



Seminar of the Work Group
Nonlinear Partial Differential Equations
Institute for Analysis
WS 24/25

Speaker: Ferdinand Eitler
November 5th, 2024, 11:30 - 13:00
Seminar room: SR 3.061

Gradient integrability for bounded BD-minimizers

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Abstract

This talk focuses on regularity theory for bounded generalised minimisers of μ -elliptic linear growth functionals in the space BD of functions of bounded deformation. For this kind of variational problems the latter space is natural, but a priori the symmetric gradient exists only as a matrix valued Radon measure. For generalised minimisers which are locally bounded we establish a higher gradient integrability result for the full range of $\mu \in (1, 3]$. In order to use the available a priori bounds on the symmetric gradients, we must simultaneously allow for algebraic manipulations and keep track of the L^∞ -constraint. The potential non-uniqueness of generalised minimisers moreover requires these tasks to be compatible with a suitable application of Ekeland's variational principle. This is joint work with Lisa Beck (Augsburg) and Franz Gmeineder (Konstanz).