FURTHER INEQUALITIES FOR SECTOR MATRICES

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Abstract. We mainly generalize a norm inequality of $n \times n$ block accretive-dissipative matrices. This complements the results of Kittaneh [10, Theorem 2.4] and Fu [18, Theorem 2.9]. And then, we present some singular value inequalities for sector matrices.

REFERENCES

[1] M. ALAKHRASS, *A note on sectorial matrices*, Linear Multilinear Algebra, available from, https://doi.org/10.1080/03081087.2019.1575332.
[2] R. BHATIA, *Matrix Analysis*, GTM 169, Springer-Verlag, New York (NY), 1997.
[3] R. BHATIA, J. A. R. HOLBROOK, *On the Clarkson-McCarthy inequalities*, Math Ann. **281**, (1988), 7–12.
[4] R. BHATIA, F. KITTANEH, *Norm inequalities for positive operators*, Lett Math Phys. **43**, (1998), 225–231.
[5] J. C. BOURIN, M. UCHIYAM, *A matrix subadditivity inequality for $f(A+B)$ and $f(A)+f(B)$*, Linear Algebra Appl. **423**, (2007), 512–518.
[6] I. GARG, J. AUJLA, *Some singular value inequalities*, Linear Multilinear Algebra **66**, (2018), 776–784.
[7] I. H. GUMUS, O. HIRZALLAH, F. KITTANEH, *Norm inequalities involving accretive-dissipative 2×2 block matrices*, Linear Algebra Appl. **528**, (2017), 76–93.
[8] R. A. HORN AND C. R. JOHNSON, *Topics in Matrix Analysis*, Cambridge University Press, Cambridge, 1991.
[9] L. HOU, D. P. ZHANG, *Concave functions of partitioned matrices with numerical ranges in a sector*, Math Inequal Appl. **20**, (2017), 83–589.
[10] F. KITTANEH, M. SAKKIJHA, *Inequalities for accretive-dissipative matrices*, Linear Multilinear Algebra **67**, (2019), 1037–1042.
[11] E. Y. LEE, *Extension of Rotfel'd theorem*, Linear Algebra Appl. **435**, (2011), 735–741.
[12] C. K. LI, R. MATHIAS, *Generalizations of Ky Fans dominance theorem*, SIAM J. Matrix Anal. Appl. **19**, (1998), 99–106.
[13] C. K. LI, S. N. SZE, *Determinantal and eigenvalue inequalities for matrices with numerical ranges in a sector*, J. Math. Anal. Appl. **410**, (2014), 487–491.
[14] M. LIN, *Some inequalities for sector matrices*, Oper. Matrices **10**, (2016), 915–921.
[15] M. LIN, *Fischer type determinantal inequalities for accretive-dissipative matrices*, Linear Algebra Appl. **438**, (2013), 2808–2812.
[16] M. LIN, F. SUN, *A property of the geometric mean of accretive operator*, Linear Multilinear Algebra **65**, (2017), 433–437.
[17] M. LIN, D. ZHOU, *Norm inequalities for accretive-dissipative operator matrices*, J. Math. Anal. Appl. **407**, (2013), 436–442.
[18] S. LIN, X. FU, *On some inequalities for sector matrices*, Linear Multilinear Algebra, available from, https://doi.org/10.1080/03081087.2019.1600466.
[19] Y. MAO, X. LIU, *On some inequalities for accretive-dissipative matrices*, Linear Multilinear Algebra, available from, https://doi.org/10.1080/03081087.2019.1635566.

[20] L. NASIRI, S. FURUICHI, *New inequalities for sector matrices applying Garg-Aujla inequalities*, available from, `https://arxiv.org/abs/2001.00687`.

[21] C. YANG, F. LU, *Some generalizations of inequalities for sector matrices*, J. Inequal. Appl. **2018**, (2018), 183.

[22] D. ZHANG, L. HOU, L. MA, *Properties of matrices with numerical ranges in a sector*, Bull. Iranian Math. Soc. **43**, (2017), 1699–1707.

[23] F. ZHANG, *A matrix decomposition and its application*, Linear Multilinear Algebra **63**, (2015), 2033–2042.

[24] F. ZHANG, *Matrix Theory: Basic Results and Techniques*, Universitext, Springer, New York, 1999.

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