Journal of Mathematical Inequalities
Volume 18, Number 1 (2024), 143–169
doi:10.7153/jmi-2024-18-09

L^p BOUNDS FOR SINGULAR INTEGRAL OPERATORS ALONG TWISTED SURFACES

BADRIYA AL-AZRI AND AHMAD AL-SALMAN

Abstract. This paper concerns the study singular integrals along twisted surfaces of the form

$$\{(\Phi(|v|)\,u, \Psi(|u|)\,v) : (u,v) \in \mathbb{R}^n \times \mathbb{R}^m\}.$$

We prove L^p bounds for the corresponding operators when the surfaces are defined by mappings more general than polynomials and convex functions, provided that the kernels are in $L(\log L)^2(\mathbb{S}^{n-1} \times \mathbb{S}^{m-1})$.

Mathematics subject classification (2020): Primary 42B20; Secondary 42B15, 42B25.
Keywords and phrases: Singular integral operators, product domains, twisted surfaces, L^p estimates, maximal functions, convex functions.

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