TWO NEW FORMS OF HILBERT INTEGRAL INEQUALITY

L. E. AZAR

Abstract. In this paper we obtain two new forms of the Hilbert inequality. The first form is a sharper form of the classical Hilbert inequality and is connected to Hardy inequality. In the second one we introduce a differential form of Hilbert inequality.

Mathematics subject classification (2010): 26D15.
Keywords and phrases: Hilbert's integral inequality, Hölder inequality, Hardy inequality.

REFERENCES

[1] A. ČIŽMEŠIJA, M. KRNIĆ, J. PEČARIĆ, *General Hilbert's inequality with non-conjugate parameters*, Math. Inequal. Appl. 11 (2008), 237–269.

[2] G. H. HARDY, J. E. LITTLEWOOD, AND G. POLYA, *Inequalities*, Cambridge Univ. Press, London, 1952.

[3] A. KUFNER, L. MALIGRANDA, L.-E. PERSSON, *The prehistory of the Hardy inequality*, Amer. Math. Monthly, 113(2006), 715–732.

[4] A. KUFNER, L. MALIGRANDA, L. E. PERSSON, *The Hardy inequality – About its history and some related results*, Vydavatelský servis, Pilsen, 2007.

[5] M. KRNIĆ, J. PEČARIĆ, *General Hilbert's and Hardy's inequalities*, Math. Inequal. Appl. 8 (2005), 29–52.

[6] M. KRNIĆ, J. PEČARIĆ, *Extension of Hilbert's inequality*, J. Math. Anal. Appl. 324 (2006), 150–160.

[7] M. KRNIĆ, *A refined discrete Hilbert inequality via the Hermite-Hadamard inequality*, Comput. Math. Appl. 63 (2012), 1587–1596.

[8] G. MINGZHE, B. YANG, *On the extended Hilbert's inequality*, Proc. Amer. Math. Soc. 126 (1998), 751–759.

[9] B. YANG, I. BRNETIĆ, M. KRNIĆ AND J. PEČARIĆ, *Generalization of Hilbert and Hardy-Hilbert integral inequalities*, Math. Ineq. and Appl. 8 (2) (2005) 259–272.

[10] B. YANG, T. M. RASSIAS, *On the way of weight coefficients and research for the Hilbert-type inequalities*, Math. Inequal. Appl. 6 (2003), 625–658.

© ELEMENT, Zagreb
Paper MIA-17-68

Mathematical Inequalities & Applications
www.ele-math.com
mia@ele-math.com