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IMPORTANT NOTE

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BIBLIOGRAPHY - THESES, BOOKS AND ARTICLES IN BOOKS

J. Abadie, Ed., <u>Integer and Nonlinear Programming</u>. New York: Elsevier, 1970.

J. Abadie, Ed., <u>Nonlinear Programming</u>. New York: Wiley, 1967.

M. Abramowitz and I. Stegun, <u>Handbook of Mathematical Functions</u>. New York: Dover Publications, 1965.

N. I. Achieser, <u>Theory of Approximation</u> (Transl. by C.J. Hyman). New York: Frederick Unger, 1956.

F.S. Acton, <u>Numerical Methods that Work</u>. New York: Harper and Row, 1970.

T.M. Apostol, <u>Mathematical Analysis</u>. Reading, MA: Addison-Wesley, 1957.

M. Aoki, <u>Introduction to Optimization Techniques</u>. New York: Macmillan, 1971.

M. Athans, M.L. Dertouzos, R.N. Spann and S.J. Mason, <u>Systems, Networks and Computation Multivariable Methods</u>. New York: McGraw-Hill, 1974.

M. Avriel, <u>Nonlinear Programming Analysis and Methods</u>. Englewood Cliffs, NJ: Prentice-Hall, 1976.

J.W. Bandler, "Computer-aided circuit optimization", in <u>Modern Filter Theory and Design</u>, G.C. Temes and S.K. Mitra, Eds. New York: Wiley-Interscience, 1973.

J.W. Bandler, "Optimization of design tolerances using nonlinear programming", in <u>Computer-Aided Filter Design</u>, G. Szentirmai, Ed. New York: IEEE Press, 1973.

J.W. Bandler, "Optimization methods for computer-aided design", in <u>Microwave Integrated Circuits</u>, J. Frey, Ed. Dedham, MA: Artech House, 1975.

J.W. Bandler and C. Charalambous, "Theory of generalized least pth approximation", in <u>Computer-Aided Filter Design</u>, G. Szentirmai, Ed. New York: IEEE Press, 1973.

A.V. Balakrishnan and L.W. Neustadt, Eds., <u>Computing Methods in Optimization Problems</u>. New York: Academic Press, 1964.

E.M. Beale, Ed., <u>Applications of Mathematical Programming Techniques</u>. New York: Elsevier, 1970.

E.M.L. Beale, "Nonlinear programming", in <u>Digital Computer User's Handbook</u>, M. Klerer and G.A. Korn, Eds. New York: McGraw-Hill, 1967.

P.W. Becker and F. Jensen, <u>Design of Systems and Circuits for Maximum Reliability or Maximum Production Yield</u>. Lyngby, Denmark: Polyteknisk

Forlag, 1974.

M. Beckmann and H.P. Kunzi, Eds., <u>Computing Methods in Optimization Problems</u>. New York: Springer-Verlag, 1969.

R. Bellman, <u>Introduction to Matrix Analysis</u> (2nd Edition). New York: McGraw-Hill, 1970.

E.J. Beltrami, <u>An Algorithmic Approach to Nonlinear Analysis and Optimization</u>. New York: Academic Press, 1970.

G.S.G. Beveridge and R.S. Schechter, <u>Optimization: Theory and Practice</u>. New York: McGraw-Hill, 1970.

M.C. Biggs, "Constrained minimisation using recursive quadratic programming: some alternative subproblems", in <u>Towards Global Optimisation</u>, L.C.W. Dixon and G.P. Szego, Eds. Amsterdam: North Holland.

J.C. Bowers and S.R. Sedore, <u>SCEPTRE A Computer Program for Circuit and Systems Analysis</u>. Englewood Cliffs, NJ: Prentice-Hall, 1971.

M.J. Box, D. Davies and W.H. Swann, <u>Nonlinear Optimization Techniques</u>. Edinburgh, Scotland: Oliver and Boyd, 1969.

J. Bracken and G.P. McCormick, <u>Selected Applications of Nonlinear Programming</u>. New York: Wiley, 1968.

A. Brameller, R.N. Allan and Y.M. Hamam, <u>Sparsity</u>. London: Pitman, 1976.

E.M. Butler, "Large change sensitivities for statistical design", in <u>Computer-Aided Filter Design</u>, G. Szentirmai, Ed. New York: IEEE Press, 1973.

D.A. Calahan, <u>Computer-Aided Network Design</u> (Revised Edition). New York: McGraw Hill, 1972.

D.A. Calahan, A.B. MacNee and E.L. McMahon, <u>Introduction to Modern Circuit Analysis</u>. New York: Holt, Rinehart and Winston, 1974.

M.D. Canon, C.D. Cullum, Jr., and E. Polak, <u>Theory of Optimal Control and Mathematical Programming</u>. New York: McGraw Hill, 1970.

B. Carnahan and J.O. Wilkes, <u>Digital Computing and Numerical Methods</u>. New York: Wiley, 1973.

C. Charalambous, "Nonlinear least pth approximation and nonlinear programming with applications in the design of networks and systems", Ph.D. Thesis, McMaster University, 1973.

J.H.K. Chen, DISOPT - a general program for continuous and discrete nonlinear programming problems, M.Eng. Thesis, McMaster University, 1974.

W.Y. Chu, "Extrapolation in least pth approximation and nonlinear programming", M. Eng. Thesis, McMaster University, 1974.

L.O. Chua and P.M. Lin, Computer-aided Analysis of Electronic Circuits. Englewood Cliffs, NJ: Prentice-Hall, 1975.

E.W. Cheney, Introduction to Approximation Theory. New York: McGraw-Hill, 1966.

L. Cooper and D. Steinberg, Introduction to Methods of Optimization. Philadelphia, PA: Saunders, 1970.

H.S.M. Coxeter, Regular Polytopes, (2nd Ed.). New York: MacMillan, 1963.

J.B. Cruz, Jr., Feedback Systems. New York: McGraw-Hill, 1972.

J.W. Daniel, The Approximate Minimization of Functionals. Englewood Cliffs, NJ: Prentice-Hall, 1971.

G.B. Dantzig, Linear Programming and Extensions. Princeton, NJ: Princeton University Press, 1963.

D. Davies and W.H. Swann, "Review of constrained optimization", in Optimization, R. Fletcher, Ed. New York: Academic Press, 1969.

P.J. Davis, Interpolation and Approximation. New York: Blaisdell, 1965.

M.M. Denn, Optimization by Variational Methods. New York: McGraw-Hill, 1969.

J.B. Dennis, Mathematical Programming and Electrical Networks. Cambridge, MA: MIT Press, 1959.

P.M. DeRusso, R.J. Roy and C.M. Close, State Variables for Engineers. New York: Wiley, 1966.

C.S. Desai and J.F. Abel, Introduction to the Finite Element Method. New York: Van Nostrand Reinhold, 1972.

C.A. Desoer and E.S. Kuh, Basic Circuit Theory. New York: McGraw-Hill, 1969.

S.W. Director, Ed., Computer-Aided Circuit Design: Simulation and Optimization. Stroudsburg, PA: Dowden, Hutchinson and Ross, 1973.

S.W. Director, "Survey of decomposition techniques for the analysis and design of electrical networks", in Decomposition of Large-Scale Problems, D.M. Himmelblau, Ed. New York: North Holland, 1973.

S.W. Director, "Towards automated design of integrated circuits", in Basic Questions of Design Theory, W.R. Spillers, Ed. New York: North Holland, 1974.

S.W. Director, Circuit Theory - A Computational Approach. New York: Wiley, 1975.

S.W. Director and R.A. Rohrer, Introduction to System Theory. New York: McGraw-Hill, 1972.

L.C.W. Dixon, Nonlinear Optimization. London: English Universities Press, 1972.

R.J. Duffin, E.L. Peterson and C.M. Zener, Geometric Programming. New York: Wiley, 1967.

A.V. Fiacco and G.P. McCormick, Nonlinear Programming Sequential Unconstrained Minimization Techniques. New York: Wiley, 1968.

D.T. Finkbeiner, Introduction to Matrices and Linear Transformations. San Francisco, CA: Freeman, 1960.

R. Fletcher, Ed., Optimization. New York: Academic Press, 1969.

R. Fletcher, "A review of methods for unconstrained optimization", in Optimization, R. Fletcher, Ed. New York: Academic Press, 1969.

R. Fletcher and A.P. McCann, "Acceleration techniques for nonlinear programming", in Optimization, R. Fletcher, Ed. New York: Academic Press, 1969.

L. Fox and I.B. Parker, Chebyshev Polynominals in Numerical Analysis. Oxford University Press, 1968.

R.L. Fox, Optimization Methods for Engineering Design. Reading, MA: Addison-Wesley, 1971.

S.I. Gass, Linear Programming (3rd Ed.). New York: McGraw-Hill, 1969.

S.I. Gass, An Illustrated Guide to Linear Programming. New York: McGraw-Hill, 1970.

R.S. Garfinkel and G.L. Nemhauser, Integer Programming. New York: Wiley, 1972.

C.W. Gear, Numerical Initial Value Problems in Ordinary Differential Equations. Englewood Cliffs, NJ: Prentice-Hall, 1971.

C.W. Gear, Introduction to Computer Science. Chicago: Science Research Associates, 1973.

K. Geher, Theory of Network Tolerances. Budapest, Hungary: Akademiai Kiado, 1971.

P.E. Gill and W. Murray, Eds., Numerical Methods for Constrained Optimization. New York: Academic Press, 1974.

B. Gold and C. Rader, Digital Processing of Signals. New York:

- 7 -

McGraw-Hill, 1969.

G. Hadley, Nonlinear and Dynamic Programming. Reading, MA: Addison-Wesley, 1964.

P.L. Hammer and S. Rudeanu, Boolean Methods in Operations Research and Related Areas. New York: Springer-Verlag, 1968.

J.M. Hammersly and D.C. Handscomb, Monte Carlo Methods. New York: Wiley, 1964.

D.C. Handscomb, Ed., Methods of Numerical Approximation. Oxford: Pergamon, 1966.

G.H. Hardy, J.E. Littlewood and G. Polya, Inequalities. Cambridge University Press, 1934.

C. Hastings, Jr., Approximations for Digital Computers. Princeton, NJ: Princeton University Press, 1955.

G.J. Herskowitz, Computer-aided Integrated Circuit Design. New York: McGraw-Hill, 1968.

A.S. Householder, Principles of Numerical Analysis. New York: McGraw-Hill, 1953.

D.M. Himmelblau, Applied Nonlinear Programming. New York: McGraw-Hill, 1972.

A.J. Hughes and D. Grawiog, Linear Programming. New York: Addison-Wesley, 1973.

M.D. Intriligator, Mathematical Optimization and Economic Theory. Englewood Cliffs, NJ: Prentice-Hall, 1971.

