

Nonexistence of Solutions in Nonconvex Multidimensional Variational Problems

Roubíček, Tomáš; Sverak, Vladimír

Mathematical Institute Charles University Sokolovská 83 18675 Praha 8 Czech Republic
School of Mathematics Vincent Hall University of Minnesota Minneapolis, MN 55455 U.S.A.



Abstract: In the scalar n -dimensional situation, the extreme points in the set of certain gradient $L^{p,p}$ -Young measures are studied. For $n = 1$, such Young measures must be composed from Diracs, while for $n \geq 2$ there are non-Dirac extreme points among them, for $n \geq 3$, some are even weakly* continuous. This is used to construct nontrivial examples of nonexistence of solutions of the minimization-type variational problem $\int_0^1 W(x, \nabla u) dx$ with a Caratheodory (if $n \geq 2$) or even continuous (if $n \geq 3$) integrand W .

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