

On existence of multipliers for constrained optimization problems with feasible sets involving PDE's

Thursday, August 15, 2024 9:00 AM (30 minutes)

In the presentation we consider constrained optimization problems with equality constraints given by operator F acting between Banach spaces and a number of inequality constraints. The regularity conditions for the this kind of problems ensuring the existence of Lagrange multipliers are expressed with the help e.g. of Robinson Kurcyusz and Zowe or other conditions like Aubin and Guignard, which are difficult to be checked. In general, Slater-type conditions and surjectivity of the derivative of F at the solution point imply Robinson Kurcyusz and Zowe regularity conditions. Our aim is to discuss regularity conditions related to the image of the derivative of F . We will introduce sufficient conditions for the non-emptiness of the set of Lagrange multipliers. To achieve this, we will employ a generalization of Lusternik's theorem.

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Session Classification: MS 07: Modeling, Analysis and Optimal Control of Infinite Dimensional Problems and Applications

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