

A BIBLIOGRAPHY ON DIGITAL COMPUTER-AIDED
CIRCUIT ANALYSIS AND DESIGN

Tsute Yang

Villanova University

The potential use of digital computer in the analysis and design of electric circuits has been recognized for some time. The first organized effort in technical meetings on the subject seems to be a session on 'Computers in Network Synthesis' in 1957 WESCON Convention when three papers (12, 17, 132) were presented. In 1961 the IRE Transactions on Circuit Theory issued a special number on Network Design by Computer (49, 60, 78, 98, 184). A Computer Program Department has since been inaugurated to the Transactions (84) which collects and publishes titles and reviews of available programs on circuit theory problems. There was a symposium on the Design of Networks with a Digital Computer (27, 47, 160, 171) at 1962 IRE International Convention. In 1963 Lockheed Missiles and Space staff prepared an annotated bibliography on computer-aided analysis and design (142). More recently at the Third Allerton Conference on Circuit and System Theory, October 20-22, 1965, six papers (85, 110, 128, 145, 165, 178) were presented at the session of Network Analysis and Design by Digital Computers.

This bibliography attempts to list all pertinent literature on computer-aided techniques and programs directly connected with circuit analysis and design. Related background material (for example, the Monte Carlo method in digital computation), thought important as they are, are deleted from this compilation. The entries are arranged in the alphabetic order of the last name of the first author of each paper. A subject index and an chronological index are appended.

The work reported here was part of research supported by the National Aeronautics and Space Administration under the grant #39-023-(004).

N66-16980

(ACCESSION NUMBER)

28
(PAGES)

Code: 1

(FORM)

LC
(CLASS) category

1 -

Hard copy (HC) 8200

Microfiche (MF) 50

653 July 65

- (1) M. W. Aarons and M. J. Goldberg, "Computer Methods for Integrated Circuit Design," *Electro-Technology*, vol. 75, no. 5, pp. 77-81; May, 1965.
- (2) J. R. Abrahams, "Amplifier Design with a Digital Computer," *Electronic Engrg*, vol. 37, pp. 740-745; November, 1965.
- (3) G. E. Adams and J. E. Gerngross, "IBM 650 as a Tool for Analysis of Transmission and Distribution System Problems," *Power Apparatus and Systems*, no. 40, (AIEE Trans. vol. 77, pt. 3) pp. 1236-1244; February, 1959.
- (4) R. K. Adams, "Digital Computer Analysis of Closed-Loop Systems Using the Number Series Approach," *Applications and Industry*, no. 67, (AIEE Trans. vol. 82, pt. 3) pp. 238-240; July, 1963.
- (5) F. A. Applegate, "Statistical Circuit Analysis Based on Part Test Data," *Electro-Technology*, vol. 71, no. 5, pp. 140-145; May, 1963.
- (6) K. G. Ashar, et al. "Transient Analysis and Device Characterization of ACP Circuits," *IBM J. Res. and Dev.*, vol. 7, pp. 207-223; July, 1963.
- (7) W. D. Ashcraft and W. Hochwald, "Design by Worst-Case Analysis: a Systematic Method to Approach Specified Reliability Requirements," *IRE Trans. on Reliability and Quality Control*, vol. RQC-10, no. 3, pp. 15-21; November, 1961.
- (8) A. G. Atwood and L. C. Drew, "Computer Analysis of an Integrated Circuit Amplifier," *RCA Engineer*, vol. 10, no. 3, pp. 27-29; October/November, 1964.
- (9) W. Austin and K. Angel, "Computer Solutions Aid Rectifier Filter Design," *Electronics Industries*, vol. 23, no. 12, pp. 54-57; December, 1964.
- (10) H. S. Balaban, "Selected Bibliography on Reliability," *IRE Transactions on Reliability and Quality Control*, vol. RQC-11, pp. 86-103; July, 1962.

- (11) T. C. Bartee, "Computer Design of Multiple-Output logical Networks,"
IRE Trans. Electronic Computers, vol. EC-10, pp. 21-30; March, 1961.
- (12) T. R. Bashkow and C. A. Desoer, "Digital Computers and Network Theory,"
WESCON Conv. Record, vol. 1, pt. 2, pp. 133-136; 1957.
- (13) _____, "Network Analysis," Mathematical Methods for Digital
Computers (book) Chapter 26, pp. 280-290; John Wiley, 1960.
- (14) W. F. Baur, D. L. Gerlough and J. W. Granholm, "Advanced Computer
Application," IRE Proc. vol. 49, pp. 296-304; January, 1961.
- (15) J. H. Beaudette and P. A. Honkanen, "PECANS Circuit Analysis of Nonlinear
Systems," IBM 7090 Program Writeup, IBM Development Lab.,
Poughkeepsie, N. Y. 1961.
- (16) F. Beck, "Harmonic Analysis Using a Digital Computer," The Computer J.
vol. 1, p. 117; October; 1958.
- (17) D. T. Bell, "Digital Computers as Tools in Designing Transmission Networks,"
WESCON Conv. Record, vol. 1, pt. 2, pp. 145-153; 1957.
- (18) A. H. Benner and B. Meredith, "Designing Reliability into Electronic Circuits,"
Proc. Nat'l Electronics Conf., vol. 10, pp. 137-145; 1954.
- (19) C. L. Bertin, "Transmission - Line Response Using Frequency Techniques,"
IBM J. Res. and Dev. vol. 8, pp. 52-63; January, 1964.
- (20) H. D. Bickley, et al. "Digital Techniques for Voltage Regulation Studies,"
Automatic Control, vol. 15, no. 6, pp. 26-30; December, 1961.
- (21) J. A. C. Bingham, "A New Method of Solving the Accuracy Problem in Filter
Design," IEEE Trans. on Circuit Theory, vol. CT-11, pp. 327-341;
September, 1964.
- (22) G. T. Bird, "On the Basic Concepts of Reliability Prediction," Proc. 7th Nat'l
symp. on Reliability and Quality Control, pp. 51-54; January, 1961.

