CORR 2000-

On the Slater Condition for the SDP Relaxations of Nonconvex Sets

Levent Tunçel

Abstract We prove that all results determining the dimensions and the affine hull of feasible solutions of any combinatorial optimization problem and various nonconvex optimization problems directly imply the existence of Slater points for a very wide class of semidefinite programming relaxations of these nonconvex problems. Our proofs are very concise, constructive and elementary.

Keywords semidefinite programming relaxations, convex optimization, Slater condition, combinatorial optimization, dimension, affine hull, interior-point methods

AMS Subject Classification 90C25, 52A27, 90C10, 49M45