

Optimization and Equilibrium Seminar

Speaker: Felipe Lara Obreque, Universidad de Tarapaca, Chile

Title: On strongly quasiconvex functions: theory and applications.

Abstract: In this talk, we present a new existence result for the class of lsc strongly quasiconvex functions by showing that every strongly quasiconvex function is 2-supercoercive (in particular, coercive). Furthermore, we investigate the usual properties of proximal operators for strongly quasiconvex functions. In particular, we prove that the set of fixed points of the proximal operator coincides with the unique minimizer of a lsc strongly quasiconvex function. As a consequence, we implemented the proximal point algorithm for finding the unique solution of the minimization problem by using a positive sequence of parameters bounded away from 0 and, in particular, we revisited the general quasiconvex case. Moreover, a new subdifferential for nonconvex functions and a new characterization for convex functions is derived from our study.

Finally, an application for a strongly quasiconvex function which is neither convex nor differentiable nor locally Lipschitz continuous, is provided.

Date: Wednesday, October 06, 2021 at 10:00 am (Chilean time)

link: <https://meet.google.com/vpx-itqg-oik>

Major information on the this and previous seminars may be found at:

<https://eventos.cmm.uchile.cl/optimseminar/seminars>