

MOSEK related publications

November 15, 2023

Chapter 1

The MOSEK software and algorithms

Several research papers have been written which discuss the algorithms employed in MOSEK. Below is a list of those papers.

1. J. Dahl and E. D. Andersen. A primal-dual interior-point algorithm for nonsymmetric exponential-cone optimization. *Math. Programming*, 194:341–370, July 2022
2. Frank Permenter, Henrik A. Friberg, and Erling D. Andersen. Solving conic optimization problems via self-dual embedding and facial reduction: a unified approach. *SIAM J. on Optim.*, 3:1257–1282, 2017
3. E. D. Andersen, C. Roos, and T. Terlaky. On implementing a primal-dual interior-point method for conic quadratic optimization. *Math. Programming*, 95(2), February 2003
4. E. D. Andersen, C. Roos, and T. Terlaky. On implementing a primal-dual interior-point method for conic quadratic optimization. *Math. Programming*, 95(2), February 2003
5. E. D. Andersen. Certificates of primal and dual infeasibility in linear programming. *Computational Optimization and Applications*, 20(2):171–183, 2001
6. E. D. Andersen. On primal and dual infeasibility certificates in a homogeneous model for convex optimization. *SIAM J. on Optim.*, 11(2):380–388, 2000
7. E. D. Andersen and K. D. Andersen. The MOSEK interior point optimizer for linear programming: an implementation of the homogeneous algorithm. In H. Frenk, K. Roos, T. Terlaky, and S. Zhang, editors, *High Performance Optimization*, pages 197–232. Kluwer Academic Publishers, 2000

8. E. D. Andersen. On exploiting problem structure in a basis identification procedure for linear programming. *INFORMS Journal on Computing*, 11(1):95–103, 1999
9. E. D. Andersen and Y. Ye. On a homogeneous algorithm for the monotone complementarity problem. *Math. Programming*, 84(2):375–399, February 1999
10. E. D. Andersen and Y. Ye. A computational study of the homogeneous algorithm for large-scale convex optimization. *Computational Optimization and Applications*, 10:243–269, 1998
11. E. D. Andersen and Y. Ye. Combining interior-point and pivoting algorithms. *Management Sci.*, 42(12):1719–1731, December 1996
12. K. D. Andersen. A Modified Schur Complement Method for Handling Dense Columns in Interior-Point Methods for Linear Programming. *ACM Trans. Math. Software*, 22(3):348–356, 1996
13. E. D. Andersen and K. D. Andersen. Presolving in linear programming. *Math. Programming*, 71(2):221–245, 1995
14. E. D. Andersen. Finding all linearly dependent rows in large-scale linear programming. *Optimization Methods and Software*, 6:219–227, 1995