REFERENCES

[Abo03]   H. Abou-Kandil, G. Freiling, V. Ionescu, and G. Jank, *Matrix Riccati Equations in Control and Systems Theory*, Birkhauser, Boston, Massachusetts, 2003.

[Aid83]   V. Aidala and S. Hammel, "Utilization of modified polar coordinates for bearings-only tracking," *IEEE Transactions on Automatic Control*, **AC-28**(3), pp. 283-294 (March 1983).

[Aki03]   B. Akin, U. Orguner, and A. Ersak, "State estimation of induction motor using unscented Kalman filter," *Conference on Control Applications*, pp. 915-919 (June 2003).

[Ale91]   H. Alexander, "State estimation for distributed systems with sensing delay," *Proceedings of the SPIE, Data Structures and Target Classification*, **1470**, pp. 103-111 (1991).

[Als72]   D. Alspach and H. Sorenson, "Nonlinear Bayesian estimation using Gaussian sum approximations," *IEEE Transactions on Automatic Control*, **AC-17**(4), pp. 439-448 (August 1972).

[Als74]   D. Alspach, "Gaussian sum approximations in nonlinear filtering and control," *Information Sciences*, **7**, pp. 271-290 (1974).

[Als74b] D. Alspach, "A parallel filtering algorithm for linear systems with unknown time varying noise statistics," *IEEE Transactions on Automatic Control*, **AC-19**(5), pp. 552-556 (October 1974).

[And79]   B. Anderson and J. Moore, *Optimal Filtering*, Prentice-Hall, Englewood Cliffs, New Jersey, 1979.

[And68]   A. Andrews, "A square root formulation of the Kalman covariance equations," *AIAA Journal*, **6**(6), pp. 1165-1166 (June 1968).

[And04]   C. Andrieu, A. Doucet, S. Singh, and V. Tadic, "Particle methods for change detection, system identification, and control," *Proceedings of the IEEE,* **92**(3), pp. 42-438 (March 2004).

[Ant91]   A. Antoulas, *Mathematical System Theory,* Springer-Verlag, New York, 1991.

[Aok65]   M. Aoki, "Optimal Bayesian and min-max control of a class of stochastic and adaptive dynamic systems," *Symposium on Systems Engineering for Control System Design,* pp. 77-84 (1965).

[Aok67]   M. Aoki, *Optimization of Stochastic Systems,* Academic Press, New York, 1967.

[Ara94]   J. Aranda, J. De La Cruz, S. Dormido, P. Ruiperez, and R. Hernandez, "Reduced-order Kalman filter for alignment," *Cybernetics and Systems,* **25**, pp. 1-16 (1994).

[Aru02]   M. Arulampalam, S. Maskell, N. Gordon, and T. Clapp, "A tutorial on particle filters for online nonlinear/non-Gaussian Bayesian tracking," *IEEE Transactions on Signal Processing,* **50**(2), pp. 174-188 (February 2002).

[Ath68]   M. Athans, R. Wishner, and A. Bertolini, "Suboptimal state estimation for continuous-time nonlinear systems from discrete measurements," *IEEE Transactions on Automatic Control,* **AC-13**(5), pp. 504-514 (October 1968).

[Ath77]   M. Athans, R. Whiting, and M. Gruber, "A suboptimal estimation algorithm with probabilistic editing for false measurements with applications to target tracking with wake phenomena," *IEEE Transactions on Automatic Control,* **AC-22**(3), pp. 372-384 (June 1977).

[Atk89]   K. Atkinson, *An Introduction to Numerical Analysis,* John Wiley & Sons, New York, 1989.

[Bai95]   E. Bai, K. Nagpal, and R. Tempo, "Bounded error parameter estimation: Noise models, recursive algorithms and H_∞ optimality," *American Control Conference,* pp. 3065-3069, June 1995.

[Bal87]   A. Balakrishnan, *Kalman Filtering Theory,* Optimization Software, New York, 1987.

[Bal01]   J. Ballabrera-Poy, A. Busalacchi, and R. Murtugudde, "Application of a reduced-order Kalman filter to initialize a coupled atmosphere-ocean model: Impact on the prediction of El Nino," *Journal of Climate,* **14**, pp. 1720-1737 (April 2001).

[Ban91]   R. Banavar and J. Speyer, "A linear-quadratic game approach to estimation and smoothing," *American Control Conference,* pp. 2818-2822 (1991).

[Ban92]   R. Banavar, "A game theoretic approach to linear dynamic estimation," Doctoral Dissertation, University of Texas at Austin, May 1992.

[Bar83]   I. Bar-Itzhack and Y. Medan, "Efficient square root algorithm for measurement update in Kalman filtering," *Journal of Guidance, Control, and Dynamics,* **6**(3), pp. 129-134 (May 1983).

[Bar78]   Y. Bar-Shalom, "Tracking methods in a multitarget environment," *IEEE Transactions on Automatic Control,* **AC-23**(4), pp. 618-626 (August 1978).

[Bar95]   Y. Bar-Shalom and X. Li, *Multitarget-Multisensor Tracking: Principles and Techniques,* YBS Publishing, Storrs, Connecticut, 1995.

[Bar98]   Y. Bar-Shalom and X. Li, *Estimation and Tracking: Principles, Techniques, and Software,* YBS Publishing, Storrs, Connecticut, 1998.

[Bar01]   Y. Bar-Shalom, X. Li, and T. Kirubarajan, *Estimation with Applications to Tracking and Navigation,* John Wiley & Sons, New York, 2001.

[Bar02]   Y. Bar-Shalom, "Update with out-of-sequence measurements in tracking: Exact solution," *IEEE Transactions on Aerospace and Electronic Systems,* **38**(3), pp. 769-778 (July 2002).

[Bar05]   K. Barbosa, C. de Souza, and A. Trofino, "Robust H_2 filtering for uncertain linear systems: LMI based methods with parametric Lyapunov functions," *Systems and Control Letters,* **54**(3), pp. 251-262 (March 2005).

[Bas99]   O. Bas, B. Shafai, and S. Linder, "Design of optimal gains for the proportional integral Kalman filter with application to single particle tracking," *IEEE Conference on Decision and Control,* pp. 4567-4571 (December 1999).

[Bas66]   R. Bass, V. Norum, and L. Swartz, "Optimal multichannel nonlinear filtering," *Journal of Mathematical Analysis and Applications,* **16**(1), pp. 152-164 (1966).

[Bat62]   R. Battin, "A statistical optimizing navigation procedure for space flight," *American Rocket Society Journal,* **32**, pp. 1681-1696 (November 1962).

[Bat64]   R. Battin, *Astronautical Guidance,* McGraw-Hill, New York, 1964.

[Bat82]   R. Battin, "Space guidance evolution – A personal narrative," *Journal of Guidance,* **5**(2), pp. 97-110 (March-April 1982).

[Bay99]   J. Bay, *Fundamentals of Linear State Space Systems,* McGraw-Hill, New York, 1999.

[Bel67]   J. Bellantoni and K. Dodge, "A square root formulation of the Kalman-Schmidt filter," *AIAA Journal,* **5**, pp. 1309-1314, 1967.

[Bel60]   R. Bellman, *Introduction to Matrix Analysis,* McGraw-Hill, New York, 1960.

[Bel61]   R. Bellman, *Adaptive Control Processes: A Guided Tour,* Princeton University Press, Princeton, New Jersey, 1961.

[Bel80]   R. Bellman, "Some consequences of the nonnegativity of the elements of the matrix exponential," *Nonlinear Analysis, Theory, Methods and Applications,* **4**(4), pp. 735-736 (1980).

[Ben62]   T. Benedict and G. Bordner, "Synthesis of an optimal set of radar track-while-scan smoothing equations," *IRE Transactions on Automatic Control,* **AC-7**(4), pp. 27-32 (July 1962).

[Ber85]   D. Bernstein and D. Hyland, "The optimal projection equations for reduced-order state estimation," *IEEE Transactions on Automatic Control,* **AC-30**(6), pp. 583-585 (June 1985).

[Ber89]   D. Bernstein and W. Haddad, "Steady-state Kalman filtering with an H_∞ error bound," *Systems and Control Letters,* **12**, pp. 9-16 (1989).

[Ber05]   D. Bernstein, *Matrix Mathematics,* Princeton University Press, Princeton, New Jersey, 2005.

[Bet94]   M. Bettayeb and D. Kavranoglu, "Reduced order H_∞ filtering," *American Control Conference,* pp. 1884-1888 (June 1994).

[Bie73]   G. Bierman, "A comparison of discrete linear filtering algorithms," *IEEE Transactions on Aerospace and Electronic Systems,* **AES-9**(1), pp. 28-37 (January 1973).

