Free pdf Measurement uncertainty analysis of cmm with iso gum (Download Only)

Sensitivity & Uncertainty Analysis, Volume 1 Experimentation and Uncertainty Analysis for Engineers The Uncertainty Analysis of Model Results Uncertainty Analysis of Instrument Calibration and Application Applied Research in Uncertainty Modeling and Analysis Uncertainty Analysis of Experimental Data with R Uncertainty Uncertainty Analysis in Engineering and Sciences: Fuzzy Logic, Statistics, and Neural Network Approach Sensitivity & Uncertainty Analysis Experimental Uncertainty Analysis: A Textbook for Science and Engineering Students Measurement Uncertainty Sensitivity and Uncertainty Analysis Control of Uncertain Sampled-Data Systems Literature review of methods for representing uncertainty Uncertainty Analysis in Engineering and Sciences: Fuzzy Logic, Statistics, and Neural Network Approach Doubt-Free Uncertainty In Measurement Uncertainty characterization in risk analysis for decision-making practice Uncertainty Analysis Uncertainty Analysis of Experimental Data with R Uncertainty Analysis Probability Methods for Cost Uncertainty Analysis A Proposed Approach to Uncertainty Analysis Uncertainty Analysis in Engineering and Sciences Calibration and Uncertainty Analysis for Complex Environmental Models Uncertainty in Risk Assessment Uncertainty Analysis of the Nist Nitrogen Flow Facility (Classic Reprint) Experimentation, Validation, and Uncertainty Analysis for Engineers Uncertainty Analysis of Instrument Calibration and Application Three Domain Modelling and Uncertainty Analysis Hydrosystems Engineering Uncertainty Analysis Uncertainty Analysis for Engineers and Scientists Uncertainty Analysis, Loads, and Safety in Structural Engineering Uncertainty Analysis with High Dimensional Dependence Modelling Reliability and Uncertainty Analyses in Hydraulic Design A Possibilistic Multifidelity Approach for the Uncertainty Analysis of Passive Safety Structures Sensitivity and Uncertainty Analysis Uncertainty Modeling and Analysis in Engineering and the Sciences Application of Uncertainty Analysis to Ecological Risks of Pesticides Uncertainty Analysis in Econometrics with Applications Assistance for the determination of Measurement Uncertainty Analysis. Development of a prototypical implementation within the existing framework

Sensitivity & Uncertainty Analysis, Volume 1

2003-05-28

as computer assisted modeling and analysis of physical processes have continued to grow and diversify sensitivity and uncertainty analyses have become indispensable investigative scientific tools in their own right while most techniques used for these analyses are well documented there has yet to appear a systematic treatment of the method based

Experimentation and Uncertainty Analysis for Engineers

1999

now in the only manual available with direct applications to the design and analysis of engineering experiments respected authors hugh coleman and glenn steele have thoroughly updated their bestselling title to include the new methodologies being used by the united states and international standards committee groups

The Uncertainty Analysis of Model Results

2018-05-02

this book is a practical guide to the uncertainty analysis of computer model applications used in many areas such as engineering ecology and economics computer models are subject to various uncertainties at the level of model formulations parameter values and input data naturally it would be advantageous to know the combined effect of these uncertainties on the model results as well as whether the state of knowledge should be improved in order to reduce the uncertainty of the results most effectively the book supports decision makers model developers and users in their argumentation for an uncertainty analysis and assists them in the interpretation of the analysis results

Uncertainty Analysis of Instrument Calibration and Application

1999

the application areas of uncertainty are numerous and diverse including all fields of engineering computer science systems control and finance determining appropriate ways and methods of dealing with uncertainty has been a constant challenge the theme for this book is better understanding and the application of uncertainty theories this book with invited chapters deals with the uncertainty phenomena in diverse fields the book is an outgrowth of the fourth international symposium on uncertainty modeling and analysis isuma which was held at the center of adult education college park maryland in september 2003 all of the chapters have been carefully edited following a review process in which the editorial committee scrutinized each chapter the contents of the book are reported in twenty three chapters covering more than pages this book is divided into six main sections part i chapters 1 4 presents the philosophical and theoretical foundation of uncertainty new computational directions in neural networks and some theoretical foundation of fuzzy systems part i1 chapters 5 8 reports on biomedical and chemical engineering applications the sections looks at noise reduction techniques using hidden markov models evaluation of biomedical signals using neural networks and changes in medical image detection using markov random field and mean field theory one of the chapters reports on optimization in chemical engineering processes

