
REFERENCES

Arkin Y., and S. Ramakrishnan (1983), "Bounds of the Optimum Quadratic Cost of Structure Constrained Regulators", IEEE Trans. Automatic Control, AC-28, 924-927.

Bar-Ness Y., and A. Halbersberg (1980), "Solution of the Singular Discrete Regulator Problem Using Eigenvector Methods", Int. J. Control, Vol.31, 615-625.

Basar T. (1974), "A Counter Example in Linear-Quadratic Games: Existence of Non-Linear Nash Strategies", J. of Optimazition Theory ond Application, 14, 425-430.

Belanger P., and T. McGillivray (1976), "Computational Experience with the Solution of the Matrix Lyapunov Equatation", IEEE Trans. Automatic Control, AC-21, 799-800.

Bertrand P. (1985), "A Homotopy Algorithm for Solving Coupled Riccati Equations", Optimal Control Applications and Methods, 6, 351-357.

Blankenship G. (1981), "Singularly Perturbed Difference Equations in Optimal Control Problems", IEEE Trans. Automatic Control, Vol. AC-26, 911-917.

Butuzov V. and A. Vasileva (1971), "Differential and Difference Equation Systems with a Small Parameter for the Case in which the Unperturbed (Singular) System is in the Spectrum", J. Differential Equations, Vol.6, 499-510.

Calise A., and D. Moerder (1985), "Optimal Output Feedback Design of Systems with Ill-Conditioned Dynamics", Automatica, 21, 271-276.

Chang K. (1972), "Singular Perturbations of a General Boundary Value Problem", SIAM J. Math. Anal. 3, 520-526.

- Chemouil P., and A. Wahdam (1980), "Output Feedback Control of System with Slow and Fast Modes", *J. Large Scale Systems*, 1, 257-264.
- Chow J. et al., (1982), "Time Scale Modeling of Dynamic Networks", Springer-Verlag, Lecture Notes in Control and Information Sciences, Vol. 47, 1982.
- Chow J., and P. Kokotović (1976), "A Decomposition of Near-Optimum Regulators for Systems with Slow and Fast Modes", *IEEE Trans. Automatic Control*, AC-21, 701-705.
- Cruz J. Jr., and C. Chen (1971), "Series Solution of Two-Person, Nonzero-Sum, Linear Quadratic Differential Games", *J. of Optimization Theory and Applications*, 7, 240-257.
- Delacour J., M. Darwish and J. Fantin (1978), "Control Strategies of Large-Scale Power Systems", *Int. J. Control*, 27, 753-767.
- Elgard I. O., and E. C. Fosha (1970), "Optimum Megawatt-Frequency Control of Multiarea Electric Energy Systems", *IEEE Trans. Power Apparatus and Systems*, PAS-89, 556-563.
- Fosha E. C., and I. O. Elgard (1970), "The Megawatt-Frequency Control Problem: A New Approach via Optimal Control Theory", *IEEE Trans. Power Apparatus and Systems*, PAS-89, 563-578.
- Fossard A., and J. Magni (1980), "Frequential Analysis of Singularly Perturbed Systems with State or Output Control", *J. Large Scale Systems*, 1, 223-228.
- Gajić Z. (1986), "Numerical Fixed Point Solution of Linear Quadratic Gaussian Control Problem for Singularly Perturbed Systems", *Int. J. Control*, 43, 373-387.
- Gajić Z., Dj. Petkovski and N. Harkara (1989), "The Recursive Algorithm for the Optimal Static Output Feedback Control of Linear Singularly Perturbed Systems", *IEEE Trans. Automatic Control*, AC-34, 465-468.
- Gajić Z., and N. Rayavarupu (1989), "The Recursive Methods for Singularly Perturbed and Weakly Coupled Linear Steady State Control Problems", (submitted for publication).

Gajić Z., and X. Shen (1989a), "Decoupling Transformation for Weakly Coupled Linear Systems", *Int. J. Control*, Vol.50, 1515-1521.

Gajić Z., and X. Shen (1989b), "Study of the Discrete Singularly Perturbed Linear-Quadratic Control Problem by a Bilinear Transformation", *IEEE Trans. Automatic Control*, to appear.

Gajić Z., and X. Shen (1989c), "Parallel Reduced-Order Controllers for Stochastic Linear Singularly Perturbed Discrete Systems", submitted for publication).

Geromel J., and P. Peres (1985), "Decentralized Load-Frequency Control", *IEE Proceedings*, 132, Pt. D., 225-230.

