Nonlocal Douglas identity in L^p

Krzysztof Bogdan, Tomasz Grzywny
Wrocław University of Science and Technology (Poland),
Katarzyna Pietruska-Pałuba
Univeristy of Warsaw (Poland),
Artur Rutkowski
Wrocław University of Science and Technology (Poland)
Krzysztof.Bogdan@pwr.edu.pl

Abstract

We will discuss Hardy-Stein and Douglas identities for specific nonlinear nonlocal Sobolev-Bregman integral forms with unimodal Lévy measures. We will also explain that the corresponding Poisson integral defines an extension operator for the Sobolev-Bregman spaces. The results generalizes to the setting of L^p spaces earlier results of the authors obtained for the (quadratic) Dirichlet forms and L^2 spaces. Here is the preprint.