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Potential theory/Harmonic analysis

Corrigendum to "A limiting weak type estimate for capacitary maximal function" [C. R. Acad. Sci. Paris, Ser. I 352 (1) (2014) 7–11] ☆

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In [1], page 11, line 9: "Consequently, $\{h(y_i)\}$ is a Cauchy sequence, $D = \lim_{i\to\infty} h(y_i)$ exists." cannot be ensured by the estimates from page 11, lines 1–10. However, a careful examination of "**3. Proof of theorem**" over there reveals that [1, Theorem 1.1] should be replaced by:

Theorem 1.1. *Under the above-mentioned two assumptions, one has:*

$$\liminf_{\lambda\to 0} \lambda C\big(\{x\in\mathbb{R}^n : M_C f(x) > \lambda\}\big) \approx \|f\|_1 \approx \limsup_{\lambda\to 0} \lambda C\big(\{x\in\mathbb{R}^n : M_C f(x) > \lambda\}\big) \quad \forall f\in L^1(\mathbb{R}^n).$$

In particular, if $\phi = \psi$ then

$$\lim_{\lambda\to 0} \lambda C\big(\{x\in\mathbb{R}^n : M_C f(x) > \lambda\}\big) = \|f\|_1 \quad \forall f\in L^1(\mathbb{R}^n).$$

Here and henceforth, $\mathsf{X}\approx\mathsf{Y}$ means that there is a constant $c>0$ independent of X and Y such that $c^{-1}\mathsf{Y}\le\mathsf{X}\le c\mathsf{Y}$.

References

[1] J. Xiao, N. Zhang, A limiting weak type estimate for capacitary maximal function, C. R. Acad. Sci. Paris, Ser. I 352 (2014) 7–11.

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