Electronic Journal of Linear Algebra ISSN 1081-3810
A publication of the International Linear Algebra Society
Volume 22, pp. 630-643, June 2011

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

SOME NEW LOWER BOUNDS FOR THE MINIMUM EIGENVALUE OF THE HADAMARD PRODUCT OF AN M-MATRIX AND ITS INVERSE*

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Abstract. For the Hadamard product $A \circ A^{-1}$ of an M-matrix A and its inverse A^{-1}, some new lower bounds for the minimum eigenvalue of $A \circ A^{-1}$ are given. These bounds improve the results of [H.B. Li, T.Z. Huang, S.Q. Shen, and H. Li. Lower bounds for the minimum eigenvalue of Hadamard product of an M-matrix and its inverse. *Linear Algebra Appl.*, 420:235-247, 2007] and [Y.T. Li, F.B. Chen, and D.F. Wang. New lower bounds on eigenvalue of the Hadamard product of an M-matrix and its inverse. *Linear Algebra Appl.*, 430:1423-1431, 2009].

Key words. Hadamard product, M-matrix, Inverse, Minimum eigenvalue, Lower bounds.

AMS subject classifications. 15A06, 15A15, 15A48.

*Received by the editors on December 10, 2009. Accepted for publication on May 20, 2011. Handling Editor: Miroslav Fiedler.

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