Time clustring of seismicity: case of the Chile-Peru seismic sequences

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The paper presents the results obtained using a fractal approach for the seismic sequences. In particular we considered the seismic sequences having a mainshock with magnitude greater than 7. In particular we investigated the seismic sequence happened in the Chile-Peru area since 1990 using data coming from the NEIC-USGS database. We defined the D0 called box-counting dimension and D2 called correlation dimension, usually D0≥D2. If t the fractal dimensions have values lesser than 1 than there is a tendency of aftershocks to clusterize in time before a large aftershock. This is coherent with the possible existence of seismic anomalies, that could occur before the large aftershock. In order to investigate the possible anomalies in the seismic sequences we also applied the delta/sigma method that it has been already applied to many sequence all over the world. A comparison among the results obtained with the fractal approach and the delta/sigma method has been done. We noticed that there are some significative anomalies in the temporal decay before the occurrence of large aftershocks.