[Bie76]   G. Bierman, "Measurement updating using the U-D factorization," *Automatica,* **12**(4), pp. 375-382 (July 1976).

[Bie77a]   G. Bierman and C. Thornton, "Numerical comparison of Kalman filter algorithms: Orbit determination case study," *Automatica,* **13**(1), pp. 23-35 (January 1977).

[Bie77b] G. Bierman, *Factorization Methods for Discrete Sequential Estimation,* Academic Press, San Diego, California, 1977.

[Bil95] P. Billingsley, *Probability and Measure,* Wiley-Interscience, New York, 1995.

[Bit85] R. Bitmead, M. Gevers, I. Petersen, and R. Kaye, "Monotonicity and stabilizability properties of solutions of the Riccati difference equation: Propositions, lemmas, theorems, fallacious conjectures and counterexamples," *Systems and Control Letters,* **5**(5), pp. 309-315 (April 1985).

[Bit91] S. Bittanti, A. Laub, and J. Willems (eds.), *The Riccati Equation,* Springer-Verlag, New York, 1991.

[Bjo67] A. Bjorck, "Solving linear least squares problems by Gram-Schmidt orthogonalization," *BIT,* **7**, pp. 1-21 (1967).

[Bla99] S. Blackman and R. Popoli, *Design and Analysis of Modern Tracking Systems,* Artech House, Dedham, Massachusetts, 1999.

[Boo52] R. Booton, "An optimization theory for time-varying linear systems with nonstationary statistical inputs," *Proceedings of the IRE,* **40**, pp. 977-981 (August 1952).

[Bor79] P. Borjesson and C. Sundberg, "Simple approximations of the error function $Q(x)$ for communications applications," *IEEE Transactions on Communications,* **COM-27**(3), pp. 639-643 (March 1979).

[Boz94] S. Bozic, *Digital and Kalman Filtering,* Halsted Press, New York, 1994.

[Bra89] K. Brammer and G. Siffling, *Kalman-Bucy Filters,* Artech House, Dedham, Massachusetts, 1989.

[Bro91] P. Brockwell and R. Davis, *Time Series: Theory and Methods,* Springer-Verlag, New York, 1991.

[Bro98] E. Brookner, *Tracking and Kalman Filtering Made Easy,* John Wiley & Sons, New York, 1998.

[Bro96] R. Brown and P. Hwang, *Introduction to Random Signals and Applied Kalman Filtering,* John Wiley & Sons, New York, 1996.

[Bry65] A. Bryson and D. Johanson, "Linear filtering for time-varying systems using measurements containing colored noise," *IEEE Transactions on Automatic Control,* **AC-10**(1), pp. 4-10 (January 1965).

[Bry68] A. Bryson and L. Henrikson, "Estimation using sampled data containing sequentially correlated noise," *Journal of Spacecraft and Rockets,* **5**(6), pp. 662-665 (June 1968).

[Buc65] R. Bucy, "Nonlinear filtering," *IEEE Transactions on Automatic Control,* **10**(1), p. 198 (January 1965).

[Buc67] R. Bucy, "Global theory of the Riccati equation," *Journal of Computer and System Sciences,* **1**, pp. 349-361 (December 1967).

[Buc68] R. Bucy and P. Joseph, *Filtering for Stochastic Processes with Applications to Guidance,* John Wiley & Sons, New York, 1968.

[Buc69] R. Bucy, "Bayes theorem and digital realizations for non-linear filters," *The Journal of the Astronautical Sciences,* **17**(2), pp. 80-94 (September-October 1969).

[Buc71] R. Bucy and K. Senne, "Digital synthesis of non-linear filters," *Automatica,* **7**(3), pp. 287-298 (May 1971).

[Bur93]   J. Burl, "A reduced order extended Kalman filter for sequential images containing a moving object," *IEEE Transactions on Image Processing,* **2**(3), pp. 285-295 (July 1993).

[Bur99]   J. Burl, *Linear Optimal Control,* Addison-Wesley, Reading, Massachusetts, 1999.

[Cai88]   P. Caines, *Linear Stochastic Systems,* John Wiley & Sons, New York, 1988.

[Cam68]   A. Cameron, "Control and estimation of linear systems with nongaussian *a priori* distributions," *Sixth Annual Allerton Conference on Circuit and System Theory* (1968).

[Cam01]   M. Campbell and S. Brunke, "Nonlinear estimation of aircraft models for online control customization," *IEEE Aerospace Conference,* pp. 621-628 (2001).

[Car73]   N. Carlson, "Fast triangular formulation of the square root filter," *AIAA Journal,* **11**(9), pp. 1259-1265 (September 1973).

[Car99]   J. Carpenter, P. Clifford, and P. Fearnhead, "Improved particle filter for nonlinear problems," *IEE Proceedings Part F: Radar and Sonar Navigation,* **146**, pp. 2-7 (February 1999).

[Cat89]   D. Catlin, *Estimation, Control, and the Discrete Kalman Filter,* Springer-Verlag, New York, 1989.

[Cha47]   S. Chandrasekhar, "On the radiative equilibrium of a stellar atmosphere, Part XXI," *The Astrophysical Journal,* **106**, pp. 152-216 (1947).

[Cha48]   S. Chandrasekhar, "On the radiative equilibrium of a stellar atmosphere, Part XXII," *The Astrophysical Journal,* **107**, pp. 48-72 (1948).

[Cha96]   S. Charleston and M. Azimi-Sadjadi, "Reduced order Kalman filtering for the enhancement of respiratory sounds," *IEEE Transactions on Biomedical Engineering,* **43**(4), pp. 421-424 (April 1996).

[Che99]   C. Chen, *Linear System Theory and Design,* Oxford University Press, 1999.

[Che93]   G. Chen, *Approximate Kalman Filtering,* World Scientific, Singapore, 1993.

[Che85]   H. Chen, *Recursive Estimation and Control for Stochastic Systems,* John Wiley & Sons, New York, 1985.

[Chi85]   T. Chia, *Parameter Identification and State Estimation of Constrained Systems,* Doctoral Dissertation, Case Western Reserve University, Cleveland, Ohio, 1985.

[Chu87]   C. Chui and G. Chen, *Kalman Filtering with Real-Time Applications,* Springer-Verlag, New York, 1987.

[Coh96]   S. Cohn and R. Todling, "Approximate data assimilation scheme for stable and unstable dynamics," *Journal of the Meteorological Society of Japan,* **74**(1), pp. 63-75 (1996).

[Cox64]   H. Cox, "On the estimation of state variables and parameters for noisy dynamic systems," *IEEE Transactions on Automatic Control,* **AC-9**(1), pp. 5-12 (January 1964).

[Cox73]   H. Coxeter, *Regular Polytopes,* Dover, New York, 1973.

[Cra04]   J. Crassidis and J. Junkins, *Optimal Estimation of Dynamic Systems,* CRC Press, New York, 2004.

[Cri02]   D. Crisan and A. Doucet, "A survey of convergence results on particle filtering methods for practitioners," *IEEE Transactions on Signal Processing,* **50**(3), pp. 736-746 (March 2002).

[Dar84]   J. Darragh and D. Looze, "Noncausal minimax linear state estimation for systems with uncertain second-order statistics," *IEEE Transactions on Automatic Control,* **AC-29**(6), pp. 555-557 (June 1984).

[Dav77]   M. Davis, *Linear Estimation and Stochastic Control,* Chapman & Hall, London, 1977.

[deF71]   R. de Figueiredo and Y. Jan, "Spline filters," *Symposium on Nonlinear Estimation Theory and Its Applications,* pp. 127-138 (1971).

[deF74]   B. de Finetti, *Theory of Probability: A Critical Introductory Treatment,* John Wiley & Sons, New York, 1974.

[deF02]   N. de Freitas, "Rao-Blackwellised particle filtering for fault diagnosis," *IEEE Aerospace Conference,* pp. 1767-1772 (2002).

[Deu65]   R. Deutsch, *Estimation Theory,* Prentice-Hall, Englewood Cliffs, New Jersey, 1965.

[Dev01]   L. Devroye and G. Lugosi, *Combinatorial Methods in Density Estimation,* Springer-Verlag, New York, 2001.

[Dew03]   P. Dewallef and O. Leonard, "On-line performance monitoring and engine diagnostic using robust Kalman filtering techniques," *ASME Turbo Expo,* Paper GT2003-38379 (2003).

[Dew04]   P. Dewallef, O. Leonard, and K. Mathioudakis, "On-line aircraft engine diagnostic using a soft-constrained Kalman filter," *ASME Turbo Expo,* Paper GT2004-53539 (2004).

