

# References

1. Aguglia, P., Voiarouge, P., Wamkeue, R., Cros, J.: Determination of fault operation dynamical constraints for the design of wind turbine DFIG drives. *Math. Comput. Simul., Elsevier* **81**, 252–262 (2010)
2. Aguiar, A.P., Hespanha, J.P.: Trajectory-tracking and path-following of underactuated autonomous vehicles with parametric modelling uncertainty. *IEEE Trans. Autom. Control* **52**(3), 1362–1379 (2007)
3. Aguilar-Ibáñez, C., Sira-Ramirez, H., Suárez-Castañón, M.S., Martínez-Navarro, E., Moreno-Armendariz, M.A.: The trajectory tracking problem for an unmanned fourrotor system: flatness-based approach. *Int. J. Control, Taylor and Francis* **85**(1), 69–77 (2012)
4. Akin, B., Orguner, U., Ersak, A.: State estimation of induction motor using unscented Kalman filter. In: *Control Applications, Proceedings of the IEEE CCA 2003 Conference, Instabul, Turkey* (2003)
5. Akin, B., Orguner, U., Ersak, A.: A comparative study on Kalman filtering techniques designed for state estimation of industrial AC drive systems. In: *Proceedings of the IEEE International Conference on Mechatronics 2004, ICM'04, Istanbul, June 2004*
6. Akin, B., Orguner, U., Ersak, A.: Simple derivative-free nonlinear state observer for sensorless AC drives. *IEEE/ASME Trans. Mechatron.* **11**(5), 634–643 (2006)
7. Alanis, A.Y., Sanchez, E.N., Ricalde, R.J., Perez-Cisneros, M.A.: Discrete-time reduced order neural observers for uncertain nonlinear systems. *Int. J. Neural Syst., World Scientific* **20**(1), 29–38 (2010)
8. Ali, A., Blath, J.P.: Nonlinear torque control of a Spark-Ignited engine. In: *Proceedings of the American Control Conference, Minneapolis, Minnesota, June 2006*
9. Allag, A., Hammoudi, M., Mimoune, S.M., Ayad, M.Y., Becherif, M., Miraoui A.: Tracking control via adaptive backstepping approach for a three-phase PWM AC-Dc converter. In: *IEEE ISIE 2007 International Symposium on Industrial Electronics* (2007)
10. Alipi, C., de Russion, C., Piuri, V.: A neural network-based control solution to air-fuel ratio control for automotive fuel injection systems. *IEEE Trans. Syst. Man Cybern. C Appl. Rev.* **33**(2), 259–268 (2003)
11. Altifai, M.T., Hassan, M.F., Zribi, M.: Decentralized load frequency controller for a multi-area interconnected power system. *Electr. Power Energy Syst., Elsevier* **33**, 198–209 (2011)
12. Alonge, F., D'Ippolito, A.: Robustness analysis of an extended Kalman filter for sensorless control of induction motors. In: *IEEE International Symposium on Industrial Electronics, ISIE 2010, Bari, Italy, July 2010*

13. An, L., Sepehri, L.: Leakage fault identification in a hydraulic positioning system using extended Kalman filter. In: Proceedings of the 2004 American Control Conference Boston, Massachusetts, June–July 2004
14. Andone, D., Dobrescu, R., Hossu, A., Dobrescu, M.: Application of fuzzy model prediction control to a drum boiler. *Integr. Comput. Aided Eng.*, IOP Press **13**(4), 347–359 (2006)
15. Anene, E.C., Aliya, U.O., Lévine, J., Vemayagamoorthy, G.K.: Flatness-based feedback linearization of a synchronous machine model with static excitation and fast turbine valving. In: IEEE 2007 Power Engineering, General Meeting, Tampa, Florida, USA, June 2007
16. Aoustin, Y., Fliess, M., Mounier, H., Rouchon P., Rudolph J.: Theory and practice in the motion planning control of a flexible robot arm using Mikusiński operators. In: Proceedings of 4th Symposium on Robotics and Control, pp. 287–293, Nantes (1997)
17. Ariaei, F., Jonckheere, E.: LDV approach to circular trajectory tracking of the underactuated hovercrafts with modelling parameter uncertainties. In: Proceedings of the 2006 American Control Conference, Minneapolis, Minnesota USA, June 2006
18. Arsie, I., Di Iorio, S., Pianese, C., Rizzo, G., Sorrentino, M.: Recurrent neural networks for air-fuel ratio estimation and control in spark-ignited engines. In: Proceedings of the 17th IFAC World Congress, Seoul, Korea, July 2008
19. Arsie, I., Pianese, C., Sorrentino, M.: A procedure to enhance identification of recurrent neural networks for simulating air-fuel ratio dynamics in SI engines. *Eng. Appl. Artif. Intell.* **19**(1), 65–77 (2006)
20. Arsie, I., Pianese, C., Rizzo, G., Cioffi, V.: An Adaptive estimator of fuel film dynamics in the intake port of a spark ignition engine. *Control Eng. Pract.*, Elsevier **11**(3), 303–309 (2003)
21. Arteaga, M.A., Siciliano, B.: On Tracking control of flexible robot arms. *IEEE Trans. Autom. Control* **45**(3), 520–527 (2000)
22. Astrom, K.J., Wittenmark, B.: *Adaptive Control*. Addison Wesley, Boston (1995)
23. Auat, C.F., Steiner, G., Perez, P.G., Carelli, R.: Optimized EIF-SLAM algorithm for precision agriculture mapping based on stem detection. *Comput. Electron. Agric.* (Elsevier). **78**, 195–207 (2011)
24. Azou, S., Burel, G.: Design of a Chaos-Based Spread-Spectrum Communication System Using Dual Unscented Kalman Filters. *IEEE Communications 2002*, Bucharest, Romania (2002)
25. Azou, S., Luca, M.B., Burel, G.: Automatic Gain Control in a Kalman Filter-Based Synchronization Chaotic Receiver. *IEEE Communications 2004*, Bucharest, Romania, June 2004
26. Bagordo, G., Cazzulani, G., Resta, F., Ripamonti, F.: A modal disturbance estimator for vibration suppression in nonlinear flexible structures. *J. Sound Vib.*, Elsevier **330**, 6061–6069 (2011)
27. Ballachi, A., Benvenuti, L., di Benedetto, M.D., Sangiovanni-Vincentelli, A.: The design of dynamical observers for hybrid systems: theory and application of an automotive control problem. *Automatica*, Elsevier **49**(4), 915–925 (2013)
28. Bao, X., Zhuo, F., Tian, Y., Tan, P.: Simplified feedback linearization control of three-phase photovoltaic inverter with an LCL filter. *IEEE Trans. Power Electron.* **28**(6), 2739–2752 (2013)
29. Barrera-Cardiel, E., Pastor-Gomez, N.: Microcontroller-based power-angle instrument for a power system laboratory. In: IEEE Powering Engineering Society Summer Meeting, pp. 1008–1012 (1999)
30. Bar-Shalom, Y.: Update with out-of-sequence measurements in tracking: exact solution. *IEEE Trans. Aerosp. Electron. Syst.* **38**, 769–778 (2007)
31. Basseville, M., Nikoiforov, I.: *Detection of Abrupt Changes: Theory and Applications*, Prentice-Hall, Englewood Cliffs (1993)
32. Basseville, M., Benveniste, A., Zhang, Q.: *Surveillance d'installations industrielles: démarche générale et conception de l'algorithmique*. IRISA Publication Interne No 1010 (1996)

33. Basseville, M., Benveniste, A., Gach-Devauchelle, B., Goursat, M., Bonnetcase, D., Doray, P., Prevosto, M., Olnon, M.: In situ damage monitoring in vibration mechanics: diagnostics and predictive maintenance. *Mech. Syst. Sig. Process.*, Elsevier **7**(5), 401–423 (1993)
34. Basturk, H.I., Kristic, M.: Adaptive wave cancellation by acceleration feedback for ramp-connected air-cushion-actuated surface effect ships. *Automatica*, Elsevier **49**, 2591–2602 (2010)
35. Becker, J., Meurer, T.: Feedforward tracking control for non-uniform Timoshenko beam models: combining differential flatness, modal analysis, and FEM. *ZAMM J. Appl. Math. Mech.*, Wiley **87**(1), 37–58 (2005)
36. Benveniste, A., Basseville, M., Moustakides, G.: The asymptotic local approach to change detection and model validation. *IEEE Trans. Autom. Control* **32**(7), 583–592 (1987)
37. Bertoglio, C., Chapelle, D., Fernandez, M.A., Gerbeau, J.F., Moireau, P.: State observers of a vascular fluid-structure interaction model through measurements in the solid, INRIA research report no 8177, Dec 2012
38. Besançon, G., Zhang, Q., Hammouri, H.: High-gain observer based state and parameter estimation in nonlinear systems, IFAC Symposium on Nonlinear Control Systems (NOLCOS), Stuttgart, Germany (2004)
39. Berman, S., Edan, Y.: Intelligent automatic guided vehicles. In: Rigatos, G. (ed.) *Intelligent Industrial Systems: Modelling, Automation and Adaptive Behavior*. IGI Publications (2010)
40. Beltran-Carbajal, F., Chavez-Conde, E., Silva Navarro, G., Vazquez Gonzalez, B., Favela Contreras, A.: Control of nonlinear active vehicle suspension systems using disturbance observers. In: *Vibration Analysis and Control—New Trend and Developments*. InTech Publications (2011)
41. Bertini, D., Bittanti, S., Savaresi, S.M.: Decoupled cushion control in ride control systems for air cushion catamarans. *Control Eng. Pract.*, Elsevier **8**, 191–203 (2000)
42. Bertoglio, C., Chapelle, D., Fernandez, M.A., Gerbeau, J.F., Moireau, P.: State observers of a vascular fluid-structure interaction model through measurements in the solid, INRIA research report no 8177, Dec 2012
43. Besnard, L., Shtessel, Y.B., Landrum, B.: Quadrotor vehicle control via sliding mode controller driven by sliding mode disturbance observer. *J. Franklin Inst.*, Elsevier **349**, 658–684 (2012)
44. Bevely, D.M., Ryu, J., Gerdes, J.C.: Integrating INS sensors With GPS measurements for continuous estimation of vehicle sideslip, roll, and tire cornering stiffness. *IEEE Trans. Intell. Transp. Syst.* **7**(4), 483–493 (2006)
45. Bidram, A., Davoudi, A., Lewis, F.L., Guerrero, J.M.: Distributed cooperative secondary control of microgrids using feedback linearization. *IEEE Trans. Power Syst.* **28**(3), 3462–3470 (2013)
46. Bidram, A., Lewis, F.L., Davoudi, A.: Synchronization of nonlinear heterogeneous cooperative systems using input-output feedback linearization. *Automatica*, Elsevier **50**, 2578–2585 (2014)
47. Blaabjerg, F., Teodorescu, R., Liserre, M., Timbus, A.V.: Overview of control and grid synchronization for distributed power generation systems. *IEEE Trans. Industr. Electron.* **53**(5), 1398–1409 (2006)
48. Blake Vance, J., Kaul, B.C., Jagannathan, S., Drallmeier, J.A.: Output feedback controller for operation of spark ignition engines at lean conditions using neural networks. *IEEE Trans. Control Syst. Technol.* **16**(2), 214–227 (2008)
49. Bodson, M., Chiasson, J., Novotnak, R.: High-performance induction motor control via input-output linearization. *IEEE Control Syst. Mag.* **14**(4), 24–33 (1994)
50. Boizot, N., Busvelle, E., Gauthier, J.-P.: An adaptive high-gain observer for nonlinear systems. *Automatica*, Elsevier **46**, 1483–1488 (2010)
51. Borsje, P., Chan, T.F., Wong, Y.K., Ho, S.L.: A comparative study of Kalman filtering for sensorless control of a permanent-magnet synchronous motor drive. In: 2005 IEEE International Conference on Electric Machines and Drives, art. no. 1531434, pp. 815–822, San Antonio, Texas (2005)

52. Bosnak, M., Matko, D., Blasic, S.: Quadcopter control using an on-board video system with off-board processing. *Robot. Auton. Syst.*, Elsevier **60**, 657667 (2012)
53. Boudaoud, M., Haddad, Y., Le Gorrec, Y.: Modelling and optimal force control of a nonlinear electrostatic microgripper. *IEEE/ASME Trans. Mechatron.* **18**, 1130–1139 (2012)
54. Boukhezzer, B., Siguerdidjane, H.: Nonlinear control with wind estimation of a DFIG variable speed wind turbine for power capture optimization. *Energy Convers. Manage.*, Elsevier **50**, 885–892 (2009)
55. Bououden, S., Boutat, D., Zheng, G., Barbot, J.P., Kratz, F.: A triangular canonical form for a class of 0-flat nonlinear systems. *Int. J. Control*, Taylor and Francis **84**(2), 261–269 (2011)
56. Blackmore, S., Stout, W., Wang, M., Runov, B.: Robotic agriculture—the future of agricultural mechanisation? In: Stafford, J.V. (ed.) *Fifth European Conference on Precision Agriculture*, pp. 621–628. Wageningen Academic Publishers, The Netherlands (2005)
57. Blake Vance, J., Kaul, B.C., Jagannathan, S., Drallmeier, J.A.: Output feedback controller for operation of spark ignition engines at lean conditions using neural networks. *IEEE Trans. Control Syst. Technol.* **16**(2), 214–227 (2008)
58. Blasco, V., Kaura, V.: A new mathematical model and control of a three-phase AC-DC voltage source converter. *IEEE Trans. Power Electron.* **12**(1), 116–123 (1997)
59. Boussaada, I., Cela, A., Mounier, H., Niculescu, S.I.: Control of drilling vibrations: a time-delay system-based approach. In: *11th Workshop on Time Delay Systems*, France, Feb 2013
60. Brahmī, J., Krichen, L., Ouali, A.: A comparative study between three sensorless control strategies for PMSG in wind energy conversion systems. *Appl. Energy*, Elsevier **86**, 1565–1573 (2009)
61. Bresch-Pietri, D., Chauvin, J., Petit, N., Controller, adaptive backstepping, for uncertain systems with unknown input time-delay. In: *Application to SI Engines*, 49th IEEE Conference on Decision and Control, Atlanta, GA, Dec 2010
62. Brdys, M.A., Kulowski, G.J.: Dynamic neural controllers for induction motor. *IEEE Trans. Neural Networks* **10**(2), 340–355 (1999)
63. Calderaro, V., Galdi, V., Piccolo, A., Siano, P.: A fuzzy controller for maximum energy extraction from variable speed wind power generation systems. *Electr. Power Syst. Res.*, Elsevier **78**, 1109–1118 (2008)
64. Campillo, F., Mevel, L.: Recursive maximum likelihood estimation for structural health monitoring: tangent filter implementations. In: *CDC-ECC '05*, 44th IEEE Conference on Decision and Control 2005 and 2005 European Control Conference
65. Campos-Gaona, D., Moreno-Goytia, E.L., Anaya-Lara, O.: Fault ride-through improvement of DFIG-NT by integrating a two-degrees-of-freedom internal model control. *IEEE Trans. Industr. Electron.* **60**(3), 1133–1145 (2013)
66. Capece, S.L., Cecati, C., Rotondale, N.: A sensorless control technique for low cost AC/DC converters. In: *IEEE Industry Applications Conference 2003*, 38th IAS Annual Meeting, vol. 3, pp. 1546–1551, 2003
67. Capece, S.L., Cecati, C., Rotondale, N.: A new three-phase active rectifier based on power matching modulation. In: *IEEE IECON 2003*, 29th Annual Conference of the Industrial Electronics Society, vol. 1, pp. 202–207 (2003)
68. Caron, F., Dufflos, E., Pomorski, D., Vanheeghe, P.: GPS/IMU data fusion using multi-sensor Kalman Filtering: introduction of conceptual aspects. *Inf. Fusion*, Elsevier **7**, 221–230 (2006)
69. Cariou, C., Lemain, R., Thuilot, B., Verducat, M.: Automatic guidance of a four-wheel-steering mobile robot for accurate field operations. *J. Field Robot.*, Wiley **26**, 504–516 (2009)
70. Castelli-Dezza, F., Iocchetti, M.F., Perini, P.: An observer for sensorless DFIM drives based on the natural fifth harmonic of the line voltage, without stator current measurements. *IEEE Trans. Industr. Electron.* **60**(10), 4301–4309 (2013)
71. Castilla, M., Miret, J., Camacho, A., Matas, J., García de Vicuña, L.: Reduction of current harmonic distortion in three-phase grid-connected photovoltaic inverters via resonant current control. *IEEE Trans. Industr. Electron.* **60**(4), 1464–1472 (2013)

