An Improved Flux Observer For Sensorless Permanent Magnet

Yeah, reviewing a ebook **An Improved Flux Observer For Sensorless Permanent Magnet** could mount up your near friends listings. This is just one of the solutions for you to be successful. As understood, exploit does not recommend that you have astounding points.

Comprehending as well as accord even more than additional will offer each success. neighboring to, the declaration as without difficulty as sharpness of this An Improved Flux Observer For Sensorless Permanent Magnet can be taken as with ease as picked to act.

An Improved Flux Observer For Sensorless Permanent Magnet ***2023-02-21***

ODOM RAY

Handbook of Research on Emerging Technologies for Electrical Power Planning, Analysis, and Optimization Springer Nature
This book presents advances in control technologies for efficient operation of the brushless doubly-fed induction generator (BDFIG). For robust and low-cost operation of BDFIGs, it is required to keep high-quality output voltage and eliminate the speed/position encoder under different loads and operation conditions. Some advanced control technologies, from the authors' latest work on these topics, are presented to achieve this goal with simple and accurate texts, illustrations, and tables. The qualified outcomes obtained from this book assure the high-performance operation of BDFIGs and also give the readers a straight insight toward challenges in this research area in the future.
Handbook of Research on Modeling, Analysis, and Control of Complex Systems Springer Nature
New perspectives on using induction generators in alternative energy technologies Durable and cost-effective, induction power generators have undergone numerous improvements that make them an increasingly attractive option for renewable energy applications, particularly for wind and hydropower generation systems. From fundamental concepts to the latest technologies, Alternative Energy Systems: Design and Analysis with Induction Generators, Second Edition provides detailed and accurate coverage of all aspects related to the design, operation, and overall analysis of such systems. Placing a greater emphasis on providing clear, precise, and succinct explanations, this second edition features new, revised, and updated content as well as figures, tables, equations, and examples. Each chapter introduces a multi-step, chapter-length problem relating the material to a real application. The solution appears at the end of the chapter, along with additional practice problems and references. New Material in This Edition: Updated definitions for generated power and efficiency Technological advances, such as new applications using doubly-fed induction generators New methodologies, such as the magnetization curve representation for induction generators Additional focus on renewable energy applications such as sea, wind, and hydropower systems Totally re-written and updated chapter covering doubly-fed induction generators Alternative Energy Systems provides the tools and expertise for advanced students and professionals in electrical, mechanical, civil, and environmental engineering involved in the development of power plants. ";
Green Energy Springer Nature
This book covers innovative technologies and approaches for improvement of technical and economic parameters of functional geotechnical systems. The focus is on mathematical modelling of objects and processes, as well as the development of techniques and their control algorithms. The book comprises schemata of practical tasks solving related to mine ventilation and electrical circuit operation, cutter-loaders and mining electrical vehicles. It also demonstrates possible applications of hybrid technologies and IT-methods to the work of geotechnical systems. Implementation of methods and technologies presented in the book will allow to reduce energy resources consumption of geotechnical systems, and to enhance environmental and economic parameters of their operation, being one of the essential conditions for sustainable development in modern society. The book is particular of interest to technical specialists, researchers, students and university teachers, whose work is connected to the improvement of efficiency of geotechnical systems.
Advanced Direct Thrust Force Control of Linear Permanent Magnet Synchronous Motor Springer Science & Business Media
This book contains selected papers presented at the First International Symposium on Sustainable Energy and Technological Advancements (ISSETA 2021), which was organized by the Department of Electrical Engineering, NIT Meghalaya, Shillong, India, during September 24–25, 2021. The topics covered in the book mainly focuses on the cutting-edge research domain with respect to sustainable energy technologies, smart building, integration, and application of multiple energy sources; advanced power converter topologies and their modulation techniques; and information and communication technologies for smart microgrids.
Advances in Control Techniques for Smart Grid Applications CRC Press
Issues in Electronics Research and Application: 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Electronics Research and Application. The editors have built Issues in Electronics Research and Application: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Electronics Research and Application in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Electronics Research and Application: 2011 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with

authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Control and Mechatronics John Wiley & Sons

