

Gangster operators and invincible positive definite matrices

Charles R. Johnson

College of William and Mary, Williamsburg, USA

Abstract

Semidefinite programming, a new and powerful field of optimization, often deals with "relaxations" of "difficult" problems. Positive definite matrices play a role in both the constraints and the objective. The positive definite matrices may be the result of zeroing out some entries of a matrix known to be positive definite. One difficulty is that this zeroing out (a Gangster operator) does not necessarily preserve positive definiteness. We discuss recent results about when it does.