Applied Research in Uncertainty Modeling and Analysis

2007-12-29

this would be an excellent book for undergraduate graduate and beyond the style of writing is easy to read and the author does a good job of adding humor in places the integration of basic programming in r with the data that is collected for any experiment provides a powerful platform for analysis of data having the understanding of data analysis that this book offers will really help researchers examine their data and consider its value from multiple perspectives and this applies to people who have small and large data sets alike this book also helps people use a free and basic software system for processing and plotting simple to complex functions michelle pantoya texas tech university measurements of quantities that vary in a continuous fashion e g the pressure of a gas cannot be measured exactly and there will always be some uncertainty with these measured values so it is vital for researchers to be able to quantify this data uncertainty analysis of experimental data with r covers methods for evaluation of uncertainties in experimental data as well as predictions made using these data with implementation in r the books discusses both basic and more complex methods including linear regression nonlinear regression and kernel smoothing curve fits as well as taylor series monte carlo and bayesian approaches features 1 extensive use of modern open source software r 2 many code examples are provided 3 the uncertainty analyses conform to accepted professional standards asme 4 the book is self contained and includes all necessary material including chapters on statistics and programming in r benjamin d shaw is a professor in the mechanical and aerospace engineering department at the university of california davis his research interests are primarily in experimental and theoretical aspects of combustion along with other courses he has taught undergraduate and graduate courses on engineering experimentation and uncertainty analysis he has published widely in archival journals and became an asme fellow in 2003

Uncertainty Analysis of Experimental Data with R

2017-07-06

a risk analysis textbook which is intended as a basic text for students as well as a reference for practitioners and researchers it provides a basis for policy analysis and draws upon a variety of case studies

Uncertainty

1990

uncertainty has been of concern to engineers managers and scientists for many centuries in management sciences there have existed definitions of uncertainty in a rather narrow sense since the beginning of this century in engineering and uncertainty has for a long time been considered as in sciences however synonymous with random stochastic statistic or probabilistic only since the early sixties views on uncertainty have ecome more heterogeneous and more tools to model uncertainty than statistics have been proposed by several scientists the problem of modeling uncertainty adequately has become more important the more complex systems have become the faster the scientific and engineering world develops and the more important but also more difficult forecasting of future states of systems have become the first question one should probably ask is whether uncertainty is a phenomenon a feature of real world systems a state of mind or a label for a situation in which a human being wants to make statements about phenomena i e reality models and theories respectively one cart also ask whether uncertainty is an objective fact or just a subjective impression which is closely related to individual persons whether uncertainty is an objective feature of physical real systems seems to be a philosophical question this shall not be answered in this volume

Uncertainty Analysis in Engineering and Sciences: Fuzzy Logic, Statistics, and Neural Network Approach

2012-12-06

as computer assisted modeling and analysis of physical processes have continued to grow and diversify sensitivity and uncertainty analyses have become indispensable investigative scientific tools in their own right while most techniques used for these analyses are well documented there has yet to appear a systematic treatment of the method based on adjoint operators which is applicable to a much wider variety of problems than methods traditionally used in control theory this book fills that gap focusing on the mathematical underpinnings of the adjoint sensitivity analysis procedure asap and the use of deterministically obtained sensitivities for subsequent uncertainty analysis

Sensitivity & Uncertainty Analysis

2003-05-28

uncertainties are inevitable in any experimental measurement therefore it is essential for science and engineering graduates to design and develop reliable experiments and estimate the uncertainty in the measurements this book describes the methods and application of uncertainty analysis during the planning data analysis and reporting stages of an experiment this book is aimed at postgraduate and advanced undergraduate students of various branches of science and engineering the book teaches methods for estimating random and systematic uncertainties and combining them to determine the overall uncertainty in a measurement in addition the method for propagating measurement uncertainties in the calculated result is discussed the book also discusses methods of reducing the uncertainties through proper instrumentation data acquisition and experiment planning this book provides detailed background and assumptions underlying the uncertainty analysis techniques for the reader to understand their applicability various solved examples are provided to demonstrate the application of the uncertainty analysis techniques the exercises at the end of the chapters have been chosen carefully to reinforce the concepts discussed in the text

