

# Evaluation Using Machine Learning

*Thursday, 22 June 2023 09:42 (1 minute)*

The CTBTO releases the Standard Events Lists (SELs) with information about the location, magnitude, time and depth of events identified from the automatic analysis of waveform data (seismic, hydroacoustic and infrasound). This automatic generated list of events could be evaluated using machine learning methods. Machine learning models work in two phases; training and testing. The training phase uses a dataset (released by the CTBTO) with events already classified in two categories; "TRUE" and "FALSE". The training phase uses features and patterns present into the dataset. In the testing phase, the already trained machine learning models are used for predicting/classifying new released (SLEs) events. Several machine learning models were created using different machine learning algorithms. The accuracy and efficiency of classifying SELs events was evaluated using k-nearest neighbors, support vector machine, decision tree learning, Naïve Bayes, random forest and linear regression.

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## Promotional text

Earthquake, Seismic waveform, Machine learning

## Oral preference format

in-person

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Analysis of Seismic, Hydroacoustic and Infrasound Monitoring Data