Title: Vanishing generalized Orlicz–Morrey spaces and fractional maximal operator

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We find sufficient conditions for the non-triviality of the generalized Orlicz–Morrey spaces $\mathcal{M}^{\Phi,\varphi}(\mathbb{R}^n)$, and prove the boundedness of the fractional maximal operator and its commutators with BMO-coefficients in vanishing generalized Orlicz–Morrey spaces $V\mathcal{M}^{\Phi,\varphi}(\mathbb{R}^n$ including weak versions of these spaces. The main advance in comparison with the existing results is that we manage to obtain conditions for the boundedness not in integral terms but in less restrictive terms of supremal operators involving the Young functions $\Phi(u), \Psi(u)$ and the function $\varphi(x,r)$ defining the space. No kind of monotonicity condition on $\varphi(x,r)$ in r is imposed.

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