[Dez92]   F. Deza, E. Busvelle, J. Gauthier, and D. Rakotopara, "High gain estimation for nonlinear systems," *Systems and Control Letters,* **18**, pp. 295-299 (1992).

[Did85]   G. Diderrich, "The Kalman filter from the perspective of the Goldberger-Thiel estimators," *The American Statistician,* **39**(3), pp. 193-198 (August 1985).

[Did95]   G. Didinsky, Z. Pan, and T. Basar, "Parameter identification for uncertain plants using H^∞ methods," *Automatica,* **31**(9), pp. 1227-1250 (September 1995).

[Dou01]   A. Doucet, N. de Freitas, and N. Gordon (eds.), *Sequential Monte Carlo Methods in Practice,* Springer-Verlag, New York, 2001.

[Dun44]   W. Duncan, "Some devices for the solution of large sets of simultaneous linear equations (with an appendix on the reciprocation of partitioned matrices)," *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science, Seventh Series,* **35**, pp. 660-670 (1944).

[Dye69]   P. Dyer and S. McReynolds, "Extension of square-root filtering to include process noise," *Journal of Optimization Theory and Applications,* **3**(6), pp. 444-459 (1969).

[Fad59]   V. Fadeeva, *Computational Methods of Linear Algebra,* Dover, New York, 1959.

[Fey63]   R. Feynman, R. Leighton, and M. Sands, *The Feynman Lectures on Physics: Volume 1,* Addison-Wesley, Reading, Massachusetts, 1963.

[Fit71]   R. Fitzgerald, "Divergence of the Kalman filter," *IEEE Transactions on Automatic Control,* **AC-16**, pp. 736-747 (December 1971).

[Fle81]   R. Fletcher, *Practical Methods of Optimization – Volume 2: Constrained Optimization,* John Wiley & Sons, New York, 1981.

[Fom00]   S. Fomin and I. Gelfand, *Calculus of Variations,* Dover, New York, 2000.

[Fra69] D. Fraser and J. Potter, "The optimum linear smoother as a combination of two optimum linear filters," *IEEE Transactions on Automatic Control,* **14**(4), pp. 387-390 (August 1969).

[Fri66] B. Friedland and I. Bernstein, "Estimation of the state of a nonlinear process in the presence of nongaussian noise and disturbances," *Journal of the Franklin Institute,* **281**(6), pp. 455-480 (June 1966).

[Fri89] B. Friedland, "On the properties of reduced-order Kalman filters," *IEEE Transactions on Automatic Control,* **34**(3), pp. 321-324 (March 1989).

[Gau04] C. Gauss, *Theory of Motion of the Heavenly Bodies Moving About the Sun in Conic Sections: A Translation of Theoria Motus,* Dover, New York, 2004.

[Gee97] J. De Geeter, H. Van Brussel, and J. De Schutter, "A smoothly constrained Kalman filter," *IEEE Transactions on Pattern Analysis and Machine Intelligence,* **19**(10), pp. 1171-1177 (October 1997).

[Gel74] A. Gelb (ed.), *Applied Optimal Estimation,* MIT Press, Cambridge, Massachusetts, 1974.

[Gil01] W. Gilks and C. Berzuini, "Following a moving target – Monte Carlo inference for dynamic Bayesian models," *Journal of the Royal Statistical Society, B,* **63**, pp. 127-146 (2001).

[Gil81] P. Gill, W. Murray, and M. Wright, *Practical Optimization,* Academic Press, New York, 1981.

[Gli94] L. Glielmo, P. Marino, R. Setola, and F. Vasca, "Reduced Kalman filtering for indirect adaptive control of the induction motor," *International Journal of Adaptive Control and Signal Processing,* **8**, pp. 527-541 (1994).

[Gol65] G. Golub, "Numerical methods for solving linear least squares problems," *Numerische Mathematik,* **7**, pp. 206-216 (1965).

[Gol89] G. Golub and C. Van Loan, *Matrix Computations,* The Johns Hopkins University Press, Baltimore, Maryland, 1989.

[Goo84] G. Goodwin and K. Sin, *Adaptive Filtering, Prediction and Control,* Prentice-Hall, Englewood Cliffs, New Jersey, 1984.

[Goo05a] G. Goodwin, M. Seron, and J. De Dona, *Constrained control and estimation,* Springer-Verlag, London, 2005.

[Goo05b] G. Goodwin, J. De Dona, M. Seron, and X. Zhuo, "Lagrangian duality between constrained estimation and control," *Automatica,* **41**(6), pp. 935-944 (June 2005).

[Gor93] N. Gordon, D. Salmond, and A. Smith, "Novel approach to nonlinear/non-Gaussian Bayesian state estimation," *IEEE Proceedings-F,* **140**(2), pp. 107-113 (April 1993).

[Gra93] J. Gray and W. Murray, "A derivation of an analytic expression for the tracking index for the alpha-beta-gamma filter," *IEEE Transactions on Aerospace and Electronic Systems,* **29**(3), pp. 1064-1065 (July 1993).

[Gre01] M. Grewal and A. Andrews, *Kalman Filtering,* John Wiley & Sons, New York, 2001.

[Gri97] K. Grigoriadis and J. Watson, "Reduced-order H_∞ and $L_2 - L_\infty$ filtering via linear matrix inequalities," *IEEE Transactions on Aerospace and Electronic Systems,* **33**(4), pp. 1326-1338 (October 1997).

[Gri88] M. Grimble, "H_∞ design of optimal linear filters," in *Linear Circuits, Systems and Signal Processing: Theory and Applications,* C. Byrnes, C. Martin, and R. Saeks (Eds.) North-Holland, Amsterdam, The Netherlands, 1988, pp. 533540.

[Gri90]   M. Grimble and A. El Sayed, "Solution of the H_∞ optimal linear filtering problem for discrete-time systems," *IEEE Transactions on Acoustics, Speech, and Signal Processing,* **38**(7), pp. 1092-1104 (July 1990).

[Gri91a]   M. Grimble, "H_∞ fixed lag smoothing filter for scalar systems," *IEEE Transactions on Signal Processing,* **39**(9), pp. 1955-1963 (September 1991).

[Gri91b]   M. Grimble and M. Johnson, "H_∞ robust control design – A tutorial review," *Computing and Control Engineering Journal,* **2**(6), pp. 275-282 (November 1991).

[Hab03]   S. Habibi and R. Burton, "The variable structure filter," *ASME Journal of Dynamic Systems, Measurement, and Control,* **125**(3), pp. 287-293 (September 2003).

[Had91]   W. Haddad, D. Bernstein, and D. Mustafa, "Mixed-norm H_2/H_∞ regulation and estimation: The discrete-time case," *Systems and Control Letters,* **16**, pp. 235-247 (1991).

[Hae98]   D. Haessig and B. Friedland, "Separate-bias estimation with reduced-order Kalman filters," *IEEE Transactions on Automatic Control,* **43**(7), pp. 983-987. (July 1998).

[Hal81]   A. Hald, "T. N. Thiele's contributions to statistics," *International Statistics Review,* **49**, pp. 1-20 (1981).

[Har89]   A. Harvey, *Forecasting, Structural Time Series Models and the Kalman Filter,* Cambridge University Press, New York, 1989.

[Has95]   B. Hassibi and T. Kailath, "H^∞ adaptive filtering," *IEEE International Conference on Acoustics, Speech, and Signal Processing,* pp. 949-952 (1995).

[Has96a]   B. Hassibi, A. Sayed, and T. Kailath, "Linear estimation in Krein spaces – Part I: Theory," *IEEE Transactions on Automatic Control,* **41**(1), pp. 18-33 (January 1996).

[Has96b]   B. Hassibi, A. Sayed, and T. Kailath, "Linear estimation in Krein spaces – Part II: Applications," *IEEE Transactions on Automatic Control,* **41**(1), pp. 34-49 (January 1996).

[Has99]   B. Hassibi, A. Sayed, T. Kailath, *Indefinite-Quadratic Estimation and Control,* SIAM, Philadelphia, Pennsylvania, 1999.

[Hay98]   S. Hayward, "Constrained Kalman filter for least-squares estimation of time-varying beamforming weights," in *Mathematics in Signal Processing IV,* J. McWhirter and I. Proudler (Eds.), Oxford University Press, pp. 113-125, 1998.

[Hec71]   C. Hecht, "Digital realization of non-linear filters," *Symposium on Nonlinear Estimation Theory and Its Applications,* pp. 152-158 (1971).

[Hec73]   C. Hecht, "Systems identification using Bayesian estimation," *Symposium on Nonlinear Estimation Theory and Its Applications,* pp. 107-113 (1973).

