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Discrimination Between Earthquakes and Explosions Using Markov

Length Scale (MLS)

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In this paper, the Markov length (time) scale are regarded as the discriminating tools to classify

the natural seismic events (earthquakes) from the artificial ones (nuclear explosions) based on

the seismic signals recorded at teleseismic distances. The bulk of our novel is to improve the

obtained numerical results using this advance technique. For the Markov length scale, by testing

the different types of seismic features, we have shown the potential application of this method to

discriminate the classes. During the above study, we found out that the Markov length scale

(MLS) has been used in a fully innovative manner in this work. Here the MLS detects the type of

the source whenever a natural or artificial source changes the nature of the background noise of

the seismograms. During the above study, we found out that MLS is sometimes capable to alarm

the further natural seismological events just a little before the onset. So the application of MLS in

seismic prediction is also studied through the simulated experiments.