

On the Singular Set of Fractional Harmonic Maps

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Abstract

In this talk I will present an Allard-type regularity theorem for the singular set of s -harmonic maps into $\mathbb{S}^1$, with $s \in (1/2, 1)$. The main result shows that the singular points in the top stratum attaining the fundamental energy level are an $(n - 2)$ -dimensional manifold of class $C^{1,\alpha}$. Then, I will discuss how to interpret such result as a regularity theory for codimension-two nonlocal minimal surfaces.

The talk is based on some joint work with María Medina de la Torre (UAM) and Joaquim Serra (ETHZ).