



## Dynamic linear models with R

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Springer-Verlag,

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Monografía

State space models have gained tremendous popularity in recent years in as disparate fields as engineering, economics, genetics and ecology. After a detailed introduction to general state space models, this book focuses on dynamic linear models, emphasizing their Bayesian analysis. Whenever possible it is shown how to compute estimates and forecasts in closed form; for more complex models, simulation techniques are used. A final chapter covers modern sequential Monte Carlo algorithms. The book illustrates all the fundamental steps needed to use dynamic linear models in practice, using R. Many detailed examples based on real data sets are provided to show how to set up a specific model, estimate its parameters, and use it for forecasting. All the code used in the book is available online. No prior knowledge of Bayesian statistics or time series analysis is required, although familiarity with basic statistics and R is assumed. Giovanni Petris is Associate Professor at the University of Arkansas. He has published many articles on time series analysis, Bayesian methods, and Monte Carlo techniques, and has served on National Science Foundation review panels. He regularly teaches courses on time series analysis at various universities in the US and in Italy. An active participant on the R mailing lists, he has developed and maintains a couple of contributed packages. Sonia Petrone is Associate Professor of Statistics at Bocconi University, Milano. She has published research papers in top journals in the areas of Bayesian inference, Bayesian nonparametrics, and latent variables models. She is interested in Bayesian nonparametric methods for dynamic systems and state space models and is an active member of the International Society of Bayesian Analysis. Patrizia Campagnoli received her PhD in Mathematical Statistics from the University of Pavia in 2002. She was Assistant Professor at the University of Milano-Bicocca and currently works for a financial software company

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**Título:** Dynamic linear models with R Giovanni Petris, Sonia Petrone, Patrizia Campagnoli

**Editorial:** Dordrecht New York Springer-Verlag ©2009

**Descripción física:** 1 online resource

**Mención de serie:** Use R!

**Bibliografía:** Includes bibliographical references

**Contenido:** Introduction: basic notions about Bayesian inference -- Dynamic linear models -- Model specification -- Models with unknown parameters -- Sequential Monte Carlo methods

**Copyright/Depósito Legal:** 437009442 492091641 647818477 666990143 741649352 816325682 823122255 1005745380 1044280700 1097342842 1116713125

**ISBN:** 9780387772387 0387772383 9780387772370 0387772375 1282292153 ebk.) 9781282292154 ebk.)

**Materia:** R (Computer program language) Linear models (Statistics) MATHEMATICS- Probability & Statistics- General. Linear models (Statistics) R (Computer program language) Bayes-Verfahren. Lineares dynamisches System. R (Programm)

**Autores:** Petrone, Sonia Campagnoli, Patrizia

**Enlace a formato físico adicional:** Print version Petris, Giovanni. Dynamic linear models With R. Dordrecht ; New York : Springer, ©2009 9780387772370 (OCoLC)310400804

**Punto acceso adicional serie-Título:** Use R!

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