

A Bibliography of Publications of Nicholas Ian Gould

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Abstract

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Second [CGT15, GR10a, GR10b, CGT12b,

CGT94a, GT99, GR12]. **second-derivative**

[GR12]. **Second-Order**

[CGT15, CGT12b, CGT94a, GT99]. **seismic** [GM81]. **Selected** [DMW06]. **semi** [CG86, CG87]. **semi-definite** [CG86]. **semi-infinite** [CG87]. **Sensitivity** [GOST05]. **Separable** [DLG94, CGT94c, CGLT94, DDLG96, DLG97, DDLG97]. **September** [DGDG97b]. **sequential** [Gou89]. **Set** [Gou03, GT02a]. **Sharp** [CGT20]. **SIAM** [CGT89a]. **SifDec** [GOT03b]. **Simple** [CGT91e, CGT88a, CGT88b, CGT89a, CGT92c, CGT92h, CGT92i, CGT97b, CGT97a, CGT97c, Gou86, Gou88]. **slack** [CGT94b]. **Smooth** [CGT12d, CGT13a]. **Solution** [DLG95, DLG96, DDLG96, DDLG97, GHN01, GM81, Gou83b, GOST02, GS03, GS04, GHS05a, GHS05b, GSH07]. **solutions** [Gou85]. **Solve** [DLG94]. **Solvers** [DGSW06, GHS05a, GHS05b, GSH07, SHG04]. **Solving** [DDG98, GLRT99, BDG94, CGT88b, Gou88, GT03a, GT07, GRT10]. **Some** [Gou03]. **space** [GGM⁺82a, GGM⁺82b]. **spaces** [CGL20]. **Sparse** [DLG96, GS98, ADGR90, DGR⁺90, DGR⁺91, FGS24, GS03, GS04, GHS05a, GHS05b, GSH07, SHG04]. **Special** [GLT04b]. **Spectral** [GS09, GS10]. **SQP** [FGL⁺02, GT00, GT03c, GR10a, GR10b, GR12, GLR15]. **SQP-filter** [FGL⁺02, GT03c]. **Squares** [CGT14b, CGT15, BCG⁺10, CGT09, CGT13b, FGS24, GLT04a, GT07]. **stability** [Gou83b]. **standard** [CGT89c, CGT90c, CGT91d]. **State** [DMW06, Gou03, DW97]. **Steepest** [CGT10, Gou83a, Gou84a, Gou84b]. **Step** [GLR14, GR12]. **Stretching** [DDG98]. **structure** [CGT90a, CGT94b]. **structured** [ADD⁺94, CGT92b, CGST94a, CGST96b, DLG95, DDG99]. **subject** [CGT00a]. **subproblem** [GLRT99]. **subproblems** [BGNW04, CGT94a, GRT10]. **Subspace** [CGST94b, DDG99, CGST96c]. **Subspace-by-subspace** [DDG99]. **Successive** [BGNW05, BGNW03]. **Superlinear** [GOST01]. **Supplement** [CGT97c]. **survey** [CGT94d]. **symmetric** [CGT91c, DGR⁺90, DGR⁺91, GS03, GS04, GHS05a, GHS05b, GSH07, SHG04]. **Systems** [DLG96, DDG98, DGSW06, DGSW10, ADD⁺94, BDG94, DLG95, DDG99, DGP94, GR89, Gou99a, Gou00, GOST02, GS03, GS04, GHS05a, GHS05b, GSH07, GOR14, KGW00]. **techniques** [GS98]. **Technology** [Ame94]. **Testing** [BCGT93, BCGT95, CGT88b, GOT03b, GOT15]. **tests** [CGT92d]. **their** [GOST05]. **theory** [GLT04b]. **thread** [GOT03c]. **thread-safe** [GOT03c]. **threads** [GOT15]. **three** [Gou88]. **Topics** [DG00]. **topology** [BBG⁺12]. **Toulouse** [DGDG97b]. **Trajectory** [GOR13]. **Trajectory-following** [GOR13]. **Trust** [CGT09, CGT00b, BGG15, CGT88a, CGT89a, CGT92b, CGST93d, CGST94a, CGST96b, CGOT00, FGL⁺02, GN98, GLRT99, GT03a, GT03c, GST05, GOST05, GT06, GT07, GRT10, GR12]. **Trust-region** [CGT09, CGT00b, CGOT00, FGL⁺02, GN98, GLRT99, GT03c, GOST05, GT06, GRT10]. **trust-region-free** [GR12]. **two** [CGST93b, CGST93a, CGST93c]. **type** [GOP16]. **Unassembled** [DLG96, DDG98]. **Unconstrained** [BCGT93, BCGT95, CGT10, CGT11a, CGT11b, CGT12b, CGT12c, DDLG97, GLRT98, GLRT00, GOT03b, GST05, GOT15]. **Unified** [GLR14]. **uniqueness** [Gou85]. **update** [CGT91c]. **Updating** [GPT12]. **USA** [Ame94]. **Use** [ADGR90, DLG94, DDG98, DAGR87]. **Using** [CGT15, DLG96, DGSW05, DGSW07, FGS25, BBG⁺12, BGNW04, CGT92b, CGST93d, CGST94a, CGT94b, CGT94a, CGST96b, DLG95, DDLG96,

DDL97, FGS24, GS98, GLRT99].

value [GN98]. **variables**
[CGT88b, CGT94b]. **via** [Gou88].

Weighted [GGM⁺84]. **without**
[GT10, GT12]. **working** [GT02a].
working-set [GT02a]. **Workshop**
[DMW06, DGDG97b]. **World** [Ame94].
Worst [CGT20, CGT11b]. **Worst-Case**
[CGT20, CGT11b].

Year [DGDG97b].

References

Arioli:1993:CSD

[ACD⁺93] M. Arioli, T. F. Chan, I. S. Duff, N. I. M. Gould, and J. K. Reid. Computing a search direction for large-scale linearly constrained nonlinear optimization calculations. Technical Report RAL-93-066 and TR-PA-93-34, Rutherford Appleton Laboratory and CERFACS, Chilton, Oxon, England and Toulouse, France, 1993. URL `ftp://130.246.8.32/pub/reports/acdgrRAL93066.ps.Z`.

Amestoy:1994:PAS

[ADD⁺94] Patrick R. Amestoy, Michel J. Daydé, Iain S. Duff, Jean-Yves L'Excellent, Nick Gould, and Chiara Puglisi. Parallel algorithms for structured systems of linear equations. In Ames [Ame94], pages 1058–1061. ISBN ????. LCCN ????. Three volumes: Volume 1: Applied mathematics, stochastic processes, iterative methods. Volume 2: Ap-

plications of computing, fluid mechanics, acoustics, solid mechanics, neural networks. Volume 3: Numerical methods and analysis finite differences and elements, differential equations, intervals.

Arioli:1990:UAC

[ADGR90] Mario Arioli, Iain S. Duff, Nicholas I. M. Gould, and John K. Reid. Use of the P^4 and P^5 algorithms for in-core factorization of sparse matrices. *SIAM Journal on Scientific and Statistical Computing*, 11(5):913–927, September 1990. CODEN SIJCD4. ISSN 0196-5204.

Ames:1994:IP1

[Ame94] W. F. Ames, editor. *IMACS '94: proceedings of the 14th IMACS World Congress on Computation and Applied Mathematics: July 11–15, 1994, Georgia Institute of Technology, Atlanta, Georgia, USA*. International Association for Mathematics and Computers in Simulation, ????, 1994. ISBN ????. LCCN ????. Three volumes: Volume 1: Applied mathematics, stochastic processes, iterative methods. Volume 2: Applications of computing, fluid mechanics, acoustics, solid mechanics, neural networks. Volume 3: Numerical methods and analysis finite differences and elements, differential equations, intervals.

Browne:2012:FMB

[BBG⁺12] P. A. Browne, C. Budd, N. I. M. Gould, H. A. Kim, and J. A.

