

(p, σ) -ABSOLUTELY LIPSCHITZ OPERATORS

D. ACHOUR,¹ P. RUEDA,^{2*} and R. YAHY¹

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ABSTRACT. Due to recent advances in the theory of ideals of Lipschitz mappings, we introduce (p, σ) -absolutely Lipschitz mappings as an interpolating class between Lipschitz mappings and Lipschitz absolutely p -summing mappings. Among other results, we prove a factorization theorem that provides a reformulation to the one given by Farmer and Johnson for Lipschitz absolutely p -summing mappings.

1. INTRODUCTION AND PRELIMINARIES

The fruitful development of the theory of absolute summability for linear operators (see, e.g., [8] for the general theory) produced several generalizations to the nonlinear context. This is the case of Lipschitz p -summing mappings (introduced by Farmer and Johnson in [9]), which quickly attracted the interest of many researchers trying to derive a parallel theory to the linear one (see, e.g., [5]–[7], [11]).

Midway between continuous linear operators and absolutely summing operators, a scale of linear operators (namely, (p, σ) -absolutely continuous operators $1 \leq p < \infty$, $0 \leq \sigma < 1$) was defined by Matter in [13] and [14] by applying an interpolative ideal procedure. The interpolated operator ideal $\Pi_{p, \sigma}$ of all (p, σ) -absolutely continuous operators was defined as an intermediate operator ideal between the ideal Π_p of the absolutely p -summing linear operators and the ideal of all continuous operators, and it shares similar properties with absolutely

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*Corresponding author.

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