

Hardy type inequalities with weights dependent on the besseL functions

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Abstract

© 2016, Pleiades Publishing, Ltd. We obtain a new sharp Hardy type inequality with an additional term. Using the Bessel functions we prove one dimensional inequality and their multidimensional analogs in domains with a finite inradius. The weight functions depend on the Bessel functions and Lamb's constants.

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Keywords

Bessel functions, convex domains, distance function, Hardy inequality, inradius, Lamb constant