

## ANALYSIS OF SPACE-TIME INTERACTION APPLIED TO DATA OF CITRUS SUDDEN DEATH

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- **ABSTRACT:** *The information on the dynamics of spatial-time plant diseases is of essential importance in developing appropriate technologies to managing the diseases in a production system. Thus, in the last years, various studies involving spatial and temporal patterns are being developed in order to achieve a better comprehension of both the mechanisms and the dynamics of diseases present in agriculture. However, the analysis of space-time interaction, using point process methods, has been little studied in this area. The objective of this work is to present methods based on the second-order statistics to analyze point processes in order to detect the presence of groupings derived from space-time interactions. This work also proposes a new hypothesis test to detect spatial-time interactions based on Monte Carlo techniques. The presented methods were applied to monthly data of Citrus Sudden Death (CSD) cases in orange trees. The results showed that the methodology available in the literature as well as the test proposed in this work were efficient to detect space-time groupings.*
- **KEYWORDS:** *K function. statistical tests. Monte Carlo. diseased plants.*

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