

- | | |
|-------------------------|---|
| 1. Record Nr. | UNINA9910712798503321 |
| Titolo | Simulations of nonparametric analyses of predictor sort (matched specimens) data |
| Pubbl/distr/stampa | U.S. Department of Agriculture, Forest Service, Forest Products Laboratory
Madison, WI |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
-
- | | |
|-------------------------|--|
| 2. Record Nr. | UNINA9910957758803321 |
| Autore | Moraga Paula |
| Titolo | Geospatial health data : modeling and visualization with R-INLA and Shiny / / Paula Moraga |
| Pubbl/distr/stampa | Boca Raton : , : CRC Press, , 2020 |
| ISBN | 1-000-73215-0
1-000-73203-7
0-429-34182-2 |
| Edizione | [1st ed.] |
| Descrizione fisica | 1 online resource (295 pages) |
| Collana | Chapman & Hall/CRC biostatistics series |
| Disciplina | 614.42 |
| Soggetti | Medical mapping |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Cover -- Half Title -- Title Page -- Copyright Page -- Dedication -- Table of Contents -- Preface -- About the author -- I: Geospatial health data and INLA -- 1: Geospatial health -- 1.1 Geospatial health data -- 1.2 Disease mapping -- 1.3 Communication of results -- 2: Spatial data and R packages for mapping -- 2.1 Types of spatial data -- 2.1.1 Areal data -- 2.1.2 Geostatistical data -- 2.1.3 Point patterns -- 2.2 Coordinate reference systems -- 2.2.1 Geographic coordinate systems -- 2.2.2 Projected coordinate systems -- 2.2.3 Setting |

Coordinate Reference Systems in R -- 2.3 Shapefiles -- 2.4 Making maps with -- 2.4.1 ggplot2 -- 2.4.2 leaflet -- 2.4.3 mapview -- 2.4.4 tmap -- 3: Bayesian inference and INLA -- 3.1 Bayesian inference -- 3.2 Integrated nested Laplace approximation -- 4: The R-INLA package -- 4.1 Linear predictor -- 4.2 The inla() function -- 4.3 Priors specification -- 4.4 Example -- 4.4.1 Data -- 4.4.2 Model -- 4.4.3 Results -- 4.5 Control variables to compute approximations -- II: Modeling and visualization -- 5: Areal data -- 5.1 Spatial neighborhood matrices -- 5.2 Standardized incidence ratio -- 5.3 Spatial small area disease risk estimation -- 5.3.1 Spatial modeling of lung cancer in Pennsylvania -- 5.4 Spatio-temporal small area disease risk estimation -- 5.5 Issues with areal data -- 6: Spatial modeling of areal data. Lip cancer in Scotland -- 6.1 Data and map -- 6.2 Data preparation -- 6.2.1 Adding data to map -- 6.3 Mapping SIRs -- 6.4 Modeling -- 6.4.1 Model -- 6.4.2 Neighborhood matrix -- 6.4.3 Inference using INLA -- 6.4.4 Results -- 6.5 Mapping relative risks -- 6.6 Exceedance probabilities -- 7: Spatio-temporal modeling of areal data. Lung cancer in Ohio -- 7.1 Data and map -- 7.2 Data preparation -- 7.2.1 Observed cases -- 7.2.2 Expected cases -- 7.2.3 SIRs -- 7.2.4 Adding data to map -- 7.3 Mapping SIRs. -- 7.4 Time plots of SIRs -- 7.5 Modeling -- 7.5.1 Model -- 7.5.2 Neighborhood matrix -- 7.5.3 Inference using INLA -- 7.6 Mapping relative risks -- 8: Geostatistical data -- 8.1 Gaussian random fields -- 8.2 Stochastic partial differential equation approach -- 8.3 Spatial modeling of rainfall in Paraná, Brazil -- 8.3.1 Model -- 8.3.2 Mesh construction -- 8.3.3 Building the SPDE model on the mesh -- 8.3.4 Index set -- 8.3.5 Projection matrix -- 8.3.6 Prediction data -- 8.3.7 Stack with data for estimation and prediction -- 8.3.8 Model formula -- 8.3.9 inla() call -- 8.3.10 Results -- 8.3.11 Projecting the spatial field -- 8.4 Disease mapping with geostatistical data -- 9: Spatial modeling of geostatistical data. Malaria in The Gambia -- 9.1 Data -- 9.2 Data preparation -- 9.2.1 Prevalence -- 9.2.2 Transforming coordinates -- 9.2.3 Mapping prevalence -- 9.2.4 Environmental covariates -- 9.3 Modeling -- 9.3.1 Model -- 9.3.2 Mesh construction -- 9.3.3 Building the SPDE model on the mesh -- 9.3.4 Index set -- 9.3.5 Projection matrix -- 9.3.6 Prediction data -- 9.3.7 Stack with data for estimation and prediction -- 9.3.8 Model formula -- 9.3.9 inla() call -- 9.4 Mapping malaria prevalence -- 9.5 Mapping exceedance probabilities -- 10: Spatio-temporal modeling of geostatistical data. Air pollution in Spain -- 10.1 Map -- 10.2 Data -- 10.3 Modeling -- 10.3.1 Model -- 10.3.2 Mesh construction -- 10.3.3 Building the SPDE model on the mesh -- 10.3.4 Index set -- 10.3.5 Projection matrix -- 10.3.6 Prediction data -- 10.3.7 Stack with data for estimation and prediction -- 10.3.8 Model formula -- 10.3.9 inla() call -- 10.3.10 Results -- 10.4 Mapping air pollution predictions -- III: Communication of results -- 11: Introduction to R Markdown -- 11.1 R Markdown -- 11.2 YAML -- 11.3 Markdown syntax -- 11.4 R code chunks -- 11.5 Figures -- 11.6 Tables -- 11.7 Example. -- 12: Building a dashboard to visualize spatial data with flexdashboard -- 12.1 The R package flexdashboard -- 12.1.1 R Markdown -- 12.1.2 Layout -- 12.1.3 Dashboard components -- 12.2 A dashboard to visualize global air pollution -- 12.2.1 Data -- 12.2.2 Table using DT -- 12.2.3 Map using leaflet -- 12.2.4 Histogram using ggplot2 -- 12.2.5 R Markdown structure. YAML header and layout -- 12.2.6 R code to obtain the data and create the visualizations -- 13: Introduction to Shiny -- 13.1 Examples of Shiny apps -- 13.2 Structure of a Shiny app -- 13.3 Inputs -- 13.4 Outputs -- 13.5 Inputs, outputs and reactivity -- 13.6 Examples of Shiny apps -- 13.6.1 Example --