Grodz T., and Z. Gajić (1988), "The Recursive Reduced Order Numerical Solution of the Singularly Perturbed Differential Riccati Equation", *IEEE Trans. Automatic Control*, AC-33, 751-754.

Haddad A. (1976), "Linear Filtering of Singularly Perturbed Systems", *IEEE Trans. Automatic Control*, AC-21, 515-519.

Haddad A., and P. Kokotović (1977), "Stochastic Control of Linear Singularly Perturbed Systems", *IEEE Trans. Automatic Control*, AC-22, 815-821.

Harkara N., Dj. Petkovski and Z. Gajić (1989), "The Recursive Algorithm for Optimal Output Feedback Control Problem of Linear Weakly Coupled Systems", *Int. J. Control*, Vol.50, 1-11.

Hemker P. (1983), "Numerical Aspects of Singular Perturbation Problems", in "Asymptotic Analysis II", *Lecture Notes in Mathematics*, 985, 267-287, Springer, New York.

Hoppensteadt F., and W. Miranker. (1977) "Multitime Methods for Systems of Difference Equations", *Studies Appl. Math.* Vol.56, 273-298.

Ishimatsu T., A. Mohri and M. Takata (1975), "Optimization of Weakly Coupled Systems by a Two-Level Method", *Int. J. Control*, 22, 877-882.

IEEE Committee Report (1968), "Computer Representation of Excitation System", *IEEE Trans. Power Apparatus and Systems*, PAS-87, 1460-1466.

Jamshidi M. (1980), "An Overview on the Solution of the Algebraic Matrix Riccati Equation and Related Problems", *J. Large Scale Systems*, 167-192.

Kato T. (1980), "Perturbation Theory of Linear Operators", Springer-Verlag, New York.

Kautsky J., N. Nichols and P. Van Douren, (1985), "Robust Pole Assignment in Linear State Feedback", *Int. J. Control*, Vol.41, 1129-1155.

Kenney C., and R. Leipnik (1985), "Numerical Integration of the Differential Matrix Riccati Equation", *IEEE Trans. Automatic Control*, AC-30, 962-970.

Khalil H. (1980), "Approximation of Nash Strategies", *IEEE Trans. Automatic Control*, AC-25, 247-250.

Khalil H. (1981), "On the Robustness of Output Feedback Control Methods to Modeling Errors", *IEEE Trans. Automatic Control*, AC-26, 524-526.

Khalil H. (1987), "Output Feedback Control of Linear Two-Time Scale Systems", *IEEE Trans. Automatic Control*, AC-32, 784-792.

Khalil H., and Z. Gajić (1984), "Near Optimum Regulators for Stochastic Linear Singularly Perturbed Systems", *IEEE Trans. Automatic Control*, AC-29, 531-541.

Khalil H., and P. Kokotović (1978), "Control Strategies for Decision Makers Using Different Models of the Same System", *IEEE Trans. Automatic Control*, AC-23, 289-298.

Khorasani K. and M. Azimi-Sadjadi (1987), "Feedback Control of Two-Time Scale Block Implemented Discrete-Time Systems", *IEEE Trans. Automatic Control*, Vol. AC-32, 69-73.

Kokotović P., J. Allemong, J. Winkelman, and J. Chow (1980), "Singular Perturbations and Iterative Separation of the Time Scales", *Automatica*, 16, 23-33.

Kokotović P., and H. Khalil (1986), "Singular Perturbations in Systems and Control" IEEE Press.

Kokotović P., H. Khalil and J. O'Reilly (1986), "Singular Perturbation Methods in Control: Analysis and Design", Academic Press.

Kokotović P., W Perkins, J. Cruz Jr., and D'Ans (1969), " ϵ -Coupling for Near-Optimum Design of Large Scale Linear Systems", Proceeding IEE, 116, 889-992.

Kokotović P., and G. Singh (1971), "Optimization of Coupled Nonlinear Systems", Int. J. Control, 14, 51-64.

Kokotović P., and R. Yackel (1972), "Singular Perturbation of Linear Regulators: Basic Theorems", IEEE Trans. Automatic Control, AC-17, 29-37.

Kondo R., and K. Furuta, (1986), "On the Bilinear Transformation of Riccati Equations", IEEE Trans. Automatic Control, AC-31, 50-54.

Kučera V. (1972), "A Contribution to Matrix Quadratic Equations", IEEE Trans. Automatic Control, AC-17, 344-347.

