# Edward J. Davison

### List of Publications

### Notation:

$(\mathbf{J})$	Journal paper with referee review system
(C)	Conference paper with referee review system
(Corr)	Correspondence paper with referee review system
(CA)	Conference paper accepted by abstract only
(CH)	Chapter contributed in book
(O)	Other

# 1965

1. (C) Davison, E.J., "An automatic way of finding 'optimal' control systems for large multi-variable plants", *Proc IFAC Tokyo Symposium*, August 1965, pp 357-373.

# 1966

- 2. (J)<sup>1</sup> Davison, E.J., "A method for simplifying linear dynamic systems", *IEEE Trans on Automatic Control*, vol AC-11, no 1, January 1966, pp 93-101.
- 3. (C) Davison, E.J., "A numerical method of finding the poles and zeros of a control system", *Proc 3rd Congress of IFAC*, June 1966, London, pp 1B.1-1B.7.
- 4. (O) Davison, E.J., Cowan, K., "Functional optimization by Rosenbrock's method of hillclimbing", *SHARE Library*, no 3466, December 1966.

- 5. (Corr) Chidamabara, M.R., Davison, E.J., "On a 'method for simplifying linear dynamic systems", *IEEE Trans on Automatic Control*, vol AC-12, no 1, February 1967, pp 119-121.
- (J) Davison, E.J., "The stability of certain classes of differential equations", *IEEE Trans on Automatic Control*, vol AC-12, no 1, February 1967, pp 118-119.
- 7. (J) Davison, E.J., "Reality of eigenvalues for a class of real unsymmetric matrices", *Matrix* and *Tensor Quarterly*, vol 17, no 3, March 1967, pp 96-101.
- 8. (Corr) Chidamabara, M.R., Davison, E.J., "Further remarks on simplifying linear dynamic systems", *IEEE Trans on Automatic Control*, vol AC-12, no 2, April 1967, pp 213-214.
- 9. (J) Davison, E.J., "Reality of eigenvalues for a class of real unsymmetric matrices", *Matrix* and *Tensor Quarterly*, vol 17, no 4, June 1967, pp 137-140.

<sup>&</sup>lt;sup>1</sup>This paper has been identified as being one of the most cited items in its field according to data taken from *Science Citation Index (SCI)* and has appeared in the Citation Classics section of *Current Contents (CC)*: Engineering, Technology and Applied Sciences, April 25, 1983, vol 14, no 17, p 20.

- 10. (Corr) Davison, E.J., Siljak, D.D., "A note on the parameter plane in the design of control systems", *IEEE Trans on Automatic Control*, vol AC-12, no 3, June 1967, pp 343-344.
- 11. (J) Davison, E.J., "Control of a distillation column with pressure variations", *Trans Instn Chem Engrs*, vol 45, no 6, July-August 1967, pp 228-250.
- (J) Davison, E.J., "A high order Crank-Nicholson technique for solving differential equations", *Computer Journal*, vol 10, no 2, August 1967, pp 195-197.
- 13. (J) Davison, E.J., "Reality of eigenvalues for a class of real unsymmetric matrices", *Matrix* and *Tensor Quarterly*, vol 13, no 1, September 1967, pp 15-16.
- 14. (J) Davison, E.J., "The stability of nonlinear time-varying system", *IEEE Trans on Auto*matic Control, vol AC-12, no 5, October 1967, pp 627-628.
- (J) Davison, E.J., Varaiya, P.P., Silverman, L.M., "Controllability of a class of nonlinear time-variable systems", *IEEE Trans on Automatic Control*, vol AC-12, no 6, December 1967, pp 791-792.
- 16. (Corr) Chidamabara, M.R., Davison, E.J., "Further comments on 'A method for simplifying linear dynamic systems", *IEEE Trans on Automatic Control*, vol AC-12, December 1967, pp 799-800.
- 17. (J) Davison, E.J., "The identification of parameters in large linear dynamic systems", *International J of Control*, vol 5, no 2, 1967, pp 123-130.

- (J) Davison, E.J., "The numerical solution of large systems of linear differential equations", AIChE Journal, vol 14, no 1, January 1968, pp 46-50.
- 19. (CA) Davison, E.J., Monro, D.M., "A computation technique for finding time optimal controls", *Hawaii International Conference on System Sciences*, January 1968, pp 341-344.
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- 22. (J) Davison, E.J., "Some sufficient conditions for the stability of a linear time-varying system", *International J of Control*, vol 7, no 4, April 1968, pp 377-380.
- 23. (J) Davison, E.J., "A new method for simplifying large linear dynamic systems", *IEEE Trans on Automatic Control*, vol AC-13, no 2, April 1968, pp 214-215.
- 24. (J) Davison, E.J., "Application of the describing function technique in a single loop feedback system with two nonlinearities", *IEEE Trans on Automatic Control*, vol AC-13, no 2, April 1968, pp 168-170.
- 25. (J) Davison, E.J., "The simplification of large linear systems", *Control*, May 1968, pp 418-419.