- Scott. A fast method for binary programming using first-order derivatives, with application to topology optimization with buckling constraints. *International Journal for Numerical Methods in Engineering*, 92(12): 1026–1043, 2012. CODEN IJN-MBH. ISSN 0029-5981 (print), 1097-0207 (electronic).
- [BCG⁺97a] I. Bongartz, A. R. Conn, N. I. M. Gould, M. A. Saunders, and Ph. L. Toint. A numerical comparison between the LANCELOT and MINOS packages for large-scale nonlinear optimization. Technical Report RAL-TR 97-054, Rutherford Appleton Laboratory, Chilton, Oxon, England, 1997.
- [BCG⁺97b] I. Bongartz, A. R. Conn, N. I. M. Gould, M. A. Saunders, and Ph. L. Toint. A numerical comparison between the LANCELOT and MINOS packages for large-scale nonlinear optimization: the complete results. Technical Report 97/14, Department of Mathematics, FUNDP, Namur, Belgium, 1997.
- [BCG⁺10] S. Bellavia, C. Cartis, N. I. M. Gould, B. Morini, and Ph. L. Toint. Convergence of a regularized Euclidean residual algorithm for nonlinear least-squares. *SIAM Journal on Numerical Analysis*, 48(1):1–29, 2010.
- [BCGT93] I. Bongartz, A. R. Conn, N. I. M. Gould, and Ph. L. Toint. CUTE: Constrained and Unconstrained Testing Environment. Technical Report TR/PA/93/10, CERFACS, Toulouse, France, 1993. URL <ftp://130.246.8.32/pub/reports/cgtCERFACS9310.ps.Z>. To appear in ACM Transactions on Mathematical Software.
- [BCGT95] I. Bongartz, A. R. Conn, Nick Gould, and Ph.L. Toint. CUTE: Constrained and unconstrained testing environment. *ACM Transactions on Mathematical Software*, 21(1):123–160, March 1995. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic). URL <http://www.acm.org/pubs/citations/journals/toms/1995-21-1/p123-bongartz/>.
- [BDG94] A. Bouaricha, Iain S. Duff, and N. I. M. Gould. Experiments in solving augmented systems. Technical Report (to appear), CERFACS, Toulouse, France, 1994.
- [BGG15] Daniel Bienstock, Philip E. Gill, and Nick Gould. A note on “On fast trust region methods

for quadratic models with linear constraints”, by Michael J.D. Powell [Preface]. *Mathematical Programming Computation*, 7 (3):235, 2015. ISSN 1867-2949 (print), 1867-2957 (electronic). [CG84]

Byrd:2003:CSL

[BGNW03] R. H. Byrd, N. I. M. Gould, J. Nocedal, and R. A. Waltz. On the convergence of successive linear programming algorithms. Technical Report RAL-TR-2003-013, Rutherford Appleton Laboratory, Chilton, Oxon, England, 2003. [CG86]

Byrd:2004:ANO

[BGNW04] Richard H. Byrd, Nicholas I. M. Gould, Jorge Nocedal, and Richard A. Waltz. An algorithm for nonlinear optimization using linear programming and equality constrained subproblems. *Mathematical Programming*, 100(1, Ser. B):27–48, 2004. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic). [CG87]

Byrd:2005:CSL

[BGNW05] Richard H. Byrd, Nicholas I. M. Gould, Jorge Nocedal, and Richard A. Waltz. On the convergence of successive linear-quadratic programming algorithms. *SIAM Journal on Optimization*, 16(2):471–489, 2005. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/42653>. [CGJR16] [CGL20]

Conn:1984:LDI

Andrew R. Conn and Nicholas I. M. Gould. On the location of directions of infinite descent for nonlinear programming algorithms. *SIAM Journal on Numerical Analysis*, 21(6):1162–1179, 1984. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).

Caron:1986:FPS

R. J. Caron and N. I. M. Gould. Finding a positive semi-definite interval for a parametric matrix. *Linear Algebra and its Applications*, 76:19–29, 1986. CODEN LAAPAW. ISSN 0024-3795 (print), 1873-1856 (electronic).

Conn:1987:EPF

Andrew R. Conn and Nicholas I. M. Gould. An exact penalty function for semi-infinite programming. *Mathematical Programming*, 37(1):19–40, 1987. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Curtis:2016:AAL

Frank E. Curtis, Nicholas I. M. Gould, Hao Jiang, and Daniel P. Robinson. Adaptive augmented Lagrangian methods: algorithms and practical numerical experience. *Optimization Methods & Software*, 31(1):157–186, 2016. ISSN 1055-6788.

Cartis:2020:MEN

Coralie Cartis, Nicholas I. M. Gould, and Marius Lange. On

monotonic estimates of the norm of the minimizers of regularized quadratic functions in Krylov spaces. *BIT Numerical Mathematics*, 60(3):??, September 2020. CODEN BITTEL, NBITAB. ISSN 0006-3835 (print), 1572-9125 (electronic). URL <https://link.springer.com/article/10.1007/s10543-019-00791-2>.

Conn:1994:PMS

- [CGLT94] A. R. Conn, Nick I. M. Gould, M. Lescrenier, and Ph. L. Toint. Performance of a multifrontal scheme for partially separable optimization. In S. Gomez, J. P. Hennart, and R. A. Tapia, editors, *Advances in optimization and numerical analysis, Proceedings of the Sixth workshop on Optimization and Numerical Analysis, Oaxaca, Mexico, 1992*, volume 275 of *Mathematics and its Applications Series*, pages 79–96. Kluwer Academic Publishers Group, Norwell, MA, USA, and Dordrecht, The Netherlands, 1994.

Conn:2000:PDT

- [CGOT00] Andrew R. Conn, Nicholas I. M. Gould, Dominique Orban, and Philippe L. Toint. A primal-dual trust-region algorithm for non-convex nonlinear programming. *Mathematical Programming*, 87 (2, Ser. B):215–249, 2000. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic). Studies in algorithmic optimization.

- [CGST93a] A. R. Conn, N. I. M. Gould, A. Sartenaer, and Ph. L. Toint. Global convergence of two augmented Lagrangian algorithms for optimization with a combination of general equality and linear constraints. Technical Report TR/PA/93/26, CERFACS, Toulouse, France, 1993.

Conn:1993:GCT

- [CGST93b] A. R. Conn, N. I. M. Gould, A. Sartenaer, and Ph. L. Toint. Global convergence properties of two augmented Lagrangian algorithms for optimization with a combination of general equality and linear constraints. Technical Report TR/PA/93/26, CERFACS, Toulouse, France, 1993. URL <ftp://130.246.8.32/pub/reports/cgstCERFACS9326.ps.Z>.

Conn:1993:GCP

- [CGST93c] A. R. Conn, N. I. M. Gould, A. Sartenaer, and Ph. L. Toint. Local convergence properties of two augmented Lagrangian algorithms for optimization with a combination of general equality and linear constraints. Technical Report TR/PA/93/27, CERFACS, Toulouse, France, 1993. URL <ftp://130.246.8.32/pub/reports/cgstCERFACS9327.ps.Z>.

Conn:1993:LCP

- [CGST93d] A. R. Conn, Nick I. M. Gould, A. Sartenaer, and Ph. L. Toint.

Conn:1993:GCC

Global convergence of a class of trust region algorithms for optimization using inexact projections on convex constraints. *SIAM Journal on Optimization*, 3(1):164–221, 1993. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic).

Conn:1994:CPM

- [CGST94a] A. R. Conn, N. I. M. Gould, A. Sartenaer, and Ph. L. Toint. Convergence properties of minimization algorithm for convex constraints using a structured trust region (revised). Technical Report 94/5, Department of Mathematics, FUNDP, Namur, Belgium, 1994. URL <ftp://138.48.4.14/pub/reports/TR94-05.ps>.

Conn:1994:ISM

- [CGST94b] A. R. Conn, N. I. M. Gould, A. Sartenaer, and Ph. L. Toint. On iterated-subspace minimization methods for nonlinear optimization. Technical Report 94-069, Rutherford Appleton Laboratory, Chilton, Oxon, England, 1994. URL <ftp://130.246.8.32/pub/reports/cgstRAL94069.ps.Z>.

Conn:1996:CPA

- [CGST96a] A. R. Conn, N. Gould, A. Sartenaer, and Ph. L. Toint. Convergence properties of an augmented Lagrangian algorithm for optimization with a combination of general equality and linear constraints. *SIAM Journal on Optimization*, 6(3):674–

703, 1996. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/25146>.

Conn:1996:CPM

- [CGST96b] A. R. Conn, Nick Gould, A. Sartenaer, and Ph. L. Toint. Convergence properties of minimization algorithms for convex constraints using a structured trust region. *SIAM Journal on Optimization*, 6(4):1059–1086, 1996. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/23648>.

Conn:1996:ISM

- [CGST96c] A. R. Conn, Nick Gould, A. Sartenaer, and Ph. L. Toint. On iterated-subspace minimization methods for nonlinear optimization. In *Linear and nonlinear conjugate gradient-related methods (Seattle, WA, 1995)*, pages 50–78. SIAM Press, Philadelphia, PA, USA, 1996.

Conn:1988:GCC

- [CGT88a] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. Global convergence of a class of trust region algorithms for optimization with simple bounds. *SIAM Journal on Numerical Analysis*, 25(2):433–460, 1988. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic). See also same journal **26**(3), 764–767, 1989.

Conn:1988:TCM

- [CGT88b] Andrew R. Conn, Nicholas I. M. Gould, and Philippe L. Toint. Testing a class of methods for solving minimization problems with simple bounds on the variables. *Mathematics of Computation*, 50(182):399–430, April 1988. CODEN MCMPAF. ISSN 0025-5718 (print), 1088-6842 (electronic).