S.L.S. Jacoby, J.S. Kowalik and J.T. Pizzo, Iterative Methods for Nonlinear Optimization Problems. Englewood Cliffs, NJ: Prentice-Hall, 1972.

E.I. Jury, Theory and Application of the z-Transform Method. New York: Wiley, 1964.

B.J. Karafin, "The optimum assignment of component tolerances for electrical networks", in Computer-Aided Filter Design, G. Szentirmai, Ed. New York: IEEE Press, 1973.

B.J. Karafin, "The general component tolerance assignment problem in electrical networks", Ph.D. Thesis, Univ. of Pennsylvania, Philadelphia, PA, 1974.

L.G. Kelly, Handbook of Numerical Methods and Applications. Reading, MA: Addison-Wesley, 1967.

B. Kinariwala, F.F. Kuo and N. Tsao, Linear Circuits and Computation.

New York: Wiley, 1973.

M. Klerer and G.A. Korn, Eds., Digital Computer User's Handbook. New York: McGraw-Hill, 1967.

J. Kowalik and M.R. Osborne, Methods for Unconstrained Optimization Problems. New York: Elsevier, 1968.

J.L. Kuester and J.H. Mize, Optimization Techniques with Fortran. New York: McGraw-Hill, 1973.

H.W. Kuhn and A.W. Tucker, "Nonlinear programming", Proc. 2nd Symp. on Math. Statistics and Probability. Berkeley, CA: University of California Press, 481-493, 1951.

H.P. Kunzi, W. Krelle and W. Oettli, Nonlinear Programming. Waltham, MA: Blaisdell, 1966.

H.P. Kunzi, H.G. Tzschach and C.A. Zehnder, Numerical Methods of Mathematical Optimization with ALGOL and FORTRAN Programs. New York: Academic Press, 1968.

F.F. Kuo and J.F. Kaiser, Eds., System Analysis by Digital Computer. New York: Wiley, 1966.

F.F. Kuo and W.G. Magnuson, Eds., Computer Oriented Circuit Design. Englewood Cliffs, NJ: Prentice-Hall, 1969.

P. Lancaster, Theory of Matrices. New York: Academic Press, 1969.

L.S. Lasdon, Optimization Theory for Large Systems. New York: Macmillan, 1970.

A. Lavi and T.P. Vogl, Eds., Recent Advances in Optimization Techniques. New York: Wiley, 1966.

P.C. Liu, "A theory for optimal worst-case design embodying centering, tolerancing and tuning, with circuit applications", Ph.D. Thesis, McMaster University, 1975.

F.A. Lootsma, Ed., Numerical Methods for Nonlinear Optimization. New York: Academic Press, 1972.

F.A. Lootsma, "A survey of methods for solving constrained minimization problems via unconstrained minimization", in Numerical Methods for Nonlinear Optimization, F.A. Lootsma, Ed. New York: Academic Press, 1972.

D.G. Luenberger, Introduction to Linear and Nonlinear Programming. Reading, MA: Addison-Wesley, 1973.

D.G. Luenberger, Optimization by Vector Space Methods. New York: Wiley, 1969.

O.L. Mangasarian, <u>Nonlinear Programming</u>. New York: McGraw-Hill, 1969.

N.D. Markettos, "Optimum system modelling using recent gradient methods", M.Eng. Thesis, McMaster University, 1972.

C. McMillan, Jr., <u>Mathematical Programming</u>: <u>An Introduction to the Design and Application of Optimal Decision Machines</u>. New York: Wiley, 1970.

G. Meinardus, <u>Approximation of Functions: Theory and Numerical Methods</u>. New York: Springer-Verlag, 1967.

M.H. Mickle and T.W. Sze, <u>Optimization in Systems Engineering</u>. Scranton, PA: Intext, 1972.

M.F. Neuts, <u>Probability</u>. Boston, MA: Allyn and Bacon, 1973.

A.V. Oppenheim and R.W. Schafer, <u>Digital Signal Processing</u>. Englewood Cliffs, NJ: Prentice-Hall, 1975.

W. Orchard-Hays, <u>Advanced Linear-Programming Computing Techniques</u>. New York: McGraw-Hill, 1968.

J.M. Ortega and W.C. Rheinboldt, <u>Iterative Solution of Nonlinear Equations in Several Variables</u>. New York: Academic Press, 1970.

G. Owen, <u>Game Theory</u>. Philadelphia, PA: Saunders, 1968.

A. Peled and B. Liu, <u>Digital Signal Processing Theory, Design and Implementation</u>. New York: Wiley, 1976.

P. Penfield, Jr., <u>MARTHA Users' Manual</u>. Cambridge, MA: M.I.T. Press, 1971.

B.S. Perlman and V.G. Gelnovatch, "Computer aided design, simulation and optimization", in <u>Advances in Microwaves vol.8</u>, L. Young and H. Sobol, Eds. New York: Academic Press, 1974.

D.A. Pierre, <u>Optimization Theory with Applications</u>. New York: Wiley, 1969.

D.A. Pierre and M.J. Lowe, <u>Mathematical Programming via Augmented Lagrangians</u>. Reading, MA: Addison-Wesley, 1975.

M.J.D. Powell, "A method for nonlinear constraints in minimization problems", in <u>Optimization</u>, R. Fletcher, Ed. New York: Academic Press, 1969.

L. Pun, <u>Introduction to Optimization Practice</u>. New York: Wiley, 1969.

B.N. Pshenichnyi, <u>Necessary Conditions for an Extremum</u>. New York: Marcel Dekker, 1971.

A. Ralston and H.S. Wilf, Eds., <u>Mathematical Methods for Digital</u>

Computers (vol. 2). New York: Wiley, 1968.

J.K. Reid, Ed., Large Sparse Sets of Linear Equations. New York: Academic Press, 1970.

J.R. Rice, The Approximation of Functions. Vol. I - Linear Theory. Reading, MA: Addison-Wesley, 1964.

J.R. Rice, The Approximation of Functions. Vol. II - Nonlinear and Multivariate Theory. Reading, MA: Addison-Wesley, 1969.

M.R.M. Rizk, "Efficient simulation of circuits for amplitude and delay optimization in the frequency domain", M.Eng. Thesis, McMaster University, 1975.

J.K. Rizoniko-Popovic, "General programs for least pth and near minimax approximation", M.Eng. Thesis, McMaster University, 1972.

A.W. Roberts and D.E. Varberg, Convex Functions. New York: Academic Press, 1973.

D.J. Rose and R.A. Willoughby, Ed., Sparse Matrices and Their Applications. New York: Plenum, 1972.

D.L. Russell, Optimization Theory. New York: Benjamin, 1970.

A.K. Seth, "Electrical network tolerance optimization", Ph.D. Thesis, University of Waterloo, Waterloo, Canada, 1972.

Yu. A. Shreider, The Monte Carlo Method. New York: Pergamon, 1966.

J.N. Siddall, Analytical Decision-Making in Engineering Design. Englewood Cliffs, NJ: Prentice-Hall, 1972.

T.V. Srinivasan, "Minimax system modelling and design", Ph.D. Thesis, McMaster University, 1973.

G.W. Stagg and A.H. El-Abiad, Computer Methods in Power System Analysis. New York: McGraw-Hill, 1968.

K.L. Su, Time-Domain Synthesis of Linear Networks. Englewood Cliffs, NJ: Prentice-Hall, 1971.

G. Szentirmai, Ed., Computer-Aided Filter Design. New York: IEEE Press, 1973.

D. Tabak and B.C. Kuo, Optimal Control by Mathematical Programming. Englewood Cliffs, NJ: Prentice-Hall, 1971.

H.A. Taha, Operations Research - An Introduction. New York: MacMillan, 1971.

A. Talbot, Ed., Approximation Theory. New York: Academic Press, 1970.

A.E. Taylor, _Introduction to Functional Analysis_. New York: Wiley, 1958.

G.C. Temes, "Optimization methods in circuit design" in _Computer Oriented Circuit Design_, F.F. Kuo and W.G. Magnuson, Jr., Eds. Englewood Cliffs, NJ: Prentice-Hall, 1969.

G.C. Temes and S.K. Mitra, Eds., _Modern Filter Theory and Design_. New York: Wiley-Interscience, 1973.

R.P. Tewarson, _Sparse Matrices_. New York: Academic Press, 1973.

S. Vajda, _Mathematical Programming_. Reading, MA: Addison-Wesley, 1961.

J. Vlach, _Computerized Approximation and Synthesis of Linear Networks_. New York: Wiley, 1969.

B.Z. Vulikh, _Introduction to Functional Analysis for Scientists and Technologists_. Reading, MA: Addison-Wesley, 1963.

H.M. Wagner, _Principles of Operations Research with Applications to Managerial Decisions_. Englewood Cliffs, NJ: Prentice-Hall, 1969.

J. Walsh, Ed., _Numerical Analysis: An Introduction_. Washington, DC: Thompson, 1967.

D.J. Wilde, _Optimum Seeking Methods_. Englewood Cliffs, NJ: Prentice-Hall, 1964.

D.J. Wilde and C.S. Beightler, _Foundations of Optimization_. Englewood Cliffs, NJ: Prentice-Hall, 1967.

P.W. Williams, _Numerical Computations_. London: Nelson, 1972.

O. Wing, _Circuit Theory with Computer Methods_. New York: Holt, Rinehart and Winston, 1972.

P. Wolfe, "Methods of nonlinear programming", in _Nonlinear Programming_, J. Abadie, Ed. New York: Wiley, 1967.

P.B. Yale, _Geometry and Symmetry_. San Francisco, CA: Holden-Day, 1968.

D.M. Young, _Iterative Solution of Large Linear Systems_. New York: Academic Press, 1971.

L.A. Zadeh, L.W. Neustadt and A.V. Balakrishnan, _Computing Methods in Optimization Problems_, vol. 2, New York: Academic Press, 1969.

W.I. Zangwill, _Nonlinear Programming_. Englewood Cliffs, NJ: Prentice-Hall, 1969.

BIBLIOGRAPHY - MATHEMATICAL ARTICLES AND REPORTS

N. Adachi, "On variable-metric algorithms", J. Optimization Theory and Applications, vol. 7, 1971, pp. 391-410.

J. Asaadi, "A computational comparison of some non-linear programs", Mathematical Programming, vol. 4, 1973, pp. 144-154.

J.W. Bandler, "Optimization methods for computer-aided design", IEEE Trans. Microwave Theory Tech., vol. MTT-17, 1969, pp. 533-552.

J.W. Bandler, "Conditions for a minimax optimum", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 476-479.

J.W. Bandler, "Optimization of design tolerances using nonlinear programming", J. Optimization Theory and Applications, vol. 14, 1974, pp. 99-114.

J.W. Bandler, "Necessary conditions for minimax optimality", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-68, 1974.

J.W. Bandler, "A review of concepts in linear, nonlinear and discrete optimization", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-158, 1977.

