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A Turnpike Result for a Class of Problems of the Calculus of Variations with Extended-Valued Integrands

We study the structure of approximate solutions of an autonomous variational problem with a lower semicontinuous integrand

$$f: \mathbb{R}^n \times \mathbb{R}^n \to \mathbb{R}^1 \cup \{\infty\},\$$

where \mathbb{R}^n is the *n*-dimensional Euclidean space. We are interested in a turnpike property of the approximate solutions which are independent of the length of the interval, for all sufficiently large intervals.

Keywords: Good function, infinite horizon, overtaking optimal function, turnpike property.

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