Kwakernaak H., and R. Sivan (1972), "Linear Optimal Control Systems", Wiley-Interscience, New York.

Lancaster P., and M. Tismenetsky (1985), "The Theory of Matrices", Academic Press, Orlando.

Lapidus L. and N. R. Amundson (1950), "Stagewise Absorption and Extraction Equilibrium", Ind. Engng. Chem. 42, 1071-1076.

Lapidus et.al. (1961), "Optimization of Process Performance". A.I.Ch.E.I. 7, 288-294.

Lee H. (1989), "Recursive Reduced-Order Approach to the Differential Games with Small Parameters", Ph. D. Dissertation in progress, Rutgers University.

Levine W., and M. Athans (1970), "On the Determination of the Optimal Constant Output Feedback Gains for Linear Multivariable Systems", IEEE Trans. Automatic Control, AC-15, 44-48.

Levine W., T. Johnson and M. Athans (1971). "Optimal Limited State Variable Feedback Controllers for Linear Systems". IEEE Trans. Automatic Control, AC-16, 785-793.

Li T-Y., and Z Gajić (1989), "An Iterative Method for Finding Nonnegative Definite Stabilizing Solutions of Coupled Algebraic Riccati Equations", (submitted for publication).

Litkouhi B. (1983). "Sampled-Data Control of Systems with Slow and Fast Models". Ph. D. Dissertation, Michigan State University.

Litkouhi B., and H. Khalil (1984), "Infinite-Time Regulators for Singularly Perturbed Difference Equations". Int. J. Control, Vol.39, 587-598.

Litkouhi B., and H. Khalil (1985), "Multirate and Composite Control of Two-Time-Scale Discrete Systems". IEEE Trans. Automatic Control, Vol. AC-30, 645-651.

Mahmoud M. (1986). "Stabilization of Discrete Systems with Multiple-Time Scales". IEEE Trans. Automatic Control, Vol. AC-31, 159-162.

Mahmoud M. (1978), "A Quantitive Comparson Between Two Decentralized Control Approaches", Int. J. Control, 28, 261-275.

Mahmoud M. (1982), "Order Reduction and Control of Discrete Systems", Proc, IEE, Vol.129, Pt.D, 129-135.

Mahmoud M., Y. Chen and M. Singh (1986), "Discrete Two-Time-Scale Systems". Int. J. Systems Science, Vol.17, 1187-1207.

Makila P., and H. Toivonen (1987), "Computational Methods for Parametric LQ Problems - A Survey". IEEE Trans. Automatic Control, AC-32, 658-671.

Mendel J. (1974), "A Concise Derivation of Optimal Limited State Feedback Gains", IEEE Trans. Automatic Control, 19, 447-448.

Miranker W. (1981), "Numerical Methods for Stiff Equations". D. Reidel Publishing Company, Holland.

Moerder D., and A. Calise (1985a). "Convergence of a Numerical Algorithm for Calculating Optimal Output Feedback Gains", IEEE Trans. Automatic Control, AC-30, 900-903.

Moerder D., and A. Calise (1985b). "Two-Time Scale Stabilization of Systems with Output Feedback". J. Guidance, 8, 731-736.

Molen C., and C. van Loan, (1978), "Nineteen Dubious Ways to Compute the Exponential of a Matrix". SIAM Review, 20, 801-836.

Naidu D., and Rao (1985). "Singular Perturbation Analysis of Discrete Control Systems". Lecture Notes in Mathematics, Vol. 1154, Springer Verlag, Berlin.

Oloomi H., and M. Sawan, (1987), "The Observer-Based Controller Design of Discrete-Time Singularly Perturbed Systems". IEEE Trans. Automatic Control, Vol. AC-32, 246-248.

Ortega J., and W. Rheinboldt (1970). "Iterative Solution of Nonlinear Equations on Several Variables", Academic Press, New York.

Ozguner U., and W. Perkins (1977), "A Series Solution to the Nash Strategies for Large Scale Interconnected Systems". Automatica, 13, 313-315.

Papavassilopoulos G., J. Medanić, and J. Cruz Jr. (1979), "On the Existence of Nash Strategies and Solutions to Coupled Riccati Equations in Linear-Quadratic Games". J. of Optimization Theory and Applications, 28, 49-75.

Papavassilopoulos G., and P. Olsder (1984). "On the Linear-Quadratic Closed-Loop, No Memory Nash Games". J. of Optimization Theory and Applications, 42, 551-560.

