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TWO-DIMENSIONAL SURFACES IN EUCLIDEAN 5-SPACE WITH CONSTANT SCALAR CURVATURE

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ABSTRACT

In this paper, we analyzed the problem of studying locally the scalar curvature S of the three dimensional surfaces foliated by an equiform motion of catenary curve in Euclidian five spaceE^5. We express the scalar curvature S of the corresponding two-dimensional surfaces as the quotient of functions$\{\phi^n \cosh m\phi\,, \phi^n \sinh m\phi\}$, and we derive the necessary and sufficient conditions for the coefficients to vanish identically. Finally an example is given to show three-dimensional surfaces with constant scalar curvature.

KEYWORDS: Catenary Surface, Equiform Motion, Scalar Curvature