Stat Papers (2011) 52:241
DOI 10.1007/s00362-009-0217-9

BOOK REVIEW

N. D. Singpurwalla (2006): Reliability and risk: a Bayesian perspective

Wiley, 396 pp., US $130.00, ISBN 978-0470855027

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Published online: 8 March 2009

The book is written by an expert in reliability analysis and it is a very valuable source of information for mathematical models for reliability problems. I personally do not agree with the citation on the first page of the book that there are no facts only interpretations. In my experience there are a lot of facts around. The volume is a kind of an encyclopedia of Bayesian models in reliability, going from theoretical concepts to practical considerations. Most Bayesian reliability concepts ever published are covered. Also some relationships to medical risk analysis are explained, and moreover applications to economical risks. The book contains the following chapters: Introduction and Overview; The Quantification of Uncertainty; Exchangeability and Indifference; Stochastic Models of Failure; Parametric Failure Data Analysis; Composite Reliability: Signatures; Survival in Dynamic Environments; Point Processes for Event Histories; Nonparametric Bayes Methods in Reliability; Survivability of Co-operative, Competing and Vague Systems; Reliability and Survival in Econometrics and Finance. There are three appendices: Appendix A on Markov Chain Monte Carlo Simulation, Appendix B on Fourier Series Models and the Power Spectrum, and Appendix C on Network Survivability and Borel's Paradox. An extensive bibliography concludes the book. In summary the book is interesting, although recent work on fuzzy lifetime data and related mathematical models should be included in a future edition.

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