BIBLIOGRAPHY

1. Ahlfors, L., Complex Analysis, Second Edition, McGraw-Hill, New York (1966).

2. Altman, A. and S. Kleiman, Introduction to Grothendieck Duality Theory, Lecture Notes in Math. 146, Springer-Verlag, Heidelberg (1970).

3. Antoulas, A.C., On canonical forms for linear constant systems, Report from the Mathematical System Theory Institute, E.T.H., Zürich, Switzerland (1978).

4. Antoulas, A.C., A polynomial matrix approach to F mod G-invariant subspaces, Ph.D. thesis, E.T.H., Zürich, Switzerland (1979).

5. Arnold, V.I., On matrices depending on parameters, Usp. Math. Nauk. 26, 101-114 (1971).

6. Atiyah, M.F. and I.G. MacDonald, Introduction to Commutative Algebra, Addison-Wesley Publ. Company, Reading, Massachusetts (1969).

7. Baras, J., R. Brockett and P. Fuhrmann, State space models for infinite dimensional systems, IEEE Trans. on Automatic Control AC-19, 693-700 (1974).

8. Birkhoff, G.D., A theorem on matrices of analytic functions, Math. Ann. 74, 122-133 (1913).

9. Birman, J.S., Braids, Links, and Mapping Class Groups, Annals of Math. Studies 82, Princeton University Press, Princeton, N.J. (1974).

10. Borel, A., Linear Algebraic Groups, Benjamin, New York (1965).

11. Bourbaki, N., Commutative Algebra, Addison-Wesley Puubl. Company, Reading, Massachusetts (1972).

12. Brockett, R., Some geometric questions in the theory of linear systems, IEEE Trans. on Automatic Control AC-21, 449-464 (1976).

13. Brockett, R., The geometry of the set of controllable systems, Res. Report of Aut. Contr. Lab., Nagoya University 24 (1977).

14. Brockett, R., The geometry of the partial realization problem, Proc. Conference on Decision and Control IEEE, New York (1978).

15. Brunovsky, P., A classification of linear controllable systems, Kibernetika 6, 176-188 (1970).

16. Bumby, R. and E. Sontag, Reachability does not imply coefficient assignability, Notices AMS (1978).

17. Byrnes, C., On the control of certain deterministic infinite dimensional systems by algebro-geometric techniques, Amer. J. Math. 100, 1333-1381 (1979).

18. Byrnes, C., Some geometric aspects of the output feedback problem, Lecture given at the NATO-AMS Adv. Study Institute and Summer Seminar on Algebraic and Geometric Methods in Linear System Theory, Harvard Univ., (June, 1979).

19. Byrnes, C. and P. Falb, Applications of algebraic geometry in system theory, Amer. J. Math. 101, 337-363 (1979).

20. Byrnes, C. and M. Gauger, Decideability criteria for the similarity problem, with applications to the moduli of linear dynamical systems, Adv. in Math. 25, 59-90 (1977).

21. Byrnes, C. and N. Hurt, On the moduli of linear dynamical systems, Adv. in Math. Supplementary Series, Studies in Analysis 4, 83-122 (1979).

22. Casti, J., Dynamical systems and their applications: linear theory, Math. in Science and Engineering 135, Academic Press, New York (1977).

23. Cauchy, A.L., Calculus des indices des fonctions, J. Ecole Polytech. 15, 176-229 (1937).

24. Chern, S.S., Complex Manifolds without Potential Theory, Van Nostrand Reinhold Company, New York (1967).

25. Clerk, J.M., The consistent selection of local coordinates in linear system identification, Proc. JACC, Purdue (1976).

26. Deligne, P., Equations Differentielles à Points Singuliers Réguliers, Lecture Notes in Math. 163, Springer-Verlag, Heidelberg (1970).

27. Dieudonne, J., Cours de Géométrie Algèbrique, Presses Universitaires de France, Paris (1974).

28. Eilenberg, S., Automata, Languages, and Machines, Vol. A, Academic Press, New York (1974).

29. Falb, P., Linear systems and invariants, Lecture Notes, Control Group, Lund University, Sweden (1974).

30. Fatou, P., Séries trigonométriques et séries de Taylor, Acta Math. 30, 335-400 (1906).

31. Fliess, M., Matrices de Hankel, J. Math. Pures Appl. 53, 197-224 (1974).

32. Fogarty, J., Invariant Theory, Benjamin, New York (1965).

33. Frobenius, G., Ueber Relationen zwischen den Näherungsbrüehen von Potensreihen, J. reine und angew. Math. 90, 1-17 (1881).

