Solution And Estimation Methods For Dsge Models

Classification, Parameter Estimation and State Estimation
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Sixth World Congress
Optimal and Robust Estimation
EPA-600/3
The Principles of Electro-deposition
Second Edition
Error Control and Posteriori Estimates
Max-Plus Methods for Nonlinear Control and Estimation
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Theory and Application
Multicollinearity in linear economic models
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Robust Estimation Methods for Image Matching
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SSRI.
Multicollinearity in linear economic models
Methods and Applications with Deterministic Sample Points
Solution and Estimation Methods for DSGE Models
A Systematic Handbook of Volumetric Analysis
Advances in Econometrics: Volume 2
Second Edition
Nonlinear Estimation
A Laboratory Guide to Electro-plating
Practical Methods for Optimal Control and Estimation Using Nonlinear Programming

Parameter Estimation and Inverse Problems
Methods for the Estimation and Application of Biological Networks
Software Project Effort Estimation
A Posteriori Error Estimation Techniques for Finite Element Methods
Inverse Problem Theory and Methods for Model Parameter Estimation
Practical Methods for Optimal Control and Estimation Using Nonlinear Programming
Application of Statistical Filter Theory to the Optimal Estimation of Position and Velocity on Board a Circumlunar Vehicle

DOMINIK KEELY

Classification, Parameter Estimation and State Estimation CRC Press
A practical introduction to intelligent computer vision theory, design, implementation, and technology The past decade has witnessed epic growth in image processing and intelligent computer vision technology. Advancements in machine learning methods—especially among adaboost varieties and particle filtering methods—have made machine learning in intelligent computer vision more accurate and reliable than ever before. The need for expert coverage of the state of the art in this burgeoning field has never been greater, and this book

satisfies that need. Fully updated and extensively revised, this 2nd Edition of the popular guide provides designers, data analysts, researchers and advanced post-graduates with a fundamental yet wholly practical introduction to intelligent computer vision. The authors walk you through the basics of computer vision, past and present, and they explore the more subtle intricacies of intelligent computer vision, with an emphasis on intelligent measurement systems. Using many timely, real-world examples, they explain and vividly demonstrate the latest developments in image and video processing techniques and technologies for machine learning in computer vision systems, including: PRTools5 software for MATLAB—especially the latest representation and generalization software toolbox for PRTools5 Machine learning applications for computer vision, with detailed discussions of contemporary state estimation techniques vs older content of particle filter methods The latest techniques for classification and supervised learning, with an emphasis on Neural Network, Genetic State Estimation and other particle filter and AI state estimation methods All new coverage of the Adaboost and its implementation in PRTools5. A valuable working resource for professionals and an excellent introduction for advanced-level students, this 2nd Edition features a

wealth of illustrative examples, ranging from basic techniques to advanced intelligent computer vision system implementations. Additional examples and tutorials, as well as a question and solution forum, can be found on a companion website.
Solution and Estimation Methods for DSGE Models
Springer Science & Business Media
"Estimating the integer parameter vector in a linear model with additive Gaussian noisearises from many applications, including communications, control, and global navigationsatellite systems. For an overdetermined integer linear model, the optimal method is tosolve an integer least squares (ILS) problem, which is unfortunately NP-hard; and a suboptimalmethod often used in applications which needs a fast solution is Babai's method.Unfortunately the performance of the Babai estimator can be much worse than that of the ILSestimator. This thesis proposes two new estimation methods and analyzes the performanceof the two estimators. The two proposed methods are between the ILS method and Babai'smethod in terms of time complexity and estimation quality. Simulation results show thatthese two methods can be much more efficient than the ILS method, while the quality ofthe two estimators can be much better than that of the Babai estimator. In addition, thethesis analyzes the performance

of the randomized Babai estimator and some interesting anduseful theoretical results are obtained"--
Sixth World Congress CRC Press
Solution and Estimation Methods for DSGE ModelsSolution and Estimation Methods for DSGE ModelsSolution and Estimation Methods for DSGE ModelsMax-Plus Methods for Nonlinear Control and EstimationSpringer Science & Business Media
Optimal and Robust Estimation Springer

