Duality for sets of strong Slater points

Margarita M.L. Rodríguez & **José Vicente-Pérez***

Abstract

The strong Slater condition plays a significant role in the stability analysis of linear semi-infinite inequality systems. This piece of work studies the set of strong Slater points, whose non-emptiness guarantees the fullfilment of the strong Slater condition. Given a linear inequality system, we firstly establish some basic properties of the set of strong Slater points. Then, we derive dual characterizations for this set in terms of the data of the system, following similar characterizacions provided also for the set of Slater points and the solution set of the given system, which are based on the polarity operators for evenly convex and closed convex sets. Finally, we present two geometric interpretations and apply our results to analyze the strict inequality systems defined by lower semicontinuous convex functions.

References

[1] RODRÍGUEZ M.M.L. & VICENTE-PÉREZ J., Duality for sets of strong Slater points, *Set-Valued Var. Anal.* (revised, with minor revisions, and resubmitted)

*University of Alicante, jose.vicente@ua.es