Electronic Journal of Linear Algebra ISSN 1081-3810
A publication of the International Linear Algebra Society
Volume 16, pp. 291-299, September 2007

ELA
http://math.technion.ac.il/iic/ela

SINGULAR VALUE INEQUALITY AND GRAPH ENERGY CHANGE*

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Abstract. The energy of a graph is the sum of the singular values of its adjacency matrix. A classic inequality for singular values of a matrix sum, including its equality case, is used to study how the energy of a graph changes when edges are removed. One sharp bound and one bound that is never sharp, for the change in graph energy when the edges of a nonsingular induced subgraph are removed, are established. A graph is nonsingular if its adjacency matrix is nonsingular.

Key words. Singular value inequality, Graph energy.

AMS subject classifications. 15A45, 05C50.

*Received by the editors 3 May 2007. Accepted for publication 6 September 2007. Handling Editor: Raphael Loewy.

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