Experimental Uncertainty Analysis: A Textbook for Science and Engineering Students

2021-07-06

literally an entire course between two covers measurement uncertainty methods and applications fourth edition presents engineering students with a comprehensive tutorial of measurement uncertainty methods in a logically categorized and readily utilized format the new uncertainty technologies embodied in both u s and international standards have been incorporated into this text with a view toward understanding the strengths and weaknesses of both the book is designed to also serve as a practical desk reference in situations that commonly confront an experimenter the text presents the basics of the measurement uncertainty model non symmetrical systematic standard uncertainties random standard uncertainties the use of correlation curve fitting problems and probability plotting combining results from different test methods calibration errors and uncertainty propagation for both independent and dependent error sources the author draws on years of experience in industry to direct special attention to the problem of developing confidence in uncertainty analysis results and using measurement uncertainty to select instrumentation systems

Measurement Uncertainty

2007

as computer assisted modeling and analysis of physical processes have continued to grow and diversify sensitivity and uncertainty analyses have become indispensable scientific tools sensitivity and uncertainty analysis volume i theory focused on the mathematical underpinnings of two important methods for such analyses the adjoint sensitivity analysis procedure and the global adjoint sensitivity analysis procedure this volume concentrates on the practical aspects of performing these analyses for large scale systems the applications addressed include two phase flow problems a radiative convective model for climate simulations and large scale models for numerical weather prediction

Sensitivity and Uncertainty Analysis

2005-05-16

my main goal in writing this monograph is to provide a detailed treatment of uncertainty analysis for sampled data systems in

the context of sys tems control theory here sampled data system refers to the hybrid sys tem formed when continuous time and discrete time systems are intercon nected by uncertainty analysis i mean achievable performance in the pres ence of worst case uncertainty and disturbances the focus of the book is sampled data systems however the approach presented is applicable to both standard and sampled data systems the past few years has seen a large surge in research activity centered around creating systematic methods for sampled data design the aim of this activity has been to deepen and broaden the by now sophisticated viewpoint developed for design of purely continuous time or discrete time systems e g j oo or i l optimal synthesis j1 theory so that it can be ap plied to the design of sampled data systems this research effort has been largely successful producing both interesting new mathematical tools for control theory and new methodologies for practical engineering design analysis of structured uncertainty is an important objective in control design because it is a flexible and non conservative way of analyzing sys tem performance which is suitable in many engineering design scenarios

Control of Uncertain Sampled-Data Systems

2012-12-06

this document provides a critical review of different frameworks for uncertainty analysis in a risk analysis context classical probabilistic analysis imprecise probability interval analysis probability bound analysis evidence theory and possibility theory the driver of the critical analysis is the decision making process and the need to feed it with representative information derived from the risk assessment to robustly support the decision technical details of the different frameworks are exposed only to the extent necessary to analyze and judge how these contribute to the communication of risk and the representation of the associated uncertainties to decision makers in the typical settings of high consequence risk analysis of complex systems with limited knowledge on their behaviour

Literature review of methods for representing uncertainty

2013-03-01

uncertainty has been of concern to engineers managers and scientists for many centuries in management sciences there have existed definitions of uncertainty in a rather narrow sense since the beginning of this century in engineering and uncertainty has for a long time been considered as in sciences however synonymous with random stochastic statistic or probabilistic only since the early sixties views on uncertainty have ecome more heterogeneous and more tools to model uncertainty than statistics have been proposed by several scientists the problem of modeling uncertainty adequately has become more important the more complex systems have become the faster the scientific and engineering world develops and the more important but also more difficult forecasting of future states of systems have become the first question one should probably ask is whether uncertainty is a phenomenon a feature of real world systems a state of mind or a label for a situation in which a human being wants to make statements about phenomena i e reality models and theories respectively one cart also ask whether uncertainty is an objective fact or just a subjective impression which is closely related to individual persons whether uncertainty is an objective feature of physical real systems seems to be a philosophical question this shall not be answered in this volume

