

1. Record Nr.	UNINA9910483948703321
Autore	Hernandez-Guzman Victor Manuel
Titolo	Energy-based control of electromechanical systems : a novel passivity-based approach // Victor Manuel Hernandez-Guzman, Ramon Silva-Ortigoza, Jorge Alberto Orrante-Sakanassi
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-58786-X
Edizione	[1st edition 2021.]
Descrizione fisica	1 online resource (XX, 619 p. 225 illus., 50 illus. in color.)
Collana	Advances in Industrial Control, , 1430-9491
Disciplina	629.8
Soggetti	Passivity-based control Electric motors - Automatic control Electromechanical devices - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Mathematical Preliminaries -- Permanent Magnet Brushed DC-Motor -- Permanent Magnet Synchronous Motor -- Induction Motor -- Switched Reluctance Motor -- Synchronous Reluctance Motor -- Bipolar Permanent Magnet Stepper Motor -- Brushless DC-Motor -- Magnetic Levitation Systems and Microelectromechanical Systems -- Trajectory Tracking for Robot Manipulators Equipped With PM Synchronous Motors -- PID Control of Robot Manipulators Equipped with SRMs.
Sommario/riassunto	This book introduces a passivity-based approach which simplifies the controller design task for AC motors. It presents the application of this novel approach to several classes of AC motors, magnetic levitation systems, microelectromechanical systems (MEMS) and rigid robot manipulators actuated by AC-motors. The novel passivity-based approach exploits the fact that the natural energy exchange existing between the mechanical and the electrical subsystems allows the natural cancellation of several high order terms during the stability analysis. This allows the authors to present come of the simplest controllers proposed in scientific literature, but provided with formal stability proofs. These simple control laws will be of use to

practitioners as they are robust with respect to numerical errors and noise amplification, and are provided with tuning guidelines. Energy-based Control of Electromechanical Systems is intended for both theorists and practitioners. Therefore, the stability proofs are not based on abstract mathematical ideas but Lyapunov stability theory. Several interpretations of the proofs are given along the body of the book using simple energy ideas and the complete proofs are included in appendices. The complete modeling of each motor studied is also presented, allowing for a thorough understanding. Advances in Industrial Control reports and encourages the transfer of technology in control engineering. The rapid development of control technology has an impact on all areas of the control discipline. The series offers an opportunity for researchers to present an extended exposition of new work in all aspects of industrial control.

2. Record Nr.	UNINA9910747598503321
Autore	Jia Yingmin
Titolo	Proceedings of 2023 Chinese Intelligent Systems Conference : Volume III // edited by Yingmin Jia, Weicun Zhang, Yongling Fu, Jiqiang Wang
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	9789819968862 9819968860
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (850 pages)
Collana	Lecture Notes in Electrical Engineering, , 1876-1119 ; ; 1091
Altri autori (Persone)	ZhangWeicun FuYongling WangJiqiang
Disciplina	006.3
Soggetti	Computational intelligence Automatic control Robotics Automation Artificial intelligence Computational Intelligence Control, Robotics, Automation Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa

Research on Hierarchical Mechanism of strictly metric-free model modeling and parameter optimization -- Analytical Study of the Nonlinear Characteristics of Hydraulic Servo Actuator -- Fetal Head Circumference Detection Based on Dlink-Net Model -- Circumnavigating Control of an Unmanned Aerial Vehicle Using Range-only Measurements -- Path Planning for Parafoil Airdrop System Based on TD3 Algorithm: Reward Shaping with Potential Field -- Research on Efficiency Optimization of Open Winding Permanent Magnet Synchronous Generator Considering Zero Sequence Current Suppression -- Low frequency wide bandgap of perforation local resonant meta-structure sandwich plate -- Full polarization radar target recognition based on ensemble learning algorithm -- Input-to-state Stability of Cyber-physical Systems under Denial of Service Attacks -- Research on Wing Attitude Prediction Method Based on Distributed Inertial Navigation Network -- Design and Simulation of Pneumatic Drive System for Mobile Highland Tent.-Finite-Time Stability and Stabilization of Continuous-Time Mean-Field Stochastic Systems -- Flight Control Practice of Relay Communication Service for Mars Exploration -- Research On Integration Technology of Guidance and Fuze For Air Defense Missile -- Assessment method for fine configuration of basic resource of information system -- Resilient Consensus of Heterogeneous Multi-Agent Systems Based on E-MSR Algorithms -- Target identification technology in space light environment based on improved YOLOX -- Adaptive Control of Vehicle Steering-by-wire System -- Quadcopter UAV Swarm Formation and Avoidance Collision System -- Finite-time anti-disturbance control for stochastic system with multiple disturbance -- Master-slave power battery management system based on STM32 microcontroller -- Preliminary Study on the Method of Generating Infrared Image Based on CycleGAN -- Predicting Nitrogen Oxide Concentration Based on Quadrupedal Robots -- Research on Aerofoil Distortion Angle Prediction Method Based on Prediction Model -- State Estimation and Fusion for Multisensor Systems with Non-Gaussian Noises and False Data Injection Attacks -- Key technology research of VR-based substation practice teaching system -- Experimental Research on Surface Integrity of High Strength Steel Turning by Analysis of Variance Method -- Event-triggered prescribed performance control for nonlinear servo systems with unknown disturbances -- Adaptive actor-critic neural finite time optimal control for constrained nonlinear MASs via command filter -- The Realization of Model-based Spacecraft Mission Planning and Execution of High-Level Autonomy -- Human Intention Recognition for Lower Limb Exoskeleton Robot -- Attention Based Temporal Convolutional Networks for Short-term Wind Power Forecasting -- Implementation of a receiver tracking loop adapted to intermittent network transmission -- Fusing multi-scale binary convolution with joint attention face expression recognition algorithm -- Comparison between Simulation and Experiment of Parafoil Fixed Height Flight by Adding Thrust Motor Model -- Multi-sensor Fusion Model-Free Adaptive Control for Systems with Network Attacks -- Stereovision-based Target Trajectory Tracking Control for Robotic Manipulator -- Model Predictive Control for Uncalibrated Visual Servoing Based on Broyden Estimation -- A Non-Iterative Turboshaft Engine Model with Its Neural Network Control Algorithm -- Real-time Pedestrian Tracking System Based on Depth Camera for Quadruped