Petkov P., N. Christov, and M. Konstantinov (1986). "A Computational Algorithm for Pole Assignment of Linear Multiinput Systems". IEEE Trans. Automatic Control, Vol. AC-31, 1044-1047.

Petkovski Dj. (1981). "Design of Decentralized Proportional-Plus-Integral Controllers for Multivariable Systems". Computers and Chemical Engineering, 5, 51-56.

Petkovski Dj., and M. Rakić (1978), "On the Calculation of Optimum Feedback Gains for Output Constrained Regulators", IEEE Trans. Automatic Control, AC-23, 760.

Petkovski Dj., and M. Rakić (1979), "A Series Solution of Feedback Gains for Output Constrained Regulators", Int. J. Control, 30, 661-669.

Petrović B., and Z. Gajić (1988), "Recursive Solution of Linear-Quadratic Nash Games for Weakly Interconnected Systems", J. Optimization Theory and Applications, 56, 463-477.

Phillips R. (1980), "Reduced Order Modeling and Control of Two Time Scale Discrete Control Systems", Int. J. Control, Vol. 31, 761-780.

Power H. (1967), "Equivalence of Lyapunov Matrix Equations for Continuous and Discrete Systems", Electronic Letters, Vol.3, 83.

Sezar M., and D. Šiljak (1986), "Nested ϵ -Decomposition and Clustering of Complex Systems", Automatica, 22, 321-331.

Shen X., and Z. Gajić (1989a), "Near-Optimum Steady State Regulators for Stochastic Linear Weakly Coupled Systems", Automatica, to appear.

Shen X., and Z. Gajić (1989b), "Optimal Reduced Order Solution of the Weakly Coupled Discrete Riccati Equation", IEEE Trans. Automatic Control, to appear.

Shen X., and Z. Gajić (1989c), "Near-Optimum Steady State Regulators for Stochastic Linear Weakly Coupled Discrete Systems", (submitted for publication).

Shen X. (1989), "Near-Optimum Reduced-Order Stochastic Control of Linear Discrete and Continuous Systems with Small Parameters", Ph.D Dissertation, Rutgers University.

Starr A., and Y. Ho (1989) "Nonzero-Sum Differential Games", J. Optimization Theory and Applications, 3, 49-79.

Stewart (1973), "Introduction to Matrix Computations", Academic Press.

Su W-C., and Z. Gajić (1989), "Reduced-Order Solution to the Finite Time Optimal Control Problems of Linear Weakly Coupled Systems", (submitted for publication).

Teneketzis D., and N. Sandell (1977), "Linear Regulator Design for Stochastic Systems by Multiple Time-Scale Method", IEEE Trans. Automatic Control, AC-22, 615-621.

Toivonen H. (1985), "A Globally Convergent Algorithm for the Optimal Constant Output Feedback Problem". Int. J. Control, 41, 1589-1599.

Washburn H., and J. Mendel (1980), "Multistage Estimation of Dynamical and Weakly Coupled Systems in Continuous-Time Linear Systems", IEEE Trans. Automatic Control, AC-25, T1-T6.

West P., S. Bignulac and W. Perkins (1985), "L-A-S: A Computer-Aided Control System Design Language". in "Computer-Aided Systems Engineering", Edited by M. Jamshidi and C. Herget, North-Holland, Amsterdam.

Wilde R., and P. Kokotović (1972), "A Dichotomy in Linear Control Theory", IEEE Trans. Automatic Control, AC-16, 382-283.

Wonham W. (1968), "On a Matrix Riccati Equation of Stochastic Control", SIAM J. Control, 6, 681-197.

Yackel R., and P. Kokotović (1973), "A Boundary Layer Method for the Matrix Riccati Equation", IEEE Trans. Automatic Control, AC-17, 17-24.

Zangwill W., and C. Garcia (1981), "Pathways to Solutions, Fixed Points and Equilibria", Prentice-Hall.