34. Frobenius, G., Ueber das Tragheitsgesetz quadratischen Formen, J. reine und angew. Math. 104, 187-230 (1895).

35. Fuhrmann, P., Algebraic system theory: An analyst's point of view, J. Franklin Inst. 301, 521-540 (1976).

36. Fuhrmann, P., On strict system equivalence and similarity, Int. J. Control 25, 5-10 (1977).

37. Fuhrmann, P., Linear feedback via polynomial models, Int. J. Control 30, 363-377 (1979).

38. Fuhrmann, P., Functional models, factorizations, and linear systems, Talks given at the NATO-AMS Adv. Study Inst. on Algebraic and Geometric Methods in Linear System Theory, Harvard Univ., (June, 1979).

39. Gantmacher, F.R., The Theory of Matrices, Vols. I and II, Chelsea, New York (1959).

40. Glover, K., Structural aspects of system identification, Ph.D. thesis, Dept. of Elect. Eng., M.I.T., Cambridge, Mass. (1973).

41. Grauert, H., Approximationssatze für holomorphe Funktionen mit Werten in komplexen Raumen, Math. Ann. 133, 139-159 (1957).

42. Grauert, H., Analytische Faserungen über holomorph-vollstandigen Raumen, Math. Ann. 135, 263-273 (1958).

43. Grauert, H. and H. Reckziegel, Hermitische Metriken und normale Familien holomorphen Abbildungen, Math. Zeitschrift 89, 108-125 (1965).

44. Griffiths, P. and J. Adams, Topics in Algebraic and Analytic Geometry, Mathematical Notes, Princeton Univ. Press, Princeton, N.J. (1974).

45. Griffiths, P. and J. Harris, Principles of Algebraic Geometry, Wiley, New York, (1978).

46. Grothendieck, A., Sur la classification des fibrés holomorphes sur la sphere de Riemann, Amer. J. Math. 79, 121-138 (1957).

47. Gunning, R., Lectures on Riemann Surfaces, Princeton Univ. Press, Princeton, N.J. (1966).

48. Gunning, R., Lectures on Vector Bundles over Riemann Surfaces, Princeton Univ. Press, Princeton, N.J. (1967).

49. Gunning, R. and H. Rossi, Analytic Functions of Several Complex Variables, Prentice-Hall, Englewood Cliffs, N.J. (1965).

50. Haboush, W.J., Reductive groups are geometrically reductive, Annals of Math. 102, 67-84 (1975).

51. Hanna, C., Decomposing algebraic vector bundles on the projective line, Proc. Amer. Math. Soc. 61, 196-200 (1976).

52. Hartshorne, R., Algebraic Geometry, GTM 52, Springer-Verlag, Heidelberg (1977).

53. Hazewinkel, M., Moduli and canonical forms for linear dynamical systems II: The topological case, Math. Systems Theory 10, 363-385 (1977).

54. Hazewinkel, M., Moduli and canonical forms for linear dynamical systems III: The algebraic geometric case, R. Hermann, C. Martin (editors), Proc. of the 1976 NASA-AMES Conf. on geometric control theory, Math. Sci. Press (1977).

55. Hazewinkel, M., On the (internal) symmetry groups of linear dynamical systems, P. Kramer, M. Dal-Cin (editors), Groups, systems and many-body physics, Vieweg (1979).

56. Hazewinkel, M., A partial survey of the uses of algebraic geometry in systems and control theory. To appear in Sym. Math. INDAM (Severi Centennial Conference, 1979), Academic Press.

57. Hazewinkel, M., (Fine) moduli (spaces) for linear systems: What are they and what are they good for, Lectures given at the NATO-AMS Study Inst. on Algebraic and Geometric Methods in Linear System Theory, Harvard Univ., (June, 1979).

58. Hazewinkel, M. and R. Kalman, On invariants, canonical forms and moduli for linear, constant, finite dimensional, dynamical systems, in Proc. CNR-CISM Symp. on Algebraic System Theory, Udine (1975), Lecture Notes in Economics Math. Syst. Theory 131, 48-60, Springer-Verlag, Heidelberg (1976).

59. Hazewinkel, H. and C. Martin, Symmetric groups, the specialization order, and systems, preprint (1980).

60. Hermann, R. and C. Martin, Applications of algebraic geometry to systems theory, Part I, IEEE Trans. on Automatic Control AC-22, 19-25 (1977).

61. Hermite, C., Sur le nombres de racines d'une equation algebrique comprise entre des limites donnes, J. reine und angewandte Math. 52, 39-51 (1856).

