

PERTURBATION BOUNDS FOR CERTAIN OPERATOR FUNCTIONS

JASPAL SINGH AUJLA

Abstract. Some inequalities for norms and spectral radius involving operator monotone functions have been obtained. Lieb's concavity for trace of certain function has also been considered in general form.

Mathematics subject classification (2000): 47A30, 47B15, 15A60.

Key words and phrases: Positive operator, operator monotone function, unitarily invariant norm.

REFERENCES

- [1] T. ANDO, *Topics on operator inequalities*, Lecture notes, Hokkaido University, Sapporo, 1987.
- [2] H. ARAKI, *On an inequality of Lieb and Thirring*, Letters in Math. Phys. **19** (1990), 167–170.
- [3] J. S. AUJLA AND H. L. VASUDEVA, *Some convex and monotone matrix functions*, Linear Alg. Appl. **248** (1996), 47–60.
- [4] R. BHATIA, *Matrix Analysis*, Springer Verlag, 1997.
- [5] R. BHATIA AND C. DAVIS, *A Cauchy–Schwarz inequality for operators with applications*, Linear Alg. Appl. **223** (1995), 119–129.
- [6] J. I. FUJII, M. FUJII, T. FURUTA AND R. NAKAMOTO, *Norm inequalities equivalent to Heinz inequality*, Proc. Amer. Math. Soc. **118** (1993), 827–830.
- [7] M. FUJII AND T. FURUTA, *Löwner–Heinz, Cordes and Heinz–Kato inequalities*, Math. Japon. **38** (1993), 73–78.
- [8] T. FURUTA, *Norm inequalities equivalent to Löwner–Heinz theorem*, Reviews in Math. Phys. **1** (1989), 135–137.
- [9] R. A. HORN AND C. R. JOHNSON, *Hadamard and conventional submultiplicativity for unitary invariant norms on matrices*, Linear Multilin. Alg. **20** (1987), 91–106.
- [10] F. KUBO AND T. ANDO, *Means of positive linear operators*, Math. Ann. **246** (1980), 205–224.
- [11] M. K. KWONG, *Some results on monotone matrix functions*, Linear Alg. Appl. **118** (1989), 129–153.
- [12] E. H. LIEB, *Convex trace functions and the Wigner–Yanasse–Dyson conjecture*, Avances in Math. **11** (1973), 267–288.
- [13] W. PUSZ AND S. L. WORONOWICZ, *Functional calculus for sesquilinear forms and the purification map*, Rep. Math. Phys. **8** (1975), 159–170.