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SOME NEW HARDY-HILBERT INTEGRAL TYPE INEQUALITIES WITH PARAMETER

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Abstract

In this paper it is shown that some new Hardy-Hilbert type integral inequalities with weights can be established by introducing a parameter λ (with $\lambda > \frac{1}{2}$) and the weight function of the form $x^{\frac{2}{s}-1}$ (with $s > 1$). And the constant factors of new inequalities established are proved to be the best possible. In particular, for case $p = 2$, some new Hilbert integral type inequalities are obtained. As applications, some equivalent forms are considered.

Key Words : *Hardy-Hilbert integral type inequality, Non-homogeneous kernel function, Weight function, Parameter*

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