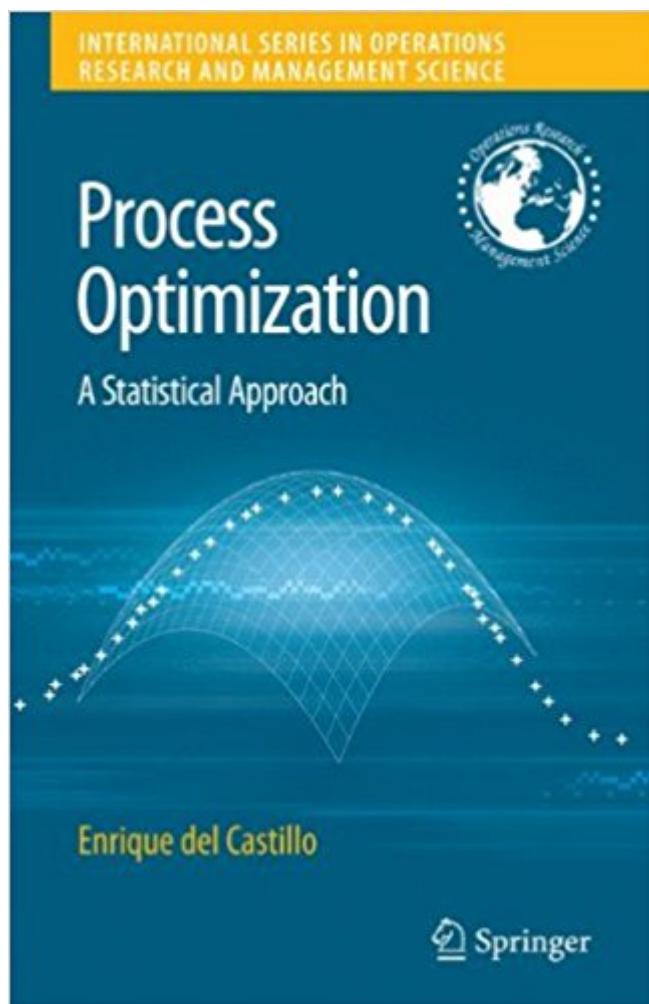


The book was found

Process Optimization: A Statistical Approach



Synopsis

PROCESS OPTIMIZATION: A Statistical Approach is a textbook for a course in Response Surface Methodology and experimental optimization techniques for industrial production processes and other "noisy" systems where the main emphasis is process optimization. The book can also be used as a reference text by Industrial, Quality and Process Engineers and Applied Statisticians working in industry, in particular, in semiconductor/electronics manufacturing and in biotech manufacturing industries. The major features of PROCESS OPTIMIZATION: A Statistical Approach are: It provides a complete exposition of mainstream experimental design techniques, including designs for first and second order models, response surface and optimal designs; Discusses mainstream response surface method in detail, including unconstrained and constrained (i.e., ridge analysis and dual and multiple response) approaches; Includes an extensive discussion of Robust Parameter Design (RPD) problems, including experimental design issues such as Split Plot designs and recent optimization approaches used for RPD; Presents a detailed treatment of Bayesian Optimization approaches based on experimental data (including an introduction to Bayesian inference), including single and multiple response optimization and model robust optimization; Provides an in-depth presentation of the statistical issues that arise in optimization problems, including confidence regions on the optimal settings of a process, stopping rules in experimental optimization and more; Contains a discussion on robust optimization methods as used in mathematical programming and their application in response surface optimization; Offers software programs written in MATLAB and MAPLE to implement Bayesian and frequentist process optimization methods; Provides an introduction to the optimization of computer and simulation experiments including and introduction to stochastic approximation and stochastic perturbation stochastic approximation (SPSA) methods; Includes an introduction to Kriging methods and experimental design for computer experiments; Provides extensive appendices on Linear Regression, ANOVA, and Optimization Results.

