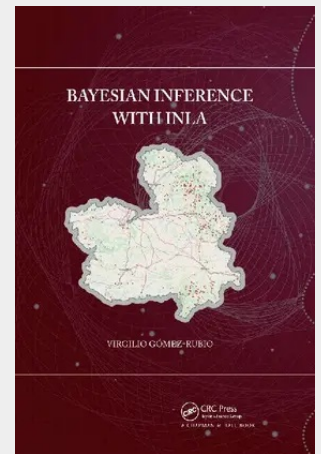


Bayesian inference with INLA

The integrated nested Laplace approximation (INLA) is a recent computational method that can fit Bayesian models in a fraction of the time required by typical Markov chain Monte Carlo (MCMC) methods. INLA focuses on marginal inference on the model parameters of latent Gaussian Markov random fields models and exploits conditional independence properties in the model for computational speed. Bayesian Inference with INLA provides a description of INLA and its associated R package for model fitting. This book describes the underlying methodology as well as how to fit a wide range of models with R. Topics covered include generalized linear mixed-effects models, multilevel models, spatial and spatio-temporal models, smoothing methods, survival analysis, imputation of missing values, and mixture models. Advanced features of the INLA package and how to extend the number of priors and latent models available in the package are discussed. All examples in the book are fully reproducible and datasets and R code are available from the book website. This book will be helpful to researchers from different areas with some background in Bayesian inference that want to apply the INLA method in their work. The examples cover topics on biostatistics, econometrics, education, environmental science, epidemiology, public health, and the social sciences.

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98,60 €

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Lieferfrist: bis zu 10 Tage

Artikelnummer: 9781032174532

Medium: Buch

ISBN: 978-1-032-17453-2

Verlag: Chapman and Hall/CRC

Erscheinungstermin: 30.09.2021

Sprache(n): Englisch

Auflage: 1. Auflage 2021

Produktform: Kartoniert

Gewicht: 644 g

Seiten: 332

Format (B x H): 189 x 246 mm

