

Seminar of the Work Group
Nonlinear Partial Differential Equations
SS 22

Speaker: Gael Diebou
May 3rd, 2022, 14:00 - 15:00
Seminar room: 3.061

Well-posedness theory for the weakly harmonic maps problem subject to irregular data

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Abstract

We study the existence, uniqueness and regularity of weakly harmonic maps into a closed Riemannian manifold. In this talk, I will emphasize on the novel ideas, based on intrinsic features of the problem and modern harmonic analysis tools which allow us to prescribe Dirichlet data with infinite energy. More precisely, we prove that under a mere smallness hypothesis on the boundary data measured in the L^∞ or BMO norm, there exists a unique solution which is locally infinitely smooth. While this regularity fails in absence of the smallness assumption, existence still persists for large data provided the domain is bounded and there exist smooth stable weakly harmonic maps. This is a joint work with Herbert Koch.