Conn:1989:CPG

- [CGT89a] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. Correction to the paper: “Global convergence of a class of trust region algorithms for optimization with simple bounds” [SIAM J. Numer. Anal. **25** (1988), no. 2, 433–460; MR0933734 (89h:90192)]. *SIAM Journal on Numerical Analysis*, 26(3):764–767, 1989. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).

Conn:1989:LSO

- [CGT89b] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. Large scale optimization. *Mathematical Programming, Series B*, 45(3), 1989. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Conn:1989:PSD

- [CGT89c] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. A proposal for a standard data input format for large-scale nonlinear programming problems. Report CSS-89-

61, University of Waterloo, Waterloo, ON, Canada, 1989.

Conn:1990:ISL

- [CGT90a] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. An introduction to the structure of large scale nonlinear optimization problems and the LANCELOT project. In R. Glowinski and A. Lichniewsky, editors, *Computing Methods in Applied Sciences and Engineering (Paris, 1990)*, pages 42–51. SIAM Press, Philadelphia, PA, USA, 1990.

Conn:1990:LSO

- [CGT90b] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. Large scale optimization — applications. *Mathematical Programming, Series B*, 48(1–3), March 1990. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Conn:1990:PSD

- [CGT90c] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. A proposal for a standard data input format for large-scale nonlinear programming problems. Report CS-89-61, Computer Science Department, University of Waterloo, Ontario, Canada, 1990.

Conn:1990:F

- [CGT90d] A. R. Conn, Nick Gould, and P. L. Toint. Foreword. *Mathematical Programming*, 48(1, (Ser. B)):vii, 1990. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Conn:1991:CDL

- [CGT91a] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. A comprehensive description of LANCELOT. Technical Report 91/10, Department of Mathematics, FUNDP, Namur, Belgium, 1991.

Conn:1991:CDS

- [CGT91b] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. A comprehensive description of LANCELOT. Technical Report 91/10, Department of Mathematics, FUNDP, Namur, Belgium, 1991.

Conn:1991:CQN

- [CGT91c] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. Convergence of quasi-Newton matrices generated by the symmetric rank one update. *Mathematical Programming*, 50(2, (Ser. A)):177–195, 1991. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Conn:1991:ISD

- [CGT91d] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. An introduction the Standard Data Input Format (SDIF) for nonlinear mathematical programming problems. Technical Report 91/8, Department of Mathematics, FUNDP, Namur, Belgium, 1991.

Conn:1991:GCA

- [CGT91e] Andrew R. Conn, Nicholas I. M. Gould, and Philippe L. Toint. A globally convergent augmented

Lagrangian algorithm for optimization with general constraints and simple bounds. *SIAM Journal on Numerical Analysis*, 28(2):545–572, 1991. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).

Conn:1992:ARS

- [CGT92a] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. Announcement of the Release A of LANCELOT, a package for nonlinear optimization. Technical Report 92/4, Department of Mathematics, FUNDP, Namur, Belgium, 1992. URL <http://www.rl.ac.uk/departments/ccd/numerical/lancelot/blurb.html>.

Conn:1992:CPM

- [CGT92b] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. Convergence properties of minimization algorithms for convex constraints using a structured trust region. Technical Report 92-069, Rutherford Appleton Laboratory, Chilton, Oxon, England, 1992. URL <ftp://130.246.8.32/pub/reports/cgtRAL92069.ps.Z>.

Conn:1992:GCL

- [CGT92c] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. A globally convergent Lagrangian barrier algorithm for optimization with general inequality constraints and simple bounds. Technical Report 92-067, Rutherford Appleton Laboratory, Chilton, Oxon, England, 1992. URL <ftp://>

/130.246.8.32/pub/reports/
cgtRAL92067.ps.Z.

Conn:1992:INT

- [CGT92d] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. Intensive numerical tests with LANCELOT (Release A): the complete results. Technical Report 92/15, Department of Mathematics, FUNDP, Namur, Belgium, 1992. URL <ftp://130.246.8.32/pub/reports/cgtFUNDP9215.ps.Z>.

Conn:1992:SLF

- [CGT92e] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. LANCELOT: a Fortran package for large-scale nonlinear optimization (Release A). Number 17 in Springer Series in Computational Mathematics. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1992. ISBN 3-540-55470-X.

Conn:1992:LSN

- [CGT92f] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. Large-scale nonlinear constrained optimization. In R. E. O'Malley, Jr., editor, *Proceedings of the Second International Conference on Industrial and Applied Mathematics (ICIAM 91, Washington, DC, 1991)*, pages 51–70. SIAM Press, Philadelphia, PA, USA, 1992.

Conn:1992:NES

- [CGT92g] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. Numerical experiments with the LANCELOT package (Release

A) for large-scale nonlinear optimization. Technical Report 92-075, Rutherford Appleton Laboratory, Chilton, Oxon, England, 1992. URL <ftp://130.246.8.32/pub/reports/cgtFUNDP9216.ps.Z>.

Conn:1992:NIIfa

- [CGT92h] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. On the number of inner iterations per outer iteration of a globally convergent algorithm for optimization with general nonlinear equality constraints and simple bounds. In D. F. Griffiths and G. A. Watson, editors, *Numerical analysis 1991 (Dundee, 1991)*, volume 260 of *Pitman Research Notes in Mathematics Series*, pages 49–68. Longmans, Harlow, Essex, England, 1992.

Conn:1992:NIIfb

- [CGT92i] A. R. Conn, N. I. M. Gould, and Ph. L. Toint. On the number of inner iterations per outer iteration of a globally convergent algorithm for optimization with general nonlinear inequality constraints and simple bounds. Technical Report 92-068, Rutherford Appleton Laboratory, Chilton, Oxon, England, 1992. URL <ftp://130.246.8.32/pub/reports/cgtRAL92068.ps.Z>.

Conn:1992:LFP

- [CGT92j] Andrew R. Conn, Nick I. M. Gould, and Philippe L. Toint. *Lancelot: A Fortran Package for*

- Large-Scale Nonlinear Optimization (Release A)*. Number 17 in Springer series in computational mathematics. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., September 1992. ISBN 3-540-55470-X (Berlin, Heidelberg), 0-387-55470-X (New York). xviii + 330 pp. LCCN QA402.5 .C648 1992. US\$89.00; US\$118.95. URL <http://www.cbooks.com/sqlnut/SP/search/gtsumt?source=&isbn=038755470X>.
- [CGT93] A. R. Conn, N. Gould, and Ph. L. Toint. Large-scale nonlinear constrained optimization. In *Linear algebra for large scale and real-time applications (Leuven, 1992)*, volume 232 of *NATO Adv. Sci. Inst. Ser. E Appl. Sci.*, pages 21–48. Kluwer Academic Publishers Group, Norwell, MA, USA, and Dordrecht, The Netherlands, 1993.
- [CGT94a] A. R. Conn, Nick I. M. Gould, and Ph. L. Toint. A note on using alternative second-order models for the subproblems arising in barrier function methods for minimization. *Numerische Mathematik*, 68(1): 17–33, June 1994. CODEN NUMMA7. ISSN 0029-599X (print), 0945-3245 (electronic). URL <http://link.springer.de/link/service/journals/00211/bibs/4068001/40680017.htm>; <http://science.springer.de/nmee/bibs/4068001/40680017.htm>.
- [CGT94b] Andrew R. Conn, Nick I. M. Gould, and Ph. L. Toint. A note on exploiting structure when using slack variables. *Mathematical Programming*, 67(1–3):89–97, 1994. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic). URL <http://link.springer.com/article/10.1007/BF01582214>.
- [CGT94c] Andrew R. Conn, Nick I. M. Gould, and Philippe L. Toint. Improving the decomposition of partially separable functions in the context of large-scale optimization: a first approach. In W. W. Hager, D. W. Hearn, and P. M. Pardalos, editors, *Large scale optimization: State of the Art (Gainesville, FL, 1993)*, pages 82–94. Kluwer Academic Publishers Group, Norwell, MA, USA, and Dordrecht, The Netherlands, 1994.
- [CGT94d] Andrew R. Conn, Nick I. M. Gould, and Philippe L. Toint. Large-scale nonlinear constrained optimization: a current survey. In E. Spedicato, editor, *Algorithms for continuous optimization: the state of the art (Il Ciocco, 1993)*, volume 434 of *NATO Adv. Sci. Inst. Series C: Mathematical and Physical Sciences*, pages 287–332. Kluwer Academic Publishers Group,

Conn:1994:NES

Conn:1994:IDP

Conn:1994:LSN

Norwell, MA, USA, and Dordrecht, The Netherlands, 1994.

