

## ON A GENERALIZATION OF HILBERT'S DOUBLE SERIES THEOREM

BICHENG YANG

*Abstract.* By introducing three parameters  $A$ ,  $B$  and  $\lambda$ , we give a generalization of Hilbert's inequality with a best constant factor and some particular results.

*Mathematics subject classification (2000):* 26D15.

*Key words and phrases:* Hilbert's inequality, weight coefficient,  $\beta$  function, Cauchy's inequality.

## REFERENCES

- [1] HARDY G. H., LITTLEWOOD J. E. AND POLYA G., *Inequalities*. Cambridge, Cambridge Univ. Press (1952).
- [2] HU KE, *On Hilbert inequality and its application*, Advances in Mathematics **22** (1993), 160–163.
- [3] YANG BICHENG, *A refinement of Hilbert's inequality*, Huanghuai J. **13** (2) (1997), 47–51.
- [4] GAO MINGZHE, *On Hilbert's inequality and its applications*, J. Math. Anal. Appl. **212** (1997), 316–323.
- [5] YANG BICHENG AND DEBNATH L., *On a new generalization of Hardy-Hilbert's inequality and its applications*, J. Math. Anal. Appl. **233** (1999), 484–497.
- [6] KANG JICHANG AND DEBNATH L., *On a new generalization of Hardy-Hilbert's inequality and their applications*, J. Math. Anal. Appl. **245** (2000), 248–265.
- [7] GAO MINGZHE, TAN LI AND DEBNATH L., *Some improvements on Hilbert's integral inequality*, J. Math. Anal. Appl. **229** (1999), 682–689.
- [8] YANG BICHENG, *On Hilbert's integral inequality*, J. Math. Anal. Appl. **220** (1998), 778–785.
- [9] YANG BICHENG, *A note on Hilbert's integral inequalities*, Chin Quart J. Math. **13** (4) (1998), 83–86.
- [10] HSU L. C. AND WANG Y. J., *A refinement of Hilbert's double theorem*, J. Math. Res. & Exp. **11** (1) (1991), 143–144.
- [11] GAO MINGZHE, *A note on Hilbert double theorem*, Hunan Anna. Math. **12** (1–2) (1992), 142–147.
- [12] YANG BICHENG, *On new generalizations of Hilbert's integral*, J. Math. Anal. Appl. **248** (2000), 29–40.