



A comparative study of two statistical approaches for the analysis of real seismicity sequences and synthetic seismicity generated by a stick-slip experimental model

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The study of two statistical approaches is analyzed for two different types of data sets, one is the seismicity generated by the subduction processes occurred at south Pacific coast of Mexico between 2005 and 2012, and the other corresponds to the synthetic seismic data generated by a stick-slip experimental model. The statistical methods used for the present study are the visibility graph in order to investigate the time dynamics of the series and the scaled probability density function in the natural time domain to investigate the critical order of the system. This comparison has the purpose to show the similarities between the dynamical behaviors of both types of data sets, from the point of view of critical systems. The observed behaviors allow us to conclude that the experimental set up globally reproduces the behavior observed in the statistical approaches used to analyse the seismicity of the subduction zone.

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