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The Stress-strength Model and Its Generalizations **Analysis of Step-Stress Models Exponentiated Distributions** *Modeling Income Distributions and Lorenz Curves* A Concept of Generalized Order Statistics **Innovative Statistical Methods for Public Health Data** *Introductory Business Statistics* **Exponential Distribution** *Information and Exponential Families* **Unitary Representation Theory of Exponential Lie Groups** *Advances in Multivariate Statistical Methods* **Exponential Families of Stochastic Processes** **Finite Difference Computing with Exponential Decay Models** *Fundamentals of Statistical Exponential Families* *A Generalized Bivariate Exponential Distribution* Characterizations of Exponential Distribution by Ordered Random Variables **Advances in Efficiency and Productivity Analysis** **Graphical Models, Exponential Families, and Variational Inference** **Computer Sciences Technical Report** **Proceedings of MEST 2012: Exponential Type Orbitals for Molecular Electronic Structure Theory** **Statistical Modelling by Exponential Families** **Generalized Linear Models** *Generalized Linear Models* Exponential Entropy for Simplified Neutrosophic Sets and Its Application in Decision Making **Bayesian Analysis of Statistical Distribution in Open BUGS** **The Fractional Trigonometry** **Multivariate Exponential Families: A Concise Guide to Statistical Inference** **Asymptotic Methods for Integrals** **Exponential Genus Problems in One-relator Products of Groups** **Advanced Topics in Shannon Sampling and Interpolation Theory** **Matrix-Exponential Distributions in Applied Probability** **An Introduction to General Thermodynamics** **Characterizations of Probability Distributions. Topics in Mathematical Physics, General Relativity, and Cosmology in Honor of Jerzy Plebański** Extremes and Related Properties of Random Sequences and Processes An Elementary Course of Infinitesimal Calculus **Annals of Mathematics** **High-Dimensional Probability** *Revue Semestrielle Des Publications Mathematiques* *Revue Semestrielle Des Publications Mathématiques*

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Matrix-Exponential Distributions in Applied Probability Apr 02 2020 This book contains an in-depth treatment of matrix-exponential (ME) distributions and their sub-class of phase-type (PH) distributions. Loosely speaking, an ME distribution is obtained through replacing the intensity parameter in an exponential distribution by a matrix. The ME distributions can also be identified as the class of non-negative distributions with rational Laplace transforms. If the matrix has the structure of a sub-intensity matrix for a Markov jump process we obtain a PH distribution which allows for nice probabilistic interpretations facilitating the derivation of exact solutions and closed form formulas. The full potential of ME and PH unfolds in their use in stochastic modelling. Several chapters on generic applications, like renewal theory, random walks and regenerative processes, are included together with some specific examples from queueing theory and insurance risk. We emphasize our intention towards applications by including an extensive treatment on statistical methods for PH distributions and related processes that will allow practitioners to calibrate models to real data. Aimed as a textbook for graduate students in applied probability and statistics, the book provides all the necessary background on Poisson processes, Markov chains, jump processes, martingales and re-generative methods. It is our hope that the provided background may encourage researchers and practitioners from other fields, like biology, genetics and medicine, who wish to become acquainted with the matrix-exponential method and its applications.

Analysis of Step-Stress Models Oct 01 2022 Analysis of Step-Stress Models: Existing Results and Some Recent Developments describes, in detail, the step-stress models and related topics that have received significant attention in the last few years. Although two books, Bagdonavicius and Nikulin (2001) and Nelson (1990), on general accelerated life testing models are available, no specific book is available on step-stress models. Due to the importance of this particular topic, Balakrishnan (2009) provided an excellent review for exponential step-stress models. The scope of this book is much more, providing the inferential issues for different probability models, both from the frequentist and Bayesian points-of-view. Explains the different distributions of the Cumulative Exposure Mode Covers many different models used for step-stress analysis Discusses Step-stress life testing under the competing or complementary risk model

