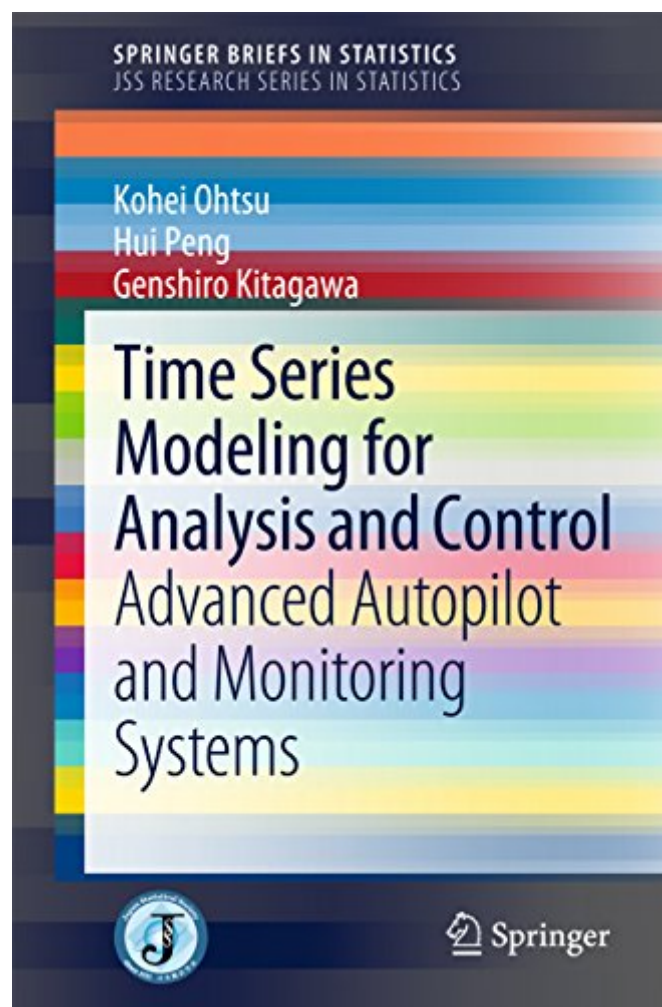# Time Series Modeling For Analysis And Control: Advanced Autopilot And Monitoring Systems (SpringerBriefs In Statistics / JSS Research Series In Statistics)

Synopsis

This book presents multivariate time series methods for the analysis and optimal control of feedback systems. Although ships' autopilot systems are considered through the entire book, the methods set forth in this book can be applied to many other complicated, large, or noisy feedback control systems for which it is difficult to derive a model of the entire system based on theory in that subject area. The basic models used in this method are the multivariate autoregressive model with exogenous variables (ARX) model and the radial bases function net-type coefficients ARX model. The noise contribution analysis can then be performed through the estimated autoregressive (AR) model and various types of autopilot systems can be designed through the state–"space representation of the models. The marine autopilot systems addressed in this book include optimal controllers for course-keeping motion, rolling reduction controllers with rudder motion, engine governor controllers, noise adaptive autopilots, route-tracking controllers by direct steering, and the reference course-setting approach. The methods presented here are exemplified with real data analysis and experiments on real ships. This book is highly recommended to readers who are interested in designing optimal or adaptive controllers not only of ships but also of any other complicated systems under noisy disturbance conditions.

Book Information

File Size: 9747 KB

Print Length: 119 pages

Publisher: Springer; 2015 edition (May 14, 2015)

Publication Date: May 14, 2015

Sold by: Digital Services LLC

Language: English

ASIN: B00UWYPNN8

Text-to-Speech: Not enabled

X-Ray: Not Enabled

Word Wise: Not Enabled

Lending: Not Enabled

Enhanced Typesetting: Not Enabled

Best Sellers Rank: #1,269,233 Paid in Kindle Store (See Top 100 Paid in Kindle Store)   #162 in Books > Computers & Technology > Hardware & DIY > Microprocessors & System Design > Control Systems   #1160 in Kindle Store > Kindle eBooks > Nonfiction > Science > Mathematics >

Applied > Probability & Statistics   #1316 in Books > Computers & Technology > Software > Mathematical & Statistical

Time Series Modeling for Analysis and Control: Advanced Autopilot and Monitoring Systems (SpringerBriefs in Statistics / JSS Research Series in Statistics) Statistics for People Who (Think They) Hate Statistics (Salkind, Statistics for People Who(Think They Hate Statistics(Without CD)) Modeling and Control of Discrete-event Dynamic Systems: with Petri Nets and Other Tools (Advanced Textbooks in Control and Signal Processing) Microsoft Excel 2013 Data Analysis and Business Modeling: Data Analysis and Business Modeling (Introducing) A Primer on QSAR/QSPR Modeling: Fundamental Concepts (SpringerBriefs in Molecular Science) Fetal Heart Monitoring: Principles and Practices (AWHONN, Fetal Heart Monitoring) Power Electronic Converters Modeling and Control: with Case Studies (Advanced Textbooks in Control and Signal Processing) Advanced Electric Drives: Analysis, Control, and Modeling Using MATLAB / Simulink Practical Decision Making: An Introduction to the Analytic Hierarchy Process (AHP) Using Super Decisions V2 (SpringerBriefs in Operations Research) Introduction to the Numerical Modeling of Groundwater and Geothermal Systems: Fundamentals of Mass, Energy and Solute Transport in Poroelastic Rocks (Multiphysics Modeling) Geochemical Modeling of Groundwater, Vadose and Geothermal Systems (Multiphysics Modeling) Advanced WebLogic Server Automation: Administration and Monitoring with WLST and JMX (Oracle In-Focus Series) (Volume 46) Quantitative Health Risk Analysis Methods: Modeling the Human Health Impacts of Antibiotics Used in Food Animals (International Series in Operations Research & Management Science) Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling Dynamic Modeling and Control of Engineering Systems (2nd Edition) Modeling and Control of Dynamic Systems Dynamic Systems: Modeling, Simulation, and Control Primer for Critiquing Social Research: A Student Guide (Research, Statistics, & Program Evaluation) Memory Controllers for Real-Time Embedded Systems: Predictable and Composable Real-Time Systems: 2 Real-time Operating Systems (The engineering of real-time embedded systems Book 1)