THE NEW REVERSES OF YOUNG TYPE INEQUALITIES
FOR NUMBERS, OPERATORS AND MATRICES

LEILA NASIRI AND WENSHI LIAO

Abstract. In this note, we give reverses of Young inequality for numbers. Then we establish operator and matrix inequalities corresponding the obtained numerical inequalities.

REFERENCES

[1] R. BHATIA, *Matrix Analysis*, Springer-Verlag, New York, 1997.
[2] R. BHATIA, *Interpolating the arithmetic-geometric mean inequality and its operator version*, Linear Algebra Appl. **413**, 355–363 (2006).
[3] R. BHATIA, C. DAVIS, *More matrix forms of the arithmetic-geometric mean inequality*, SIAM J. Matrix Anal. Appl. **14**, 132–136 (1993).
[4] A. BURQAN AND M. KHANDAQJI, *Reverses of Young type inequalities*, J. Math. Inequal. Vol. 9, No. 1 (2015), 113–120.
[5] T. FURUTA, J. MIĆIĆ HOT, J. PEČARIĆ AND Y. SEO, *Mond-Pečarić method in operator inequalities*, Element, Zagreb, 2005.
[6] C. HE, L. ZOU AND S. QAISAR, *On improved arithmetic-geometric mean and Heinz inequalities for matrices*, J. Math. Inequal. **6**, 453–459 (2012).
[7] X. HU, *Young type inequalities for matrices*, J. East China Norm. Univ. Natur. Sci. Ed. **4**, 12–17 (2012).
[8] F. KITTANEH AND Y. MANASRAH, *Reverse Young and Heinz inequalities for matrices*, Linear and Multilinear Algebra **59** (2011), 1031–1037.
[9] F. KITTANEH, *On the convexity of the Heinz means*, Integral Equ. Oper. Theory **68**, 519–527 (2010).
[10] F. KITTANEH, Y. MANASRAH, *Improved Young and Heinz inequalities for matrices*, J. Math. Anal. Appl. **361**, 262–269 (2010).
[11] F. KUBO AND T. ANDO, *Means of positive linear operators*, J. Math. Ann. **246**, 205–224 (1980).
[12] L. NASIRI AND M. BAKHERAD, *Improvements of some operator inequalities involving positive linear maps via the Kantorovich constant*, Houston J. Math., (2018) (to appear).
[13] L. NASIRI, M. SHAKOORI, *A note on improved Young type inequalities with Kantorovich constant*, J. Math. Stat. **12**, 3 (2016), 201–205.
[14] L. NASIRI, M. SHAKOORI AND W. LIAO, *A note on the Young type inequalities*, Int. J. Nonlin. Appl. **10**, 2 (2016), 559–570.
[15] H. ZUO, G. SHI AND M. FUJII, *Refined Young inequality with Kantorovich constant*, J. Math. Inequal. Vol. 5, No. 4 (2011), 551–556.

ⓒ ELEMENT, Zagreb
Paper OaM-12-64

Operators and Matrices
www.ele-math.com
oam@ele-math.com