FACTORIZATION OF LIPSCHITZ OPERATORS ON BANACH FUNCTION SPACES

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Abstract. Let \((X,d)\) be a pointed metric space. Let \(T: X \to Y_1(\mu)\) and \(S: X \to Y_2(\mu)\) be two Lipschitz operators into two Banach function spaces \(Y_1\) and \(Y_2\) over the same finite measure \(\mu\). We show which are the vector norm inequalities that characterize those \(T\) and \(S\) for which 
\(T = M_g \circ S\), for some multiplication operator \(M_g: Y_2 \to Y_1\). Our ideas give rise to Maurey-Rosenthal type factorization results for Lipschitz operators. We provide some applications on the Lipschitz structure of metric subsets of Banach function spaces.


Keywords and phrases: Banach function spaces, Lipschitz operators, factorization of operators, multiplication operators, product spaces.

REFERENCES