Abstract

In ecology and epidemiology, spatio-temporal distributions of events can be described by Cox processes. Situations for which there exists a hidden process which contributes to random effects on the intensity of the observed Cox process are considered. The observed process is a generalized shot noise Cox process and the hidden process is a Poisson process associated with a Dirichlet process. The distributional properties of quadrat counts are presented and Bayesian inference is proposed for estimating and predicting parameters of interest in the model. Illustrations are given from weed spatial count data and disease mortality data.

References


Bayesian Inference on a Cox Process Associated with a Dirichlet Process

Index Terms

Computer Science

Applied Sciences

Keywords

point process  Cox process  bayesian inference  ecology  epidemiology