- (23) B. Birtwistle and B. M. Dent, "Digital Computer as an Aid to the Electrical Design Engineer," *The Engineer*, vol. 201, pp. 440-442; May 4, 1956.
- (24) W. Bongenaar and N. C. de Troye, "Worst-Case Considerations in Designing Logical Circuits," *IEEE Trans. on Electronic Computers*, vol. EC-14, pp. 590-599; August, 1965.
- (25) A. Brameller and J.K. Denmead, "Some Improved Methods for Digital Network Analysis," *Proceedings of I. E. E.* vol. 109, Part A, pp. 109-116; 1962.
- (26) F.H. Branin, Jr., "D-C Analysis Portion of PETAP - A Program for Analyzing Transistor Switching Circuits," IBM Tech. Rept. 00.701, IBM Development Lab. Poughkeepsie, N. Y. 1959.
- (27) _____, "D-C and Transient Analysis of Networks Using a Digital Computer," *IRE Conv. Record* vol. 10, pt. 2, pp. 236-256; 1962.
- (28) _____, "Machine Analysis of Networks and Its Application," IBM Tech. Rept. TROO. 855; March 30, 1962.
- (29) N. G. Brooks and H. S. Long, "A Program for Computing the Transient Response of Transistor Switching Circuits-PETAP," IBM Tech. Rept. 00.700, IBM Development Lab. Poughkeepsie, N. Y. 1959.
- (30) A. Brown, et al, "Mathematical Circuit Analysis and Design," Remington Rand Univac Div. Scientific Rpt. no. 2, AFCRL-191; March, 1961
ASTIA AD 259786.
- (31) H. E. Brown, L. K. Kirchmayer, C. E. Person and G. W. Stagg, "Digital Calculation of 3-phase Short Circuits by Matrix Method," *Power Apparatus and Systems* no. 52, pp. 1277-82 (*AIEE Trans.* vol. 79 pt. 3); February, 1961.
- (32) R. R. Brown, "A Generalized Computer Procedure for the Design of Optimum Systems," *AIEE Trans. Comm. and Electronics* vol. 78, no. 1, pp. 285-293; July, 1959.

- (33) J. D. Brule and B. P. Sah, "Time Response Characteristics of Linear Networks and Transformation Methods in Network Synthesis," Syracuse Univ. Report; August, 1961; AD 257 822.
- (34) K. J. Butler and J. N. Warfield, "A Digital Computer Program for Reducing Logical States to a Minimal Form," Proc. Nat'l Electronics Conf. vol. 15, pp. 456-466; 1959.
- (35) R. T. Byerly, R. W. Long and C. W. King, "Logic for Applying Topological Methods to Electric Networks," Commun. and Electronics, no. 39, (AIEE Trans. vol. 77, pt. 1) pp. 657-667; November, 1958.
- (36) D. A. Calahan, "Modern Network Analysis" (book), vol. 1, chapter 5, use of the Computer in Approximation. Hayden Book Co. New York, N. Y. 1964.
- (37) _____, "Computer Generation of Equivalent Networks," IEEE Conv. Record, vol. 12, pt. 1, pp. 330-337; 1964.
- (38) _____, "Computer Solution of the Network Realization Problem," Proc. 2nd Allerton Conf. on Circuit and System Theory pp. 175-195; 1964.
- (39) _____, "Computer Design of Linear Frequency Selective Networks," Proc. IRE vol. 53, pp. 1701-1706; November, 1965.
- (40) J. T. Carleton, N. Chackan and T. W. Martin, "The Use of Automatic Programming Techniques for Solving Engineering Problems," Commun. and Electronics no. 45, (AIEE Trans. vol. 78, pt. 1) pp. 596-601; November 1959.
- (41) E. V. Carter, "Thermal Analysis of Integrated Circuits," Proceedings 2nd Design Aids Symposium, Autonetics, Anaheim, Calif., Pub. no. 558-A-14, paper no. II; September, 1963.

