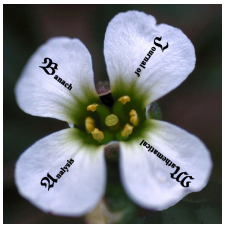

Banach J. Math. Anal. 6 (2012), no. 2, 168–179

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

AN INTERPOLATION THEOREM FOR SUBLINEAR OPERATORS ON NON-HOMOGENEOUS METRIC MEASURE SPACES

HAIBO LIN[1] AND DONGYONG YANG[2*]

Communicated by P. E. Jorgensen

Abstract. Let $(\mathcal{X}, d, \mu)$ be a metric measure space and satisfy the so-called upper doubling condition and the geometrically doubling condition. In this paper, the authors establish an interpolation result that a sublinear operator which is bounded from the Hardy space $H^1(\mu)$ to $L^{1,\infty}(\mu)$ and from $L^\infty(\mu)$ to the BMO-type space $\mathrm{RBMO}(\mu)$ is also bounded on $L^p(\mu)$ for all $p \in (1, \infty)$. This extension is not completely straightforward and improves the existing result.

[1] College of Science, China Agricultural University, Beijing 100083, People's Republic of China.
E-mail address: haibolincau@126.com

[2] School of Mathematical Sciences, Xiamen University, Xiamen 361005, People's Republic of China.
E-mail address: dyyang@xmu.edu.cn

Date: Received: 29 January 2012; Accepted: 2 May 2012.
* Corresponding author.
2010 *Mathematics Subject Classification.* Primary 42B35; Secondary 42B25, 47B38.
Key words and phrases. $\mathrm{RBMO}(\mu)$, upper doubling, geometrically doubling, sublinear, interpolation.