

1. Record Nr.	UNINA9910456150303321
Titolo	Perspectives in mathematical sciences . I [[electronic resource] /] / editors, N.S. Narasimha Sastry ... [et al.] ; series editor: Sankar K. Pal
Pubbl/distr/stampa	Singapore ; ; London, : World Scientific, c2009
ISBN	1-282-75809-8 9786612758096 981-4273-63-5
Descrizione fisica	1 online resource (283 p.)
Collana	Statistical science and interdisciplinary research ; ; v. 7
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Disciplina	510 519.2
Soggetti	Probabilities Statistics Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Platinum jubilee series".
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Contents; Foreword; Preface; 1. Entropy and Martingale K. B. Athreya and M. G. Nadkarni; 1.1. Introduction; 1.2. Relative Entropy and Gibbs-Boltzmann Measures; 1.2.1. Entropy Maximization Results; 1.2.2. Weak Convergence of Gibbs-Boltzmann Distribution; 1.2.3. Relative Entropy and Conditioning; 1.3. Measure Free Martingales, Weak Martingales, Martingales; 1.3.1. Finite Range Case; 1.3.2. The General Case; 1.4. Equivalent Martingale Measures; References; 2. Marginal Quantiles: Asymptotics for Functions of Order Statistics G. J. Babu; 2.1. Introduction; 2.1.1. Streaming Data 2.2. Marginal Quantiles 2.2.1. Joint Distribution of Marginal Quantiles; 2.2.2. Weak Convergence of Quantile Process; 2.3. Regression under Lost Association; 2.4. Mean of Functions of Order Statistics; 2.5. Examples; Acknowledgment; References; 3. Statistics on Manifolds with Applications to Shape Spaces R. Bhattacharya and A. Bhattacharya; 3.1. Introduction; 3.2. Geometry of Shape Manifolds; 3.2.1. The Real Projective Space $RP^d$ ; 3.2.2. Kendall's (Direct Similarity) Shape Spaces $k$ ; 3.2.3. Reflection (Similarity) Shape Spaces $RSk^m$ ; 3.2.4. Affine Shape Spaces $ASK^m$

3.2.5. Projective Shape Spaces; 3.3. Frechet Means on Metric Spaces; 3.4. Extrinsic Means on Manifolds; 3.4.1. Asymptotic Distribution of the Extrinsic Sample Mean; 3.5. Intrinsic Means on Manifolds; 3.6. Applications; 3.6.1. Sd; 3.6.1.1. Extrinsic Mean on Sd; 3.6.1.2. Intrinsic Mean on Sd; 3.6.2. RPd; 3.6.2.1. Extrinsic Mean on RPd; 3.6.2.2. Intrinsic Mean on RPd; 3.6.3.  $k$  m; 3.6.4.  $k^2$ ; 3.6.4.1. Extrinsic Mean on  $k^2$ ; 3.6.4.2. Intrinsic Mean on  $k^2$ ; 3.6.5.  $Rk$  m; 3.6.6.  $Ak$  m; 3.6.7.  $P0k$  m; 3.7. Examples; 3.7.1. Example 1: Gorilla Skulls; 3.7.2. Example 2: Schizophrenic Children; 3.7.3. Example 3: Glaucoma Detection Acknowledgment; References; 4. Reinforcement Learning - A Bridge Between Numerical Methods and Monte Carlo V. S. Borkar; 4.1. Introduction; 4.2. Stochastic Approximation; 4.3. Estimating Stationary Averages; 4.4. Function Approximation; 4.5. Estimating Stationary Distribution; 4.6. Acceleration Techniques; 4.7. Future Directions; References; 5. Factors, Roots and Embeddings of Measures on Lie Groups S. G. Dani; 5.1. Introduction; 5.2. Some Basic Properties of Factors and Roots; 5.3. Factor Sets; 5.4. Compactness; 5.5. Roots; 5.6. One-Parameter Semigroups; References 6. Higher Criticism in the Context of Unknown Distribution, Non-independence and Classification A. Delaigle and P. Hall; 6.1. Introduction; 6.2. Methodology; 6.2.1. Higher-criticism signal detection; 6.2.2. Generalising and adapting to an unknown null distribution; 6.2.3. Classifiers based on higher criticism; 6.3. Theoretical Properties; 6.3.1. Effectiveness of approximation to hcW by hcW; 6.3.2. Removing the assumption of independence; 6.3.3. Delineating good performance; 6.4. Further Results; 6.4.1. Alternative constructions of hcW and hcW; 6.4.2. Advantages of incorporating the threshold

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Sommario/riassunto

This book presents a collection of invited articles by distinguished probabilists and statisticians on the occasion of the Platinum Jubilee Celebrations of the Indian Statistical Institute - a notable institute with significant achievement in research areas of statistics, probability and mathematics - in 2007. With a wide coverage of topics in probability and statistics, the articles provide a current perspective of different areas of research, emphasizing the major challenging issues. The book also proves its reference and utility value for practitioners as the articles in Statistics contain

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