

Determination of the arrival time of seismic signals based on the analysis of their phase characteristics

¹ Aleksandrov, Pavel N. (<https://orcid.org/0009-0008-6895-5811>), alexandr@igemi.troitsk.ru

² Stasenko, Liya V. (<https://orcid.org/0009-0000-2458-5152>)

¹ Schmidt Institute of Physics of the Earth of the Russian Academy of Sciences, Moscow, Troitsk, Russia

² Research Station of the Russian Academy of Sciences, Bishkek, Kyrgyz Republic

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Abstract. The article discusses methodological issues of applying phase characteristics in determining the arrival time of seismic waves. The accuracy of earthquake location depends on the precision with which the arrival times of longitudinal, transverse, and surface waves can be determined. Determining the phase characteristics of seismic waves is crucial for locating nearby earthquakes, since these waves are different for distant earthquakes. Methods for determining the arrival times of seismic waves of various natures characterized by different frequencies are investigated based on the analysis of the phase characteristics of signals from seismic events. Theoretical underpinnings of this approach are considered, and the results of processing seismic data on determining the arrival times of wave packets of the corresponding elastic waves associated with earthquakes are presented.

Keywords:

earthquakes, Hilbert transform, phase spectrum, arrival time

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