A Generalized Bivariate Exponential Distribution Aug 19 2021 In a previous paper ('A Multivariate Exponential Distribution, ' AD-634 335) the authors have derived a multivariate exponential distribution from points of view designed to indicate the applicability of the distribution. Two of these derivations are based on 'shock models' and one is based on the requirement that residual life is independent of age. The practical importance of the univariate exponential distribution is partially due to the fact that it governs waiting times in a Poisson process. In this paper, the distribution of joint waiting times in a bivariate Poisson process is investigated. There are several ways to define 'joint waiting time.' Some of these lead to the bivariate exponential distribution previously obtained by the authors, but others lead to a generalization of it. This generalized bivariate exponential distribution is also derived from shock models. The moment generating function and other properties of the distribution are investigated. (Author).

Revue Semestrielle Des Publications Mathématiques Jun 24 2019

High-Dimensional Probability Aug 26 2019 High-dimensional probability offers insight into the behavior of random vectors, random matrices, random subspaces, and objects used to quantify uncertainty in high dimensions. Drawing on ideas from probability, analysis, and geometry, it lends itself to applications in mathematics, statistics, theoretical computer science, signal processing, optimization, and more. It is the first to integrate theory, key tools, and modern applications of high-dimensional probability. Concentration inequalities form the core, and it covers both classical results such as Hoeffding's and Chernoff's inequalities and modern developments such as the matrix Bernstein's inequality. It then introduces the powerful methods based on stochastic processes, including such tools as Slepian's, Sudakov's, and Dudley's inequalities, as well as generic chaining and bounds based on VC dimension. A broad range of illustrations is embedded throughout, including classical and modern results for covariance estimation, clustering, networks, semidefinite programming, coding, dimension reduction, matrix completion, machine learning, compressed sensing, and sparse regression.

Extremes and Related Properties of Random Sequences and Processes Nov 29 2019 Classical Extreme Value Theory-the asymptotic distributional theory for maxima of independent, identically distributed random variables-may be regarded as roughly half a century old, even though its roots reach further back into mathematical antiquity. During this period of time it has found significant application-exemplified best perhaps by the book *Statistics of Extremes* by E. J. Gumbel-as well as a rather complete theoretical development. More recently, beginning with the work of G. S. Watson, S. M. Berman, R. M. Loynes, and H. Cramer, there has been a developing interest in the extension of the theory to include, first, dependent sequences and then continuous parameter stationary processes. The early activity proceeded in two directions-the extension of general theory to certain dependent sequences (e.g., Watson and Loynes), and the beginning of a detailed theory for stationary sequences (Berman) and continuous parameter processes (Cramer) in the normal case. In recent years both lines of development have been actively pursued.

Generalized Linear Models Dec 11 2020 *Generalized Linear Models: A Unified Approach* provides an introduction to and overview of GLMs, with each chapter carefully laying the groundwork for the next. Authors Jeff Gill and Michelle Torres provide examples using real data from multiple fields in the social sciences such as psychology, education, economics, and political science, including data on voting intentions in the 2016 U.S. Republican presidential primaries. The Second Edition also strengthens material on the exponential family form, including a new discussion on the multinomial distribution; adds more information on how to interpret results and make inferences in the chapter on estimation procedures; and has a new section on extensions to generalized linear models.

