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OPTIMIZATION OF MAYER FUNCTIONAL IN OPTIMAL CONTROL PROBLEM WITH DISCRETE INCLUSIONS

Sevilay Demir Sağlam*

Istanbul University, Department of Mathematics, Istanbul, Turkey

ABSTRACT

The optimization of Mayer functional in optimal control problems with discrete inclusions plays a crucial role in mathematical modeling and engineering applications. This study explores necessary and sufficient optimality conditions for discrete inclusions, incorporating Euler-Lagrange inclusions and transversality conditions. Using locally adjoint mapping techniques, we derive Euler–Lagrange and Hamiltonian-type conditions to establish a framework for solving discrete problems. The results contribute to the advancement of optimal control methodologies, offering new perspectives on constrained mathematical programming problems.

***K*eywords** Discrete inclusions · Optimality Conditions

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*Corresponding Author's E-mail: sevilay.demir@istanbul.edu.tr