The book presents a significant expansion in depth and breadth of the previous edition. It includes substantially more numerical illustrations and copious supporting MATLAB code that the reader can use to replicate illustrations or build his or her own. The code is deliberately written to be as simple as possible and easy to edit. The book is an excellent starting point for any researcher to gain a solid grounding in MPC concepts and algorithms before moving into application or more advanced research topics. Sample problems for readers are embedded throughout the chapters, and in-text questions are designed for readers to demonstrate an understanding of concepts through numerical simulation. The rapid evolution of computer science, communication, and information technology has enabled the application of control techniques to systems beyond the possibilities of control theory just a decade ago. Critical infrastructures such as electricity, water, traffic and intermodal transport networks are now in the scope of control engineers. The sheer size of such large-scale systems requires the adoption of advanced distributed control approaches. Distributed model predictive control (MPC) is one of the promising control methodologies for control of such systems. This book provides a state-of-the-art overview of distributed MPC approaches, while at the same time making clear directions of research that deserve more attention. The core and rationale of 35 approaches are carefully explained. Moreover, detailed step-by-step algorithmic descriptions of each approach are provided. These features make the book a comprehensive guide both for those seeking an introduction to distributed MPC as well as for those who want to gain a deeper insight in the wide range of distributed MPC techniques available. Model Predictive Control is an important technique used in the process control industries. It has developed considerably in the last few years, because it is the most
general way of posing the process control problem in the time domain. The Model Predictive Control formulation integrates optimal control, stochastic control, control of processes with dead time, multivariable control and future references. The finite control horizon makes it possible to handle constraints and non linear processes in general which are frequently found in industry. Focusing on implementation issues for Model Predictive Controllers in industry, it fills the gap between the empirical way practitioners use control algorithms and the sometimes abstractly formulated techniques developed by researchers. The text is firmly based on material from lectures given to senior undergraduate and graduate students and articles written by the authors. The second edition of "Model Predictive Control" provides a thorough introduction to theoretical and practical aspects of the most commonly used MPC strategies. It bridges the gap between the powerful but often abstract techniques of control researchers and the more empirical approach of practitioners. The book demonstrates that a powerful technique does not always require complex control algorithms. Many new exercises and examples have also been added throughout. Solutions available for download from the authors' website save the tutor time and enable the student to follow results more closely even when the tutor isn't present. Recent developments in model-predictive control promise remarkable opportunities for designing multi-input, multi-output control systems and improving the control of single-input, single-output systems. This volume provides a definitive survey of the latest model-predictive control methods available to engineers and scientists today. The initial set of chapters present various methods for managing uncertainty in systems, including stochastic model-predictive control. With the advent of affordable and fast computation, control engineers now need to think about using "computationally intensive controls," so the second part of this book addresses the solution of optimization problems in "real" time for model-predictive control. The theory and applications of control theory often influence each other, so the last section of Handbook of Model Predictive Control rounds out the book with representative applications to automobiles, healthcare, robotics, and finance. The chapters in this volume will be useful to working engineers, scientists, and mathematicians, as well as students and faculty interested in the progression of control theory. Future developments in MPC will no doubt build from concepts demonstrated in this book and anyone with an interest in MPC will find fruitful information and suggestions for additional reading. For the first time, a textbook that brings together classical predictive control with treatment of up-to-date robust and stochastic techniques. Model Predictive Control describes the development of tractable algorithms for uncertain, stochastic, constrained systems. The starting point is classical predictive control and the appropriate formulation of performance objectives and constraints to provide guarantees of closed-loop stability and performance. Moving on to robust predictive control, the text explains how similar guarantees may be obtained for cases in which the model describing the system dynamics is subject to additive disturbances and parametric uncertainties. Open- and closed-loop optimization are considered and the state of the art in computationally tractable methods based on uncertainty tubes presented for systems with additive model uncertainty. Finally, the tube framework is also applied to model predictive control problems involving hard or probabilistic constraints for the cases of multiplicative and stochastic model uncertainty. The book provides: extensive use of illustrative examples; sample problems; and discussion of novel control applications such as resource allocation for sustainable development and turbine-blade control for maximized power capture with simultaneously reduced risk of turbulence-
induced damage. Graduate students pursuing courses in model predictive control or more generally in advanced or process control and senior undergraduates in need of a specialized treatment will find Model Predictive Control an invaluable guide to the state of the art in this important subject. For the instructor it provides an authoritative resource for the construction of courses.

