a powerful tool in attacking several extremal problems. In this talk we discuss recent results in which this observation was used to resolve conjectures about cycle lengths and large clique-minors in  $H$ -free graphs.

Parts of this work are joint with J. Verstratete and with M. Krivelevich.

Wednesday, September 13, 2006  
4:15 p.m.

M.I.T. Room 2-136

Refreshments will be served at 3:30 PM in Room 2-349.

<http://www-math.mit.edu/~combin>