72. Cecati, C., Dell' Aquila, A., Lecci, A., Liserre, M.: Implementation issues of a fuzzy-logic-based three-phase active rectifier employing only voltage sensors. *IEEE Trans. Industr. Electron.* **52**(2), 378–385 (2005)
73. Cecati, C., Ciancetta, F., Siano, P.: A multilevel inverter for photovoltaic systems with fuzzy logic control. *IEEE Trans. Industr. Electron.* **57**(12), 4115–4125 (2010)
74. Cecati, C., Ciancetta, F., Siano, P.: A FPGA/fuzzy logic—based multilevel inverter. In: *Proceedings of the ISIE 2009, 18th IEEE International Symposium on Industrial Electronics*, pp. 706–711 (2009)
75. Cecati, C., Dell' Aquila, A., Liserre, M., Ometto, A.: A fuzzy-logic-based controller for active rectifier. *IEEE Trans. Ind. Appl.* **39**(1), 105–112 (2003)
76. Chladny, R.R., Koch, C.R.: Flatness-based tracking of an electromechanical variable valve timing actuator with disturbance observer feedforward compensation. *IEEE Trans. Control Syst. Technol.* **16**(4), 652–663 (2008)
77. Chamseddine, A., Li, T., Zhang, Y., Rabbath, C.A., Theilliol, D.: Flatness-based trajectory planning for a quadrotor unmanned aerial vehicle test-bed considering actuator and system constraints. In: *2012 American Control Conference Fairmont Queen Elizabeth, Montréal, Canada, 27–29 June 2012*
78. Chang, C.H., Lin, Y.H., Chen, Y.M., Chang, Y.R.: Simplified reactive power control for single-phase grid-connected photovoltaic inverters. *IEEE Trans. Industr. Electron.* **61**(5), 2286–2296 (2014)
79. Chang, Y.C.: A robust tracking control for chaotic Chua's circuits via fuzzy approach. *IEEE Trans. Circ. Syst. I* **48**(7), 889–895 (2001)
80. Chang, Y.D.: Digital secure communication via chaotic systems. *Digital Sig. Process.*, Elsevier **19**, 693–699 (2009)
81. Chauvin, J.: Observer design for a class of wave equations driven by an unknown periodic input. In: *18th World Congress. Milano, Italy (2011)*
82. Chauvin, J., Corde, G., Moulin, P., Castagné, M., Petit, N., Rouchon, P.: Real-time combustion torque estimation on a diesel engine test bench using time-varying Kalman filtering. In: *43rd IEEE Conference on Decision and Control, Bahamas, Dec 2004*
83. Chauvin, J., Moulin, P., Corde, G., Petit, N., Rouchon, P.: Filtering, Kalman, for real-time individual cylinder air fuel ratio observer on a diesel engine test bench. In: *Proceedings: American Control Conference. Minneapolis, Minnesota (2006)*
84. Chavarría, J., Biel, D., Guinjoan, F., Meza, C., Negroni, J.J.: Energy-balance control of PV cascaded multilevel grid-connected inverters under level-shifted and phase-shifted pwms. *IEEE Trans. Industr. Electron.* **60**(1), 98–111 (2013)
85. Chen, W.H., Ballance, D.J., Gawthrop, P.J., Reilly, J.O.: A nonlinear disturbance observer for robotic manipulators. *IEEE Trans. Industr. Electron.* **47**(4), 932–938 (2000)
86. Chen, L., Mercorelli, P., Liu, S.: A Kalman estimator for detecting repetitive disturbances. In: *ACC 2005, American Control Conference, Portland, Oregon (2005)*
87. Chen, B.S., Lee, C.H., Chang, Y.C.:  $H_\infty$  tracking design of uncertain nonlinear SISO systems: adaptive fuzzy approach. *IEEE Trans. Fuzzy Syst.* **4**, 32–43 (1996)
88. Chen, B., Liu, X., Tong, S.: Adaptive fuzzy output tracking control of MIMO nonlinear uncertain systems. *IEEE Trans. Fuzzy Syst.* **15**(2), 287–300 (2007)
89. Chen, C.H., Lin, C.M., Chen, T.Y.: Intelligent adaptive control for MIMO uncertain nonlinear systems. *Expert Syst. Appl.*, Elsevier **35**, 865–877 (2008)
90. Chen, C.S.: Robust self-organising neural-fuzzy control with uncertainty observer for MIMO nonlinear systems. *IEEE Trans. Fuzzy Syst.* **19**(4), 694–706 (2011)
91. Chen, C.S.: Dynamic structure adaptive neural fuzzy control for MIMO uncertain nonlinear systems. *Inf. Sci.*, Elsevier **179**, 2676–2688 (2009)
92. Chen, C.S.: Robust self-organising neural-fuzzy control with uncertainty observer for MIMO nonlinear systems. *IEEE Trans. Fuzzy Syst.* **19**(4), 694–706 (2011)
93. Chen, X.B., Siljaki, D.D., Stankovic, S.S.: Decentralized  $H_\infty$  design of automatic generation control. In: *IFAC 15th World Congress, Barcelona, Spain (2002)*

94. Chen, G., Moiola, J.L., Wang, H.O.: Bifurcation control: theories, methods and applications. *Int. J. Bifurcat. Chaos* **10**(3), 511–548 (2000)
95. Chen, G., Zhang, L., Cai, X., Zhang, W., Yin, C.: Nonlinear control of the doubly fed induction generator by input-output linearizing strategy. In: Hu, W. (ed.) *Electronics and Signal Processing, Lecture Notes in Electrical Engineering*, vol. 97, pp. 601–608. Springer (2011)
96. Chen, B., Liu, X., Tong, S.: Adaptive fuzzy approach to control unified chaotic systems. *Chaos, Solitons and Fractals*, Elsevier **34**, 1180–1187 (2007)
97. Chen, D., Zhao, W., Sprott, J.C., Ma, X.: Application of Takagi-Sugeno fuzzy model to a class of chaotic synchronization and anti-synchronization. *Nonlinear Dyn.*, Springer **73**, 1495–1505 (2013)
98. Chengzhi, Y., Cong, W.: Persistency of excitation and performance of deterministic learning. In: *Proceedings of the 30th Chinese Control Conference*, Yantai, China, July 2011
99. Cho, Y.W., Park, C.W., Kim, J.H., Park, M.: Indirect model reference adaptive fuzzy control of dynamic fuzzy-state space model. *IET Proc. Control Theor. Appl.* **148**(4), 273–282 (2005)
100. Chiasson, J.: A new approach to dynamic feedback linearization control of an induction motor. *IEEE Trans. Autom. Control* **43**(3), 391–397 (1998)
101. Chiu, C.S.: Mixed feedforward/feedback adaptive fuzzy control for a class of MIMO nonlinear systems. *IEEE Trans. Fuzzy Syst.* **14**(6), 716–727 (2006)
102. Chinniah, Y., Burton, R., Habibi, S.: EKF applications to actuators state estimation-based control. *Mechatronics*, Elsevier **16**, 643–653 (2006)
103. Chladny, R.R., Koch, C.R.: Flatness-based tracking of an electromechanical variable valve timing actuator with disturbance observer feedforward compensation. *IEEE Trans. Control Syst. Technol.* **16**(4), 652–663 (2008)
104. Cho, Y.W., Park, C.W., Kim, J.H., Park, M.: Indirect model reference adaptive fuzzy control of dynamic fuzzy-state space model. *IET Proc. Control Theor. Appl.* **148**(4), 273–282 (2005)
105. Choi, S.B., Hedrick, J.K.: An observer-based controller design method for improving air/fuel characteristics of spark ignition engines. *IEEE Trans. Control Syst. Technol.* **6**(3), 325–334 (1998)
106. Colin, G., Chamuillard, Y., Bloch, G., Corde, G.: Neural control of fast nonlinear systems: application to a turbocharged SI engine with VCT. *IEEE Trans. Neural Networks* **18**(4), 1101–1114 (2007)
107. Cortesao, R., Park, J., Khatib, O.: Real-time adaptive control for haptic tele-manipulation with Kalman active observers. *IEEE Trans. Robot.* **22**(5), 987–999 (2006)
108. Cortesao, R.: On Kalman active observers. *J. Intell. Robot. Syst.*, Springer **48**(2), 131–155 (2006)
109. Cot, L.D., Bes, C.: Study of the robustness of an enhanced CSK system by using the extended Kalman filter. In: *2011 International Conference for Internet Technology and Secured Transactions (ICITST)*, Abu Dhabi (2011)
110. Craven, P.J., Sutton, R., Burns, R.S.: Multivariable neurofuzzy control of an autonomous underwater vehicle. *Integr. Comput. Aided Eng.*, IOS Press **6**(4), 275–288 (1999)
111. Crespo, L., Agrawal, S.: Differential flatness and cooperative tracking in the Lorenz System. In: *Proceedings of the American Control Conference* Denver, Colorado, June 2003
112. Cui, Y., Ge, S.S.: Autonomous vehicle positioning with GPS in urban canyon environments. *IEEE Trans. Robot. Autom.* **19**(1), 15–15 (2003)
113. Dabo, M., Langlois, N., Chafouk, H.: Asymptotic tracking applied to the control of a turbocharged diesel engine. In: *UKACC International Conference on Control*, University of Manchester, 2008
114. Dacic, D.B., Subbotin, M.V., Kootovic, P.V.: Control effort reduction in tracking feedback laws. *IEEE Trans. Autom. Control* **51**(11), 1831–1837 (2006)
115. Damm, G., Marino, R., Lamnabhi-Lagarrigue, R.: Adaptive nonlinear output feedback for stabilization and voltage regulation of power generators with unknown parameters. *Int. J. Robust Nonlinear Control*, Wiley **14**, 833–855 (2004)

116. Dasgupta, S., Mohan, S.N., Sahoo, S.K., Panda, S.K.: Lyapunov function-based current controller to control active and reactive power flow from a renewable energy source to a generalized three-phase microgrid system. *IEEE Trans. Industr. Electron.* **60**(2), 799–813 (2013)
117. Dannehl, J., Fuchs, F.W.: Flatness-based control of an induction machine fed via voltage source inverter—concept, control design and performance analysis. In: *IECON 2006, IEEE Conference on Industrial Electronics*, pp. 5125–5130 (2006)
118. Delaleau, E., Louis, J.P., Ortega, R.: Modelling and control of induction motors. *Int. J. Appl. Math. Comput. Sci.* **11**(1), 105–129 (2001)
119. De Leon Moralers, J., Busawon, K., Acha-Duza, S.: A robust observer-based controller for synchronous generators. *Electr. Power Energy Syst., Elsevier*, **23**, 195–211 (2001)
120. Del Angel, A., Geurts, P., Ernst, D., Glavic, M., Wehenkel, L.: Estimation of rotor angles of synchronous machines using artificial neural networks and local PMU-based quantities. *Neurocomputing, Elsevier* **70**, 2668–2678 (2007)
121. Delvecchio, D., Spelta, C., Perico, G., Savaresi, S.M.: Accelerometer-based estimation of the elongation speed in a motorcycle suspension via Kalman-filter techniques. In: *49th IEEE Conference on Decision and Control, Atlanta* (2010)
122. De Luca, A., Siciliano, B.: Regulation of flexible arms under gravity. *IEEE Trans. Robot. Autom.* **9**, 463–467 (1993)
123. Delvecchio, D., Spelta, C., Savaresi, S.M.: Estimation of the Tire vertical deflection in a motorcycle suspension via Kalman-Filtering techniques. In: *2011 IEEE International Conference on Control Applications (CCA) Part of 2011 IEEE Multi-Conference on Systems and Control Denver* (2011)
124. Demetriou, M.A.: Design of consensus and adaptive consensus filters for distributed parameter systems. *Automatica, Elsevier* **46**, 300–311 (2010)
125. Dendouga, A., Abdessamed, R., Bendaas, M.L., Chaiba, A.: Decoupled active and reactive power control of a doubly-fed induction generator (DFIG). In: *Proceedings of the 15th Mediterranean Conference on Control and Automation, Athens, Greece, July 2007*
126. DeSouza, G.N., Kak, A.C.: A subsumptive, hierarchical and distributed vision-based architecture for smart robotics. *IEEE Trans. Syst. Man Cybern. B* **34**(5), 1988–2002 (2004)
127. Dimassi, H., Loria, A., Belghith, S.: A new secured transmission scheme based on chaotic synchronisation via smooth adaptive unknown-input observers. *Commun. Nonlinear Sci. Numer. Simul., Elsevier* **17**, 3727–3739 (2012)
128. Do, K.D., Pan, J.: Global tracking control of underactuated ships with nonzero off-diagonal terms in their system matrices. *Automatica, Elsevier* **41**, 87–95 (2005)
129. Do, K.D.: Practical formation control of multiple underactuated ships with limited sensing ranges. *Robot. Auton. Syst., Elsevier* **59**(6), 457–471 (2011)
130. Do, T.D., Leu, V.Q., Choi, Y.S., Choi, H.H., Jung, J.W.: An adaptive voltage control strategy of three-phase inverter for stand-alone distributed generation systems. *IEEE Trans. Industr. Electron.* **60**(12), 5660–5672 (2013)
131. Dong, L., Zhang, Y., Gao, Z.: A robust decentralized load frequency controller for interconnected power systems. *ISA Trans., Elsevier* **51**, 410–419 (2012)
132. Doyle, J.C., Glover, K., Khargonekar, P.P., Francis, B.A.: State-space solutions to standard  $H_2$  and  $H_\infty$  control problems. *IEEE Trans. Autom. Control* **34**, 831–847 (1989)
133. Dragonescu, A., Soane, A.M.: Multigrid solution of a distributed optimal control problem constrained by the Stokes equations. *Appl. Math. Comput., Elsevier* **219**, 5622–5634 (2013)
134. Du, H., Zhang, N.:  $H_\infty$  control of active vehicle suspensions with actuator time delay. *J. Sound Vib., Elsevier* **301**, 236–252 (2007)
135. Dubljevic, S.: Optimal boundary control of Kuramoto-Sivashinsky equation. In: *2009 American Control Conference, St. Luis, MO, USA, June 2009*
136. Dydek, Z.T., Annaswamy, A.M., Lavretsky, E.: Adaptive control of quadrotor UAVs: a design trade study with flight evaluations. *IEEE Trans. Control Syst. Technol.* **21**(4), 1400–1406 (2013)

137. Efimov, D.V., Fradkov, A.L.: Adaptive tuning to bifurcation for time-varying nonlinear systems. *Automatica*, Elsevier **42**, 417–425 (2006)
138. Efimov, D., Zolghadri, A., Simon, P.: Improving fault detection abilities of extended Kalman filters by covariance matrices adjustment. In: 2010 Conference on Control and Fault Tolerant Systems, Nice, France, 6–8 Oct 2010
139. El Magri, A., Giri, F., Bensançon, G., El Fadili, A., Dagard, L., Chaoui, F.Z.: Sensorless adaptive output feedback control of wind energy systems with PMS generators. *Control Eng. Pract.*, Elsevier, **21**, 530–543 (2013)
140. Elkington, K., Knazkins, V., Ghanhari, M.: On the stability of power systems containing doubly-fed induction generator-based generation. *Elect. Power Syst. Res.*, Elsevier **78**, 1477–1484 (2008)
141. Escobar, G., Chevreau, D., Ortega, R., Mendes, E.: An adaptive passivity-based controller for a unity power factor rectifier. *IEEE Trans. Control Syst. Technol.* **9**(4), 637–644 (2001)
142. Fallahi, K., Leung, H.: A chaos secure communication scheme based on multiplication modulation. *Commun. Nonlinear Sci. Numer. Simul.*, Elsevier **15**, 368–383 (2010)
143. Fallahi, K., Raoufi, R., Khoshbin, H.: An application of Chen system for secure chaotic communication based on Extended Kalman Filter and multi-shift cipher algorithm. *Commun. Nonlinear Sci. Numer. Simul.*, Elsevier **13**, 763–781 (2008)
144. Fan, L., Wehbe, Y.: Extended Kalman filtering based real-time dynamic state and parameter estimation using PMU data. *Electr. Power Syst. Res.*, Elsevier, **103**, 168–177 (2013)
145. Farinwata, S., Filev, D., Langari, R.: *Fuzzy Control: Synthesis and Analysis*. Wiley, New York (2000)
146. Fei, J., Zhou, J.: Robust adaptive control of MEMS triaxial gyroscope using fuzzy compensator. *IEEE Trans. Syst. Man Cybern. Part B Cybern.* **42**(6), 1599–1607 (2012)
147. Feki, M., Robert, B., Gelle, G., Colas, M.: Secure digital communication using discrete-time chaos synchronization. *Chaos Solitons and Fractals* **18**, 881–890 (2003)
148. Fiengo, G., Grizzle, J.W., Cook, J.A., Karnik, A.Y.: Dual-UEGO active catalyst control for emissions reduction: design and experimental validation. *IEEE Trans. Control Syst. Technol.* **13**(5), 722–735 (2005)
149. Flardh, O., Ericsson, G., Klingborg, E., Martensson, J.: Optimal air-path control during load transients on a spark ignited engine with variable geometry turbine and variable valve timing. *IEEE Trans. Control Syst. Technol.* **22**(1), 82–92 (2013)
150. Fliess, M., Mounier, H., Rouchon, P., Rudolph, J.: Systèmes lineaires sur les operateurs de Mikusiński et commande d' une poutre flexible. In: ESAIM Proceedinds Élasticité, viscoélasticité et contrôle optimal, huitièmes entretiens du Centre Jacques Cartier, Lyon (1996)
151. Fliess, M., Mounier, H., Rouchon, P., Rudolph, J.: A distributed parameter approach to the control of a tubular reactor: a multi-variable case. In: Proceedings of 37<sup>th</sup> Conference on Decision and Control, pp. 439–442, Tampa (1998)
152. Fliess, M., Mounier, H.: Tracking control and  $\pi$ -freeness of infinite dimensional linear systems. In: Picci, G., Gilliam, D.S. (eds.) *DynAmical Systems, Control, Coding and Computer Vision*, vol. 258, pp. 41–68. Birkhäuser, Basel (1999)
153. Fliess, M., Lévine, J., Martin, P., Rouchon, P.: A Lie-Backlund approach to equivalence and flatness of nonlinear systems. *IEEE Trans. Autom. Control* **44**(5), 922–937 (1999)
154. Fliess, M., Mounier, H.: An algebraic framework for infinite-dimensional linear systems. In: Proceedings of International School on Automatic Control of Lille, Control of Distributed Parameter Systems: Theory and Applications, Grenoble, France (2002)
155. Forchetti, D.G., Solsona, J.A., Garcia, G.O., Valla, M.I.: A control strategy for stand-alone wound rotor induction machine. *Electr. Power Syst. Res.*, Elsevier **77**, 163–169 (2007)
156. Forchetti, D.G., Garcia, G.O., Valla, M.I.: Adaptive observer for sensorless control of stand-alone doubly-fed induction generator. *IEEE Trans. Industr. Electron.* **56**(10), 4174–4180 (2009)
157. Fouladirad, M., Nikiforov, I.: Optimal statistical fault detection with nuisance parameters. *Automatica*, Elsevier **41**, 1157–1171 (2005)



