COMPLETE DENSE MINIMAL SURFACES IN ANY DOMAIN OF $\mathbb{R}^n$

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Given an open Riemann surface M and an integer $n \geq 3$, we prove on [1] that the set of complete conformal minimal immersions $M \to \mathbb{R}^n$ with $\overline{X(M)} = \mathbb{R}^n$ forms a dense subset in the space of all conformal minimal immersions $M \to \mathbb{R}^n$ endowed with the compact-open topology. Furthermore, we show that given a domain in $\mathbb{R}^n$ we may find a complete minimal surface which is dense on it and has arbitrary orientable topology (possibly infinite); we also provide such surfaces whose complex structure is any given bordered Riemann surface.

Analogous results for non-orientable minimal surfaces in $\mathbb{R}^n$ $(n \geq 3)$, complex curves in $\mathbb{C}^n$ $(n \geq 2)$, holomorphic null curves in $\mathbb{C}^n$ $(n \geq 3)$, and holomorphic Legendrian curves in $\mathbb{C}^{2n+1}$ $(n \in \mathbb{N})$ may be proved adapting the used techniques.

Referencias

[1] A. Alarcón, I. Castro-Infantes. *Complete minimal surfaces densely lying in arbitrary domains of* $\mathbb{R}^n$ arXiv:1611.05029.

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