This book, published in two volumes, embodies the proceedings of the 15th European Workshop on Advanced Control and Diagnosis (ACD 2019) held in Bologna, Italy, in November 2019. It features contributed and invited papers from academics and professionals specializing in an important aspect of control and automation. The book discusses current theoretical research developments and open problems and illustrates practical applications and industrial priorities. With a focus on both theory and applications, it spans a wide variety of up-to-date topics in the field of systems and control, including robust control, adaptive control, fault-tolerant control, control reconfiguration, and model-based diagnosis of linear, nonlinear and hybrid systems. As the subject coverage has expanded to include cyber-physical production systems, industrial internet of things and sustainability issues, some contributions are of an interdisciplinary nature, involving ICT disciplines and environmental sciences. This book is a valuable reference for both academics and professionals in the area of systems and control, with a focus on advanced control, automation, fault diagnosis and condition monitoring.

Proceedings of First International Conference on Smart System, Innovations and Computing CRC Press

Industrial electronics systems govern so many different functions that vary in complexity-from the operation of relatively simple applications, such as electric motors, to that of more complicated machines and systems, including robots and entire fabrication processes. The Industrial Electronics Handbook, Second Edition combines traditional and new

15th European Workshop on Advanced Control and Diagnosis (ACD 2019) MDPI

Permanent magnet synchronous motors (PMSMs) are popular in the electric vehicle industry due to their high-power density, large torque-to-inertia ratio, and high reliability. This book presents an improved field-oriented control (FOC) strategy for PMSMs that utilizes optimal proportional-integral (PI) parameters to achieve robust stability, faster dynamic response, and higher efficiency in the flux-weakening region. The book covers the combined design of a PI current regulator and varying switching frequency pulse-width modulation (PWM), along with an improved linear model predictive control (MPC) strategy. Researchers and graduate students in electrical engineering, systems and control, and electric vehicles will find this book useful. Features: • Implements evolutionary optimization algorithms to improve PMSM performance. • Provides coverage of PMSM control design in the flux-weakening region. • Proposes a modern method of model predictive control to improve the dynamic performance of interior PMSM. • Studies the dynamic performance of two kinds of PMSMs: surface-mounted and interior permanent magnet types. • Includes several case studies and illustrative examples with MATLAB®. This book is aimed at researchers, graduate students, and libraries in electrical engineering with specialization in systems and control and electric vehicles.

The proceedings of the 10th Frontier Academic Forum of Electrical Engineering (FAFEE2022) Springer Nature

This book gathers outstanding papers presented at the 17th Annual Conference of China Electrotechnical Society, organized by China Electrotechnical Society (CES), held in Beijing, China, from September 17 to 18, 2022. It covers topics such as electrical technology, power systems, electromagnetic emission technology, and electrical equipment. It introduces the innovative solutions that combine ideas from multiple disciplines. The book is very much helpful and useful for the researchers, engineers, practitioners, research students, and interested readers.

Proceedings of the 5th International Conference on Electrical Engineering and Information Technologies for Rail Transportation (EITRT) 2021 CRC Press

Control of Power Electronic Converters and Systems, Volume 3, explores emerging topics in the control of power electronics and converters, including the theory behind control, and the practical operation, modeling, and control of basic power system models. This book introduces the most important controller design methods, including both analog and digital procedures. This reference explains the dynamic characterization of terminal behavior for converters, as well as preserving the stability and power quality of modern power systems. Useful for engineers in emerging applications of power electronic converters and those combining control design methods into different applications in power electronics technology. Addressing controller interactions - in light of increasing renewable energy integration and related challenges with stability and power quality - is becoming more frequent in power converters and passive components. Discusses different applications and their control in integrated renewable energy systems Introduces the most important controller design methods, both in analog and digital Describes different important applications to be used in future industrial products Explains the dynamic characterization of terminal behavior for converters

The Proceedings of 2023 International Conference on Wireless Power Transfer (ICWPT2023) IGI Global

This book gathers selected high-impact articles from the 3rd International Conference on Data Science, Machine Learning & Applications 2021. It highlights the latest developments in the areas of artificial intelligence, machine learning, soft computing, human–computer interaction and various data science and machine learning applications. It brings together scientists and researchers from different universities and industries around the world to showcase a broad range of perspectives, practices and technical expertise.