158. Fradkov, A.I., Andrievsky, B., Andrievsky, A.: Practically stable observer-based synchronization of discrete-time chaotic systems over the limited-band communication channel. In: 3rd International Conference on Physics and Control PhysCon 2007, Potsdam, Germany, Sept 2007
159. Franch, J., Agrawal, S.K., Sangwan, V.: Differential flatness of a class of  $n$ -DOF planar manipulators driven by 1 or 2 actuators. *IEEE Trans. Autom. Control* **55**(2), 548–554 (2010)
160. Fu, K.S., Gonzalez, R.C., Lee, G.S.G.: *Robotics: Control, Sensing, Vision and Intelligence*, McGraw-Hill, New York (1987)
161. Ghahremani, E., Kamwa, I.: Dynamic state estimation in power system by applying the extended Kalman filter with unknown inputs to phasor measurements. *IEEE Trans. Power Syst.* **26**(4), 2556–2566 (2011)
162. Galdi, V., Piccolo, A., Siano, P.: Designing an adaptive fuzzy controller for maximum wind energy extraction. *IEEE Trans. Energy Convers.* **23**(2), 559–569 (2008)
163. Gan, Q., Harris, C.J.: Comparison of two measurement fusion methods for Kalman-filter-based multisensor data fusion. *IEEE Trans. Aerosp. Electron. Syst.* **37**(1), 273–280 (2001)
164. Gao, Y., Er, M.J.: Online adaptive fuzzy neural identification and control of a class of MIMO nonlinear systems. *IEEE Trans. Fuzzy Syst.* **11**(4), 462–477 (2003)
165. Gao, H., Sun, W., Shi, P.: Robust sampled-data  $H_\infty$  control for vehicle active suspension systems. *IEEE Trans. Control Syst. Technol.* **18**(1), 238–245 (2010)
166. Ge, S.S., Hang, C.C., Zhang, T.: Nonlinear adaptive control using neural networks and its application to CSTR systems. *J. Process Control*, Elsevier **9**, 313–323 (1998)
167. Ge, S.S., Wang, C.: Direct adaptive NN control of a class of nonlinear systems. *IEEE Trans. Neural Networks* **13**(1), 214–221 (2002)
168. Ge, S.S., Hang, C.C., Zhang, T.: Adaptive neural network control of nonlinear systems by state and output feedback. *IEEE Trans. Syst. Man Cybern. Part B Cybern.* **29**, 818–828 (1999)
169. Ge, S.S., Lee, T.H., Zhu, G.: Energy-based robust controller design for multi-link flexible robots. *Mechatronics*, Elsevier, **6**(7), 779–798 (1996)
170. Georges, D., De Wit, C., Ramirez, J.: Nonlinear  $H_2$  and  $H_\infty$  optimal controllers for current-fed induction motors. *IEEE Trans. Autom. Control* **44**(7), 1430–1435 (1999)
171. Gensior, A., Nguyen, T.M.P., Rudolph, J., Guldner, H.: Flatness-based loss optimization and control of a doubly-fed induction generator system. *IEEE Trans. Control Syst. Technol.* **19**(6), 1457–1466 (2011)
172. Gensior, A., Rudolph, J., Guldner, H.: Flatness-based control of three-phase boost rectifiers. In: 11th European Conference on Power Electronics and Applications, EPE 2005, Dresden, Germany, Sept 2005
173. Gensior, A., Sira-Ramirez, H., Rudolph, J., Guldner, H.: On some nonlinear current controllers for three-phase boost rectifiers. *IEEE Trans. Industr. Electron.* **56**(2), 360–370 (2009)
174. Gerasimov, D.N., Javaherian, H., Nikiforov, V.O.: Data driven inverse-model control of SI engines. In: 2011 American Control Conference, San Francisco, CA, USA, June–July 2011
175. Gerdes, M., Greif, G., Peich, H.J.: Numerical optimal control of the wave equation: optimal boundary control of a string to rest in finite time. In: Proceedings of the 5th Mathmod Conference, Vienna, Austria, Feb 2006
176. Ghommam, J., Mnif, F.: Coordinated path-following control for a group of underactuated surface vessels. *IEEE Trans. Industr. Electron.* **56**(10), 3951–3963 (2009)
177. Gibbs, B.P.: *Advanced Kalman Filtering, Least Squares and Modelling: A Practical Handbook*. Wiley, New Jersey (2011)
178. Golapalakhrihnan, A., Kaisare, N., Narasimhan, S.: Incorporating delayed and infrequent measurements in extended Kalman filter-based nonlinear state estimation. *J. Process Control*, Elsevier **21**, 119–129 (2011)
179. Gorinevsky, D.: On the persistency of excitation in radial basis function network identification of nonlinear systems. *IEEE Trans. Neural Networks* **6**(5), 1237–1244 (1995)
180. Granle, M., Zhu, G., Saydy, L.: Sliding-mode tracking control of an electrostatic parallel-plate MEMS. In: IEEE/ASME International Conference on Advanced Intelligent Mechatronics, Montréal, Canada, July 2010

181. Guardiola, C., Pla, B., Blanco-Rodriguez, D., Erikson, L.: A computationally efficient Kalman Filter-based estimator for updating look-up tables applied to NOx estimation in diesel engines. *Control Eng. Pract.*, Elsevier **21**(11), 1455–1468 (2013)
182. Guerrero, J.M., Chandorkar, M., Lee, T.L., Loh, P.C.: Advanced control architectures for intelligent microgrids-part I: decentralized and hierarchical control. *IEEE Trans. Industr. Electron.* **60**(4), 1260–1262 (2013)
183. Gupta, A., Malley, M.K.O.: Disturbance-observer-based force estimation for haptic feedback. *ASME J. Dyn. Syst. Meas. Control* **133**(1), Article no. 014505 (2011)
184. Guo, S., Xie, W., Ma, B.: Robust position stabilization of underactuated hovercrafts with modelling parameter uncertainties. In: Proceedings of the 32nd Chinese Control Conference, Xian China, July 2013
185. Guo, B.Z., Xu, C.Z., Hammouri, H.: Output feedback stabilization of a one-dimensional wave equation with an arbitrary time-delay in boundary observation. *ESAIM Control Optim. Calc. Var.* **18**, 22–25 (2012)
186. Guo, L., Billings, S.A.: State-space reconstruction and spatio-temporal prediction of lattice dynamical systems. *IEEE Trans. Autom. Control* **52**(4), 622–632 (2007)
187. Gugat, M., Keiner, A., Leugering, G.: Optimal distributed control of the wave equation subject to state constraints. *ZAMM J. Appl. Math. Mech.* **89**(6), 420–444 (2009)
188. Guzzella, L., Simons, M., Geering, H.P.: Feedback-linearizing air-fuel ratio control. *Control Eng. Pract.*, Elsevier **5**(8), 1101–1105 (1997)
189. Hagenmeyer, V., Delaleau, E.: Robustness analysis of exact feedforward linearization based on differential flatness. *Automatica*, Elsevier **39**, 1941–1946 (2003)
190. Hagenmeyer, V., Delaleau, E.: Robustness analysis with respect to exogenous perturbations for flatness-based exact feedforward linearization. *IEEE Trans. Autom. Control* **55**(3), 727–731 (2010)
191. Han, T.T., Ge, S.S.: Cooperative control design for circular flocking of underactuated hovercrafts, 2011 IEEE Conference on Decision and Control and European Control Conference (CDC-ECC), Orlando Florida, Dec 2011
192. Harris, C., Hong, X., Gan, Q.: Adaptive Modelling, Estimation and Fusion from Data. Springer, Berlin (2002)
193. Harrison, R.F.: Optimal LQG regulation of multi-axled vehicle suspension dynamics. *J. Sound Vib.*, Elsevier **174**, 239–247 (1994)
194. Haschke, R., Steil, J.J.: Input-space bifurcation manifolds of recurrent neural networks. *Neurocomputing*, Elsevier **64**, 25–38 (2005)
195. He, B., Shen, T., Kako, J., Ouyang, M.: Input observer-based individual cylinder air-fuel ratio control: modelling, design and validation. *IEEE Trans. Control Syst. Technol.* **16**(5), 1057–1065 (2008)
196. He, Y., McPhee, J.: Multidisciplinary design optimization of mechatronic vehicles with active suspensions. *J. Sound Vib.*, Elsevier **283**, 217–241 (2005)
197. He, G., Gang, Z.: Finite-time stabilization of a comb-drive electrostatic microactuator. *IEEE/ASME Trans. Mechatron.*, Elsevier **17**(1), 107–115 (2012)
198. Hidayat, Z., Babuska, R., de Schutter, B., Nunez, A.: Decentralized Kalman Filter comparison for distributed parameter systems: a case study for a 1D heat conduction process. In: Proceedings of the 16th IEEE International Conference on Emerging Technologies and Factory Automatio, ETFA 2011, Toulouse, France, Sept 2011
199. Hilaiet, M., Augerb, E., Berthelot, F.: Speed and rotor flux estimation of induction machines using a two-stage extended Kalman filter. *Automatica*, Elsevier **45**, 1819–1827 (2009)
200. Holtz, J.: Sensorless control of induction motor drives. *Proc. IEEE* **90**(8), 1359–1394 (2002)
201. Hong, K.S.: An open-loop control for underactuated manipulators using oscillatory inputs: steering capability of an unactuated joint. *IEEE Trans. Control Syst. Technol.* **10**(3), 469–479 (2002)
202. Horng, J.H.: Neural adaptive tracking control of a DC motor. *Inf. Sci.*, Elsevier **118**, 1–13 (1999)

203. Hosseini, M., Zhu, G., Peter, Y.A.: A new formulation of fringing capacitance and its application to the control of parallel-plate electrostatic micro-actuators. *Analog Integr. Circ. Sig. Process.*, Springer **53**, 119–128 (2007)
204. Hou, J., Jankowski, L., Qu, J.: An online substructure identification method for local structural health monitoring. *Smart Mater. Struct.*, Inst. Phys. Publishing **22**, 95–117 (2013)
205. Hovakimyan, N., Nardi, F., Calise, A.J.: A novel error observer-based adaptive output feedback approach for control of uncertain systems. *IEEE Trans. Autom. Control* **47**(8), 1310–1314 (2002)
206. Hrovat, D.: Optimal active suspension structures for quarter-car vehicle models. *Automatica*, Elsevier **26**(5), 845–860 (1998)
207. Hsiao, W.Y., Chiang, H.H., Lee, T.T.: Sliding-mode-based filtered feedback control design for active suspension system. In: *IEEE SMC 2011 International Conference on Systems, Man and Cybernetics*. Anchorage, Alaska (2011)
208. Hu, Z., Feng, J.: Blind channel equalization algorithm based on dual Unscented Kalman Filter for chaotic multi-input multi-output communication systems. *Trans. Tianjin Univ.*, Springer **18**, 33–37 (2012)
209. Hua, J.S., Yin, D., Hori, Y.: Fault-tolerant traction control of electric vehicles. *Control Eng. Pract.*, Elsevier **19**, 204–213 (2011)
210. Huang, Y.S., Zhou, D.Q., Xiao, S.P., Ling, D.: Coordinated decentralized hybrid adaptive output feedback fuzzy control for a class of large-scale nonlinear systems with strong interconnections. *IET Control Theor. Appl.* **3**(9), 1261–1274 (2009)
211. Huang, Z., Schneider, K., Nieplocha, J.: Feasibility studies of applying Kalman Filter techniques to power system dynamic state estimation. In: *IPEC 2007 Power Engineering International Conference*, pp. 376–382
212. Huerta, F., Pizzaro, D., Cobreces, S., Rodriguez, F., Giron, C., Rodriguez, A.: LQG Servo controller for the current control of LCL grid-connected voltage-source converters. *IEEE Trans. Industr. Electron.* **59**(11), 4272–4284 (2012)
213. Hugues-Salas, O., Shove, K.A.: An extended Kalman filtering approach to nonlinear time-delay systems: application to chaotic secure communications. *IEEE Trans. Circ. Syst. I: Regul. Pap.* **57**, 2520–2530 (2010)
214. Houari, A., Renaudineau, H., Martin, J.P., Pierfederici, S., Meibody-Tabar, F.: Flatness-based control of three-phase inverter with output LC filter. *IEEE Trans. Industr. Electron.* **59**(7), 2890–2897 (2012)
215. Hwang, C.L., Shih, Y.Y.: A distributed active-vision network-space approach for the navigation of a car-like wheeled robot. *IEEE Trans. Industr. Electron.* **56**(3), 846–855 (2002)
216. Isidori, A.: *Nonlinear Control Systems*, 3rd edn. Springer, New York (1995)
217. Jankovic, M., Magner, S.: Control of engines with fully variable valvetrain. In: *American Control Conference*, Portland, June 2005
218. Jaward, M.H., Kadirkamanathan, V.: Interacting multiple models for single-user channel estimation and equalization. In: *ICASSP 2001, IEEE International Conference on Acoustics, Speech, and Signal Processing*, Salt Lake City, Utah (2001)
219. Jia, Z., Balasuriyaa, S., Challab, S.: Sensor fusion-based visual target tracking for autonomous vehicles with the out-of-sequence measurements solution. *Robot. Auton. Syst.*, Elsevier **56**, 157–176 (2008)
220. Jiang, L., Wu, Q.H., Zhang, C., Zhou, X.X.: Observer-based nonlinear control of synchronous generators with perturbation estimation. *Electr. Power Energy Syst.*, Elsevier **23**, 359–367 (2001)
221. Jiang, L., Wu, Q.H., Wen, J.Y.: Decentralized nonlinear adaptive control for multimachine power systems via high-gain perturbation observer. *IEEE Trans. Circ. Syst.* **51**(10), 2052–2059 (2004)
222. Jiang, G., Guo, S., Zhang, J., Huang, W.: Development of electronic governor for diesel engine based on embedded RTOS. In: *IEEE ICVES 2006, IEEE International Conference on Vehicular Electronics and Safety*, Beijing, China (2006)

223. Johnson, B.B., Dhople, S.V., Hamadeh, A.O., Krein, P.T.: Synchronization of nonlinear oscillators in an LTI electrical power network. *IEEE Trans. Circuit. Syst. I* **61**(3), 834–844 (2014)
224. Julier, S., Uhlmann, J., Durrant-Whyte, H.F.: A new method for the nonlinear transformations of means and covariances in filters and estimators. *IEEE Trans. Autom. Control* **45**(3), 477–482 (2000)
225. Julier, S.J., Uhlmann, H.K.: Unscented filtering and nonlinear estimation. *Proc. IEEE* **92**, 401–422 (2004)
226. Kahrobaeian, A., Abdel-Rady, Y., Mohamed, I.: Analysis and mitigation of low-frequency instabilities in autonomous medium-voltage converter-based microgrids with dynamic loads. *IEEE Trans. Industr. Electron.* **61**(4), 1643–1657 (2014)
227. Kahveci, N.E., Jankovic, M.J.: Adaptive controller with delay compensation for air-fuel ratio regulation in SI engines. In: 2010 American Control Conference, Baltimore, MD, USA, June–July 2010
228. Kamala, E., Aitouche, A.: Robust fault tolerant control of DFIG wind energy systems with unknown inputs. *Renewable Energy, Elsevier* **56**, 2–15 (2013)
229. Kamen, E.W., Su, J.K.: Introduction to Optimal Estimation. Springer, New York (1999)
230. Kalsi, K., Lian, J., Zak, S.H.: Decentralized control of multi-machine power systems. In: American Control Conference, St. Louis, MO, USA (2009)
231. Kandepu, R., Foss, B., Imsland, M.: Applying the unscented Kalman filter for nonlinear state estimation. *J. Process Control, Elsevier* **18**, 753–768 (2008)
232. Kanoh, H., Tzafestas, S.G., Lee, H.G., Kalat, J.: Modelling and control of flexible robot arms. In: Proceedings of 25th Conference on Decision and Control, pp. 1866–1870, Athens, Greece (1986)
233. Karami, F., Poshtan, J., Poshtan, M.: Model-based fault detection in induction Motors. In: 2010 IEEE International Conference on Control Applications, CCA 2010, Yokohama, Japan, Sept 2010
234. Kathuda, H., Hadlar, A.: A novel health assessment technique with minimum information. *J. Struct. Control Health Monit., Wiley* **15**, 821–838 (2008)
235. Kenné, G., Gome, R., Nkwawo, H., Lamnabhi-Lagarrique, F., Arzandé, A., Vannier, J.C.: An improved direct feedback linearization technique for transient stability enhancement and voltage regulation of power generators. *Electr. Power Energy Syst., Elsevier* **32**, 809–816 (2010)
236. Kennel, R.M.: Why do incremental encoders do a reasonably good job in electrical drives with digital control? In: Industry Applications Conference, IEEE 41st IAS Annual Meeting, Conference Record (2006)
237. Kerkeni, H., Lauber, J., Lendek, Z., Guerra, T.M.: Individual cylinder air/fuel ratio observer on IC engine using Takagi-Sugeno's fuzzy model. In: IEEE Vehicle Power and Propulsion Conference (VPPC), Harbin, China (2008)
238. Khalil, H.K.: Nonlinear Systems, 2nd edn. Prentice Hall, Upper Saddle River (1996)
239. Khanesar, M.A., Teshnehlal, M., Kaynak, O.: Observer-based indirect model reference fuzzy control system with application to control of chaotic systems. *J. Franklin Inst., Elsevier* **350**, 419–436 (2013)
240. Khanesar, M.A., Teshnehlal, M., Kaynak, O.: Control and synchronization of chaotic systems using a novel indirect model reference fuzzy controller. *Soft Comput., Springer* **16**(7), 1253–1265 (2012)
241. Kharel, R., Busawon, K., Ghassemlooy, Z.: Observer based secure communication using indirect coupled synchronization. In: 8th IEEE, IET International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP'12). Poznan, Poland (2012)
242. Khorrami, F., Jain, S., Tzes, A.: Experimental results on adaptive nonlinear control and input pre-shaping for multi-link flexible manipulators. *Automatica, Elsevier* **31**(1), 83–97 (1995)
243. Kiani, A., Fallahi, K., Pariz, N., Leung, H.: A chaotic secure communication scheme using fractional chaotic systems based on an extended fractional Kalman filter. *Commun. Nonlinear Sci. Numer. Simul., Elsevier* **14**, 863–879 (2009)

244. Kim, Y., Park, C., Joo, J., Jeong, S.: Extended Kalman filter for wireless LAN based indoor positioning. *Decis. Support Syst.*, Elsevier **45**, 960–971 (2008)
245. Kim, K., Jeung, Y., Lee, D., Kim, H.: LVRT scheme of PMSG wind power systems based on feedback linearization. *IEEE Trans. Power Electron.* **27**(5), 2376–2384 (2012)
246. Kim, D.E., Lee, D.C.: Feedback linearization control of three-phase UPS inverter systems. *IEEE Trans. Industr. Electron.* **57**(3), 963–968 (2010)
247. Kim, J.H., Hyun, C.H., Kim, E., Park, M.: Adaptive synchronization of chaotic systems based on T-S fuzzy model. *IEEE Trans. Fuzzy Syst.* **15**(3), 359–369 (2007)
248. Koch, G., Kloiber, T., Pellegrini, E., Lohmann, B.: A nonlinear estimator concept for active vehicle suspension control. In: American Control Conference Marriott Waterfront, Baltimore, MD, USA, (2010)
249. Koch, G., Kloiber, T., Lohmann, B.: Nonlinear and filter based estimation for vehicle suspension control. In: 49th IEEE Conference on Decision and Control, Atlanta, GA, USA (2010)
250. Koch, C., Lynch, A., Chung, S.: Flatness-based automotive solenoid valve control. In: Proceedings of the 6th IFAC Symposium Nonlinear Control Systems (NOLCOS), pp. 1091–1096 (2004)
251. Kotman, P., Bitzer, M., Kugi, A.: Flatness-based feedforward control of a two-stage turbocharged diesel air system with EGR. In: 2010 IEEE International Conference on Control Applications, Yokohama, Japan (2010)
252. Kröner, A.: Adaptive finite element methods for optimal control second order hyperbolic equations. *Comput. Methods Appl. Math.*, De Gruyter **11**(2), 214–240 (2011)
253. Krstic, M.: Adaptive control of an anti-stable wave PDE. *Dyn Continuous, Discrete Impulsive Syst. Ser A: Math Anal.* **17**, 853–882 (2010)
254. Krstic, M., Guo, B.Z., Balogh, A., Smyshlyaev, A.: Output-feedback stabilization of an unstable wave equation. *Automatica*, Elsevier **44**, 63–74 (2008)
255. Kröner, A.: Adaptive finite element methods for optimal control second order hyperbolic equations. *Comput. Methods Appl. Math.* **11**(2), 214–240 (2011)
256. Kumar, S., Prakash, J., Kanagasabapathy, P.: A critical evaluation and experimental verification of extended Kalman filter, unscented Kalman filter and neural state filter for state estimation of three phase induction motor. *Appl. Soft Comput. J.*, Elsevier **11**(3), 3199–3208 (2011)
257. Kuo, H.C., Wu, L.J.: Prediction of heat-affected zone using Grey theory. *J. Mater. Process. Technol.*, Elsevier **180**, 151–168 (2002)
258. Kurikawa, T., Kaneko, K.: Learning to memorize input-output mapping as bifurcation in neural dynamics: relevance of multiple time-scales for synaptic changes. *Neural Comput. Appl.*, Springer **31**, 725–734 (2012)
259. Kurylowicz, A., Jaworska, I., Tzafestas, S.G.: Robust stabilizing control: an overview. In: Tzafestas, S.G. (ed.) *Applied Control—Current Trends and Modern Methodologies*, pp. 289–324. Marcel Dekker (1993)
260. Kwon, S., Chung, W.K.: Combined synthesis of state estimator and perturbation observer. *ASME J. Dyn. Syst. Measur. Control* **125**, 19–26 (2003)
261. Lai, X.Z., Pan, C.Z., Wu, M., Yang, S.X.: Unified control of n-link underactuated manipulator with single passive joint: a reduced order approach. *Mech. Mach. Theor.*, Elsevier **56**, 170–185 (2012)
262. Lai, X.Z., She, J.-H., Yang, S.X., Wu, M.: Comprehensive unified control strategy for underactuated two-link manipulators. *IEEE Trans. Syst., Man Cybern. B Cybern.* **39**(2), 389–398 (2009)
263. Laroche, B., Martin, Ph, Petit, N.: *Commande par platitude: Équations différentielles ordinaires et aux dérivées partielles.* École Nationale Supérieure des Techniques Avancées, Paris (2007)
264. Lee, D.J.: Nonlinear estimation and multiple sensor fusion using unscented information filtering. *IEEE Sig. Process. Lett.* **15**, 861–864 (2008)

