

A SURVEY OF DELAUNAY SURFACES WITH APPLICATIONS IN CAPILLARY SURFACES

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In this paper we survey Delaunay surfaces in \mathbb{R}^3 spanning two coaxial circles which appear as capillary surfaces supported on different solid supports in the absence of gravity. We classify these surfaces based on contact angles and the geometry of the support. Numerical solutions of the Euler Lagrange equation are provided using numerical methods.

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1. Introduction

Studies of the Constant Mean Curvature (CMC) surfaces in \mathbb{R}^3 are a central topic in classical differential geometry with a long history. For instance, these surfaces are the local solutions of the isoperimetric problem of finding area minimizing