The Fractional Trigonometry Sep 07 2020 Addresses the rapidly growing field of fractional calculus and provides simplified solutions for linear commensurate-order fractional differential equations *The Fractional Trigonometry: With Applications to Fractional Differential Equations and Science* is the result of the authors' work in fractional calculus, and more particularly, in functions for the solutions of fractional differential equations, which is fostered in the behavior of generalized exponential functions. The authors discuss how fractional trigonometry plays a role analogous to the classical trigonometry for the fractional calculus by providing solutions to linear fractional differential equations. The book begins with an introductory chapter that offers insight into the fundamentals of fractional calculus, and topical coverage is then organized in two main parts. Part One develops the definitions and theories of fractional exponentials and fractional trigonometry. Part Two provides insight into various areas of potential application within the sciences. The fractional exponential function via the fundamental fractional differential equation, the generalized exponential function, and R-function relationships are discussed in addition to the fractional hyperbolicity, the R1-fractional trigonometry, the R2-fractional trigonometry, and the R3-trigonometric functions. *The Fractional Trigonometry: With Applications to Fractional Differential Equations and Science* also: Presents fractional trigonometry as a tool for scientists and engineers and discusses how to apply fractional-order methods to the current toolbox of mathematical modelers Employs a mathematically clear presentation in an effort to make the topic broadly accessible Includes solutions to linear fractional differential equations and generously features graphical forms of functions to help readers visualize the presented concepts Provides effective and efficient methods to describe complex structures *The Fractional Trigonometry: With Applications to Fractional Differential Equations and Science* is an ideal reference for academic researchers, research engineers, research scientists, mathematicians, physicists, biologists, and chemists who need to apply new fractional calculus methods to a variety of disciplines. The book is also appropriate as a textbook for graduate- and PhD-level courses in fractional calculus. Carl F. Lorenzo is Distinguished Research Associate at the NASA Glenn Research Center in Cleveland, Ohio. His past positions include chief engineer of the Instrumentation and Controls Division and chief of the Advanced Controls Technology and Systems Dynamics branches at NASA. He is internationally recognized for his work in the development and application of the fractional calculus and fractional trigonometry. Tom T. Hartley, PhD, is Emeritus Professor in the Department of Electrical and Computer Engineering at The University of Akron. Dr Hartley is a recognized expert in fractional-order systems, and

together with Carl Lorenzo, has solved fundamental problems in the area including Riemann's complementary-function initialization function problem. He received his PhD in Electrical Engineering from Vanderbilt University.

Annals of Mathematics Sep 27 2019

Exponential Families of Stochastic Processes Nov 21 2021 A comprehensive account of the statistical theory of exponential families of stochastic processes. The book reviews the progress in the field made over the last ten years or so by the authors - two of the leading experts in the field - and several other researchers. The theory is applied to a broad spectrum of examples, covering a large number of frequently applied stochastic process models with discrete as well as continuous time. To make the reading even easier for statisticians with only a basic background in the theory of stochastic process, the first part of the book is based on classical theory of stochastic processes only, while stochastic calculus is used later. Most of the concepts and tools from stochastic calculus needed when working with inference for stochastic processes are introduced and explained without proof in an appendix. This appendix can also be used independently as an introduction to stochastic calculus for statisticians. Numerous exercises are also included.

Computer Sciences Technical Report Apr 14 2021

Proceedings of MEST 2012: Exponential Type Orbitals for Molecular Electronic Structure Theory Mar 14 2021 Advances in Quantum Chemistry presents surveys of current topics in this rapidly developing field that has emerged at the cross section of the historically established areas of mathematics, physics, chemistry, and biology. It features detailed reviews written by leading international researchers. This volume focuses on the theory of heavy ion physics in medicine. Advances in Quantum Chemistry presents surveys of current topics in this rapidly developing field and this volume focuses on the theory of heavy ion physics in medicine

An Elementary Course of Infinitesimal Calculus Oct 28 2019

Multivariate Exponential Families: A Concise Guide to Statistical Inference Aug 07 2020 This book provides a concise introduction to exponential families. Parametric families of probability distributions and their properties are extensively studied in the literature on statistical modeling and inference. Exponential families of distributions comprise density functions of a particular form, which enables general assertions and leads to nice features. With a focus on parameter estimation and hypotheses testing, the text introduces the reader to distributional and statistical properties of multivariate and multiparameter exponential families along with a variety of detailed examples. The material is widely self-contained and written in a mathematical setting. It may serve both as a concise, mathematically rigorous course on exponential families in a systematic structure and as an introduction to Mathematical Statistics restricted to the use of exponential families.