- (42) L. C. Casady and H. T. Breen, "Transistor and Diode State Finding Routine,"
Proceedings 2nd Design Aids Symposium, Autonetics, Anaheim, Calif.,
Pub. no. 558-A-14, paper no. V; September, 1963.
- (43) P. W. Case, et al. "Solid Logic Design Automation," IBM J. Res. and Dev.
vol. 8, pp. 127-140; April, 1964.
- (44) Y. N. Chang and O. M. George, "Use of High-Speed Digital Computers to Study
Performance of Complex Switching Networks Incorporating Time
Delays," Commun. and Electronics no. 46, (AIEE Trans. vol. 78,
pt. 1), pp. 982-987, 1959.
- (45) L-H Shang Cheo, "Arbitrary Delay Equalization Utilizing Digital Computer
IBM 704," Univ. of California Report; July, 1961. PB 150 512.
- (46) D. H. Chung and J. A. Palmieri, "Design of ACP Resistor-Coupled Switching
Circuits," IBM J. Res. and Dev. vol. 7, pp. 190-198; July, 1963.
- (47) O. P. Clark, "Design of Transistor Feedback Amplifiers and Automatic Control
Circuits with the Aid of a Digital Computer," IRE Convention Record,
vol. 10, pt. 2, pp. 228-235; 1962.
- (48) C. Clunies-Ross and S. S. Husson, "Statistical Techniques in Circuit Optimiza-
tion," Proc. Nat'l Electronics Conf. vol. 18, pp. 325-334; 1962.
- (49) G. H. Cohen and D. Platnick, "The Design of Transistor IF Amplifiers Using
an IBM 650 Digital Computer," IRE Trans. Circuit Theory, vol.
CT-8 pp. 237-243; September, 1961.
- (50) E. U. Cohler, "Statistics Applied to Computer Circuit Design," The Sylvania
Technologist, vol. 12, pp. 134-139; October, 1959.
- (51) D. Coleman, F. Watts and R. B. Shipley, "Digital Calculation of Overhead-
Transmission-Line Constants," Power Apparatus and Systems,
no. 40, (AIEE Trans. vol. 77, pt. 3), pp. 1266-1268; February, 1959.

- (52) D. F. Cooper, "An Integrated Circuit Design for a High Speed Commercial Computer," Solid State Design, vol. 6, no. 6, pp. 21-25; October, 1965
- (53) M. S. Corrington, "Simplified Calculation of Transient Response Proceedings of IEEE, vol. 53, pp. 287-292; March, 1965.
- (54) E. L. Cox, "A Computer-Programmed Component Tolerance Analysis," Diamond Ord. Fuze Labs Report; March 20, 1962, ASTIA AD 269 212
- (55) M. D. Creech, "Finding the Natural Frequencies of an Undamped Linear System with a Digital Computer," American Society of Naval Engineering, pp. 129-132; February, 1962.
- (56) D. R. Crosby and H. R. Kaupp, "Calculated Waveforms for Tunnel Diode Locked-Pair Circuit," Proc. Eastern Joint Computer Conf. vol. 18, pp. 233-239; December, 1960.
- (57) J. B. Dennis, "Mathematical Programming and Electrical Networks," (book), John Wiley & Sons 1959.
- (58) _____, R. F. Nease and R. M. Saunders, "System Synthesis with Aid of Digital Computers," Commun. and Electronics no. 45, (AIEE Trans. vol. 78, pt. 1), pp. 512-515; November, 1959.
- (59) _____, "Distributed Solution of Network Programming Problem," Proc. First Allerton Conf. on Circuit and System Theory, pp. 367-384; 1963.
- (60) C. A. Desoer and S. K. Mitra, "Design of Lossy Ladder Filters by Digital Computer," IRE Trans. Circuit Theory, vol. CT-8, pp. 192-201; September, 1961.
- (61) A. J. DeVilbiss, D. J. Spencer and G. R. Hogsett, "A Worst-Case Circuit Design Technique Utilizing a Small Digital Computer," Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California; October, 1964.

- (62) G. Diaz, "Computer Methods for Analyzing Test Data," Electro-Technology Vol. 71, no. 5, pp. 152-155; May, 1963.
- (63) R.J. Domenico, "Simulation of Transistor Switching Circuits on IBM 704," IRE Trans. on Electronic Computers, vol. EC-6, pp. 242-247; December, 1957.
- (64) R.H. Doxtator and F. Arnold, Press: An IBM 704 Program for Performance and Reliability Evaluation by Synthetic Sampling, Tech. Rept. 01.01.112.602, IBM, Endicott, N.Y.; December, 1959.
- (65) L.C. Drew and A.G. Atwood, "Using the Computer for Integrated Circuit Analysis," Electronic Industries vol. 23, no. 7, pp. 52-57; July, 1964.
- (66) T.E. DUBY, "Linear Circuit Analysis Using the SPADE Program," Proceedings 2nd Design Aids Symposium, Autonetics, Anaheim, Calif. Pub. no. 558-A-14, paper no. I: September, 1963.
- (67) W.J. Dunnet and Y.C. Ho, "Statistical Analysis of Transistor-Resistor Logic Networks," IRE Conv. Record, vol. 8, pt. 2, pp. 11-40;1960.
- (68) A.H. El-Abiad, "Digital Calculation of Line-to-Ground Short Circuits by Matrix Method," Power Apparatus and Systems no. 48, (AIEE Trans. vol. 79, pt. 3) pp. 323-332; June 1960.
- (69) _____, R. Guidone and G.W. Stagg, "Calculation of Short Circuits Using the High-Speed Digital Computer," Power App. and Systems no. 57, (AIEE Trans. vol. 80, pt. 3), pp. 702-708; December, 1961.
- (70) _____, "Digital Computer Analysis of Large Linear Systems," Proc. First Allerton Conf. on Circuit and System Theory, pp. 205-220, 1963.