13.6.2 Example -- 13.7 HTML content -- 13.8 Layouts -- 13.9 Sharing Shiny apps -- 14: Interactive dashboards with flexdashboard and Shiny -- 14.1 An interactive dashboard to visualize global air pollution -- 15: Building a Shiny app to upload and visualize spatio-temporal data -- 15.1 Shiny -- 15.2 Setup -- 15.3 Structure of app.R -- 15.4 Layout -- 15.5 HTML content -- 15.6 Read data -- 15.7 Adding outputs -- 15.7.1 Table using DT -- 15.7.2 Time plot using dygraphs -- 15.7.3 Map using leaflet -- 15.8 Adding reactivity -- 15.8.1 Reactivity in dygraphs -- 15.8.2 Reactivity in leaflet -- 15.9 Uploading data -- 15.9.1 Inputs in ui to upload a CSV file and a shapefile -- 15.9.2 Uploading CSV file in server() -- 15.9.3 Uploading shapefile in server() -- 15.9.4 Accessing the data and the map -- 15.10 Handling missing inputs -- 15.10.1 Requiring input files to be available using req() -- 15.10.2 Checking data are uploaded before creating the map -- 15.11 Conclusion -- 16: Disease surveillance with SpatialEpiApp -- 16.1 Installation -- 16.2 Use of SpatialEpiApp -- 16.2.1 'Inputs' page -- 16.2.2 'Analysis' page -- 16.2.3 'Help' page -- Appendix -- A: R installation and packages used in the book. A.1 Installing R and RStudio -- A.2 Installing R packages -- A.3 Packages used in the book -- Bibliography -- Index.

Sommario/riassunto

"This book shows how to model disease risk and quantify risk factors using areal and geostatistical data. It also shows how to create interactive maps of disease risk and risk factors, and describes how to build interactive dashboards and Shiny web applications that facilitate the communication of insights to collaborators and policy makers"--
