A MONOTONE OPERATOR FUNCTION VIA
FURUTA–TYPE INEQUALITY WITH NEGATIVE POWERS

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Abstract. We strengthen a recent monotonicity theorem on an operator inequality with negative powers, and this is done by using means of positive operators.

REFERENCES

[1] E. KAMEI, *A satellite to Furuta's inequality,* Math. Japon **33** (1988), 883–886.
[2] E. KAMEI, *Complements to the Furuta inequality,* II, Math. Japon **45** (1997), 15–23.
[3] F. KUBO AND ANDO, *Means of Positive Linear Operator,* Math. Ann **246** (1980), 205–224.
[4] K. TANAHASHI, *Best possibility of the Furuta inequality,* Proc. Amer. Math. Soc. **124** (1996), 141–146.
[5] K. TANAHASHI, *The Furuta inequality in case of negative power,* Proc. Amer. Math. Soc. **127** (1999), no. 6, 1683–1692.
[6] M. FUJII, *Furuta's inequality and its mean theoretic approch,* J. Operator Theory **23** (1990), 67–72.
[7] M. FUJII AND E. KAMEI, *Furuta's inequality for chaotic order,* Math. Japon. **36** (1991), 603–606.
[8] M. FUJII AND E. KAMEI, *Furuta's inequality and a generalization of Ando'theorem,* Pro. Amer. Math. Soc. **115** (1992), 409–413.
[9] M. FUJII, J. F. JIANG AND E. KAMEI, *Complements to the Furuta inequality,* IV, Math. Japon **45** (1997), 511–518.
[10] M. FUJII, T. FURUTA AND E. KAMEI, *Complements to the Furuta inequality,* Proc. Japan Acad. **70** (1994), Ser. A, 239–242.
[11] M. FUJII, T. FURUTA AND E. KAMEI, *Complements to the Furuta inequality,* III, Math. Japon **45** (1997), 25–32.
[12] M. FUJII, T. FURUTA AND E. KAMEI, *Operator functions associated with Furuta inequality,* Linear algebra Appl. **149** (1991), 91–96.
[13] T. FURUTA, *An elementary proof of an order preserving inequality,* Proc. Japan Acad. **65** (1989), 126.
[14] T. FURUTA, *Extension of the Furuta inequality and Ando-Hiai log-majorization,* Liner. Alg. and Its Apple. **219** (1995), 139–155.
[15] T. FURUTA, T. YAMAZAKI AND M. YANAGIDA, *Equivalence relations among Furuta-type inequalities with negative powers,* Sci. Math. **1** (1998), 223–229.
[16] T. FURUTA, T. YAMAZAKI AND M. YANAGIDA, *On a conjecture related Furuta-type inequalities with negative powers,* Nihonkai Math. J. **9** (1998), 213–218.
[17] T. YOSHINO, *Introduction to Operator Theory, Pitman Research Notes in Math. Ser,* **300**, Longman Scientific and Technical, 1993.

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