ABSTRACT

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The Polyhedral Combinatorics and the solution of routing problems

Beginning with the pioneering works of Dantzig, Edmonds, and others, linear programming-based methods have been successfully applied to the solution of many combinatorial optimization problems.

These methods basically consist of trying to formulate the problem as a linear program and using the existing powerful methods of linear programming to solve it.

Routing problems are no exception, and it can be said that LP-based methods are currently among the most effective for solving NP-hard node and arc routing problems.

The effectiveness of these methods depends on a good understanding of the polyhedron associated with the problem under study.

This talk deals with the application of polyhedral theory to the construction of effective optimization algorithms for solving routing problems.