Our world is widely contaminated with damaging chemicals, and companies create thousands of new, potentially dangerous chemicals each year. Due to the difficulty and expense of obtaining accurate measurements and the unreliability of reported values, we know surprisingly little about the properties of these contaminants. Determining the properties of chemicals is critical to judging their impact on environmental quality and in making decisions about emission rates, clean-up, and other important public health issues. Chemical Property Estimation describes modern methods of estimating chemical properties, methods which cost much less than traditional laboratory techniques and are sufficiently accurate for most environmental applications. Estimation methods are used to screen chemicals for testing, design monitoring and analysis methods, design clean-up procedures, and verify

experimental measurements. The book discusses key methods for estimating chemical properties and considers their relative strengths and weaknesses. Several chapters are devoted to the partitioning of chemicals between air, water, soil, and biota; and properties such as solubility, vapor pressure, and chemical transport. Each chapter begins with a review of relevant theory and background information explaining the applications and limitations of each method. Sample calculations and practical advice on how and when to use each method are included as well. Each method is evaluated for accuracy and reliability. Computer software, databases, and internet resources are evaluated, as well as other supplementary material, such as fundamental constants, units of measure, and more. EPA-600/3 Elsevier Nonlinear Estimation: Methods and Applications with Deterministic Sample Points focusses on a comprehensive treatment of deterministic sample point filters (also called Gaussian filters) and their variants for nonlinear estimation problems, for which no closed-form solution is available in general. Gaussian filters are becoming popular with the designers due to their ease of implementation and real time execution even on inexpensive or legacy hardware. The main purpose of the book is to educate the reader about a variety of available nonlinear estimation

methods so that the reader can choose the right method for a real life problem, adapt or modify it where necessary and implement it. The book can also serve as a core graduate text for a course on state estimation. The book starts from the basic conceptual solution of a nonlinear estimation problem and provides an in depth coverage of (i) various Gaussian filters such as the unscented Kalman filter, cubature and quadrature based filters, Gauss-Hermite filter and their variants and (ii) Gaussian sum filter, in both discrete and continuous-discrete domain. Further, a brief description of filters for randomly delayed measurement and two case-studies are also included. Features: The book covers all the important Gaussian filters, including filters with randomly delayed measurements. Numerical simulation examples with detailed matlab code are provided for most algorithms so that beginners can verify their understanding. Two real world case studies are included: (i) underwater passive target tracking, (ii) ballistic target tracking. The style of writing is suitable for engineers and scientists. The material of the book is presented with the emphasis on key ideas, underlying assumptions, algorithms, and properties. The book combines rigorous mathematical treatment with matlab code, algorithm listings, flow charts and detailed case studies to deepen understanding.

The Principles of Electro-deposition CRC Press

This dissertation, "Robust Estimation Methods for Image Matching" by Chunlin, Feng, □□□, was obtained from The University of Hong Kong (Pokfulam, Hong Kong) and is being sold pursuant to Creative Commons: Attribution 3.0 Hong Kong License. The content of this dissertation has not been altered in any way. We have altered the formatting in order to facilitate the ease of printing and reading of the dissertation. All rights not granted by the above license are retained by the author. Abstract: Abstract of Thesis Entitled Robust Estimation Methods for Image Matching Submitted by FENG Chun Lin for the degree of Master of Philosophy at The University of Hong Kong in August 2004 This study proposes new image matching methods for matching feature points across a pair or triple of views through robust recovery of epipolar geometry or trifocal geometry. The aim of this study was to enable 3D scenes to be automatically reconstructed using projective geometry, assuming corresponding points are matched robustly using the methods proposed in the thesis. Its findings have applications to 3D reconstruction, robust estimation and object recognition. Image matching, i.e. depicting the process of recovering feature correspondences, is a challenging problem in computer vision. The

crux of this problem is that putative matches are often poorly or incorrectly extracted by intensity-based cross-correlation methods. Geometry-based methods, inspired by geometric relationships governing point correspondences, are therefore used to examine the correctness of correspondence of putative matches. However, retrieving geometric relationships can be difficult in the presence of a fair proportion of mismatches. For this reason, the fundamental matrix for epipolar geometry or trifocal tensor in the case of trifocal geometry may well be incorrectly estimated due to misclassification of matches and mismatches. In order to overcome this problem, two methods are proposed in this study for matching two-view and three-view images, both involving intensity-based and geometry-base matching. Intensity-based matching forms putative matches based on image intensity, which involves corner detection and cross-correlation measurement. Geometry-based matching examines the correctness of correspondences of putative matches in a geometric perspective, thus enabling correct matches to be distinguished from mismatches. This method first determines the fundamental matrix or trifocal tensor from random samples, and then evaluates each solution through reprojection error measurement, parameter estimation, dataset