J.W. Bandler and C. Charalambous, "Practical least pth approximation with extremely large values of p", 5th Asilomar Conf. on Circuits and Systems Conf. Record (Pacific Grove, CA, 1971), pp. 66-70.

J.W. Bandler and C. Charalambous, "Conditions for minimax approximation obtained from the $\ell p(n)$ norm", IEEE Trans. Automatic Control, vol. AC-17, 1972, pp. 257-258.

J.W. Bandler and C. Charalambous, "Theory of generalized least pth approximation", IEEE Trans. Circuit Theory, vol. CT-19, 1972, pp. 287-289.

J.W. Bandler and C. Charalambous, "Practical least pth optimization of networks", IEEE Trans. Microwave Theory Tech., vol. MTT-20, 1972, pp. 834-840.

J.W. Bandler and C. Charalambous, "On conditions for optimality in least pth approximation with $p \to \infty$ ", J. Optimization Theory and Applications, vol. 11, 1973, pp. 556-566.

J.W. Bandler and C. Charalambous, "Nonlinear programming using minimax techniques", J. Optimization Theory and Applications, vol. 13, 1974, pp. 607-619.

J.W. Bandler, C. Charalambous, J.H.K. Chen and W.Y Chu, "New results in the least pth approach to minimax design", IEEE Trans. Microwave Theory Tech., vol. MTT-24, 1976, pp. 116-119.

J.W. Bandler and W.Y. Chu, "Nonlinear programming using least pth optimization with extrapolation", Int. J. Systems Science, vol. 7, 1976, pp. 1239-1248.

J.W. Bandler, P.C. Liu and H. Tromp, "A nonlinear programming approach to optimal design centering, tolerancing and tuning", IEEE Trans. Circuits and Systems, vol. CAS-23, 1976, pp. 155-165.

J.W. Bandler and P.A. Macdonald, "Cascaded noncommensurate transmission-line networks as optimization problems", IEEE Trans. Circuit Theory, vol. CT-16, 1969, pp. 391-394.

J.W. Bandler and P.A. Macdonald, "Optimization of microwave networks by razor search", IEEE Trans. Microwave Theory Tech., vol. MTT-17, 1969, pp. 552-562.

J.W. Bandler, T.V. Srinivasan and C.Charalambous, "Minimax optimization of networks by grazor search", IEEE Trans. Microwave Theory Tech., vol. MTT-20, 1972, pp. 596-604.

E.M.L. Beale, "On quadratic programming", Naval Research Logistics Quarterly, vol. 27, July 1959, pp. 227-243.

M.J. Best, "A feasible conjugate direction method to solve linearly constrained optimization problems", J. Optimization Theory and Applications, vol. 16, 1975, pp. 25-38.

M.J. Best and K. Ritter, "An accelerated conjugate direction method to solve linearly constrained minimization problems", University of Waterloo, Waterloo, Canada, Report CORR 73-16, 1973.

M.C. Biggs, "Constrained minimisation using recursive quadratic programming: some alternative subproblems", in Towards Global Optimisation, L.C.W. Dixon and G.P. Szego, Eds. Amsterdam: North Holland, 1975.

M.C. Biggs and M.A. Laughton, "Optimal electrical power scheduling", Mathematical Programming, vol. 13, 1977, pp. 167-182.

M.J. Box, "A comparison of several current optimization methods, and the use of transformations in constrained problems", Computer J., vol. 9, 1966, pp. 67-77.

R.H. Breen, Jr., and G.C. Temes, "Applications of Golub's algorithm in circuit optimization and analysis", IEEE Trans. Circuit Theory, vol. CT-20, 1973, pp. 687-690.

K.W. Brodie, A.R. Gourlay, and J. Greenstadt, "Rank-one and rank-two corrections to positive definite matrices expressed in product form", J. Inst. Math. Its Appl., vol. 11, 1973, pp. 73-82.

C.G. Broyden, "A class of methods for solving nonlinear simultaneous equations", Math. Comp., vol. 19, 1965, pp. 577-593.

C.G. Broyden, "Quasi-Newton methods and their application to function minimization", Math. Comp., vol. 21, 1967, pp. 368-381.

C.G. Broyden, "A new method of solving nonlinear simultaneous equations", Computer J., vol. 12, 1969, pp. 94-99.

C.G. Broyden, "The convergence of a class of double-rank minimization algorithms 2. The new algorithm", J. Inst. Math. Applics., vol. 6, 1970, pp. 222-231.

C.W. Carroll, "The created response surface technique for optimizing nonlinear, restrained systems", Operations Research, vol. 9, 1961, pp. 169-185.

C. Charalambous, "Unconstrained optimization based on homogeneous models", Mathematical Programming, vol. 5, 1973, pp. 189-198.

C. Charalambous, "A unified review of optimization", IEEE Trans. Microwave Theory Tech., vol. MTT-22, 1974, pp.289-300.

C. Charalambous, "Minimax optimization of recursive digital filters using recent minimax results", IEEE Trans. Acoustics, Speech and Signal Processing, vol. ASSP-23, 1975, pp. 333-345.

C. Charalambous, "A method to overcome the ill-conditioning problem of differentiable penalty functions", Proc. 18th Midwest Symp. Circuits and Systems (Montreal, 1975), pp. 535-539.

C. Charalambous, "Penalty estimates and the least pth approach to nonlinear programming", Seventh Annual Pittsburgh Conf. on Modelling and Simulation, (Pittsburgh, 1976).

C. Charalambous, "A negative to positive barrier method for nonlinear progamming", Int. J. Systems Science, vol. 7, 1976, pp. 557-575.

C. Charalambous, "Nonlinear least pth optimization and nonlinear programming", Mathematical Programming, vol. 12, 1977, pp. 195-225.

C. Charalambous, "Acceleration of the least pth algorithm for minimax optimization", Dept. of Systems Design, Univ. of Waterloo, Waterloo, Canada, Report 28-0-280677, 1977.

C. Charalambous and J.W. Bandler, "New algorithms for network optimization", IEEE Trans. Microwave Theory Tech., vol. MTT-21, 1973, pp. 815-818.

C. Charalambous and J.W. Bandler, "Nonlinear minimax optimization as a sequence of least pth optimization with finite values of p", Int. J. Systems Science, vol. 7, 1976, pp. 377-391.

C. Charalambous and A.R. Conn, "Optimization of microwave networks", IEEE Trans. Microwave Theory Tech., vol. MTT-23, 1975, pp. 834-838.

W.J. Cody, "A survey of practical rational and polynomial approximation

of functions", SIAM Rev., vol. 12, 1970, pp. 401-423.

W.J. Cody and J. Stoer, "Rational Chebyshev approximation using interpolation", Numer. Math., No. 9, 1966, pp. 177-188.

A.R. Colville, "A comparative study of nonlinear programming codes", IBM Report 320-2949, 1967.

A.R. Conn, "Constrained optimization using nondifferentiable penalty function", SIAM J. Num. Anal., vol. 10, 1973, pp.760-784.

A.R. Curtis and M.J.D. Powell, "Necessary conditions for a minimax approximation", Computer J., vol. 8, 1966, pp. 358-361.

R.J. Dakin, "A tree-search algorithm for mixed integer programming problems", Computer J., vol. 8, 1966, pp. 250-255.

W.C. Davidon, "Variable metric method for minimization", A.E.C. Research and Development Report, ANL-5990 (Rev.), 1959.

V.F. Demjanov, "Algorithms for some minimax problems", J. Computer and Systems Sciences, vol. 2, 1968, pp. 342-380.

V.F. Demjanov, "Sufficient conditions for minimax problems", Zh. Uychisl. Mat. Fiz., vol. 10, 1970, pp. 1107-1115.

L.C.W. Dixon, "Variable metric algorithms: necessary and sufficient conditions for identical behavior of nonquadratic functions", J. Optimization Theory and Applications, vol. 10, 1972, pp. 34-40.

W.S. Dorn, "Nonlinear programming - a survey", Management Science, vol. 9, 1963, pp. 171-208.

S.R.K. Dutta and M. Vidyasagar, "New algorithms for constrained minimax optimization", Mathematical Programming, vol. 13, 1977, pp. 140-155.

O. Einarsson, "Minimax optimization by algorithms employing modified Lagrangians", IEEE Trans. Microwave Theory Tech., vol. MTT-23, 1975, pp. 838-841.

A.V. Fiacco, "Penalty methods for mathematical programming in E with general constraint sets", J. Optimization Theory and Applications, vol. 6, 1970, pp. 252-268.

A.V. Fiacco and G.P. McCormick, "Computational algorithm for the sequential unconstrained minimization technique for nonlinear programming", Management Science, vol. 10, 1964, pp. 601-617.

A.V. Fiacco and G.P. McCormick, "Extensions of SUMT for nonlinear programming: Equality constraints and extrapolation", Management Science, vol. 12, 1966, pp. 816-828.

A.V. Fiacco and G.P. McCormick, "The sequential unconstrained minimization technique for nonlinear programming a primal-dual method",

Management Science, vol. 10, 1964, pp. 360-366.

A.V. Fiacco and G.P. McCormick, "The sequential unconstrained minimization technique (SUMT) without parameters", _Operations Research_, vol. 15, 1967, pp. 820-827.

A.V. Fiacco and G.P. McCormick, "The slacked unconstrained minimization technique for convex programming", _SIAM J. Appl. Math._, vol. 15, 1967, pp. 505-515.

R. Fletcher, "A new approach to variable metric algorithms", _Computer J._, vol. 13, 1970, pp. 317-322.

R. Fletcher, "An algorithm for solving linearly constrained optimization problems", _Math. Programming_, vol. 2, 1972, pp. 133-165.

R. Fletcher, "Function minimization without evaluating derivatives -- a review", _Computer J._, vol. 8, 1965, pp. 33-41.

R. Fletcher, "Generalized inverse methods for the best least squares solution of systems of nonlinear equations", _Computer J._, vol. 10, 1968, pp. 392-399.

R. Fletcher, "An exact penalty function for nonlinear programming with inequalities", _Math. Programming_, vol. 5, 1973, pp. 129-150.

R. Fletcher, J.A. Grant and M.D. Hebden, "The calculation of linear best LP approximations", _Computer J._, vol. 14, 1971, pp. 276-279.

R. Fletcher and M.J.D. Powell, "A rapidly convergent descent method for minimization", _Computer J._, vol. 6, 1963, pp. 163-168.

R. Fletcher and C.M. Reeves, "Function minimization by conjugate gradients", _Computer J._, vol. 7, 1964, pp. 149-154.

C.W. Gear, "Simultaneous numerical solution of differential-algebraic equations", _IEEE Trans. Circuit Theory_, vol. CT-18, 1971, pp. 89-95.

C.W. Gear, "The automatic integration of differential equations", _Comm. ACM._, vol. 14, 1971, pp. 176-179.

