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Optimization and Equilibrium Seminar

Speaker 1: Abderrahim Hantoute

Affiliation: Universidad de Alicante, España

Title: Partially non-convex minimax theorem and applications to remotal sets.

Abstract: Given a convex subset B A of a locally convex space Y X; and a function f : Y X ! R such that B is compact and f (y;); y 2 Y; are concave and upper semicontinuous, we establish in a Örst step a minimax inequality of the form maxy2B infx2A f (y; x) □ infx2A supy2B0 f (y; x); where B0 is the set of points y 2 B such that f (y;) is proper and convex.

The main di§erence with the classical minimax theorem is that, here, the set B0 does not need to be convex or compact. We use this result to give a new proof of the characterization of remotal sets, relying on the convexiy of the set of farthest points. We also propose new duals for inÖnite programming problems with zero-duality gap.

Key words. Minimax theorem, convexity, remotal sets, duality.

Speaker 2: Sofía López

Affiliation: Escuela Politécnica Nacional, Ecuador.

Title: A second-order descent method with active-set prediction for group sparse optimization

Abstract: In this talk, we propose a second-order algorithm for the solution of finite and infinite dimensional group sparse optimization problems. Group sparse optimization has gained a lot of attention in the last years due to several important classification problems requiring group sparse solutions. The most prominent application example is the group LASSO problem, which consists in minimizing a least-squares fitting term together with the group sparsity l1/l2 norm. The method is built upon the steepest descent directions of the nonsmooth problem, which are further modified by using second-order information. A prediction step is also proposed for faster identification of the strong active set. A general convergence result is proved in Rn, and the active set behavior is analyzed. The work ends with comparative computational experiments to test the performance of the devised algorithm.

Link de zoom:
https://reuna.zoom.us/j/5185702306?pwd=cEtaeGVqUk1ZY0lkQ2Z0WU4yNlFmUT09

Miércoles 18 de Octubre de 2023, a las 16:15 Hrs.
Sala de Seminarios John Von Neumann del Centro de Modelamiento Matemático (Beauchef 851, Edificio Norte, Piso 7).