

Computational Experiments with Multi-Row Cuts

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Mixed-integer programming is a branch of mathematical programming concerned with optimization problems in which a linear objective function is maximized (or minimized) subject to linear constraints and integrality requirements on some of the variables. Cutting planes play a crucial role in solving mixed-integer programs. Recently there has been a renewed interest in cutting planes derived from multiple rows of a simplex tableau. In particular a beautiful correspondence between minimal valid inequalities for the semi- infinite relaxation and maximal lattice-free convex sets was discovered. In this talk, we present an introduction to cutting plane methods and particularly concentrate on multi-row cutting planes. We discuss our implementation of multi-row cut generators and report on computational experience with multi-row cutting planes.