Towards Intelligent Engineering and Information Technology Springer

This book describes the development of an adaptive state observer using a mathematical model to achieve high performance for sensorless induction motor drives. This involves first deriving an expression for a modified gain rotor flux observer with a parameter adaptive scheme to estimate the motor speed accurately and improve the stability and performance of sensorless vector-controlled induction motor drives. This scheme is then applied to the controls of a photovoltaic-motor water-pumping system, which results in improved dynamic performance under different operating conditions. The book also presents a robust speed controller design for a sensorless vector-controlled induction motor drive system based on H∞ theory, which overcomes the problems of the classical controller.

Development of Adaptive Speed Observers for Induction Machine System Stabilization John Wiley & Sons

Intelligent engineering systems try to replicate fundamental abilities of humans and nature in order to achieve sufficient progress in solving complex problems. In an ideal case multi-disciplinary applications of different modern engineering fields can result in synergistic effects. Information technology and computer modeling are the underlying tools that play a major role at any stages of developing intelligent systems. Chapters in the

present volume have been written by eminent scientists from different parts of the world, dealing with challenging problems for efficient modeling of intelligent systems. The reader can find different characteristics and methodologies of computational intelligence with real life applications. Various facets of intelligent engineering and information technology are addressed. Starting with theoretical issues from pseudo-analysis to parametric classes of digital fuzzy conjunctions for hardware implementation of fuzzy systems, diverse aspects of control including quantum as well as fuzzy control and hybrid approaches, intelligent robotics dealing with mobile and autonomous robots and new trends, approaches and results on information technology, machines, materials and manufacturing, and issues of intelligent systems and complex processes are covered.

High Performance Drives Test Bed Development Springer Nature

A unique approach to sensorless control and regulator design of electric drives Based on the author's vast industry experience and collaborative works with other industries, Control of Electric Machine Drive Systems is packed with tested, implemented, and verified ideas that engineers can apply to everyday problems in the field. Originally published in Korean as a textbook, this highly practical updated version features the latest information on the control of electric machines and apparatus, as well as a new chapter on sensorless control of AC machines, a topic not covered in any other publication. The book begins by explaining the features of the electric drive system and trends of development in related technologies, as well as the basic structure and operation principles of the electric machine. It also addresses steady state characteristics and control of the machines and the transformation of physical variables of AC machines using reference frame theory in order to provide a proper foundation for the material. The heart of the book reviews several control algorithms of electric machines and power converters, explaining active damping and how to regulate current, speed, and position in a feedback manner. Seung-Ki Sul introduces tricks to enhance the control performance of the electric machines, and the algorithm to detect the phase angle of an AC source and to control DC link voltages of power converters. Topics also covered are: Vector control Control algorithms for position/speed sensorless drive of AC machines Methods for identifying the parameters of electric machines and power converters The matrix algebra to model a three-phase AC machine in d-q-n axes Every chapter features exercise problems drawn from actual industry experience. The book also includes more than 300 figures and offers access to an FTP site, which provides MATLAB programs for selected problems. The book's practicality and realworld relatability make it an invaluable resource for professionals and engineers involved in the research and development of electric machine drive business, industrial drive designers, and senior undergraduate and graduate students. To obtain instructor materials please send an email to pressbooks@ieee.org To visit this book's FTP site to download MATLAB codes, please click on this link: ftp://ftp.wiley.com/public/sci_tech_med/electric_machine/ MATLAB codes are also downloadable from Wiley Booksupport Site at http://booksupport.wiley.com

