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Morrey potentials from Campanato classes

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Abstract. This paper shows that under

$$\begin{cases} 0 < \beta, \kappa \le n; \\ -\infty < \lambda \le n; \\ 1 \le p, q < \infty; \\ p^{-1}(n-\beta) < \alpha < \min\{n, 1+p^{-1}\kappa\}; \\ \lambda = p^{-1}q(\kappa - \alpha p) + n - \beta < \begin{cases} \kappa + \varepsilon \ \forall\, \varepsilon > 0 & \text{as } \alpha^{-1}\kappa \le p < \infty \\ \kappa + \varepsilon \ \forall\, \varepsilon > 0 & \text{as } 1 < p < \alpha^{-1}\kappa \\ \kappa + \frac{(n-\kappa)(n-\alpha-\beta)}{n-\alpha} & \text{as } 1 = p < \alpha^{-1}\kappa, \end{cases} \end{cases}$$

if μ is a nonnegative Radon measure of finite β-variation on $\mathbb{R}^n$ then the Morrey potential class $I_\alpha L^{p,\kappa}$ embeds continuously into the Campanato class $\mathcal{L}^{q,\lambda}_\mu$, and its converse also holds with μ being admissible.

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