1. Record Nr. UNINA9911006600003321

Autore	Pham Hoang
Titolo	Reliability modeling, analysis and optimization / / Hoang Pham
Pubbl/distr/stampa	Hackensack, NJ, : World Scientific, c2006
ISBN	9786611908973 9781281908971 1281908975 9789812707147 981270714X
Descrizione fisica	1 online resource (506 p.)
Collana	Series on quality, reliability and engineering statistics ; ; vol. 9
Disciplina	620/.00452
Soggetti	Computer software - Reliability Reliability (Engineering) Reliability (Engineering) - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Contents; Preface; List of Contributors; I. RELIABILITY MODELING; 1. Numerical Computation of the Marginal Distributions of a Semi-Markov Process C. Cocozza-Thivent and R. Eymard; 1. Introduction; 2. Equations for the Marginal Distributions; 2.1. The general case; 2.2. Case of an initial distribution given by a density; 2.3. Case of a Dirac initial distribution; 2.4. Resolution of particular cases using convolution tools; 3. An Approximation Using a Finite Volume Method; 4. Numerical Examples; 4.1. Case of an alternating renewal process; 4.2. Examples with more than two states; 5. Conclusion References2. Optimal Checkpointing Interval for Task Duplication with Spare Processing S. Nakagawa, Y. Okuda and S. Yamada; 1. Introduction; 2. Double Modular Redundant System; 3. Roll-Forward and Rollback Recoveries; 4. Optimal Checkpointing Interval; 5. Numerical Examples; 6. Conclusions; References; 3. Monitoring Inter-ArrivalTimes with Statistical Control Charts P. R. Sharma, M. Xie and T. N. Goh; 1. Introduction; 2. Overview: Some Useful Control Charts; 2.1. CQC-charts; 2.2. Exponential CUSUM charts; 2.3. CQC -charts; 3. Comparison Based on ARL and ATS Performance

5. Discrete-Time Economic Manufacturing Quantity Model with Stochastic Machine Breakdown and Repair B. C. Giri and T. Dohi1. Introduction; 2. Brief Literature Review; 3. The General Model; 3.1. Notation; 3.2. Basic assumption; 3.3. Model formulation; 4. The Case of Geometric Failure and Geometric Repair; 5. The Model under General Failure and Constant Repair; 6. The Case of Geometric Failure and Constant Repair; 7. Numerical Illustration; 8. Concluding Remarks; Acknowledgments; References; 6. Applying Accelerated Life Models to HALT Testing F. Guerin, P. Lantieri and B. Dumon; 1. Introduction 2. Maturity Design Testing: HALT2.1. Thermal step stress test; 2.2. Rapid thermal transitions stress test; 3. Accelerated Life Testing; 3.1. Test plan definition; 3.2. Common lifetime distributions; 3.2.1. Exponential distribution; 3.2.2. Weibull distribution; 3.3. Accelerated life test models; 3.3.1. Arrhenius model; 3.3.2. Eyring model; 3.3.3. Inverse power model; 4. Applying Accelerated Life Models to HALT Testing; 4.1. Thermal step stress test; 4.2. Combined step stress test (temperature and voltage); 4.3. Rapid thermal transitions stress test; 4.4. Voltage step stress test; 5. Conclusion
References

Sommario/riassunto

"As our modern information-age society grows in complexity both in terms of embedded systems and applications, the problems and challenges in reliability become ever more complex. Bringing together many of the leading experts in the field, this volume presents a broad picture of current research on system modeling and optimization in reliability and its applications. The book comprises twenty-three chapters organized into four parts: Reliability Modeling, Software Quality Engineering, Software Reliability, and Maintenance and Inspection Policies. These sections cover a wide range of important topics, including system reliability modeling, optimization, software reliability and quality, maintenance theory and inspection, reliability failure analysis, sampling plans and schemes, software development processes and improvement, stochastic process modeling, statistical distributions and analysis, fault-tolerant performance, software measurements and cost effectiveness, queueing theory and applications, system availability, reliability of repairable systems, testing sampling inspection, software capability maturity model, accelerated life modeling, statistical control, and HALT testing."