Electronic Journal of Linear Algebra ISSN 1081-3810
A publication of the International Linear Algebra Society
Volume 20, pp. 303-313, May 2010

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

PERTURBATIONS OF FUNCTIONS OF DIAGONALIZABLE MATRICES*

MICHAEL I. GIL'†

Abstract. Let A and $\tilde{A}$ be $n \times n$ diagonalizable matrices and f be a function defined on their spectra. In the present paper, bounds for the norm of $f(A) - f(\tilde{A})$ are established. Applications to differential equations are also discussed.

Key words. Matrix valued functions, Perturbations, Similarity of matrices, Diagonalizable matrices.

AMS subject classifications. 15A54, 15A45, 15A60.

*Received by the editors December 8, 2009. Accepted for publication April 19, 2010. Handling Editor: Peter Lancaster.

†Department of Mathematics, Ben Gurion University of the Negev, P.0. Box 653, Beer-Sheva 84105, Israel (gilmi@cs.bgu.ac.il). Supported by the Kameah fund of the Israel.