Conn:1996:NEL

- [CGT96] A. R. Conn, Nick Gould, and Ph. L. Toint. Numerical experiments with the LANCELOT package (Release A) for large-scale nonlinear optimization. *Mathematical Programming*, 73 (1, Ser. A):73–110, 1996. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Conn:1997:NII

- [CGT97a] A. R. Conn, N. Gould, and Ph. L. Toint. On the number of inner iterations per outer iteration of a globally convergent algorithm for optimization with general nonlinear inequality constraints and simple bounds. *Computational optimization and applications*, 7(1):41–69, 1997. CODEN CPPPEF. ISSN 0926-6003 (print), 1573-2894 (electronic). Computational issues in high performance software for nonlinear optimization (Capri, 1995).

Conn:1997:GCL

- [CGT97b] A. R. Conn, Nick Gould, and Ph. L. Toint. A globally convergent Lagrangian barrier algorithm for optimization with general inequality constraints and simple bounds. *Mathematics of Computation*, 66 (217):261–288, S1–S11, January 1997. CODEN MCM-PAF. ISSN 0025-5718 (print), 1088-6842 (electronic). URL

<http://www.ams.org/jourcgi/jour-pbprocess?fn=110&arg1=S0025-5718-97-00777-1&u=/mcom/1997-66-217/>.

Conn:1997:SGC

- [CGT97c] A. R. Conn, Nick Gould, and Ph. L. Toint. Supplement to “A globally convergent Lagrangian barrier algorithm for optimization with general inequality constraints and simple bounds”. *Mathematics of Computation*, 66(217):S1–S11, January 1997. CODEN MCM-PAF. ISSN 0025-5718 (print), 1088-6842 (electronic).

Conn:1997:MNC

- [CGT97d] Andrew R. Conn, Nicholas I. M. Gould, and Philippe L. Toint. Methods for nonlinear constraints in optimization calculations. In Duff and Watson [DW97], pages 363–390. ISBN 0-19-850014-9. LCCN QA297.S775 1997. URL <https://global.oup.com/academic/product/the-state-of-the-art-in-numerical-analysis-9780198500148>. Based on the proceedings of a conference on the state of the art in numerical analysis. Organized by the Institute of Mathematics and Its Applications and held at York University in April 1996.

Conn:2000:PDA

- [CGT00a] Andrew R. Conn, Nicholas I. M. Gould, and Philippe L. Toint. A primal–dual algorithm for minimizing a non-

- convex function subject to bound and linear equality constraints. In Di Pillo and Giannessi [DG00], pages 15–50. ISBN 0-7923-6109-1 (hardcover). LCCN QA402.5 .N55 2000. URL <http://www.loc.gov/catdir/enhancements/fy0822/99056953-d.html>; <http://www.loc.gov/catdir/enhancements/fy0822/99056953-t.html>. [CGT11a]
- [CGT00b] Andrew R. Conn, Nicholas I. M. Gould, and Philippe L. Toint. *Trust-region methods*. MPS/SIAM Series on Optimization. SIAM Press, Philadelphia, PA, USA, 2000. ISBN 0-89871-460-5. xx + 959 pp.
- [CGT09] C. Cartis, N. I. M. Gould, and P. L. Toint. Trust-region and other regularisations of linear least-squares problems. *BIT Numerical Mathematics*, 49(1):21–53, March 2009. CODEN BIT-TEL, NBITAB. ISSN 0006-3835 (print), 1572-9125 (electronic). URL <http://www.springerlink.com/openurl.asp?genre=article&issn=0006-3835&volume=49&issue=1&spage=21>. [CGT11c]
- [CGT10] C. Cartis, N. I. M. Gould, and Ph. L. Toint. On the complexity of steepest descent, Newton’s and regularized Newton’s methods for nonconvex unconstrained optimization problems. *SIAM Journal on Optimization*, 20(6):2833–2852, 2010. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic).
- Cartis:2011:ACRa**
- Coralie Cartis, Nicholas I. M. Gould, and Philippe L. Toint. Adaptive cubic regularisation methods for unconstrained optimization. Part I: motivation, convergence and numerical results. *Mathematical Programming*, 127(2, Ser. A):245–295, 2011. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).
- Cartis:2011:ACRb**
- Coralie Cartis, Nicholas I. M. Gould, and Philippe L. Toint. Adaptive cubic regularisation methods for unconstrained optimization. Part II: worst-case function- and derivative-evaluation complexity. *Mathematical Programming*, 130(2, Ser. A):295–319, 2011. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).
- Cartis:2011:ECC**
- Coralie Cartis, Nicholas I. M. Gould, and Philippe L. Toint. On the evaluation complexity of composite function minimization with applications to non-convex nonlinear programming. *SIAM Journal on Optimization*, 21(4):1721–1739, 2011. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic). URL <http://epubs.siam.org>.
- Cartis:2010:CSD**

siam.org/siopt/resource/1/sjope8/v21/i4/p1721_s1.

Cartis:2012:ACR

- [CGT12a] C. Cartis, N. I. M. Gould, and Ph. L. Toint. An adaptive cubic regularization algorithm for non-convex optimization with convex constraints and its function-evaluation complexity. *IMA Journal of Numerical Analysis*, 32(4):1662–1695, October 2012. CODEN IJNADH. ISSN 0272-4979 (print), 1464-3642 (electronic). URL <http://imajna.oxfordjournals.org/content/32/4/1662.full.pdf+html>.

Cartis:2012:CBS

- [CGT12b] C. Cartis, N. I. M. Gould, and Ph. L. Toint. Complexity bounds for second-order optimality in unconstrained optimization. *Journal of Complexity*, 28(1):93–108, 2012. CODEN JO-COEH. ISSN 0885-064x (print), 1090-2708 (electronic).

Cartis:2012:ECA

- [CGT12c] Coralia Cartis, Nicholas I. M. Gould, and Philippe L. Toint. Evaluation complexity of adaptive cubic regularization methods for convex unconstrained optimization. *Optimization Methods & Software*, 27(2):197–219, 2012. ISSN 1055-6788.

Cartis:2012:OCF

- [CGT12d] Coralia Cartis, Nicholas I. M. Gould, and Philippe L. Toint. On the oracle complexity of first-order and derivative-free

algorithms for smooth non-convex minimization. *SIAM Journal on Optimization*, 22(1):66–86, 2012. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic). URL http://epubs.siam.org/siopt/resource/1/sjope8/v22/i1/p66_s1.

Cartis:2013:NAC

- [CGT13a] Coralia Cartis, Nicholas I. M. Gould, and Philippe L. Toint. A note about the complexity of minimizing Nesterov’s smooth Chebyshev–Rosenbrock function. *Optimization Methods & Software*, 28(3):451–457, 2013. ISSN 1055-6788.

Cartis:2013:ECC

- [CGT13b] Coralia Cartis, Nicholas I. M. Gould, and Philippe L. Toint. On the evaluation complexity of cubic regularization methods for potentially rank-deficient nonlinear least-squares problems and its relevance to constrained nonlinear optimization. *SIAM Journal on Optimization*, 23(3):1553–1574, 2013. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic).

Cartis:2014:CFF

- [CGT14a] Coralia Cartis, Nicholas I. M. Gould, and Philippe L. Toint. On the complexity of finding first-order critical points in constrained nonlinear optimization. *Mathematical Programming*, 144(1-2, Ser. A):93–106, 2014. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

- [CGT14b] Coralia Cartis, Nicholas I. M. Gould, and Philippe L. Toint. On the evaluation complexity of cubic regularization methods for potentially rank-deficient nonlinear least-squares problems and its relevance to constrained nonlinear optimization. *SIAM Journal on Optimization*, 23(3):1553–1574, 2014. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic).
- [CGT15] Coralia Cartis, Nicholas I. M. Gould, and Philippe L. Toint. On the evaluation complexity of constrained nonlinear least-squares and general constrained nonlinear optimization using second-order methods. *SIAM Journal on Numerical Analysis*, 53(2):836–851, 2015. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).
- [CGT20] Coralia Cartis, Nicholas I. M. Gould, and Philippe L. Toint. Sharp worst-case evaluation complexity bounds for arbitrary-order nonconvex optimization with inexpensive constraints. *SIAM Journal on Optimization*, 30(1):513–541, 2020. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic).
- [DAGR87] I. S. Duff, M. Anoli, N. I. M. Gould, and J. K. Reid. The practical use of the Hellerman–Ranck P^4 algorithm and the P^5 algorithm of Erisman et al. Report CSS213, AERE Harwell Laboratory, Chilton, Oxon, England, 1987.
- [DDG98] M. J. Daydé, J. P. Décamps, and N. I. M. Gould. On the use of block stretching for solving unassembled linear systems. *Calculateurs Parallèles, Réseaux et Systèmes Répartis*, 10(4):391–399, 1998. ISSN 1260-3198.
- [DDG99] Michel J. Daydé, Jérôme P. Décamps, and Nicholas I. M. Gould. Subspace-by-subspace preconditioners for structured linear systems. *Numerical Linear Algebra with Applications*, 6(3):213–234, April/May 1999. CODEN NLAAEM. ISSN 1070-5325 (print), 1099-1506 (electronic).
- [DDL96] Michel J. Daydé, Jérôme P. Décamps, Jean-Yves L’Excellent, and Nicholas I. M. Gould. Solution of large-scale partially separable optimization problems using element-by-element preconditioners. In *Poster Session of the Fifth SIAM Conference on Optimization*. SIAM Press, Philadelphia, PA, USA, 1996.
- [DDL97] M. J. Daydé, J. P. Décamps, J.-Y. L’Excellent, and N. I. M. Gould. Solution of large scale partially separable unconstrained optimization problems

using element-by-element preconditioners. In ????, editor, *Proceedings of NAFEMS World Congress 97, Glasgow, Scotland*, volume 2, pages 942–953. ????, 1997. URL <http://www.nafems.org/>.

