WEIGHTED END–POINT WEAK TYPE \((p, p)\) ESTIMATES FOR \(g^*_\lambda\)–FUNCTION WITH KERNELS OF LOWER REGULARITIES

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Abstract. In 1970, if \(1 < p < 2\) and \(\lambda = 2/p\), C. Fefferman obtained the end-point weak \((p, p)\) boundedness of \(g^*_\lambda\)-function. In this paper, the authors essentially improved the result given by C. Fefferman, by showing that the weighted end-point weak type \((p, p)\) boundedness of \(g^*_\lambda\)-function still holds with lower regularities assumed on the kernel for \(1 < p < 2\) and \(\lambda = 2/p\). Moreover, similar results can also be extended to parametric Littlewood-Paley \(g^*_\lambda\)-function with more rough kernels.


Keywords and phrases: Littlewood-Paley \(g^*_\lambda\)-function, parametric \(g^*_\lambda\)-function, weak-type \((p, p)\) estimates, \(\text{Lip}_\beta(S^{n-1})\) condition.

REFERENCES