# of a Seismic Event Based on Waveform Characteristics of Different Seismic Phases

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Discriminating the event type with seismic waveforms is a vital part of the verification work. In this research, 500 seismic events with a magnitude below 3.0 ML around Beijing were collected in the categories of: natural earthquake, blasting and mining collapse. More than 25 features and their ratio parameters were applied to characterize the seismic waveforms, which were extracted from P and S waves in each trace, and the mean value of characteristics of the seismic event was calculated. SVM, Fisher, and Bayesian probability methods were utilized for the event type identification. It is found that the SVM method exhibits the highest identification accuracy, followed by the Fisher method. The Bayesian method ranked third. In addition, the identification accuracy can be improved by adding the ratio parameter of P and S wave features. However, under the same condition of characteristic data, the identification accuracy based on P and S wave features is lower than the identification accuracy based on mean features of events.

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Promotional text

Research on the identification of seismic event types based on the waveform characteristics of different seismic phases can provide a reference and support for the type analysis and discrimination of small magnitude seismic event.

Oral preference format

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