265. Lee, D.J.: Unscented information filtering for distributed estimation and multiple sensor fusion. In: AIAA Guidance, Navigation and Control Conference and Exhibit, Hawaii, Aug 2008
266. Lee, H.T., Chen, C.T., Wu, J.L.: Numerical and experimental investigation into effect of temperature field on sensitization of alloy 690 butt welds fabricated by gas tungsten arc welding and laser beam welding. *J. Mater. Process. Technol.*, Elsevier **210**, 1636–1644 (2010)
267. Lee, K.M., Woodruff, G.W., Wei, Z., Zhou, Z.: Modeling by numerical reduction of modes for multivariable control of an optical-fiber draw process. *IEEE Trans. Autom. Sci. Eng.* **3**(1), 119–130 (2006)
268. Lee, S.C., Ahn, H.S.: Sensorless torque estimation using adaptive Kalman filter and disturbance estimator. In: 2010 IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications, Qingdao, China, July 2010
269. Lee, S., Kim, W.J.: Active suspension control with direct-drive tubular linear brushless permanent-magnet motor. *IEEE Trans. Control Syst. Technol.* **18**(4), 859–870 (2010)
270. Lee, S., Jeon, M., Shin, V.: Distributed estimation fusion with application to a multisensory vehicle suspension system with time delays. *IEEE Trans. Industr. Electron.* **59**(11), 4475–4482 (2010)
271. Lee, T.: Robust adaptive attitude tracking on SO(3) with an application to a quadrotor UAV. *IEEE Trans. Control Syst. Technol.* **21**(5), 1924–1930 (2013)
272. Lee, K., Jahns, T.J., Lipo, T.A., Blasko, V.: New control method including state observer of voltage unbalance for grid voltage-source converters. *IEEE Trans. Industr. Electron.* **57**(6), 2054–2065 (2010)
273. Lei, Y., Jiang, Y.Q.: A two-stage Kalman estimation approach for the identification of nonlinear structural parameters. *Procedia Eng.*, Elsevier **14**, 3088–3094 (2011)
274. Lei, Y., Jiang, Y., Xu, Z.: Structural damage detection with limited input and output measurement signals. *Mech. Syst. Sig. Process.*, Elsevier **28**, 229–243 (2012)
275. Lei, Y., Wu, Y., Li, T.: Identification of nonlinear structural parameters under limited input and output measurements. *Int. J. Nonlinear Mech.*, Elsevier **47**, 1141–1146 (2012)
276. Leland, R.P.: Adaptive control a MEMS gyroscope using Lyapunov methods. *IEEE Trans. Control Syst. Technol.* **14**(2), 278–283 (2006)
277. Leon, A.E., Solsona, J.A., Valla, M.I.: Comparison among nonlinear excitation control strategies used for damping power system oscillations. *Energy Convers. Manag.*, Elsevier **53**, 55–67 (2012)
278. Leon, A.E., Mauricio, J.M., Solsona, J.A.: Multi-machine power system stability improvement. Using an observer-based nonlinear controller. *Electr. Power Syst. Res.*, Elsevier **89**, 202–214 (2012)
279. Leon, A.E., Solsona, J.S., Busada, C., Chiacchiarini, H., Valla, M.I.: High-performance control of a three-phase voltage-source converter including feedforward compensation of the estimated load current. *Energy Convers. Manag.*, Elsevier **50**, 2000–2008 (2009)
280. Leonhard, W.: *Control of Electrical Drives*. Springer, London (1985)
281. Leroy, T., Chauvin, J., Petit, N.: Airpath control of a SI engine with variable valve timing actuators. In: 2008 American Control Conference. Seattle USA, Washington, June 2008
282. Leu, Y.G., Lee, T.T., Wang, W.Y.: Observer-based adaptive fuzzy-neural control for unknown nonlinear dynamical systems. *IEEE Trans. Syst., Man Cybern. B Cybern.* **29**, 583–591 (1999)
283. Leung, H., Zhu, Z.: Performance evaluation of EKF-based chaotic synchronization. *IEEE Trans. Circ. Syst. I: Fundam. Theor. Appl.* **49**, 1118–1125 (2001)
284. Lévine, J.: *Analysis and Control of Nonlinear Systems: A Flatness-Based Approach*. Springer, London (2009)
285. Lévine, J., Nguyen, D.V.: Flat output characterization for linear systems using polynomial matrices. *Syst. Control Lett.*, Elsevier **48**, 69–75 (2003)
286. Lévine, J.: On necessary and sufficient conditions for differential flatness. *Appl. Algebra Eng. Commun. Comput.*, Springer **22**(1), 47–90 (2011)

287. Liao, X., Wong, K.W., Wu, Z.: Bifurcation analysis of a two-neuron system with distributed delays. *Physica D*, Elsevier **149**, 123–141 (2001)
288. Li, Y., Jiang, Y.: Real-time control of the robot manipulators by neural networks. *Integr. Comput. Aided Eng.*, IOP Press **2**(3), 241–248 (1995)
289. Li, H.X., Tong, S.: A hybrid adaptive fuzzy control for a class of nonlinear MIMO systems. *IEEE Trans. Fuzzy Syst.* **11**(1), 24–35 (2003)
290. Li, P., Kadirkamanathan, V.: Particle filtering based likelihood ratio approach to fault diagnosis in nonlinear stochastic systems. *IEEE Trans. Syst. Man Cybern. C* **31**, 337–343 (2001)
291. Li, T.S., Tong, S.C., Feng, G.: A novel robust adaptive-fuzzy-tracking control for a class of nonlinear multi-input multi-output systems. *IEEE Trans. Fuzzy Syst.* **18**(1), 150–160 (2010)
292. Li, W., Lin, P.X.: Robust adaptive tracking control of uncertain electrostatic microactuators with H-infinity performance. *Mechatronics*, Elsevier **19**, 591–597 (2009)
293. Li, S., Kolmanovsky, I.V., Ulsoy, A.G.: Direct optimal design for component swapping modularity in control systems. *IEEE/ASME Trans. Mechatron.* **18**(1), 297–306 (2013)
294. Lian, K.Y., Chiang, T.S., Chiu, C.S., Liu, P.: Synthesis of fuzzy model-based designs to synchronization and secure communications for chaotic systems. *IEEE Trans. Syst., Man Cybern. Part B: Cybern.* **31**, 66–83 (2001)
295. Lim, J.S., Park, C., Han, J., Lee, J.L.: Robust tracking of a three-phase DC-AC inverter for UPS applications. *IEEE Trans. Industr. Electron.* **61**(8), 4142–4151 (2014)
296. Lin, F.J., Wai, R.J., Lin, C.H., Liu, D.C.: Decoupled stator-flux-oriented induction motor drive with fuzzy neural network uncertainty observer. *IEEE Trans. Industr. Electron.* **47**(2), 356–367 (2000)
297. Lin, Y.J., Wang, W.: Adaptive fuzzy control for a class of uncertain non-affine nonlinear systems. *Inf. Sci.*, Elsevier **177**, 3901–3917 (2007)
298. Lin, J.M., Lin, M.C., Wang, H.P.: LEQG/LTR controller design with Extended Kalman Filter for sensorless brushless DC driver. *Comp. Methods Appl. Mech. Eng.*, Elsevier **190**, 5481–5494 (2001)
299. Lin, Y.J., Wang, W.: Adaptive fuzzy control for a class of uncertain non-affine nonlinear systems. *Inf. Sci.*, Elsevier **177**, 3901–3917 (2007)
300. Lin, W.M., Hong, C.M., Cheng, F.S.: On-line designed hybrid controller with adaptive observer for variable-speed wind generation system. *Energy*, Elsevier **35**, 3022–3030 (2010)
301. Lin, C.M., Ting, A.B., Hsu, C.F., Chung, C.M.: Adaptive control for MIMO uncertain nonlinear systems using recurrent wavelet neural network. *Int. J. Neural Syst.*, World Scientific **21**(6), 443–457 (2011)
302. Lin, Y.J., Wang, W.: Adaptive fuzzy control for a class of uncertain non-affine nonlinear systems. *Inf. Sci.*, Elsevier **177**, 3901–3917 (2007)
303. Lin, J.H., Lin, J.H.: Decoding chaotic secure communication system with extended Kalman filter based observers. In: *IEEE ISIE 2013 International Symposium on Industrial Electronics*, Taipei, Taiwan (2013)
304. Lin, W.M., Hong, C.M., Cheng, F.S.: On-line designed hybrid controller with adaptive observer for variable-speed wind generation system. *Energy*, Elsevier **35**, 3022–3030 (2010)
305. Lin, S.S., Horng, S.C.: A more general parallel dual-type method and application to state estimation. *Electr. Power Energy Syst.*, Elsevier **33**, 799–804 (2011)
306. Lions, J.L.: Pointwise control for distributed systems. In: Banks, H.T. (ed.) *Control and Estimation in Distributed Parameter Systems*. SIAM Frontiers in Applied Mathematics. SIAM, Philadelphia (1992)
307. Liu, Y., Zhu, Z.Q., Howe, D.: Instantaneous torque estimation in sensorless direct-torque-controlled brushless DC motors. *IEEE Trans. Ind. Appl.* **42**(5), 1275–1283 (2006)
308. Liu, M., Zhang, S.: An LMI approach to design  $H_\infty$  controllers for discrete-time nonlinear systems based on unified models. *Int. J. Neural Syst.*, World Sci. **18**(5), 443–452 (2008)
309. Liu, J., Laghrouche, S., Wack, M.: Differential flatness-based observer design for a PEM fuel cell using adaptive-gain sliding mode differentiators. In: *2013 European Control Conference (ECC)*, Zurich, Switzerland, July 2013

310. Liu, W., Gu, W., Sheng, W., Meng, X., Wu, Z., Chen, W.: Decentralized multi-agent system-based cooperative frequency control for autonomous microgrids with communication constraints. *IEEE Trans. Sustain. Energy* **5**(2), 446–456 (2014)
311. Liu, D., Javaherian, H., Kovalenko, O., Huang, T.: Adaptive critic learning techniques for engine torque and airfuel ratio control. *IEEE Trans. Syst., Man Cybern. Part B: Cybern.* **38**(4), 988–993 (2008)
312. Liu, Y., Guo, C., Zhou, R.: Robust feedback stabilization control of an underactuated surface vessel. In: *IEEE WRI 2009 World Congress on Computer Science and Information Engineering*, Los Angeles, California, March–April (2009)
313. Locatelli, M., Alfieri, E., Onder, C.H., Geering, H.P.: Identification of the relevant parameters of the wall-wetting system by extended Kalman filter. *Control Eng. Pract.*, Elsevier **14**(3), 235–241 (2006)
314. Loria, A.: Control of the 4th order hyper-chaotic system with one input. *Commun. Nonlinear Sci. Numer. Simul.*, Elsevier **15**(6), 1621–1630 (2010)
315. Low, K.S., Cao, R.: Model predictive control of parallel-connected inverters for uninterruptible power supplies. *IEEE Trans. Industr. Electron.* **55**(8), 2884–2893 (2008)
316. Lublin, L., Athans, M.: An experimental comparison of and designs for interferometer testbed. In: Francis, B., Tannenbaum, A. (eds.) *Lectures Notes in Control and Information Sciences: Feedback Control, Nonlinear Systems and Complexity*, pp. 150–172. Springer, London (1995)
317. Lu, W.C., Duan, L., Hsiao, F.B., Mora-Camino, F.: Differential flatness applied to vehicle trajectory tracking. In: *Proceedings of the 27th Chinese Control Conference*, 16–18 July, Kunming, Yunnan, China (2008)
318. Lu, Q., Mei, S., Hu, W., Wu, F.F., Ni, Y., Shen, T.: Nonlinear decentralized disturbance attenuation excitation control via new recursive design for multi-machine power systems. *IEEE Trans. Power Syst.* **16**(4), 729–736 (2001)
319. Machowski, J., Robak, S., Bialek, J.W., Bumby, J.R., Abi-Samra, N.: Decentralized stability-enhancing control of synchronous generator. *IEEE Trans. Power Syst.* **15**(4), 1336–1344 (2000)
320. Maldi, A., Corriou, J.P.: Distributed control of nonlinear diffusion systems by input-output linearization. *Int. J. Robust Nonlinear Control*, Wiley **26**, 389–405 (2014)
321. Malinkowski, M., Kazmierkowski, M.P., Hansen, S., Blaabjerg, F., Marques, G.D.: Virtual-flux-based direct power control of three-phase PWM rectifiers. *IEEE Trans. Ind. Appl.* **37**(4), 1019–1027 (2001)
322. Malinkowski, M., Jasinski, M., Kazmeirkowski, M.P.: Simple direct power control of three-phase PWM rectifier using space-vector modulation (DPC-SVM). *IEEE Trans. Ind. Electron.* **51**(2), 447–454 (2004)
323. Mammari, S., Glaser, S., Netto, M.: Vehicle lateral dynamics estimation using unknown input proportional-integral observers. In: *American Control Conference* (2006)
324. Mathuswamy, J., Okandan, M., Jain, T., Gilletti, A.: Electrostatic microactuators for precise positioning of neural microelectrodes. *IEEE Trans. Biomed. Eng.* **52**(10), 1742–1755 (2005)
325. Mahindrakar, A.D., Rao, S., Banavar, R.N.: Point-to-point control of a 2R planar horizontal underactuated manipulator. *Mech. Mach. Theor.*, Elsevier **41**, 838–844 (2006)
326. Mahler, R.P.S.: *Statistical Multisource-multitarget Information Fusion*. Artech House Inc., Norwood (2007)
327. Mahmoud, M.A., Rota, H.K., Hussain, M.J.: Full-order nonlinear observer-based excitation controller design for interconnected power systems via exact linearization approach. *Electr. Power Eng. Syst.*, Elsevier **41**, 54–62 (2012)
328. Mahmud, M.A., Pota, H.R., Hossain, M.J.: Nonlinear controller design for single-phase Grid-Connected photovoltaic systems using partial feedback linearization. In: *Australian Control Conference*, Sydney, Australia, Nov 2012
329. Makarenko, A., Durrany-Whyte, H.: Decentralized Bayesian algorithms for active sensor networks. *Inf. Fusion*, Elsevier **7**, 418–433 (2006)



330. Malis, E., Chaumette, F., Boudet, S.: Multi-cameras visual servoing. In: IEEE International Conference on Robotics and Automation, ICRA 2000 International Conference on Robotics and Automation, pp. 3183–3188 (2000)
331. Mammari, S., Glaser, S., Netto, M.: Vehicle lateral dynamics estimation using unknown input proportional-integral observers. In: American Control Conference (2006)
332. Manyika, J., Durrant-Whyte, H.: Data Fusion and Sensor Management: A Decentralized Information Theoretic Approach. Prentice Hall, Englewood Cliffs (1994)
333. Maroteaux, F., Saad, C.: Diesel engine combustion modelling for hardware in the loop applications: effects of ignition delay time model. *Energy*, Elsevier **57**(1), 641–652 (2013)
334. Marino, R.: Adaptive observers for single output nonlinear systems. *IEEE Trans. Autom. Control* **35**(9), 1054–1058 (1990)
335. Marino, R., Tomei, P.: Global asymptotic observers for nonlinear systems via filtered transformations. *IEEE Trans. Autom. Control* **37**(8), 1239–1245 (1992)
336. Marino, R., Peresada, S., Valigi, P.: Adaptive input-output linearizing control of induction motors. *IEEE Trans. Autom. Control* **38**(2), 208–221 (1993)
337. Marino, R., Cinili, F.: InputOutput decoupling control by measurement feedback in four-wheel-steering vehicles. *IEEE Trans. Control Syst. Technol.* **17**(5), 1163–1172 (2009)
338. Martin, P., Rouchon, P.: Two remarks on induction motors. In: CESA '96 IMACS Multiconference, vol. 1, pp. 76–79. Lille, France (1996)
339. Maroteaux, F., Saad, C.: Diesel engine combustion modelling for hardware in the loop applications: effects of ignition delay time model. *Energy*, Elsevier **57**(1), 641–652 (2013)
340. Martin, Ph. Rouchon, P.: Systèmes plats: planification et suivi des trajectoires. Journées X-UPS, École des Mines de Paris, Centre Automatique et Systèmes, Mai (1999)
341. Marzbanrada, J., Ahmadib, G., Zohoorc, H., Hojjatd, Y.: Stochastic optimal preview control of a vehicle suspension. *J. Sound Vib., Elsevier* **275**, 973–990 (2004)
342. Medeiros, H., Park, J., Kak, A.C.: Distributed object tracking using a cluster-based Kalman filter in wireless camera networks. *IEEE J. Sel. Top. Sign. Process.* **2**, 448–463 (2008)
343. Mendalek, N., Al-Haddad, K., Fnaiech, F., Dessaint, L.A.: Nonlinear control technique to enhance dynamic performance of a shunt active power filter. *IEE Proc. Electr. Power Appl.* **150**(4), 373–379 (2003)
344. Mercorelli, P., Lehmann, K., Liu, S.: Robust flatness based control of an electromagnetic linear actuator using adaptive PID controller. In: Proceedings of IEEE Decision and Control Conference, pp. 3790–3795 (2003)
345. Meyer, J., Yurkovich, S., Midlam-Mohler, S.: Air-to-fuel ratio switching frequency control for gasoline engines. *IEEE Trans. Control Syst. Technol.* **21**(3), 636–648 (2013)
346. Micheau, P., Oddo, R., Lecours, G.: Engine speed limiter for watercrafts. *IEEE Trans. Control Syst. Technol.* **14**, 579–585 (2006)
347. W. Mielczarski, Observing the state of a synchronous generator. *Int. J. Control. Part 1: Theory*, Taylor and Francis. **45**(3), 987–1000 (1987)
348. Mielczarski, W., Observing the state of a synchronous generator. Part 2, applications. *Int. J. Control*, Taylor and Francis **45**(3), 1001–1021 (1987)
349. Menhour, L., d'Andréa-Novel, B., Boussard, C., Fliess, M., Mounier, H.: Algebraic nonlinear estimation and flatness-based lateral/longitudinal control for automotive vehicles. In: 14th International IEEE Conference in Intelligent Transportation Systems, Washington (2011)
350. Menhour, L.: Brigitte d'Andréa-Novel, Michel Fliess and Hugues Mounier, Commande couplée longitudinale/latérale de véhicules par platitude et estimation algébrique, Manuscrit publié dans, 7e Conférence Internationale Francophone d'Automatique, Grenoble, France (2012)
351. Menhour, L., d'Andréa-Novel, B., Fliess, M., Mounier, H.: Coupled nonlinear vehicle control: Flatness-based setting with algebraic estimation techniques. *Control Eng. Pract.*, Elsevier **22**, 135–146 (2014)
352. Meurer, T., Zeitz, M.: A modal approach to flatness-based control of flexible structures. *PAMM—Proc. Appl. Math. Mech.*, Wiley **4**, 133–134 (2004)

