Seminar on Combinatorial Computing
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Room 6417, Graduate Center
365 Fifth Avenue, New York

Antimagic labelings of regular bipartite graphs

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Abstract

A labeling of a graph is a bijection from its edges to the set $\{1, 2, \ldots, |E(G)|\}$. A labeling is *antimagic* if for every pair of distinct vertices u and v, the sum of the labels on edges incident to u is different from the sum of the labels on edges incident to v. We say a graph is antimagic if it has an antimagic labeling. In 1990, Hartfield and Ringel conjectured that every connected graph other than K_2 is antimagic. The most significant progress was been made by Alon et al. (in 2004), who showed there exists a constant C such that if an n-vertex graph G has $\delta(G) \geq C \log n$, then G is antimagic. In this paper, we show that every regular bipartite graph (with degree at least 2) is antimagic.

Our technique relies heavily on the Marriage Theorem.

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or visit our website
http://www.math.nyu.edu/∼pach/public_html/combinatorics_seminar.html