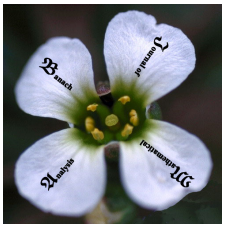

Banach J. Math. Anal. 6 (2012), no. 1, 61–73

Banach Journal of Mathematical Analysis
ISSN: 1735-8787 (electronic)
www.emis.de/journals/BJMA/

OPTIMAL RANGE THEOREMS FOR OPERATORS WITH p-TH POWER FACTORABLE ADJOINTS

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Communicated by M. Abel

Abstract. Consider an operator $T : E \to X(\mu)$ from a Banach space E to a Banach function space $X(\mu)$ over a finite measure μ such that its dual map is p-th power factorable. We compute the optimal range of T that is defined to be the smallest Banach function space such that the range of T lies in it and the restricted operator has p-th power factorable adjoint. For the case $p = 1$, the requirement on T is just continuity, so our results give in this case the optimal range for a continuous operator. We give examples from classical and harmonic analysis, as convolution operators, Hardy type operators and the Volterra operator.

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Date: Received: 26 August 2011; Accepted: 9 September 2011.
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2010 *Mathematics Subject Classification.* Primary 47B38, Secondary 46E30.
Key words and phrases. Banach function space, operator, vector measure, integration, optimal range.