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**Marin, Jean-Michel; Robert, Christian P.**

**Bayesian core. A practical approach to computational statistics.** (English)  
Springer Texts in Statistics. New York, NY: Springer. xiii, 255 p. EUR 59.95/net;  
SFR 98.50; £ 46.00; \$ 74.95 (2007). ISBN 978-0-387-38979-0/hbk

The book is a good, compact and self-contained introduction to the applications of Bayesian statistics and to the use of R to implement the procedures. After a brief introduction to R, Bayesian ideas are introduced in a straightforward way in Chapter 2. The advantage is that the presentation is very dense and quick (no beating around the bush, no preaching on the virtues of Bayesianism), although a bit hard to follow for complete new-comers. On the other hand, a reader with a previous formal course in statistics will enjoy reading this book.

Applications are presented in the following progression: linear models, generalized linear models, capture-recapture experiments, mixture models, dynamic models, image analysis. The topics are therefore a mixture of what every applied researcher should know and some more original choices.

Particular attention is devoted to the use of flat objective priors and a central theme of the book is the use of simulation techniques to explore the posterior distributions of interest. All modern samplers, from the universal Metropolis-Hasting algorithm to the more sophisticated and specific reversible jump MCMC, are explained and illustrated in connection with applications. A good feature of the book is that MCMC techniques are presented not all together, but as the progression into more complex applications requires more complex techniques. As a matter of fact, the authors are not shy of presenting such complex models as hidden Markov models and Markov random fields in a simple and direct way. This adds an edge to a compact and useful text.

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*Keywords* : MCMC simulation; GLM; capture-recapture; mixture models; dynamic models; image analysis

*Classification* :

- \*62F15 Bayesian inference
- 62-01 Textbooks (statistics)
- 65C60 Computational problems in statistics
- 62M99 Inference from stochastic processes
- 62J12 Generalized linear models
- 62-04 Machine computation, programs (statistics)