On the commutators of singular integral operators with rough convolution kernels
Xiaoli Guo and Guoen Hu

Abstract. Let $T_\Omega$ be the singular integral operator with kernel $\frac{\Omega(x)}{|x|^n}$, where $\Omega$ is homogeneous of degree zero, has mean value zero and belongs to $L^q(S^{n-1})$ for some $q \in (1, \infty]$. In this paper, the authors establish the compactness on weighted $L^p$ spaces, and the Morrey spaces, for the commutator generated by $\text{CMO}(\mathbb{R}^n)$ function and $T_\Omega$. The associated maximal operator and the discrete maximal operator are also considered.