

Non-Coercive Variational Problems with Constraints on the Derivatives

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Abstract: We establish a necessary and sufficient condition for the existence of the minimum of the functional $\int_0^1 f(t, v'(t)) dt$ in the class $\mathcal{W}_d^p = \{v \in W^{1,p}([0,1]) : v(0)=0, v(1)=d, v'(t) \geq \alpha\}$, in terms of a limitation of the slope d . Some applications to quasi-coercive and non-coercive integrands are also derived.



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