

VECTOR AND OPERATOR TRAPEZOIDAL TYPE INEQUALITIES FOR CONTINUOUS FUNCTIONS OF SELFADJOINT OPERATORS IN HILBERT SPACES *

SEVER S. DRAGOMIR[†]

Abstract. Some vector and operator generalized trapezoidal inequalities for continuous functions of selfadjoint operators in Hilbert spaces are given. Applications for power and logarithmic functions of operators are provided as well.

Key words. Selfadjoint operators, Functions of selfadjoint operators, Spectral representation, Inequalities for selfadjoint operators.

AMS subject classifications. 47A63, 47A99.

 $^{^*}$ Received by the editors on November 29, 2010. Accepted for publication on February 17, 2011. Handling Editor: Moshe Goldberg.

[†]School of Engineering & Science, Victoria University, PO Box 14481, Melbourne City, MC 8001, Australia (sever.dragomir@vu.edu.au), and School of Computational & Applied Mathematics, University of the Witwatersrand, Private Bag-3, Wits-2050, Johannesburg, South Africa.