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TWO WEIGHTED INEQUALITIES FOR CONVOLUTION MAXIMAL OPERATORS

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Abstract

Let $\varphi\colon \mathbb{R} \to [0,\infty)$ an integrable function such that $\varphi\chi_{(-\infty,0)} = 0$ and φ is decreasing in $(0,\infty)$. Let $\tau_h f(x) = f(x-h)$, with $h \in \mathbb{R} \setminus \{0\}$ and $f_R(x) = \frac{1}{R} f(\frac{x}{R})$, with $R > 0$. In this paper we characterize the pair of weights (u,v) such that the operators $M_{\tau_h \varphi} f(x) = \sup_{R>0} |f| * [\tau_h \varphi]_R(x)$ are of weak type (p,p) with respect to (u,v), $1 < p < \infty$.

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