MULTILINEAR COMMUTATORS FOR FRACTIONAL INTEGRALS IN NON-HOMOGENEOUS SPACES

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Abstract

Under the assumption that μ is a non-doubling measure on $\mathbb{R}^d$, the authors obtain the (L^p, L^q)-boundedness and the weak type endpoint estimate for the multilinear commutators generated by fractional integrals with RBMO(μ) functions of Tolsa or with $\mathrm{Osc}_{\exp L^r}(\mu)$ functions for $r \geq 1$, where $\mathrm{Osc}_{\exp L^r}(\mu)$ is a space of Orlicz type satisfying that $\mathrm{Osc}_{\exp L^r}(\mu) = \mathrm{RBMO}(\mu)$ if $r = 1$ and $\mathrm{Osc}_{\exp L^r}(\mu) \subset \mathrm{RBMO}(\mu)$ if $r > 1$.