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"Semidefinite representations of convex sets I"

Abstract:

The feasible sets of semidefinite programming, called spectrahedra, are affine slices of a cone of positive semidefinite matrices. Representing a given convex set as a spectrahedron can be a difficult task, which is related to determinantal representations of polynomials. This tutorial will give an introduction to this exciting area of research, focussing on examples and a number of key questions.