

Discrete Mathematics Seminar

Time: Friday, 22 February 2013, 1:00 – 2:00 PM

Location: 238 Derrick Hall

Title: Eigenvalue conditions for some properties of simple graphs

Speaker: Dr. Xiaofeng Gu, Mathematics Department

Abstract:

Let G be a simple undirected graph on n vertices with vertex set $\{v_1, v_2, \dots, v_n\}$. The adjacency matrix of G is an n by n matrix $A(G) = (a_{ij})$ given by $a_{ij} = 1$ if there is an edge between v_i and v_j or $a_{ij} = 0$ if otherwise, for $1 \leq i, j \leq n$. The largest eigenvalue of the adjacency matrix has been well studied. We are more interested in the second largest eigenvalue. In this talk, the second largest eigenvalue conditions for some properties of graphs are presented, including edge connectivity, spanning tree packing and forest covering. As corollaries, Laplacian and signless Laplacian matrix eigenvalue conditions are also discussed.