62. Heymann, M., Comments on "Pole assignment in multi-input controllable linear systems", IEEE Trans. on Automatic Control AC-13, 748-749 (1968).

63. Ho, B.L., An effective construction of realizations from input/output descriptions, Ph.D. thesis, Stanford University (1966).

64. Ho, B.L. and Kalman, R., Effective construction of linear state-variable models from input/output functions, Regelungstechnik 14, 545-548 (1966).

65. Hormander, L., Introduction to Complex Analysis in Several Variables, Van Nostrand, Princeton, N.J. (1966).

66. Horowitz, I., Synthesis of Feedback Systems, Academic Press, New York (1963).

67. Horowitz, I. and A. Gera, Blending of uncertain nonminimum-phase plants for elimination or reduction of nonminimum-phase property, Int. J. Systems Science 10, 1007-1024 (1979).

68. Horowitz, I. and U. Shaked, Superiority of transfer function over state variable methods in linear time-invariant feedback system designs, IEEE Trans. on Automatic Control AC-20, 84-97 (1975).

69. Horowitz, I. and M. Sidi, Optimum synthesis of nonminimum-phase feedback systems with parameter uncertainty, Int. J. Control 27, 361-386 (1978).

70. Hu, S.T., Homotopy Theory, Academic Press, New York and London (1959).

71. Humphreys, J., Linear Algebraic Groups, GTM 21, Springer-Verlag, Berlin and New York (1975).

72. Hurwitz, A., Über die Bedingungen unter welchen eine Gleichung nur Wurzeln mit negativen reelen Teilen besitz, Math. Ann. 52, 273-284 (1895).

73. Isidori, A. and A.J. Krener, Non-linear decoupling via feedback: A differential geometric approach, preprint (1979).

74. Jacobs, O.L., Introduction to Control Theory, Clarendon Press, Oxford (1974).

75. Kalman, R.E., Lectures on controllability and observability, Centro Internazionale Matematico Estivo Summer Course 1968, Cremonese, Rome.

76. Kalman, R.E., Pattern recognition properties of multilinear machines, IFAC Symposium, Yereyan, Armenian SSR (1968).

77. Kalman, R.E., On minimal partial realizations of an input/output map. In Aspects of Network and System Theory (edited by R. Kalman and N. DeClaris), Holt, Rinehart, and Winston, Inc., New York, 385-407 (1971).

78. Kalman, R.E., Kronecker invariants and feedback. In Ordinary Differential Equations (edited by L. Weiss), Academic Press, New York (1972).

79. Kalman, R.E., Algebraic geometric description of the class of linear systems of constant dimension, 8th Annual Princeton Conference on Information Sciences and Systems, Princeton, N.J., (March, 1974).

80. Kalman, R.E., System theoretic aspects of the theory of invariants, unpublished manuscript (1974).

81. Kalman, R.E., On partial realizations, transfer functions, and canonical forms, Acta Polytechnica Scandinavica 31, 9-32 (1979).

82. Kalman, R.E., M. Arbib and P. Falb, Topics in Mathematical System Theory, McGraw-Hill, New York,(1965).

83. Kamen, E., An operator theory of linear functional differential equations, J. Diff. Equations 27, 274-297 (1978).

84. Kimura, H., Pole assignment by gain output feedback, IEEE Trans. on Automatic Control AC-20, 509-516 (1975).

85. Kimura, H., A further result on the problem of pole assignment by output feedback, IEEE Trans. on Automatic Control AC-22, 458-463 (1977).

86. Kleiman, S., Geometry on Grassmannians and applications to splitting bundles and smoothing cycles, I.H.E.S. Pub. Math. 36 (1969).

87. Kleiman, S. and D. Laksov, Shubert calculus, Amer. Math. Monthly 79, 1061-1082 (1972).

88. Kobayashi, S., Hyperbolic Manifolds and Holomorphic Mappings, Marcel Dekker, New York (1970).

89. Kraft, H., Geometrische Methoden in der Invariantentheorie, Notes to a course given at the University of Bonn during the winter semester 1977-78.

90. Kraft, H. and C. Procesi, Closures of conjugacy classes of matrices are normal, Invent. Math. 53, 227-247 (1979).

91. Lang, S., Algebra, Addison-Wesley, Reading, Massachusetts (1971).

92. Langenhop, C., On the stabilization of linear systems, Proc. Amer. Math. Soc. 15, 735-742 (1964).

93. Luenberger, D.G., Introduction to Dynamic Systems, John Wiley and Sons, New York (1979).

94. Luna, D., Sur les orbites fermées des groupes algébriques réductifs, Invent. Math. 16, 1-5 (1972).

95. Lyapunov, A.M., Probleme général de les stabilité du mouvement, Ann. Fac. Sci. Toulouse 9, 203-474 (1907). (Reprinted in Ann. Math. Study No. 17, Princeton Univ. Press, Princeton, N.J. (1949).)