classification and scoring, and finally yields the solution with the best score together with associated matches. The matching methods proposed in this study include: (a) incorporation of a maximum likelihood estimator for unknown parameters in the image error model, thus removing complexity arising from manual configuration of these parameters; (b) formulation of an effective cost function to score each solution by considering its consistency with estimated matches and the shape of its residual error distribution, thus enabling a fair measurement of solution error; and (c) determination and evaluation of solutions (the fundamental matrix for two views and the trifocal tensor for three views) by means of the same measure viz. the geometric error. The novelty of the proposed methods mainly lies in the study in part (a) and (b), and in the integration of the characteristics (a)-(c) into a single algorithm. Extensive evaluations are performed for both synthetic and real image sequences to validate the proposed methods. This study also includes a novel investigation of random sampling strategy to determine the optimal size for random sampling in the fundamental matrix estimation, thereby improving the computational efficiency of linear estimators. DOI: 10.5353/th_b2975269

SIAM

This is a short introduction to Maximum Likelihood

(ML) Estimation. It provides a general modeling framework that utilizes the tools of ML methods to outline a flexible modeling strategy that accommodates cases from the simplest linear models (such as the normal error regression model) to the most complex nonlinear models linking endogenous and exogenous variables with non-normal distributions. Using examples to illustrate the techniques of finding ML estimators and estimates, the author discusses what properties are desirable in an estimator, basic techniques for finding maximum likelihood solutions, the general form of the covariance matrix for ML estimates, the sampling distribution of ML estimators; the use of ML in the normal as well as other distributions, and some useful illustrations of likelihoods. *Second Edition* Springer Science & Business Media Software effort estimation is one of the oldest and most important problems in software project management, and thus today there are a large number of models, each with its own unique strengths and weaknesses in general, and even more importantly, in relation to the environment and context in which it is to be applied. Trendowicz and Jeffery present a comprehensive look at the principles of software effort estimation and support software practitioners in systematically selecting and applying the most suitable effort estimation approach. Their book not only presents what

approach to take and how to apply and improve it, but also explains why certain approaches should be used in specific project situations. Moreover, it explains popular estimation methods, summarizes estimation best-practices, and provides guidelines for continuously improving estimation capability. Additionally, the book offers invaluable insights into project management in general, discussing issues including project trade-offs, risk assessment, and organizational learning. Overall, the authors deliver an essential reference work for software practitioners responsible for software effort estimation and planning in their daily work and who want to improve their estimation skills. At the same time, for lecturers and students the book can serve as the basis of a course in software processes, software estimation, or project management.

Error Control and Posteriori Estimates

Vandenhoeck & Ruprecht Parameter Estimation and Inverse Problems, Third Edition, is structured around a course at New Mexico Tech and is designed to be accessible to typical graduate students in the physical sciences who do not have an extensive mathematical background. The book is complemented by a companion website that includes MATLAB codes that correspond to examples that are illustrated with simple, easy to follow problems that illuminate the details

of particular numerical methods. Updates to the new edition include more discussions of Laplacian smoothing, an expansion of basis function exercises, the addition of stochastic descent, an improved presentation of Fourier methods and exercises, and more. Features examples that are illustrated with simple, easy to follow problems that illuminate the details of a particular numerical method Includes an online instructor’s guide that helps professors teach and customize exercises and select homework problems Covers updated information on adjoint methods that are presented in an accessible manner

Max-Plus Methods for Nonlinear Control and Estimation Springer

This book gives a practical, applications-oriented account of the latest techniques for estimating and analyzing large, nonlinear macroeconomic models. Ray Fair demonstrates the application of these techniques in a detailed presentation of several actual models, including his United States model, his multicountry model, Sargent's classical macroeconomic model, autoregressive and vector autoregressive models, and a small (twelve equation) linear structural model. He devotes a good deal of attention to the difficult and often neglected problem of moving from theoretical to econometric models. In addition, he provides an extensive discussion of optimal control techniques and methods

for estimating and analyzing rational expectations models. A computer program that handles all the techniques in the book is available from the author, making it possible to use the techniques with little additional programming. The book presents the logic of this program. A smaller program for personal microcomputers for analysis of Fair's United States model is available from Urban Systems Research & Engineering, Inc. Anyone wanting to learn how to use large macroeconomic models, including researchers, graduate students, economic forecasters, and people in business and government both in the United States and abroad, will find this an essential guidebook.

