

## Nonoccurrence of Lavrentiev gap for a general minimization problem

*Tuesday, June 25, 2024 11:00 AM (30 minutes)*

We discuss the absence of Lavrentiev gap for minimization problems in the calculus of variations when the functional depends on the space variable, the function and the gradient. Namely, can we approximate a function  $u$  of finite energy by a sequence of Lipschitz functions whose energy converges to that of the original function? In general, it is not true, thus, we have to put some constraints on our functional. In our case, we require a natural condition balancing control on the variations of the space variable with growth with respect to those that depend on the gradient. The proof relies on this assumption combined with an approximation result on the graph of  $u$ .

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