96. Mac Duffee, C.C., The Theory of Matrices, Chelsea, New York (1946).

97. Marden, M., The Geometry of the Zeros, Mathematical Surveys No. III, Amer. Math. Soc., New York (1949).

98. Martin, C. and R. Hermann, Applications of algebraic geometry to systems theory: The Mc Millan degree and Kronecker indices of transfer functions as topological and holomorphic invariants, SIAM J. Control and Optimization 16, 743-755 (1978).

99. Massey, W.S., Algebraic Topology: An Introduction, Harcourt, Brace and World, Inc., New York (1967).

100. Maxwell, J.C., On governors, Proc. Royal Soc. of London 16, 270-283 (1867/68).

101. Milnor, J., On the betti numbers of real varieties, Proc. Amer. Math. Soc. 15, 275-280 (1964).

102. Mislin, G., Finitely dominated nilpotent spaces, Ann. of Math. (2) 103, 547-556 (1976).

103. Morrow, J. and K. Kodaira, Complex Manifolds, Holt, Reinhart, and Winston, Inc., New York (1971).

104. Mumford, D., Geometric Invariant Theory, Ergeb. Math. Bol. 34, Springer-Verlag, Berlin and New York (1965).

105. Mumford, D., Lectures on Curves on an Algebraic Surface, Annals of Math. Studies 59, Princeton Univ. Press, Princeton, N.J. (1966).

106. Mumford, D., Introduction to Algebraic Geometry, Notes from Harvard Univ., Cambridge, Massachusetts.

107. Mumford, D., Algebraic geometry I: Complex projective varieties, Grundlehren der math. Weissenschaften 221, Springer-Verlag, Heidelberg (1976).

108. Mumford, D. and K. Suominen, Introduction to the theory of moduli, Proc. 5th Nordic Summer School in Math., Oslo, 1970 (edited by F. Oort), Wolters-Noordhoff, Groningen, 171-222 (1972).

109. Nagata, M., Lectures on the 14th problem of Hilbert, Tata Inst. of Fundamental Research Lecture Notes 31, Bombay (1965).

110. Narasimhan, Several Complex Variables, University of Chicago Press, Chicago and London (1971).

111. Nerode, A., Linear automaton transformations, Proc. Amer. Math. Soc. 9, 541-544 (1958).

112. Nevanlinna, R., Über beschrankte Funktionen, die in gegebenen Punkten vorgeschriebene Werte annehmen, Ann. Acad. Sci. Fenn. 13, No. 1 (1919).

113. Perron, O., Die Lehre von den Kettenbrüchen, Teubner, Leipzig (1913).

114. Pick, G., Über die Beschränkungen analytischer Funktionen, welche durch vorgegebenen Funktionswerte bewiskt sind, Math. Ann. 77, 7-23 (1916).

115. Popov, V.M., Invariant description of linear time-invariant controllable systems, SIAM J. Control 10, 252-264 (1972).

116. Quillen, D., Projective modules over polynomial rings, Inv. Math. 36, 167-171 (1976).

117. Richardson, R., Principal orbit types for algebraic transformation spaces in characteristic zero, Inv. Math. 16, 6-14 (1972).

118. Rosenbrock, H.H., State-space and Multivariable Theory, Nelson and Sons Ltd., London (1970).

119. Rouchaleau, Y., Linear, discrete time, finite dimensional dynamical systems over some classes of commutative rings, Ph.D. thesis, Stanford (1972).

120. Rouchaleau, Y. and E. Sontag, On the existence of minimal realizations of linear dynamical systems over Noetherian integral domains, J. Computer and System Sciences 18, 65-75 (1979).

121. Rouchaleau, Y. and B. Wyman, Linear dynamical systems over integral domains, J. Comput. Syst. Sci. 9, 129-142 (1975).

122. Rouchaleau, Y., B. Wyman and R. Kalman, Algebraic structure of linear dynamical systems III. Realization theory over a commutative ring, Proc. Nat. Acad. Sci. (USA) 69, 3404-3406 (1972).

