

L^p -boundedness of a Hausdorff operator associated with change of variables and weights

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Received October 1, 2020; Revised February 12, 2021

Keywords Hausdorff operator, Dunkl hypergroup, Jacobi hypergroup.
2010 Mathematics Subject Classification 47G10; 43A32

Abstract

Multivariate Hausdorff operators associated with linear transformations on $L^p(\mathbb{R}^n)$ are investigated by Brown and Moricz. We replace the linear transformation with a general change of variables and introduce modified Hausdorff operators \mathcal{H}_ψ associated with a change of variables and weights. We obtain a condition of ψ under which the operator is bounded from L^p to L^p . The modified Hausdorff operators cover the Hausdorff operators defined on the Euclidean space, the Dunkl hypergroup and the Jacobi hypergroup. In each case, we give conditions of ψ under which the operators are bounded from L^p to L^p .