Solving a continuous local access network design problem with a stabilized central column generation approach

Abstract.

In this paper, we focus on a variant of the multi-source Weber problem. In the multi-source Weber problem, the location of a fixed number of concentrators, and the allocation of terminals to them, must be chosen to minimize the total cost of links between terminals and concentrators. In our variant, we have a third hierarchical level, two categories of link costs, and the number of concentrators is unknown. To solve this difficult problem, we propose several heuristics, and use a new stabilized column generation approach, based on a central cutting plane method, to provide lower bounds.