ON SINGULAR INTEGRALS AND MAXIMAL OPERATORS
ALONG SURFACES OF REVOLUTION ON PRODUCT DOMAINS

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Abstract. We study the mapping properties of singular integral operators along surfaces of revolutions on product domains. For several classes of surfaces, we prove sharp $L^p$ bounds ($1 < p < \infty$) for these singular integral operators as well as their corresponding maximal operators. By using these $L^p$ bounds and an extrapolation argument we obtain the $L^p$ boundedness of these operators under optimal conditions on the singular kernels. Our results extend and improve several results previously obtained by many authors.


Keywords and phrases: Singular integrals, product domains, rough kernels, block spaces, extrapolation.

REFERENCES