353. Mianzo, L., Peng, H.: Output feedback  $H_\infty$  preview control of an electro-mechanical valve actuator. *IEEE Trans. Control Syst. Technol.* **15**(3), 428–437 (2007)
354. Miklosovic, R., Radke, A., Gao, Z.: Discrete implementation and generalization of the Extended State Observer. In: *Proceedings of the American Control Conference*, Minneapolis, Minnesota, USA (2006)
355. Mohseni, M., Islam, S.M.: Transient control of DFIG-based wind power plants in compliance with the Australian grid code. *IEEE Trans. Power Electron.* **27**(6), 2813–2824 (2012)
356. Montanaro, U., di Gaeta, A., Giglio, V.: Robust discrete-time MRAC with minimal controller synthesis of an electronic throttle body. *IEEE/ASME Trans. Mechatron.* **19**(2), 524–537 (2014)
357. Moulin, P., Chauvin, J.: Modeling and control of the air system of a turbocharged gasoline engine. *Control Eng. Pract.* **19**, 287–297 (2011)
358. Mounier, H., Rudolph, J.: Trajectory tracking for  $\pi$ -flat nonlinear dealy systems with a motor example. In: Isidori, A., Lamnabhi-Lagarigue, F., Respondek, W. (eds.) *Nonlinear Control in the Year 2000*, Lecture Notes in Control and Information Science, vol. 258, pp. 339–352. Springer (2001)
359. Moreira, L., Fossen, T.I., Soares, G.G.: Path following control system for a tanker ship model. *Ocean Eng., Elsevier* **34**(14–15), 2074–2085 (2007)
360. Moriwaki, K., Tanaka, K.: Navigation control for electric vehicles using nonlinear state feedback H-infinity control. *Nonlinear Anal., Elsevier* **71**, 2920–2933 (2009)
361. Moulin, P.: Modélisation et commande des systèmes d' air des moteurs suralimentés. Thèse de doctorat, Ecole Nationale Supérieure des Mines de Paris (2010)
362. Mounier, H., Rudolph, J.: Trajectory tracking for  $\pi$ -flat nonlinear dealy systems with a motor example. In: Isidori, A., Lamnabhi-Lagarigue, F., Respondek, W. (eds.) *Nonlinear Control in the Year 2000*, Lecture Notes in Control and Information Science, vol. 258, pp. 339–352. Springer (2001)
363. Mounier, H., Rudolph, J., Woittenneck, F.: Boundary value problems and convolutional systems over rings of ultradistributions. In: *Advances in the Theory of Control, Signal and Systems with Physical Modelling*. Lecture Notes in Control an Information Sciences, pp. 179–188. Springer (2010)
364. Mounier, H.: Document de synthèse pour l' habilitation à diriger des recherches. Université de Paris XI, Juillet (2005)
365. Moon, H.S., Kim, Y.B., Beattie, R.J.: Multi sensor data fusion for improving performance and reliability of fully automatic welding system. *Int. J. Adv. Manuf. Technol., Springer* **28**, 286–293 (2006)
366. Narikiyoa, T., Sahashib, J., Misao, K.: Control of a class of underactuated mechanical systems. *Nonlinear Anal. Hybrid Syst., Elsevier* **2**, 231–241 (2008)
367. N'Doye, L., Voos, H., Darouach, M.: Observer-based approach for fractional-order chaotic synchronization and secure communication. *IEEE J. Emerg. Sel. Top. Circ. Syst.* **3**, 442–450 (2013)
368. Negrea, A.C., Imecs, M., Incze, I.I., Pop, A., Szabo, C.: Error compensation methods in speed identification using incremental encoder. In: *2012 International Conference and Exposition on Electrical and Power Engineering (EPE)*, Iasi, Romania (2012)
369. Nettleton, E., Durrant-Whyte, H., Sukkarieh, S.: A robust architecture for decentralized data fusion. In: *ICAR03, 11th International Conference on Advanced Robotics*, Coimbra, Portugal, 2003
370. Niknam, T., Firouzi, B.: A practical algorithm for distribution state estimation including renewable energy sources. *Renewable Energy, Elsevier* **34**, 2309–2316 (2009)
371. Ning, Z.H., Yan, Q.X.: Stabilization of the wave equation with variable coefficients and a delay in dissipative boundary feedback. *J. Math. Anal. Appl., Elsevier* **367**, 167–173 (2010)
372. Ng, G.W.: *Intelligent Systems—Fusion, Tracking and Control*. Research Studies Press, England (2003)
373. Nguyen, L.H., Hong, K.S.: Synchronization of coupled chaotic FitzHughNagumo neurons via Lyapunov functions. *Math. Comput. Simul., Elsevier* **82**, 590–603 (2011)

374. Nguyen, A., Lauber, J., Dambrine, M.: Multi-objective control design for turbo-charged spark ignited air system: a switching Takagi-Sugeno model approach. In: 2013 American Control Conference, Washington DC, USA (2013)
375. Nitsche, R., Schwarzmann, D., Hanscke, J.: Nonlinear internal model control of diesel air systems. *Oil Gas Sci. Technol. Rev. IFP Energies Nouvelles* **62**(4), 573–586 (2011)
376. Nosrati, K., Azemi, A., Rostami, A.S., Pariz, N.: Unscented Kalman filter applied to noisy synchronization of Rossler chaotic system. In: 3rd International Conference on Advanced Computer Control (ICACC), Harbin, China (2011)
377. Nounou, H.N., Rehman, H.: Application of adaptive fuzzy control to AC machines. *Appl. Soft Comput.*, Elsevier **7**(3), 899–907 (2007)
378. Okatan, A., Hajiyev, C., Hajiyeva, U.: Fault detection in sensor information fusion Kalman Filter. *Int. J. Electron. Commun.*, Elsevier **47**(4), 1657–1665 (2001)
379. Okou, F., Dessaint, L.-A., Akhrif, O.: Power systems stability enhancement using a wide-area signals based hierarchical controller. *IEEE Trans. Power Syst.* **20**(3), 1465–1477 (2005)
380. Olfati-Saber, R.: Distributed Kalman filter with embedded consensus filters. In: Proceedings of 44th IEEE Conference on Decision and Control, pp. 8179–8184, Seville, Spain (2005)
381. Olfati-Saber, R.: Distributed Kalman filtering and sensor fusion in sensor networks. *Lect. Notes Control Inf. Sci.* **331**, 157–167 (2006)
382. Oriolo, G., De Luca, A., Vendittelli, M.: WMR control via dynamic feedback linearization: design, implementation and experimental validation. *IEEE Trans. Control Syst. Technol.* **10**(6), 835–852 (2002)
383. Ovalle, A., Ramos, G., Bacha, S., Hably, A., Rameau, A.: Decentralized control of voltage source converters in microgrids based on the application of instantaneous power theory. *IEEE Trans. Industr. Electron.* (2015). doi:[10.1109/TIE.2014.2336638](https://doi.org/10.1109/TIE.2014.2336638)
384. Pan, C.Z., Lai, X.Z., Yang, S.X., Wu, M.: An efficient neural network approach to tracking control of an autonomous surface vehicle with unknown dynamics. *Expert Syst. Appl.* Elsevier, **40**, 1629–1635 (2013)
385. Pena, R., Cardenas, R., Reyes, E., Clare, J., Wheeler, P.: Control of a doubly fed induction generator via an indirect matrix converter with changing DC voltage. *IEEE Trans. Industr. Electron.* **58**(10), 4664–4674 (2011)
386. Peresada, S., Tilli, A., Tonielli, A.: Power control of a doubly fed induction machine via output feedback. *Control Eng. Pract.*, Elsevier **12**, 4157 (2004)
387. Petkovic, I.: Dynamique de la phase dans des jonctions Josephson ferromagnétiques. Thèse de doctorat, Université Paris-Sud **11**, (2009)
388. Pinsky, M.: *Partial Differential Equations and Boundary Value Problems*. Prentice-Hall, Englewood Cliffs (1991)
389. Piyabongkarn, D., Sun, Y., Rajamani, R., Sezen, A., Nelson, B.J.: Travel range extension of a MEMS electrostatic microactuator. *IEEE Trans. Control Syst. Technol.* **13**(1), 138–145 (2005)
390. Postma, M., Nagamune, R.: Air-fuel ratio control of spark ignition engines using a switching LPV controller. *IEEE Trans. Control Syst. Technol.* **20**(5), 1175–1187 (2012)
391. Powell, J.D., Fekete, N.P., Chang, C.-F.: Observer-based air-fuel ratio control. *IEEE Control Syst. Mag.* **18**(5), 72–83 (1998)
392. Posznyak, A.S., Yu, W., Sanchez, E.N.: Identification and control of unknown chaotic systems via dynamic neural network. *IEEE Trans. Circuits Syst. I* **46**(12), 1491–1495 (1999)
393. Purwar, S., Kar, I.N., Jha, A.N.: Adaptive control of robot manipulators using fuzzy logic systems under actuator constraints. *Fuzzy Sets Syst.*, Elsevier **152**, 651–664 (2004)
394. Puscasu, G., Codres, B.: Nonlinear system identification and control based on modular neural networks. *Int. J. Neural Syst.*, World Scientific **21**(4), 319–334 (2011)
395. Puthusserypady, S., Kurian, A.P.: Variants of Kalman filter for synchronization of chaotic systems. In: Kordic, V. (ed.) *Kalman Filter*. InTech Croatia (2010)
396. Qi, R., Tao, G., Tan, C., Yao, X.: Adaptive control of discrete-time state-space TS fuzzy systems with general relative degree. *Fuzzy Sets Syst.*, Elsevier **217**, 2240 (2013)

397. Raffo, G.V., Ortega, M.G., Rubio, F.R.: An integral predictive/nonlinear  $H_\infty$  control structure for a quadrotor helicopter. *Automatica*, Elsevier **46**, 29–39 (2010)
398. Raffo, G.V., Ortega, M.G., Rubio, F.R.: MPC with nonlinear  $H_\infty$  control for path tracking of a quad-rotor helicopter. In: Proceedings of the 17th World Congress The International Federation of Automatic Control Seoul, Korea, 6–11 July 2008
399. Raffo, G.V., Ortega, M.G., Rubio, F.R.: Path tracking of a UAV via an underactuated  $H$ -infinity control strategy. *Eur. J. Control*, Elsevier **17**, 194–213 (2011)
400. Raffo, G.V., Ortega, M.G., Rubio, F.R.: Nonlinear  $H$ -infinity controller for the quad-rotor helicopter with input coupling. In: 18th World Congress of the IFAC, 2011, Milan, Italy, Aug 2011
401. Sira-Ramirez, H., Aguilar-Ibanez, C.: On the control of the hovercraft system. *Dyn. Control*, Springer **10**, 151–163 (2000)
402. Rao, B.S., Durrant-Whyte, H.F.: Fully decentralized algorithm for multisensor Kalman filtering. *IEE Proc. D* **138**, 413–451 (1991)
403. Raoufi, R., Zinober, A.: Smooth adaptive sliding mode observers in uncertain chaotic communication. *Int. J. Syst. Sci.*, Taylor and Francis **38**, 931–942 (2007)
404. Rigatos, G.G., Tzafestas, C.S., Tzafestas, S.G.: Mobile robot motion control in partially unknown environments using a sliding-mode fuzzy-logic controller. *Robot. Auton. Syst.*, Elsevier **33**, 1–11 (2000)
405. Rigatos, G., Zhang, Q.: Fuzzy Model Validation using the Local Statistical Approach, Publication Interne IRISA No 1417. Rennes, France (2001)
406. Rigatos, G.G.: Fuzzy stochastic automata for intelligent vehicle control. *IEEE Trans. Industr. Electron.* **50**, 76–79 (2003)
407. Rigatos, G.G., Tzafestas, S.G.: Adaptive fuzzy control for the ship steering problem. *J. Mechatron.*, Elsevier **16**(6), 479–489 (2006)
408. Rigatos, G.G., Tzafestas, S.G.: Extended Kalman filtering for fuzzy modelling and multi-sensor fusion. *Math. Comput. Model. Dyn. Syst.*, Taylor & Francis **13**, 251–266 (2007)
409. Rigatos, G.G., Tzafestas, S.G.:  $H_\infty$  tracking of uncertain SISO nonlinear systems: an observer-based adaptive fuzzy approach. *Int. J. Syst. Sci.*, Taylor & Francis **38**, 459–472 (2007)
410. Rigatos, G.G.: Adaptive fuzzy control with output feedback for  $H_\infty$  tracking of SISO nonlinear systems. *Int. J. Neural Syst.*, World Scientific **18**(4), 1–16 (2008)
411. Rigatos, G.G.: Particle Filtering for state estimation in industrial robotic systems. *IMEche J. Syst. Control Eng.*, Sage Publications **222**(6), 437–455 (2008)
412. Rigatos, G.G.: Particle filtering for state estimation in nonlinear industrial systems. *IEEE Trans. Instrum. Meas.* **58**(11), 3885–3901 (2009)
413. Rigatos, G.G.: Adaptive fuzzy control of DC motors using state and output feedback. *Electr. Power Syst. Res.*, Elsevier **79**(11), 1579–1592 (2009)
414. Rigatos, G., Zhang, Q.: Fuzzy model validation using the local statistical approach. *Fuzzy Sets Syst.*, Elsevier **60**(7), 882–904 (2009)
415. Rigatos, G.G., Siano, P., Merola, E.: Sensorless control of DC and induction motors using Kalman Filtering, MASCOT 2009. In: IMACS Workshop on Scientific Computation, Italian Institute for Calculus Applications, Roma Italy (2009)
416. Rigatos, G.G., Siano, P., Piccolo, A.: A neural network-based approach for early detection of cascading events in electric power systems. *IET Gener. Transm. Distrib.* **3**(7), 650–665 (2009)
417. Rigatos, G.G.: Particle and Kalman filtering for state estimation and control of DC motors. *ISA Trans.*, Elsevier **48**(1), 62–72 (2009)
418. Rigatos, G.G., Particle and Kalman filtering for fault diagnosis in DC motors. In: IEEE VPPC 2009, IEEE 5th Vehicle Power Propulsion Conference, Michigan, USA, Sept 2009
419. Rigatos, G.G.: Sigma-point Kalman Filters and particle filters for integrated navigation of unmanned aerial vehicles. In: International Workshop on Robotics for Risky Interventions and Environmental Surveillance, RISE 2009, Brussels, Belgium, Jan 2009

420. Rigatos, G.G.: Model-based and model-free control of flexible-link robots: a comparison between representative methods. *Appl. Math. Model.*, Elsevier **33**(10), 3906–3925 (2009)
421. Rigatos, G.G.: Extended Kalman and particle Filtering for sensor fusion in motion control of mobile robots. *Math. Comput. Simul.*, Elsevier **81**(3), 590–607 (2010)
422. Rigatos, G.G.: Extended Kalman and particle Filtering for sensor fusion in motion control of mobile robots. *Math. Comput. Simul.*, Elsevier **81**(3), 590–607 (2010)
423. Rigatos, G., Siano, P.: Design of robust electric power system stabilizer using Kharitonov's theorem. *Math. Comput. Simul.*, Elsevier **82**(1), 181–191 (2011)
424. Rigatos, G.G.: A derivative-free Kalman Filtering approach for sensorless control of nonlinear systems. In: IEEE ISIE 2010, IEEE International Symposium on Industrial Electronics. Bari, Italy, July, 2010
425. Rigatos, G., Siano, P.: A derivative-free extended information filtering approach for sensorless control of nonlinear systems. In: MASCOT 2010. IMACS Workshop on Scientific Computation, Italian Institute for Calculus Applications, Gran Canaria, Spain, Oct 2010
426. Rigatos, G., Al-Khazraji, A.: Flatness-based adaptive fuzzy control for MIMO nonlinear dynamical systems. In: *Nonlinear Estimation and Applications to Industrial Systems Control*, Nova Publications (2011)
427. Rigatos, G.G.: *Modelling and Control for Intelligent Industrial Systems: Adaptive Algorithms in Robotics and Industrial Engineering*. Springer, New York (2011)
428. Rigatos, G.G.: Adaptive fuzzy control for field-oriented induction motor drives. *Neural Comput. Appl.*, Springer **21**(1), 9–23 (2011)
429. Rigatos, G.G.: Flatness-based adaptive fuzzy control for nonlinear dynamical systems. In: AIM 2011, IEEE/ASME, International Conference on Advanced Intelligent Mechatronics, Budapest, Hungary, July 2011
430. Rigatos, G.G.: Distributed nonlinear filtering under packet drops and variable delays for robotic visual servoing. In: *Robot Arms*, In-Tech Publications, Vienna, Austria (2011)
431. Rigatos, G.G., Siano, P.: Design of robust electric power system stabilizers using Kharitonov's theorem. *Math. Comput. Simul.*, Elsevier **81**(1), 181–191 (2011)
432. Rigatos, G.G.: Differential flatness theory and Extended Kalman Filtering for sensorless control of induction motors. In: 43rd ISIC International Symposium on Stochastic Systems Theory and Its Applications, Japan (2011)
433. Rigatos, G.G.: Adaptive fuzzy control of MIMO dynamical systems using differential flatness theory. In: IEEE ISIE 2012, 21st International Symposium on Industrial Electronics. Hangzhou, China, May 2012
434. Rigatos, G.G.: A derivative-free Kalman Filtering approach to state estimation-based control of nonlinear dynamical systems. *IEEE Trans. Industr. Electron.* **59**(10), 3987–3997 (2012)
435. Rigatos, G.G.: Distributed filtering over sensor networks for autonomous navigation of UAVs. *Intel. Serv. Robot.*, Springer **5**(3), 179–198 (2012)
436. Rigatos, G.G.: Derivative-free nonlinear Kalman Filtering for MIMO dynamical systems: Application to multi-DOF robotic manipulators. *J. Adv. Rob. Syst.* (special issue on Robot Manipulators) (2012). doi:[10.5772/10679](https://doi.org/10.5772/10679)
437. Rigatos, G.G.: Nonlinear Kalman Filters and particle filters for integrated navigation of unmanned aerial vehicles. *Robot. Auton. Syst.*, Elsevier **60**(7), 978–995 (2012)
438. Rigatos, G., Siano, P., Zervos, N.: A Distributed state estimation approach to condition monitoring of nonlinear electric power systems. *Asian J. Control.*, Wiley **15**(3), 849–860 (2013)
439. Rigatos, G., Siano, P.: DFIG control using differential flatness theory and extended kalman filtering. In: IFAC INCOM 2012, 14th IFAC International Conference on Information Control Problems in Manufacturing, Bucharest, Romania, May 2012
440. Rigatos, G., Siano, P.: Sensorless nonlinear control of induction motors using unscented Kalman Filtering. In: IEEE IECON 2012, 38th international Conference of the Industrial Electronics Society, Montreal, Canada, Oct 2012
441. Rigatos, G., Siano, P., Zervos, N.: Derivative-free nonlinear Kalman filtering for PMSG sensorless control. In: Habib, M. (ed.) *Mechatronics Engineering: Research Development and Education*, Wiley (2012)