123. Routh, E.J., Stability of a Given State of Motion, MacMillan, London (1877).

124. Segal, G., The topology of spaces of rational functions, Acta Mathematica 143, 39-72 (1979).

125. Serre, J.-P., Faisceaux algébriques cohérents, Ann. of Math. 61, 197-278 (1955).

126. Serre, J.-P., Géométrie algebrique et géométrie analytique, Ann. Inst. Fourier 6, 1-42 (1956).

127. Serre, J.-P., Algèbre Locale-Multiplicités, Lecture Notes in Math. 11, Springer-Verlag, Heidelberg (1965).

128. Serre, J.-P., Corps Locaux, Hermann, Paris (1968).

129. Seshadri, C.S., Triviality of vector bundles over the affine space K^2, Proc. Nat. Acad. Sci. U.S.A. 44, 456-458 (1958).

130. Seshadri, C.S., Mumford's conjecture for GL(2) and applications, in Algebraic Geometry (edited by S. Abhyankar) 347-371, Oxford University Press, London (1969).

131. Seshadri, C.S., Quotient spaces modulo-reductive algebraic groups, Ann. of Math. 95, 511-556 (1972).

132. Seshadri, C.S., Theory of moduli, Proc. A.M.S. Summer Inst. (Arcata), Amer. Math. Soc. Proc. Symp. Pure Math. 29, 263-304 (1975).

133. Silverman, L., Representation and realization of time-variable linear systems, Ph.D. thesis, Columbia Univ. (1966).

134. Silverman, L., Realization of linear dynamical systems, IEEE Trans. on Automatic Control AC-16, 554-567 (1971).

135. Simha, R., On the complement of a curve on a Stein space of dimension two, Math. Zeitschriff 82, 63-66 (1963).

136. Singer, I. and J. Thorpe, Lecture Notes on Elementary Topology and Geometry, Scott, Foresman and Co., Glenview, Illinois (1967).

137. Sontag, E., Linear systems over commutative rings: A survey, Ricerche di Automatica 7, 1-34 (1976).

138. Sontag, E., On split realizations of response maps over rings, Inf. and Control 37, 23-33 (1978).

139. Sontag, E., Polynomial response maps, Lecture Notes in Control and Information Sciences 13, Springer-Verlag, Heidelberg (1979).

140. Sontag, E., On the observability of polynomial systems I: Finite-time problems, SIAM J. Control and Optimization 17, 139-151 (1979).

141. Sontag, E. and Y. Rouchaleau, On discrete-time polynomial systems, J. Nonlinear Analysis, Methods. Theory, and Applications 1, 55-64 (1976).

142. Spanier, E.H., Algebraic Topology, McGraw-Hill, New York (1969).

143. Steenrod, N., The Topology of Fibre Bundles, Princeton Mathematical Series 14, Princeton University Press, Princeton, N.J. (1951).

144. Suslin, A., Projective modules over a polynomial ring, Dokl. Akad. Nauk. SSSR 26 (1976).

145. Sussmann, H., Existence and uniqueness of minimal realizations of nonlinear systems, Math. Systems Theory 10, 263-284 (1976/1977).

146. Tannenbaum, A., Feedback stabilization of linear dynamical plants with uncertainty in the gain factor, Int. J. Control 32, 1-16 (1980).

147. Tannenbaum, A., The blending problem and parameter uncertainty in control theory, preprint (1980).

148. Tannenbaum, A., Geometric invariants of linear systems, preprint (1980).

149. Walsh, J.L., Interpolation and approximation by rational functions in the complex domain, A.M.S. Colloquium Publications 20, Fourth Edition (1965).

150. Wang, S. and E. Davison, Canonical forms of linear multivariable systems, SIAM J. Control and Optimization 14, 236-250 (1976).

151. Wells, R.O., Differential Analysis on Complex Manifolds, Prentice-Hall, Inc., Englewood Cliffs, N.J. (1973).

152. Wonham, W.M., On pole assignment in multi-input controllable linear systems, IEEE Trans. on Automatic Control AC-12, 600-665 (1967).

153. Yeno, K. and S. Ishihara, Tangent and Cotangent Bundles, Marcel-Dekker, Inc., New York (1973).

154. Youla, D., J. Bongiorno and C. Lu, Single-loop feedback — stabilization of linear multivariable dynamic plants, Automatica 10, 159-173 (1974).

155. Youla, D. and M. Saito, Interpolation with positive-real functions, Journal of the Franklin Institute 284, 77-108 (1967).

156. Zariski, O. and P. Samuel, Commutative Algebra (Vols. I, II), Van Nostrand, Princeton, N.J. (1958),(1960).

157. Zeheb, E. and A. Lempel, Interpolation in the network sense, IEEE Trans. on Circuit Theory CT-13, 118-119 (1966).

INDEX