

Duality for Mixed-Integer Linear Programs

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Abstract—The theory of duality for linear programs is well-developed and has been successful in advancing both the theory and practice of linear programming. In principle, much of this broad framework can be extended to mixed-integer linear programs, but this has proven difficult, in part because duality theory does not integrate well with current computational practice. This paper surveys what is known about duality for integer programs and offers some minor extensions, with an eye towards developing a more practical framework.

Keywords—Duality, Mixed-integer linear programming, Value function, Branch and cut

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