

ON MULTILINEAR FRACTIONAL STRONG MAXIMAL OPERATOR ASSOCIATED WITH RECTANGLES AND MULTIPLE WEIGHTS

Joint work with Mingming Cao and Kôzô Yabuta

ABSTRACT. In this talk, we will introduced the multilinear fractional strong maximal operator $\mathcal{M}_{\mathcal{R},\alpha}$ associated with rectangles and corresponding multiple weights $A_{(\vec{p},q),\mathcal{R}}$. Under the dyadic reverse doubling condition, a necessary and sufficient condition for two-weight inequalities will be given. As consequences, we first obtain a necessary and sufficient condition for one-weight inequalities. Then, we give a new proof for the weighted estimates of multilinear fractional maximal operator \mathcal{M}_α associated with cubes and multilinear fractional integral operator \mathcal{I}_α , which is quite different and simple from the proof known before.