

ON A HILBERT–TYPE INTEGRAL INEQUALITY WITH NON–HOMOGENEOUS KERNEL OF MIXED HYPERBOLIC FUNCTIONS

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Abstract. In this paper, by constructing a new non-homogeneous kernel of mixed hyperbolic functions, we establish a new Hilbert-type integral inequality with the best constant factor. We also consider the equivalent form of the obtained inequality. Moreover, by using the rational fraction expansion of cotangent function and cosecant function, some special Hilbert's type inequalities with the constant factors related to the higher derivatives of cotangent function and cosecant function are presented.

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