INDEX

- Allemong, 70, 104, 105, 106, 109, 123
 Analyticity, 3, 7, 13, 129
 Amundson, 57
 Approximations
 errors, 11, 20, 30, 44, 81, 135
 controls, 2, 66, 87, 139, 157, 181
 filters, 66, 87, 91, 157, 181
 transformation matrices, 29, 31, 70, 105
 Arkin, 45
 Athans, 35, 38, 48
 Azimi-Sadjadi, 163
 Bar-Ness, 146, 166, 168
 Basar, 127
 Belanger, 106
 Bertrand, 127
 Bilinear transformation, 145, 166, 178
 Bingulac, 32
 Blankenship, 162
 Block diagonal form, 86, 99, 106, 111, 155, 161
 Bounds
 boundness, 3, 7, 79, 112, 126
 bounded solution, 17, 24, 135
 Butuzov, 163
 Calise, 35, 36, 38, 39, 46, 51, 52, 60
 Chang, 26, 65, 99, 101, 175, 179
 Cheap control, 125
 Chemouil, 36
 Chen, 139, 140
 Chow, 66, 68, 70, 75, 104, 105, 106, 109, 123
 Christov, 118
 Closed loop matrix
 slow system, 17
 fast system, 17
 Continuation, 13
 Continuity, 13, 128
 Convergence, 3, 12, 13, 35, 105, 142
 Compact set, 129
 Closed loop matrix
 slow system, 17
 fast system, 17
 Cruz, 2, 18, 25, 33, 125, 127, 129, 139, 140
 D'Ans, 2, 18, 25, 33, 125, 129
 Darwish, 2, 25
 Decoupling transformation
 linear singularly perturbed systems, 65, 99, 102, 179
 linear weakly coupled systems, 27
 differential Lyapunov equation, 32

- Delacour, 2, 25
- Detectability, 14, 15, 66, 85, 132, 147
- Dichotomy transformation, 100
- Differential games
Nash strategies, 126
- Elgard, 92, 96
- Examples
chemical absorption column, 56
distillation column, 118, 147, 160
electric power system, 89
fluid catalytic cracker, 45
F-8 aircraft controller, 73, 172
magnetic type control system, 68
steam power system, 183
synchronous machine, 109
- Fantin, 2, 25
- Fosha, 92, 96
- Fossard, 36
- Filtering
reduced-order, 4, 71, 87, 156
- Fixed point method, 2, 7, 12, 29
- Furuta, 145, 146, 164, 165
- Gajic, 1, 2, 6, 7, 13, 16, 17, 25, 26, 29, 31, 36, 37, 43, 45, 48, 63, 65, 66, 67, 78, 79, 83, 104, 105, 106, 111, 112, 113, 115, 118, 125, 127, 137, 150, 154, 155, 159, 162, 164, 170, 175, 179, 183
- Garcia, 13
- Geromel, 89, 92
- Grodt, 1, 6, 7, 31
- Haddad, 63
- Halbergsberg, 146, 166, 169
- Hamiltonian, 98, 111
- Harkara, 1, 2, 6, 7, 26, 29, 45, 79, 83, 111, 112, 164
- Hemker, 1, 109
- Hierarchical structure, 54, 125, 133
- High gain feedback, 2, 125
- Ho, 126
- Hoppenestadt, 163
- Ill-conditioning, 36, 40, 99
- Implicit function theorem, 17, 24, 28, 135
- Initial conditions, 39, 43, 54, 67
- Initial guess, 32, 46, 60, 105
- Innovation process, 65, 155
- Ishimatsu, 2, 25
- Jacobian, 17, 24, 135
- Jamshidi, 67, 68
- Johanson, 35
- Kalman filter, 35, 78, 85, 150, 179
- Kato, 118
- Kautsky, 147, 148

- Kenney, 100
- Khalil, 1, 2, 9, 11, 13, 15, 17, 25, 26, 36, 37, 39, 63, 65, 66, 67, 78, 98, 100, 104, 106, 140, 159, 163, 164, 165, 167, 171, 172, 175, 179, 183
- Khorasani, 163
- Kokotovic, 1, 2, 9, 11, 13, 15, 17, 18, 25, 26, 33, 37, 39, 63, 66, 68, 70, 78, 98, 99, 100, 101, 104, 105, 106, 109, 110, 111, 123, 125, 129, 142, 167
- Kondo, 145, 146, 164, 165
- Konstantinov, 118
- Kronecker product, 17, 135
- Kucera, 127, 132
- Kwakernaak, 79, 81, 83, 99, 107, 109, 113, 117, 152, 158, 159, 177, 182
- Lancaster, 17, 28, 136
- Lapidus, 57
- Leipnik, 100
- Levine, 35, 38, 48
- Li, 127, 137
- Litkouhi, 163, 164, 165, 167, 171, 172, 173
- Lyapunov algebraic equation, 3, 8
 convergence condition, 106
 nonstandard, 43
 scaling, 19
 singularly perturbed, 10, 172
 weakly coupled, 19
- Lyapunov differential equation
 scaling, 33
 weakly coupled, 32
- Mahmoud, 2, 25, 26, 125, 163, 176, 183, 184
- Magni, 36
- Makila, 35
- MacGrillivray, 106
- Medanic, 127
- Mendel, 2, 25, 35
- Miranker, 99, 163
- Moerder, 35, 36, 38, 39, 46, 51, 52, 60
- Mohri, 2, 25
- Molen, 104, 117
- Naidu, 163
- Near-optimum, 46
- Newton method, 31, 99, 105
- Nichols, 147, 148
- Nonlinear algebraic equations, 3, 38, 127
- Observer, 29, 35
- Observability, 100
- Oloomi, 163
- Olsder, 127
- O'Reilly, 1, 2, 9, 11, 13, 15, 17, 167
- Ortega, 28

