ABSTRACT

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Recent advances on the Discrete Ordered Median Problem

Ordered median optimization has been proven to be a powerful tool to model many features in well-known problems from the literature (location problems, multiobjective optimization, complex networks design, portfolio selection, machine learning algorithms, etc.). Considering sorting procedures allows us to extend the range of application of the problems including preferences, fairness, avoiding envy, unhappiness, etc. when using compact formulations.

In this talk we focus on the recent improvements of the Discrete Ordered Median Problem (DOMP), a location problem where client-facility allocations are ranked. We review properties of the k-sum optimization used to derived the most competitive formulation in the literature and present a state-of-the-art Benders decomposition.