

Seminar AGCO

Speaker: Gonzalo Muñoz, Universidad de O'Higgins.

Title: Maximal Quadratic-Free Sets.

Abstract: The intersection cut paradigm is a powerful framework that facilitates the generation of valid linear inequalities, or cutting planes, for a potentially complex feasible set S of an optimization problem. The key ingredient in this construction is an S -free set: a convex zone whose interior does not intersect S . Ideally, such S -free set would be maximal inclusion-wise, as it would generate a deeper cutting plane. In the case of integer programming, maximal lattice-free sets (i.e., when S corresponds to the integer lattice) have proven to be a powerful tool and have been carefully studied by the optimization community. In this work, we consider quadratically constrained optimization problems and show how to construct maximal S -free sets when S is defined as a general quadratic inequality. Our maximal S -free sets are such that efficient separation of a vertex in LP-based approaches to quadratically constrained problems is guaranteed. To the best of our knowledge, this work is the first to provide maximal quadratic-free sets.

<https://zoom.us/j/98178172542?pwd=N2R1R2VIU1V6WnRyTEhnMXFwaTBIZz09>

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Miércoles 29 de Julio, 14:30 hrs.