This volume contains the proceedings of the KKA 2017 – the 19th Polish Control Conference, organized by the Department of Automatics and Biomedical Engineering, AGH University of Science and Technology in Kraków, Poland on June 18–21, 2017, under the auspices of the Committee on Automatic Control and Robotics of the Polish Academy of Sciences, and the Commission for Engineering Sciences of the Polish Academy of Arts and Sciences. Part 1 deals with general issues of modeling and control, notably flow modeling and control, sliding mode, predictive, dual, etc. control. In turn, Part 2 focuses on optimization, estimation and prediction for control. Part 3 is concerned with autonomous vehicles, while Part 4 addresses applications. Part 5 discusses computer methods in control, and Part 6 examines fractional order calculus in the modeling and control of dynamic systems. Part 7 focuses on modern robotics. Part 8 deals with modeling and identification, while Part 9 deals with problems related to security, fault detection and diagnostics. Part 10 explores intelligent systems in automatic control, and Part 11 discusses the use of control tools and techniques in biomedical engineering. Lastly, Part 12 considers engineering education and teaching with regard to automatic control and robotics.

This monograph introduces the authors’ work on model predictive control system design using extended state space and extended non-minimal state space approaches. It systematically describes model predictive control design for chemical processes, including the basic control algorithms, the extension to predictive functional control, constrained control, closed-loop system analysis, model predictive control optimization-based PID control, genetic algorithm optimization-based model predictive control, and industrial applications. Providing important insights, useful methods and practical algorithms that can be used in chemical process control and optimization, it offers a valuable resource for researchers, scientists and engineers in the field of process system engineering and control engineering. With a simple approach that includes real-time applications and algorithms, this book covers the theory of model predictive control (MPC). During the past decade model predictive control (MPC), also referred to as receding horizon control or moving horizon control, has become the preferred control strategy for quite a number of industrial processes. There have been many significant advances in this area over the past years, one of the most important ones being its extension to nonlinear systems. This book gives an up-to-date assessment of the current state of the art in the new field of nonlinear model predictive control (NMPC). The main topic areas that appear to be of central importance for NMPC are covered, namely receding horizon control theory, modeling for NMPC, computational aspects of on-line optimization and application issues. The book consists of selected papers presented at the International Symposium on Nonlinear Model Predictive Control – Assessment and Future Directions, which took place from June 3 to 5, 1998, in Ascona, Switzerland. The book is geared towards researchers and practitioners in the area of control engineering and control theory. It is also suited for postgraduate students as the book contains several overview articles that give a tutorial introduction into the various aspects of nonlinear model predictive control, including systems theory, computations, modeling and applications. Practical Design and Application of Model Predictive Control is a self-learning resource on how to design, tune and deploy an MPC using MATLAB® and
Simulink®. This reference is one of the most detailed publications on how to design and tune MPC controllers. Examples presented range from double-Mass spring system, ship heading and speed control, robustness analysis through Monte-Carlo simulations, photovoltaic optimal control, and energy management of power-split and air-handling control. Readers will also learn how to embed the designed MPC controller in a real-time platform such as Arduino®. The selected problems are nonlinear and challenging, and thus serve as an excellent experimental, dynamic system to show the reader the capability of MPC. The step-by-step solutions of the problems are thoroughly documented to allow the reader to easily replicate the results. Furthermore, the MATLAB® and Simulink® codes for the solutions are available for free download. Readers can connect with the authors through the dedicated website which includes additional free resources at www.practicalmpc.com. Illustrates how to design, tune and deploy MPC for projects in a quick manner. Demonstrates a variety of applications that are solved using MATLAB® and Simulink®. Bridges the gap in providing a number of realistic problems with very hands-on training. Provides MATLAB® and Simulink® code solutions. This includes nonlinear plant models that the reader can use for other projects and research work. Presents application problems with solutions to help reinforce the information learned. Although industrial processes are inherently nonlinear, many contributions for controller design for those plants are based on the assumption of a linear model of the system. However, in some cases it is difficult to represent a given process using a linear model. Model Predictive Control (MPC) is an optimal control approach which can effectively deal with constraints and multivariable processes in industries. Because of its advantages, MPC has been widely applied in automotive and process control communities. This book discusses the theory, practices and future challenges of model predictive control. This volume brings about the