# Uhlenbeck Theorem for almost-minimizers

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*The talk is based on joint work with J. Kristensen.*

A class of functionals for which everywhere $C^{1,\alpha}$ regularity of minimizers occurs is the one first identified in the fundamental work of K. Uhlenbeck . It prescribes that the dependance of the gradient must occur directly via the modulus $|Du|$.
I will present Hölder continuity results for almost minimizers of functionals.

**Definition 1.** A map $u \in W^{1,p}(\Omega, \mathbb{R}^N)$ is $\omega$ almost-minimizing ($\omega$-minimizer) if

$$\int_{B_R} |Du|^p dx \leq (1 + \omega(R)) \int_{B_R} |Dv|^p dx \tag{1}$$

whenever $u - v \in W_0^{1,p}(B_R, \mathbb{R}^N)$ and $B_R \subset\subset \Omega$ is a ball of radius $R \in (0, 1)$.

Here $\omega\colon (0, \infty) \to (0, \infty)$ is a nondecreasing continuous function such that

$$\lim_{R \searrow 0} \omega(R) = 0.$$