

[Available Issues](#) | [Japanese](#)

>> [Publisher Site](#)

Author:

Keyword:

Search

[ADVANCED](#)



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1348-6365

PRINT ISSN : 1882-2754

JOURNAL OF THE JAPAN STATISTICAL SOCIETY

Vol. 36 (2006) , No. 2 pp.121-147

[\[PDF \(930K\)\]](#) [\[References\]](#)

Bayesian Estimation of Soft-Core Potential Models for Spatial Point Patterns

Masahilo Okabe¹⁾ and Masaharu Tanemura²⁾

1) *Department of Statistical Science, The Graduate University for Advanced Studies*

2) *The Institute of Statistical Mathematics*

Abstract: For a spatial pattern of points interacting with a repulsive potential in a given finite region of the plane, Bayesian estimation of parametric interaction potential functions between individuals (the Soft-Core models) is proposed. The computations are performed by the use of MCMC (Markov Chain Monte Carlo) methods. We consider two prior distributions with the jumping distributions within Markov chain simulations. Simulated marginal posterior densities of model parameters are fitted to the generalized gamma distribution. We compare marginal posterior modes with the maximum likelihood estimates of the model parameters. The validity of our procedure is graphically demonstrated by the L -statistics. As illustrations, the application to several real data is presented.

Key words: Bayesian estimation, L -statistics, MCMC methods, repulsive interaction, Soft-Core models

[\[PDF \(930K\)\]](#) [\[References\]](#)

Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Masahilo Okabe and Masaharu Tanemura; “Bayesian Estimation of Soft-Core Potential Models for Spatial Point Patterns”, *JOURNAL OF THE JAPAN STATISTICAL SOCIETY*,