- Output feedback, 2
 - singularly perturbed, 37
 - weakly coupled, 32
- Ozguner, 125, 128, 129, 138
- Papavassilopoulos, 127
- Parallel algorithms, 8, 11, 13, 20, 23
- Peres, 89, 92
- Perkins, 2, 18, 25, 32, 33, 125, 128, 129, 138
- Perturbation parameter
 - singularly perturbed, 7, 8, 16, 138
 - weakly coupled, 7, 8, 90, 119, 138, 148
- Petkov, 118
- Petkovski, 1, 2, 6, 7, 25, 26, 29, 35, 36, 45, 46, 47, 50, 51, 60, 79, 83, 111, 112, 164
- Petrovic, 2, 6, 7, 26, 29, 48, 79, 83, 111, 112, 125
- Phillips, 163
- Power, 159, 183
- Power series, 2, 7, 12, 36, 50, 66, 68, 71, 91, 99, 110, 129, 138
- Rakic, 2, 25, 26, 35, 36, 46, 47, 50, 51, 60
- Ramakrishnan, 45
- Rao, 163
- Rayvarupu, 2, 6, 7, 26, 29, 36, 43, 78, 79, 83, 111, 112
- Recursive algorithms, 11, 16, 20, 23, 29, 31, 38, 41, 44, 50, 53, 70, 105, 133
 - rate of convergence, 3, 17, 20, 23, 29, 45, 71, 112, 118, 136
 - radius of convergence, 13, 31
 - required matrix multiplications, 12, 103, 111, 139
- Regulators linear-quadratic
 - deterministic continuous-time, 8
 - deterministic discrete-time, 171
 - near-optimal, 73, 88
 - stochastic continuous-time, 63, 78
 - stochastic discrete-time, 151, 176
- Reinitialization, 108, 117
- Rheinboldt, 28
- Riccati algebraic equation, 3, 8
 - coupled equations, 127
 - scaling, 64, 84, 129
 - singularly perturbed, 13
 - weakly coupled, 21, 144
- Riccati differential equation
 - singularly perturbed, 98
 - weakly coupled, 111
- Sandell, 63, 73, 75
- Sawan, 163
- Sezar, 2, 25, 142
- Shen, 2, 6, 7, 78, 111, 112, 113, 115, 118, 150, 154, 155, 159, 162, 164, 183
- Siljak, 2, 25, 142
- Singh, 142, 163
- Sivan, 79, 81, 83, 99, 107, 109, 113, 117, 152, 158, 159, 177, 182
- Solution

- zero-order, 15, 41, 51
- nonuniqueness, 60
- Stability, 12, 51
- Stabilizability, 14, 15, 66, 85, 100, 132, 147
- Starr, 126
- Stiff, 36, 67, 99
- Stochastic system, 63
 - variance equation, 9, 72, 182
 - state estimation, 64
- Su, 6, 7, 111
- Sylvester equation, 28, 31, 51
- Takata, 2, 25
- Tismenetsky, 17, 28, 130
- Toivonen, 35
- Trajectories, 28, 67, 88
- Triangular system, 26, 29
- Van Douren, 147, 148
- Van Loan, 104, 117
- Vasileva, 163
- Wahdam, 36
- Washburn, 2, 25
- Weak coupling assumption, 128
- West, 32
- White noise, 9, 63
 - discrete fast time, 187
- Wilde, 100, 101
- Winkelman, 70, 104, 105, 106, 109, 123
- Wonham, 127, 132
- Yackel, 68, 99, 100, 110, 111
- Zangwill, 13