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LOCAL HARDY–LITTLEWOOD MAXIMAL OPERATOR IN VARIABLE LEBESGUE SPACES

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ABSTRACT. We investigate the class $\mathcal{B}^{loc}(\mathbb{R}^n)$ of exponents $p(\cdot)$ for which the local Hardy–Littlewood maximal operator is bounded in variable exponent Lebesgue spaces $L^{p(\cdot)}(\mathbb{R}^n)$. Littlewood–Paley square function characterization of $L^{p(\cdot)}(\mathbb{R}^n)$ spaces with the above class of exponent are also obtained.

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