- (71) Electro-Technology Staff Report, "The Computer as a Design Tool - The M. I. T. Approach," *Electro-Technology*, vol. 72, no. 5, pp. 112-115, pp. 119; November, 1963.
- (72) L. R. Fairbrother and H. G. Bassett, "Computer Program for Analysing Networks containing Three-terminal Active Devices characterized by their Two-part Parameters," *The Radio and Electronic Engineer*, vol. 29, pp. 85-92; February, 1965.
- (73) H. Falk, "The Computer as a Design Tool," *Electro-Technology*, vol. 72, no. 7, pp. 48-50; July, 1963.
- (74) _____, "Computer Programs for Circuit Design," *Electro-Technology*, vol. 73, no. 3, pp. 101-104, pp. 162-164; March, 1964.
- (75) J. V. Fall, "A Digital Computer Program for the Design of Phase Correctors," *IRE Trans. Circuit Theory*, vol. CT-8, pp. 223-236; September, 1961.
- (76) R. Ferguson, "Application of Digital Computer Techniques to Power System Analysis," *Proc. First Midwest Symp. on Circuit Analysis*, pp. 14-1 to 14-9; 1955.
- (77) R. W. Ferguson, R. W. Long and L. J. Rindt, "Digital Calculation of Network Functions Used in Loss Formula Studies," *Commun. and Electronics*, no. 39, (AIEE Trans. vol. 77, pt. 1), pp. 647-652, November, 1958.
- (78) D. C. Fiedler, "A Combinatorial-Digital Computation of a Network Parameter," *IRE Trans. Circuit Theory*, vol. CT-8, pp. 202-209; September, 1961.
- (79) T. Fleetwood, "Automatic Solution of Network Frequency Response," *Electronic Engrg*, vol. 37, pp. 612-614; September 1965.
- (80) D. A. Franks, "A New Automatic Method for the Design of Low Voltage Transformers on IBM 704," *IRE Conv. Record*, vol. 8, pt. 6, pp. 193-204; 1960.

- (81) W. D. Fryer and W. C. Schultz, "Digital Simulation of Transfer Functions,"
Proc. Nat'l Electronics conf. vol. 17, pp. 419-420; 1961.
- (82) T. Fujisawa, "Optimization of Low-Pass Attenuation Characteristics by a
Digital Computer," Proc. 6th Midwest Symp. on Circuit Theory,
pp. P1-P13, 1963.
- (83) P. R. Geffe, "Predistorted Filter Design with a Digital Computer," WESCON
Record, vol. 2, pt. 2, pp. 10-22; 1958.
- (84) _____, "Computer Program Reviews," IRE Trans. on Circuit Theory,
CT-9 p. 307; September, 1962
CT-11 p. 512; December, 1964
CT-12 p. 301; June, 1965.
- (85) R. M. Golden, "Digital Computer Simulation of Communication Systems Using
the Block Diagram Computer," : BLØDIB, Proc. of 3rd Allerton
Conf. on Circuit System Theory; October, 1965.
- (86) G. H. Goldstick and D. G. Mackie, "Design of Computer Circuits Using Linear
Programming Techniques," IRE Convention Record, vol. 9, pt. 2,
pp. 224-240; 1961; also IRE Trans. on Electronic Computers, vol.
EC-11, pp. 518-530; August, 1962.
- (87) R. G. Goodman and R. L. Cummins, "Computer Determination of Isomorphisms
in Linear Graphs," Proc. 8th Midwest Symp. on Circuit Theory
pp. 12-1 to 12-12; June, 1965.
- (88) B. J. Grinnell, "Analysis Testing for Improved Circuit Reliability," Proc. 8th
Nat'l. Symp. on Reliability and Quality Control, pp. 103-108; 1962.
- (89) P. P. Gupta and M. W. H. Davies, "Digital Computers in Power System Analysis,"
Proc. Instn. Elec. Engrs. vol. 108, part A, pp. 383-404; October, 1961.

- (90) T.J.B. Hannom and G. Kaskey, "Digital Computer as a Design Tool," IRE Conv. Record. vol. 13, pt. 6, pp. 27-38; 1965.
- (91) J.N. Hatfield, "A Linear Circuit Analysis Program for the IBM 1620/1311 20k Data Processing System (CIRCS)," Jet Propulsion Lab. Pasadena, Calif.; May, 1964.
- (92) M.K. Haynes, "Transient Analysis of Cryotron Networks by Computer Simulation," Proc. IRE, vol. 49, pp. 245-257; January, 1961.
- (93) C.L. Hegedus, "TRL Circuit Design Implemented by Computer," Electronic Design vol. 12, pp. 40-46; March 16, 1964.
- (94) L. Hellerman, "Monte Carlo Analysis and Design Program," IBM Technical Note, TN00.11000.54.
- (95) _____ and M.P. Racite, "Reliability Techniques for Electronic Circuit Design," IRE Trans. on Reliability and Quality Control vol. RQC-14, pp. 9-16; September, 1958.
- (96) _____, "A Computer Application to Reliable Circuit Design," IRE Trans. Reliability and Quality Control vol. RQC-11, pp. 9-18; May, 1962.
- (97) _____ and E.J. Skiko, "Methods of Analysis of Circuit Transient Performance," IBM J. Res. and Dev. vol. 5, pp. 33-43; January, 1961.
- (98) S. Hellerstein, "Synthesis of All-Pass Delay Equalizers," IRE Trans. on Circuit Theory, vol. CT-8, pp. 215-222; September, 1961.
- (99) R.H. Hindricks, "A Statistical Method for Analyzing the Performance Variation of Electronic Circuits," Convair Report no. ZX-7-008; October, 1953.
- (100) _____, "A Second Statistical Method for Analyzing the Performance Variation of Electronic Circuits," Convair Report No. AZ-7-0100; February, 1956.

