Seminar on Combinatorial Computing
April 10, 2002, Wednesday, 6:30 p.m.
Room 6417, Graduate Center
365 Fifth Avenue, New York

Proof of a tiling conjecture of Komlós

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Abstract

Given two graphs G and H, an H-matching of G is a subgraph of G consisting of vertex-disjoint copies of H. For an r-chromatic graph H on h vertices, we write $u = u(H)$ for the smallest color-class size in any r-coloring of H. The critical chromatic number of H is the number $\chi_{cr}(H) = (r-1)h/(h-u)$. A conjecture of Komlós states that for every graph H, there is a constant K such that if G is any n-vertex graph of minimum degree at least $(1 - (1/\chi_{cr}(H)))n$, then G contains an H-matching that covers all but K vertices of G. In a joint paper with Ali Shokoufandeh, I prove the conjecture for sufficiently large values of n.

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