Recent advances in Augmented Lagrangian Methods for nonlinear optimization problems

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Augmented Lagrangian (AL) techniques comprise an important and widely used class of methods to solve optimization problems with constraints. The classical AL method uses an iterative sequence of subproblems that are considerably easier to solve. By its intrinsic definition, the convergence analysis of the AL method is directly related to the study of the so-called sequential optimality conditions (SOC). Over the past few years, special attention has been devoted to define weaker SOCs.

One of the most prominent and studied AL method is known as "Algencan". This method has excellent theoretical properties and presents robust numerical behaviour. In this talk we will discuss recent advances concerning Algencan, from a theoretical and numerical point of view.