- (101) W. Hochwald and W. D. Ashcraft, "Design by Worst-Case Analysis," IRE Trans. on Reliability and Quality Control; November, 1961.
- (102) J. L. Hogin, "An Active Low-Pass RC Filter Configuration Utilizing the Voltage Follower," Proc. 7th Midwest Symp. on Circuit Theory, pp. 179-191; 1964.
- (103) K. H. Hosking, B. M. J. Kavanaugh and M. Sadler, "The Application of 'Deuce' to the Analysis of Linear Passive Networks," Marconi Rev. vol. 25, no. 2, pp. 139-156; 1962.
- (104) T. Iedorsko, T. Tsuchiya and H. Watanabe, "A New Calculation Method for the Design of Filters by Digital Computer with the Special Consideration of the Accuracy Problem," IEEE Conv. Record, vol. 11, pt. 2, pp. 100-113; 1963.
- (105) International Business Machines Corp., "1620 Electronic Circuit Analysis Program (ECAP 1620-EE-02X)," IBM, Tech. Publ. Dept., White Plains, N. Y.; 1965.
- (106) _____, "ASAP, An Automated Statistical Analysis Program," Tech. Rept. prepared for Goddard Space Flight Center, Greenbelt, Md., Contract no. NAS 5-3373.
- (107) M. N. John, "A General Method of Digital Network Analysis Particularly Suitable for Use with Low-Speed Computers," Proc. Inst. Elec. Enges., vol. 108 (part A), pp. 369-382; October, 1961.
- (108) H. J. Joyal, "Power-Supply Circuit Design by Digital Computer Method," Electrical Mfg. vol. 65, pp. 171-177; May, 1960.
- (109) G. Kaskey, N. S. Prywes and H. Lukoff, "Applications of Computers to Circuit Design for UNIVAC LARC," Proc. WJCC, Los Angeles, Calif. vol. 19, pp. 185-205; May, 1961.

- (110) J. Katzenelson and L. H. Seitelman, "An Iterative Method for Solution of Non-linear Resistor Networks," Proc. of 3rd Allerton Conf. on Circuit and System Theory; October, 1965.
- (111) T. A. Keenan, G. H. Cohn and D. Platnick, "Circuit Study Using Computer Techniques," Rochester University, Final Rept. 74 p.; July 15, 1959.
ASTIA AD229842 OTS PB157-593
- (112) W. H. Kim, et al., "On Iterative Factorization in Network Analysis by Digital Computer," Proc. EJCC, vol. 18, pp. 241-253; December, 1960.
- (113) E. G. Kimme and F. F. Kuo, "Synthesis of Optimal Filters for a Feedback Quantization System," IEEE Trans. on Circuit Theory, vol. CT-10, pp. 405-413; September, 1963.
- (114) S. Klapp, "Empirical Parameter Variation Analysis for Electronic Circuits," IEEE Trans. on Reliability and Quality Control, vol. RQC-13, pp. 34-40; March, 1964.
- (115) T. B. Knapp, "An Application of Nonlinear Programming to Mismatched Filters," IEEE Trans. on Circuit Theory, vol. CT-12, pp. 185-193; June, 1965.
- (116) C. Kurth, "Analysis of Diode Modulators Having Frequency-Selective Terminations Using Computers," Electrical Communication, vol. 39, no. 3, pp. 369-378; 1964.
- (117) D. M. Larson and B. J. Grinell, "A Comparison of Methods of Drift Reliability Determination," Proc. 7th Nat'l Symp. on Reliability and Quality Control, pp. 448-454; 1961.
- (118) G. L. Lasher and J. C. Morgan, "A General Method of Predicting the Transient Response of a Nonlinear Circuit," IBM Research Rept. RC-7; 1957.
- (119) A. P. Lechler, D. C. Mark and H. S. Scheffler, "Applying Statistical Techniques to the Analysis of Electronic Networks," Proc. 1962 Nat'l Aerospace Electronics Conf. pp. 168-172.

