

ON THE INVESTIGATION OF CAUSAL RELATIONS BETWEEN SEISMIC SERIES

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Abstract

The Aegean and the surrounding area is considered as the seismically most active region in Europe. The separation of this area into nineteen seismic zones has been based on the distribution of the epicentres as well as on other seismotectonic criteria. In this paper two methods are employed for the investigation of causal relations between the 19 zones. Cross-correlation techniques are applied and linear intensity models are fitted in order to give a mathematical description of the earthquake occurrence in one of every two of the 19 zones, given the seismicity of the other one. Model selection criteria such as Akaike's Information Criterion, are used to estimate the parameters of the intensity models. Finally, the results are compared and the most interesting cases are presented.

Keywords and phrases: Plate Tectonics; Seismicity; Cross-correlation; Intensity functions; AIC.