[Hef66]   H. Heffes, "The effect of erroneous models on the Kalman filter response," *IEEE Transactions on Automatic Control,* **AC-11**, pp. 541-543 (July 1966).

[Hel94]   Y. Hel-Or and M. Werman, "Recognition and localization of articulated objects," *IEEE Workshop on Motion of Non-Rigid and Articulated Objects,* pp. 116-123 (November 1994).

[Hen81]   H. Henderson and S. Searle, "On deriving the inverse of a sum of matrices," *SIAM Review,* **23**(1), pp. 53-60 (January 1981).

[Hen82]   R. Henriksen, "The truncated second-order nonlinear filter revisited," *IEEE Transactions on Automatic Control,* **AC-27**(1), pp. 247-251 (February 1982).

[Hid03] C. Hide, T. Moore, and M. Smith, "Adaptive Kalman filtering for low-cost INS/GPS," *The Journal of Navigation,* **56**, pp. 143-152 (2003).

[Ho64] Y. Ho and R. Lee, "A Bayesian approach to problems in stochastic estimation and control," *IEEE Transactions on Automatic Control,* **AC-9**, pp. 333-339 (1964).

[Ho02] Y. Ho and D. Pepyne, "Simple explanation of the no-free-lunch theorem and its implications," *Journal of Optimization Theory and Applications,* **155**(3). 549-570. (December 2002).

[Hor85] R. Horn and C. Johnson, *Matrix Analysis,* Cambridge University Press, New York, 1985.

[Hou53] A. Householder, *Principles of Numerical Analysis,* McGraw-Hill, New York, 1953.

[Hou64] A. Householder, *The Theory of Matrices in Numerical Analysis,* Blaisdell, New York, 1964.

[Hsi96] F. Hsiao and S. Pan, "Robust Kalman filter synthesis for uncertain multiple time-delay stochastic systems," *Journal of Dynamic Systems, Measurement, and Control,* **118**, pp. 803-808 (December 1996).

[Hug88] R. Hughes, *Analog Automatic Control Loops in Radar and EW,* Artech House, Dedham, Massachusetts, 1988.

[Hun03] Y. Hung and F. Yang, "Robust H_∞ filtering with error variance constraints for discrete time-varying systems with uncertainty," *Automatica,* **39**(7), pp. 1185-1194 (July 2003).

[Hut84] C. Hutchinson, "The Kalman filter applied to aerospace and electronic systems," *IEEE Transactions on Aerospace and Electronic Systems,* **AES-20**(4), pp. 500-504 (July 1984).

[Iba01] Y. Iba, "Population Monte Carlo algorithms," *Transactions of the Japanese Society for Artificial Intelligence,* **16**(2), pp. 279-286. (2001).

[Ion99] V. Ionescu, C. Oara, and M. Weiss, *Generalized Riccati Theory and Robust Control,* John Wiley & Sons, New York, 1999.

[Isa96] M. Isaard and A. Blake, "Contour tracking by stochastic propagation of conditional density," *European Conference on Computer Vision,* Cambridge, pp. 343-356, 1996.

[Isa98a] M. Isard and A. Blake, "Condensation – Conditional density propagation for visual tracking," *International Journal of Computer Vision,* **29**(1), pp. 5-28. (1998).

[Isa98b] M. Isard and A. Blake, "ICondensation: Unifying low-level and high-level tracking in a stochastic framework," *Lecture Notes in Computer Science,* **1406**, pp. 893-908. (1998).

[Jaz66] A. Jazwinski, "Filtering for nonlinear dynamical systems," *IEEE Transactions on Automatic Control,* **AC-11**(5), pp. 765-766 (October 1966).

[Jaz69] A. Jazwinski, "Adaptive filtering," *Automatica,* **5**(4), pp. 475-485 (July 1969).

[Jaz70] A. Jazwinski, *Stochastic Processes and Filtering Theory,* Academic Press, New York, 1970.

[Joh69] G. Johnson, "A deterministic theory of estimation and control," *IEEE Transactions on Automatic Control,* **14**(4), pp. 380-384 (August 1969).

[Jor68] T. Jordan, "Experiments on error growth associated with some linear least-squares procedures," *Mathematics of Computation,* **22**, pp. 579-588 (1968).

[Jua93]   J. Juang, *Applied System Identification*, Prentice-Hall, Upper Saddle River, New Jersey, 1993.

[Jul95]   S. Julier, J. Uhlmann, and H. Durrant-Whyte, "A new approach for filtering nonlinear systems," *American Control Conference,* pp. 1628-1632 (1995).

[Jul00]   S. Julier, J. Uhlmann, and H. Durrant-Whyte, "A new method for the nonlinear transformation of means and covariances in filters and estimators," *IEEE Transactions on Automatic Control,* **45**(3), pp. 477-482 (March 2000).

[Jul02a]   S. Julier and J. Uhlmann, "Reduced sigma point filters for the propagation of means and covariances through nonlinear transformations," *American Control Conference,* pp. 887-892, 2002.

[Jul03]   S. Julier, "The spherical simplex unscented transformation," *American Control Conference,* pp. 2430-2434, 2003.

[Jul04]   S. Julier and J. Uhlmann, "Unscented filtering and nonlinear estimation," *Proceedings of the IEEE,* **92**(3), pp. 401-422 (March 2004).

[Kai68]   T. Kailath, "An innovations approach to least-squares estimation – Part I: Linear filtering in additive white noise," *IEEE Transactions on Automatic Control,* **AC-13**(6), pp. 646-655 (December 1968).

[Kai73]   T. Kailath, "Some new algorithms for recursive estimation in constant linear systems," *IEEE Transactions on Information Theory,* **IT-19**(6), pp. 750-760 (November 1973).

[Kai74]   T. Kailath, "A view of three decades of linear filtering theory," *IEEE Transactions on Information Theory,* **IT-20**(2), pp. 146-181 (March 1974).

[Kai77]   T. Kailath (ed.), *Linear Least Squares Estimation,* Dowden, Hutchinson & Ross, Stroudsburg, Pennsylvania, 1977.

[Kai80]   T. Kailath, *Linear Systems,* Prentice-Hall, Englewood Cliffs, New Jersey, 1980.

[Kai81]   T. Kailath, *Lectures on Wiener and Kalman Filtering,* Springer-Verlag, New York, 1981.

[Kai00]   T. Kailath, A. Sayed, and B. Hassibi, *Linear Estimation,* Prentice-Hall, Upper Saddle River, New Jersey, 2000.

[Kal84]   P. Kalata, "The tracking index: A generalized parameter for α-β and α-β-γ target trackers," *IEEE Transactions on Aerospace and Electronic Systems,* **AES-20**(2), pp. 174-182.

[Kal60]   R. Kalman, "A new approach to linear filtering and prediction problems," *ASME Journal of Basic Engineering,* **82**, pp. 35-45 (March 1960).

[Kal60b]   R. Kalman, "Contributions to the theory of optimal control," *Boletin de la Sociedad Matematica Mexicana,* **5**, pp. 102-119 (1960).

[Kal60c]   R. Kalman, "On the general theory of control systems," *Proceedings of the 1st IFAC Congress,* pp. 481492, Butterworth's, London, 1960.

[Kal61]   R. Kalman and R. Bucy, "New results in linear filtering and prediction theory," *ASME Journal of Basic Engineering,* **83**, pp. 95-108 (March 1961).

[Kal63]   R. Kalman, Y. Ho, and K. Narendra, "Controllability of linear dynamical systems," *Contributions to Differential Equations,* **1**(2), pp. 189-213 (1963).

[Kam71]   P. Kaminski, A. Bryson, and S. Schmidt, "Discrete square root filtering: A survey of current techniques," *IEEE Transactions on Automatic Control,* **AC-16**, pp. 727-736 (December 1971).

[Kan95]   K. Kanazawa, D. Koller, and S. Russell, "Stochastic simulation algorithms for dynamics probabilistic networks," *Eleventh Annual Conference on Uncertainty in AI*, pp. 346-351, 1995.

[Kas96]   E. Kaskurewicz and A. Bhaya, "Discrete-time state estimation with two counters and measurement delay," *IEEE Conference on Decision and Control*, pp. 1472-1476, 1996.

[Kel98]   J. Keller and M. Darouach, "Reduced-order Kalman filter with unknown inputs," *Automatica,* **34**(11), pp. 1463-1468 (November 1998).

[Kel99]   J. Keller, "A new strategy for designing a reduced-order Kalman filter," *International Journal of Systems Science,* **30**(11), pp. 1161-1166 (1999).

[Ken61]   M. Kendall, "Daniel Bernoulli on maximum likelihood," *Biometrika,* **48**, pp. 1-18 (1961).