DiPillo:2000:NOR

[DG00]

Gianni Di Pillo and Franco Giannesi, editors. *Nonlinear Optimization and Related Topics*, Applied optimization. Kluwer Academic Publishers Group, Norwell, MA, USA, and Dordrecht, The Netherlands, 2000. ISBN 0-7923-6109-1 (hardcover). LCCN QA402.5 .N55 2000. URL <http://www.loc.gov/catdir/enhancements/fy0822/99056953-d.html>; <http://www.loc.gov/catdir/enhancements/fy0822/99056953-t.html>.

Duff:1997:DML

[DGDG97a]

I. S. Duff, N. I. M. Gould, C. C. Douglas, and L. Giraud. Direct methods, linear algebra in optimization, iterative methods. *BIT Numerical Mathematics*, 37(3):??, September 1997. CODEN BITTEL, NBITAB. ISSN 0006-3835 (print), 1572-9125 (electronic). Proceedings from the International Linear Algebra Year Workshops. September 1995–June 1996.

Duff:1997:PWD

[DGDG97b]

Iain Duff, Nick Gould, Craig Douglas, and Luc Giraud, editors. *Proceedings of the Workshop on Direct Methods, September 26–29, 1995; the Workshop*

on Linear Algebra in Optimization, April 22–25, 1996; and the Workshop on Iterative Methods, June 10–13, 1996, held in Toulouse as part of the International Linear Algebra Year (ILAY). BIT, Copenhagen, 1997. CODEN NBITAB. ISSN 0006-3835 (print), 1572-9125 (electronic). BIT **37** (1997), no. 3.

Duff:1987:MMP

[DGLR87]

I. Duff, N. Gould, M. Lescrenier, and J. Reid. The multifrontal method in a parallel environment. Technical Report CSS-211, AERE Harwell Laboratory, Chilton, Oxon, England, 1987.

Duff:1990:MMP

[DGLR90]

I. S. Duff, N. I. M. Gould, M. Lescrenier, and J. K. Reid. The multifrontal method in a parallel environment. In M. G. Cox and S. J. Hammarling, editors, *Reliable Scientific Computation*, Oxford Sci. Publ., pages 93–111. Oxford University Press, Walton Street, Oxford OX2 6DP, UK, 1990.

Duff:1994:ESA

[DGP94]

Iain S. Duff, N. I. M. Gould, and J. Patricio. Experiments in scaling augmented systems. Technical Report (to appear), Rutherford Appleton Laboratory, Chilton, Oxon, England, 1994.

Duff:1990:FSS

[DGR⁺90]

I. S. Duff, N. I. M. Gould, J. K. Reid, J. A. Scott, and K. Turner.

The factorization of sparse symmetric indefinite matrices. Report RAL-90-066, Rutherford Appleton Laboratory, Chilton, Oxon, England, 1990. ??? pp.

Duff:1991:FSS

- [DGR⁺91] I. S. Duff, N. I. M. Gould, J. K. Reid, J. A. Scott, and K. Turner. The factorization of sparse symmetric indefinite matrices. *IMA Journal of Numerical Analysis*, 11(2):181–204, 1991. CODEN IJNADH. ISSN 0272-4979 (print), 1464-3642 (electronic).

Dollar:2005:UCP

- [DGSW05] H. S. Dollar, N. I. M. Gould, W. H. A. Schilders, and A. J. Wathen. Using constraint preconditioners with regularized saddle-point problems. Technical Report RAL-TR-2005-026, Rutherford Appleton Laboratory, Chilton, Oxon, England, 2005.

Dollar:2006:IFP

- [DGSW06] H. Sue Dollar, Nicholas I. M. Gould, Wil H. A. Schilders, and Andrew J. Wathen. Implicit-factorization preconditioning and iterative solvers for regularized saddle-point systems. *SIAM Journal on Matrix Analysis and Applications*, 28(1):170–189, January 2006. CODEN SJMAEL. ISSN 0895-4798 (print), 1095-7162 (electronic).

Dollar:2007:UCP

- [DGSW07] H. S. Dollar, N. I. M. Gould, W. H. A. Schilders, and A. J.

Wathen. Using constraint preconditioners with regularized saddle-point problems. *Computational optimization and applications*, 36(2-3):249–270, 2007. CODEN CPPPEF. ISSN 0926-6003 (print), 1573-2894 (electronic).

Dollar:2010:PSP

- [DGSW10] H. Sue Dollar, Nicholas I. M. Gould, Martin Stoll, and Andrew J. Wathen. Preconditioning saddle-point systems with applications in optimization. *SIAM Journal on Scientific Computing*, 32(1):249–270, ??? 2010. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Dollar:2006:IFC

- [DGW06] H. Sue Dollar, Nicholas I. M. Gould, and Andrew J. Wathen. On implicit-factorization constraint preconditioners. In *Large-scale nonlinear optimization*, volume 83 of *Nonconvex Optim. Appl.*, pages 61–82. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2006.

Dayde:1994:UEE

- [DLG94] M. Daydé, J.-Y. L’Excellent, and N. I. M. Gould. On the use of element-by-element preconditioners to solve large scale partially separable optimization problems. Technical Report RT/APO/94/4, ENSEEIHT-IRIT, Toulouse, France, 1994. URL <ftp://130.246.8.32/>

pub/reports/degENSEEIH944.
ps.Z.

Dayd:1995:SSS

- [DLG95] M. J. Daydé, J.-Y. L'Excellent, and N. I. M. Gould. Solution of structured systems of linear equations using element-by-element preconditioners. In Svetozar D. Margenov and Panayot S. Vassilevski, editors, *Iterative methods in linear algebra, II. Proceedings of the 2nd IMACS international symposium on iterative methods in linear algebra, Blagoevgrad, Bulgaria, June 17–20, 1995 (1996)*, volume 3 of *IMACS series in computational and applied mathematics*, page ?? IMACS, Department of Computer Science, Rutgers University, New Brunswick, NJ, 1995. ISSN 1098-870X. LCCN QA1 I617 v. 3.

Dayde:1996:PSU

- [DLG96] M. J. Daydé, J.-Y. L'Excellent, and N. I. M. Gould. Preprocessing of sparse unassembled linear systems for efficient solution using element-by-element preconditioners. *Lecture Notes in Computer Science*, 1124:34–43, 1996. CODEN LNCSD9. ISSN 0302-9743 (print), 1611-3349 (electronic).

Dayde:1997:EEP

- [DLG97] Michel J. Daydé, Jean-Yves L'Excellent, and Nicholas I. M. Gould. Element-by-element preconditioners for large partially separable optimization prob-

lems. *SIAM Journal on Scientific Computing*, 18(6):1767–1787, November 1997. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/27479>.

Dongarra:2006:APC

- [DMW06] Jack Dongarra, Kaj Madsen, and Jerzy Wasniewski, editors. *Applied Parallel Computing: State of the Art in Scientific Computing. 7th International Workshop, PARA 2004, Lyngby, Denmark, June 20–23, 2004. Revised Selected Papers*, volume 3732 of *Lecture Notes in Computer Science*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2006. CODEN LNCSD9. ISBN 3-540-29067-2 (softcover). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN ??? URL <http://www.springerlink.com/content/978-3-540-29067-4>; <http://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=3732>.

