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“ On a restricted weak lower semicontinuity in the calculus of variations”

ABSTRACT:

In this talk, I will address some issues related to a problem suggested in a lecture note by Stefan Muller. Here I discuss the weak lower semicontinuity of a smooth functional on a Sobolev space along all its Palais-Smale sequences. The relationship of this restricted semicontinuity with the usual unrestricted one will be studied, which shows quite different results in various cases. In general, a necessary and sufficient condition for the restricted weak lower semicontinuity is not known, but we give such a condition for the one-dimensional problem.

This is joint work with Daniel Vasiliu.