contemporary results in the field of discrete-time systems. It covers papers written on the topics of robust control, nonlinear systems and recent applications. Although the technical views are different, they all geared towards focusing on the up-to-date knowledge gain by the researchers and providing effective developments along the systems and control arena. Each topic has a detailed discussions and suggestions for future perusal by interested investigators. Easy-to-follow learning structure makes absorption of advanced material as pain-free as possible. Introduces complete theories for stability and cost monotonicity for constrained and non-linear systems as well as for linear systems. In co-ordination with MATLAB® files available from springeronline.com, exercises and examples give the student more practice in the predictive control and filtering techniques presented. This book presents general methods for the design of economic model predictive control (EMPC) systems for broad classes of nonlinear systems that address key theoretical and practical considerations including recursive feasibility, closed-loop stability, closed-loop performance, and computational efficiency. Specifically, the book proposes: Lyapunov-based EMPC methods for nonlinear systems; two-tier EMPC architectures that are highly computationally efficient; and EMPC schemes handling explicitly uncertainty, time-varying cost functions, time-delays and multiple-time-scale dynamics. The proposed methods employ a variety of tools ranging from nonlinear systems analysis, through Lyapunov-based control techniques to nonlinear dynamic optimization. The applicability and performance of the proposed methods are demonstrated through a number of chemical process examples. The book presents state-of-the-art methods for the design of economic model predictive control systems for chemical processes. In addition to being mathematically rigorous, these methods accommodate key practical issues, for example, direct optimization
of process economics, time-varying economic cost functions and computational efficiency. Numerous comments and
remarks providing fundamental understanding of the merging of process economics and feedback control into a
single framework are included. A control engineer can easily tailor the many detailed examples of industrial
relevance given within the text to a specific application. The authors present a rich collection of new research
topics and references to significant recent work making Economic Model Predictive Control an important source of
information and inspiration for academics and graduate students researching the area and for process engineers
interested in applying its ideas. Artificial Neural Networks (ANNs) is a powerful computational tool to mimic the
learning process of the mammalian brain. This book gives a comprehensive overview of ANNs including an
introduction to the topic, classifications of single neurons and neural networks, model predictive control and a
review of ANNs used in food processing. Also, examples of ANNs in food processing applications such as
pasteurization control are illustrated. Model Predictive Control of Wind Energy Conversion Systems addresses the
predicative control strategy that has emerged as a promising digital control tool within the field of power
electronics, variable-speed motor drives, and energy conversion systems. The authors provide a comprehensive
analysis on the model predictive control of power converters employed in a wide variety of variable-speed wind
energy conversion systems (WECS). The contents of this book includes an overview of wind energy system
configurations, power converters for variable-speed WECS, digital control techniques, MPC, modeling of power
converters and wind generators for MPC design. Other topics include the mapping of continuous-time models to
discrete-time models by various exact, approximate, and quasi-exact discretization methods, modeling and control
of wind turbine grid-side two-level and multilevel voltage source converters. The authors also focus on the MPC
of several power converter configurations for full variable-speed permanent magnet synchronous generator based
WECS, squirrel-cage induction generator based WECS, and semi-variable-speed doubly fed induction generator based
WECS. Furthermore, this book: Analyzes a wide variety of practical WECS, illustrating important concepts with
case studies, simulations, and experimental results Provides a step-by-step design procedure for the development
of predictive control schemes for various WECS configurations Describes continuous- and discrete-time modeling of
wind generators and power converters, weighting factor selection, discretization methods, and extrapolation
techniques Presents useful material for other power electronic applications such as variable-speed motor drives,
power quality conditioners, electric vehicles, photovoltaic energy systems, distributed generation, and high-
voltage direct current transmission. Explores S-Function Builder programming in MATLAB environment to implement
various MPC strategies through the companion website Reflecting the latest technologies in the field, Model
Predictive Control of Wind Energy Conversion Systems is a valuable reference for academic researchers, practicing
engineers, and other professionals. It can also be used as a textbook for graduate-level and advanced
undergraduate courses. Synthesis of Feedback Systems presents the feedback theory which exists in various feedback
problems. This book provides techniques for the analysis and solution of these problems. The text begins with an
introduction to feedback theory and exposition of problems of plant identification, representation, and analysis.