Uncertainty Analysis in Engineering and Sciences: Fuzzy Logic, Statistics, and Neural Network Approach

2011-09-28

this volume presents measurement uncertainty and uncertainty budgets in a form accessible to practicing engineers and engineering students from across a wide range of disciplines the book gives a detailed explanation of the methods presented by nist in the gum guide to uncertainty of measurement emphasis is placed on explaining the background and meaning of the topics while keeping the level of mathematics at the minimum level necessary dr colin ratcliffe usna and bridget ratcliffe johns hopkins develop uncertainty budgets and explain their use in some examples the budget may show a process is already adequate and where costs can be saved in other examples the budget may show the process is inadequate and needs improvement the book demonstrates how uncertainty budgets help identify the most cost effective place to make changes in addition an extensive fully worked case study leads readers through all issues related to an uncertainty analysis including a variety of different types of uncertainty budgets the book is ideal for professional engineers and students concerned with a broad range of measurement assurance challenges in applied sciences this book also facilitates practicing engineers understanding of uncertainty budgets essential to calculating cost effective savings to a wide variety of processes contingent on measurement presents uncertainty budgets in an accessible style suitable for all undergraduate stem courses that include a laboratory component provides a highly adaptable supplement to graduate textbooks for courses where students work includes reporting on experimental results includes an expanded case study developing uncertainty from transducers though measurands and propagated to the final measurement that can be used as a template for the analysis of many processes stands as a useful pocket reference for all engineers and experimental scientists

Doubt-Free Uncertainty In Measurement

2014-11-17

this document provides an overview of sources of uncertainty in probabilistic risk analysis for each phase of the risk analysis process system modeling hazard identification estimation of the probability and consequences of accident sequences risk evaluation the authors describe and classify the types of uncertainty that can arise the document provides a description of the risk assessment process as used in hazardous industries such as nuclear power and offshore oil and gas extraction a classification of sources of uncertainty both epistemic and aleatory and a description of techniques for uncertainty representation a description of the different steps involved in a probabilistic risk assessement pra or quantitative risk assessment qra and an analysis of the types of uncertainty that can affect each of these steps annexes giving an overview of a number of tools used during probabilistic risk assessment including the hazid technique fault trees and event tree analysis

Uncertainty characterization in risk analysis for decision-making practice

2012-05-01

this would be an excellent book for undergraduate graduate and beyond the style of writing is easy to read and the author does a good job of adding humor in places the integration of basic programming in r with the data that is collected for any experiment provides a powerful platform for analysis of data having the understanding of data analysis that this book offers will really help researchers examine their data and consider its value from multiple perspectives and this applies to people who have small and large data sets alike this book also helps people use a free and basic software system for processing and plotting simple to complex functions michelle pantoya texas tech universitymeasurements of quantities that vary in a continuous fashion e g the pressure of a gas cannot be measured exactly and there will always be some uncertainty with these measured values so it is vital for researchers to be able to quantify this data uncertainty analysis of experimental data with r covers methods for evaluation of uncertainties in experimental data as well as predictions made using these data with implementation in r the books discusses both basic and more complex methods including linear regression nonlinear regression and kernel smoothing curve fits as well as taylor series monte carlo and bayesian approaches features 1 extensive use of modern open source software r 2 many code examples are provided 3 the uncertainty analyses conform to accepted professional standards asme 4 the book is self contained and includes all necessary material including chapters on statistics and programming in r benjamin d shaw is a professor in the mechanical and aerospace engineering department at the university of california davis his research interests are primarily in experimental and theoretical aspects of combustion along with other courses he has taught undergraduate and graduate courses on engineering experimentation and uncertainty analysis he has published widely in archival journals and became an asme fellow in 2003 provided by publisher

Uncertainty Analysis

1988-03-31

probability methods for cost uncertainty analysis a systems engineering perspective second edition gives you a thorough grounding in the analytical methods needed for modeling and measuring uncertainty in the cost of engineering systems this includes the treatment of correlation between the cost of system elements how to present the analysis to

