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| Autore | Saleh A. K. Md. Ehsanes |
| Titolo | Theory of preliminary test and Stein-type estimation with applications [[electronic resource] /] / A.K. Md. Ehsanes Saleh |
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| Soggetti | Parameter estimation<br>Regression analysis<br>Bayesian statistical decision theory<br>Electronic books. |
| Lingua di pubblicazione | Inglese |
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| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references (p. 601-612) and indexes. |
| Nota di contenuto | Theory of Preliminary Test and Stein-Type Estimation with Applications; Contents; List of Figures; List of Figures; List of Tables; List of Tables; Preface; 1 Introduction; 1.1.1 Batting averages of 18 players; 1.1 Display of predicted batting averages based on Stein's formula; 1.1 Objective of This Book; 1.2 Statistical Decision Principle; 1.3 Quadratic Loss Function; 1.4 Some Statistical Models with Preliminaries; 1.4.1 Mean and Simple Linear Models; 1.4.2 One-Sample Multivariate Model; 1.4.3 ANOVA Models; 1.4.4 Parallelism Models<br>1.4.5 Multiple Regression Model and General Linear Hypothesis1.4.6 Simple Multivariate Linear Model; 1.4.7 Discrete Data Models; 1.5 Organization of the Book; 1.6 Conclusions; 1.7 Problems; 2 Preliminaries; 2.1 Normal Distribution; 2.2 Chi-square Distribution and Properties; 2.3 Some Results from Multivariate Normal Theory; 2.4 Beta Distribution and Applications; 2.5 Discrete Distributions; 2.5.1 Binomial Distribution; 2.5.2 Multinomial Distribution; 2.6 Matrix Results; 2.7 |

Large Sample Theory; 2.7.1 Four Types of Convergence; 2.7.2 Law of Large Numbers; 2.7.3 Central Limit Theorems
2.8 Nonparametric Theory: Preliminaries2.8.1 Order-Statistics, Ranks, and Sign Statistics; 2.8.2 Linear rank-statistics (LRS); 2.8.3 Rank Estimators of the Parameters of Various Models; 2.9 Problems; 3 Preliminary Test Estimation; 3.1 Simple Linear Model, Estimators, and Tests; 3.1.1 Simple Linear Model; 3.1.2 Estimation of the Intercept and Slope Parameter; 3.1.3 Test for the Slope Parameter; 3.2 PTE of the Intercept Parameter; 3.2.1 UE, RE and PTE of the Intercept Parameter; 3.2.2 Bias and MSE Expressions; 3.2.3 Comparison of bias and mse functions
3.2.1 Graph of quadratic bias functions of the estimators3.2.4 Optimum Level of Significance of Preliminary Test; 3.2.2 Graph of MRE (tn;  tn) and MRE(tPTn;  tn); 3.2.1 Maximum and Minimum Guaranteed Efficiencies for n = 8; 3.2.2 Maximum and Minimum Guaranteed Efficiencies for n = 12 and x2/Q = 0.1(0.2)0.9; 3.3 Two-Sample Problem and Pooling of Means; 3.3.1 Model; 3.3.2 Estimation and Test of the Difference between Two Means; 3.3.3 Bias and mse Expression of the Three Estimators of a Mean; 3.3.1 Maximum and Minimum Guaranteed Efficiencies; 3.3.2 Maximum and Minimum Guaranteed Efficiencies
3.3.3 Maximum and Minimum Guaranteed Efficiencies3.4 One-Sample Problem: Estimation of Mean; 3.4.1 Model; 3.4.2 Unrestricted, Restricted, and Preliminary Test Estimators; 3.3.1 Graph of MRE (m1; m1) and MRE(mPT1;  m1); 3.4.3 Bias, mse, and Analysis of Efficiency; 3.5 An Alternative Approach; 3.5.1 Introduction; 3.4.1 Minimum and Maximum Efficiency of PTE; 3.5.2 One-Sample Problem; 3.5.3 Comparison of PTE, tPTn and SE tSn; 3.5.1 Maximum and Minimum Efficiencies of SE and Efficiency of PTE at D0 for Selected a; 3.5.4 Simple Linear Model and Shrinkage Estimation
3.5.1 Graph of the relative efficiency of SE and PTE for different values of a