Subsequent chapters are devoted to the application of the feedback point of view to any system; the principal
useful properties of feedback; the feedback control system synthesis techniques; and the class of two degree-of-
freedom feedback configurations and synthesis procedures appropriate for such configurations. The final chapter
considers how to translate specifications from their typical original formulation, to the language appropriate for detailed design. The book is intended for engineers and graduate students of engineering design. Model predictive control (MPC) is a method for controlling a process while satisfying a set of constraints. The use of MPC for controlling power systems has been gaining traction in recent years. This work presents the use of MPC for distributed renewable power generation in microgrids. A comprehensive examination of DMPC theory and its technological applications • A comprehensive examination of DMPC theory and its technological applications from basic through to advanced level • A systematic introduction to DMPC technology providing classic DMPC coordination strategies, analysis of their performance, and design methods for both unconstraint and constraint systems • Includes the system partition methods, coordination strategies, the performance analysis and how to design stabilized DMPC under different coordination strategies • Presents useful theories and technologies which can be used in many different industrial fields, such as the metallurgical process and high speed transport, helping readers to grasp the procedure of using the DMPC • Reflects the authors’ combined research in the area, providing a wealth of and current and background information.
control methodologies due to the simplicity of the basic idea (measure the current state, predict and optimize the future behavior of the plant to determine an input signal, and repeat this procedure ad infinitum) and its capability to deal with constrained nonlinear multi-input multi-output systems. While the basic idea is simple, the rigorous analysis of the MPC closed loop can be quite involved. Here, distributed means that either the computation is distributed to meet real-time requirements for (very) large-scale systems or that distributed agents act autonomously while being coupled via the constraints and/or the control objective. In the latter case, communication is necessary to maintain feasibility or to recover system-wide optimal performance. The term economic refers to general control tasks and, thus, goes beyond the typically predominant control objective of set-point stabilization. Here, recently developed concepts like (strict) dissipativity of optimal control problems or turnpike properties play a crucial role. The book collects research and survey articles on recent ideas and it provides perspectives on current trends in nonlinear model predictive control. Indeed, the book is the outcome of a series of six workshops funded by the German Research Foundation (DFG) involving early-stage career scientists from different countries and from leading European industry stakeholders. The advantage of model predictive control is that it can take systematic account of constraints, thereby allowing processes to operate at the limits of achievable performance. Engineers in academia, industry, and government from the US and Europe explain how the linear version can be adapted and applied to the nonlinear conditions that characterize the dynamics of most real manufacturing plants. They survey theoretical and practical trends, describe some specific theories and demonstrate their practical application, derive strategies that provide appropriate assurance of closed-loop stability, and discuss practical implementation. Annotation copyrighted by Book News, Inc., Portland, OR

This book introduces the so-called "stable factorization approach" to the synthesis of feedback controllers for linear control systems. The key to this approach is to view the multi-input, multi-output (MIMO) plant for which one wishes to design a controller as a matrix over the fraction field $F$ associated with a commutative ring with identity, denoted by $R$, which also has no divisors of zero. In this setting, the set of single-input, single-output (SISO) stable control systems is precisely the ring $R$, while the set of stable MIMO control systems is the set of matrices whose elements all belong to $R$. The set of unstable, meaning not necessarily stable, control systems is then taken to be the field of fractions $F$ associated with $R$ in the SISO case, and the set of matrices with elements in $F$ in the MIMO case. The central notion introduced in the book is that, in most situations of practical interest, every matrix $P$ whose elements belong to $F$ can be "factored" as a "ratio" of two matrices $N,D$ whose elements belong to $R$, in such a way that $N,D$ are coprime. In the familiar case where the ring $R$ corresponds to the set of bounded-input, bounded-output (BIBO)-stable rational transfer functions, coprimeness is equivalent to two functions not having any common zeros in the closed right half-plane including infinity. However, the notion of coprimeness extends readily to discrete-time systems, distributed-parameter systems in both the continuous- as well as discrete-time domains, and to multi-dimensional systems. Thus the stable factorization approach enables one to capture all these situations within a common framework. The key result in the stable factorization approach is the parametrization of all controllers that stabilize a given plant. It is shown that the set of all stabilizing controllers can be parametrized by a single parameter $R$, whose elements all belong to $R$. Moreover, every transfer matrix in the closed-loop system is an affine function of the design parameter $R$. 