Duff:1997:SAN

- [DW97] Iain S. Duff and G. Alistair Watson, editors. *The state of the art in numerical analysis*, volume 63 of *The Institute of Mathematics and Its Applications conference series: new series*. Oxford University Press, Walton Street, Oxford OX2 6DP, UK, 1997. ISBN 0-19-850014-9. LCCN QA297.S775 1997. URL <https://global.oup.com/academic/>

- product/the-state-of-the-art-in-numerical-analysis-9780198500148. Based on the proceedings of a conference on the state of the art in numerical analysis. Organized by the Institute of Mathematics and Its Applications and held at York University in April 1996.
- [FGF13] Jaroslav M. Fowkes, Nicholas I. M. Gould, and Chris L. Farmer. A branch and bound algorithm for the global optimization of Hessian Lipschitz continuous functions. *Journal of Global Optimization*, 56(4):1791–1815, 2013. CODEN JGOPEO. ISSN 0925-5001 (print), 1573-2916 (electronic).
- [FGL⁺02] Roger Fletcher, Nicholas I. M. Gould, Sven Leyffer, Philippe L. Toint, and Andreas Wächter. Global convergence of a trust-region SQP-filter algorithm for general nonlinear programming. *SIAM Journal on Optimization*, 13(3):635–659, 2002. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/35725>.
- [FGS24] Jaroslav M. Fowkes, Nicholas I. M. Gould, and Jennifer A. Scott. Approximating sparse Hessian matrices using large-scale linear least squares. *Numerical Algorithms*, 96(4):1675–1698, August 2024. CODEN NUALEG. ISSN 1017-1398 (print), 1572-9265 (electronic). URL <https://link.springer.com/article/10.1007/s11075-023-01681-z>.
- [FGS25] Jaroslav M. Fowkes, Nicholas I. M. Gould, and Jennifer A. Scott. Approximating large-scale Hessian matrices using secant equations. *ACM Transactions on Mathematical Software*, 51(2):9:1–9:??, June 2025. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic).
- [GGM⁺82a] P. E. Gill, N. I. M. Gould, W. Murray, M. A. Saunders, and M. H. Wright. Range-space methods for convex quadratic programming problems. Technical report SOL 82-9, Department of Operations Research, Stanford University, Stanford, CA, USA, 1982.
- [GGM⁺82b] P. E. Gill, N. I. M. Gould, W. Murray, M. A. Saunders, and M. H. Wright. A range-space quadratic programming algorithm for problems with a mixture of bounds and general constraints. Technical Report SOL 82-10, Department of Operations Research, Stanford University, Stanford, CA, USA, 1982.
- [GGM⁺84] Philip E. Gill, Nicholas I. M. Gould, Walter Murray, Michael A. Saunders, and J. Moré. *Optimization software for systems with mixed constraints*. Springer, 1984.

- Saunders, and Margaret H. Wright. A weighted Gram–Schmidt method for convex quadratic programming. *Mathematical Programming*, 30(2): 176–196, 1984. CODEN MH-PGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).
- [GHS05b] N. I. M. Gould, Y. Hu, and J. A. Scott. A numerical evaluation of sparse direct solvers for the solution of large, sparse, symmetric linear systems of equations. Technical Report RAL-TR-2005-005, Rutherford Appleton Laboratory, Chilton, Oxon, England, 2005.
- [GHS05a] N. I. M. Gould, Y. Hu, and J. A. Scott. Complete results from a numerical evaluation of sparse direct solvers for the solution of large, sparse, symmetric linear systems of equations. Numerical Analysis Group Internal Report 2005-1, Rutherford Appleton Laboratory, Chilton, Oxon, England, 2005.
- [GH25] N. I. M. Gould and J. A. J. Hall. Roger Fletcher. 29 January 1939–15 July 2016. *Biographical Memoirs of Fellows of the Royal Society*, 78:127–146, June 2025. CODEN BMFRA3. ISSN 0080-4606 (print), 1748-8494 (electronic).
- [GHN01] Nicholas I. M. Gould, Mary E. Hribar, and Jorge Nocedal. On the solution of equality constrained quadratic programming problems arising in optimization. *SIAM Journal on Scientific Computing*, 23(4):1376–1395, July 2001. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/34566>.
- [GHS05b] N. I. M. Gould, Y. Hu, and J. A. Scott. A numerical evaluation of sparse direct solvers for the solution of large, sparse, symmetric linear systems of equations. Technical Report RAL-TR-2005-005, Rutherford Appleton Laboratory, Chilton, Oxon, England, 2005.
- [GL03] Nicholas I. M. Gould and Sven Leyffer. An introduction to algorithms for nonlinear optimization. In *Frontiers in numerical analysis (Durham, 2002)*, Universitext, pages 109–197. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2003.
- [GLR14] Nicholas I. M. Gould, Yueling Loh, and Daniel P. Robinson. A filter method with unified step computation for nonlinear optimization. *SIAM Journal on Optimization*, 24(1):175–209, 2014. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic).
- [GLR15] Nicholas I. M. Gould, Yueling Loh, and Daniel P. Robinson. A nonmonotone filter SQP method: Local convergence and numerical results. *SIAM Journal on Optimization*, 25(3):1885–1911, 2015.

- ???? 2015. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic).
- [GLRT98] **Gould:1998:LAM** Nicholas I. M. Gould, Stefano Lucidi, Massimo Roma, and Philippe L. Toint. A line-search algorithm with memory for unconstrained optimization. In *High performance algorithms and software in nonlinear optimization (Ischia, 1997)*, volume 24 of *Appl. Optim.*, pages 207–223. Kluwer Academic Publishers Group, Norwell, MA, USA, and Dordrecht, The Netherlands, 1998.
- [GLRT99] **Gould:1999:STR** Nicholas I. M. Gould, Stefano Lucidi, Massimo Roma, and Philippe L. Toint. Solving the trust-region subproblem using the Lanczos method. *SIAM Journal on Optimization*, 9(2): 504–525, March 1999. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/32273>.
- [GLRT00] **Gould:2000:ENC** N. I. M. Gould, S. Lucidi, M. Roma, and Ph. L. Toint. Exploiting negative curvature directions in linesearch methods for unconstrained optimization. *Optimization Methods & Software*, 14(1-2):75–98, 2000. CODEN OMSOE2. ISSN 1055-6788. International Conference on Nonlinear Programming and Variational Inequalities (Hong Kong, 1998).
- [GLT04a] **Gould:2004:MFA** Nicholas I. M. Gould, Sven Leyffer, and Philippe L. Toint. A multidimensional filter algorithm for nonlinear equations and nonlinear least-squares. *SIAM Journal on Optimization*, 15(1):17–38, 2004. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/42263>.
- [GLT04b] **Gould:2004:PNP** Nick Gould, Sven Leyffer, and Philippe Toint. Preface: Nonlinear programming: theory and practice [Special issue on large scale nonconvex optimization algorithms and applications in honor of Roger Fletcher’s 65th birthday]. *Mathematical Programming*, 100(1, Ser. B):1–2, 2004. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).
- [GM81] **Gould:1981:NSP** N. I. M. Gould and W. Murray. The numerical solution of a problem arising from the accurate determination of an earthquake epicenter occurring in a seismic net. Report, Stanford University and U.S. Geological Survey, Stanford, CA, USA, 1981.
- [GN98] **Gould:1998:MAV** Nicholas I. M. Gould and Jorge Nocedal. The modi-

- fied absolute-value factorization norm for trust-region minimization. In *High performance algorithms and software in nonlinear optimization (Ischia, 1997)*, volume 24 of *Appl. Optim.*, pages 225–241. Kluwer Academic Publishers Group, Norwell, MA, USA, and Dordrecht, The Netherlands, 1998.
- [GOR16] N. Gould, C. Ortner, and D. Packwood. A dimer-type saddle search algorithm with preconditioning and line-search. *Mathematics of Computation*, 85(302):2939–2966, November 2016. CODEN MCMPAF. ISSN 0025-5718 (print), 1088-6842 (electronic). URL <http://www.ams.org/journals/mcom/2016-85-302/S0025-5718-2016-03096-3>; <http://www.ams.org/journals/mcom/2016-85-302/S0025-5718-2016-03096-3/S0025-5718-2016-03096-3.pdf>; <http://www.ams.org/mathscinet/search/author.html?authorName=Packwood%2C%20D.;> <http://www.ams.org/mathscinet/search/author.html?mrauthid=75720;> <http://www.ams.org/mathscinet/search/author.html?mrauthid=803698>.
- [GOR13] Nicholas I. M. Gould, Dominique Orban, and Daniel P. Robinson. Trajectory-following methods for large-scale degenerate convex quadratic programming. *Mathematical Programming Computation*, 5(2):113–142, 2013. ISSN 1867-2949 (print), 1867-2957 (electronic).
- Gould:2016:DTS**
- Gould:2014:PKM**
- [GOR14] Nick Gould, Dominique Orban, and Tyrone Rees. Projected Krylov methods for saddle-point systems. *SIAM Journal on Matrix Analysis and Applications*, 35(4):1329–1343, 2014. CODEN SJMAEL. ISSN 0895-4798 (print), 1095-7162 (electronic).
- Gould:2001:SCP**
- [GOST01] Nicholas I. M. Gould, Dominique Orban, Annick Sartenaer, and Philippe L. Toint. Superlinear convergence of primal-dual interior point algorithms for nonlinear programming. *SIAM Journal on Optimization*, 11(4):974–1002, March/May 2001. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/37051>.
- Gould:2002:CFC**
- [GOST02] Nicholas I. M. Gould, Dominique Orban, Annick Sartenaer, and Philippe L. Toint. Component-wise fast convergence in the solution of full-rank systems of nonlinear equations. *Mathematical Programming*, 92(3, Ser. B):481–508, 2002. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic). ISMP 2000, Part 2 (Atlanta, GA).
- Gould:2013:TFM**

