13^{th} **EUROPT Workshop on Advances in Continuous Optimization**

Title: Augmented Lagrangian methods for nonlinear programming with possible infeasibility

Speaker: Leandro F. Prudente

Authors: M.L.N. Gonçalves, J.G. Melo, L.F. Prudente

Abstract: We consider a nonlinear programming problem for which the constraint set may be infeasible. We propose an algorithm based on a large family of augmented Lagrangian functions and, accepting inexact global solutions of the subproblems, analyze its convergence properties taking into account the possible infeasibility of the problem. In a finite number of iterations, the algorithm stops detecting the infeasibility of the problem or finds an approximate feasible/optimal solution with any required precision. We present some numerical experiments illustrating the applicability of the algorithm for different Lagrangian/penalty functions proposed in the literature.