Chadi Nour (chadi@igd.univ − lyon1.fr), Institut Girard Desargues, Université Lyon 1 (La Doua), 21 avenue Claude Bernard, 69622 Villeurbanne Cedex, France, *Nonconvex Duality in Optimal Control*

Necessary and sufficient optimality conditions are obtained for a class of optimal control problems. We find a representation of the minimum cost in terms of the upper envelope of generalized semisolutions of the Hamilton-Jacobi equation, and as a corollary a representation in terms of smooth subsolutions, generalizing a result due to Vinter. An important application of our result is a new characterization of the minimal time function.