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On Rough Singular Integrals Along Surfaces on Product Domains

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**Abstract:** In this paper, we study a class of singular integrals along surfaces on product domains with kernels in  $L(\log L)^2(S^{n-1} \times S^{m-1})$ . We formulate a general theorem concerning the  $L^p$  boundedness of these operators. As a consequence of this theorem we establish  $L^p$  estimates of several classes of operators whose  $L^p$  boundedness in the one parameter setting is known. The condition  $L(\log L)^2(B^{n-1} \times S^{m-1})$  is known to be an optimal size condition



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