

Global Optimality Conditions in Non-Convex Optimization and Related Issues

Panos M. Pardalos

Center for Applied Optimization (CAO), University of Florida, Gainesville, USA
Laboratory of Algorithms and Technologies for Networks Analysis (LATNA),
National Research University – Higher School of Economics, Russia
`pardalos@ufl.edu`

In this talk we are going to present recent results regarding global optimality conditions for general non-convex optimization problems. First we are going to discuss complexity issues regarding the existence of points satisfying optimality conditions and the connection to complementarity problems. In addition, we are going to discuss surprising connections between optimality conditions and continuous formulations of discrete optimization problems.

In the second part of the talk we are going to discuss our recent result regarding optimality conditions of locally Lipschitz functions. Namely, we show how the necessary conditions for a local minimum can be used to obtain a sufficient optimality condition of first order for a global minimum of a locally Lipschitz function on a closed convex set in a Banach space.