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Rough Oscillatory Singular Integral Operators-II

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Abstract: In this paper, we study certain classes of oscillatory singular integral operators with kernels in Llog L(S^{n-1}) which is known to be the most desirable size condition for the L^p boundedness to hold. We prove that such operators are bounded on L^p. Our results extend and improve previously known results. Variations of our approach in this paper can be applied to handle more general oscillatory singular integral operators. This concludes by indicating a variety of results that can be obtained.

Key Words: Oscillatory singular integral operators, Rough kernels, L^p estimates, Hardy Littlewood maximal function