

Sufficient optimality conditions for a bang–singular extremal in the minimum time problem

Laura Poggiolini, Gianna Stefani
Dipartimento di Matematica Applicata "G. Sansone"
Università degli Studi di Firenze

CONTROL AND CYBERNETICS (ISSN:0324-8569), 469 - 490, 37

The paper gives second order sufficient conditions for the strong local optimality of a bang–singular extremal in a minimum time problem. The conditions are given in terms of regularity assumptions on the extremal and of the coercivity of the extended second variation on the singular arc. The conditions are *close* to the necessary ones in the usual sense, namely we require strict inequalities where the necessary conditions have mild inequalities.

Keywords: Minimum time, second order sufficient conditions, bang–singular arc, Hamiltonian formalism.