P.E. Gill and W. Murray, "Quasi-Newton methods for unconstrained optimization", _J. Inst. Maths. and its Applications_, vol. 9, 1972, pp. 91-108.

D. Goldfarb, "A family of variable metric methods derived by variational means", _Mathematics of Computation_, vol. 24, 1970, pp. 23-26.

H.J. Greenberg and W.P. Pierskalla, "A review of quasi-convex functions", _J. Operations Research_, vol. 19, 1971, pp. 1553-1570.

M.D. Hebden, "A bound on the difference between the Chebyshev norm and the Holder norms of a function", _SIAM J. Num. Anal._, vol. 8, 1971, pp. 270-277.

J.E. Heller, J.B. Cruz, Jr., and J. Medanic, "An algorithm for minimax design", _Proc. Int. Conf. on the Theory and Applic. of Differential Games_ (Amherst, MA, 1969), pp. II-25 to II-30.

M.R. Hestenes, "Multiplier and gradient methods", _J. Optimization Theory and Applications_, vol. 4, 1969, pp. 303-320.

R. Hooke and T.A. Jeeves, "'Direct search' solution of numerical and statistical problems", _J. ACM_, vol. 8, 1961, pp. 212-229.

S. Hoshino, "A formulation of variable metric methods", _J. Inst. Maths. and its Applications_, vol. 10, 1972, pp. 394-403.

H.Y. Huang, "Unified approach to quadratically convergent algorithms for function minimization", _J. Optimization Theory and Applications_, vol. 5, 1970, pp. 405-423.

Y. Ishizaki and H. Watanabe, "An iterative Chebyshev approximation method for network design", _IEEE Trans. Circuit Theory_, vol. CT-15, 1968, pp. 326-336.

D.H. Jacobson and W. Oksman, "An algorithm that minimizes homogeneous functions of N variables in N+2 iterations and rapidly minimizes general functions", _J. Math. Anal. Applics._, vol. 38, 1972, pp. 535-552.

D.C. Joyce, "Survey of extrapolation processes in numerical analysis", _SIAM Review_, vol. 13, 1971, pp. 435-490.

P. Kokotovic and J. Heller, "Direct and adjoint sensitivity equations for parameter optimization", _IEEE Trans. Automatic Control_, vol. AC-12, 1967, pp. 609-610.

J. Kowalik, M.R. Osborne and D.M. Ryan, "A new method for constrained optimization problems", _Operations Research_, vol. 17, 1969, pp. 973-983.

E.L. Lawler and D.E. Wood, "Branch and bound methods: a survey". _J. Operations Research_, vol. 14, 1966, pp. 699-719.

K. Levenberg, "A method for the solution of certain nonlinear problems in least squares", _Quart. App. Math._, vol. 2, 1944, pp. 164-168.

F.A. Lootsma, "Logarithmic programming: a method of solving nonlinear-programming problems", _Philips Res. Repts._, vol. 22, 1967, pp. 329-344.

F.A. Lootsma, "Extrapolation in logarithmic programming", _Philips Res. Repts._, vol. 23, 1968, pp. 108-116.

K. Madsen and H. Schjaer-Jacobsen, "Singularities in minimax optimization of networks", _IEEE Trans. Circuits and Systems_, vol. CAS-23, 1976, pp. 456-460.

D.W. Marquardt, "An algorithm for least-squares estimation of nonlinear parameters", _J. SIAM_, vol. 11, 1963, pp. 431-441.

J. Medanic, "Solution of the convex minimax problem by the Newton-Raphson method", Proc. 8th Allerton Conf. Circuit and System Theory (Urbana, IL., 1970), pp. 13-22.

D.D. Morrison, "Optimization by least squares", SIAM J. Numerical Analysis, vol. 5, 1968, pp. 83-88.

J.A. Nelder and R. Mead, "A simplex method for function minimization", Computer J., vol. 7, 1965, pp. 308-313.

E.P. Novodvorskii and I.S. Pinsker, "The process of equating maxima," Uspekhi Mat. Nauk (USSR), vol. 6, 1951, pp. 174-181. (Engl. transl. by A. Shenitzer).

S.M. Nikol'skii, "Approximation of functions of several variables by polynomials", Siberian Math. J., vol. 10, 1969, pp. 792-799.

M.R. Osborne and D.M. Ryan, "On penalty function methods for nonlinear programming problems", J. Math. Anal. Appl., vol. 31, 1970, pp. 559-578.

M.R. Osborne and G.A. Watson, "An algorithm for minimax approximation in the nonlinear case", Computer J., vol. 12, 1969, pp. 63-68.

M.R. Osborne and G.A. Watson, "A note on singular minimax approximation problems", J. Math. Anal. and Applications, vol. 25, March 1969, pp. 692-700.

R. Penrose, "A generalized inverse of matrices", Proc. Cambridge Phil. Soc., vol. 51, 1954, pp. 406-413.

G. Peters and J.H. Wilkinson, "The least squares problem and pseudo-inverses", Computer J., vol. 13, 1970, pp. 309-316.

T. Pietrzykowski, "An exact potential method for constrained maxima", SIAM J. Numerical Analysis, vol. 6, 1969, pp. 299-304.

J. Ponstein, "Seven kinds of convexity", SIAM Review, vol. 9, 1967, pp. 115-119.

M.J.D. Powell, "A survey of numerical methods for unconstrained optimization", SIAM Rev., vol. 12, 1970, pp. 79-97.

M.J.D. Powell, "An efficient method for finding the minimum of a function of several variables without calculating derivatives", Computer J., vol. 7, 1964, pp. 155-162.

A. Ralston, "Rational Chebyshev approximation by Remes' algorithms", Numer. Math., No. 7, 1965, pp. 322-331.

J.R. Rice, "The characterization of best nonlinear Tchebycheff approximations", Trans. Amer. Math. Soc., vol. 96, 1960, pp. 322-340.

J.R. Rice and K.H. Usow, "The Lawson algorithm and extensions", Math. of Computation, vol. 22, 1968, pp. 118-127.

R.T. Rockafellar, "Augmented Lagrange multiplier functions and duality in non-convex programming", SIAM J. Control, vol. 12, 1974, pp. 268-285.

H.H. Rosenbrock, "An automatic method for finding the greatest or least value of a function", Computer J., vol. 3, 1960, pp. 175-184.

S.L. Sobolev, "Formulas for mechanical cubatures in n-dimensional space", (transl.), Sov. Math. Dokl., vol. 2, 1961, p. 317-320.

S.L. Sobolev, "On the interpolation of functions of n variables", (transl.), Sov. Math. Dokl., vol. 2, 1961, pp. 343-346.

W.H. Swann, "A survey of non-linear optimization techniques", Computing Techniques in Biochemistry, vol. 2, 1969, pp. S39-S55.

G.C. Temes and D.A. Calahan, "Computer-aided network optimization the state-of-the-art", Proc. IEEE, vol. 55, 1967, pp. 1832-1863.

G.C. Temes and D.Y.F. Zai, "Least pth approximation", IEEE Trans. Circuit Theory, vol. CT-16, 1969, pp. 235-237.

H.C. Thacher, Jr., "Generalization of concepts related to linear dependence", SIAM J., vol. 6, 1959, pp. 288-299.

H.C. Thacher, Jr., and W.E. Milne, "Interpolation in several variables", SIAM J., vol. 8, 1960, pp. 33-42.

W.J. Vetter, "Derivative operations on matrices", IEEE Trans. Automatic Control, vol. AC-15, 1970, pp. 242-244.

K. Vit, "Rational interpolation and extrapolation for SUMT", Computer J., vol. 18, 1975, pp. 368-370.

A.D. Waren, L.S. Lasdon and D.F. Suchman, "Optimization in engineering design", Proc. IEEE, vol. 55, 1967, pp. 1885-1897.

G.A. Watson, "On an algorithm for nonlinear minimax approximation", Comm. ACM, vol. 13, 1970, pp. 160-162.

H. Werner, J. Stoer and W. Bommas, "Rational Chebyshev approximation", Numer. Math., no. 10, 1967, pp. 289-306.

P. Wolfe, "The simplex method for quadratic programming", Econometrica, vol. 27, July 1959.

W.I. Zangwill, "Minimizing a function without calculating derivatives", Computer J., vol. 10, 1967, pp. 293-296.

W.I. Zangwill, "Nonlinear programming via penalty functions", Management Science, vol. 13, 1967, pp. 344-358.

G. Zoutendijk, "Nonlinear programming: a numerical survey", J. SIAM Control, vol. 4, 1966, pp. 194-210.

BIBLIOGRAPHY - ENGINEERING ARTICLES AND REPORTS

M.R. Aaron, "The use of least squares in system design", IRE Trans. Circuit Theory, vol. CT-3, 1956, pp. 224-231.

H.L. Abdel-Malek and J.W. Bandler, "Yield estimation for efficient design centering assuming arbitrary statistical distributions", Int. J. Circuit Theory and Applications, accepted for publication.

R.L. Adams and V.K. Manaktala, "An optimization algorithm suitable for computer assisted network tuning", Proc. IEEE Int. Symp. Circuits and Systems (Newton, MA, 1975), pp. 210-212.

P.R. Adby, "Component tolerance assignment by the method of moments", Proc. IEE Int. Conf. Computer Aided Design (Southampton, England, 1974), pp.99-104.

P.R. Adby and J.R. Baxter, "Tolerance fields in the frequency and time domain", Proc. European Conf. Circuit Theory and Design (London, England, 1974), pp. 307-311.

T. Adielson, "Determination of an optimal power flow by iterative sub-optimizations", Proc. 4th PSCC (Grenoble, France, 1972), Paper 2.1/9.

O. Alsac and B. Stott, "Optimal load flow with steady-state security", IEEE Trans. Power Apparatus and Systems, vol. PAS-93, May/June 1974, pp. 745-751.

E. Avenhaus and W. Schuessler, "On the approximation problem in the design of digital filters with limited wordlength", Archiv Der Elektrischen Uebertragung, vol. 24, 1970, pp. 571-572.

P. Balaban and J.J. Golembeski, "Statistical analysis for practical circuit design", IEEE Trans. Circuits and Systems, vol. CAS-22, 1975, pp. 100-108.

P. Balaban, B.J. Karafin and D.B. Snyder, "A Monte Carlo tolerance analysis of the integrated, single-substrate, RC Touch-Tone oscillator", BSTJ, vol. 50, 1971, pp. 1263-1291.

J.W. Bandler, "Optimum noncommensurate stepped transmission-line transformers", Electronics Letters, vol. 4, 1968, pp. 212-213.

J.W. Bandler, "Computer optimization of a stabilizing network for a tunnel-diode amplifier", IEEE Trans. Microwave Theory Tech., vol. MTT-16, 1968, pp. 326-333.

J.W. Bandler, "Optimization methods for computer-aided design", IEEE Trans. Microwave Theory Tech., vol. MTT-17, 1969, pp. 533-552.

