

Seminario de Análisis Numérico y Modelamiento Matemático de Estudiantes

Limiting normal cones to the union of two convex sets and M-stationarity: Local uniqueness and stability in mathematical programming

This talk addresses new developments regarding optimality conditions, dealing with the limiting normal cone to the union of two polyhedrons, as a way to solve the discretized versions of problems regarding differential inclusions, which generalize the optimal control problem. In particular, we focus on sweeping processes. We follow a similar approach as the one used [1], where the authors obtain conditions to ensure local uniqueness and stability on the solutions the Karush-Kuhn-Tucker optimality conditions. We now deal with the problem resulting from the discretization of a simple sweeping process, this includes geometrics constraints, which we study via the M-stationarity optimality condition instead.

References

[1] W. Hager, M. Gowda: Stability in the presence of degeneracy and error estimation, Mathematical Programming, 85, 181–192, 1999.

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