Second-order Optimality Conditions for a Semilinear Elliptic Optimal Control Problem with Mixed Pointwise Constraints

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Abstract: In this talk, we give a common critical cone, under which the second-order necessary and sufficient conditions for a semilinear elliptic control problem with mixed pointwise constraint, are valid. Some kinds of second-order sufficient optimality conditions are given and compared. Our results approach to a theory of no-gap second-order conditions. In order to obtain the results, we reduce the problem to a special mathematical programming problem in which the contraint sets are G-polyhedric and then we use some tools of variational analysis and techniques of semilinear elliptic equations to analyze second-order conditions.

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