Generalized Linear Models Jan 12 2021 The author explains the theoretical underpinnings of generalized linear models so that researchers can decide how to select the best way to adapt their data for this type of analysis. Examples are provided to illustrate the application of GLM to actual data and the author includes his Web address where additional resources can be found.

Innovative Statistical Methods for Public Health Data May 28 2022 The book brings together experts working in public health and multi-disciplinary areas to present recent issues in statistical methodological development and their applications. This timely book will impact model development and data analyses of public health research across a wide spectrum of analysis. Data and software used in the studies are available for the reader to replicate the models and outcomes. The fifteen chapters range in focus from techniques for dealing with missing data with Bayesian estimation, health surveillance and population definition and implications in applied latent class analysis, to multiple comparison and meta-analysis in public health data. Researchers in biomedical and public health research will find this book to be a useful reference and it can be used in graduate level classes.

A Concept of Generalized Order Statistics Jun 28 2022 Order statistics and record values appear in many statistical applications and are widely used in statistical modeling and inference. Both models describe random variables arranged in order of magnitude. In addition to these well-known models, several other models of ordered random variables, known and new ones, are introduced in this book such as order statistics with non-integral sample size, sequential order statistics, k-th record values, Pfeifer's record model, k - records from non-identical distributions and ordered random variables which arise from n truncation of distributions. These models can be effectively applied, e.g., in reliability theory. Here, an order statistic represents the life-length of some r-out-of-n-system which is an important technical structure consisting of n components. For this application, a new and more adequate model is naturally suggested. Sequential order statistics serve as a model describing certain dependencies or interactions among the system components caused by failures of components. Record values are closely connected with the occurrence times of some corresponding non-homogeneous Poisson process and used in so lled shock models. More flexible record models, and therefore more applicable to practical situations, are considered here. The main purpose of this book is to present a concept of generalized order statistics as a unified approach to a variety of models of ordered random variables. In the distribution theoretical sense, all of the models mentioned above are contained in the proposed model of generalized order statistics.

Bayesian Analysis of Statistical Distribution in Open BUGS Oct 09 2020 Bayesian method in statistics is very widely used in solving variety of complex problem. Bayesian method provides an important computational and methodological advantage over classical technique. The Markov Chain Monte Carlo (MCMC) method provides an alternative

method for parameter estimation of the model. The book extensively uses Markov Chain Monte Carlo (MCMC) simulation method in Open BUGS to estimate the parameters of the model. A procedure is developed to estimate the scale and shape parameter of the model on a complete sample in Open BUGS. A module (Code) is incorporated in an Open BUGS. R-Functions are developed to study the statistical properties of the model. One real data set is analyzed for illustration in the book. Two distributions viz. Generalized Exponential and Inverse Weibull have been used for analyzing the reliability of the distribution. The MCMC methods in Open BUGS were found to be more simple and reliable as compared to tradition method like Maximum Likelihood Method.

Modeling Income Distributions and Lorenz Curves Jul 30 2022 Jean-Jacques Rousseau wrote in the Preface to his famous Discourse on Inequality that “I consider the subject of the following discourse as one of the most interesting questions philosophy can propose, and unhappily for us, one of the most thorny that philosophers can have to solve. For how shall we know the source of inequality between men, if we do not begin by knowing mankind?” (Rousseau, 1754). This citation of Rousseau appears in an article in Spanish where Dagum (2001), in the memory of whom this book is published, also cites Socrates who said that the only useful knowledge is that which makes us better and Seneca who wrote that knowing what a straight line is, is not important if we do not know what rectitude is. These references are indeed a good illustration of Dagum’s vast knowledge, which was clearly not limited to the field of Economics. For Camilo the first part of Rousseau’s citation certainly justified his interest in the field of inequality which was at the centre of his scientific preoccupations. It should however be stressed that for Camilo the second part of the citation represented a “solid argument in favor of giving macroeconomic foundations to microeconomic behavior” (Dagum, 2001). More precisely, “individualism and methodological holism complete each other in contributing to the explanation of individual and social behavior” (Dagum, 2001).

