SEMINÁRIO

13 de Março de 2009

(Departamento de Matemática, sala Sousa Pinto, 11:30-12:30)

Título: CONNECTED GRAPHS OF FIXED ORDER AND SIZE WITH MAXIMAL $Q-$INDEX: SOME SPECTRAL BOUNDS.

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Abstract: he $Q-$index (or spectral radius) of a simple graph is the largest eigenvalue of its signless Laplacian matrix. There are many results in the literature where, for some fixed class of graphs, all graphs whose index is maximal are identified. For connected graphs of fixed order and size this problem is not yet completely resolved (in contrast to the more general class when connectivity is not required). It is only known (for a long time) that the graphs with maximal $Q-$index in the former class (and the latter one) are the nested split graphs.

Focusing our attention on eigenvector techniques we got some new (lower and upper) bounds on the $Q-$index of nested split graphs.

2000 **Mathematical Subject Classification**: 05C50

Key words and phrases: signless Laplacian spectrum, largest eigenvalue, spectral radius, graph $Q-$index, spectral bounds.