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INTERIOR POINT METHODS ADAPTED TO INFEASIBLE LINEAR PROGRAMS

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For linear programs, we consider schemes for the formation of a generalized central path, which arise under the simultaneous use of interior and exterior penalty terms in the traditional Lagrange function and the minimax problems generated by it. The advantage of the new schemes is that they do not require the a priori knowledge of feasible interior points in the primal or dual problem. Moreover, when applied to problems with inconsistent constraints, the schemes automatically lead to some of their generalized solutions, which have important applied content. Descriptions of the algorithms, their justification, and results of numerical experiments are presented.

Keywords: linear programming, duality, penalty function methods, regularization methods, infeasible problems, central path.

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