Example Annotated Bibliography

Stephen C. Billups

Math 4779

January 31, 2001

References

[1] E. J. Anderson. A new primal algorithm for semi-infinite linear programming. In E. J. Anderson and A. B. Philpott, editors, *Proceedings of an International Symposium on Infinite Dimensional Linear Programming, Cambridge, September 1984*, Berlin, 1985. Springer-Verlag.

[2] S. C. Billups and L. T. Watson. A probability-one homotopy algorithm for nonsmooth equations and mixed complementarity problems. UCD/CCM Report No. 165, University of Colorado at Denver, Denver, Colorado, September 2000.

> This paper extends the probability-one homotopy algorithm of Chow-Yorke and Li, which solves C^2 systems of equations. The resulting algorithm is capable of solving semismooth systems of equations. The basis of the algorithm is to "smooth" the nonsmooth system of equations using a smoothing parameter that is a function of the homotopy parameter.

[3] Jose Vicente Granato de Araujo. *A Statistically Based Procedure for Calibration of Water Distribution Systems*. PhD thesis, Oklahoma State University, Stillwater, Oklahoma, May 1992.

> This Ph.D. thesis discusses a statistically based calibration method for water distribution systems. The author gives an in-depth analysis of the calibration procedure discussing analytical methods, optimization methods, and uncertainty analysis for estimating demands and C-factors. A linear regression technique for estimating the C-factors is discussed. Also, a procedure for transferring uncertainties in input data to the parameter estimation is explained.

[4] Thomas M. Liebling and Dominique de Werra, editors. *Recent progress in unconstrained nonlinear optimization without derivatives*, North-Holland, 1997. Mathematical Programming Society.

[5] R. Mifflin. Semismooth and semiconvex functions in constrained optimization. *Siam Journal on Control*, 15:957–972, 1977.

> This is the first appearance in the literature of the concept of a semismooth function. Semismooth functions are closed under addition and composition, and also guarantee the local convergence of nonsmooth generalizations of Newton's method.

[6] D. A. Savic and G. A. Walters. Genetic algorithm techniques for calibrating network models. Technical Report 95/12, University of Exeter, 1995.

> Savic seems to have spent much time and effort in using genetic algorithms in water system design. In this paper he discusses genetic algorithms and gives a brief overview, he discusses how he used a genetic algorithm to calibrate a small water system. He talks about what he was trying to find (c-factors and demands) and how he used a genetic algorithm to do this.

[7] G. Winter, J. Periaux, M. Galan, and P. Cuesta. *Genetic Algorithms in Engineering and Computer Science*. John Wiley and Sons, Chickester, England, 1995.

> This book contains a general overview of genetic algorithms as well as a few other topics such as neural networks. The book also talks about many applications of genetic algorithms and how researchers slightly changed from standard genetic algorithms by using different crossover techniques different mutations etc. It also discusses using Fuzzy logic in a genetic algorithm and gives techniques to finding the best sample size and mutation probability.