



CPS Paper

## The root-Gaussian Cox Process for Spatio-temporal Disease Mapping with Aggregated Data

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### Presentation File

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### Brief Description

This paper focuses on the analysis of spatial data aggregated in space and time when the boundaries of geographic regions change over time.

This can occur when reported cases of a health outcome are counted in regions over time and these regions change occasionally.

We extend the spatial root-Gaussian Cox Process (RGCP), which uses the square-root link function rather than the usual log-link function, to the spatio-temporal case.

A simulation study shows the algorithm can identify a spatio-temporal risk surface, and an analysis of malaria incidence in India is presented.

### Abstract

This paper focuses on the analysis of spatial data aggregated in space and time when the boundaries of geographic regions change over time. This can occur when reported cases of a health outcome are counted in regions over time and these regions change occasionally. We extend the spatial root-Gaussian Cox Process (RGCP), which uses the square-root link function rather than the usual log-link function, to the spatio-temporal case. A simulation study shows the algorithm can identify a spatio-temporal risk surface, and an analysis of malaria incidence in India is presented.