Uncertainty Analysis of Experimental Data with R

2017

explores methods for the representation and treatment of uncertainty in risk assessment in providing guidance for practical decision making situations concerning high consequence technologies e g nuclear oil and gas transport etc the theories and methods studied in uncertainty in risk assessment have wide ranging applications from engineering and medicine to environmental impacts and natural disasters security and financial risk management the main focus however is on engineering applications while requiring some fundamental background in risk assessment as well as a basic knowledge of probability theory and statistics uncertainty in risk assessment can be read profitably by a broad audience of professionals in the field including researchers and graduate students on courses within risk analysis statistics engineering and the physical sciences uncertainty in risk assessment illustrates the need for seeing beyond probability to represent uncertainties in risk assessment contexts provides simple explanations supported by straightforward numerical examples of the meaning of different types of probabilities including interval probabilities and the fundamentals of possibility theory and evidence theory offers guidance on when to use probability and when to use an alternative representation of uncertainty presents and discusses methods for the representation and characterization of uncertainty in risk assessment uses examples to clearly illustrate ideas and concepts

Uncertainty Analysis

1982

excerpt from uncertainty analysis of the nist nitrogen flow facility note 1297 we assume that uncertainties stated by manufacturers are based on a rectangular distribution that is the performance of the instrument will fall within the manufacturers uncertainty 100 percent of the time to estimate a standard uncertainty of an instrument we divide the manufacturer s uncertainty by the square root of 3 about the publisher forgotten books publishes hundreds of thousands of rare and classic books find more at forgottenbooks com this book is a reproduction of an important historical work forgotten books uses state of the art technology to digitally reconstruct the work preserving the original format whilst repairing imperfections present in the aged copy in rare cases an imperfection in the original such as a blemish or missing page may be replicated in our edition we do however repair the vast majority of imperfections successfully any imperfections that remain are intentionally left to preserve the state of such historical works

Probability Methods for Cost Uncertainty Analysis

2016-01-06

helps engineers and scientists assess and manage uncertainty at all stages of experimentation and validation of simulations fully updated from its previous edition experimentation validation and uncertainty analysis for engineers fourth edition includes expanded coverage and new examples of applying the monte carlo method mcm in performing uncertainty analyses presenting the current internationally accepted methodology from iso ansi and asme standards for propagating uncertainties using both the mcm and the taylor series method tsm it provides a logical approach to experimentation and validation through the application of uncertainty analysis in the planning design construction debugging execution data analysis and reporting phases of experimental and validation programs it also illustrates how to use a spreadsheet approach to apply the mcm and the tsm based on the authors experience in applying uncertainty analysis in complex large scale testing of real engineering systems experimentation validation and uncertainty analysis for engineers fourth edition includes examples throughout contains end of chapter problems and is accompanied by the authors website uncertainty analysis com guides readers through all aspects of experimentation validation and uncertainty analysis emphasizes the use of the monte carlo method in performing uncertainty

analysis includes complete new examples throughout features workable problems at the end of chapters experimentation validation and uncertainty analysis for engineers fourth edition is an ideal text and guide for researchers engineers and graduate and senior undergraduate students in engineering and science disciplines knowledge of the material in this fourth edition is a must for those involved in executing or managing experimental programs or validating models and simulations

A Proposed Approach to Uncertainty Analysis

1983

experimental aerodynamic researchers require estimated precision and bias uncertainties of measured physical quantities typically at 95 percent confidence levels uncertainties of final computed aerodynamic parameters are obtained by propagation of individual measurement uncertainties through the defining functional expressions in this paper rigorous mathematical techniques are extended to determine precision and bias uncertainties of any instrument sensor system through this analysis instrument uncertainties determined through calibration are now expressed as functions of the corresponding measurement for linear and nonlinear univariate and multivariate processes treatment of correlated measurement precision error is developed during laboratory calibration calibration standard uncertainties are assumed to be an order of magnitude less than those of the instrument being calibrated often calibration standards do not satisfy this assumption this paper applies rigorous statistical methods for inclusion of calibration standard uncertainty and covariance due to the order of their application the effects of mathematical modeling error on calibration bias uncertainty are quantified the effects of experimental design on uncertainty are analyzed the importance of replication is emphasized techniques for estimation of both bias and precision uncertainties using replication are developed statistical tests for stationarity of calibration parameters over time are obtained tripp john s and tcheng pinglangley research centerbias precision errors calibrating confidence limits mathematical models statistical analysis statistical tests regression analysis least squares method

