

1. Record Nr.	UNISA996210340103316
Titolo	The Journal of staff development
Pubbl/distr/stampa	[Oxford, Ohio], : National Staff Development Council [Oxford, Ohio], : Learning Forward
Descrizione fisica	1 online resource
Disciplina	374/.973
Soggetti	Adult education - United States Teachers - Training of - United States Adult education Teachers - Training of Periodicals. United States
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Periodico
Note generali	Refereed/Peer-reviewed At head of title, winter 1991-fall 2002: JSD.

2. Record Nr.	UNINA9910958581703321
Autore	Xiao Chengmo
Titolo	Yacht modelling and adaptive control // Chengmo Xiao and Sing Kiong Nguang
Pubbl/distr/stampa	New York, : Nova Science Publishers, c2009
ISBN	1-61209-860-6
Edizione	[1st ed.]
Descrizione fisica	1 online resource (xiii, 151 pages) : illustrations
Collana	Transportation issues, policies and R&D series
Altri autori (Persone)	NguangSing Kiong
Disciplina	623.82/023
Soggetti	Yachts - Design and construction Yachts - Tecnological innovations Stability of ships Motion control devices Automatic pilot (Ships) Steering-gear Global Positioning System
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- YACHT MODELLING AND ADAPTIVECONTROL -- YACHTMODELLINGANDADAPTIVECONTROL -- Contents -- List of Tables -- List of Figures -- Abstract -- Introduction -- 1.1. Introduction to Ship Motion Control Problem -- 1.2. Review on Ship Motion Control Strategies -- 1.3. Yacht Motion Control Problems -- 1.3.1. The Overlooked Study on Yacht Motion Control -- 1.3.2. What Is the Difference of Yacht Motion Control? -- 1.3.3. Why Adaptive Control? -- 1.4. What Is the New Contribution In This Book? -- 1.5. How Is This Book Organized? -- Yacht Mathematic Modelling: Hydrodynamics Analysis -- 2.1. Introduction -- 2.2. The Yacht Motion Coordinate Frame -- 2.3. Derivation of Motion Equations for Marine Vessels -- 2.3.1. A Particular Case of Ship Motion Analysis -- 2.3.2. The More General Case of Ship Motion Analysis -- 2.3.3. Simplification on Ship Motion Equations -- 2.4. Yacht Hydrodynamics Analysis -- 2.5. Disturbances Analysis -- 2.5.1. Wind Disturbance -- 2.5.2. Wave and Current Disturbances -- 2.6. SimulinkTM Implementation of the Chosen 12-metreAmerica's Cup Yacht -- 2.7. Summary -- Yacht

Mathematic Modelling:Parameter Identification -- 3.1. Introduction -- 3.2. Yacht's Model Identification and Simplification -- 3.2.1. Recursive Prediction Error Method (RPEM) -- 3.2.2. Identification of Transfer Function -- 3.3. Numeric Results of Yacht Identification -- 3.3.1. Spectrum Analysis on Heading, Rolling and Rudder Angles -- 3.3.2. Responses of Yaw and Roll Motion to the Rudder -- 3.3.3. Sensitivity to Wind Disturbances -- 3.3.4. Illustrations on Parameter Estimation -- 3.4. Summary -- Adaptive Self-Tuning PID YachtAutopilots: LQR Approach -- 4.1. Introduction -- 4.2. LQR Self-tuning PID Autopilot Design -- 4.2.1. LQR Self-tuning PD Control Algorithm -- 4.2.2. LQR Self-tuning PID Control Algorithm -- 4.2.3. Analysis of the PD and PID Autopilot Algorithms. 4.2.3.1. Boundaries on w_0 and x -- 4.2.3.2. Gains Comparison on LqrPD and LqrPID Autopilots -- 4.3. Simulations and Results Comparisons -- 4.3.1. Simulations on LQR Tuned PD Autopilots -- 4.3.2. Simulations on LQR Tuned PID Autopilots -- 4.4. Stability Analysis -- 4.5. Summary -- Adaptive Self-tuning PD YachtSteering Control: H ∞ Approach -- 5.1. Introduction -- 5.2. H ∞ Auto-tuning PD Autopilot Design -- 5.2.1. Review of H ∞ Theory -- 5.2.2. H ∞ Tuned PD Autopilot Design -- 5.2.3. Constraints Analysis on Choosing Parameters w_0 and x -- 5.3. Simulations Study -- 5.3.1. Calm Sea Steering Control -- 5.3.2. Comparisons on Robust and Adaptive H ∞ Tuned PD Autopilot -- 5.3.3. Comparisons on Adaptive H ∞ PD and LQR Tuned PD/PID Autopilots -- 5.4. Stability Study -- 5.5. Summary -- Adaptive Yacht Rudder-RollDamping and Steering Control -- 6.1. Introduction -- 6.2. Yacht Steering and Roll Damping Control:Adaptive LQR Strategy -- 6.2.1. LQR Steering Autopilot Design -- 6.2.2. LQR Roll Damping Controller Plus PD Steering Control -- 6.2.3. LQR Steering and Roll Damping Controller -- 6.3. LQR Steering and Roll Damping Control Simulation -- 6.3.1. Comparison of PID and Adaptive LQR Autopilots for Yacht SteeringControl -- 6.3.2. Simulation Analysis of the Designed Adaptive LQR Roll Damping Autopilots -- 6.3.3. Results Analysis of the Designed LQR Steering and Roll Damping Autopilots -- 6.4. Summary -- Online Adaptive LQR AutopilotDesign Based on Genetic Algorithms -- 7.1. Introduction -- 7.2. Review of Genetic Optimization -- 7.3. The Online Adaptive LQR Autopilot Design by GA Algorithm -- 7.3.1. Brief Review of the Yacht Mathematical Model -- 7.3.2. Review of Adaptive LQR Autopilot Design -- 7.3.3. The Development of a Full-Adaptive LQR Controller Tuned by GA -- 7.4. Simulation Study -- 7.4.1. Determination of Minimum Size of Population and Generation. 7.4.2. Control Performance Comparison on the Ship "Sea Scout" -- 7.4.3. Control Performance Comparison on the Yacht -- 7.5. Summary -- Conclusions and Future's Work -- 8.1. General Conclusions -- 8.2. Suggestions for Future Research -- Appendix -- A.1. Measurements for the 12-metre America's Cup RacingYacht -- A.2. Coefficients for the 12-metre America's Cup Racing Yacht -- A.3. Added Mass of the Simulated Yacht -- References -- Index.

Sommario/riassunto

The autopilot system which integrates the electronic hardware and the control algorithms has become standard use for commercial and military marine vessels, and is becoming essential equipment for smaller marine vessels such as leisure boats and yachts.