442. Rigatos, G. Siano, P.: Validation of fuzzy Kalman Filters using the local statistical approach to fault diagnosis. In: IMACS Mascot 2012, Annual Conference of the Italian Institute for Calculus Applications, Gran Canaria, Spain, Oct 2012
443. Rigatos, G.G.: Adaptive fuzzy control for non-linear dynamical systems based on differential flatness theory. *IET Control Theor. Appl.* **6**(17), 2644–2656 (2012)
444. Rigatos, G., Siano P., Zervos, N.: PMSG sensorless control with the use of the derivative-free nonlinear Kalman Filter. In: IEEE ICCEP 2013, IEEE International Conference on Clean Electrical Power, Alghero, Sardinia, Italy, June 2013
445. Rigatos, G, Siano, P.: Control of underactuated robotic systems with the use of the derivative-free nonlinear Kalman filter. In: ICNAAM 2013, 11th International Conference on Numerical Analysis and Applied Mathematics, AIP Conference Proceedings, vol. 1558, pp. 2551–2556 (2013)
446. Rigatos, G., Zervos, N.: Channel equalization and synchronization in chaotic communications using a dual Kalman filtering scheme. In: ICNAAM 2013, 14th International Conference on Numerical Analysis and Applied Mathematics, AIP Conference Proceedings, vol. 1558, pp. 2539–2544 (2013)
447. Rigatos, G., Siano, P., Zervos, N., Cecati, C.: Derivative-free nonlinear Kalman Filtering for control of three-phase voltage source converters. In: IEEE IECON 2013, 39th IEEE Conference on Industrial Electronics, Vienna, Austria, Nov 2013
448. Rigatos, G., Siano P., Zervos N.: Control and disturbances compensation for doubly-fed induction generators using derivative-free nonlinear Kalman Filter. In: IEEE IECON 2013, 39th IEEE Conference on Industrial Electronics, Vienna, Austria, Nov 2013
449. Rigatos, G., Siano, P., Zervos, N.: PMSG sensorless control with the derivative-free nonlinear Kalman Filter for distributed generation units. In: 11th IFAC International Workshop on Adaptation and Learning in Control and Signal Processing (ALCOSP'2013), Caen, France, July 2013
450. Rigatos, G.: Derivative-free distributed filtering for MIMO robotic systems under delays and packet drops. In: Yin-Tien Wang (ed.) *International Journal of Advanced Robotic Systems*, Intech Publications (2013). doi:[10.5772/54186](https://doi.org/10.5772/54186)
451. Rigatos, G.G.: Sensor fusion-based dynamic positioning of ships using Extended Kalman and Particle Filtering. *Robotica*, Cambridge University Press **31**(3), 389–403 (2013)
452. Rigatos, G.G.: Robust control of valves in ship diesel engines with the use of the derivative-free nonlinear Kalman Filter. *IMEche J. Syst. Control Eng.*, Sage Publications **228**(9), 631–644 (2014)
453. Rigatos, G.G.: *Advanced Models of Neural Networks: Nonlinear Dynamics and Stochasticity in Biological Neurons*. Springer, Berlin (2014)
454. Rigatos, G.G.: A differential flatness theory approach to observer-based adaptive fuzzy control of MIMO nonlinear dynamical systems. *Nonlinear Dyn.*, Springer **76**(2), 1335–1354 (2014)
455. Rigatos, G.: A differential flatness theory approach to adaptive fuzzy control of chaotic dynamical systems. In: IEEE SSCI 2014, Orlando, Florida, USA (2014)
456. Rigatos, G., Siano, P., Zervos, N.: Sensorless control of distributed power generators with the derivative-free nonlinear Kalman Filter. *IEEE Trans. Industr. Electron.* **61**(11), 6369–6382 (2014)
457. Rigatos, G., Zhu, G., Youssef, H., Boukroune, A.: Flatness-based adaptive fuzzy control of electrostatically actuated MEMS using output feedback. In: ISI Internal Research Report (2014)
458. Rigatos, G., Siano, P.: A nonlinear H-infinity feedback control approach for asynchronous generators. In: IEEE ICCEP 2015, 5th International Conference on Clean Electrical Power, Taormina, Sicily, Italy, June 2015
459. Rigatos, G.: A new concept on flatness-based control of nonlinear dynamical systems, ISI Internal Report (2015)
460. Rigatos, G., Siano, P., Zervos, N., Cecati, C.: Nonlinear control of the three-phase inverter using the derivative-free nonlinear Kalman Filter. In: IET ACDC 2015, The 11th IET International Conference on AC and DC Power Transmission, Birmingham UK, Feb 2015

461. Rigatos, G., Raffo, F.: Input-output linearizing control of the underactuated hovercraft using the Derivative-free nonlinear Kalman Filter. *Unmanned Systems*, World Scientific (2015)
462. Rosencrantz, M., Gordon, G., Thrun, S.: Decentralized data fusion with distributed particle filtering. In: *Proceedings of the Conference of Uncertainty in AI (UAI)*, Acapulco, Mexico (2003)
463. Rouchon, P., Laroche, B., Martin, P.: Motion planning of the heat equation. *Int. J. Robust Nonlinear Control*, Wiley **10**:629–643 (2000)
464. Rouchon, P.: Flatness-based control of oscillators. *ZAMM J. Appl. Math. Mech.* **85**(6), 411–421 (2005)
465. Rudolph, J.: Flatness based control of distributed parameter systems. In: *Examples and Computer Exercises from Various Technological Domains*, Shaker Verlag, Aachen (2003)
466. Saadatpour, A., Levi, M.: Travelling waves in chains of pendula. *Physica D* **244**, 68–73 (2013)
467. Salberg, S.A., Maybeck, P.S., Oxley, M.E.: Infinite-dimensional sampled-data Kalman Filtering and stochastic heat equation. In: *49th IEEE Conference on Decision and Control*, Atlanta, Georgia, USA, Dec 2010
468. Saleh, M.H., Aldvidyan, K.M., Tatlicioglu, E., Dawson, D.M.: Robust backstepping nonlinear control for parallel-plate micro electrostatic actuators. In: *Proceedings of the 49th IEEE Conference on Decision and Control*, Atlanta, Georgia, USA, Dec 2010
469. Särkkä, S.: On unscented Kalman Filtering for state estimation of continuous-time nonlinear systems. *IEEE Trans. Autom. Control* **52**(9), 1631–1641 (2007)
470. Sepulveda, R., Montiel, O., Castello, O., Melin, P.: Embedding a high-speed interval type-2 fuzzy controller for a real plant into a FPGA. *Appl. Soft Comput.*, Elsevier **12**(3), 988–998 (2012)
471. Shafiee, Q., Vasquez, J., Guerrero, J.M.: Distributed secondary control for islanded microgrids: a networked control systems approach. In: *IEEE IECON 2012, 38th Annual Conference of the IEEE Industrial Electronics Society*, Montr’ eal, Canada (2012)
472. Shcheglov, K., Jiang, X., Toch, R., Chang, Z., Yang, E.H.: Hybrid linear microactuators and their control models for mirror shape correction. *J. Micro-Nano Mechatron.*, Springer **4**, 159–167 (2008)
473. Schiffer, J., Goldin, D., Raisch, J., Sezi, T.: Synchronization of droop-controlled microgrids with distributed rotational and electronic generation. In: *IEEE Conference on Decision and Control CDC 2013*, pp. 2334–2339, Firenze, Italy, Dec 2013
474. Schiffer, J., Ortega, R., Astolfi, A., Raisch, J., Sezi, T.: Conditions for stability of droop-controlled inverter-based microgrids. *Automatica*, Elsevier **50**(10), 2457–2469 (2014)
475. Schiffer, J., Ortega, R., Astolfi, A., Raisch, J., Sezi, T.: Stability of synchronized motions of inverter-based microgrids under droop control. In: *19th IFAC World Congress*, Cape Town, South Africa (2014)
476. Schenato, L.: Optimal sensor fusion for distributed sensors subject to random delay and packet loss. In: *Proceedings of the 46th IEEE Conference on Decision and Control*, New Orleans, Louisiana, USA, Dec 2007
477. Schenato, L.: Optimal estimation in networked control systems subject to random delay and packet drop. *IEEE Trans. Autom. Control* **53**, 1311–1317 (2008)
478. Schuurman, D.C., Capson, D.W.: Robust direct visual servo using network-synchronized cameras. *IEEE Trans. Rob. Autom.* **20**, 319–334 (2004)
479. Sekhavat, S., Rouchon, P., Hermosillo, P.J.: Computing the flat outputs of engel differential systems: the case study of the bi-steerable car. In: *American Control Conference* (2001)
480. Seguritan, A., Rotuno, M.: Torque pulsation compensation for a DC motor using an extended Kalman Filter approach. In: *Proceedings of the 41st IEEE Conference on Decision and Control*, Las Vegas, Nevada, USA, Dec 2002
481. Sepulveda, R., Montiel, O., Castello, O., Melin, P.: Embedding a high-speed interval type-2 fuzzy controller for a real plant into a FPGA. *Appl. Soft Comput.*, Elsevier **12**(3), 988–998 (2012)

482. Serrano, M.E., Scaglia, G.J.E., Godoy, S.A., Mut, V., Ortiz, O.A.: Trajectory tracking of underactuated surface vessels: a linear algebra approach. *IEEE Trans. Control Syst. Tech.* **22**(3), 1103–1111 (2014)
483. Shafiee, Q., Stefanovic, C., Draginevic, T., Popovskii, P., Vasquez, J., Guerrero, J.M.: Robust networked control scheme for distributed secondary control of islanded microgrids. *IEEE Trans. Industr. Electron.* **61**(10), 5363–5374 (2014)
484. Shih, M.C., Wang, T.Y.: Active control of electro-rheological fluid embedded pneumatic vibration isolator. *Integr. Comput. Aided Eng.* **15**(3), 267–276 (2008)
485. Shima, T., Rasmussen, S.J., Chandler, P.: UAV team decision and control using efficient collaborative estimation. *ASME J. Dyn. Syst. Measur. Control* **129**(5), 609–619 (2007)
486. Shimizu, Y., Ohtsuka, T., Diehl, M.: Nonlinear receding horizon control of an underactuated hovercraft with a multiple-shooting-based algorithm. In: *Proceedings of the 2006 IEEE International Conference on Control Applications*, Munich, Germany, Oct 2006
487. Shrinivashan, P., Gallash, C.O., Kraft, M.: Three-dimensional electrostatic actuators for tunable optical micro-cavities. *Sens. Actuators A, Elsevier* **161**, 191–198 (2010)
488. Sienel, W.: Estimation of the tire cornering stiffness and its application to active car steering. In: *Proceedings of the 36th Conference on Decision & Control*, San Diego, California, USA, Dec 1997
489. Silver, D., Salmon, R., Barbieri, E., Drakunov, S.: Towards an integrated welding testbed: temperature field control. In: *Proceedings of the IEEE ACC 98, American Control Conference*, Philadelphia, Pennsylvania, June 1998
490. Simon, D.: A game theory approach to constrained minimax state estimation. *IEEE Trans. Sig. Process.* **54**(2), 405–412 (2006)
491. Sira-Ramirez, H., Matamoros-Sanchez, A., Goodall, R.M.: Flatness based control of a suspension system: a GPI observer approach. In: *18th IFAC World Congress*, Milano, Italy (2011)
492. Sira-Ramirez, H.: Dynamic second-order sliding-mode control of the hovercraft vessel. *IEEE Trans. Control Syst. Tech.* **10**(6), 860–865 (2002)
493. Sira-Ramirez, H., Luviano-Juarez, A., Cortes-Romero, J.: A disturbance rejection flatness-based linear output feedback control approach for tracking tasks of Chua's circuit. In: *50th IEEE Conference on Decision and Control and European Control Conference (CDC-ECC)*, Orlando, Florida (2011)
494. Sira-Ramirez, H., Fliess, M.: On the output feedback control of a synchronous generator. In: *43rd IEEE Conference on Decision and Control*, Bahamas, Dec 2004
495. Sira-Ramirez, H., Agrawal, S.: *Differentially Flat Systems*. Marcel Dekker, New York (2004)
496. M'Sirdi, N.K., Jaballah, B., Rabhi, A., Messaoud, H., Naamane, A.: Differential estimators for state observers in vehicle dynamics: HOSM and ALIEN. In: *18th IFAC World Congress*, Milano, Italy, Aug–Sep (2011)
497. Sivaramakrishnan, S.: Simultaneous identification of tire cornering stiffnesses and vehicle center of gravity. In: *2008 American Control Conference*, Seattle, Washington, USA, June 2008
498. Slotine, J.J.: *Applied Nonlinear Control*, Prentice-Hall, Englewood Cliffs (1991)
499. Soltun, R.A., Ashrafioun, H., Muske, K.R.: ODE-based obstacle avoidance and trajectory planning for unmanned surface vessels. *Robotica, Cambridge University Press* **29**, 691–703 (2010)
500. Song, E., Lynch, A.F., Dinavahi, V.: Experimental validation of a flatness-based control for a voltage source converter. In: *Proceedings of the 2007 American Control Conference*, New York, USA (2007)
501. Song, T., Bin, C., Wang, Y.: Fuzzy adaptive output feedback control for MIMO nonlinear systems. *Fuzzy Sets Syst., Elsevier* **156**, 285–299 (2005)
502. Sorensen, A.J., Egeland, O.: Design of ride control system for surface effect ships using dissipative control. *Automatica, Elsevier* **31**, 183–199 (1995)
503. Spooner, J.T., Passino, K.M.: Stable adaptive control using fuzzy systems and neural networks. *IEEE Trans. Fuzzy Syst.* **4**, 339–359 (1996)



504. Su, C.Y., Stephanenko, Y.: Adaptive fuzzy control of a class of nonlinear systems. *IEEE Trans. Fuzzy Syst.* **2**, 285–294 (1994)
505. Sugihira, S., Ohmori, H.: Model-based starting control of SI engines via adaptive feedback linearization. In: SICE Annual Conference 2008, The University of Electro-Communications, Japan, Aug 2008
506. Sun, S.L., Deng, Z.L.: Distributed optimal fusion steady-state Kalman filter for systems with coloured measurement noises. *Int. J. Syst. Sci.*, Taylor & Francis **36**, 113–118 (2005)
507. Sun, J., Zhang, C., Guo, B.: Distributed full-order optimal fusion filters and smoothers for discrete-time stochastic singular systems. *Int. J. Syst. Sci.*, Taylor & Francis **42**, 507–516 (2011)
508. Suresh, S., Kannan, N., Sundararajan, N., Saratchandran, P.: Neural adaptive control for vibration suppression in composite fin-tip of aircraft. *Int. J. Neural Syst.*, World Scientific **18**(3), 219–231 (2008)
509. Tanaka, K., Iwasaki, M., Wang, H.O.: Switching control of an R/C hovercraft: stabilization and smooth switching. *IEEE Trans. Syst. Man Cybern. B Cybern.* **31**(6), 853–863 (2001)
510. Tang, C.P., Miller, P.T., Krovi, V.N., Ryu, J.C., Agrawal, S.K.: Differential flatness-based planning and control of a wheeled mobile manipulator theory and experiment. *IEEE/ASME Trans. Mechatron.* **16**(4), 768–773 (2011)
511. Tee, K.P., Ge, S.S., Tay, F.E.H.: Adaptive control of electrostatic microactuators with bi-directional drive. *IEEE Trans. Control Syst. Technol.* **17**(2), 340–352 (2009)
512. Tee, K.F., Koh, K.F., Quek, S.T.: Numerical and experimental studies of a substructural identification strategy. *Struct. Health Monit.*, Sage Publications **8**, 397–410 (2009)
513. Tee, K.P., Ge, S.S., Tay, E.H.: Output feedback adaptive control of electrostatic microactuators. In: 2009 American Control Conference, St. Louis, MO, USA, June 2009
514. Terzic, B., Jadric, M.: Design and implementation of the extended Kalman Filter for the speed and rotor position estimation of brushless DC motor. *IEEE Trans. Industr. Electron.* **48**(6) (2001)
515. Tham, Y.K., Wang, H., Teoh, E.K.: Multi-sensor fusion for steerable four-wheeled industrial vehicles. *Control Eng. Pract.*, Elsevier **7**, 1233–1248 (1999)
516. Tang, C.P., Miller, P.T., Krovi, V.N., Ryu, J.C., Agrawal, S.K.: Differential flatness-based planning and control of a wheeled mobile manipulator theory and experiment. *IEEE/ASME Trans. Mechatron.* **16**(4), 768–773 (2011)
517. Tang, H., Weng, L., Dong, Z.Y., Yan, R.: Adaptive and learning control for SI engine model with uncertainties. *IEEE/ASME Trans. Mechatron.* **14**(1), 93–104 (2009)
518. Tang, H., Zhang, Q.: An efficient numerical inverse scattering algorithm for generalized Zakharov-Shabat equations with two potential functions, INRIA Research Report, inria-00447358 (2010)
519. Tee, K.F., Koh, C.C., Quek, S.T.: Numerical and experimental studies of a substructural identification strategy. *Struct. Health Monit.*, Sage Publications **8**, 397–410 (2009)
520. Tharmarasa, R., Kirubarajan, T., Peng, J., Lang, T.: Optimization-based dynamic sensor management for distributed multitarget tracking. *IEEE Trans. Syst. Man Cybern. Part C Appl. Rev.* **39**(5), 534–546 (2009)
521. Thao, N.G.M., Uchida, K.: Control the active and reactive powers of three-phase grid-connected photovoltaic inverters using feedback linearization and fuzzy logic. In: 2013 Australian Control Conference, Perth, Australia, Nov 2013
522. Tian, G., Gao, Z.: Frequency response analysis of active disturbance rejection based control system. In: 16th IEEE International Conference on Control Applications, Singapore, Oct 2007
523. Tonati, Y., Djouani, K., Amirat, Y.: Neuro-fuzzy based approach for hybrid force/position robot control. *Integr. Comput. Aided Eng.*, IOS Press **11**(1), 85–98 (2004)
524. Tong, S., Li, H.-X., Chen, G.: Adaptive fuzzy decentralized control for a class of large-scale nonlinear systems. *IEEE Trans. Syst. Man Cybern. Part B Cybern.* **34**(1), 770–775 (2004)
525. Tong, S., Chen, B., Wang, Y.: Fuzzy adaptive output feedback control for MIMO nonlinear systems. *Fuzzy Sets Syst.*, Elsevier **156**, 285–299 (2005)

