

ON DIAZ–METCALF AND KLAMKIN–MCLENAGHAN TYPE OPERATOR INEQUALITIES

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Abstract. In this note, a result of M. S. Moslehian, R. Nakamoto and Y. Seo [Electron. J. Linear Algebra, 22 (2011) 179–190] on Diaz-Metcalf and Klamkin-McLenaghan type inequalities for positive definite operators is extended to operators having accretive transforms.

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REFERENCES

- [1] T. ANDO, C.-K. LI AND R. MATHIAS, *Geometric means*, Linear Algebra Appl., 385 (2004) 305–334.
- [2] S. S. DRAGOMIR, *Reverses of Schwarz, triangle and Bessel inequalities in inner product spaces*, J. Inequal. Pure Appl. Math., 5 (3) (2004) Article 76.
- [3] S. S. DRAGOMIR, *Some Grüss type inequalities in inner product spaces*, J. Inequal. Pure Appl. Math., 4 (2) (2003) Article 42.
- [4] S. S. DRAGOMIR, *New inequalities of the Kantorovich type for bounded linear operators in Hilbert spaces*, Linear Algebra Appl., 428 (2008) 2750–2760.
- [5] S. S. DRAGOMIR, *Inequalities for the numerical radius, the norm and the maximum of the real part of bounded linear operators in Hilbert spaces*, Linear Algebra Appl., 428 (2008) 2980–2994.
- [6] N. ELEZOVIĆ, L.J. MARANGUNIĆ AND J. PEČARIĆ, *Unified treatment of complemented Schwarz and Grüss inequalities in inner product spaces*, Math. Inequal. Appl., 8 (2) (2005) 223–231.
- [7] F. KUBO AND T. ANDO, *Means of positive linear operators*, Math. Ann., 246 (1980) 205–224.
- [8] E.-Y. LEE, *A matrix reverse Cauchy-Schwarz inequality*, Linear Algebra Appl., 430 (2009) 805–810.
- [9] M. S. MOSLEHIAN AND L. E. PERSSON, *Reverse Cauchy-Schwarz inequalities for positive C^* -valued sesquilinear forms*, Math. Inequal. Appl., 12 (4) (2009) 701–709.
- [10] M. S. MOSLEHIAN, R. NAKAMOTO AND Y. SEO, *A Diaz-Metcalf type inequality for positive linear maps and its applications*, Electron. J. Linear Algebra, 22 (2011) 179–190.
- [11] M. NIEZGODA, *Commutators and accretive operators*, Linear Algebra Appl. 431 (2009) 1192–1198.
- [12] M. NIEZGODA, *Accretive operators and Cassels inequality*, Linear Algebra Appl., 433 (2010) 136–142.
- [13] M. NIEZGODA, *Kantorovich type inequalities for ordered linear spaces*, Electron. J. Linear Algebra, 20 (2010) 103–114.
- [14] M. NIEZGODA, *Extensions of inequalities involving Kantorovich constant*, Math. Inequal. Appl., 14 (2011) 935–946.