

1. Record Nr.	UNINA9910830962403321
Autore	Lawson Andrew (Andrew B.)
Titolo	Statistical methods in spatial epidemiology // Andrew B. Lawson
Pubbl/distr/stampa	Chichester, England ; ; Hoboken, NJ : , : Wiley, , [2006]
ISBN	1-118-72317-1 0-470-03577-3 0-470-03578-1
Edizione	[Second edition.]
Descrizione fisica	1 online resource (424 pages)
Collana	Wiley series in probability and statistics
Disciplina	614.4 614.42
Soggetti	Epidemiology - Statistical methods Medical geography - Statistical methods
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (pages 367-388) and index.
Nota di contenuto	<p>""Title Page ""; ""Contents""; ""Preface and Acknowledgements to Second Edition""; ""Preface and Acknowledgements""; ""I The Nature of Spatial Epidemiology ""; ""1 Definitions, Terminology and Data Sets ""; ""1.1 Map Hypotheses and Modelling Approaches""; ""1.2 Definitions and Data Examples""; ""1.2.1 Case event data""; ""1.2.2 Count data""; ""1.3 Further Definitions""; ""1.3.1 Control events and processes""; ""1.3.2 Census tract information""; ""1.3.3 Clustering definitions""; ""1.4 Some Data Examples""; ""1.4.1 Case event examples""; ""1.4.2 Count data examples""</p> <p>""2 Scales of Measurement and Data Availability """"2.1 Small Scale""; ""2.2 Large Scale""; ""2.3 Rate Dependence""; ""2.4 Data Quality and the Ecological Fallacy""; ""2.5 Edge Effects""; ""3 Geographical Representation and Mapping ""; ""3.1 Introduction and Definitions""; ""3.2 Maps and Mapping""; ""3.2.1 Statistical maps and mapping""; ""3.2.2 Object process mapping""; ""3.2.3 Geostatistical mapping""; ""3.3 Statistical Accuracy""; ""3.4 Aggregation""; ""3.5 Mapping Issues Related to Aggregated Data""; ""3.6 Conclusions""; ""4 Basic Models ""; ""4.1 Sampling Considerations""</p> <p>""4.2 Likelihood-Based and Bayesian Approaches""""4.3 Point Event Models""; ""4.3.1 Point process models and applications""; ""4.3.2 The</p>

basic Poisson process model"; "4.3.3 Hybrid models and regionalisation"; "4.3.4 Bayesian models and random effects"; "4.3.5 MAP estimation, empirical Bayes and full Bayesian analysis"; "4.3.6 Bivariate/multivariate models"; "4.3.7 Hidden structure and mixture models"; "4.3.8 Space-time extensions"; "4.4 Count Models"; "4.4.1 Standard models"; "4.4.2 Approximations"; "4.4.3 Random-effect extensions"; "4.4.4 Hidden structure and mixture models"; "4.4.5 Space-time extensions"; "5 Exploratory Approaches, Parametric Estimation and Inference "; "5.1 Exploratory Methods"; "5.1.1 Cartographic issues"; "5.1.2 Case event mapping"; "5.1.3 Count mapping"; "5.2 Parameter Estimation"; "5.2.1 Case event likelihood models"; "5.2.2 Count event likelihood models"; "5.2.3 Approximations"; "5.2.4 Bayesian models"; "5.3 Residual Diagnostics"; "5.4 Hypothesis Testing"; "5.5 Edge Effects"; "5.5.1 Edge effects in case events"; "5.5.2 Edge effects in counts"; "5.5.3 Edge weighting schemes and MCMC methods"; "5.5.4 Discussion"; "5.5.5 The Tuscany example"; "II Important Problems in Spatial Epidemiology "; "6 Small Scale: Disease Clustering "; "6.1 Definition of Clusters and Clustering"; "6.2 Modelling Issues"; "6.3 Hypothesis Tests for Clustering"; "6.3.1 General non-specific clustering"; "6.3.2 Specific clustering"; "6.4 Space-Time Clustering"; "6.4.1 Modelling issues"; "6.4.2 Hypothesis testing"; "6.5 Clustering Examples"; "6.5.1 Humberside example"; "6.5.2 Larynx cancer example"; "6.5.3 Count data clustering example"

Sommario/riassunto

Spatial epidemiology is the description and analysis of the geographical distribution of disease. It is more important now than ever, with modern threats such as bio-terrorism making such analysis even more complex. This second edition of Statistical Methods in Spatial Epidemiology is updated and expanded to offer a complete coverage of the analysis and application of spatial statistical methods. The book is divided into two main sections: Part 1 introduces basic definitions and terminology, along with map construction and some basic models.