- (120) G. H. Leichner, "Network Synthesis Using a Digital Computer," Proc. N. E. C. vol. 12, pp. 830-838; 1956.
- (121) _____, "Designing Computer Circuits with a Computer," J. Assoc. Computing Mach., vol. 4, pp. 143-147; April, 1957.
- (122) B. J. Leon and C. A. Bean, "Analysis and Design of Parametric Amplifiers with the Aid of a 709 Computer," IRE Trans. on Circuit Theory, vol. CT-8, pp. 210-215; September, 1961.
- (123) V. S. Levadi, "Simplified Method of Determining Transient Response from Frequency Response of Linear Networks and Systems," IRE Conv. Record, vol. 7, pt. 4, pp. 57-68; 1959.
- (124) J. I. Levin, "Failure Prevention Through Design Optimization Utilizing Monte-Carlo Simulation Techniques," Solid State Design, vol. 6, no. 10, pp. 26-29; October, 1965.
- (125) R. W. Levinge, "A Transfer Function Computer," Electronic Engrg., vol. 37, pp. 218-224; April, 1965.
- (126) I. C. Liggett, "Examples of Engineering Applications on IBM Digital Computers," Electrical Engrg., vol. 74, pp. 233-236; March, 1955.
- (127) M. L. Liou, "Numerical Techniques of Fourier Transforms with Applications," Proc. 2nd Allerton Conf. on Circuit and System Theory, pp. 114-134; 1964.
- (128) _____, "A Numerical Solution of Linear Time-Invariant System," Proc. of 3rd Allerton Conf. on Circuit and System Theory; October, 1965.
- (129) A. J. McElroy and R. M. Porter, "Digital Computer Calculation of Transients in Electrical Networks," Power Apparatus and Systems, no. 59, (AIEE Trans. vol. 82, pt. 3), pp. 88-96; April, 1963.

- (130) J. Marini and R. T. Williams, "The Evaluation and Prediction of Circuit Performance by Statistical Techniques," Proc. Joint Military-Industry Symp. on Guided Missile Reliability; 1957.
- (131) W. Mayeda and M. E. Van Valkenburg, "Network Analysis and Synthesis by Digital Computers," WESCON Conv. Record, vol. 1, pt. 2, pp. 137-144; 1957.
- (132) _____ and M. E. Valkenburg, "Analysis of Nonreciprocal Networks by Digital Computer," IRE Conv. Record, vol. 6, no. 2, pp. 70-75; 1958.
- (133) C. S. Meyer, "A Digital Computer Representation of the Linear Constant-Parameter Electronic Network," M. I. T., Cambridge, Mass., Tech. Memo 8436-TM-3, p. 110; August, 1960, ASTIA AD 248437. (OTS PB 155408).
- (134) R. S. Miles, "Transient Response using Matrizant Procedures," Proceedings 2nd Design Aids Symposium, Autonetics, Anaheim, Calif., Pub. no. 558-A-14, paper no. IV; September, 1963.
- (135) M. I. T. Res. Lab. Electronics, "Circuit Simulation on a Digital Computer," Quarterly Progress Report #61; December, 1960 - February, 1961.
- (136) E. F. Morris and T. E. Wohen, "Automatic Implementation of Computer Logic," Commun. ACM, vol. 1, no. 5, pp. 14-30; May, 1958.
- (137) F. Moskowitz, "The Analysis of Redundancy Networks," Commun. and Electronics, no. 39, (AIEE Trans. vol. 77, pt. p), pp. 627-632; November, 1958.
- (138) W. F. Niesen, "System Analysis Using Digital Computers," Electronic Industries, vol. 18, no. 8, pp. 212-13; August, 1960.

- (139) E. Nussbaum, E. A. Irland and C. E. Young, "Statistical Analysis of Logic Circuit Performance in Digital Systems," Proc. I. R. E. vol. 49, pp. 236-244; January, 1961.
- (140) E. A. Pacello, "The Use of "Deuce" for Network Analysis," The Marconi Review, vol. 24, no. 142, Third Quarter; 1961.
- (141) K. C. Parton and D. A. Newey, "Power-System Design - New Techniques," J. Science and Technology, vol. 29, no. 1, pp. 9-19; 1962.
- (142) C. M. Pierce, "The Design and Analysis of Electrical Electronic Systems by Means of Digital Computers," an Annotated Bibliography, Lockheed Missiles and Space; September, 1963, p. 34, AD 439 440.
- (143) S. C. Plumb, "A Program for Statistical Reliability Evaluation by Synthetic Sampling (STRESS)," Tech. Publ. no. TR 00.834, IBM Poughkeepsie, N. Y.; January, 1962.
- (144) C. Pottle, "On the Partial Fraction Expansion of a Rational Function with Multiple Poles by Digital Computer," IEEE Trans. on Circuit Theory, vol. CT-11, pp. 161-162; March, 1964.
- (145) _____, "Comprehensive Active Network Analysis by Digital Computer - A State-Space Approach," Proc. of 3rd Allerton Conf. on Circuit and System Theory; October, 1965.
- (146) M. B. Reed and others, "A Digital Approach to Power-System Engineering," (in 4 parts), Power Apparatus and Systems, no. 48 (AIEE Trans. vol. 79, pt. 3), pp. 198-225; June 1961.
- (147) Remington Rand Univac Division, "Mathematical Circuit Analysis and Design," Remington Rand; February 29, 1960, p. 40, OTS PB 148222.
- (148) A. L. Riemenschneider and C. W. Cox, "Digital Computer Analysis of the Tunnel Diode Relaxation Oscillator," Electronic Engineering, vol. 36, pp. 382-385; 1964.

