PENSDP and PENBMI - SDP solvers

TOMLAB /PENSDP and TOMLAB /PENBMI solves large, sparse linear semidefinite programming problems with linear constraints. The toolboxes are developed in cooperation with PENOPT Gbr and researchers Michal Kocvara and Michael Stingl, University of Erlangen-Nürnberg.

Features and Capabilities

PENSDP

➢ Four different input formats may be used for problem formulation: The standard sparse SDPA format used in SDPLIB, the PENSDP Structural Format, the TOMLAB format for semidefinite problems, as well as the modeling engine tomSym.

➢ Problems defined in SeDuMi Matlab format may easily be converted to SDPA format and solved by TOMLAB /PENSDP. A conversion routine called writesdp has been written by Brian Borcher.

➢ Apart from solving the SDP problem, the user can check feasibility of the system of linear matrix inequalities.

PENBMI

➢ Three different input formats may be used for problem formulation: The PENBMI Structural Format, an extension of PENSDP format for linear problems, TOMLAB format for semidefinite problems and models built with tomSym.

➢ Apart from solving the BMI problem, the user can check feasibility of the system of linear and bilinear matrix inequalities.

Common Features and Capabilities

➢ TOMLAB /PENSDP and TOMLAB /PENBMI are integrated with the TOMLAB environment.

➢ TOMLAB /PENSDP and TOMLAB /PENBMI solvers may be used as subproblem solver in the TOMLAB environment.

➢ The softwares are available for MATLAB R2007b or later.