526. Tong, S., Li, Y.: Observer-based adaptive control for strict-feedback nonlinear systems. *Fuzzy Sets Syst.*, Elsevier **160**, 1749–1764 (2009)
527. Song, T., Bin, C., Wang, Y.: Fuzzy adaptive output feedback control for MIMO nonlinear systems. *Fuzzy Sets Syst.*, Elsevier **156**, 285–299 (2005)
528. Tsai, M.T., Tsai, W.I.: Analysis and design of three-phase AC-to-DC converters with high power factor and near-optimum feedforward control. *IEEE Trans. Industr. Electron.* **46**(3), 535–543 (1999)
529. Tsai, J.S.H., Lu, F.C., Provence, R.S., Shieh, L.S., Han, Z.: A new approach for adaptive blind equalization of chaotic communication: the optimal linearization technique. *Comput. Math. Appl.*, Elsevier **58**(9), 1687–1698 (2009)
530. Tsygankov, D.: Spontaneous synchronization of Josephson junctions and fiber lasers. Ph.D. Thesis, Georgia Institute of Technology (2005)
531. Tyner, D.R., Lewis, A.D.: Controllability of a hovercraft model (and two general results). In: 43rd IEEE Conference on Decision and Control, Atlantis, Paradise Island, Bahamas, Dec 2004
532. Tzafestas, S.G., Rigatos, G.G., Kyriannakis, E.J.: Geometry and thermal regulation of GMA welding via conventional and neural adaptive control. *J. Intell. Rob. Syst.*, Springer **19**(2), 153–186 (1997)
533. van der Merwe, R., Wan, E.A., Julier, S.I.: Sigma-point Kalman Filters for nonlinear estimation and sensor-fusion applications to intergrated navigation. In: Proceedings of the AIAA Guidance, Navigation and Control Conference, Providence, RI, USA, Aug 2004
534. Vercauteren, T., Wang, X.: Decentralized sigma-point information filters for target tracking in collaborative sensor networks. *IEEE Trans. Signal Process.* **53**(8), 2997–3009 (2005)
535. Villagra, J., d'Andrea-Novell, B., Mounier, H., Pengov, M.: Flatness-based vehicle steering control strategy with SDRE feedback gains tuned via a sensitivity approach. *IEEE Trans. Control Syst. Technol.* **15**, 554–565 (2007)
536. Vural, C., Cetinel, C.: Blind equalization of single-input single-output FIR channels for chaotic communication systems. *Digital Signal Process.*, Elsevier **20**, 201–211 (2010)
537. Wai, R.J., Chang, J.M.: Implementation of robust wavelet-neural-network sliding-mode control for induction servo motor drive. *IEEE Trans. Ind. Electron.* **50**(6), 1317–1334 (2003)
538. Wai, R.J., Chang, H.H.: Backstepping wavelet neural network control for indirect field-oriented induction motor drive. *IEEE Trans. Neural Networks* **15**(2), 367–382 (2004)
539. Wai, R.J., Chang, J.M.: Intelligent control of induction servo motor drive via wavelet neural network. *Electr. Power Syst. Res.*, Elsevier **61**(1), 67–76 (2001)
540. Wai, R.J., Wang, W.H., Lin, C.Y.: High-performance stand-alone photovoltaic generation system. *IEEE Trans. Ind. Electron.* **55**(1), 240–250 (2008)
541. Wang, J., Boussaada, I., Cela, A., Mounier, H., Niculescu, S.I.: Analysis and control of quadrotor via a normal form approach. In: IEEE International Symposium on Mathematical Theory of Networks and Systems, Melbourne, Australia (2012)
542. Wan, F., Wang, L.-X.: On the persistent excitation conditions of adaptive fuzzy system in nonlinear identifications. In: Proceedings of the 39th IEEE Conference on Decision and Control, Sydney, Australia, Dec 2000
543. Wang, L.X.: *Adaptive Fuzzy Systems and Control: Design and Stability Analysis*. Prentice Hall, Englewood Cliffs (1994)
544. Wang, L.X.: *A Course in Fuzzy Systems and Control*. Prentice-Hall, Englewood Cliffs (1998)
545. Wang, Y., Nam, K., Fujimoto, H., Hori, Y.: Robust roll and yaw integrated control using 4-wheel steering based on yaw moment and lateral force observers. In: Proceedings of the IEEJ Technical Meeting Record, IIC-11-138 (2011)
546. Wang, H.P., Bosche, J., Tian, Y., El Hajjaji, A.: Two-loop based dynamical feedback stabilization of a diesel engine with EGR & VGT. In: 50th IEEE conference of Decision and Control and European Control Conference (CDC-ECC), Orlando, Florida (2011)
547. Wang, F.Y., Gao, Y.: *Advanced Studies of Flexible Robotic Manipulators*. World Scientific, New Jersey (2004)

548. Wang, X., Yaz, E.E.: A new nonlinear-filter-based modulation/demodulation technique for chaotic communication. In: 2009 American Control Conference, St. Louis, Missouri, USA (2009)
549. Wang, X., Yaz, E.: Improved chaotic communications using nonlinear filtering. *Int. J. Innov. Comput. Inf. Control* **6**(5), 2127–2136 (2010)
550. Wang, Q., Jing, Y., Wang, L., Kong, Z.: Backstepping-based direct adaptive fuzzy control for SISO nonlinear systems. In: Proceedings of the 46th IEEE Conference on Decision and Control, New Orleans, LA, USA, Dec 2007
551. Wahlström, J., Erikson, L.: Nonlinear EGR and VGT control with integral action for diesel engines. *OGST - Rev. IFP Energies Nouvelles* **66**(4), 573–586 (2011)
552. Watanabe, K., Tzafestas, S.G.: Filtering, smoothing and control in discrete-time stochastic distributed-sensor networks, In: Tzafestas, S.G., Watanabe, K. (eds.) *Stochastic Large-Scale Engineering Systems*, pp. 229–252, Marcel Dekker (1992)
553. Wei, D.Q., Luo, X.S., Zhang, B., Qin, Y.H.: Controlling chaos in spaceclamped FitzHugh-Nagumo neuron by adaptive passive method. *Nonlinear Anal. Real World Appl.*, Elsevier **11**(3), 1752–1759 (2010)
554. Wesemeier, D., Isermann, R.: Identification of vehicle parameters using stationary driving maneuvers. *Control Eng. Pract.*, Elsevier **17**(12), 1426–1431 (2009)
555. Wiggins, S.: *Introduction to Applied Nonlinear Dynamical Systems and Chaos*. Series: Texts in Applied Mathematics, vol. 2. Springer, New York (2003)
556. White, A., Choi, J., Zhu, G.: Dynamic output feedback gain scheduling of an electric variable valve timing system. In: 2013 American Control Conference, Washington DC, USA, June 2013
557. Winkler, F.J., Krause, I., Lohmann, B.: Flatness-based control of a continuous furnace. In: 18th International Conference on Control Applications, Part of 2009 IEEE Multi-Conference on Systems and Control, Saint Petersburg, Russia, July 2009
558. Winkler, F.J., Lohmann, B.: Design of a decoupling controller structure for first order hyperbolic PDEs with distributed control action. In: 2010 American Control Conference, Baltimore, MD, USA, July 2010
559. Woittennek, F., Rudolph, J.: Controller canonical forms and flatness-based state feedback for 1D hyperbolic systems. In: 7th Vienna International Conference on Mathematical Modelling, MATHMOD (2012)
560. Woittennek, F., Mounier, H.: Controllability of networks of spatially one-dimensional second order pdes—an algebraic approach. *SIAM J. Control Optim.* **48**(6), 3882–3902 (2010)
561. Wu, S.L., Chen, P.C., Hsu, C.H., Chang, K.Y.: Gain-scheduled control of PVTOL aircraft dynamics with parameter-dependent disturbance. *J. Franklin Inst.*, Elsevier **345**(8), 906–925 (2008)
562. Wu, F., Zhang, X.P., Ju, P., Sterling, M.J.H.: Decentralized nonlinear control of wind turbine with doubly-fed induction generator. *IEEE Trans. Power Syst.* **23**(2), 613–621 (2008)
563. Wu, S., Zhou, L., Yang, J.: Experimental study of an adaptive extended Kalman Filter for structural damage identification. In: 4th International Conference on Earthquake Engineering, Taipei, Taiwan, Oct 2006
564. Wu, H.N., Wang, J.W., Li, H.K.: Design of distributed  $H_\infty$  fuzzy controllers with constraint for nonlinear hyperbolic PDE systems. *Automatica*, Elsevier **48**, 2535–2543 (2012)
565. Wu, D., Chen, K.: Design and analysis of precision active disturbance rejection control for nonsingular turning process. *IEEE Trans. Industr. Electron.* **56**(7), 2746–2753 (2009)
566. Wu, B., Lang, Y., Zargari, N., Kouros, S.: *Power Conversion and Control of Wind Energy Systems*. Wiley, NJ (2011)
567. Wu, C.S., Wang, H.L., Zhang, Y.M.: Numerical analysis of the temperature profiles and weld dimension in high power direct-diode laser welding. *Comput. Mater. Sci.*, Elsevier **46**, 49–56 (2009)
568. Wu, Z.G., Shi, P., Su, H., Chu, J.: Sampled-data fuzzy control of chaotic systems based on T-S Fuzzy model. *IEEE Trans. Fuzzy Syst.* **22**(1), 153–163 (2014)

569. Xia, Y., Shang, J., Chen, J., Liu, G.P.: Networked Data Fusion with packet losses and variable delays. *IEEE Trans. Syst. Man Cybern. B Cybern.* **39**, 1107–1119 (2009)
570. Xia, Y., Zhu, Z., Fu, M., Wang, S.: Attitude tracking of rigid spacecraft with bounded disturbances. *IEEE Trans. Industr. Electron.* **58**(2), 647–659 (2011)
571. Xie, Z., Feng, J., Li, Z.: A multi-user chaotic communication scheme based on feedback square root Unscented Kalman Filter. *Int. J. Nonlinear Sci. Numer. Simul.* **11**, 1059–1068 (2010)
572. Xin, X., Tanaka, S., She, J., Yamasaki, T.: New analytical results of energy-based swing-up control for the Pendubot. *Int. J. Non-Linear Mech., Elsevier* **52**, 110–118 (2013)
573. Xiong, J.: *An Introduction to Stochastic Filtering Theory*. Oxford University Press, Oxford (2008)
574. Xiong, K., Zhang, H.Y., Chan, C.W.: Performance evaluation of UKF-based nonlinear filtering. *Automatica*, Elsevier **42**(2), 261–270 (2006)
575. Xu, H., Hu, J., He, Y.: Operation of wind-turbine-driven DFIG systems under distorted grid voltage conditions: analysis and experimental validations. *IEEE Trans. Power Electron.* **27**(5), 2354–2366 (2012)
576. Xu, X., Hu, H.Y., Wang, H.L.: Stability switches, Hopf bifurcations and chaos of a neuron model with delay dependent parameters. *Phys. Lett. A, Elsevier* **354**(1–2), 126–136 (2006)
577. Xue, Y., Tai, N.: System frequency regulation in doubly fed induction generators. *Electr. Power Energy Syst., Elsevier* **43**(1), 977–983 (2012)
578. Yadaiah, N., Venkata Ramara, N.: Linearization of multi-machine power system: modelling and control—a survey. *Electr. Power Energy Syst., Elsevier* **29**(4), 297–311 (2007)
579. Yamashita, M., Fujimori, K., Hayakaw, K., Kimura, H.: Application of  $H_\infty$  control to active suspension systems. *Automatica*, Elsevier **30**(11), 1717–1729 (1994)
580. Yang, S.K.: An experiment of state estimation for predictive maintenance using Kalman Filter on a DC motor. *Reliab. Eng. Syst. Saf., Elsevier* **75**(1), 103–111 (2002)
581. Yang, Y., Zhou, C., Jia, X.: Robust adaptive fuzzy control and its application to ship roll stabilization. *Inf. Sci., Elsevier* **142**(1–4), 177–194 (2002)
582. Yang, S., Ajjarapu, V.: A speed-adaptive reduced-order observer for sensorless vector control of doubly-fed induction generator-based variable-speed wind turbines. *IEEE Trans. Energy Convers.* **25**(3), 891–900 (2010)
583. Yang, Q., Jagannathan, S.: A suite of robust controllers for the manipulation of microscale objects. *IEEE Trans. Syst. Man Cybern. B Cybern.* **38**(1), 113–125 (2008)
584. Yang, X.S., Huang, Y.: Complex Dynamics in Simple Hopfield Networks. *AIP Chaos* **16** (2006)
585. Yang, S., Lei, Q., Peng, F.Z., Qian, Z.: A robust control scheme for grid-connected voltage-source inverters. *IEEE Trans. Industr. Electron.* **58**(1), 202–212 (2011)
586. Yao, J., Li, H., Chen, Z., Xia, X., Li, X.Q., Liao, Y.: Enhanced control of a DFIG-based wind-power generation system with series grid-side converter under unbalanced grid voltage conditions. *IEEE Trans. Power Electron.* **28**(7), 3167–3181 (2013)
587. Yao, J., Li, H., Chen, Z., Xia, X.: Enhanced control of a DFIG-based wind-power generation system with series grid-side converter under unbalanced grid voltage conditions. *IEEE Trans. Power Electron.* **28**(7), 3167–3181 (2013)
588. Yildiz, Y., Annaswamy, A., Yanakiev, D., Kolmanovsky, I.: Adaptive air fuel ratio control for internal combustion engines. In: *Proceedings of American Control Conference*, pp. 2058–2063 (2008)
589. Yoon, Y., Shin, J., Kim, H.J., Park, Y., Sastry, S.: Model-predictive active steering and obstacle avoidance for autonomous ground vehicles. *Control Eng. Pract., Elsevier* **17**(7), 741–750 (2009)
590. Yoshimoto, Y., Watanabe, K., Iwatani, Y., Hashimoto, K.: Multi-camera visual servoing of a micro helicopter under occlusions. In: Fung, R.-F. (ed.) *Visual Servoing*. InTech Publications (2010)
591. Yousef, H.A., Hamdy, M., Shafiq, M.: Flatness-based adaptive fuzzy output tracking excitation control for power system generators. *J. Franklin Inst., Elsevier* **350**(8), 2334–2353 (2013)

592. Yu, D., Chakravotry, S.: A randomly perturbed iterative proper orthogonal decomposition technique for filtering distributed parameter systems. In: American Control Conference, Montreal, Canada, June 2012
593. Yue, H., Li, J.: Output-feedback adaptive fuzzy control for a class of nonlinear time-varying delay systems with unknown control directions. *IET Control Theory Appl.* **6**, 1266–1280 (2012)
594. Yoshimoto, Y., Watanabe, K., Iwatani, Y., Hashimoto, K.: Multi-camera visual servoing of a micro helicopter under occlusions. In: Fung, R.-F. (ed.) *Visual Servoing*. InTech Publications (2010)
595. Zamani, M.A., Sidha, T.S., Yazdani, A.: Investigations into the control and protection of existing distribution network to operate as a microgrid: a case study. *IEEE Trans. Industr. Electron.* **61**(4), 1904–1915 (2014)
596. Zarei, J., Poshtan, J., Poshtan, M.: Robust fault detection of nonlinear systems with unknown disturbances. In: 2010 IEEE International Conference on Control Applications (Part of 2010 IEEE Multi-Conference on Systems and Control), Yokohama, Japan, Sept 2010
597. Zhang, C., Franch, J., Agrawal, S.K.: Differentially flat design of a closed-chain planar underactuated 2-DOF system. *IEEE Trans. Robot.* **29**(1), 277–282 (2013)
598. Zhang, J., Shen, T., Marino, R.: Model-based cold-start speed control scheme for spark ignition engines. *Control Eng. Pract.*, Elsevier **18**(11), 1285–1294 (2010)
599. Zhang, Z., Sun, Z.: Rotational angle based pressure control of a common rail fuel injection system for internal combustion engines. In: 2009 American Control Conference Hyatt Regency Riverfront. St. Louis, MO, USA, June 2009
600. Zhang, Q., Basseville, M., Benveniste, A.: Fault detection and isolation in nonlinear dynamic systems: a combined input-output and local approach. *Automatica*, Elsevier **34**(11), 1359–1373 (1998)
601. Zhang, X., Khadra, A., Li, D., Yang, D.: Impulsive stability of chaotic systems represented by Takagi-Sugeno model. *Chaos, Solitons Fractals*, Elsevier **41**(4), 1863–1869 (2009)
602. Zhang, B., Ma, B.: Robust stabilization of underactuated surface vessels with parameter uncertainties. In: 29th Chinese Control Conference, Beijing, China, July 2010
603. Zhang, Y., Ma, H.: Theoretical and experimental investigation of networked control for parallel operation of inverters. *IEEE Trans. Industr. Electron.* **59**(4), 1961–1970 (2012)
604. Zheng, G., Boutat, D., Floquet, T., Barbot, J.P.: Secure communication based on multi-input multi-output chaotic system with large message amplitude. *Chaos, Solitons Fractals*, Elsevier **41**(3), 1510–1517 (2009)
605. Zheng, P., Tang, W., Zhang, J.: Some novel double-scroll chaotic attractors in Hopfield networks. *Neurocomputing*, Elsevier **73**(10–12), 2280–2285 (2010)
606. Zhong, Q.C., Nguyen, P.L., Ma, Z., Sheng, W.: Self-synchronized synchronverters: inverters without a dedicated synchronization unit. *IEEE Trans. Power Electron.* **29**(2), 617–629 (2014)
607. Zhong, Q.C.: Robust droop controller for accurate proportional load sharing among inverters operated in parallel. *IEEE Trans. Industr. Electron.* **60**(4), 1281–1290 (2013)
608. Zhong, Q.C., Hornik, T.: *Control of Power Inverters in Renewable Energy and Smart Grid Integration*. Wiley, NY (2013)
609. Zhong, Q.C., Weiss, G.: Static synchronous generators for distributed generation and renewable energy. In: Proceedings of IEEE PES Systems Control Conference Exhibition, pp. 1–6 (2009)
610. Zhong, Q.C., Weiss, G.: Synchronverters: inverters that mimic synchronous generators. *IEEE Trans. Industr. Electron.* **58**(4), 1259–1267 (2011)
611. Zhou, L., Wu, S., Yang, J.N.: Experimental study of an adaptive extended Kalman filter for structural damage identification. *ASCE J. Infrastruct. Syst.* **14**(Special Issue: New Sensors, Instrumentation, and Signal Interpretation), 4251 (2008)
612. Zhou, Z., Wang, C., Liu, Y., Holland, P.M., Iqic, P.: Load current observer based feed-forward DC bus voltage control for active rectifiers. *Electr. Power Syst. Res.*, Elsevier **84**(1), 165–173 (2012)

