

Hamiltonian systems and optimal control

A. Agrachev
Department of Mathematics
SISSA
via Beirut 4
Trieste, 34014
Italy
`agrachev@sissa.it`

Abstract

Solutions to any optimal control problem are described by trajectories of a Hamiltonian system. The system is intrinsically associated to the problem by a procedure that is a geometric elaboration of the Lagrange multipliers rule. The intimate relation of Optimal Control and Hamiltonian Dynamics is fruitful for both domains; among other things, it leads to a clarification and far going generalization of important classical results about Riemannian geodesic flows.

For more information see Lecture Notes: [arXiv math.0C/0506197](https://arxiv.org/abs/math/0605197).