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Thus problems of reliable stabilization, disturbance rejection, robust stabilization etc. can all be formulated in terms of choosing an appropriate R. This is a reprint of the book Control System Synthesis: A Factorization Approach originally published by M.I.T. Press in 1985. Model Predictive Control (MPC) has become a widely used methodology across all engineering disciplines, yet there are few books which study this approach. Until now, no book has addressed in detail all key issues in the field including apriori stability and robust stability results. Engineers and MPC researchers now have a volume that provides a complete overview of the theory and practice of MPC as it relates to process and control engineering. Model-Based Predictive Control, A Practical Approach, analyzes predictive control from its base mathematical foundation, but delivers the subject matter in a readable, intuitive style. The author writes in layman's terms, avoiding jargon and using a style that relies upon personal insight into practical applications. This detailed introduction to predictive control introduces basic MPC concepts and demonstrates how they are applied in the design and control of systems, experiments, and industrial processes. The text outlines how to model, provide robustness, handle constraints, ensure feasibility, and guarantee stability. It also details options in regard to algorithms, models, and complexity vs. performance issues. This book is a comprehensive introduction to model predictive control (MPC), including its basic principles and algorithms, system analysis and design methods, strategy developments and practical applications. The main contents of the book include an overview of the development trajectory and basic principles of MPC, typical MPC algorithms, quantitative analysis of classical MPC systems, design and tuning methods for MPC parameters, constrained multivariable MPC algorithms and online optimization decomposition methods. Readers will then progress to more advanced topics such as nonlinear MPC and its related algorithms, the diversification development of MPC with respect to control structures and optimization strategies, and robust MPC. Finally, applications of MPC and its generalization to optimization-based dynamic problems other than control will be discussed. Systematically introduces fundamental concepts, basic algorithms, and applications of MPC Includes a comprehensive overview of MPC development, emphasizing recent advances and modern approaches Features numerous MPC models and structures, based on rigorous research Based on the best-selling Chinese edition, which is a key text in China Predictive Control: Fundamentals and Developments is written for advanced undergraduate and graduate students and researchers specializing in control technologies. It is also a useful reference for industry professionals, engineers, and technicians specializing in advanced optimization control technology. This book is a printed edition of the Special Issue "New Directions on Model Predictive Control" that was published in Mathematics Describes the general principles and current research into Model Predictive Control (MPC); the most up-to-date control method for power converters and drives The book starts with an introduction to the subject before the first chapter on classical control methods for power converters and drives. This covers classical converter control methods and classical electrical drives control methods. The next chapter on Model predictive control first looks at predictive control methods for power converters and drives and presents the basic principles of MPC. It then looks at MPC for power electronics and drives. The third chapter is on predictive control applied to power converters. It discusses: control of a three-phase inverter; control of a neutral point clamped inverter; control of an active front end rectifier, and; control of a matrix converter. In the middle of the book there is Chapter four - Predictive control applied to motor drives. This section analyses predictive torque control of...
