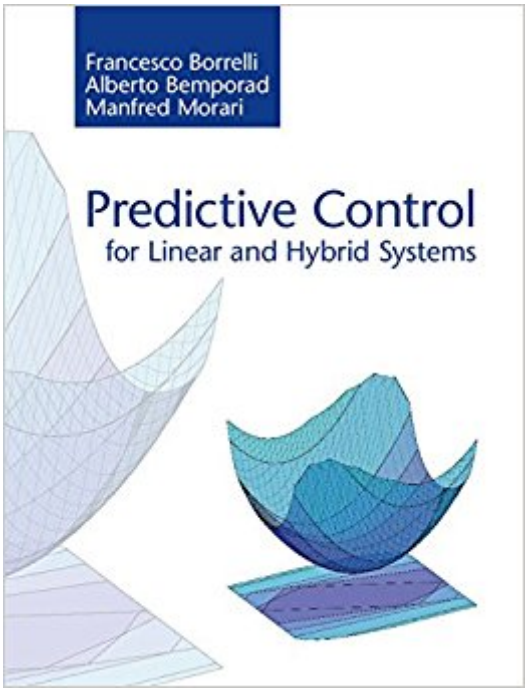
Predictive Control For Linear And Hybrid Systems



Synopsis

Model Predictive Control (MPC), the dominant advanced control approach in industry over the past twenty-five years, is presented comprehensively in this unique book. With a simple, unified approach, and with attention to real-time implementation, it covers predictive control theory including the stability, feasibility, and robustness of MPC controllers. The theory of explicit MPC, where the nonlinear optimal feedback controller can be calculated efficiently, is presented in the context of linear systems with linear constraints, switched linear systems, and, more generally, linear hybrid systems. Drawing upon years of practical experience and using numerous examples and illustrative applications, the authors discuss the techniques required to design predictive control laws, including algorithms for polyhedral manipulations, mathematical and multiparametric programming and how to validate the theoretical properties and to implement predictive control policies. The most important algorithms feature in an accompanying free online MATLAB toolbox, which allows easy access to sample solutions. Predictive Control for Linear and Hybrid Systems is an ideal reference for graduate, postgraduate and advanced control practitioners interested in theory and/or implementation aspects of predictive control.

Book Information

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Customer Reviews

Just purchased a paper version of the book, and this is the best book out there that covers complete aspects of model predictive control, and present concise and precise notations/equations. Plenty of examples and free/available matlab script to reproduce the results, this is extremely helpful for both beginners and researchers to hands on controller design for engineering applications.Highly recommended for anyone interested in learning and applying model predictive control to real world engineering problems.

I have the kindle version. The material is good but the formula has really low resolutions, which looks really blurry.

Predictive Control for Linear and Hybrid Systems Model Predictive Control of Wind Energy Conversion Systems (IEEE Press Series on Power Engineering) Show Networks and Control Systems: Formerly "Control Systems for Live Entertainment" Model Predictive Control of High Power Converters and Industrial Drives Practical Predictive Analytics and Decisioning Systems for Medicine: Informatics Accuracy and Cost-Effectiveness for Healthcare Administration and Delivery Including Medical Research Signals and Systems: Analysis of Signals Through Linear Systems Linear Algebra and Its Applications plus New MyMathLab with Pearson eText -- Access Card Package (5th Edition) (Featured Titles for Linear Algebra (Introductory)) Linear Algebra With Applications (Jones and Bartlett Publishers Series in Mathematics. Linear) Linear Algebra with Applications (9th Edition) (Featured Titles for Linear Algebra (Introductory)) NLP: Neuro Linguistic Programming: Re-program your control over emotions and behavior, Mind Control - 3rd Edition (Hypnosis, Meditation, Zen, Self-Hypnosis, Mind Control, CBT) NLP: Persuasive Language Hacks: Instant Social Influence With Subliminal Thought Control and Neuro Linguistic Programming (NLP, Mind Control, Social Influence, ... Thought Control, Hypnosis, Communication) Spatial Control of Vibration: Theory and Experiments (Stability, Vibration and Control of Systems, Series A) Nonlinear Control Systems (Communications and Control Engineering) Wind Turbine Control Systems: Principles, Modelling and Gain Scheduling Design (Advances in Industrial Control) Sampling in Digital Signal Processing and Control (Systems & Control: Foundations & Applications) Real-time Monitoring and Operational Control of Drinking-Water Systems (Advances in Industrial Control) Modelling and Control of Dynamic Systems Using Gaussian Process Models (Advances in Industrial Control) Electrical Control of Fluid Power: Electric and Electronic Control of Hydraulic & Air Systems

Automation and Systems Issues in Air Traffic Control (Nato a S I Series Series III, Computer and Systems Sciences) Automotive Fuel and Emissions Control Systems (4th Edition) (Automotive Systems Books)