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On Hausdorff Operator in the framework of weighted Lebesgue and grand Lebesgue spaces

In this talk, we shall discuss the weighted L^p -boundedness of the Hausdorff operator

$$(H_\phi f)(x) := \int_0^\infty \frac{\phi(y)}{y} f\left(\frac{x}{y}\right) dy.$$

As an application of Sawyer's duality principle, the corresponding boundedness for monotone functions will be derived. Also, we shall discuss the operator H_ϕ in the framework of grand Lebesgue spaces. We shall point out the possibility of dealing with the more general Dunkl-Hausdorff operator

$$(H_{\alpha,\phi} f)(x) := \int_0^\infty \frac{\phi(y)}{y^{2\alpha+2}} f\left(\frac{x}{y}\right) dy.$$