J.W. Bandler, "Computer optimization of inhomogeneous waveguide transformers", IEEE Trans. Microwave Theory Tech., vol. MTT-17, 1969, pp. 563-571.

J.W. Bandler, "Program for processing standing wave measurements", IEEE Trans. Microwave Theory Tech., vol. MTT-17, 1969, pp. 644-646.

J.W. Bandler, "Automatic optimization of engineering designs - possibilities and pitfalls", IEEE NEREM Meeting Record (Boston, MA, 1969), pp. 26-27.

J.W. Bandler, "A review of computer oriented circuit optimization", IEEE Int. Conf. on Communications Record (Montreal, 1971), pp. 3.18-3.22.

J.W. Bandler, "Conditions for a minimax optimum", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 476-479.

J.W. Bandler, "New directions in nonlinear programming for circuit design", Proc. 16th Midwest Symp. on Circuit Theory (Waterloo, Canada, 1973), pp. VI.3.1 - VI.3.10.

J.W. Bandler, "The tolerance problem in optimal design", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-18, 1973.

J.W. Bandler, "Optimization of design tolerances using nonlinear programming", J. Optimization Theory and Applications, vol. 14, 1974, pp. 99-114.

J.W. Bandler, Ed., IEEE Trans. Microwave Theory Tech. Special Issue on Computer-Oriented Microwave Practices, vol. MTT-22, 1974, pp. 153-351.

J.W. Bandler, Ed., "Notes on numerical methods of optimization with applications in optimal design", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-113, 1975.

J.W. Bandler, "Eighty problems in computational methods and design", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-138, 1976.

J.W. Bandler, "Nonlinear optimization of engineering design with emphasis on centering, tolerancing and tuning", in Large Engineering Systems, A. Wexler, Ed. Oxford, England: Pergamon, 1977.

J.W. Bandler, "Teaching optimal design", IEEE Trans. Education, vol. E-20, 1977, pp. 34-40.

J.W. Bandler, "Bibliography in computational methods, design and optimization", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-155, 1977.

J.W. Bandler, H.L. Abdel-Malek, P.B. Johns and M.R.M. Rizk, "Optimal design via modeling and approximation", Proc. IEEE Int. Symp. Circuits and Systems (Munich, 1976), pp. 767-770.

J.W. Bandler and H.L. Abdel-Malek, "Optimal centering and tolerancing utilizing available analysis programs", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-118, 1976.

J.W. Bandler and H.L. Abdel-Malek, "Optimal centering, tolerancing and yield determination using multidimensional approximations", Proc. IEEE Int. Symp. Circuits and Systems (Phoenix, AZ., 1977), pp. 219-222.

J.W. Bandler and H.L. Abdel-Malek, "Modeling and approximation for statistical evaluation and optimization of microwave designs", Proc. 7th European Microwave Conf. (Copenhagen, Denmark, 1977), pp. 153-157.

J.W. Bandler and H.L. Abdel-Malek, "Optimal centering, tolerancing and yield determination via updated approximations and cuts", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-173, 1977.

J.W. Bandler and B.L. Bardakjian, "Least pth optimization of recursive digital filters", IEEE Trans. Audio Electroacoustics, vol. AU-21, 1973, pp. 460-470.

J.W. Bandler, B.L. Bardakjian and J.H.K. Chen, "Design of recursive digital filters with optimized word length coefficients", Computer Aided Design, vol. 7, 1975, pp. 151-156.

J.W. Bandler and C. Charalambous, "Practical least pth approximation with extremely large values of p", 5th Asilomar Conf. on Circuits and Systems Conf. Record (Pacific Grove, CA, 1971), pp. 66-70.

J.W. Bandler and C. Charalambous, "Conditions for minimax approximation obtained from the $\ell p(n)$norm", IEEE Trans. Automatic Control, vol. AC-17, 1972, pp. 257-258.

J.W. Bandler and C. Charalambous, "Theory of generalized least pth approximation", IEEE Trans. Circuit Theory, vol. CT-19, 1972, pp. 287-289.

J.W. Bandler and C. Charalambous, "Practical least pth optimization of networks", IEEE Trans. Microwave Theory Tech., vol. MTT-20, 1972, pp. 834-840.

J.W. Bandler and C. Charalambous, "On conditions for optimality in least pth approximation with p $\to\infty$ ", J. Optimization Theory and Applications, vol. 11, 1973, pp. 556-566.

J.W. Bandler and C. Charalambous, "Nonlinear programming using minimax techniques", J. Optimization Theory and Applications, vol. 13, 1974, pp. 607-619.

J.W. Bandler, C. Charalambous and J.H.K. Chen, "MINOPT - an optimization program based on recent minimax results", IEEE Trans. Microwave Theory Tech., vol. MTT-24, 1976, p. 543.

J.W. Bandler, C. Charalambous, J.H.K. Chen and W.Y. Chu, "New results in the least pth approach to minimax design", IEEE Trans. Microwave Theory Tech., vol. MTT-24, 1976, pp. 116-119.

J.W. Bandler and J.H.K. Chen, "DISOPT - a general program for continuous

and discrete nonlinear programming problems", Int. J. Systems Science, vol. 6, 1975, pp. 665-680.

J.W. Bandler, J.H.K. Chen, P. Dalsgaard and P.C. Liu, "TOLOPT - a program for optimal, continuous or discrete, design centering and tolerancing", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-105, 1975.

J.W. Bandler and W.Y. Chu, "FLOPT2 - A program for least pth optimization with extrapolation to minimax solutions", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-84, 1975.

J.W. Bandler and W.Y. Chu, "FLOPT3 - an interactive program for least pth optimization with extrapolation to minimax solutions", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-108, 1975.

J.W. Bandler and W.Y. Chu, "FLOPT2 - a program for least pth optimization with extrapolation to minimax solutions", IEEE Trans. Microwave Theory Tech., vol. MTT-24, 1976, pp. 543-544.

J.W. Bandler and W.Y. Chu, "Nonlinear programming using least pth optimization with extrapolation", Int. J. Systems Science, vol. 7, 1976, pp. 1239-1248.

J.W. Bandler, W.Y. Chu and J.R. Popovic, "Efficient, interactive semi-automated optimization of models and designs", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-42, 1974.

J.W. Bandler, P.B. Johns and M.R.M. Rizk, "Transmission-line modeling and sensitivity evaluation for lumped network simulation and design in the time domain", J. Franklin Inst., vol. 304, 1977, pp. 15-32.

J.W. Bandler and P.C. Liu, "Automated network design with optimal tolerances", IEEE Trans. Circuits and Systems, vol. CAS-21, 1974, pp. 219-222.

J.W. Bandler and P.C. Liu, "Some implications of biquadratic functions in the tolerance problem", IEEE Trans. Circuits and Systems, vol. CAS-22, 1975, pp. 385-390.

J.W. Bandler, P.C. Liu and J.H.K. Chen, "Worst case network tolerance optimization", IEEE Trans. Microwave Theory Tech., vol. MTT-23, 1975, pp. 630-641.

J.W. Bandler, P.C. Liu and H. Tromp, "A nonlinear programming approach to optimal design centering, tolerancing and tuning", IEEE Trans. Circuits and Systems, vol. CAS-23, 1976, pp. 155-165.

J.W. Bandler, P.C. Liu and H. Tromp, "Efficient, automated design centering and tolerancing", Proc. IEEE Int. Symp. Circuits and Systems (Munich, 1976), pp. 710-713.

J.W. Bandler, P.C. Liu and H. Tromp, "Integrated approach to microwave

design", IEEE Trans. Microwave Theory Tech., vol. MTT-24, 1976, pp. 584-591.

J.W. Bandler and P.A. Macdonald, "Optimization of microwave networks by razor search", IEEE Trans. Microwave Theory Tech., vol. MTT-17, 1969, pp. 552-562.

J.W. Bandler and P.A. Macdonald, "Cascaded noncommensurate transmission-line networks as optimization problems", IEEE Trans. Circuit Theory, vol. CT-16, 1969, pp. 391-394.

J.W. Bandler, N.D. Markettos and N.K. Sinha, "Optimum system modelling using recent gradient methods", Int. J. Systems Science, vol. 4, 1973, pp. 33-44.

J.W. Bandler, N.D. Markettos and T.V. Srinivasan, "Gradient minimax techniques for system modelling", Int. J. Systems Science, vol. 4, 1973, pp. 317-331.

J.W. Bandler and J.R. Popovic, "CANOPT - cascaded network optimization package", Faculty of Engineering, McMaster University, Hamilton, Canada, Report CRL-12, 1973 (Revised May 1974).

J.W. Bandler and J.R. Popovic, "CANOP2 - interactive cascaded network optimization package", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-69, 1974.

J.W. Bandler, J.R. Popovic and V.K. Jha, "Cascaded network optimization program", IEEE Trans. Microwave Theory Tech., vol. MTT-22, 1974, pp. 300-308.

J.W. Bandler, M.R.M. Rizk and H. Tromp, "Efficient calculation of exact group delay sensitivities", IEEE Trans. Microwave Theory Tech., vol. MTT-24, 1976, pp. 188-194.

J.W. Bandler and R.E. Seviora, "Direct method for evaluating scattering matrix sensitivities", Electronics Letters, vol. 6, 1970, pp. 773-774.

J.W. Bandler and R.E. Seviora, "Current trends in network optimization", IEEE Trans. Microwave Theory Tech., vol. MTT-18, 1970, pp. 1159-1170.

J.W. Bandler and R.E. Seviora, "Computation of sensitivities for non-commensurate networks", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 174-178.

J.W. Bandler and R.E. Seviora, "Computation of equivalent wave source using the adjoint network", Electronics Letters, vol. 7, 1971, pp. 235-236.

J.W. Bandler and R.E. Seviora, "Wave sensitivities of networks", IEEE Trans. Microwave Theory Tech., vol. MTT-20, 1972, pp. 138-147.

J.W. Bandler and D. Sinha, "FLOPT4 - a program for least pth optimization with extrapolation to minimax solutions", Faculty of Engineering,

McMaster University, Hamilton, Canada, Report SOC-151, 1977.

J.W. Bandler and T.V. Srinivasan, "Automated minimax system modelling", Int. J. Systems Science, vol. 5, 1974, pp. 1097-1106.

J.W. Bandler, T.V. Srinivasan and C. Charalambous, "Minimax optimization of networks by grazor search", IEEE Trans. Microwave Theory Tech., vol. MTT-20, 1972, pp. 596-604.

P.W. Becker and B. Jarkler, "A systematic procedure for the generation of cost-minimized designs", IEEE Trans. Reliability, vol. R-21, 1972, pp. 41-45.

C. Belove, "Tolerance coefficients for R-C networks", J. Applied Physics, vol. 24, 1953, pp. 745-747.

S. Ben-Yaakov, "Application of linear programming to the economical optimization of electrical networks", Proc. IEEE, vol. 56, 1968, pp. 1619-1621.