Uncertainty Analysis in Engineering and Sciences

2015

this book examines in detail the planning and modelling of local infrastructure like energy systems including the complexities resulting from various uncertainties readers will discover the individual steps involved in infrastructure planning in cities and territories as well as the primary requirements and supporting quality factors further topics covered concern the field of uncertainty and its synergies with infrastructure planning theories methodological backgrounds and concrete case studies will not only help readers to understand the proposed methodologies for modelling and uncertainty analysis but will also show them how these approaches are implemented in practice

Calibration and Uncertainty Analysis for Complex Environmental Models

2015-05-17

failure of hydrosystems such as dams levees storm sewers or pollution control systems pose threats to the public safety and health as well as potentially inflict enormous damages on properties and environments many failures of hydrosystems are mainly attributed by the existence of various uncertainties including inherent natural randomness and the lack of complete understanding of involved geophysical processes it is therefore essential to systematically quantify the degree of uncertainty for the problem in hand so that reliability assessment and risk based design of hydrosystems can be made the conventional approach of frequency analysis of heavy rainfalls or large floods consider only portion of the uncertainties involved in hydrosystem engineering problems over the past two decades or so there has been a steady growth on the development and application of uncertainty analysis techniques in hydrosystems engineering and other disciplines the aim of this book is to bring together these uncertainty analysis techniques in one book and to demonstrate their applications and limitations for a wide variety of hydrosystem engineering problems

Uncertainty in Risk Assessment

2013-12-17

build the skills for determining appropriate error limits for quantities that matter with this essential toolkit understand how to handle a complete project and how uncertainty enters into various steps provides a systematic worksheet based process to determine error limits on measured quantities and all likely sources of uncertainty are explored measured or estimated features instructions on how to carry out error analysis using excel and matlab making previously tedious calculations easy whether you are new to the sciences or an experienced engineer this useful resource provides a practical approach to performing error analysis suitable as a text for a junior or senior level laboratory course in aerospace chemical and mechanical engineering and for professionals

Uncertainty Analysis of the Nist Nitrogen Flow Facility (Classic Reprint)

2018-03-30

mathematical models are used to simulate complex real world phenomena in many areas of science and technology large complex models typically require inputs whose values are not known with certainty uncertainty analysis aims to quantify the overall uncertainty within a model in order to support problem owners in model based decision making in recent years there has been an explosion of interest in uncertainty analysis uncertainty and dependence elicitation dependence modelling model inference efficient sampling screening and sensitivity analysis and probabilistic inversion are among the active research areas this text provides both the mathematical foundations and practical applications in this rapidly expanding area including an up to date comprehensive overview of the foundations and applications of uncertainty analysis all the key topics including uncertainty elicitation dependence modelling sensitivity analysis and probabilistic inversion numerous worked examples and applications workbook problems enabling use for teaching software support for the examples using unicorn a windows based uncertainty modelling package developed by the authors a website featuring a version of the unicorn software tailored specifically for the

book as well as computer programs and data sets to support the examples uncertainty analysis with high dimensional dependence modelling offers a comprehensive exploration of a new emerging field it will prove an invaluable text for researches practitioners and graduate students in areas ranging from statistics and engineering to reliability and environmetrics

Experimentation, Validation, and Uncertainty Analysis for Engineers

2018-03-29

prepared by the subcommittee on uncertainty and reliability analyses in design of hydraulic structures of the technical committee on probabilistic approaches to hydraulics of asce this report contains 13 papers presenting the application of reliability analysis to the design and safety of hydraulic structures several recent major failures of engineering systems have raised public concern on the safety and reliability of engineering struct ures decades ago a quantitative evaluation of the reliability of structures was not possible and engineers used safety factors that were determined mainly through experience and judgement recent advances in probability methods and computers make it feasible to evaluate the contributions of various technologic and natural factors to the safety and reliability of structures Øthe first four papers in this report discuss techniques pertinent to reliability and uncertainty analyses the next nine papers explore how these techniques can be applied to dam safety coastal floods and hydraulic structures the report concludes with a reprint of an article by vrijling on the eastern scheldt storm surge barrier of the delta project in the netherlands and the use of reliability analysis for sewer design

