

SOME EXTENSIONS OF HILBERT'S INTEGRAL INEQUALITY

L. E. AZAR

Abstract. In this paper we introduce a new extension of Hilbert's integral inequality with a best constant factor involving the hypergeometric function. The equivalent form and some examples will be given.

Mathematics subject classification (2010): 26D15.

Keywords and phrases: Hardy-Hilbert's integral inequality, Holder's inequality, weight function, equivalent form.

REFERENCES

- [1] G.H. HARDY, J.E. LITTLEWOOD, AND G. POLYA, *Inequalities*, Cambridge Univ. Press, London, 1952.
- [2] BICHENG YANG, *On Hilbert's Inequality with some parameters*, Acta Math. Sinica (Chin.ser.), **49**, 5 (2006), 1121–1126.
- [3] BICHENG YANG, *On Best extensions of Hardy-Hilbert's inequality with two parameters*, J. Ineq. in pure and Appl. Math., **6**, 3 (2005), Art 81, 1–15.
- [4] MARIO KRNIĆ, GAO MINGZHE, JOSIP PECARIĆ AND GAO XUEMEI, *On the best constant in Hilbert's inequality*, Math. Ineq. and Appl., **8**, 2 (2005), 317–329.
- [5] MARIO KRNIĆ, *Hilbert Inequality and Gaussian Hypergeometric Functions*, Journal of Math. Ineq., **3**, 4 (2009), 645–656.
- [6] M. ABRAMOWITZ, AND I.A. STEGUN, *Handbook of Mathematical Functions With Formulas, Graphs, and Mathematical Tables*, 9th printing, Dover, New York, 1972, pp. 807–808.