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# Intersection cuts from multiple rows: a disjunctive programming approach

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We address the issue of generating cutting planes for mixed integer programs from multiple rows of the simplex tableau with the tools of disjunctive programming. A cut from  $q$  rows of the simplex tableau is an intersection cut from a  $q$ -dimensional parametric cross-polytope, which can also be viewed as a disjunctive cut from a  $2q$ -term disjunction. We define the disjunctive hull of the  $q$ -row problem, describe its relation to the integer hull, and show how to generate its facets. For the case of binary basic variables, we derive cuts from the stronger disjunctions whose terms are equations. We give cut strengthening procedures using the integrality of the nonbasic variables for both the integer and the binary case. Finally, we discuss some computational experiments.

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