Uncertainty Analysis of Instrument Calibration and Application

2018-09-24

engineers and scientists often need to solve complex problems with incomplete information resources necessitating a proper treatment of uncertainty and a reliance on expert opinions uncertainty modeling and analysis in engineering and the sciences prepares current and future analysts and practitioners to understand the fundamentals of knowledge a

Three Domain Modelling and Uncertainty Analysis

2015-05-28

while current methods used in ecological risk assessments for pesticides are largely deterministic probabilistic methods that aim to quantify variability and uncertainty in exposure and effects are attracting growing interest from industries and governments probabilistic methods offer more realistic and meaningful estimates of risk and hence pot

Hydrosystems Engineering Uncertainty Analysis

2005-04-14

unlike uncertain dynamical systems in physical sciences where models for prediction are somewhat given to us by physical laws uncertain dynamical systems in economics need statistical models in this context modeling and optimization surface as basic ingredients for fruitful applications this volume concentrates on the current methodology of copulas and maximum entropy optimization this volume contains main research presentations at the sixth international conference of the thailand econometrics society held at the faculty of economics chiang mai university thailand during january 10 11 2013 it consists of keynote addresses theoretical and applied contributions these contributions to econometrics are somewhat centered around the theme of copulas and maximum entropy econometrics the method of copulas is applied to a variety of economic problems where multivariate model building and correlation analysis are needed as for the art of choosing copulas in practical problems the principle of maximum entropy surfaces as a potential way to do so the state of the art of maximum entropy econometrics is presented in the first keynote address while the second keynote address focusses on testing stationarity in economic time series data

Uncertainty Analysis for Engineers and Scientists

2021-01-07

master s thesis from the year 2015 in the subject computer science applied grade 2 university of applied sciences coburg language english abstract the project shall contribute to the further development of a prototypical implementation for an assistance solution supporting measurement uncertainty analysis within the existing framework the main tasks in this project will be familiarisation with the topic of measurement uncertainty analysis and the handling of software gum workbench definition of an design outline for the user support during measurement uncertainty analysis including an analysis of required supporting function and the subsequent definition of a possible system structure selection of one aspect in the process and development of a draft for an adequate support solution containing elements to enable partial automation or increase of efficiency for the process step as well as explanatory information for the users prototypical implementation and testing of the defined elements within the outlined framework in the guide to the expression of uncertainty in measurement gum jointly issued by iso and bipm a standard procedure for the determination of measurement uncertainty is defined yet although this document is supported by many international organisations and the consideration of measurement uncertainty is of high importance in many fields of application ranging from industrial quality control to scientific research still often the determination of measurement uncertainty is omitted this is mainly due to difficulties of the metrologists to apply the general rules of the gum to the task at hand to ease this task and support the determination of measurement uncertainty the software gum workbench performs all required mathematical evaluations based on a model of the measurement additionally a concept for an assistance system as well as a graphic modelling editor has been developed to facilitate the definition of a suitable model but the existing concepts are not yet fit for practical testing under industrial conditions

Uncertainty Analysis, Loads, and Safety in Structural Engineering

1982

Uncertainty Analysis with High Dimensional Dependence Modelling

2006-10-02

Reliability and Uncertainty Analyses in Hydraulic Design

1993-01-01

A Possibilistic Multifidelity Approach for the Uncertainty Analysis of Passive Safety Structures

2021

Sensitivity and Uncertainty Analysis

2003

Uncertainty Modeling and Analysis in Engineering and the Sciences

2006-05-25

Application of Uncertainty Analysis to Ecological Risks of Pesticides

2010-04-07

Uncertainty Analysis in Econometrics with Applications

2012-12-14

Assistance for the determination of Measurement Uncertainty Analysis. Development of a prototypical implementation within the existing framework

2020-12-29