Contents

List of Contributors Preface Contents of Volume 2	ix X Xii
Parameter Estimation in Stochastic Differential Systems: Theory and Application	
A. V. BALAKRISHNAN	
 Introduction White Noise: Basic Notions Radon-Nikodym Derivatives of Weak Distributions Dynamic Systems Application References 	22020
Comparative Aspects of the Study of Ordinary Time Series and of Point Processes	
DAVID R. BRILLINGER	
1. Introduction	34 39
2. Foundations 3. Inference	112
References	128
Some Recent Developments on Real Multivariate Distributions	
P. R. KRISHNAIAH	
1. Introduction	135
 Preliminaries and Evaluation of Some Integrals Joint Distributions of the Eigenvalues of Certain Random Matrices 	137 140
4. Distributions of the Individual Roots of a Class of Random Matrices	143
5. Distributions of the Ratios of the Roots	146
Distributions of Elementary Symmetric Functions Distributions of the Likelihood Ratio Statistics	14 0 149
. Distributions of the Likelihood Ratio Statistics	

8. Applications in Inference on Covariance Structures and Simultaneous Test Procedures	153
9. Applications in Simultaneous Tests for the Equality of the Eigenvalues	156
References	162
Covariance Analysis of Nonstationary Time Series	
M. M. RAO	
1. Introduction and Outline	172
2. A General Class of Nonstationary Time Series	175
3. Nonstationary Series Generated by Difference Equations4. Series Generated by Differential Equations: Flows	182 190
5. Asymptotic Distributions of Estimators	190
6. Equivalence of Gaussian Time Series	206
7. Likelihood Ratios and Tests	219
References	223
N	
Nonparametric Repeated Significance Tests	
PRANAB KUMAR SEN	
1. Introduction	227
2. Type A Repeated Significance Tests	229
3. Type B Repeated Significance Tests 4. Some Specific Repeated Significance Tests	231 232
4. Some Specific Repeated Significance Tests5. Asymptotic Distribution Theory under Null Hypotheses	232
6. Asymptotic Distribution Theory under Local Alternatives	245
7. Efficiency of Repeated Significance Tests	250
8. Some General Remarks	254
References	262
A Review of Some Recent Work on Discrete Optimal Factorial Designs for Statisticians and Experimenters	
J. N. SRIVASTAVA	
	2/7
Introduction Preliminaries for Users of Designs	267 272
3. 2 ^m Factorial Designs	281
4. The Counting Operator and the Information Matrix	284
5. Orthogonal Designs and Orthogonal Arrays	287
6. Balanced Designs and Balanced Arrays	290
7. Existence Conditions for Balanced Arrays	293
8. The Characteristic Roots of the Information Matrix for Balanced Designs	300
9. Optimal Balanced 2^m Factorial Designs of Resolution V, $m = 4, 5, 6$	305
10. Optimal Balanced Designs of Resolution V of the 2^7 Series, $N \le 42$	306
11. Optimal Balanced 2 ⁷ Factorial Designs with $43 \le N \le 68$	311
12. The Case $m = 8$	313 315
13. Tables of Optimal Designs and How to Use Them	313

Contents	vii
14. Comparison of Optimality Criteria	323
15. Search Designs	324
References	326
Author Index	331
Subject Index	330