Characterizations of Probability Distributions. Jan 30 2020 Preliminaries and basic results; Characterizations based on truncated distributions; Characterizations by properties of order statistics; Characterization of the poisson process; Characterizations of multivariate exponential distributions.

Unitary Representation Theory of Exponential Lie Groups Jan 24 2022 The aim of the series is to present new and important developments in pure and applied mathematics. Well established in the community over two decades, it offers a large library of mathematics including several important classics. The volumes supply thorough and detailed expositions of the methods and ideas essential to the topics in question. In addition, they convey their relationships to other parts of mathematics. The series is addressed to advanced readers wishing to thoroughly study the topic. Editorial Board Lev Birbrair, Universidade Federal do Ceará, Fortaleza, Brasil Victor P. Maslov, Russian Academy of Sciences, Moscow, Russia Walter D. Neumann, Columbia University, New York, USA Markus J. Pflaum, University of Colorado, Boulder, USA Dierk Schleicher, Jacobs University, Bremen, Germany

Statistical Modelling by Exponential Families Feb 10 2021 A readable, digestible introduction to essential theory and wealth of applications, with a vast set of examples and numerous exercises.

Characterizations of Exponential Distribution by Ordered Random Variables Jul 18 2021 Exponential distribution is one of the most-used distributions in the theory and practice of statistics. It has several important properties like being memoryless and having a constant hazard rate. The field of characterization is developed in different branches of statistics and applied probability. Ordered random variables are common in various applications in practice. In this book, characterizations of exponential distribution using ordered random variables are presented. Most of the known results as well as many new results are given in this book. The aim of the book is to present various characterizations of exponential distribution based on ordered random variables. The book is written on a lower technical level and requires basic knowledge of mathematics and statistics. Chapter 1 gives some basic properties of exponential distribution. Chapters 2, 3, and 4 give the characterization of exponential distribution based on order statistics, record values, and generalized order statistics.

Introductory Business Statistics Apr 26 2022 Introductory Business Statistics is designed to meet the scope and sequence requirements of the one-semester statistics course for business, economics, and related majors. Core statistical concepts and skills have been augmented with practical business examples, scenarios, and exercises. The result is a meaningful understanding of the discipline, which will serve students in their business careers and real-world experiences.

Exponential Distribution Mar 26 2022 The exponential distribution is one of the most significant and widely used distribution in statistical practice. It possesses several important statistical properties, and yet exhibits great mathematical tractability. This volume provides a systematic and comprehensive synthesis of the diverse literature on the theory and applications of the expon

Exponentiated Distributions Aug 31 2022 This book contains entirely new results, not to be found elsewhere. Furthermore, additional results scattered elsewhere in the literature are clearly presented. Several well-known distributions such as Weibull distributions, exponentiated Burr type XII distributions and exponentiated exponential distributions and their properties are demonstrated. Analysis of real as well as well-simulated data are analyzed. A number of inferences based on a finite mixture of distributions are also presented.

Advances in Efficiency and Productivity Analysis Jun 16 2021 The volume examines the state-of-the-art of productivity and efficiency analysis. It brings together a selection of the best papers from the 10th North American Productivity Workshop. By analyzing world-wide perspectives on challenges that local economies and institutions may face when

changes in productivity are observed, readers can quickly assess the impact of productivity measurement, productivity growth, dynamics of productivity change, measures of labor productivity, measures of technical efficiency in different sectors, frontier analysis, measures of performance, industry instability and spillover effects. The contributions in this volume focus on the theory and application of economics, econometrics, statistics, management science and operational research related to problems in the areas of productivity and efficiency measurement. Popular techniques and methodologies including stochastic frontier analysis and data envelopment analysis are represented. Chapters also cover broader issues related to measuring, understanding, incentivizing and improving the productivity and performance of firms, public services, and industries.

