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of Modeling and Applications on Amplitude-Magnitude-Distance-Depth of Teleseism and Ultra-Teleseism Phases

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The consistency of phases is an important method to estimate the relationship between the event and signal in the detection of seismic event. The consistency of amplitude can be used to determine the association, through the comparison of amplitude residuals, of numerous signal features on time and frequency domain. Different phases comply with the different propagation and attenuation laws of amplitude-distance-depth. The distribution of sample size along with the distance of teleseism and ultra-teleseism phases, such as P, PcP, PKP, PKPab and PKPbc based on the IDC is calculated. The model of amplitude-magnitude-distance-depth is constructed by iterative regression based on the residual statistics. The accuracy of model is estimated through the standard deviation and mean of magnitude. The application of the model is verified through examples.

Promotional text

In routine analysis, automatic seismic signal processing usually results in large amount of false events, which are caused by improper phase association. The consistency of amplitude can be used for determination of association through the comparison of amplitude residual.

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