

## ***Interactive comment on “Using spatial Markovian chain for the statistical analysis of seismic occurrences in the Azores Region” by M. C. M. Rodrigues and C. S. Oliveira***

### **Anonymous Referee #2**

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This paper present a study to estimate a probability of occurrence of an earthquake in 7 distinct seismic zones in the Azores region, with an evaluation of the influence of the location of an earthquake on the location of the next earthquake. This is a nice idea, and the manuscript does provide some interesting information, however I come to the overall conclusion to recommend rejection of the manuscript.

- 1) The treatment of the data is not sufficiently transparent in the manuscript. The study is based only on the number of occurrences of earthquakes (?)
- 2) The quantitative analysis is based only on mathematics. The underlying physics are not explained. This study is based only on a probabilistic methodology in a region where seismic zones have been defined on purely statistical criteria without any phys-

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ical basis. What is the physical law (or criteria) that explains the definition of seismic zones and the results presented in this article?

In conclusion, and although the two points cited above, could be certainly resolved during revision, addressing the main issues involves not only very substantial revision of the manuscript, but also some significant reanalysis, which leads me to recommend rejection of the manuscript at the present stage. Generally, I feel that this approach is interesting to analyse the seismic occurrences in the Azores Region, and I would like to encourage the authors to resolve the problem considering the nature of the earthquake (rupture process/focal mechanisms), in order to resubmit this study in the future.

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