

The Log-Gaussian Cox process is an important example of the use of spatial modeling and spatial statistics in practice. It is useful for describing many real-world situations, from modeling tree growth in the rainforests, to trying to understand the occurrence of precipitation and earthquakes, to examining the expansion of the Greenland seal population. In this work we focus mainly on the multivariate form of this point process. Specially in such form that allows to describe at the same time inhomogeneity, clustering and environmental effects in the investigated system. When the parameters of multivariate LGCP process are estimated, the minimum contrast method is usually used. However, we investigate the possibility of using composite likelihood estimation instead. We consider the composite likelihood criterion as a limit of the likelihoods in approximating discrete models. We compare it with an established approach of constructing the composite likelihood based on multiplication of likelihoods for pairs of points.