A new library of structured semidefinite programming instances

Renata Sotirov
Tilburg University, The Netherlands

Abstract

Interior point solvers for semidefinite programming (SDP) have evolved a great deal in the last decade, and their development continues. In order to further support and encourage this development, we present a new test set of SDP instances. These instances arise from recent applications of SDP in coding theory, computational geometry, graph theory and truss topology design. Most of these instances have a special structure that may be exploited during a pre-processing phase, e.g. algebraic symmetry, or low rank in the constraint matrices.