- [GOST05] **Gould:2005:STR** Nicholas I. M. Gould, Dominique Orban, Annick Sartenaer, and Phillipe L. Toint. Sensitivity of trust-region algorithms to their parameters. *JOR*, 3(3):227–241, September 2005. ISSN 1619-4500.
- [GOT00] **Gould:2000:QPB** N. I. M. Gould, D. Orban, and Ph. L. Toint. A quadratic programming bibliography. Numerical Analysis Group Internal Report 2000-1, Rutherford Appleton Laboratory, Chilton, Oxon, England, 2000.
- [GOT02] **Gould:2002:RNE** N. I. M. Gould, D. Orban, and Ph. L. Toint. Results from a numerical evaluation of LANCELOT B. Numerical Analysis Group Internal Report 2002-1, Rutherford Appleton Laboratory, Chilton, Oxon, England, 2002.
- [GOT03a] **Gould:2003:IPP** N. I. M. Gould, D. Orban, and Ph. L. Toint. An interior-point $l[1]$ -penalty method for nonlinear optimization. Technical Report RAL-TR-2003-022, Rutherford Appleton Laboratory, Chilton, Oxon, England, 2003.
- [GOT03b] **Gould:2003:CSC** Nicholas I. M. Gould, Dominique Orban, and Philippe L. Toint. CUTer and SifDec: A constrained and unconstrained testing environment, revisited. *ACM Transactions on Mathematical Software*, 29(4):373–394, December 2003. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic).
- [GOT03c] **Gould:2003:GLT** Nicholas I. M. Gould, Dominique Orban, and Philippe L. Toint. GALAHAD, a library of thread-safe Fortran 90 packages for large-scale nonlinear optimization. *ACM Transactions on Mathematical Software*, 29(4):353–372, December 2003. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic).
- [GOT05] **Gould:2005:NML** Nick Gould, Dominique Orban, and Philippe Toint. Numerical methods for large-scale nonlinear optimization. *Acta Numerica*, 14:299–361, 2005. CODEN ANUMFU. ISBN 0-521-85807-0. ISSN 0962-4929 (print), 1474-0508 (electronic).
- [GOT15] **Gould:2015:CUT** Nicholas I. M. Gould, Dominique Orban, and Philippe L. Toint. CUTEst: a constrained and unconstrained testing environment with safe threads for mathematical optimization. *Computational optimization and applications*, 60(3):545–557, 2015. CODEN CPPPEF. ISSN 0926-6003 (print), 1573-2894 (electronic).
- [Gou82] **Gould:1982:NML** N. I. M. Gould. *Numerical methods for linear and quadratic pro-*

gramming. PhD thesis, University of Oxford, Oxford, England, 1982.

Gould:1983:GSE

- [Gou83a] N. I. M. Gould. The generalized steepest edge for linear programming. Research report CORR 83-2, Department of Combinatorics and Optimization, University of Waterloo, Waterloo, ON, Canada, 1983.

Gould:1983:SSG

- [Gou83b] N. I. M. Gould. The stability of the solution of general quadratic programs. Research report CORR 83-11, Department of Combinatorics and Optimization, University of Waterloo, Waterloo, ON, Canada, 1983.

Gould:1984:GSE

- [Gou84a] N. I. M. Gould. The generalized steepest-edge for linear programming: part 2, practicalities. Report CORR 84-1, Department of Combinatorics and Optimization, University of Waterloo, Waterloo, ON, Canada, 1984.

Gould:1984:SEL

- [Gou84b] N. I. M. Gould. The steepest edge for linear programming, part 2: practicalities. Research report CORR 84-1, Department of Combinatorics and Optimization, University of Waterloo, Ontario, Canada, 1984.

Gould:1985:PCE

- [Gou85] Nicholas I. M. Gould. On practical conditions for the existence and uniqueness of solutions to the general equality quadratic programming problem. *Mathematical Programming*, 32(1):90–99, 1985. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Gould:1986:ADS

- [Gou86] Nicholas Ian Mark Gould. On the accurate determination of search directions for simple differentiable penalty functions. *IMA Journal of Numerical Analysis*, 6(3):357–372, 1986. CODEN IJNADH. ISSN 0272-4979 (print), 1464-3642 (electronic).

Gould:1988:STC

- [Gou88] N. I. M. Gould. On solving three classes of nonlinear programming problems via simple differentiable penalty functions. *Journal of Optimization Theory and Applications*, 56(1):89–126, 1988. CODEN JOTABN. ISSN 0022-3239 (print), 1573-2878 (electronic).

Gould:1989:CSP

- [Gou89] Nicholas Ian Mark Gould. On the convergence of a sequential penalty function method for constrained minimization. *SIAM Journal on Numerical Analysis*, 26(1):107–128, 1989. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).

Gould:1991:ALS

- [Gou91a] Nicholas I. M. Gould. An algorithm for large-scale quadratic programming. *IMA Journal of Numerical Analysis*, 11(3):299–324, 1991. CODEN IJNADH. ISSN 0272-4979 (print), 1464-3642 (electronic).

Gould:1991:GGE

- [Gou91b] Nick I. M. Gould. On growth in Gaussian elimination with complete pivoting. *SIAM Journal on Matrix Analysis and Applications*, 12(2):354–361, April 1991. CODEN SJMAEL. ISSN 0895-4798 (print), 1095-7162 (electronic).

Gould:1999:IMI

- [Gou99a] N. I. M. Gould. Iterative methods for ill-conditioned linear systems from optimization. In Di Pillo and Giannessi [DG00], pages 123–142. ISBN 0-7923-6109-1 (hardcover). LCCN QA402.5 .N55 2000. URL <http://www.loc.gov/catdir/enhancements/fy0822/99056953-d.html>; <http://www.loc.gov/catdir/enhancements/fy0822/99056953-t.html>.

Gould:1999:MFL

- [Gou99b] Nicholas Ian Mark Gould. On modified factorizations for large-scale linearly constrained optimization. *SIAM Journal on Optimization*, 9(4):1041–1063, September 1999. CODEN SJOPPE. ISSN 1052-6234 (print), 1095-7189 (electronic).

URL <http://epubs.siam.org/sam-bin/dbq/article/29066>. Dedicated to John E. Dennis, Jr., on his 60th birthday.

Gould:2000:IMI

- [Gou00] Nicholas I. M. Gould. Iterative methods for ill-conditioned linear systems from optimization. In *Nonlinear optimization and related topics (Erice, 1998)*, volume 36 of *Appl. Optim.*, pages 123–141. Kluwer Academic Publishers Group, Norwell, MA, USA, and Dordrecht, The Netherlands, 2000.

Gould:2003:SRC

- [Gou03] Nicholas I. M. Gould. Some reflections on the current state of active-set and interior-point methods for constrained optimization. *SIAG/OPT Views-and-News*, 14(1):2–7, April 2003. URL <http://www.mcs.anl.gov/~leyffer/views/14-1.pdf>.

Gould:2008:HGP

- [Gou08] Nicholas I. M. Gould. How good are projection methods for convex feasibility problems? *Computational optimization and applications*, 40(1):1–12, 2008. CODEN CPPPEF. ISSN 0926-6003 (print), 1573-2894 (electronic).

Gould:2012:HGE

- [Gou12] Nicholas I. M. Gould. How good are extrapolated bi-projection methods for linear feasibility problems? *Computational optimization and applications*, 51

(3):1089–1095, 2012. CODEN CPPPEF. ISSN 0926-6003 (print), 1573-2894 (electronic).

Gould:2012:URP

- [GPT12] N. I. M. Gould, M. Porcelli, and P. L. Toint. Updating the regularization parameter in the adaptive cubic regularization algorithm. *Computational optimization and applications*, 53(1):1–22, 2012. CODEN CPPPEF. ISSN 0926-6003 (print), 1573-2894 (electronic).

Gould:1989:NCP

- [GR89] Nicholas I. M. Gould and John K. Reid. New crash procedures for large systems of linear constraints. *Mathematical Programming*, 45(1–3):475–501, August 1989. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Gould:2010:SDSa

- [GR10a] Nicholas I. M. Gould and Daniel P. Robinson. A second derivative SQP method: Global convergence. *SIAM Journal on Optimization*, 20(4):2023–2048, ??? 2010. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic).

