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Abstract

On existence of a limit average value for a optimal control problem with horizon tending to infinity:

We investigated a limit value of an optimal control problem when the horizon converges to infinity:

$$\lim_{t \rightarrow +\infty} \inf_{y(\cdot)} \frac{1}{t} \int_0^t h(y(s), u(s)) ds,$$

where the infimum is taken over solutions $y(\cdot)$ to the control system

$$y'(s) = g(y(s), u(s)), \quad y(0) = y_0.$$

For this aim, we suppose suitable nonexpansive-like assumptions which does not implies that the limit is independent of the initial state y_0 as it is usually done in the literature.

This talk is mainly based on the article "[On the Existence of a Limit Value in Some Nonexpansive Optimal Control Problems](#)", Marc Quincampoix and Jérôme Renault, SIAM J. Control Optim. 49, 2118 (2011)