

Facial Approach for Constructing Stationary Points for Mathematical Programs with Cone Complementarity Constraints

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Abstract

The talk is devoted to the study of stationary points of mathematical programs with cone complementarity constraints, denoted as CMPCC. We first review the different formulations of CMPCC. We then revisit definitions for Bouligand, Proximal Strong, Regular Strong, Wachsmuth's Strong, Wachsmuth's L-Strong, Mordukhovich, Clarke, and Wachsmuth's Weak stationary points, creating a comprehensive framework for CMPCC. Building upon the fundamental principles of cone faces and their properties, we introduce a novel stationarity condition, termed *Facial stationary point*, which seems the natural generalization of the original weak stationary condition to this CMPCC setting. We then investigate and explain the hierarchical relationships among stationary points.

This work was supported by Centro de Modelamiento Matemático (CMM) BASAL fund FB210005 for center of excellence from ANID-Chile.