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A LOWER BOUND FOR THE NUMBER OF DISTINCT EIGENVALUES OF SOME REAL SYMMETRIC MATRICES*

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Abstract. This mostly expository note surveys and recovers a lower bound for the number of distinct eigenvalues of real symmetric matrices associated with a graph. The relation is established with the length of some paths of the underlying graph, using an improvement of an inequality involving the multiplicities of the eigenvalues. An interesting use of that number is observed. Some applications of the results to particular classes of graphs are considered.

Key words. Multiplicities, distinct eigenvalues, real symmetric matrices, graphs, paths, spectra.

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