

Weierstrass interpolation theorem for minimal surfaces

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There is a strong connection between complex analysis and minimal surfaces via the Weierstrass representation formula. It has been exploited recently in the study of such surfaces. The classical interpolation theorem of Weierstrass asserts that the values of an entire function may be prescribed on a discrete and closed subset of the Euclidean complex plane.

We would present in this talk the first results dealing with interpolation in the setting of minimal surfaces. Concretely, given an open Riemann surface M and an integer $n \geq 3$. We prove on [1] that one may prescribe the values of a conformal minimal immersion $M \rightarrow \mathbb{R}^n$ on a discrete and closed subset of M .

Furthermore, global properties of the immersions are proved under natural assumptions.

This is a joint work with Antonio Alarcón.

References

- [1] A. Alarcón, I. Castro-Infantes. *Interpolation by conformal minimal surfaces and directed holomorphic curves*. Analysis & PDE 12-2 (2019), 561–604. DOI 10.2140/apde.2019.12.561