The proceedings of the 16th Annual Conference of China Electrotechnical Society Springer Nature

On the basis of instrument electrical and automatic control system, the 5th International Conference on Electrical Engineering and Automatic Control (CEEAC) was established at the crossroads of information technology and control technology, and seeks to effectively apply information technology to a sweeping trend that views control as the core of intelligent manufacturing and life. This book takes a look forward into advanced manufacturing development, an area shaped by intelligent manufacturing. It highlights the application and promotion of process control represented by traditional industries, such as the steel industry and petrochemical industry; the technical equipment and system cooperative control represented by robot technology and multi-axis CNC; and the control and support of emerging process technologies represented by laser melting and stacking, as well as the emerging industry represented by sustainable and intelligent life. The book places particular emphasis on the micro-segments field, such as intelligent micro-grids, new energy vehicles, and the Internet of Things.

Modeling and Analysis with Induction Generators, Third Edition Springer Nature

As the demand for efficient energy sources continues to grow around the globe, electrical systems are becoming more essential in an effort to meet these increased needs. As these systems are being utilized more frequently, it becomes imperative to find ways of optimizing their overall function. The Handbook of Research on Emerging Technologies for Electrical Power Planning, Analysis, and Optimization features emergent methods and research in the systemic and strategic planning of energy usage. Highlighting theoretical perspectives and empirical research, this handbook is a comprehensive reference source for researchers, practitioners, students, and professionals interested in the current advancements and efficient use in power systems.

Advanced Control Systems for Electric Drives Springer

The different chapters of this book cover a large range of information regarding electrical actuators, including: synchronous and asynchronous machine modeling in order to measure and identify offline and online parameters using modern optimization methods; identification in real time of parameters with Luenberger filter and the extended Kalman filter; estimation of non-measurable variables, first by linear estimates and observers, then by lower observers. Robustness is a very problematic issue, as well, which is fully explored in a chapter dedicated to the subject. Finally, the estimate of non-measurable mechanical variables is particularly dealt with: estimate of load moment, then observation of the positioning of a command without mechanical sensor. The conditions to measure variables and real implementation of numerical algorithms are also examined with particular attention.

Measuring Technology and Mechatronics Automation IV Springer Nature

This volume includes extended and revised versions of a set of selected papers from the International Conference on Electric and Electronics (EEIC 2011) , held on June 20-22 , 2011, which is jointly organized by Nanchang University, Springer, and IEEE IAS Nanchang Chapter. The objective of EEIC 2011 Volume 3 is to provide a major interdisciplinary forum for the presentation of new approaches from Electrical Power Systems and Computers, to foster integration of the latest developments in scientific research. 133 related topic papers were selected into this volume. All the papers were reviewed by 2 program committee members and selected by the volume editor Prof. Xiaofeng Wan. We hope every participant can have a good opportunity to exchange their research ideas and results and to discuss the state of the art in the areas of the Electrical Power Systems and Computers.

Proceeding of the Second International Conference on

Microelectronics, Computing & Communication Systems (MCCS 2017) Springer Nature
This book provides extensive information about advanced control techniques in electric drives. Multiple control and estimation methods are studied for position and speed tracking in different drives. Artificial intelligence tools, such as fuzzy logic and neural networks, are used for specific applications using electric drives.
Proceedings of the 5th International Conference on Electrical Engineering and Automatic Control Springer Nature
The volume presents high quality papers presented at the Second International Conference on Microelectronics, Computing & Communication Systems (MCCS 2017). The book discusses recent trends in technology and advancement in MEMS and nanoelectronics, wireless communications, optical communication, instrumentation, signal processing, image processing, bioengineering, green energy, hybrid vehicles, environmental science, weather forecasting, cloud computing, renewable energy, RFID, CMOS sensors, actuators, transducers, telemetry systems, embedded systems, and sensor network applications. It includes original papers based on original theoretical, practical, experimental, simulations, development, application, measurement, and testing. The applications and solutions discussed in the book will serve as a good reference material for future works.