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EMBEDDING PROPERTIES FOR WEIGHTED MORREY SPACES

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In [1], Samko introduced the weighted Morrey spaces. We recall the definition of the spaces. Let $0 < q \le p < \infty$ and w be a weight. The weighted Morrey space $\mathcal{M}^p_q(w)$ is the set of all functions $f \in L^q_{\mathrm{loc}}(dw)$ for which the quasi-norm

$$\|f\|_{\mathcal{M}^p_q(w)} := \sup_{Q \in \mathcal{Q}} |Q|^{\frac{1}{p}-\frac{1}{q}} \left(\int_Q |f(x)|^q dw(x) \right)^{\frac{1}{q}}$$

is finite, where $\mathcal{Q}$ denotes the family of all cubes. In this poster, we shall investigate the boundedness of some classical operators which appears in Harmonic analysis, that is, Hardy-Littlewood maximal operator, fractional maximal operator, fractional integral operator and singular integral operator on $\mathcal{M}^p_q(w)$. As an application, we define the weighted Besov-Morrey spaces and weighted Triebel-Lizorkin-Morrey spaces and consider the embedding properties.

References

[1] N. Samko, Weighted Hardy and singular operators in Morrey spaces, J. Math. Anal. Appl. **350** (2009), 56–72.

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