- 26. (J) Davison, E.J., Man, F.T., "The numerical solution of  $\underline{A}'\underline{Q} + \underline{Q}\underline{A} = -C$ ", *IEEE Trans* on Automatic Control, vol AC-13, no 4, August 1968, pp 448-449.
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- 29. (J) Davison, E.J., Man, F.T., "Stability conditions for an *n*th-order nonlinear time-varying differential system", *IEEE Trans on Automatic Control*, vol AC-13, no 6, December 1968, pp 723-724.
- 30. (J) Davison, E.J., Wonham, W.M., "On pole assignment in linear multivariable systems", *IEEE Trans on Automatic Control*, vol AC-13, no 6, December 1968, pp 747-748.

- 31. (CA) Davison, E.J., "On pole assignment in linear systems with incomplete state feedback", 2nd Hawaii Conference on Systems, January 1969, pp 301-304.
- 32. (J) Davison, E.J., Alas, R., "Numerical optimization of large interconnected systems", *AIChE Journal*, vol 15, no 2, March 1969, pp 276-281.
- 33. (J) Davison, E.J., Cowan, K., "A computational method for determining the stability region of a second-order nonlinear autonomous system", *International J of Control*, vol 9, no 3, March 1969, pp 349-357.
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- 35. (C) Davison, E.J., "A nonminimum phase index and its application to interacting multivariable control systems", *IFAC IVth Congress*, Warsaw, June 1969, Paper no 61.1, pp 1-21.
- 36. (J) Davison, E.J., "The stability of a second order linear periodic system", *Trans ASME*, *Series D Journal of Basic Engineering*, vol 91, no 2, June 1969, pp 207-210.
- (C) Davison, E.J., Monro, D.M., "A computational technique for finding time optimal controls of nonlinear time-varying systems", *JACC 1969*, Colorado, August 1969, pp 270-280.
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- (CA) Davison, E.J., Chadha, K.J., "On the control of large linear constant systems: Example of a chemical plant", *Third Hawaii International Conference on System Sciences*, January 14-16, 1970, pp 622-625.
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- 44. (J) Davison, E.J., Ramesh, N., "A note on the eigenvalues of a real matrix", *IEEE Trans* on Automatic Control, vol AC-15, no 2, April 1970, pp 252-253.
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- 47. (J) Davison, E.J., "A computational method for finding the zeros of a multivariable linear time invariant system", *Automatica*, vol 6, May 1970, pp 481-484.
- 48. (J) Davison, E.J., "On pole assignment in linear systems with incomplete state feedback", *IEEE Trans on Automatic Control*, vol AC-15, no 3, June 1970, pp 348-351.
- 49. (C) Quintana, V.H., Davison, E.J., "A time-weighted gradient method for computing optimal controls", *JACC*, Georgia, June 1970, pp 43-50.
- 50. (C) Davison, E.J., Kurak, E.M., "A computational method for determining quadratic Lyapunov functions for nonlinear systems", *JACC 1970*, Georgia, June 1970, pp 57-65.
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- 76. (J) Davison, E.J., "The output control of linear time-invariant multivariable systems with unmeasurable arbitrary disturbances", *IEEE Trans on Automatic Control*, vol AC-17, no 5, October 1972, pp 621-630.
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- 89. (CA) Wang, S.H., Davison, E.J., "Design of non-interacting controls using output feedback – A frequency domain approach", 7th Annual Princeton Conference on Information Sciences & Systems, Princeton, NJ, March 1973, pp 232-235.
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- 91. (CA) Davison, E.J., "The generalized servomechanism problem", 3rd Soviet All-Union Conference on Multivariable Systems, Moscow, USSR, April 9-13, 1973, (invited paper).
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<sup>&</sup>lt;sup>2</sup>This paper was chosen for honourable mention amongst the papers published in the *IEEE Trans on Automatic Control*, vol AC-18 (1973) and vol AC-19 (1974).

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- 100. (CA) Davison, E.J., "The decentralized stabilization and control of a class of unknown nonlinear time-varying systems", 11th Annual Allerton Conference on Circuit & System Theory, October 1973, pp 790-797.
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- 114. (J) Davison, E.J., Wang, S.H., "New results on the controllability and observability of general composite systems", *IEEE Trans on Automatic Control*, vol AC-20, no 1, 1975, pp 123-128.
- 115. (J) Davison, E.J., Wong, P., "A robust conjugate-gradient algorithm which minimizes Lfunctions", Automatica, vol 11, no 3, 1975, pp 297-308.
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- 129. (C) Davison, E.J., "Multivariable tuning regulators: The feedforward and robust control of a general servomechanism problem", *IEEE Control & Decision Conference*, December 1975, pp 180-187.
- 130. (C) Davison, E.J., "The robust decentralized control of a general servomechanism problem", IEEE Control & Decision Conference, December 1975, pp 815-821.
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- 133. (CH) Davison, E.J., Cross, W.G., "An algorithm for the simulation of very large dynamic composite systems", in *Recent Contributions to Large Scale Systems*, (ed: R. Saeks), Point Lobos Press, 1976, pp 240-255.
- 134. (Corr) Axelby, G., Davison, E.J., "On the computation of transmission zeros of linear multivariable systems", *Automatica*, vol 12, no 5, 1976, pp 533-534.
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