613. Zhu, G., Lévine, J., Praly, L., Peter, Y.A.: Flatness-based control of electrostatically actuated MEMS with application to adaptive optics: a simulation study. *IEEE J. Microelectromech. Syst.* **15**(5), 1165–1174 (2006)
614. Zhu, G., Packirisamy, M., Hosseini, M., Peter, Y.A.: Modelling and control of an electrostatically actuated torsional micromirror. *J. Micromech. Microeng.*, Institute of Physics Publishing **16**(10), 2044–2052 (2006)
615. Zhu, G., Saydy, L., Hosseini, M., Chiannetta, J.F., Peter, Y.A.: A robustness approach for handling modelling errors in parallel-plate electrostatic MEMS control. *J. Microelectromech. Syst.* **17**(6), 1902 (2007)
616. Zhu, G., Agudelo, G.G., Saydy, L., Packirisamy, M.: Torque multiplication and singularity avoidance in the control of electrostatic torsional micro-mirrors. In: *Proceedings of 17th IFAC World Congress, Seoul, Korea, July 2008*
617. Zhu, Z., Leung, H.: Combined demodulation with adaptive blind-channel equalization for chaotic-modulation communication systems. *IEEE Trans. Circ. Syst. I* **49**(12), 1811–1820 (2002)
618. Zuazua, E.: Propagation, observation and control of waves approximated by finite difference methods. *SIAM Rev.* **47**(2), 197–243 (2005)
619. Zwart, H., Le Gorrec, Y., Moschke, B.: Linking hyperbolic and parabolic PDEs. 2011 50th IEEE Conference on Decision and Control and European Control Conference, CDC-ECC, Orlando, Florida, USA, Dec 2011

# Index

## Symbols

$H_\infty$  Kalman Filtering, 299  
 $H_\infty$  criterion, 106  
 $H_\infty$  tracking performance, 104, 438, 542  
 $\chi^2$  distribution, 662  
 $\chi^2$  test, 648  
0-flat system, 83

## A

Active control of suspensions, 240  
Adaptation scheme in MIMO control, 541  
Adaptive fuzzy control of chaotic systems, 579  
Adaptive fuzzy control of diesel engines, 492, 528, 529  
Adaptive fuzzy control of MEMS, 429  
Adaptive fuzzy control of SI engines, 492, 560  
Air–fuel ratio measurement delays, 574  
ARMAX description of the Kalman Filter, 646  
Asymptotic stability, 10  
Asynchronous motor dynamics, 411  
Attenuation coefficient, 111, 131  
Autonomous 4-wheeled ground vehicles, 240  
Autonomous dynamical system, 58  
Autonomous ground vehicle, 242  
Autonomous hovercraft, 62  
Autonomous Underwater Vessels, 239  
Autonomous vehicle localization, 242

## B

Backstepping control, 672, 679  
Barbalat's Lemma, 131, 212, 591  
Bendixson's theorem, 21  
Bifurcations of fixed points, 21  
Bit Error Rate, 599  
Boundary control of nonlinear PDEs, 672, 687, 693  
Brunovsky canonical form, 80, 118, 154, 165, 403, 406  
Brunovsky-form, 57

## C

Canonical form of robotic unicycles, 247  
Canonical (normal) form, 32  
Cart-pole balancing, 111  
Central Limit Theorem, 648  
Channel distortion, 602  
Channel equalization, 603  
Chaos, 2  
Chaotic carrier signal, 599  
Chaotic communication system, 579, 598  
Chaotic modulation, 579  
Chaotic modulator, 598  
Chen chaotic system, 585  
Closed-chain underactuated robots, 218  
Codistribution, 29  
Communication delays, 177  
Compensation of delays and packet losses, 230  
Compensation of measurement delays, 493

- Completely integrable, 30
- Controllability condition, 40
- Control of wave-type PDEs, 613
- Coriolis and centrifugal forces matrix, 123
- Coupled nonlinear oscillators, 616, 657
- Covector field, 26
- Cramer–Rao Lower Bound, 158
  
- D**
- Decoupling, 44
- Defect, 87
- Derivative-free distributed nonlinear Kalman Filter, 173, 185, 227, 239, 262, 263, 271
- Derivative-free nonlinear Kalman Filter, 141, 158, 242, 329, 350, 370, 443, 491, 579, 600, 613, 624, 637, 661
- Derivative-free nonlinear Kalman Filter for DFIG, 337
- Derivative-free nonlinear Kalman Filter for distributed PMSGs, 338
- Derivative-free nonlinear Kalman Filter for PMSG, 337
- Derivative-free nonlinear Kalman Filter for UGVs, 247
- Derivative-free nonlinear Kalman Filter for unicycle, 253
- Derivative-free nonlinear Kalman Filtering, 219, 284, 300, 316
- Detection of parametric changes in PDE, 653
- DFIG control in cascading loops, 381
- Diffeomorphism, 28
- Differential flatness, 671
- Differential flatness for the heat PDE, 101
- Differential flatness of 4-wheel vehicle, 240, 276, 280
- Differential flatness of air–fuel ratio system, 493, 567
- Differential flatness of DFIG, 337, 367, 378
- Differential flatness of Diesel engines, 491, 521
- Differential flatness of distributed inverters, 444, 480
- Differential flatness of distributed PMSGs, 338, 393
- Differential flatness of gas exchange valve, 491, 501
- Differential flatness of hovercraft, 241
- Differential flatness of implicit systems, 90
- Differential flatness of inverter, 466
- Differential flatness of MEMS, 404, 427
- Differential flatness of nonlinear DC motor, 406
- Differential flatness of nonlinear wave PDE, 621, 690, 691
- Differential flatness of PMSG, 337, 347
- Differential flatness of quadroters, 240
- Differential flatness of quadrotor, 313
- Differential flatness of robotic unicycle, 245
- Differential flatness of the air–fuel ratio system, 570
- Differential flatness of the DC motor, 154
- Differential flatness of the nonlinear heat PDE, 100, 634
- Differential flatness of the n-storey building, 657, 659
- Differential flatness of the spark-ignited engine, 492, 551
- Differential flatness of vehicle’s suspension, 240, 296
- Differential flatness of voltage source converters, 449, 451
- Differentially flat system, 48, 49
- Differentially flat underactuated robot, 196
- Diffiety, 71, 88
- Discrete-time Kalman filter, 144
- Distributed filtering for AGVs, 266
- Distributed filtering for cooperating vehicles, 262, 263
- Distributed filtering over communication network, 230, 238
- Distributed nonlinear filtering, 141
- Distributed nonlinear Kalman Filtering, 173
- Distributed parameter systems, 47, 96, 613
- Distributed Particle Filter, 142
- Distributed state estimation-based control, 184
- Distribution, 28
- Disturbance estimator, 221
- Disturbance observer, 184, 219
- Dual Kalman Filtering, 603
- Duffing chaotic system, 579, 584
- Duffing oscillator, 5
- Dynamic extension, 45
- Dynamic extension for air–fuel ratio system, 571
- Dynamic extension for diesel engines, 517
- Dynamic extension for underactuated vessel, 324
- Dynamic feedback linearization, 45, 47, 61, 573
- Dynamic feedback linearization for diesel engines, 518
- Dynamics of 4-wheel vehicle, 277
- Dynamics of DFIG, 360
- Dynamics of diesel engine, 512



- Dynamics of distributed inverters, 479
- Dynamics of electrostatic microactuator, 424
- Dynamics of gas exchange valves, 497
- Dynamics of interconnected PMSGs, 390
- Dynamics of inverter, 459
- Dynamics of n-storey building, 657
- Dynamics of PMSG, 341
- Dynamics of quadrotor, 313
- Dynamics of SI engine, 548
- Dynamics of the air–fuel ratio system, 569
- Dynamics of voltage source converters, 446
  
- E**
- Endogenous feedback, 78
- Equivalence between inverters and synchronous generators, 477
- Equivalent model, 51
- Equivalent systems, 59
- Estimation of communication channel coefficients, 609
- Euler-Lagrange equation, 111, 311
- Euler-Lagrange method, 187, 190
- Extended Information Filter, 141, 173, 185, 262, 271
- Extended Kalman Filter, 142, 145, 601
- Extended Kalman Filter for DFIG, 383
- Extended Kalman Filtering for induction motors, 416
- Extended State Observer, 224
  
- F**
- Fault diagnosis in distributed parameter systems, 614, 640
- Fault diagnosis in sensors network, 652
- Fault isolation test, 646
- Fault threshold, 614
- Feedback control of nonlinear heat PDE, 636
- Feedback control of the nonlinear wave PDE, 615, 623
- Field-oriented induction motor, 411
- Filtering for nonlinear wave PDE, 623
- Filtering for vehicle localization, 248
- Filtering in chaotic communications, 601
- Filtering of wave-type PDEs, 613
- Finite escape time, 1
- Fisher Information matrix, 172, 173
- Flatness-based adaptive control of MEMS, 403
- Flatness-based adaptive fuzzy control, 103, 403, 407
- Flatness-based control, 47, 244
- Flatness-based control in cascading loops, 403, 414, 672, 694
- Flatness-based control of 1-DOF robot, 680
- Flatness-based control of 4-wheel vehicle, 283
- Flatness-based control of air–fuel ratio, 493, 572
- Flatness-based control of chaotic dynamics, 579, 591
- Flatness-based control of converter, 452
- Flatness-based control of cooperating vehicles, 261, 265
- Flatness-based control of DFIG, 369
- Flatness-based control of diesel engines, 491, 524
- Flatness-based control of distributed inverters, 481, 483
- Flatness-based control of distributed PMSGs, 396, 398
- Flatness-based control of gas exchange valve, 491
- Flatness-based control of gas exchange valves, 504
- Flatness-based control of inverter, 443, 470
- Flatness-based control of PMSG, 682
- Flatness-based control of SI engines, 492
- Flatness-based control of spark-ignited engines, 552
- Flatness-based control of underactuated vessel, 329, 331
- Flat output, 50, 671, 692
- Flat subsystem, 86
- Fréchet topology, 58
- Frobenius theorem, 29
- Fusion of distributed estimates, 235
  
- G**
- Gas metal arc welding process, 613
- Generalized Likelihood Ratio, 649
- Genesio–Tesi chaotic system, 584
- Global asymptotic stability, 10
- Global change detection test, 646
- Gradient algorithm, 110, 210
  
- H**
- Hamiltonian matrix, 132, 213
- Heat diffusion equation, 96
- H-infinity performance index, 111, 131, 564, 590
- Hopf bifurcations, 21, 24, 26
- Hurwitz stable system, 44
- Hyperbolic equilibrium point, 12, 24

Hyper-regular matrices, 90  
Hypothesis testing, 648

**I**

Implicit control system, 88  
Industrial robotic manipulators, 183  
Inertia matrix, 123  
Information Filter, 141  
Information Matrix, 174  
Information state vector, 174  
Input–output linearization, 30, 34, 245  
Input–output linearization for underactuated vessel, 324, 328  
Input–output linearization of converters, 447  
Input–output linearization of DFIG, 363  
Input–output linearization of distributed PMSGs, 391, 393  
Input–output linearization of gas exchange valves, 498, 500  
Input–output linearization of inverter, 463  
Input–output linearization of MEMS, 425  
Input–output linearization of PMSG, 346  
Input–output linearization of the SI engine, 549, 550  
Input-state linearizable, 40  
Input-to-state linearization, 38, 39  
Integrity monitoring of sensors, 240  
Inverters, 443  
Involutive distribution, 28  
Involutivity condition, 30, 40  
Isoclines, 6

**J**

Jacobian, 146  
Jacobian matrix, 10, 12, 18, 19, 141  
Jacobi's identity, 41  
Josephson junction, 617  
Josephson transmission line, 618

**K**

Kalman Filter-based control, 184  
Kalman Filter-based disturbance estimator, 219, 222, 525  
Kalman Filter-based disturbance observer, 240, 241, 285, 301, 317, 331, 338, 351, 372, 397, 443, 453, 472, 483, 574, 665  
Kalman Filter-based disturbances estimator, 492, 505  
Kalman Filter for delayed measurements, 232

Kernel functions, 126, 129, 209, 536

**L**

Lagrangian, 189, 311  
Lie algebra-based observer for nonlinear systems, 343  
Lie-Backlund condition, 672  
Lie-Backlund equivalence, 89  
Lie-Backlund isomorphism, 57, 71  
Lie-Backlund transformation, 71  
Lie Bracket, 27, 118  
Lie derivative, 26, 117, 342  
Limit cycles, 2, 8, 19, 21  
Linear canonical (Brunovsky) form, 195, 428, 451, 471, 480, 503, 520, 552, 585, 614, 621, 672, 674  
Linear DC motor, 152  
Linearizing transformation for nonlinear PDEs, 643  
Linear Matrix Inequalities, 591  
Linear regressor models, 645  
Linearizing transformation for nonlinear PDEs, 643  
Liouvillian systems, 86  
Local linearization, 9, 591  
Local linearization of Lorenz oscillator, 593  
Local statistical approach to fault diagnosis, 614, 643  
Lorenz chaotic system, 579, 582  
Lyapunov function, 127, 207, 678, 696  
Lyapunov stability analysis, 104, 109, 183, 403, 404, 434, 493, 538, 562, 579, 588  
Lyapunov stability criterion, 10

**M**

Manifold of jets, 71, 88  
Mean Square Error (MSE), 158, 599  
MIMO canonical form, 119  
MIMO differentially flat systems, 47  
MIMO nonlinear dynamics, 116  
Minimization problem in optimal control, 687  
Minimum mean squares estimation problem, 144  
Min–max test for fault isolation, 650  
Multi-DOF building, 614  
Multi-DOF mechanical structure, 614  
Multi-DOF robotic manipulators, 183  
Multipath propagation, 602  
Multiple isolated equilibria, 1

**N**

Neuro-fuzzy approximators, 107, 108, 127, 198, 432, 536, 561, 587  
 Nonautonomous dynamical system, 58  
 Nonflat systems, 86  
 Nonlinear DC motor, 152, 225, 403, 405, 673  
 Nonlinear electric power generation systems, 672  
 Nonlinear heat diffusion PDE, 613, 631  
 Nonlinear partial differential equations, 96, 613  
 Nonlinear PDEs control in cascading loops, 688, 694  
 Nonlinear wave PDE, 616, 688  
 Normal coordinates, 35  
 Normal form, 34  
 Normalized error square, 662  
 Normal states, 35

**O**

Observation gain matrix, 202  
 Observer-based adaptive control, 404  
 Observer-based adaptive fuzzy control, 183, 199, 431, 492  
 Observer canonical form, 227  
 Optimal control, 686  
 Optimal fault threshold selection, 643  
 Optimal trajectories, 687

**P**

Packet drops, 177  
 PDE of Josephson junction dynamics, 618  
 Perturbation observer, 224  
 Phase diagram, 8, 13  
 Pitchfork bifurcations, 22  
 Poincaré-Bendixson's theorem, 21  
 Point of singularity, 74  
 Pointwise control of PDEs, 613

**R**

Recursive computation of control inputs, 677  
 Regulation problem, 106, 560, 586  
 Relative degree, 27, 343  
 Residuals, 614, 646  
 Riccati equations, 104, 109, 143, 207, 213, 435, 538, 563, 589  
 Rigid-link robotic manipulator, 123, 133, 163  
 Robotic visual servoing, 184  
 Robustness of a flatness-based controller, 82

**S**

Saddle-node bifurcation, 22  
 Saddle point, 13  
 Sensitivity matrix, 648  
 Sensitivity test for fault isolation, 650  
 Sensor fusion for AGVs, 266  
 Sensorless control of DFIG, 338, 383  
 Sensorless control of DFIG in cascading loops, 338, 380  
 Sensorless control of induction motor, 403  
 Sensorless control of PMSG, 337  
 Sensors fusion for vehicle localization, 265  
 Sensors integrity monitoring for AGVs, 267  
 Sigma-Point Kalman Filters, 147  
 Signal to Noise Ratio, 606  
 Sine-Gordon equation, 616  
 Sine-Gordon nonlinear wave PDE, 625  
 Single-input differentially flat system, 105  
 Smoothing Kalman Filter, 232  
 Spring-damper-mass system, 52  
 Stabilizing control input, 34  
 Stabilizing feedback control, 43  
 State estimation-based control, 158, 168  
 State estimation-based feedback control, 672  
 State observer, 202  
 State-space description of the nonlinear heat PDE, 97, 633  
 State-space model of Josephson junction PDE, 619, 621  
 State-space model of nonlinear wave PDE, 622, 644, 689  
 State transition matrix, 231  
 Static feedback linearization, 47, 192  
 Static state feedback, 83  
 Statistical processing of residuals, 614, 643  
 Strong closedness, 88  
 Structural condition monitoring, 614  
 Sub-harmonic and harmonic oscillation, 2  
 Synchronization of distributed inverters, 444, 480, 483  
 Synchronization of distributed PMSGs, 396  
 System in the explicit form, 88  
 Systems in triangular form, 84, 671, 674  
 Systems without drift term, 84

**T**

Takagi-Sugeno fuzzy modelling, 591  
 Takagi-Sugeno model stability condition, 592  
 Taylor series expansion, 145  
 Trajectory planning, 72  
 Trajectory tracking, 78

Transformation into the canonical form, [673](#)  
Transmitter-receiver synchronization, [580](#),  
[603](#)

## U

Uncented Kalman Filtering for induction  
motors, [416](#)  
Underactuated nonlinear robotic manipula-  
tors, [183](#), [191](#)  
Underactuated robot control, [198](#)  
Underactuated robotic mechanism, [185](#)  
Underactuated vessel dynamics, [62](#), [241](#),  
[323](#)  
Unicycle robots, [239](#)  
Unknown Input Observer, [224](#)  
Unmanned Aerial Vehicles, [239](#)  
Unmanned Ground Vehicles, [239](#)  
Unmanned Surface Vessels, [239](#)  
Unscented Information Filter, [142](#)

Unscented Kalman Filter, [147](#), [403](#), [602](#)  
Unscented Transform, [148](#)

## V

Van der Pol oscillator, [19](#)  
Vector field, [26](#)  
Virtual synchronous generators, [477](#)  
Visual servoing, [178](#), [225](#), [236](#)  
Voltage source converters, [443](#)  
VTOL aircraft, [55](#), [60](#)

## W

Weights adaptation law, [437](#)

## Z

Zero dynamics, [77](#)