industrial machines and predictive control of permanent magnet synchronous motors. Design and implementation issues of model predictive control is the subject of the final chapter. The following topics are described in detail: cost function selection; weighting factors design; delay compensation; effect of model errors, and prediction of future references. While there are hundreds of books teaching control of electrical energy using pulse width modulation, this will be the very first book published in this new topic. Unique in presenting a completely new theoretic solution to control electric power in a simple way Discusses the application of predictive control in motor drives, with several examples and case studies Matlab is included on a complementary website so the reader can run their own simulationsRecent developments in model-predictive control promise remarkable opportunities for designing multi-input, multi-output control systems and improving the control of single-input, single-output systems. This volume provides a definitive survey of the latest model-predictive control methods available to engineers and scientists today. The initial set of chapters present various methods for managing uncertainty in systems, including stochastic model-predictive control. With the advent of affordable and fast computation, control engineers now need to think about using “computationally intensive controls,” so the second part of this book addresses the solution of optimization problems in “real” time for model-predictive control. The theory and applications of control theory often influence each other, so the last section of Handbook of Model Predictive Control rounds out the book with representative applications to automobiles, healthcare, robotics, and finance. The chapters in this volume will be useful to working engineers, scientists, and mathematicians, as well as students and faculty interested in the progression of control theory. Future developments in MPC will no doubt build from concepts demonstrated in this book and anyone with an interest in MPC will find fruitful information and suggestions for additional reading.Model Predictive Control System Design and Implementation Using MATLAB® proposes methods for design and implementation of MPC systems using basis functions that confer the following advantages: - continuous- and discrete-time MPC problems solved in similar design frameworks; - a parsimonious parametric representation of the control trajectory gives rise to computationally efficient algorithms and better on-line performance; and - a more general discrete-time representation of MPC design that becomes identical to the traditional approach for an appropriate choice of parameters. After the theoretical presentation, coverage is given to three industrial applications. The subject of quadratic programming, often associated with the core optimization algorithms of MPC is also introduced and explained. The technical contents of this book is mainly based on advances in MPC using state-space models and basis functions. This volume includes numerous analytical examples and problems and MATLAB® programs and exercises.Nonlinear Model Predictive Control (NMPC) has become the accepted methodology to solve complex control problems related to process industries. The main motivation behind explicit NMPC is that an explicit state feedback law avoids the need for executing a numerical optimization algorithm in real time. The benefits of an explicit solution, in addition to the efficient on-line computations, include also verifiability of the implementation and the possibility to design embedded control systems with low software and hardware complexity. This book considers the multi-parametric Nonlinear Programming (mp-NLP) approaches to explicit approximate NMPC of constrained nonlinear systems, developed by the authors, as well as their applications to various NMPC problem formulations and several case studies. The following types of nonlinear systems are considered, resulting in
different NMPC problem formulations: - Nonlinear systems described by first-principles models and nonlinear systems described by black-box models; - Nonlinear systems with continuous control inputs and nonlinear systems with quantized control inputs; - Nonlinear systems without uncertainty and nonlinear systems with uncertainties (polyhedral description of uncertainty and stochastic description of uncertainty); - Nonlinear systems, consisting of interconnected nonlinear sub-systems. The proposed mp-NLP approaches are illustrated with applications to several case studies, which are taken from diverse areas such as automotive mechatronics, compressor control, combustion plant control, reactor control, pH maintaining system control, cart and spring system control, and diving computers. In this original book on model predictive control (MPC) for power electronics, the focus is put on high-power applications with multilevel converters operating at switching frequencies well below 1 kHz, such as medium-voltage drives and modular multi-level converters. Consisting of two main parts, the first offers a detailed review of three-phase power electronics, electrical machines, carrier-based pulse width modulation, optimized pulse patterns, state-of-the-art converter control methods and the principle of MPC. The second part is an in-depth treatment of MPC methods that fully exploit the performance potential of high-power converters. These control methods combine the fast control responses of deadbeat control with the optimal steady-state performance of optimized pulse patterns by resolving the antagonism between the two. MPC is expected to evolve into the control method of choice for power electronic systems operating at low pulse numbers with multiple coupled variables and tight operating constraints. The Model Predictive Control of High Power Converters and Industrial Drives will enable readers to learn how to increase the power capability of the converter, lower the current distortions, reduce the filter size, achieve very fast transient responses and ensure the reliable operation within safe operating area constraints. Targeted at power electronic practitioners working on control-related aspects as well as control engineers, the material is intuitively accessible, and the mathematical formulations are augmented by illustrations, simple examples and a book companion website featuring animations. Readers benefit from a concise and comprehensive treatment of MPC for industrial power electronics, enabling them to understand, implement and advance the field of high-performance MPC schemes. 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.