Advances in Multivariate Statistical Methods Dec 23 2021 This volume contains a collection of research articles on multivariate statistical methods, encompassing both theoretical advances and emerging applications in a variety of scientific disciplines. It serves as a tribute to Professor S N Roy, an eminent statistician who has made seminal contributions to the area of multivariate statistical methods, on his birth centenary. In the area of emerging applications, the topics include bioinformatics, categorical data and clinical trials, econometrics, longitudinal data analysis, microarray data analysis, sample surveys, statistical process control, etc. Researchers, professionals and advanced graduates will find the book an essential resource for modern developments in theory as well as for innovative and emerging important applications in the area of multivariate statistical methods.

Asymptotic Methods for Integrals Jul 06 2020 This book gives introductory chapters on the classical basic and standard methods for asymptotic analysis, such as Watson's lemma, Laplace's method, the saddle point and steepest descent methods, stationary phase and Darboux's method. The methods, explained in great detail, will obtain asymptotic approximations of the well-known special functions of mathematical physics and probability theory. After these introductory chapters, the methods of uniform asymptotic analysis are described in which several parameters have influence on typical phenomena: turning points and transition points, coinciding saddle and singularities. In all these examples, the special functions are indicated that describe the peculiar behavior of the integrals. The text extensively covers the classical methods with an emphasis on how to obtain expansions, and how to use the results for numerical methods, in particular for approximating special functions. In this way, we work with a computational mind: how can we use certain expansions in numerical analysis and in computer programs, how can we compute coefficients, and so on. Contents: Basic Methods for Integrals Basic Methods: Examples for Special Functions Other Methods for Integrals Uniform Methods for Integrals Uniform Methods for Laplace-Type Integrals Uniform Examples for Special Functions A Class of Cumulative Distribution Functions Readership: Researchers in applied mathematics, engineering, physics, mathematical statistics, probability theory and biology. The introductory parts and examples will be useful for post-graduate students in mathematics. Key Features: The book gives a complete overview of the classical asymptotic methods for integrals The many examples give insight in the behavior of the well-known special functions The detailed explanations on how to obtain the coefficients in the expansions make the results useful for numerical applications, in particular, for computing special functions The many results on asymptotic representations of special functions supplement and extend those in the NIST Handbook of Mathematical Functions Keywords: Asymptotic Analysis; Approximation of Integrals; Asymptotic Approximations; Asymptotic Expansions; Steepest Descent Methods; Saddle Point Methods; Stationary Phase Method; Special Functions; Numerical Approximation of Special Functions; Cumulative Distribution Functions Reviews: "The book is a useful contribution to the literature. It contains many asymptotic formulas that can be used by practitioners." Zentralblatt MATH

The Stress-strength Model and Its Generalizations Nov 02 2022 This important book presents developments in a remarkable field of inquiry in statistical/probability theory the stress-strength model. Many papers in the field include the enigmatic words "P"("X"Y") or something similar in the title.

Fundamentals of Statistical Exponential Families Sep 19 2021

Advanced Topics in Shannon Sampling and Interpolation Theory May 04 2020 Advanced Topics in Shannon Sampling and Interpolation Theory is the second volume of a textbook on signal analysis solely devoted to the topic of sampling and restoration of continuous time signals and images. Sampling and reconstruction are fundamental problems in any field that deals with real-time signals or images, including communication engineering, image processing, seismology, speech recognition, and digital signal processing. This second volume includes contributions from leading researchers in the field on such topics as Gabor's signal expansion, sampling in optical image formation, linear prediction theory, polar and spiral sampling theory, interpolation from nonuniform samples, an extension of Papoulis's generalized sampling expansion to higher dimensions, and applications of sampling theory to optics and to time-frequency representations. The exhaustive bibliography on Shannon sampling theory will make this an invaluable research tool as well as an excellent text for students planning further research in the field.

