

State constrained optimal control with states of low regularity

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We discuss a recent existence and regularity result for Lagrange multipliers in the context of state constrained optimal control. In contrast to existing results, a Slater condition is exploited independently of the regularity of the states.

Applied to problems with pointwise state constraints this yields for example representations of the Lagrange multipliers via measures, even in cases where continuity of the states is not guaranteed.

Our aim is also to explore possible applications and insights, gained from this result, in particular to stability or sensitivity considerations.