HILBERT–TYPE INEQUALITIES INVOLVING DIFFERENTIAL OPERATORS, THE BEST CONSTANTS, AND APPLICATIONS

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Abstract. Motivated by some recent results, in this article we derive several Hilbert-type inequalities with a differential operator, regarding a general homogeneous kernel. Moreover, we show that the constants appearing on the right-hand sides of these inequalities are the best possible. The general results are then applied to some particular examples of homogeneous kernels and compared with previously known from the literature.


Keywords and phrases: Hilbert-type inequality, Hardy inequality, differential operator, homogeneous function, Gamma function.

REFERENCES