ON HILBERT’S INTEGRAL INEQUALITY AND ITS APPLICATIONS

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Abstract. In this paper it is shown that a new improvement on Hilbert’s integral inequality can be established by introducing a weight function of the form \((1 + \sqrt{x} - 1 + x)^2\) (with \(x \geq 0\)). As applications, some refinements on Widder’s inequality and Hardy-Littlewood’s inequality are given.

Keywords and phrases: Weight function, Hilbert’s integral inequality, Schwarz’s inequality, Widder’s inequality, Hardy-Littlewood’s inequality.

REFERENCES