

# **The Application of Space-Time Methods for the Description and the Analysis of Greek Earthquake Catalogues.**

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## **Abstract**

In this paper space-time shock point process are used to model the occurrences of the earthquakes over time and space in the Aegean and the surrounding area. This area is considered as one of the seismically most active regions of the world and therefore investigation and modeling its seismicity is of great interest. Methods such as Kernel smoothing are used for the non-parametric estimation of the intensity function. Effects of spatial concentrations that persist in time at the same locations (clustering) are also taken into consideration.

**KEY WORDS:** Space-time models; Intensity function; Kernel estimators; Smoothing; Cross-validation; Clustering.