



BAYESIAN STATISTICS AND ITS APPLICATIONS

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KEY SELLING POINTS

- ◆ Latest information on key discipline
- ◆ Both theory and practical applications
- ◆ International contributors

BOOK INFORMATION

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In the last two decades, Bayesian Statistics has acquired immense importance and has penetrated almost every area including those where the application of statistics appeared to be a remote possibility. This volume provides both theoretical and practical insights into the subject with detailed up-to-date material on various aspects. It serves two important objectives – to offer a thorough background material for theoreticians and gives a variety of applications for applied statisticians and practitioners.

Consisting of 33 chapters it covers topics on biostatistics, econometrics, reliability, image analysis, Bayesian computation, neural networks, prior elicitation, objective Bayesian methodologies, role of randomisation in Bayesian analysis, spatial data analysis, nonparametrics and a lot more.

The book will serve as an excellent reference work for updating knowledge and for developing new methodologies in a wide variety of areas. It will become an invaluable tool for statisticians and the practitioners of Bayesian paradigm.

Contents:

Two-fold Spatial Zero-inflated Models for Analysing Isopod Settlement Patterns * Prior Model for Reconstruction of Contingency Table * Bayesian Estimation for the Key Parameters of a Fish Population * Why Bayesianism? A Primer on a Probabilistic Philosophy of Science * Coregionalized Models for Spatially Replicated Experiments in Weed Proliferation Studies * Bayes Factors for One Sided Hypothesis Testing in Linear Calibration * Bayesian Hierarchical Spatio-Temporal Analysis of fMRI Data: A Case Study * Intrinsic Point Estimation of the Normal Variance * Analysing Financial Data Using Polya Trees * Shape Classification Procedures with Application to Schizophrenia Diagnosis * Checking for Pro-Data Conflict with Hierarchically Specified Priors * Bayesian Cross-Sectional Analysis of the Conditional Distribution of Earnings of Men in the USA (1967-1996) * Role of Randomization in Bayesian Analysis: An expository Overview * Bayesian Neural Nets for Survival Analysis * Semiparametric Accelerated Failure Time Models for Censored Data * Sequential Monte Carlo in Bayesian Inference for Dynamic Models: An Overview * Estimation of Threshold Time Series Models Using Efficient Jump MCMC * A Semiparametric Accelerated Failure Time Model for Survival Data with Time Dependent Covariates * Biological Monitoring: A Bayesian Model for Multivariate Compositional Data * Semiparametric Multivariate Survival Models with Random Effects * Modelling Rainfall Data Using a Bayesian Kriged-Kalman Model * A Line Finding Assignment Problem and Rock Fracture Modelling * On Bayesian Models Incorporating Covariates in Reliability Analysis of Repairable Systems * Semi-Parametric Bayesian Models for Population Pharmacokinetics and Pharmacodynamics * Bayesian Predictive Inference Under Informative Sampling via Surrogate Samples * Research in Elicitation * On a Characterization of Dirichlet Distribution * Simpler Calculation of Posterior Distributions of the Parameters in Structural Equation Model * Nonparametric Empirical Bayes Two-Tail Tests for Scale Exponential Family When Random Variables in the Sequence are Negatively Associated * Bayesian Methods in Educational Measurement * A Bayes Analysis of the Birnbaum-Saunders Distribution Using the Gibbs Sampler Approach * Bayesian Approaches to Content-based Image Retrieval * Theoretical and Applied Bayesian Information Processing