Gould:2010:SDSb

- [GR10b] Nicholas I. M. Gould and Daniel P. Robinson. A second derivative SQP method: Local convergence and practical issues. *SIAM Journal on Optimization*, 20(4):2049–2079, ??? 2010.

CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic).

Gould:2012:SDS

Nicholas I. M. Gould and Daniel P. Robinson. A second-derivative SQP method with a ‘trust-region-free’ predictor step. *IMA Journal of Numerical Analysis*, 32(2):580–601, April 2012. CODEN IJNADH. ISSN 0272-4979 (print), 1464-3642 (electronic). URL <http://imajna.oxfordjournals.org/content/32/2/580.full.pdf+html>.

Gould:2010:STR

- [GRT10] Nicholas I. M. Gould, Daniel P. Robinson, and H. Sue Thorne. On solving trust-region and other regularised subproblems in optimization. *Mathematical Programming Computation*, 2(1):21–57, 2010. CODEN ??? ISSN 1867-2949 (print), 1867-2957 (electronic). URL <http://www.springerlink.com/openurl.asp?genre=journal%26issn=1867-295>.

Gould:1998:SAI

- [GS98] Nicholas I. M. Gould and Jennifer A. Scott. Sparse approximate-inverse preconditioners using norm-minimization techniques. *SIAM Journal on Scientific Computing*, 19(2):605–625, 1998. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/28842>.

Gould:2003:CRN

- [GS03] N. I. M. Gould and J. A. Scott. Complete results from a numerical evaluation of HSL packages for the direct-solution of large sparse, symmetric linear systems of equations. Numerical Analysis Group Internal Report 2003-2, Rutherford Appleton Laboratory, Chilton, Oxon, England, 2003.

Gould:2004:NEH

- [GS04] Nicholas I. M. Gould and Jennifer A. Scott. A numerical evaluation of HSL packages for the direct solution of large sparse, symmetric linear systems of equations. *ACM Transactions on Mathematical Software*, 30(3): 300–325, September 2004. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic).

Gould:2009:SAS

- [GS09] N. I. M. Gould and V. Simoncini. Spectral analysis of saddle point matrices with indefinite leading blocks. *SIAM Journal on Matrix Analysis and Applications*, 31(3): 1152–1171, 2009. CODEN SJMAEL. ISSN 0895-4798 (print), 1095-7162 (electronic).

Gould:2010:SAS

- [GS10] N. I. M. Gould and V. Simoncini. Spectral analysis of saddle point matrices with indefinite leading blocks. *SIAM Journal on Matrix Analysis and Applications*, 31(3): 1152–1171, 2010. CODEN SJMAEL. ISSN 0895-4798 (print), 1095-7162 (electronic).

Gould:2007:NES

- [GSH07] Nicholas I. M. Gould, Jennifer A. Scott, and Yifan Hu. A numerical evaluation of sparse direct solvers for the solution of large sparse symmetric linear systems of equations. *ACM Transactions on Mathematical Software*, 33(2): 1–32, June 2007. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic).

Gould:2005:FTR

- [GST05] Nick I. M. Gould, Caroline Sainvitu, and Philippe L. Toint. A filter-trust-region method for unconstrained optimization. *SIAM Journal on Optimization*, 16(2): 341–357, 2005. CODEN SJOPE8. ISSN 1052-6234 (print), 1095-7189 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/60385>.

Gould:1999:NCB

- [GT99] Nicholas I. M. Gould and Philippe L. Toint. A note on the convergence of barrier algorithms to second-order necessary points. *Mathematical Programming*, 85(2, Ser. A):433–438, 1999. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Gould:2000:SML

- [GT00] Nicholas I. M. Gould and Philippe L. Toint. SQP methods for large-scale nonlinear programming. In *System modelling and optimization (Cambridge, 1999)*, pages 149–178. Kluwer

Academic Publishers Group,
Norwell, MA, USA, and Dor-
drecht, The Netherlands, 2000.

[GT03b]

Gould:2002:IWS

- [GT02a] Nicholas I. M. Gould and
Philippe L. Toint. An iterative
working-set method for large-
scale nonconvex quadratic pro-
gramming. *Applied Numerical
Mathematics: Transactions of
IMACS*, 43(1–2):109–128, Octo-
ber 2002. CODEN ANMAEL.
ISSN 0168-9274 (print), 1873-
5460 (electronic). 19th Dundee
Biennial Conference on Numerical
Analysis (2001).

Gould:2002:NML

[GT03c]

- [GT02b] Nicholas I. M. Gould and
Philippe L. Toint. Numerical
methods for large-scale non-
convex quadratic programming.
In *Trends in industrial and ap-
plied mathematics (Amritsar,
2001)*, volume 72 of *Appl. Op-
tim.*, pages 149–179. Kluwer
Academic Publishers Group,
Norwell, MA, USA, and Dor-
drecht, The Netherlands, 2002.

Gould:2003:FFF

- [GT03a] N. I. M. Gould and Ph. L. Toint.
FILTRANE, a Fortran 95 filter-
trust-region package for solv-
ing nonlinear feasibility prob-
lems. Technical Report RAL-
TR-2003-017, Rutherford Apple-
ton Laboratory, Chilton, Oxon,
England, 2003.

Gould:2003:FIA

N. I. M. Gould and Philippe L.
Toint. The filter idea and
its application to the nonlin-
ear feasibility problem. In
David F. Griffiths and G. Al-
istair Watson, editors, *Proceed-
ings of the 20th Biennial Con-
ference on Numerical Analy-
sis, 24–27 June, 2003, Univer-
sity of Dundee, Scotland*, vol-
ume NA/217 of *Numerical anal-
ysis report*, pages 73–79. ????,
???, 2003. LCCN QA297 .D85
2003. URL <http://www.maths.dundee.ac.uk/~naconf/>.

Gould:2003:GCH

Nick Gould and Philippe L.
Toint. Global convergence of
a hybrid trust-region SQP-filter
algorithm for general nonlinear
programming. In *System model-
ing and optimization, XX (Trier,
2001)*, volume 130 of *IFIP Int.
Fed. Inf. Process.*, pages 23–
54. Kluwer Academic Publish-
ers Group, Norwell, MA, USA,
and Dordrecht, The Netherlands,
2003.

Gould:2004:HMN

[GT04a]

Nick Gould and Philippe L.
Toint. How mature is nonlin-
ear optimization? In *Applied
mathematics entering the 21st
century*, pages 141–161. SIAM
Press, Philadelphia, PA, USA,
2004.

Gould:2004:PQP

[GT04b]

Nick Gould and Philippe L.
Toint. Preprocessing for

quadratic programming. *Mathematical Programming*, 100(1, Ser. B):95–132, 2004. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Gould:2006:GCN

- [GT06] Nicholas I. M. Gould and Philippe L. Toint. Global convergence of a non-monotone trust-region filter algorithm for nonlinear programming. In *Multiscale optimization methods and applications*, volume 82 of *Nonconvex Optim. Appl.*, pages 125–150. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2006.

Gould:2007:FFF

- [GT07] Nicholas I. M. Gould and Philippe L. Toint. FILTRANE, a Fortran 95 filter-trust-region package for solving nonlinear least-squares and nonlinear feasibility problems. *ACM Transactions on Mathematical Software*, 33(1):3:1–3:23, March 2007. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic).

Gould:2010:NPP

- [GT10] N. I. M. Gould and Ph. L. Toint. Nonlinear programming without a penalty function or a filter. *Mathematical Programming*, 122(1, Ser. A):155–196, 2010. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Gould:2012:ENP

- [GT12] N. I. M. Gould and Ph. L. Toint. Erratum to: Nonlinear program-

ming without a penalty function or a filter [mr2533756]. *Mathematical Programming*, 131(1-2, Ser. A):403–404, 2012. CODEN MHPGA4. ISSN 0025-5610 (print), 1436-4646 (electronic).

Keller:2000:CPI

- [KGW00] Carsten Keller, Nicholas I. M. Gould, and Andrew J. Wathen. Constraint preconditioning for indefinite linear systems. *SIAM Journal on Matrix Analysis and Applications*, 21(4):1300–1317, 2000. CODEN SJMAEL. ISSN 0895-4798 (print), 1095-7162 (electronic). URL <http://epubs.siam.org/sam-bin/dbq/article/35180>.

Scott:2004:ESD

- [SHG04] Jennifer A. Scott, Yifan Hu, and Nicholas I. M. Gould. An evaluation of sparse direct symmetric solvers: an introduction and preliminary findings. In Donarra et al. [DMW06], pages 818–827. CODEN LNCSD9. ISBN 3-540-29067-2 (softcover). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN ????. URL <http://www.springerlink.com/content/978-3-540-29067-4>; <http://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=3732>.