Sommario/riassunto

Theory of Preliminary Test and Stein-Type Estimation with Applications provides a com-prehensive account of the theory and methods of estimation in a variety of standard models used in applied statistical inference. It is an in-depth introduction to the estimation theory for graduate students, practitioners, and researchers in various fields, such as statistics, engineering, social sciences, and medical sciences. Coverage of the material is designed as a first step in improving the estimates before applying full Bayesian methodology, while problems at the end of each chapter enlarge the scope

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| Collana | Lecture Notes in Electrical Engineering, , 1876-1119 ; ; 1083 |
| Altri autori (Persone) | RevankarShripad |
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| Nota di contenuto | Intro -- Contents -- About the Editors -- Review and Study of Solar String Inverters for a PV System -- 1 Introduction -- 2 Solar Inverter -- 3 Survey -- 4 Analysis of Single Phase and Three Phase Inverter -- 5 Conclusion -- References -- An Improved Strategic Analysis on Fault Diagnosis in Modular Multilevel Converter -- 1 Introduction -- 2 Modular Multilevel Converter-MMC -- 3 Overview of Faults in MMC -- 3.1 Open Circuit Fault -- 3.2 Short Circuit Fault -- 4 Fault Detection and Localization -- 5 Experimental Study of Open Short Circuit Faults -- 5.1 Experiment with Totem Pole Circuit -- 5.2 Test with TC4421 IC -- 6 Results and Discussion -- 7 Conclusion -- References -- Mathematical Model Approach to Study and Analyze FOC-Based PMSM Control -- 1 Introduction -- 2 Mathematical Modeling -- 3 Clarke's and Park's Transformation -- 4 Field Oriented Control -- 4.1 Current Controller -- 4.2 Speed Control -- 5 Graphical Analysis of the Designed Controller -- 6 Closed-Loop Simulation Result and Analysis -- 7 Conclusion -- References -- Review on Power Converter Topology |

