

Weak lower semicontinuity and relaxation of integral functionals: Concentrations and associated generalized Young measures

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Abstract

For integral functionals on $W^{1,p}$, the standard result due to Acerbi and Fusco shows equivalence of quasiconvexity of the integrand and weak lower semicontinuity of the functional. This result relies on an additional assumption, a lower bound for the integrand, which is not purely technical, but not optimal either. We consider functionals with an integrand whose negative part can have p -growth as well, a situation where concentrating sequences play a crucial role. In addition, we discuss a class of generalized gradient Young measures capturing concentrations.

Part of this is joint work with Martin Kružík.