

Two–weight Estimates for Strong Fractional Maximal Functions and Potentials with Multiple Kernels

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**Abstract.** In the paper two-weight inequalities for strong fractional maximal functions and potentials with multiple kernels defined on  $\mathbb{R}^2$  are established. As corollaries, we have criteria on a weight function guaranteeing the trace inequality for the operators mentioned above. Fefferman-Stein-type inequality is also derived.