Methods for constrained DC optimization based on outer approximations

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Abstract

In this talk, we present methods for solving the constrained difference of convex (DC) programming problems. First, we discuss outer approximations of the feasible set. These approximations are constructed using ε -subdifferentials of DC components of constraint functions. Then the constrained DC optimization problem is approximated by the sequence of DC optimization problems where one can easily select the feasible starting points. We use improvement functions (or sharp augmented Lagrangians) to replace the constrained DC optimization problems and design methods based on this approach. We discuss convergence of the methods, use a collection of academic test problems to evaluate them and compare them with several constrained nonsmooth optimization solvers.