

Polyhedral Computations
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Polyhedral Computations and Practical Problem Solving

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Abstract

It is essential for the success of branch-and-cut algorithms for solving combinatorial optimization problems that reasonable tight linear relaxations and effective routines for solving the respective separation problems are available. In this talk we discuss the usefulness of small instance relaxations obtained from complete facet descriptions of polytopes associated with small instances of the problem to be solved. We give a survey on how to make use of such relaxations in practice. Algorithmic aspects such as separation, facet and cut selection, and shrinking of large problem instances are addressed in general and for several concrete problems. Computational results are presented as well.