OPTIMAL ESTIMATES FOR THE FRACTIONAL HARDY OPERATOR ON VARIABLE EXPONENT LEBESGUE SPACES

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Abstract. Let \( A_{\alpha} f(x) = \frac{1}{|B(0, |x|)^{\alpha/n}|} \int_{B(0, |x|)} f(t) \, dt \) be the \( n \)-dimensional fractional Hardy operator, where \( 0 < \alpha \leq n \). We prove optimality results for the action of the operator \( A_{\alpha} \) on variable exponent Lebesgue spaces \( L^{p(x)} \) and weighted variable exponent Lebesgue spaces, as an extension of [13, 14, 17].


Keywords and phrases: Fractional Hardy operator, Banach function space, optimal spaces, weighted Lebesgue spaces.

REFERENCES