for EV Fast Charger -- 1 Introduction -- 2 Overview of EV Charger -- 2.1 Classification of Electric Vehicle Charger Based on Power Flow Direction -- 2.2 Bidirectional AC/DC Converter -- 2.3 Single-Phase Totem Pole PFC [24] -- 2.4 Unidirectional AC/DC Converter -- 2.5 Bidirectional DC/DC Converter -- 2.6 DAB in CLLLC Mode -- 2.7 Unidirectional DC/DC Converter LLC -- 2.8 Phase Shifted Full Bridge Converter -- 3 Overview of AC/DC Topologies -- 4 Overview of DC/DC Topologies -- 5 Conclusion -- References -- Mathematical Modeling and Analysis of Interleaved Two-Phase Boost PFC -- 1 Introduction -- 2 System Overview -- 3 Modeling of interleaved boost pfc -- 4 Mode 2: T1 to T2 -- 5 Mode 3: T2 to T3 -- 6 Mode 4: T3 to T4 -- 7 Simulation and results -- 8 Conclusion -- References.
Design of a Solar Battery Charger with Maximum Power Point Tracking -- 1 Introduction -- 2 System Overview -- 3 Circuit Design -- 3.1 Selection of Buck Converter Components -- 3.2 Selection of MOSFETs -- 3.3 MOSFET Gate Driver Selection -- 3.4 Reverse Polarity Protection -- 3.5 Schematic Diagram of the Battery Charger -- 4 Voltage and Current Measurement -- 4.1 Battery Voltage Measurement -- 4.2 Panel Voltage Measurement -- 4.3 Current Measurement -- 5 Main Algorithm and MPPT Algorithm -- References -- Implementation of Edge Computing Model for the Processing of Data in Mines -- 1 Introduction -- 2 Design and Components -- 2.1 Components -- 2.2 Module Design -- 3 Methodology -- 3.1 Working Principle -- 3.2 Simulation -- 3.3 Setup -- 4 Result -- 4.1 Latency Comparision -- 4.2 Network Usage Comparison -- 5 Conclusion -- References -- Adaptive Protection of Solar PV Microgrid Without ESS -- 1 Introduction -- 2 Modeling of Microgrid -- 2.1 Inverter Control During Grid Connected Mode -- 2.2 Inverter Control During Islanded Mode -- 3 Overcurrent Adaptive Protection Scheme -- 4 Fault Analysis of Microgrid -- 5 Simulation Results for the Proposed Protection Scheme -- 6 Inferences -- 7 Conclusion -- References -- Comparative Study of Sensor and Sensor Less Speed Control of Permanent Magnet Synchronous Machines -- 1 Introduction -- 2 Mathematical Modeling of PMSM -- 3 Adaptive Mechanism -- 4 Development of SIMULINK Model -- 5 Results and Discussions -- 6 Conclusion -- References -- An Exposition of Digital Taylor-Fourier Transform -- 1 Introduction -- 2 Evolution of DTFT from DFT -- 3 Spectral Estimation Performance of DTFT -- 3.1 Performance of DTFT as a Phasor Measurer -- 3.2 Performance of DTFT as a Harmonic Filter Bank -- 3.3 Performance of DTFT in Estimating Exponentially Varying Sinusoids -- 4 Conclusions -- References.
Autonomous Microgrid Using New Perspective on Droop Control in AC Microgrid -- 1 Introduction -- 2 Microgrid Architecture with Controller -- 3 Proposed Virtual Impedance Method and Frequency Droop -- 4 Results and Discussions -- 5 Conclusion -- References -- Solar Photovoltaic Charging of Electric Vehicle and V2G for Indian Electricity Demand Scenario -- 1 Introduction -- 2 Related Works -- 3 Proposed Work -- 3.1 Control Strategy of EV Battery Charging and Discharging -- 3.2 Generation of Alpha, Beta, and Active Components -- 3.3 Control Strategy of Extracting Power from SPV -- 3.4 Control Strategy of V2G Technology -- 3.5 Control Strategy of G2V Technology -- 3.6 Generation of PWM Signals for the Bidirectional AC-DC Converter -- 4 Simulation and Results -- 4.1 V2G and Charging from SPV -- 4.2 V2G and Charging from Grid (G2V) -- 5 Conclusion and Future Scope -- References -- Review of Voltage SagSwell Mitigation Control Techniques with Dynamic Voltage Restorer in a Grid Integrated Distribution System -- 1 Introduction -- 2 Power Quality -- 3 Dynamic Voltage Restorer -- 4 Control Techniques -- 5 Conclusion -- References -- Parametric Sensitivity Analysis of STATCOM

Supplementary Modulation Controller Incorporated in SMIB System -- 1 Introduction -- 1.1 System Description -- 2 Result and Analysis -- 3 Discussion -- 4 Conclusion -- References -- Review on the Addition of Antioxidants and Nanoparticles to Natural Ester as an Alternative to Transformer Oil -- 1 Introduction -- 2 Insulating Oils -- 2.1 Mineral Oil -- 2.2 Silicone Oil -- 2.3 Synthetic Esters -- 2.4 Natural Esters -- 3 AntiOxidants -- 4 Nanoliquid Dielectrics -- 4.1 Synthesis of Nanoparticles -- 4.2 Synthesis of Nanoliquids -- 5 Effect of Antioxidants and Nanoparticles on Natural Esters -- 6 Conclusion -- References.

Sommario/riassunto

This book presents select peer-reviewed proceedings of the International Conference on Advances in Renewable Energy and Electric Vehicles (AREEV 2022). The topics covered include renewable energy sources, electric vehicles, energy storage systems, power system protection & security, smart grid, and wide bandgap semiconductor technologies. The book also discusses applications of signal processing, artificial neural networks, optimal and robust control systems, and modeling and simulation of power electronic converters. The book is a valuable reference for academics and professionals interested in power systems, renewable energy, and electric vehicles.