Robot -- Automatic Kidney Parenchyma Segmentation Based on Improved UNeXt Model -- Analysis of the problem of zero deviation characteristics exceeding the tolerance of a hydraulic servo actuator -- Design of a Multi axis Motion Control System for Smart Hands Based on SOC -- A Distributed Processing Method for Large Scale Logs -- Precession Fault Diagnosis Method Based on Butterworth Filter and Convolutional Neural Network -- Active contour model based on poisson's equation and morphology for inhomogeneous imagesegmentation -- Path Planning of Mobile Robot Based on Improved Artificial Potential Field Method -- Research on trajectory control of unmanned based on adaptive MPC -- Adaptive Repetitive Learning Control for Dual-motor Driving Servo Systems -- Adaptive non-backstepping output-feedback control for hydraulic servo system -- Concurrent Learning Model Reference Adaptive Control of Articulated Vehicles -- Adaptive Neural Finite-time Output Feedback Compensated Control for Stochastic Nonstrict-feedback Systems with Prescribed Performance -- Bipartite Consensus Control for Multi-Agent Systems with Privacy-Preserving under Directed Topology -- A geometric approach to design disturbance rejection controller in finite frequency domain -- Adaptive Sliding Mode Control with Disturbance Observer for Trajectory Tracking of Robotic Milling -- Research on Multi-aircraft Time Cooperative Interception Method Based on TD3 Algorithm -- Laser Intensity and Multi-Echo Information Utilization for Indoor Unmanned Aerial Vehicles (UAVs): Current Status and Future Trends -- UCB-based architecture search for remaining useful life prediction -- Simulation and experimental analysis of thermal characteristics of valve body active cooling structure -- A Method for Partitioning the Topological Structure of Groups Based on Hypergraphs -- Motion imagery classification algorithm based on multiscale convolution and transfer learning -- A Method to Enhance Data Observability for Robot Calibration in Confined Space -- Multiplayer Stackelberg-Nash Game for Discrete-Time Nonlinear System -- Adaptive Finite-Time Parameter Estimation for a Reaction Force-sensing Series Elastic Actuator -- Space Robotic Arm Joint Design and Experimental Method Research -- Multi-mobile Robots Formation Control with Prescribed Performance in Polar Coordinates -- Horizontal Trajectory Tracking Control for X Rudder AUV Adopted Sliding Mode Control with IPSO Allocation Algorithm -- A Novel Graph Convolutional Neural Network and its Application in Power Load Forecasting -- Identity Consistency Construction for Visible-infrared Person Re-identification in Cloud Environment -- Adaptive Consensus for Second-Order Uncertain Multiagent Systems with Communication Delays Using Relative Output Information -- A Multi-terrain Adaptive Feed-forward Control Walking Algorithm for Lifting Exoskeleton -- FDI Attack-Resilient Distributed Cooperative Control for Microgrids via Two-hop Communication -- Adaptive Formation Control for Uncertain Networked Wheeled Mobile Robots -- A PGK Aerodynamic Simulation Analysis and Trajectory Optimization Study -- Deep Reinforcement Learning-based Multi-objective 3D Path Planning for Vehicles.

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## Sommario/riassunto

This book constitutes the proceedings of the 19th Chinese Intelligent Systems Conference, CISC 2023, which was held during October 14–15, 2023, in Ningbo, Zhejiang, China. The book focuses on new theoretical results and techniques in the field of intelligent systems and control. This is achieved by providing in-depth studies of a number of important topics such as multi-agent systems, complex networks, intelligent robots, complex systems theory and swarm behavior, event-driven and data-driven control, robust and adaptive control, big data and brain science, process control, intelligent sensors and detection

technology, deep learning and learning control, navigation and control of aerial vehicles, and so on. The book is particularly suitable for readers interested in learning intelligent systems and control and artificial intelligence. The book can benefit researchers, engineers and graduate students.

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