- (149) D. Rigney, L. Kraus and H. Malamud, "Synthesis of Current Waveforms by Type C Networks," Republic Aviation Report; August, 1961, PB 155 213.
- (150) L. G. Roberts, "Circuit Simulation on a Digital Computer," M. I. T., Cambridge, Mass., Quarterly Progress Report, no. 61, pp. 239-251; April, 1961.
- (151) C. W. Rosenthal and H. Simon, "Computers as an Aid in the Development of Transmission Circuits," Proc. 2nd Allerton conf. on Circuit and System Theory, pp. 337-365; 1964.
- (152) D. T. Ross and J. E. Rodriguez, "Theoretical Foundations for the Computer-Aided Design System," Proc. 1963 Spring Joint Computer conf. pp. 305-322.
- (153) N. A. Routledge, "Logic on Electronic Computers: A Practical Method for Reducing Expressions to Conjunctive Normal Form," Proc. Camb. Phil. Soc., vol. 52, pp. 161-173; April, 1956.
- (154) N. Sato, "Digital Calculation of Network Inverse and Mesh Transformation Matrices," Power Apparatus and Systems, no. 50 (AIEE Trans. vol. 79, pt. 3), pp. 719-726; October, 1960.
- (155) H. S. Scheffler and F. R. Terry, "Description and Comparison of Five Computer Methods of Circuit Analysis," Proc. 6th Symposium on Ballistic Missiles and Aerospace Technology, Los Angeles, 1961, Ed. by C. T. Morrow, L. D. Ely and M. R. Smith, Academic Press, 1961.
- (156) _____, J. J. Duffy and B. C. Spradlin, "MANDEX-A Worst-Case Circuit Analysis Computer Program," Proc. 1962 Nat'l Aerospace Electronics Conf. pp. 38-53.

- (157) J. D. Schoeffler, "The Synthesis of Minimum Sensitivity Networks," IEEE Trans. on Circuit Theory, vol. CT-11, pp. 271-276; June, 1964.
- (158) H. Schorr, "Computer-Aided Digital System Design and Analysis Using a Register Transfer Language," IEEE Trans. on Electronic Computers, vol. EC-13, pp. 730-737; December, 1964.
- (159) L. S. Schwartz, "Statistical Methods in the Design and Development of Electronic Systems," Proc. IRE, vol. 36, pp. 664-670; May, 1948.
- (160) C. L. Semmelman, "Experience with a Steepest Decent Computer Program for Designing Delay Networks," IRE Conv. Record, vol. 10, pt. 2, pp. 206-210; 1962.
- (161) Y. Shiger, T. Takebe, T. Shinozaki, K. Kimura and S. Watanabe, "Network Design by the Taylor Series Method," Rev. Elect. Commun. Lab. (Japan) vol. 10, no. 9-10, pp. 483-500; September - October, 1962.
- (162) R. B. Shipley, D. Coleman and C. F. Watts, "Transformer Circuits for Digital Studies," Power Apparatus and Systems, no. 64 (AIEE Trans. vol. 81, pt. 3) pp. 1028-1031; February, 1963.
- (163) J. K. Skwirzynski, "The Use of Digital Computers for Network Analysis," Marconi Rev., vol. 28, no. 158, pp. 195-210; 1965.
- (164) B. R. Smith and G. C. Temes, "An Iterative Approximation Procedure for Automatic Filter Synthesis," IEEE Trans. on Circuit Theory, vol. CT-12, pp. 107-112; March, 1965.
- (165) H. C. So, "Analysis and Design of Linear Networks with Variable Parameters Using on-line Simulation," Proc. of 3rd Allerton Conf. on Circuit and System Theory; October, 1965.
- (166) L. H. Stember, H. S. Scheffler and J. J. Duffy, "Circuit Analysis Techniques Utilizing Digital Computers," Proc. 7th Nat'l. Symp. on Reliability and Quality Control, pp. 361-374; 1961.

- (167) C. W. Stempin, "Application of Matrizant Operators for General Network Response," Proceedings 2nd Design Aids Symposium, Autonetics, Anaheim, Calif., no. 558-A-14, paper no. III; September, 1963.
- (168) R. W. Stineman, "Digital Time-Domain Analysis of Systems with Widely Separated Poles," J. of Assoc. Computing Machinery, vol. 12, 11. 286-293; April, 1965.
- (169) G. Szentirmai, "Theoretical Basis of a Digital Computer Program Package for Filter Synthesis," Proc. 1st Allerton Conf. on Circuit and System Theory, pp. 37-49; 1963.
- (170) N. H. Taylor, "Designing for Reliability," Proc. IRE vol. 45, pp. 811-822; June, 1957.
- (171) G. C. Temes, "Filter Synthesis Using a Digital Computer," IRE Conv. Record, vol. 10, pt. 2, pp. 211-227; 1962.
- (172) A. O. Thomas, "Calculation of Transmission - Line Impedance by Digital Computer," Power Apparatus and Systems, no. 40 (AIEE Trans. vol. 77, pt. 3) pp. 1270-1274; February, 1959.
- (173) J. B. Tommerdahl, A. C. Nelson and K. K. Mazuy, "Mathematical Models for Predicting Pulse Characteristics in Digital Logic Systems," IEEE Trans. on Electronic Computers, vol. EC-13, pp. 705-710; December, 1964.
- (174) _____ and A. C. Nelson, "Switching Circuit Transient Performance Prediction Using Empirical Mathematical Modeling Techniques," IEEE Trans. on Reliability and Quality Control, vol. RQC-14, pp. 5-14; March, 1965.
- (175) J. G. Truxal, "Numerical Analysis for Network Design," IRE Trans. on Circuit Theory, vol. CT-1, no. 3, pp. 49-60; September, 1954.

