

INTERNAL REPORTS IN
SIMULATION, OPTIMIZATION
AND CONTROL

No. SOC-155

BIBLIOGRAPHY IN COMPUTATIONAL METHODS,
DESIGN AND OPTIMIZATION

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January 1977

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McMASTER UNIVERSITY
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January 1977

IMPORTANT NOTE

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BIBLIOGRAPHY - BOOKS AND ARTICLES IN BOOKS

- J. Abadie, Ed., Integer and Nonlinear Programming. New York: Elsevier, 1970.
- J. Abadie, Ed., Nonlinear Programming. New York: Wiley, 1967.
- M. Abramowitz and I. Stegun, Handbook of Mathematical Functions. New York: Dover Publications, 1965.
- N. I. Achieser, Theory of Approximation (Transl. by C.J. Hyman). New York: Frederick Unger, 1956.
- F.S. Acton, Numerical Methods that Work. New York: Harper and Row, 1970.
- T.M. Apostol, Mathematical Analysis. Reading, MA: Addison-Wesley, 1957.
- M. Aoki, Introduction to Optimization Techniques. New York: Macmillan, 1971.
- M. Athans, M.L. Dertouzos, R.N. Spann and S.J. Mason, Systems, Networks and Computation Multivariable Methods. New York: McGraw-Hill, 1974.
- M. Avriel, Nonlinear Programming Analysis and Methods. Englewood Cliffs, NJ: Prentice-Hall, 1976.
- J.W. Bandler, "Computer-aided circuit optimization", in Modern Filter Theory and Design, G.C. Temes and S.K. Mitra, Eds. New York: Wiley-Interscience, 1973.
- J.W. Bandler, "Optimization of design tolerances using nonlinear programming", in Computer-Aided Filter Design, G. Szentirmai, Ed. New York: IEEE Press, 1973.
- J.W. Bandler, "Optimization methods for computer-aided design", in Microwave Integrated Circuits, J. Frey, Ed. Dedham, MA: Artech House, 1975.
- J.W. Bandler and C. Charalambous, "Theory of generalized least pth approximation", in Computer-Aided Filter Design, G. Szentirmai, Ed. New York: IEEE Press, 1973.
- A.V. Balakrishnan and L.W. Neustadt, Eds., Computing Methods in Optimization Problems. New York: Academic Press, 1964.
- E.M. Beale, Ed., Applications of Mathematical Programming Techniques. New York: Elsevier, 1970.
- E.M.L. Beale, "Nonlinear programming", in Digital Computer User's Handbook, M. Klerer and G.A. Korn, Eds. New York: McGraw-Hill, 1967.
- M. Beckmann and H.P. Kunzi, Eds., Computing Methods in Optimization Problems. New York: Springer-Verlag, 1969.

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

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

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

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

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

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

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

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

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

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

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

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.

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 Polynomials 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, 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.

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.

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.

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

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.

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

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

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.

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

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.

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, Nonlinear Programming. New York: McGraw-Hill, 1969.

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

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

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

M.F. Neuts, Probability. Boston, MA: Allyn and Bacon, 1973.

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

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

G. Owen, Game Theory. Philadelphia, PA: Saunders, 1968.

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

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

D.A. Pierre, Optimization Theory with Applications. New York: Wiley, 1969.

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

L. Pun, Introduction to Optimization Practice. New York: Wiley, 1969.

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

A. Ralston and H.S. Wilf, Eds., Mathematical Methods for Digital 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.

- 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.
- 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.
- G. Szentirmai, Ed., Computer-Aided Filter Design. New York: IEEE Press, 1973.
- K.L. Su, Time-Domain Synthesis of Linear Networks. Englewood Cliffs, NJ: Prentice-Hall, 1971.
- D. Tabak and B.C. Kuo, Optimal Control by Mathematical Programming. Englewood Cliffs, NJ: Prentice-Hall, 1971.
- A. Talbot, Ed., Approximation Theory. New York: Academic Press, 1970.
- H.A. Taha, Operations Research - An Introduction. New York: MacMillan, 1971.
- 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.
- P. Wolfe, "Methods of nonlinear programming", in Nonlinear Programming,

J. Abadie, Ed. New York: Wiley, 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.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

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

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 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 $p \rightarrow \infty$ ", 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, accepted for publication.

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.

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. Applies., 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, "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 programming", Int. J. Systems Science, vol. 7, 1976, pp. 557-575.

C. Charalambous, "Nonlinear least pth optimization and nonlinear programming", Mathematical Programming, accepted for publication.

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. 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.

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.

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 L 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.

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.

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. Appl., 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.

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.

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).

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.
- 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, "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., and W.E. Milne, "Interpolation in several variables", SIAM J., vol. 8, 1960, pp. 33-42.
- H.C. Thacher, Jr., "Generalization of concepts related to linear dependence", SIAM J., vol. 6, 1959, pp. 288-299.
- 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.

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

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

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.

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. 326-33.

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, "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, "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, "Teaching optimal design", IEEE Trans. Education, vol. E-20, 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 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, "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 $p \rightarrow \infty$ ", 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 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 and W.Y. Chu, "Nonlinear programming using least pth optimization with extrapolation", Int. J. Systems Science, accepted for publication.

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, 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. Seviara, "Direct method for evaluating scattering matrix sensitivities", Electronics Letters, vol. 6, 1970, pp. 773-774.

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

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

J.W. Bandler and R.E. Seviara, "Computation of equivalent wave source

using the adjoint network", Electronics Letters, vol. 7, 1971, pp. 235-236.

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

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. 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., "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.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.

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.

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.

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.

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. Broderon, "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 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.

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

N.J. Elias, "New statistical methods for assigning devices 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 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.

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.

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.

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.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.

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

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.

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.

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.

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.

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

J.F. Pinel, "Tolerance assignment 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.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.

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.

T.R. Scott and T.P. Walker, "Regionization: a method for generating joint density estimates", Proc. IEEE Int. Symp. Circuits and Systems (Newton, MA, 1975), pp. 325-328.

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. Seviara, 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.

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.

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.

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.

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.

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 et al, "Solution of large, sparse systems in design and analysis", IEEE Int. Microwave Symp. Digest (Palo Alto, CA, 1975).

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January 1977, No. of Pages: 32

Revised:

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