

## Abstract

The Capacitated  $p$ -median Problem (CPMP) is a facility location problem and as such, it can be used for partitioning geographical areas. The goal is to set a certain number ( $p$ ) of facilities and to assign users to them in such way that the sum of the distances between the users and the facility is minimized, having in mind that those facilities are limited in capacity. In this work combinatorial techniques were used to provide primal and dual bounds for this problem: a Lagrangean relaxation is used to provide dual bounds. Then heuristics are used to provide primal bounds. All methods are tested using a set of instances found in the literature. Computational results show good primal and dual bounds in reasonable CPU times.