

## Bayesian Analysis of Cosmic Rays data for Earthquake Predictions

The aim of this project is to consider recent cosmic rays and meteorological recollected data during Earthquake occurrence as input for Bayesian inference aiming at prediction of this kind of events. It has been already conjectured that the cosmic ray flux plays the role of a precursor of seismic waves. Moreover, we expect that pressure changes in the atmosphere at local scales affect cosmic ray fluxes which may show a considerable correlation. Thus, we shall consider the combined data from these measurements.

Bayesian inference is a useful method that is able to provide posterior probabilities for a hypothesis provided some evidence or information is included. The method allows for improvement of the results as more data for an event become available.

The specific task of this analysis corresponds to the implementation of a Bayesian algorithm able to read the cosmic ray data obtained by the Auger observatory and meteorological data from nearby sites. As a result, we expect to obtain Earthquake probability distributions which may serve to characterize a universal behavior.

Supervisors:

Dr. David Alvarez Castillo  
Prof. Piotr Homola

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