
Zbl 1165.62074

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Bayesian reliability. (English)

Springer Series in Statistics. New York, NY: Springer. xvi, 436 p. EUR 69.95/net; SFR 122.00; £ 54.00; $ 89.95 (2008). ISBN 978-0-387-77948-5/hbk

This is both a reference and a very complete textbook on Bayesian reliability. Unlike existing monographs, an equal amount of space is devoted to basics in reliability – divided into components, systems and repairable systems reliability – and Bayesian statistics, including modern computational MCMC based methods. Appropriate and up-to-date software (WinBUGS and YADAS) is used but not presented in detail. This has been a good choice by the authors, since these softwares come generally well documented. Then more specialized topics, such as regression models, degradation data and assurance testing, are introduced with appropriate but simple terminology. The sequence of the topics is very logical and well organized.

Starting from basics allows the use of the book by engineers and readers without previous knowledge of statistics, although it would be safer to assume that students have taken a course in basic statistics before using the text. Nonparametric methods, more common in ife sciences applications, are absent, but that is somewhat implied by the title of the book and existing different traditions. Accordingly, most examples are from engineering.

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Classification :

∗62N05 Reliability, etc. (statistics)
62F15 Bayesian inference
62-01 Textbooks (statistics)
65C40 Computational Markov chains