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"4.2 Likelihood-Based and Bayesian Approaches""4.3 Point Event Models"; "4.3.1 Point process models and applications"; "4.3.2 The 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"

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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.

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