With an Introduction to Stochastic Control Theory, Second Edition Cambridge University Press

This unique volume introduces and discusses the methods of validating computer simulations in scientific research. The core concepts, strategies, and techniques of validation are explained by an international team of pre-eminent authorities, drawing on expertise from various fields ranging from engineering and the physical sciences to the social sciences and history. The work also offers new and original philosophical perspectives on the validation of simulations. Topics and features: introduces the fundamental concepts and principles related to the validation of computer simulations, and examines philosophical

frameworks for thinking about validation; provides an overview of the various strategies and techniques available for validating simulations, as well as the preparatory steps that have to be taken prior to validation; describes commonly used reference points and mathematical frameworks applicable to simulation validation; reviews the legal prescriptions, and the administrative and procedural activities related to simulation validation; presents examples of best practice that demonstrate how methods of validation are applied in various disciplines and with different types of simulation models; covers important practical challenges faced by simulation scientists when applying validation methods and techniques; offers a selection of general philosophical reflections that explore the significance of validation from a broader perspective. This truly interdisciplinary handbook will appeal to a broad audience, from professional scientists spanning all natural and social sciences, to young scholars new to research with computer simulations. Philosophers of science, and methodologists seeking to increase their understanding of simulation validation, will also find much to benefit from in the text.

Theory and Application

Academic Press

It was R. Frisch, who in his publications 'Correlation and Scatter Analysis in Statistical Variables' (1929) and 'Statistical

Confluence Analysis by means of Complete Regression Systems' (1934) first pointed out the complications that arise if one applies regression analysis to variables among which several independent linear relations exist. Should these relationships be exact, then there exist two closely related solutions for this problem, viz. 1. The estimation of 'stable' linear combinations of coefficients, the so-called estimable functions. 2. The dropping of the well-known condition of unbiasedness of the estimators. This leads to minimum variance minimum bias estimators. This last solution is generalised in this book for the case of a model consisting of several equations. In econometrics however, the relations among variables are nearly always approximately linear so that one cannot apply one of the solutions mentioned above, because in that case the matrices used in these methods are, although ill-conditioned, always of full rank. Approximating these matrices by good-conditioned ones of the desired rank, it is possible to apply these estimation methods. In order to get an insight in the consequences of this approximation a simulation study has been carried out for a two-equation model. Two Stage Least Squares estimators and estimators found with the aid of the above mentioned estimation method have been compared. The results of this study seem

to be favourable for this new method.

Multicollinearity in linear economic models

SIAM

Statistical filter theory is employed to develop a method for determining the best possible estimate of the position and velocity of a space vehicle in the midcourse phase of flight. Results of a computer simulation are given to illustrate the performance attainable. An onboard system is visualized in which the source of information is an arbitrary sequence of observations of space angles, corrupted by measurement errors. The scheme is in effect a dynamical time-varying filter, implemented by a digital computer, which processes the incoming data to compute an up-to-date optimal estimate of position and velocity.

Logic and Practice

Solution and Estimation Methods for DSGE ModelsSolution and Estimation Methods for DSGE ModelsSolution and Estimation Methods for DSGE ModelsMax-Plus Methods for Nonlinear Control and Estimation

The central focus of this book is the control of continuous-time/continuous-space nonlinear systems. Using new techniques that employ the max-plus algebra, the author addresses several classes of nonlinear control problems, including nonlinear optimal control problems and nonlinear robust/H-infinity control and estimation problems. Several numerical techniques are employed, including a max-plus eigenvector approach and

an approach that avoids the curse-of-dimensionality. The max-plus-based methods examined in this work belong to an entirely new class of numerical methods for the solution of nonlinear control problems and their associated Hamilton–Jacobi–Bellman (HJB) PDEs; these methods are not equivalent to either of the more commonly used finite element or characteristic approaches. Max-Plus Methods for Nonlinear Control and Estimation will be of interest to applied mathematicians, engineers, and graduate students interested in the control of nonlinear systems through the implementation of recently developed numerical methods.

Fix-point Estimation in Theory and Practice London : Department of Economics, University of Western Ontario

A focused presentation of how sparse optimization methods can be used to solve optimal control and estimation problems.