[Kit87]   G. Kitagawa, "Non-Gaussian state-space modelling of non-stationary time series (with discussion)," *Journal of the American Statistical Association,* **82**(400), pp. 1032-1063 (December 1987).

[Kit89]   G. Kitagawa, "Non-Gaussian seasonal adjustment," *Computers and Mathematics with Applications,* **18**(6,7), pp. 503-514 (1989).

[Kit94]   G. Kitagawa, "The two-filter formula for smoothing and an implementation of the Gaussian-sum smoother," *Annals of the Institute of Statistical Mathematics,* **46**(4), pp. 605-623 (1994).

[Kit96a] G. Kitagawa, *Smoothness Priors Analysis of Time Series,* Springer-Verlag, New York, 1996.

[Kit96]   G. Kitagawa, "Monte Carlo filter and smoother for non-Gaussian nonlinear state space models," *Journal of Computational and Graphical Statistics,* **5**(1), pp. 1-25 (1996).

[Ko06]   S. Ko and R. Bitmead, "State estimation for linear systems with state equality constraints," *Automatica,* 2006.

[Kob03]   T. Kobayashi and D.L. Simon, "Application of a bank of Kalman filters for aircraft engine fault diagnosis," *ASME Turbo Expo,* Atlanta, paper GT2003-38550, June 2003.

[Kol41]   A. Kolmogorov, "Interpolation and extrapolation of stationary random sequences," in *Selected Works of A. N. Kolmogorov, Volume II,* V. Tikhomirov (Ed.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 272-280 (1992).

[Kop63]   R. Kopp and R. Orford, "Linear regression applied to system identification for adaptive control systems," *AIAA Journal,* **1**, pp. 2300-2306 (October 1963).

[Kos04]   S. Kosanam and D. Simon, "Kalman filtering with uncertain noise covariances," *Intelligent Systems and Control,* Honolulu, Hawaii, pp. 375-379, August 2004.

[Kra88]   S. Kramer and H. Sorenson, "Recursive Bayesian estimation using piece-wise constant approximations," *Automatica,* **24**(6), pp. 789-801 (November 1988).

[Kri84]   V. Krishnan, *Nonlinear Filtering and Smoothing: An Introduction to Martingales, Stochastic Integrals and Estimation,* John Wiley & Sons, New York, 1984.

[Kus67a] H. Kushner, "Dynamical equations for optimal nonlinear filtering," *Journal of Differential Equations,* **3**, pp. 179-190 (1967).

[Kus67]   H. Kushner, "Approximations to optimal nonlinear filters," *IEEE Transactions on Automatic Control,* **AC-12**(5), pp. 546-556 (October 1967).

[Kwa72]   H. Kwakernaak and R. Sivan, *Linear Optimal Control Systems*, John Wiley & Sons, New York, 1972.

[Kwo04]   C. Kwok, D. Fox, and M. Meila, "Real-time particle filters," *Proceedings of the IEEE,* **92**(3), pp. 469-484 (March 2004).

[Kwo03]   S. Kwon and W. Chung, "Combined synthesis of state estimator and perturbation observer," *ASME Journal of Dynamic Systems, Measurement, and Control,* **125**(1), pp. 19-26 (March 2003).

[Lai74]   D. Lainiotis, "Estimation: A brief survey," *Information Sciences,* **7**, pp. 191-202 (1974).

[Lan95]   P. Lancaster and L. Rodman, *Algebraic Riccati Equations,* Oxford University Press, New York, 1995.

[Lar98]   T. Larsen, N. Andersen, O. Ravn, and N. Poulsen, "Incorporation of time delayed measurements in a discrete-time Kalman filter," *IEEE Conference on Decision and Control,* pp. 3972-3977, 1998.

[Lau81]   S. Lauritzen, "Time series analysis in 1880: A discussion of contributions made by T. N. Thiele," *International Statistics Review,* **49**, pp. 319-331 (1981).

[Lee64]   R. Lee, *Optimal Estimation, Identification, and Control,* The MIT Press, Cambridge, Massachusetts, 1964.

[Lew51]   K. Lewin, *Field Theory in Social Science; Selected Theoretical Papers,* Harper & Row, New York, 1951.

[Lew86a]   F. Lewis, *Optimal Control,* John Wiley & Sons, New York, 1986.

[Lew86b]   F. Lewis, *Optimal Estimation,* John Wiley & Sons, New York, 1986.

[Lew97]   H. Lewis, *Foundations of Fuzzy Control,* Plenum, New York, 1997.

[Lie67]   P. Liebelt, *An Introduction to Optimal Estimation,* Addison-Wesley, Reading, Massachusetts, 1967.

[Liu80]   C. Liu and S. Marcus, "Estimator performance for a class of nonlinear estimation problems," *IEEE Transactions on Automatic Control,* **AC-25**(2), pp. 299-302 (April 1980).

[Liu98]   J. Liu and R. Chen, "Sequential Monte Carlo methods for dynamical systems," *Journal of the American Statistical Association,* **93**, pp. 1032-1044 (1998).

[Lju98]   L. Ljung, *System Identification: Theory for the User,* Prentice-Hall, Upper Saddle River, New Jersey, 1998.

[Lue84]   D. Luenberger, *Linear and Nonlinear Programming,* Addison-Wesley, Reading, Massachusetts, 1984.

[Mac99]   J. MacCormick and A. Blake, "A probabilistic exclusion principle for tracking multiple objects," *International Conference on Computer Vision,* pp. 572-578, 1999.

[Mah04a]   K. Mahata and T. Soderstrom, "Improved estimation performance using known linear constraints," *Automatica,* **40**(8), pp. 1307-1318 (August 2004).

[Mah04b]   M. Mahmoud, "Resilient linear filtering of uncertain systems," *Automatica,* **40**(10), pp. 1797-1802 (October 2004).

[Mai84]   J. Maindonald, *Statistical Computation,* John Wiley & Sons, New York, 1984.

[Mal01]   M. Mallick, S. Coraluppi, and C. Carthel, "Advances in asynchronous and decentralized estimation," *IEEE Aerospace Conference,* pp. 1873-1888, 2001.

[Mar05]   H. Marquez and M. Riaz, "Robust state observer design with application to an industrial boiler system," *Control Engineering Practice,* **13**(6), pp. 713-728 (June 2005).

[Mas75] C. Masreliez, "Approximate non-Gaussian filtering with linear state and observation relations," *IEEE Transactions on Automatic Control,* **AC-20**, pp. 107-110 (February 1975).

[Mas77] C. Masrielez and R. Martin, "Robust Bayesian estimation for the linear model and robustifying the Kalman filter," *IEEE Transactions on Automatic Control,* **AC-22**(3), pp. 361-371 (June 1977).

[May79] P. Maybeck, *Stochastic Models, Estimation, and Control – Volume 1,* Academic Press, New York, 1979.

[May82] P. Maybeck, *Stochastic Models, Estimation, and Control – Volume 2,* Academic Press, New York, 1982.

[May84] P. Maybeck, *Stochastic Models, Estimation, and Control – Volume 3,* Academic Press, New York, 1984.

[McG74] T. McGarty, *Stochastic Systems and State Estimation,* John Wiley & Sons, New York, 1974.

[McG85] L. McGee and S. Schmidt, "Discovery of the Kalman filter as a practical tool for aerospace and industry," NASA Technical Memo 86847, November 1985.

[Mcr75] S. McReynolds, "Multidimensional Hermite-Gaussian quadrature formulae and their application to nonlinear estimation," *Symposium on Nonlinear Estimation Theory and Its Applications,* pp. 188-191 (1975).

[Mec49] E. Mechler, J. Russell, and M. Preston, "The basis for the optimum aided-tracking time constant," *Journal of the Franklin Institute,* **248**, pp. 327-334 (October 1949).

[Med69] J. Meditch, *Stochastic Optimal Linear Estimation and Control,* McGraw-Hill, New York, 1969.

[Med73] J. Meditch, "A survey of data smoothing for linear and nonlinear dynamic systems," *Automatica,* **9**(2), pp. 151-162 (March 1973).

[Meh70] R. Mehra, "On the identification of variances and adaptive Kalman filtering," *IEEE Transactions on Automatic Control,* **AC-15**(2), pp. 175-184 (April 1970).

[Meh72] R. Mehra, "Approaches to adaptive filtering," *IEEE Transactions on Automatic Control,* **AC-17**(5), pp. 693-698 (October 1972).

[Men87] J. Mendel, *Lessons in Digital Estimation Theory,* Prentice-Hall, Englewood Cliffs, New Jersey, 1987.

