

# Parametric and Non-parametric estimations for spatial models

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## Abstract

Estimation of spatial models is an interesting and crucial problem in statistical inference for a number of applications, where the influence of a vector of covariates on some response variable is to be studied in a context of spatial dependence. Spatial data are modeled as finite realizations of random fields and are collected from different spatial locations on the earth, as in a variety of fields, including soil science, geology, oceanography, econometrics, epidemiology, environmental science, forestry and many others. Although potential applications of modelling non-parametrically spatial data are without number, little theoretical works have been devoted to nonparametric space modelling compare to parametric case.

We present here some statistical parametric and nonparametric frameworks for modelling spatial processes. We illustrate some of the methodologies with some real data applications.

**Keywords:** Spatial, Spatio-temporal models, prediction, density, regression, quantile, parametric, non-parametric

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