R.D. Berry, "An optimal ordering of electronic circuit equations for a sparse matrix solution", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 40-50.

M.C. Biggs and M.A. Laughton, "Optimal electrical power scheduling", Mathematical Programming, vol. 13, 1977, pp. 167-182.

R. Billinton and S.S. Sachdeva, "Real and reactive power optimization by suboptimum techniques", IEEE Trans. Power Apparatus and Systems, vol. PAS-92, 1973, pp. 950-956.

R. Billinton and S.S. Sachdeva, "The Fletcher-Powell approach for large power system optimization", Canadian Electrical Eng. J., vol. 1, no. 2, 1976, pp. 17-23.

M. Boari, E. DeCastro, E. Marazzi and V. Monaco, "Multivariable optimal design of electronic circuits with assignment of component value spreads", Proc. European Conf. Circuit Theory and Design (London, England, 1974), pp. 171-176.

F. Bonfatti, V.A. Monaco and P. Tiberio, "Microwave circuit analysis by sparse-matrix techniques" IEEE Trans. Microwave Theory Tech., vol. MTT-22, 1974, pp. 264-269.

C. Brancher, F. Maffioli and A. Premoli, "Computer optimization of cascaded noncommensurable-line lowpass filters", Electronics Letters, vol. 6, 1970, pp. 513-515.

F.H. Branin, Jr., "Computer methods of network analysis", Proc. IEEE, vol. 55, 1967, pp. 1787-1801.

F.H. Branin, Jr., "Widely convergent method for finding multiple solutions of simultaneous nonlinear equations", IBM J. Research and Development, vol. 16, No. 5, 1972.

F.H. Branin, Jr., "Network sensitivity and noise analysis simplified", IEEE Trans. Circuit Theory, vol. CT-20, 1973, pp. 285-288.

F.H. Branin, Jr., G.R. Hogsett, R.L. Lunde and L.E. Kugel "ECAP II - A new electronic circuit analysis program", IEEE J. Solid-State Circuits, vol. SC-4, 1971, pp. 146-166.

R.K. Brayton and S.W. Director, "Computation of delay time sensitivities for use in time domain optimization", IEEE Trans. Circuits and Systems, vol. CAS-22, 1975, pp. 910-920.

R.K. Brayton, A.J. Hoffman and T.R. Scott, "A theorem on inverses of convex sets of real matrices with application to the worst-case D.C. problem", Proc. IEEE Int. Symp. Circuits and Systems (Munich, 1976), pp. 82-85.

R.H. Breen, Jr. and G.C. Temes, "Applications of Golub's algorithm in circuit optimization and analysis", IEEE Trans. Circuit Theory, vol. CT-20, 1973, pp. 687-690.

A.J. Brodersen, S.W. Director and W.A. Bristol, "Simultaneous automated AC and DC design of linear integrated circuit amplifiers", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 50-58.

A.J. Brodersen and S.W. Director, "Computer evaluation of differential amplifier performance", IEEE Trans. Circuits and Systems, vol. CAS-21, 1974, pp. 735-741.

P.W. Broome and F.J. Young, "The selection of circuit components for optimum circuit reproducibility", IRE Trans. Circuit Theory, vol. CT-9, 1962, pp. 18-23.

E.M. Butler, "Realistic design using large-change sensitivities and performance contours", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 58-66.

E.M. Butler, "Techniques for statistical DC modeling of bipolar transistors", Proc. IEEE Int. Symp. Circuit Theory (San Francisco, 1974), pp. 725-729.

D.A. Calahan, "Numerical considerations for implementation of a nonlinear transient circuit analysis program", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 66-73.

H.J. Carlin and O.P. Gupta, "Computer design of filters with lumped-distributed elements or frequency variable terminations", IEEE Trans. Microwave Theory Tech., vol. MTT-17, 1969, pp. 598-604.

J.W. Carpentier, "Differential injections method, a general method for secure and optimal load flows", Proc. 8th PICA Conf. (Minneapolis, MI, 1973), pp. 255-262.

C. Charalambous, "A unified review of optimization", IEEE Trans. Microwave Theory Tech., vol. MTT-22, 1974, pp. 289-300.

C. Charalambous, "Minimax design of recursive digital filters", Computer Aided Design, vol. 6, 1974, pp. 73-81.

C. Charalambous, "Discrete optimization", Int. J. Systems Science, vol. 5, 1974, pp. 889-894.

C. Charalambous, "Minimax optimization of recursive digital filters using recent minimax results", IEEE Trans. Acoustics, Speech and Signal Processing, vol. ASSP-23, 1975, pp. 333-345.

C. Charalambous and J.W. Bandler, "New algorithms for network optimization", IEEE Trans. Microwave Theory Tech., vol. MTT-21, 1973, pp. 815-818.

C. Charalambous and M.J. Best, "Optimization of recursive digital filters with finite word lengths", IEEE Trans. Acoustics, Speech and Signal Processing, vol. ASSP-22, 1974, pp. 424-431.

C. Charalambous and A.R. Conn, "Optimization of microwave networks", IEEE Trans. Microwave Theory Tech., vol. MTT-23, 1975, pp. 834-838.

K.S. Chao, D.K. Liu and C.T. Pan, "A systematic search method for obtaining multiple solutions of simultaneous nonlinear equations", IEEE Trans. Circuits and Systems, vol. CAS-22, 1975, pp. 748-753.

L.O. Chua, "Efficient computer algorithms for piecewise-linear analysis of resistive nonlinear networks", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 73-85.

L.O. Chua and A. Ushida, "A switching-parameter algorithm for finding multiple solutions of nonlinear resistive circuits", Int. J. Circuit Theory and Appl., vol. 4, 1976, pp. 215-239.

D. DeCastro, G. Iuculano and V.A. Monaco "Component value spread and network function tolerances: an optimal design procedure", Alta Freq., vol. 40, 1971, pp. 867-872.

A.G. Deczky, "Synthesis of recursive digital filters using the minimum p-error criterion", IEEE Trans. Audio Electroacoustics, vol. AU-20, 1972, pp. 257-263.

A.G. Deczky, "Equiripple and minimax (Chebyshev) approximation for recursive digital filters", IEEE Trans. Acoustics, Speech and Signal Processing, vol. ASSP-22, 1974, pp. 98-111.

S.W. Director, "A survey of circuit oriented optimization techniques", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 3-10.

S.W. Director, "LU factorization in network sensitivity computations", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 184-185.

S.W. Director, W.A. Bristol and A.J. Broderson, "Fabrication based optimization of linear integrated circuits", IEEE Trans. Circuit Theory, vol. CT-20, 1973, pp. 690-697.

S.W. Director and K.W. Current, "Optimization of forced nonlinear periodic circuits", IEEE Trans. Circuits and Systems, vol. CAS-23, 1976, pp. 329-335.

S.W. Director and G.D. Hachtel, "The simplicial approximation approach to design centering and tolerance assignment", Proc. IEEE Int. Symp. Circuits and Systems (Munich, 1976), pp. 706-709.

S.W. Director and G.D. Hachtel, "Yield estimation using simplicial approximation", Proc. IEEE Int. Symp. Circuits and Systems (Phoenix, 1977), pp. 579-582.

S.W. Director and R.A. Rohrer, "Generalized adjoint network and network sensitivities", IEEE Trans. Circuit Theory, vol. CT-16, 1969, pp. 318-323.

S.W. Director and R.A. Rohrer, "Automated network design: The frequency domain case", IEEE Trans. Circuit Theory, vol. CT-16, 1969, pp. 330-337.

S.W. Director and R.A. Rohrer, "On the design of resistance n-port networks by digital computer", IEEE Trans. Circuit Theory, vol. CT-16, 1969, pp. 337-346.

S.W. Director and D. A. Wayne, "Computational efficiency in the determination of Thevenin and Norton equivalents", IEEE Trans. Circuit Theory, vol. CT-19, 1972, pp. 96-98.

H.W. Dommel and W.F. Tinney, "Optimal power flow solutions", IEEE Trans. Power Apparatus and Systems, vol. PAS-87, 1968, pp. 1866-1876.

I.S. Duff, "A survey of sparse matrix research", Proc. IEEE, vol. 65, 1977, pp. 500-535.

A.F. Dyson and A.J. Cable "Laser trimming of thick film resistors", Electrocomponent Science and Technolgy, vol. 1, 1974, pp. 51-57.

O. Einarsson, "Minimax optimization by algorithms employing modified Lagrangians", IEEE Trans. Microwave Theory Tech., vol. MTT-23, 1975, pp. 838-841.

N.J. Elias, "New statistical methods for assigning device tolerances", Proc. IEEE Int. Symp. Circuits and Systems (Newton, MA, 1975), pp. 329-332.

F.E. Emery and M. O'Hagan, "Optimal design of matching networks for microwave transistor amplifiers", IEEE Trans. Microwave Theory Tech., vol. MTT-14, 1966, pp. 696-698.

E. Evanhaus, "On the design of digital filters with coefficients of limited word length", IEEE Trans. Audio Electroacoustics, vol. AU-20, 1972, pp. 206-212.

J.K. Fidler, "Network sensitivity calculation", IEEE Trans. Circuits and Systems, vol. CAS-23, 1976, pp. 567-571.

J.K. Fidler and C. Nightingale, "Differential-incremental-sensitivity relationships", Electronics Letters, vol. 8, 1972, pp. 626-627.

R.N. Gadenz and G.C. Temes, "Computation of dissipation-induced loss distortion in lumped/distributed networks", Electronics Letters, vol. 7, 1971, pp. 258-260.

R.N. Gadenz and G.C. Temes, "Efficient hybrid and state space analysis of the adjoint network", IEEE Trans. Circuit Theory, vol. CT-19, 1972, pp. 529-531.

R.N. Gadenz and G.C. Temes, "Iterative compensation techniques for lossy or mismatched two-ports", IEEE Trans. Circuit Theory, vol. CT-20, 1973, pp. 599-603.

R.N. Gadenz and M.G. Rezai-Fakhr and G.C. Temes, "A method for the computation of large tolerance effects", IEEE Trans. Circuit Theory, vol. CT-20, 1973, pp. 704-708.

H. Gaunholt, "Design and predistortion of passive filters by optimization", Int. J. Circuit Theory and Appl., vol. 2, 1974, pp. 391-396.

V.G. Gelnovatch and I.L. Chase, "DEMON: An optimal seeking computer program for the design of microwave circuits", IEEE J. Solid-State Circuits, vol. SC-5, 1970, pp. 303-309.

M. Glesner and A. Blum, "Worst-case error analysis of electrical networks with the aid of nonlinear programming methods", Proc. European Conf. Circuit Theory and Design (London, England, 1974), pp. 312-318.