Book Information

Hardcover: 462 pages

Publisher: Springer; 2007 edition (August 6, 2007)

Language: English

ISBN-10: 0387714340

ISBN-13: 978-0387714349

Product Dimensions: 6.1 x 1.1 x 9.2 inches

Shipping Weight: 1.6 pounds ([View shipping rates and policies](#))

Average Customer Review: 5.0 out of 5 stars 1 customer review

Best Sellers Rank: #789,924 in Books (See Top 100 in Books) #121 in Books > Science & Math > Mathematics > Applied > Linear Programming #121 in Books > Engineering & Transportation > Engineering > Industrial, Manufacturing & Operational Systems > Production, Operation & Management #171 in Books > Engineering & Transportation > Engineering > Industrial, Manufacturing & Operational Systems > Industrial Design > Products

Customer Reviews

This is a book about Response Surface Methods, both classic and advanced, aimed as a textbook or for self-study. In addition to traditional RSM topics, it contains material not available in other RSM books, such as bayesian optimization, confidence regions on the location of an optimal point, Kriging, and a detailed treatment of steepest ascent techniques.

PROCESS OPTIMIZATION: A Statistical Approach is a textbook for a course in experimental optimization techniques for industrial production processes and other "noisy" systems where the main emphasis is process optimization. The book can also be used as a reference text by Industrial, Quality and Process Engineers and Applied Statisticians working in industry, in particular, in semiconductor/electronics manufacturing and in biotech manufacturing industries. The major features of PROCESS OPTIMIZATION: A Statistical Approach are: It provides a complete exposition of mainstream experimental design techniques, including designs for first and second order models, response surface and optimal designs; Discusses mainstream response surface method in detail, including unconstrained and constrained (i.e., ridge analysis and dual and multiple response) approaches; Includes an extensive discussion of Robust Parameter Design (RPD) problems, including experimental design issues such as Split Plot designs and recent optimization approaches used for RPD; Presents a detailed treatment of Bayesian Optimization approaches based on experimental data (including an introduction to Bayesian inference), including single and multiple response optimization and model robust optimization; Provides an in-depth presentation of the statistical issues that arise in optimization problems, including confidence regions on the optimal settings of a process, stopping rules in experimental optimization and more; Contains a discussion on robust optimization methods as used in mathematical programming and their application in response surface optimization; Offers software programs written in MATLAB and MAPLE to implement Bayesian and frequentist process optimization methods; Provides an introduction to the optimization of computer and simulation experiments including and introduction to stochastic

approximation and stochastic perturbation stochastic approximation (SPSA) methods; Includes an introduction to Kriging methods and experimental design for computer experiments; Provides extensive appendices on Linear Regression, ANOVA, and Optimization Results. A A

This have a few of typos but it covers many things that other books might not cover. Many advanced topics are included and well written. Easy to read and understand. Recommend for graduate students!

[Download to continue reading...](#)

Process Optimization: A Statistical Approach Engineering Design Optimization using Calculus Level Methods: A Casebook Approach: Math Modeling, Simulation, & Optimization The Little Book on Digital Marketing SEO - Search Engine Optimization: Tips and tricks for keyword research in SEO or Search Engine Optimization Introduction to Linear Optimization (Athena Scientific Series in Optimization and Neural Computation, 6) Pyomo – Optimization Modeling in Python (Springer Optimization and Its Applications) Analytics: Business Intelligence, Algorithms and Statistical Analysis (Predictive Analytics, Data Visualization, Data Analytics, Business Analytics, Decision Analysis, Big Data, Statistical Analysis) Instrument Engineers' Handbook, Vol. 2: Process Control and Optimization, 4th Edition Handbook of Process Chromatography: A Guide to Optimization, Scale Up, and Validation Simulated Annealing and Boltzmann Machines: A Stochastic Approach to Combinatorial Optimization and Neural Computing The Cross-Entropy Method: A Unified Approach to Combinatorial Optimization, Monte-Carlo Simulation and Machine Learning (Information Science and Statistics) High Percentage Fishing: A Statistical Approach To Improving Catch Rates The Conceptual Foundations of the Statistical Approach in Mechanics (Dover Books on Physics) Statistical Methods for the Information Professional: A Practical, Painless Approach to Understanding, Using and Interpreting Statistics (Asist Monograph Series) Data Analysis and Graphics Using R: An Example-Based Approach (Cambridge Series in Statistical and Probabilistic Mathematics) A Horse Racing System Based On A Statistical Approach To Selection And Staking Pharmacology and the Nursing Process, 7e (Lilley, Pharmacology and the Nursing Process) - Standalone book Groups: Process and Practice, 9th Edition (HSE 112 Group Process I) Groups: Process and Practice (HSE 112 Group Process I) Interpersonal Process in Therapy: An Integrative Model (Skills, Techniques, & Process) The Modern Process Server Guide: Process Serving in the Digital Age

[Contact Us](#)

DMCA

Privacy

FAQ & Help