

# Evidencia Subida de Paper

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## Subida de Paper

Submission Summary

Conference Name	The 2nd International Symposium on Green Technologies and Applications
Paper ID	134
Paper Title	Spatio-Temporal Modeling of Agricultural Patterns in Peru Using Cox Processes: An Approach Based on ENA 2022-2024
Abstract	This study models agricultural patterns in Peru using Log-Gaussian Cox Processes (LGCP) with data from the National Agricultural Survey (ENA) 2022-2024. The objective was to analyze the spatio-temporal distribution of 174,040 agricultural events, considering covariates such as water source and land area. The methodology included intensity estimation via kernel smoothing ( $\sigma = 0.0009$ ) and LGCP modeling with exponential covariance. Results revealed significant clustering ( $L(r) > 0$ for $r < 1.0^{\circ}$ ), with higher intensity in the Sierra (524 points/unit <sup>2</sup> ) compared to the Coast (194) and Jungle (168). The LGCP model yielded significant coefficients ( $\beta_0 = 6.8006$ , $\beta_1 = -0.3957$ , $\beta_2 = -0.7300$ , $p < 0.001$ , AIC = -810,737), but low explained variance ( $R^2 = 0.0535$ ). It is concluded that LGCPs are effective for identifying agricultural patterns, recommending the integration of climatic and satellite data to enhance sustainable agricultural planning.
Created	19/10/2025, 9:48:11 p.m.
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Authors	Yhack Aycaya Paco (Universidad Nacional del Altiplano) <yaycaya@est.unap.edu.pe>
Submission Files	PAPER.pdf (1.5 Mb, 19/10/2025, 9:46:14 p.m.)

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Figura 1: Resumen de Subida

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Paper ID: 134

Paper Title: Spatio-Temporal Modeling of Agricultural Patterns in Peru Using Cox Processes: An Approach Based on ENA 2022-2024

Abstract:  
This study models agricultural patterns in Peru using Log-Gaussian Cox Processes (LGCP) with data from the National Agricultural Survey (ENA) 2022-2024. The objective was to analyze the spatio-temporal distribution of 174,040 agricultural events, considering covariates such as water source and land area. The methodology included intensity estimation via kernel smoothing ( $\sigma = 0.0009$ ) and LGCP modeling with exponential covariance. Results revealed significant clustering ( $L(r) > 0$  for  $r < 1.0^{\circ}$ ), with higher intensity in the Sierra (524 points/unit<sup>2</sup>) compared to the Coast (194) and Jungle (168). The LGCP model yielded significant coefficients ( $\beta_0 = 6.8006$ ,  $\beta_1 = -0.3957$ ,  $\beta_2 = -0.7300$ ,  $p < 0.001$ , AIC = -810,737), but low explained variance ( $R^2 = 0.0535$ ). It is concluded that LGCPs are effective for identifying agricultural patterns, recommending the integration of climatic and satellite data to enhance sustainable agricultural planning.

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Authors:  
- yaycaya@est.unap.edu.pe (Primary)

Secondary Subject Areas: Not Entered

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Figura 2: Acuse de recibo