Topics in Mathematical Physics, General Relativity, and Cosmology in Honor of Jerzy Plebanski Dec 31 2019 One of modern science's most famous and controversial figures, Jerzy Plebanski was an outstanding theoretical physicist and an author of many intriguing discoveries in general relativity and quantum theory. Known for his exceptional analytic talents, explosive character, inexhaustible energy, and bohemian nights with brandy, coffee, and enormous amounts of cigarettes, he was dedicated to both science and art, producing innumerable handwritten articles - resembling monk's calligraphy - as well as a collection of oil paintings. As a collaborator but also an antagonist of Leopold Infeld's (a coauthor of Albert Einstein's), Plebanski is recognized for designing the "heavenly" and "hyper-heavenly" equations, for introducing new variables to describe the gravitational field, for the exact solutions in Einstein's gravity and in quantum theory, for his classification of the tensor of matter, for some outstanding results in nonlinear electrodynamics, and for analyzing general relativity with continuous sources long before Chandrasekhar et al. A tribute to Plebanski's contributions and the variety of his interests, this is a unique and wide-ranging collection of invited papers, covering gravity quantization, strings, branes, supersymmetry, ideas on the deformation quantization, and lesser known results on the

continuous Baker-Campbell-Hausdorff problem.

Graphical Models, Exponential Families, and Variational Inference May 16 2021 The core of this paper is a general set of variational principles for the problems of computing marginal probabilities and modes, applicable to multivariate statistical models in the exponential family.

An Introduction to General Thermodynamics Mar 02 2020

Exponential Entropy for Simplified Neutrosophic Sets and Its Application in Decision Making Nov 09 2020 Entropy is one of many important mathematical tools for measuring uncertain/fuzzy information. As a subclass of neutrosophic sets (NSs), simplified NSs (including single-valued and interval-valued NSs) can describe incomplete, indeterminate, and inconsistent information. Based on the concept of fuzzy exponential entropy for fuzzy sets, this work proposes exponential entropy measures of simplified NSs (named simplified neutrosophic exponential entropy (SNEE) measures), including single-valued and interval-valued neutrosophic exponential entropy measures, and investigates their properties.

Revue Semestrielle Des Publications Mathematiques Jul 26 2019

Information and Exponential Families Feb 22 2022 First published by Wiley in 1978, this book is being re-issued with a new Preface by the author. The roots of the book lie in the writings of RA Fisher both as concerns results and the general stance to statistical science, and this stance was the determining factor in the author's selection of topics. His treatise brings together results on aspects of statistical information, notably concerning likelihood functions, plausibility functions, ancillarity, and sufficiency, and on exponential families of probability distributions.

Finite Difference Computing with Exponential Decay Models Oct 21 2021 This text provides a very simple, initial introduction to the complete scientific computing pipeline: models, discretization, algorithms, programming, verification, and visualization. The pedagogical strategy is to use one case study – an ordinary differential equation describing exponential decay processes – to illustrate fundamental concepts in mathematics and computer science. The book is easy to read and only requires a command of one-variable calculus and some very basic knowledge about computer programming. Contrary to similar texts on numerical methods and programming, this text has a much stronger focus on implementation and teaches testing and software engineering in particular.

Exponential Genus Problems in One-relator Products of Groups Jun 04 2020 Exponential equations in free groups were studied initially by Lyndon and Schutzenberger and then by Comerford and Edmunds. Comerford and Edmunds showed that the problem of determining whether or not the class of quadratic exponential equations have solution is decidable, in finitely generated free groups. In this paper the author shows that for finite systems of quadratic exponential equations decidability passes, under certain hypotheses, from the factor groups to free products and one-relator products.