P.J. Goddard, P.A. Villalaz and R. Spence, "Method for the efficient computation of the large-change sensitivity of linear non-reciprocal networks", Electronics Letters, vol. 7, 1971, pp. 112-113.

J.J. Golembeski, "Linear circuit models derived via computer optimization", IEEE Trans. Education, vol. E-12, 1969, pp. 162-169.

P.E. Green, M.K. McPhun, M.A. Murray-Lasso and A.E. Smoll, "Automatic general-purpose microwave circuit analysis programs (Panel Discussion)", IEEE Trans. Microwave Theory Tech., vol. MTT-17, 1969, pp. 527-533.

H. Gutsche, "Statistical tolerance analysis of electrical networks", Proc. European Conf. Circuit Theory and Design (London, England, 1974), pp. 301-306.

G.D. Hachtel, R.K. Brayton and F.G. Gustavson, "The sparse tableau approach to network analysis and design", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 101-113.

G.D. Hachtel, M.R. Lightner and H.J. Kelly, "Application of the optimization program AOP to the design of memory circuits", IEEE Trans. Circuits and Systems, vol. CAS-22, 1975, pp. 496-503.

G.D. Hachtel and R.A. Rohrer, "Design and synthesis of switching circuits", Proc. IEEE, vol. 55, 1967, pp. 1864-1876.

S.L. Hakimi and J.B. Cruz, "Measures of sensitivity for linear systems with large multiple parameter variation", IRE WESCON Conv. Rec., vol. 4, part 2, 1960, pp. 109-115.

M.H. Hamza, "Economical optimization of electrical networks using separable programming", Proc. IEEE, vol. 60, 1972, pp. 332-333.

H.W. Hanneman, "The systematic and the random errors due to element tolerances of electrical networks", Philips Res. Repts., 26, 1971, pp. 414-423.

K. Hartmann, W. Kotyczka and M.J.O. Strutt, "Computer-aided determination of the small-signal equivalent network of a bipolar microwave transistor", IEEE Trans. Microwave Theory Tech., vol. MTT-20, 1972, pp. 120-126.

K. Hartmann and M.J.O. Strutt, "Computer simulation of small-signal and noise behaviour of microwave bipolar transistors up to 12 GHz", IEEE Trans. Microwave Theory Tech., vol. MTT-22, 1974, pp. 178-183.

T. Hashimoto, "The optimum design of filters by the aid of large-change sensitivities", Proc. IEEE Int. Symp. Circuits and Systems (Newton, MA, 1975), pp. 194-197.

H.D. Helms, "Digital filters with equiripple or minimax responses", IEEE Trans. Audio Electroacoustics, vol. AU-19, 1971, pp. 87-94.

S.E. Hersom, "Optimisation methods in engineering design", Numerical Optimisation Centre, Hatfield, England, Tech. Report No. 25, June 1971.

K. Heuck, "Optimal scheduling of thermal power stations", Proc. 4th PSCC (Grenoble, France, 1972), Paper 2.1/2.

D.M. Himmelblau, "Optimal design via structural parameters and nonlinear programming", Engineering Optimization, vol. 2, 1976, pp. 17-27.

C.W. Ho, "Time-domain sensitivity computation for networks containing transmission lines", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 114-122.

M.C. Horton and R.J. Wenzel, "General theory and design of optimum quarter-wave TEM filters", IEEE Trans. Microwave theory Tech., vol. MTT-13, 1965, pp. 316-327.

T.W. Houston and L.W. Read, "Computer-aided design of broad-band and low noise microwave amplifiers", IEEE Trans. Microwave Theory Tech., vol. MTT-17, 1969, pp. 612-614.

T.S. Huang and H.B. Lee, "Bounds on impedance functions of R, $\pm$L, $\pm$C, T networks", J. Franklin Inst., vol. 279, 1965, pp. 83-94.

T.E. Idleman, F.S. Jenkins, W.J. McCalla and D.O. Pederson, "SLIC-A simulator for linear integrated circuits", IEEE J. Solid-State Circuits, vol. SC-6, 1971, pp. 188-204.

Y. Ishizaki and H. Watanabe, "An iterative Chebyshev approximation method for network design", IEEE Trans. Circuit Theory, vol. CT-15, 1968, pp. 326-336.

G. Iuculano, V.A. Monaco, and P. Tiberio, "Network sensitivities in terms of scattering parameters", Electronics Letters, vol. 7, 1971, pp. 53-55.

F.J. Jaimes and A.H. El-Abiad, "Optimization by a sequence of equality constrained problems - its application to optimal power flows", Proc. 7th PICA Conf. (Boston, MA, 1971), pp. 219-227.

F.S. Jenkins and S.P. Fan, "TIME - A nonlinear DC and time-domain circuit simulation program", IEEE J. Solid-State Circuits, vol. SC-6, 1971, pp. 182-188.

G. Kaplan, "Computer-aided design", IEEE Spectrum, vol. 12, 1975, pp. 40-47.

B.J. Karafin, "The optimum assignment of component tolerances for electrical networks", BSTJ, vol. 50, 1971, pp. 1225-1242.

A.K. Kevorkian, "A decompositional algorithm for the solution of large systems of linear algebraic equations", Proc. IEEE Int. Symp. Circuits and Systems, (Newton, MA, 1975), pp. 116-120.

G. Kjellstrom, "Optimization of electrical networks with respect to tolerance cost", Ericsson Technics, No. 3, 1970, pp. 157-175.

L.S. Lasdon and A.D. Waren, "Optimal design of filters with bounded, lossy elements", IEEE Trans. Circuit Theory, vol. CT-13, 1966, pp. 175-187.

L.S. Lasdon, D.F. Suchman and A.D. Waren, "Nonlinear programming applied to linear array design", J. Acoust. Soc. Am., vol. 40, 1966, pp. 1197-1200.

L.S. Lasdon, A.D. Waren and D. Suchman, "Optimal design of acoustic sonar transducer arrays", Dept. of Operations Research, School of Management, Case Western Reserve University, Cleveland, OH, Technical Memorandum No. 326, 1973.

K. Leung and R. Spence, "Efficient frequency-domain statistical circuit analysis", Proc. IEEE Int. Symp. Circuits and Systems (Munich, 1976), pp 197-200.

K.H. Leung and R. Spence, "Idealized statistical models for low-cost linear circuit yield analysis", IEEE Trans. Circuits and Systems, vol. CAS-24, 1977, pp. 62-66.

S.T. Li, J.L. Hammond and K.L. Su, "Optimum tolerance assignment for linear systems with correlated component values", _Proc. IEEE Int. Symp. Circuits and Systems_ (Newton, MA, 1975), pp. 190-193.

K. Madsen, O. Nielsen, H. Schjaer-Jacobsen and L. Thrane, "Efficient minimax design of networks without using derivatives", _IEEE Trans. Microwave Theory Tech._, vol. MTT-23, 1975, pp. 803-809.

K. Madsen, H. Schjaer-Jacobsen and J. Voldby, "Automated minimax design of networks", _IEEE Trans. Circuits and Systems_, vol. CAS-22, 1975, pp. 791-796.

F.C. Marshall and G.C. Temes, "Computer-aided Chebyshev optimization in the time domain", _Proc. Kyoto Int. Conf. on Circuit and Systems Theory_ (Kyoto, Japan, 1970), pp. 13-14.

F.C. Marshall and G.C. Temes, "Computer-aided circuit design in the time domain", _IEEE Int. Symp. on Circuit Theory Digest_ (Atlanta, 1970), pp. 111-112.

F.C. Marshall and G.C. Temes, "Generalized linear minimax approximation of system functions with constraints", _IEEE Trans. Circuit Theory_, vol. CT-20, 1973, pp. 429-432.

H.M. Melvin, "On concavity of resistance functions", _J. Applied Physics_, vol. 27, 1956, pp. 658-659.

R.M. Mersereau, D.B. Harris and H.S. Hersey, "An efficient algorithm for the design of equiripple two-dimensional FIR digital filters", _Proc. IEEE Int. Symp. Circuits and Systems_ (Boston, MA, 1975), pp. 443-446.

R.N. Mishra and V.R. Sastry, "Application of memory gradient method to economic load dispatching problem", _IEEE PES Summer Meeting_ (San Francisco, 1972), Paper C72438-0.

V.A. Monaco and P. Tiberio, "A method for automatic scattering matrix computation of a lumped, linear network", _Alta Freq._, vol. 38, 1969, pp. 906-912.

V.A. Monaco and P. Tiberio, "Automatic scattering matrix computation of microwave circuits", _Alta. Freq._, vol. 39, 1970, pp. 59-64.

V.A. Monaco and P. Tiberio, "On linear network scattering matrix sensitivity", _Alta. Freq._, vol. 39, 1970, pp. 193-195.

V.A. Monaco and P. Tiberio, "Two properties for circuit sensitivity in terms of scattering parameters", _Electronics Letters_, vol. 8, 1972, pp. 382-383.

V.A. Monaco and P. Tiberio, "Computer-aided analysis of microwave circuits", _IEEE Trans. Microwave Theory Tech._, vol. MTT-22, 1974, pp. 249-263.

D.C. Montgomery and D.M. Evans, Jr., "Second-order response surface

designs in computer simulation", Simulation, vol. 25, 1975, pp. 169-178.

M.E. Mokari-Bolhassan and T.N. Trick, "Computer-aided design of distributed-lumped-active networks", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 187-190.

M.A. Murray-Lasso, "Black-box models for linear integrated circuits", IEEE Trans. Education, vol. E-12, 1969, pp. 170-180.

N. Nabona and L.L. Freris, "Optimization of economic dispatch through quadratic and linear programming", Proc. IEE, vol. 120, 1973, pp. 574-579.

L. Nagel and R.A. Rohrer, "Computer analysis of nonlinear circuits, excluding radiation (CANCER)", IEEE J. Solid-State Circuits, vol. SC-6, 1971, pp. 166-182.

L.A. O'Neill, "A case study of the use of computer aids in circuit design-pulse equalizers for the T2 digital transmission line", BSTJ, vol. 50, 1971, pp. 1243-1262.

C.W. Nelson and H.M. Krisbergh, "A search procedure for policy oriented simulations: applications to urban dynamics", Management Science, vol. 20, 1974, pp. 1164-1174.

H. Nicholson and M.J.H. Sterling, "Optimum dispatch of active and reactive generation by quadratic programming", IEEE Trans. Power Apparatus and Systems, vol. PAS-92, 1973, pp. 644-654.

S.R. Parker, "Sensitivity: old questions, some new answers", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 27-35.

S.R. Parker, E. Peskin and P.M. Chirlian, "Application of a bilinear theorem to network sensitivity", IEEE Trans. Circuit Theory, vol. CT-12, 1965, pp. 448-450.

P. Penfield, Jr., R. Spence and S. Duinker, "A generalized form of Tellegen's theorem", IEEE Trans. Circuit Theory, vol. CT-17, 1970, pp. 302-305.

