EVERY MEROMORPHIC FUNCTION IS THE GAUSS MAP OF A CONFORMAL MINIMAL SURFACE

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Abstract: We prove that every meromorphic function on an open Riemann surface M is the complex Gauss map of a conformal minimal immersion $M \to \mathbb{R}^3$ which may furthermore be chosen as the real part of a holomorphic null curve $M \to \mathbb{C}^3$. Analogous results are proved for conformal minimal immersions $M \to \mathbb{R}^n$ for any $n > 3$. We also show that every conformal minimal immersion $M \to \mathbb{R}^n$ is isotopic to a flat one, and we identify the path connected components of the space of all conformal minimal immersions $M \to \mathbb{R}^n$ for any $n \geq 3$.

(Joint work with Antonio Alarcon and Francisco J. Lopez, University of Granada.)

References

[1] Alarcon, A., Forstnerič, F. and Lopez, F. J.; Every meromorphic functions is the Guass map of a conformal minimal surface. arXiv:1604.00514.