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Weighted Norm Inequalities for a Class of Rough Maximal Operators

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Keywords
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Abstract: We consider maximal singular integral operators arising from rough kernels satisfying an H^1-type condition on the unit (n-1)-sphere and prove weighted L^p estimates for certain radial weights. We also prove weighted L^p estimates with A_p-weights where in this case the H^1 -type condition is replaced by an L^q-type condition with $q > 1$. Some applications of these results are also obtained regarding singular integrals and Marcinkiewicz integrals. Our results are essential extensions and improvements of some known results.

Key Words: L^p boundedness, Hardy space, maximal operators, Fourier transform, rough kernel, A_p weight

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