J. Peschon, D.W. Bree and L.P. Hajdu, "Optimal solutions involving system security", Proc. 7th PICA Conf. (Boston, MA, 1971), pp. 210-218.

J.F. Pinel, "Computer-aided network tuning", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 192-194.

J.F. Pinel, "Tolerance asignment and network alignment of linear networks in the frequency domain", IEEE Short Course on Computer Aided Network Design, 73-SC-06, 1973, pp. 17-25.

J.F. Pinel and K.A. Roberts, "Tolerance assignment in linear networks using nonlinear programming", IEEE Trans. Circuit Theory, vol. CT-19, 1972, pp. 475-479.

J.F. Pinel, K.A. Roberts and K. Singhal, "Tolerance assignment in network design", Proc. IEEE Int. Symp. Circuits and Systems (Newton, MA, 1975), pp. 317-320.

J.F. Pinel and K. Singhal, "Efficient Monte Carlo computation of circuit yield using importance sampling", Proc. IEEE Int. Symp. Circuits and Systems (Phoenix, AZ, 1977), pp. 575-578.

J.R. Popovic and J.W. Bandler, "A special program for least pth approximation including interpolation", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-19, 1973.

J.R. Popovic and J.W. Bandler, "A general program for discrete least pth approximation", Faculty of Engineering, McMaster University, Hamilton, Canada, Report SOC-20, 1973.

J.R. Popovic, J.W. Bandler and C. Charalambous, "General programs for least pth and near minimax approximation", Int. J. Systems Science, vol. 5, 1974, pp. 907-932.

L.R. Rabiner, J.H. McClellan and T.W. Parks, "FIR digital filter design techniques using weighted chebyshev approximation", Proc. IEEE, vol. 63, 1975, pp. 595-610.

G.F. Reid and L. Hasdorff, "Economic dispatch using quadratic programming", IEEE Trans. Power Apparatus and Systems, vol. PAS-92, 1973, pp. 2015-2023.

M.G. Rezai-Fakhr and G.C. Temes, "Statistical large-tolerance analysis of nonlinear circuits in the time domain", Proc. European Conf. Circuit Theory and Design (London, England, 1974), pp. 295-299.

M.G. Rezai-Fakhr and G.C. Temes, "Statistical large-tolerance analysis in the time domain", IEEE Trans. Circuit Theory, vol. CAS-22, 1975, pp. 15-21.

M.G. Rezai-Fakhr and G.C. Temes, "Node elimination in linear active circuits", Electronics Letters, vol. 11, 1976, pp. 121-122.

G.A. Richards, "Second-derivative sensitivity using the concept of the adjoint network", Electronics Letters, vol. 5, 1969, pp. 398-399.

R.A. Rohrer, L. Nagel, R. Meyer and L. Weber, "Computationally efficient electronic-circuit noise calculations", IEEE J. Solid-State Circuits, vol. SC-6, 1971, pp. 204-213.

P.M. Russo and R.A. Rohrer, "Computer optimization of the transient response of an ECL gate", IEEE Trans. Circuit Theory, vol. CT-18, 1971, pp. 197-199.

E. Sanchez-Sinencio and T.N. Trick, "CADMIC - Computer-aided design of microwave integrated circuits", IEEE Trans. Microwave Theory Tech., vol. MTT-22, 1974, pp. 309-316.

A.M. Sasson, "Nonlinear programming solutions for load-flows, minimum loss, and economic dispatching problems", IEEE Trans. Power Apparatus and Systems, vol. PAS-88, 1969, pp. 399-409.

A.M. Sasson, "Combined use of the Powell and Fletcher-Powell nonlinear programming methods for optimal load flows", IEEE Trans. Power Apparatus and Systems, vol. PAS-88, 1969, pp. 1530-1537.

A.M. Sasson and H.M. Merrill, "Some applications of optimization techniques to power systems problems", Proc. IEEE, vol. 62, 1974, pp. 959-972.

A.M. Sasson, F. Viloria and F. Aboytes, "Optimal load flow solution using the Hessian matrix", IEEE Trans. Power Apparatus and Systems, vol. PAS-92, Jan./Feb. 1973, pp. 31-41.

T.R. Scott and T.P. Walker, "Regionalization: a method for generating joint density estimates", IEEE Trans. Circuits and Systems, vol. CAS-23, 1976, pp. 229-234.

A.K. Seth and P.H. Roe, "Selection of component tolerances for optimal circuit reproducibility", Proc. IEEE Int. Symp. Circuit Theory (London, England, 1971), pp. 105-106.

A.K. Seth and P.H. Roe, "Hybrid formulation of explicit formulae for higher order network sensitivities", IEEE Trans. Circuits and Systems, vol. CAS-22, 1975, pp. 475-478.

C.L. Semmelman, E.D. Walsh and G.T. Daryanani, "Linear circuits and statistical design", BSJT, vol. 50, 1971, pp. 1149-1171.

R. Seviora, M. Sablatash and J.W. Bandler, "Least pth and minimax objectives for automated network design", Electronics Letters, vol. 6, 1970, pp. 14-15.

C.E. Shannon and D.W. Hagelbarger, "Concavity of resistance functions", J. Applied Physics, vol. 27, 1956, pp. 42-43.

K. Singhal, J. Vlach and P.R. Bryant, "Efficient computation of large change multiparameter sensitivity", Int. J. Circuit Theory and Appl., vol. 1, 1973, pp. 237-247.

W.L. Snyder, Jr., and A.M. Sasson, "Security load flow employing a modified decoupled hessian technique", Proc. 10th PICA Conf. (Toronto, 1977), pp. 442-450.

T.V. Srinivasan and J.W. Bandler, "Practical application of a penalty function approach to constrained minimax optimization", Computer Aided Design, vol. 7, 1975, pp. 221-224.

W. Stehle, "Optimal design of pulse forming networks", Computer Aided Design, vol. 5, 1973, pp. 2-6.

K. Steiglitz, "Computer-aided design of recursive digital filters", IEEE

Trans. Audio Electroacoustics, vol. AU-18, 1970, pp. 123-129.

K. Steiglitz, "Designing short-word recursive digital filters", *Proc. 9th Allerton Conf. Circuit and System Theory* (Urbana, IL., 1971), pp. 778-788.

B. Stott, "Review of load-flow calculation methods", *Proc. IEEE*, vol. 62, 1974, pp. 916-929.

M. Styblinski, "Sensitivity minimization with an optimal assignment of network element tolerances", *Proc. IEEE Int. Symp. Circuits and Systems* (Phoenix, AZ, 1977), pp. 223-226.

D. Sud, "Differential sensitivity after simultaneous large changes in one or more circuit elements", *Proc. IEEE Int. Symp. Circuits and Systems* (Newton, MA, 1975), pp. 198-201.

D. Sud and R. Spence, "Component tolerance assignment and design centering", *Proc. European Conf. Circuit Theory and Design* (London, England, 1974), pp. 165-170.

M. Suk and S.K. Mitra, "Computer-aided design of digital filters with finite word length", *IEEE Trans. Audio Electroacoustics*, vol. AU-20, 1972, pp. 356-363.

G. Szentirmai, Ed., *Computer-Aided Filter Design*. New York: IEEE Press, 1973.

G.C. Temes, "First-order estimation and precorrection of parasitic loss effects in ladder filters", *IRE Trans. Circuit Theory*, vol. CT-9, 1962, pp. 385-399.

G.C. Temes, "Exact computation of group delay and its sensitivities using adjoint-network concept", *Electronics Letters*, vol. 6, 1970, pp. 483-485.

G.C. Temes and V. Barcilon, "A lower bound for the minimum risetime of bandlimited systems", *IEEE Trans. Circuit Theory*, vol. CT-19, 1972, pp. 280-282.

G.C. Temes, V. Barcilon and F. Marshall, "The optimization of band-limited systems", *Proc. IEEE*, vol. 61, 1973, pp. 196-234.

G.C. Temes and J.A.C. Bingham, "Iterative Chebyshev approximation technique for network synthesis", *IEEE Trans. Circuit Theory*, vol. CT-14, 1967, pp. 31-37.

G.C. Temes and D.A. Calahan, "Computer-aided network optimization the state-of-the-art", *Proc. IEEE*, vol. 55, 1967, pp. 1832-1863.

G.C. Temes, R.M. Ebers and R.N. Gadenz, "Some applications of the adjoint network concept in frequency domain analysis and optimization", *Computer Aided Design*, vol. 4, 1972, pp. 129-134.

G.C. Temes and R.N. Gadenz, "Simple technique for the prediction of dissipation-induced loss distortion", Electronics Letters, vol. 6, 1970, pp. 836-837.

G.C. Temes and D.Y.F. Zai, "Least pth approximation", IEEE Trans. Circuit Theory, vol. CT-16, 1969, pp. 235-237.

C.W. Therrien, "Use of the adjoint for computing exact changes in response of cascaded two-port networks", IEEE Trans. Circuits and Systems, vol. CAS-21, 1974, pp. 217-218.

A.R. Thorbjornsen and S.W. Director, "Computer-aided tolerance assignment for linear circuits with correlated elements", IEEE Trans. Circuit Theory, vol. CT-20, 1973, pp. 518-523.

W.F. Tinney and J.W. Walker, "Direct solution of sparse network equations by optimally ordered triangular factorization", Proc. IEEE, vol. 55, 1967, pp. 1801-1809.

T.N. Trick and J. Vlach, "Computer-aided design of broadband amplifiers with complex loads", IEEE Trans. Microwave Theory Tech., vol. MTT-18, 1970, pp. 541-547.

H. Tromp, "The generalized tolerance problem and worst case search", Conf. Computer-aided Design of Electronic and Microwave Circuits and Systems (Hull, England, 1977), pp. 72-77.

A.D. Waren, L.S. Lasdon, L.B. Stotts and D.C. McCall, "Recent developments in nonlinear optimization and their use in engineering design", in Large Engineering Systems, A. Wexler, Ed., Oxford, England: Pergamon, 1977.

A.D. Waren, L.S. Lasdon and D.F. Suchman, "Optimization in engineering design", Proc. IEEE, vol. 55, 1967, pp. 1885-1897.

D.A. Wayne, S.W. Director and A.J. Brodersen, "Automated design of large signal amplifiers for minimum harmonic distortion", IEEE Trans. Circuit Theory, vol. CT-19, 1972, pp. 531-533.

W.T. Weeks, A.J. Jimenez, G.W. Mahoney, H. Qassemzadah and T.R. Scott, "Network analysis using a sparse tableau with tree selection to increase sparseness", Proc. IEEE Int. Symp. Circuit Theory (Toronto, 1973), pp. 165-168.

A. Wexler, J.A. Dobrowalski and A.E. Hammad, "Solution of large, sparse systems in design and analysis", IEEE Int. Microwave Symp. Digest (Palo Alto, CA, 1975), pp. 202-203.

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