[Met49] N. Metropolis and S. Ulam, "The Monte Carlo method," *Journal of the American Statistical Association,* **44**(247), pp. 335-341 (September 1949).

[Min93] G. Minkler and J. Minkler, *Theory and Application of Kalman Filtering,* Magellan Book Company, Palm Bay, Florida, 1993.

[Mir90] L. Mirsky, *An Introduction to Linear Algebra,* Dover, New York, 1990.

[Mol03] C. Moler and C. Van Loan, "Nineteen dubious ways to compute the exponential of a matrix, twenty-five years later," *SIAM Review,* **45**(1), pp. 3-49 (January 2003).

[Moo00] T. Moon and W. Stirling, *Mathematical Methods and Algorithms for Signal Processing,* Prentice-Hall, Upper Saddle River, New Jersey, 2000.

[Mor98] P. Moral, "Measure valued processes and interacting particle systems: Application to non-linear filtering problems," *Annals of Applied Probability,* **8**(2), pp. 438-495, 1998.

[Mor03]   R. Morales-Menendez, N. de Freitas, and D. Poole, "Estimation and control of industrial processes with particle filters," *American Control Conference,* pp. 579-584, 2003.

[Mor78]   M. Morf, R. Levy, and T. Kailath, "Square-root algorithms for the continuous-time linear least-square estimation problem," *IEEE Transactions on Automatic Control,* **AC-23**(5), pp. 907-911 (October 1978).

[Mul91]   P. Muller, "Monte Carlo integration in general dynamic models," *Contemporary Mathematics,* **115**, pp. 145-163 (1991).

[Mye76]   K. Myers and B. Tapley, "Adaptive sequential estimation with unknown noise statistics," *IEEE Transactions on Automatic Control,* **AC-21**(4), pp. 520-523 (August 1976).

[Nag87]   K. Nagpal, R. Helmick, and C. Sims, "Reduced-order estimation: Part I. Filtering," *International Journal of Control,* **45**, pp. 1867-1888 (1987).

[Nag91]   K. Nagpal and P. Khargonekar, "Filtering and smoothing in an H^∞ setting," *IEEE Transactions on Automatic Control,* **36**(2), pp. 152-166 (February 1991).

[Nah69]   N. Nahi, "Optimal recursive estimation with uncertain observation," *IEEE Transactions on Information Theory,* **IT-15**(4), pp. 457-462 (July 1969).

[Nel87]   E. Nelson, *Radically Elementary Probability Theory,* Princeton University Press, Princeton, New Jersey, 1987.

[Net78]   M. Netto, L. Gimeno, and M. Mendes, "On the optimal and suboptimal non-linear filtering problem for discrete-time systems," *IEEE Transactions on Automatic Control,* **AC-23**(6), pp. 1062-1067 (December 1978).

[Nis66]   T. Nishimura, "On the a priori information in sequential estimation problems," *IEEE Transactions on Automatic Control,* **AC-11**, pp. 197-204 (April 1966).

[Nor00]   M. Norgaard, N. Poulsen, and O. Ravn, "New developments in state estimation for nonlinear systems," *Automatica,* **36**(11), pp. 1627-1638 (November 2000).

[OCo96]   J. O'Connor and E. Robertson, *Matrices and Determinants,* http://www-history.mcs.st-andrews.ac.uk/HistTopics/Matrices_and_determinants.html (1996).

[Ott85]   P. Otter, *Dynamic Feature Space Modelling, Filtering and Self-Tuning Control of Stochastic Systems,* Springer-Verlag, New York, 1985.

[Pan96]   Z. Pan and T. Basar, "Parameter identification for uncertain linear systems with partial state measurements under an H^∞ criterion," *IEEE Transactions on Automatic Control,* **41**(9), pp. 1295-1311 (September 1996).

[Pap02]   A. Papoulis and S. Pillai, *Probability, Random Variables and Stochastic Processes,* McGraw-Hill, New York, 2002.

[Pat98]   A. Patti, A. Tekalp, and M. Sezan, "A new motion-compensated reduced-order model Kalman filter for space-varying restoration of progressive and interlaced video," *IEEE Transactions on Image Processing,* **7**(4), pp. 543-554 (April 1998).

[Pee01]   P. Peebles, *Probability, Random Variables, and Random Signal Principles,* McGraw-Hill, New York, 2001.

[Pha98]   D. Pham, J. Verron, and M. Roubaud, "A singular evolutive extended Kalman filter for data assimilation in oceanography," *Journal of Marine Systems,* **16**, pp. 323-240 (1998).

[Pit99]   M. Pitt and N. Shephard, "Filtering via simulation: Auxiliary particle filters," *Journal of the American Statistical Association,* **94**(446), pp. 590-599 (1999).

[Pla50]   R. Plackett, "Some theorems in least squares," *Biometrika,* **37**, pp. 149-157 (1950).

[Poo81]   V. Poor and D. Looze, "Minimax state estimation for linear stochastic systems with noise uncertainty," *IEEE Transactions on Automatic Control,* **AC-26**(4), pp. 902-906 (August 1981).

[Por88]   J. Porrill, "Optimal combination and constraints for geometrical sensor data," *International Journal of Robotics Research,* **7**(6), pp. 66-77 (December 1988).

[Pou86]   M. Poubelle, I. Petersen, M. Gevers, and R. Bitmead, "A miscellany of results on an equation of Count J. F. Riccati," *IEEE Transactions on Automatic Control,* **AC-31**(7), pp. 651-654 (July 1986).

[Pre92]   W. Press, B. Flannery, S. Teukolsky, and W. Vetterling, *Numerical Recipes in C : The Art of Scientific Computing,* Cambridge University Press, New York, 1992.

[Rao03]   C. Rao, J. Rawlings, and D. Mayne, "Constrained state estimation for nonlinear discrete-time systems: Stability and moving horizon approximations," *IEEE Transactions on Automatic Control,* **48**(2), pp. 246-258 (February 2003).

[Rau65]   H. Rauch, F. Tung, and C. Striebel, "Maximum likelihood estimates of linear dynamic systems," *AIAA Journal,* **3**(8), pp. 1445-1450 (August 1965).

[Rei72]   W. Reid, *Riccati Differential Equations,* Academic Press, New York, 1972.

[Rei98]   K. Reif, F. Sonnemann, and R. Unbehauen, "An EKF-based nonlinear observer with a prescribed degree of stability," *Automatica,* **34**(9), pp. 1119-1123 (September 1998).

[Rei99]   K. Reif, F. Sonnemann, and R. Unbehauen, "Nonlinear state observation using H_∞-filtering Riccati design," *IEEE Transactions on Automatic Control,* **44**(1), pp. 203-208 (January 1999).

[Rhe89]   I. Rhee and J. Speyer, "A game theoretic controller and its relationship to H_∞ and linear-exponential-Gaussian synthesis," *IEEE Conference on Decision and Control,* pp. 909-915 (1989).

[Rho71]   I. Rhodes, "A tutorial introduction to estimation and filtering," *IEEE Transactions on Automatic Control,* **AC-16**(6), pp. 688-706 (December 1971).

[Rip87]   B. Ripley, *Stochastic Simulation,* John Wiley & Sons, New York, 1987.

[Ris04]   B. Ristic, S. Arulampalam, and N. Gordon, *Beyond the Kalman Filter: Particle Filters for Tracking Applications,* Artech House, Norwell, Massachusetts, 2004.

[Rob99]   C. Robert and G. Casella, *Monte Carlo Statistical Methods,* Springer-Verlag, New York, 1999.

[Ruy85]   P. Ruymgaart and T. Soong, *Mathematics of Kalman-Bucy Filtering,* Springer-Verlag, New York, 1985.

[Saf78]   M. Safonov and M. Athans, "Robustness and computational aspects of nonlinear stochastic estimators and regulators," *IEEE Transactions on Automatic Control,* **AC-23**(4), pp. 717-725 (August 1978).

[Sag71]   A. Sage and J. Melsa, *Estimation Theory with Applications to Communications and Control,* McGraw-Hill, New York, 1971.

[Sch67]   F. Schlee, C. Standish, and N. Toda, "Divergence in the Kalman filter," *AIAA Journal,* **5**, pp. 1114-1120 (June 1967).

[Sch66]   S. Schmidt, "Applications of state space methods to navigation problems," in C. Leondes (Ed.), *Advances in Control Systems,* Vol. 3, pp. 293-340, Academic Press, New York, 1966.

[Sch81]   S. Schmidt, "The Kalman filter: Its recognition and development for aerospace applications," *Journal of Guidance and Control,* **4**(1), pp. 4-7 (January-February 1981).