- (176) C. G. Veinott, "Electric Machinery Design by Digital Computer - after nine years," *Elect. Engrg.* vol. 82, pp. 275-280; April, 1963.
- (177) S. Y. Yong and M. Kochen, "Automatic Network Analysis with a Digital Computation System," *Comm. and Electronics*, no. 24 (*AIEE Trans.* vol. 75, pt. 1), pp. 172-175; May, 1956.
- (178) A. D. Waren and L. S. Lasdon, "Practical Filter Design Using Mathematical Optimization," *Proc. of 3rd Allerton Conf. on Circuit and System Theory*; October, 1965.
- (179) H. Watanabe, "A Computational Method for Network Topology," *IRE Trans. on Circuit Theory*, vol. CT-7, pp. 296-302; September, 1960.
- (180) W. J. West and H. S. Scheffler, "Design Considerations for Reliable Electronic Equipment," *Pub. no. 558-A-2*, From: Autonetics; October, 1962.
- (181) D. Wildfeuer, "The Use of Automatic Digital Computation Machine in Design of Minature Pulse Transformers and Power Transformers," *Proc. Nat'l Electronics Conf.* vol. 16, pp. 631-651; 1960.
- (182) S. B. Williams, P. A. Abetti and E. F. Magnusson, "How Digital Computers Aid Transformer Designers," *General Electric Rev.*, vol. 58, pp. 24-25; May, 1955.
- (183) _____ and H. J. Mason, "Complete Design of Power Transformers with a Large Size Digital Computer," *Power Apparatus and Systems*, no. 34, (*AIEE Trans.* vol. 77, pt. 3), pp. 1282-1291; February, 1958.
- (184) Yamanoto, K. K. Fujimoto and H. Watanabe, "Programming the Minimum Inductance Transformation," *IRE Trans. Circuit Theory*, vol. CT-3 pp. 184-191; September, 1961.
- (185) G. W. Zorbist and G. V. Lago, "Digital Computer Analysis of Passive Networks Using Topological Formulas," *Proc. 2nd Allerton Conf. on Circuit and System Theory*, pp. 573-595; 1964.

SUBJECT INDEX

Amplifiers:	2	8	47	50	122					
Analysis:	4	5	6	7	13	15	16	19	20	25
	26	27	28	30	31	37	42	54	55	56
	59	62	66	70	72	77	78	79	82	
	103	107	110	111	112	114	131	132		
	133	137	138	140	145	147	148	163		
	165	166	167	168	173	177	184			
Bibliography:	10	142								
Books:	13	36	57							
Computer Programs:										
	15	26	29	64	71	74	84	91	105	
	106	143								
Design and Synthesis:										
	(2)	9	11	17	18	21	24	30	32	
	33	36	37	38	39	45	46	52	58	
	60	61	75	83	86	93	98	101	104	
	108	109	113	120	121	122	124	131		
	147	149	151	154	157	158	160	161		
	164	165	171	175	178					
Filter:	9	21	60	83	102	104				
	113	115	164	171	178					
Integrated Circuits:										
	1	8	41	52	65					
Logical Network:	11	34	35	43	44	67	136	153		
Numerical Method:	4	36	127	128	175					

Power Network:	3	51	68	69	76	89	141	146
	172							
Reliability:	10	18	22	88	95	96	117	170
	180							
Simulation:	63	81	85	135	150			
Statistical Technique:								
	5	48	50	67	94	99	100	
	119	124	130	139	159			
Survey:	12	14	23	40	73	90	126	131
	155	176						
Theory:	57	152	169					
Topological Method:								
	35	87	179	185				
Transfer Function:	81	125	144					
Transformer:	80	162	181	182	183			
Transients	6	27	29	33	53	92	97	118
	123	129	134	174				
Transistor Diode:	42	56	116	148				
Worst-Case Analysis:								
	7	24	61	101	156			

CHRONOLOGICAL INDEX

<u>1945</u>	159						
<u>1953</u>	99						
<u>1954</u>	18						
<u>1955</u>	76	126	182				
<u>1956</u>	23	100	153	177			
<u>1957</u>	12	17	63	118	120	130	131
	170						
<u>1958</u>	16	35	77	83	95	132	136
	137	183					
<u>1959</u>	3	26	29	32	34	40	44
	50	51	57	58	64	111	123
	172						
<u>1960</u>	13	56	67	68	80	108	112
	133	138	147	154	179	181	
<u>1961</u>	7	11	14	15	20	22	30
	31	33	45	49	60	69	75
	78	81	89	92	97	98	101
	107	109	117	122	135	139	140
	146	149	150	155	166	184	
<u>1962</u>	10	25	27	28	47	48	54
	55	84	86	88	96	103	119
	141	143	156	160	161	171	180
<u>1963</u>	4	5	6	41	42	46	59
	62	66	70	71	73	82	104
	113	129	134	142	152	162	167
	169	176					

<u>1964</u>	8	9	19	21	36	37	38
	43	61	65	74	84	91	93
	102	114	116	127	144	148	151
	157	158	173	185			
<u>1965</u>	1	2	24	39	52	53	72
	79	84	85	87	90	105	110
	115	124	125	128	145	163	164
	165	168	174	178			