Chemical Property Estimation Elsevier

Self-adaptive discretization methods are now an indispensable tool for the numerical solution of partial differential equations that arise from physical and technical applications. The aim is to obtain a numerical solution within a prescribed tolerance using a minimal amount of work. The main tools in achieving this goal are a posteriori error estimates which give global and local information on the error of the numerical

solution and which can easily be computed from the given numerical solution and the data of the differential equation. This book reviews the most frequently used a posteriori error estimation techniques and applies them to a broad class of linear and nonlinear elliptic and parabolic equations. Although there are various approaches to adaptivity and a posteriori error estimation, they are all based on a few common principles. The main aim of the book is to elaborate these basic principles and to give guidelines for developing adaptive schemes for new problems. Chapters 1 and 2 are quite elementary and present various error indicators and their use for mesh adaptation in the framework of a simple model problem. The basic principles are introduced using a minimal amount of notations and techniques providing a complete overview for the non-specialist. Chapters 4-6 on the other hand are more advanced and present a posteriori error estimates within a general framework using the technical tools collected in Chapter 3. Most sections close with a bibliographical remark which indicates the historical development and hints at further results.

Solution of Linear Programming and Non-linear Regression Problems Using Linear M-estimation Methods

John Wiley & Sons

As computational fluid dynamics (CFD) is applied to ever more demanding fluid flow problems, the ability to compute

numerical fluid flow solutions to a user specified tolerance as well as the ability to quantify the accuracy of an existing numerical solution are seen as essential ingredients in robust numerical simulation. Although the task of accurate error estimation for the nonlinear equations of CFD seems a daunting problem, considerable effort has centered on this challenge in recent years with notable progress being made by the use of advanced error estimation techniques and adaptive discretization methods. To address this important topic, a special course wasjointly organized by the NATO Research and Technology Office (RTO), the von Karman Insti tute for Fluid Dynamics, and the NASA Ames Research Center. The NATO RTO sponsored course entitled "Error Estimation and Solution Adaptive Discretization in CFD" was held September 10-14, 2002 at the NASA Ames Research Center and October 15-19, 2002 at the von Karman Institute in Belgium. During the special course, a series of comprehensive lectures by leading experts discussed recent advances and technical progress in the area of numerical error estimation and adaptive discretization methods with spe cific emphasis on computational fluid dynamics. The lecture notes provided in this volume are derived from the special course material. The volume con sists of 6 articles prepared by the special course lecturers.

Robust Estimation Methods for Image Matching SAGE
The advent of high-dimensional biological data from technologies like microarrays and mass spectrometers has transformed both biology and statistical theory; however, the tremendous potential of these datasets to explore the interactive behavior of genes or proteins has been largely unexplored. This dissertation describes two advances in the study of biological networks in these datasets, introducing improved methods for estimating network structure and for describing changes in pathway behavior in disease. The first method, the "Joint Graphical Lasso," is an extension of existing network estimation methods to datasets with multiple classes of observations, for example cancer and healthy cells. We describe a convex penalized likelihood equation whose solution has desirable properties for joint network estimation, and we detail an algorithm for its solution. The second method is a test for biologically meaningful changes in the pattern of co-regulation in biological pathways. Analysis of biological pathways has been almost entirely restricted to investigation of marginal effects; our method instead focuses on the joint behavior of features, examining important and previously unexplored aspects of pathway behavior.
Numerical Solution of Ordinary Differential Equations SIAM
The thesis examines three

methods for calculating the 100(1-alpha)% lower confidence limits for the reliability of a K-sized series system. Assuming that each component reliability has a Beta distribution, identical posterior parameters A and B are assigned for each component. (Author).

On the Convergence and Estimation of Errors in Some Methods of Solution of Numerical Equations

Springer

It was R. Frisch, who in his publications 'Correlation and Scatter Analysis in Statistical Variables' (1929) and 'Statistical Confluence Analysis by means of Complete Regression Systems' (1934) first pointed out the complications that arise if one applies regression analysis to variables among which several independent linear relations exist. Should these relationships be exact, then there exist two closely related solutions for this problem, viz. 1. The estimation of 'stable' linear combinations of coefficients, the so-called estimable functions. 2. The dropping of the wen-known condition of unbiasedness of the estimators. This leads to minimum variance minimum bias estimators. This last solution is generalised in this book for the case of a model consisting of several equations. In econometrics however, the relations among variables are nearly always approximately linear so that one cannot apply one of the solutions mentioned above, because in that case the

matrices used in these methods are, although ill-conditioned, always of full rank. Approximating these matrices by good-conditioned ones of the desired rank, it is possible to apply these estimation methods. In order to get an insight in the consequences of this approximation a simulation study has been carried out for a two-equation model. Two Stage Least Squares estimators and estimators found with the aid of the above mentioned estimation method have been compared. The results of this study seem to be favourable for this new method.