Docket #: S86-042

LSSOL (TM)

LSSOL is a software package for solving constrained linear least-squares problems and convex quadratic programs (definite or semidefinite), including linear programs. Dense matrices are assumed throughout. LSSOL is recommended for QP problems whose objective includes a term of the form x'A'Ax for some matrix A (which may be rectangular, square or triangular). Linear constraints and bounds on the variables are treated separately by an active-set method. If the problem has no feasible solution, LSSOL minimizes the sum of the constraint and bound violations.

Applications

- General-purpose dense linear programming and quadratic programming.
- Statistics, Economics, Finance.
- Least-squares data fitting, Portfolio analysis.
- LSSOL is used as a subroutine inside NPSOL to solve a sequence of related quadratic programs, using warm starts.

Advantages

- Portable code (Fortran 77). Matlab interface included.
- Numerically stable algorithms.
- Warm start capability.
- Elastic bounds on variables and constraints (for infeasible problems).

Publications

- P. E. Gill, S. J. Hammarling, W. Murray, M. A. Saunders and M. H. Wright, User's Guide for LSSOL (Version 1.0): a Fortran package for constrained linear least-squares and convex quadratic programming, Report SOL 86-1, Systems

Optimization Laboratory, Stanford University (1986).

Innovators

- Philip Gill
- Walter Murray
- Michael Saunders
- Margaret Wright

Licensing Contact

Evan Elder

Associate Director, Licensing and Strategic Alliances, Physica

Email