[Sch68]   L. Schwartz and E. Stear, "A computational comparison of several nonlinear filters," *IEEE Transactions on Automatic Control,* **13**(1), pp. 83-86 (February 1968).

[Sch73]   F. Schweppe, *Uncertain Dynamic Systems,* Prentice-Hall, Englewood Cliffs, New Jersey, 1973.

[Sea67]   H. Seal, "The historical development of the Gauss linear model," *Biometrika,* **54**(1-2), pp. 1-24 (1967).

[Sch17]   I. Schur, "Uber potenzreihen, die in innern des einheitskrises beschrankt sind," *Journal fuer die Reine und Angewandte Mathematik,* **147**, pp. 205-232 (1917).

[Sch86]   I. Schur, "On power series which are bounded in the interior of the unit circle, Part I," in I. Gohberg (Ed.), *I. Schur Methods in Operator Theory and Signal Processing,* pp. 31-88, Birkhauser, Boston, Massachusetts, 1986.

[Ser81]   L. Servi and Y. Ho, "Recursive estimation in the presence of uniformly distributed measurement noise," *IEEE Transactions on Automatic Control,* **26**(2), pp. 563-564 (April 1981).

[Sha82]   W. Shanahan, "Circuit models for prediction, Wiener filtering, Levinson and Kalman filters for ARMA time series," *IEEE International Conference on Acoustics, Speech and Signal Processing,* pp. 266-269 (May 1982).

[Sha92]   U. Shaked and Y. Theodor, "H_∞-optimal estimation: a tutorial," *IEEE Conference on Decision and Control,* pp. 2278-2286 (December 1992).

[She95]   X. Shen and L. Deng, "Discrete H_∞ filter design with application to speech enhancement," *IEEE International Conference on Acoustics, Speech, and Signal Processing,* pp. 1504-1507 (1995).

[She97]   X. Shen and L. Deng, "Game theory approach to discrete H_∞ filter design," *IEEE Transactions on Signal Processing,* pp. 1092-1095 (April 1997).

[She99]   K. Shen, J. Crossley, A. Lun, S. Kangshen, and H. Liu, *The Nine Chapters on the Mathematical Art: Companion and Commentary,* Oxford University Press, Oxford (1999).

[Shi98]   N. Shimada, Y. Shirai, Y. Kuno, and J. Miura, "Hand gesture estimation and model refinement using monocular camera – Ambiguity limitation by inequality constraints," *Third IEEE International Conference on Automatic Face and Gesture Recognition,* pp. 268-273 (April 1998).

[Sil86]   B. Silverman, *Density Estimation for Statistics and Data Analysis,* Chapman & Hall, London, 1986.

[Sim96]   D. Simon and H. El-Sherief, "Hybrid Kalman/minimax filtering in phase-locked loops," *Control Engineering Practice,* **4**, pp. 615-623 (October 1996).

[Sim02]   D. Simon and T. Chia, "Kalman filtering with state equality constraints," *IEEE Transactions on Aerospace and Electronic Systems,* **38**(1), pp. 128-136 (January 2002).

[Sim05a]   D. Simon and D.L. Simon, "Aircraft turbofan engine health estimation using constrained Kalman filtering," *ASME Journal of Engineering for Gas Turbines and Power,* **127**(2), pp. 323-328 (April 2005).

[Sim06a]   D. Simon, "Reduced order Kalman filtering without model reduction," *Control and Intelligent Systems,* 2006.

[Sim06b]   D. Simon and D.L. Simon, "Constrained Kalman filtering via density function truncation for turbofan engine health estimation," submitted for publication.

[Sim06c]   D. Simon, "A game theory approach to constrained minimax state estimation," *IEEE Transactions on Signal Processing,* **54**(2), pp. 405-412 (February 2006).

[Sim69]   K. Simon and A. Stubberud, "Reduced order Kalman filter," *International Journal of Control,* **10**(5), pp. 501-509 (1969).

[Sim98]   J. Simonoff, *Smoothing Methods in Statistics,* Springer-Verlag, New York, 1998.

[Sim82]   C. Sims, "Reduced-order modelling and filtering," in C. Leondes (Ed.), *Control and Dynamic Systems, Vol. 18,* pp. 55-103, 1982.

[Sin73]   R. Singer and R. Sea, "New results in optimizing surveillance system tracking and data correlation performance in dense multitarget environment," *IEEE Transactions on Automatic Control,* pp. 571-582 (December 1973).

[Sio96]   G. Siouris, *An Engineering Approach to Optimal Control and Estimation Theory,* John Wiley & Sons, New York, 1996.

[Ske98]   R. Skelton, T. Iwasaki, and K. Grigoriadis, *A Unified Algebraic Approach to Linear Control Design,* Taylor & Francis, London, 1998.

[Skl57]   J. Sklansky, "Optimizing the dynamic parameters of a track-while-scan system," *RCA Review,* **18**, pp. 163-185 (June 1957).

[Smi92]   A. Smith and A. Gelfand, "Bayesian statistics without tears: A sampling-resampling perspective," *The American Statistician,* **46**(2), pp. 84-88, (May 1992).

[Smi78]   M. Smith and A. Roberts, "An exact equivalence between the discrete- and continuous-time formulations of the Kalman filter," *Mathematics and Computers in Simulation,* **20**(2), pp. 102-109 (June 1978).

[Sne97]   J. Snell, "A conversation with Joe Doob," *Statistical Science,* **12**(4), pp. 301-311 (November 1997).

[Sob63]   V. Sobolev, *A Treatise on Radiative Transfer,* Van Nostrand, Princeton, New Jersey, 1963.

[Son95]   Y. Song and J. Grizzle, "The extended Kalman filter as a local asymptotic observer for discrete-time nonlinear systems," *Journal of Mathematical Systems, Estimation, and Control,* **5**(1), pp. 59-78.

[Soo65]   T. Soong, "On *a priori* statistics in minimum-variance estimation problems," *ASME Journal of Basic Engineering,* **87D**, pp. 109-112 (March 1965).

[Sor68]   H. Sorenson and A. Stubberud, "Nonlinear filtering by approximation of the *a posteriori* density," *International Journal of Control,* **8**(1), pp. 33-51 (1968).

[Sor70]   H. Sorenson, "Least squares estimation: from Gauss to Kalman," *IEEE Spectrum,* **7**, pp. 63-68 (July 1970).

[Sor71a]   H. Sorenson and J. Sacks, "Recursive fading memory filtering," *Information Science,* **3**, pp. 101-119 (January 1971).

[Sor71b]   H. Sorenson and D. Alspach, "Recursive Bayesian estimation using Gaussian sums," *Automatica,* **7**(4), pp. 465-479 (July 1971).

[Sor80]   H. Sorenson, *Parameter Estimation,* Marcel Dekker, New York, 1980.

[Sor85]   H. Sorenson (ed.), *Kalman Filtering: Theory and Application,* IEEE Press, New York, 1985.

[Sot99]   G. Soto, E. Mendes, and A. Razek, "Reduced-order observers for rotor flux, rotor resistance and speed estimation for vector controlled induction motor

drives using the extended Kalman filter technique," *IEE Proceedings – Electric Power Applications,* **146**(3), pp. 282-288 (May 1999).

[Spa88]   J. Spall (editor), *Bayesian Analysis of Time Series and Dynamic Models,* Marcel Dekker, New York, 1988.

[Sri70]   K. Srinivasan, "State estimation by orthogonal expansion of probability distributions," *IEEE Transactions on Automatic Control,* **AC-15**(1), pp. 3-10 (February 1970).

[Ste68]   E. Stear and A. Stubberud, "Optimal filtering for Gauss-Markov noise," *International Journal of Control,* **8**(2), pp. 123-130 (July 1968).

[Ste52]   P. Stein, "Some general theorems on iterants," *Journal of Research of the National Bureau of Standards,* **48**, pp. 82-82 (1952).

[Ste94]   R. Stengel, *Optimal Control and Estimation,* Dover, New York, 1994.

[Sti86]   S. Stigler, *The History of Statistics: The Measurement of Uncertainty Before 1900,* Cambridge, Massachusetts, Harvard University Press, 1986.

[Sto94]   A. Stoorvogel and J. Van Schuppen, "An H_∞-parameter estimator and its interpretation," *IFAC Symposium on System Identification,* pp. 1223-1226 (July 1994).

[Str90]   P. Strobach, *Linear Prediction Theory,* Springer-Verlag, New York, 1990.

[Swe59]   P. Swerling, "First order error propagation in a stagewise smoothing procedure for satellite observations," *The Journal of the Astronautical Sciences,* **6**, pp. 46-52 (1959).

