

A regularity theory for scalar local minimizers of splitting-type variational integrals

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Abstract. Starting from Giaquinta's counterexample [12] we introduce the class of splitting functionals being of (p, q) -growth with exponents $p \leq q < \infty$ and show for the scalar case that locally bounded local minimizers are of class $C^{1,\mu}$. Note that to our knowledge the only $C^{1,\mu}$ -results without imposing a relation between p and q concern the case of two independent variables as it is outlined in Marcellini's paper [15], Theorem A, and later on in the work of Fusco and Sbordone [10], Theorem 4.2.

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