[Swe63]   P. Swerling, "Comment on 'A statistical optimizing navigation procedure for space flight'," *AIAA Journal,* **1**, p. 1968 (1963).

[Swe71]   P. Swerling, "Modern state estimation methods from the viewpoint of the method of least squares," *IEEE Transactions on Automatic Control,* **AC-16**, pp. 707-719 (1971).

[Tap80]   B. Tapley and J. Peters, "Sequential estimation algorithm using a continuous UDU^T covariance factorization," *Journal of Guidance and Control,* **3**(4), pp. 326-331 (July 1980).

[The94a]   Y. Theodor, U. Shaked, and C. de Souza, "A game theory approach to robust discrete-time H_∞ estimation," *IEEE Transactions on Signal Processing,* **42**(6), pp. 1486-1495 (June 1994).

[The94b]   Y. Theodor and U. Shaked, "Game theory approach to H_∞-optimal discrete-time fixed-point and fixed-lag smoothing," *IEEE Transactions on Automatic Control,* **39**(9), pp. 1944-1948 (September 1994).

[The96]   Y. Theodor and U. Shaked, "Robust discrete-time minimum-variance filtering," *IEEE Transactions on Signal Processing,* **44**(2), pp. 181-189 (February 1996).

[Thi61]   H. Thiel and A. Goldberger, "On pure and mixed statistical estimation in economics," *International Economic Review,* **2**(1), pp. 65-78 (January 1961).

[Tho94a]   S. Thomopoulos and L. Zhang, "Decentralized filtering with random sampling and delay," *Information Sciences,* **81**, pp. 117-131 (1994).

[Tho94b]   S. Thomopoulos, "Decentralized filtering and control in the presence of delays: Discrete-time and continuous-time case," *Information Sciences,* **81**, pp. 133-153 (1994).

[Tho77]   C. Thornton and G. Bierman, "Gram-Schmidt algorithms for covariance propagation," *International Journal of Control,* **25**(2), pp. 243-260 (February 1977).

[Tsa83]   C. Tsai and L. Kurz, "An adaptive robustizing approach to Kalman filtering," *Automatica,* **19**(3), pp. 278-288 (May 1983).

[Tse94]   J. Tse, J. Bentsman, and N. Miller, "Minimax long range parameter estimation," *IEEE Conference on Decision and Control,* pp. 277-282, December 1994.

[Urs80]   B. Ursin, "Asymptotic convergence properties of the extended Kalman filter using filtered state estimates," *IEEE Transactions on Automatic Control,* **AC-25**(6), pp. 1207-1211 (December 1980).

[Van01]   R. Van der Merwe and E. Wan, "The square-root unscented Kalman filter for state and parameter estimation," *IEEE International Conference on Acoustics, Speech, and Signal Processing,* pp. 3461-3464 (May 2001).

[Vau70]   D. Vaughan, "A nonrecursive algebraic solution for the discrete Riccati equation," *IEEE Transactions on Automatic Control,* **AC-15**(5), pp. 597-599 (October 1970).

[Ver84]   S. Verdu and H. Poor, "Minimax linear observers and regulators for stochastic systems with uncertain second-order statistics," *IEEE Transactions on Automatic Control,* **AC-29**(6), pp. 499-511 (June 1984).

[Ver86]   M. Verhaegen and P. Van Dooren, "Numerical aspects of different Kalman filter implementations," *IEEE Transactions on Automatic Control,* **AC-31**(10), pp. 907-917 (October 1986).

[Ver95]   M. Verlaan and A. Hemmink, "Reduced rank square root filters for large scale data assimilation problem," *Second International Symposium on Assimilation of Observations in Meteorology and Oceanography,* pp. 247-252 (1995).

[Ver02]   J. Vermaak, C. Andrieu, A. Doucet, and S. Godsill, "Particle methods for Bayesian modeling and enhancement of speech signals," *IEEE Transactions on Speech and Audio Processing,* **10**, pp. 173-185 (March 2002).

[Wan01]   E. Wan and R. van der Merwe, "The unscented Kalman filter," in *Kalman Filtering and Neural Networks,* S. Haykin (ed.), John Wiley & Sons, New York, 2001.

[Wat22]   G. Watson, *A Treatise on the Theory of Bessel Functions,* Cambridge University Press, Cambridge, United Kingdom, 1922.

[Wei74]   R. Weinstock, *Calculus of Variations,* Dover, New York, 1974.

[Wel87]   M. Welch, "A Kalman filter perspective," *The American Statistician,* **41**, pp. 90-91 (1987).

[Wen92]   W. Wen and H. Durrant-Whyte, "Model-based multi-sensor data fusion," *IEEE International Conference on Robotics and Automation,* pp. 1720-1726, May 1992.

[Wes85]   M. West, P. Harrison, and H. Mignon, "Dynamic generalized linear models and Bayesian forecasting," *Journal of the American Statistical Association,* **80**(389), pp. 73-97 (March 1985).

[Wie56]   N. Wiener, *I Am a Mathematician,* MIT Press, Cambridge, Massachusetts, 1956.

[Wie64]   N. Wiener, *Extrapolation, Interpolation, and Smoothing of Stationary Time Series,* MIT Press, Cambridge, Massachusetts, 1964.

[Wil81]   W. Willman, "Edgeworth expansions in state perturbation estimation," *IEEE Transactions on Automatic Control,* **AC-26**(2), pp. 493-498 (April 1981).

[Wis69]   R. Wishner, J. Tabaczynski, and M. Athans, "A comparison of three non-linear filters," *Automatica,* **5**(4), pp. 487-496 (July 1969).

[Wis70]   R. Wishner, R. Larson, and M. Athans, "Status of radar tracking algorithms," *Symposium on Nonlinear Estimation Theory and its Applications,* San Diego, pp. 32-54, 1970.

[Wri97]   S. Wright, *Primal-Dual Interior-Point Methods,* SIAM Press, Philadelphia, Pennsylvania, 1997.

[Xie94]   L. Xie, C. Soh, and C. de Souza, "Robust Kalman filtering for uncertain discrete-time systems," *IEEE Transactions on Automatic Control,* **39**(6), pp. 1310-1314 (June 1994).

[Xie04]   L. Xie, L. Lu, D. Zhang, and H. Zhang, "Improved robust H_2 and H_∞ filtering for uncertain discrete-time systems," *Automatica,* **40**(5), pp. 873-880 (May 2004).

[Xu02]   S. Xu and T. Chen, "Reduced-order H_∞ filtering for stochastic systems," *IEEE Transactions on Signal Processing,* **50**(12), pp. 2998-3007 (December 2002).

[Yae91]   I. Yaesh and U. Shaked, "A transfer function approach to the problems of discrete-time systems: H_∞-optimal linear control and filtering," *IEEE Transactions on Automatic Control,* **36**(11), pp. 1264-1271 (November 1991).

[Yae92]   I. Yaesh and U. Shaked, "Game theory approach to state estimation of linear discrete-time processes and its relation to H_∞-optimal estimation," *International Journal of Control,* **55**(6), pp. 1443-1452 (1992).

[Yae04]   I. Yaesh and U. Shaked, "Min-max Kalman filtering," *Systems and Control Letters,* **53**(3-4), pp. 217-228 (November 2004).

[Yon80]   K. Yonezawa, "Reduced-order Kalman filtering with incomplete observability," *Journal of Guidance and Control,* **3**(3), pp. 280-282 (June 1980).

[Yoo04]   M. Yoon, V. Ugrinovskii, and I. Petersen, "Robust finite horizon minimax filtering for discrete-time stochastic uncertain systems," *Systems and Control Letters,* **52**(2), pp. 99-112 (June 2004).

[Zad50]   L. Zadeh and J. Ragazzini, "An extension of Wiener's theory of prediction," *Journal of Applied Physics,* **21**, pp. 645-655 (July 1950).

[Zar00]   P. Zarchan and H. Musoff, *Fundamentals of Kalman Filtering: A Practical Approach,* American Institute of Aeronautics and Astronautics, Reston, Virginia, 2000.

[Zha05a]   H. Zhang, L. Xie, Y. Chai Soh, and D. Zhang, "H_∞ fixed-lag smoothing for discrete linear time-varying systems," *Automatica,* **41**(5), pp. 839-846 (May 2005).

[Zha95]   X. Zhang, A. Heemink, and J. Van Eijkeren, "Performance robustness analysis of Kalman filter for linear discrete-time systems under plant and noise uncertainty," *International Journal of Systems Science,* **26**(2), pp. 257-275 (February 1995).

[Zha05b]   Y. Zhang, Y. Soh, and W. Chen, "Robust information filter for decentralized estimation," *Automatica,* **41**(12), pp. 2141-2146 (December 2005).