

MULTIPLEXED DEEP-FOCUS EARTHQUAKES FROM HINDU KUSH AREA

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The analysis of the wave pattern of large deep-focus earthquakes from Hindu Kush area showed that large number of such earthquakes has complex nature, consists of several earthquakes separated by time gaps from 3 to 10 s. For example, this peculiarity had two largest earthquakes for recent 20 years: March 3, 2002, $M_w=7.4$, and October 26, 2015, $M_w=7.5$. In both cases, the energy of the first earthquake was much less than the main shock. Many of International and Regional Seismological Centers performed the operational processing of the October 26, 2015 earthquake incorrectly, mistaking the arrival of the P-wave of the first event for the arrival of the P-wave of the main shock, in connection with this, such earthquake parameters as the time at the source, the coordinates of the epicenter were incorrectly determined. The International Data Center (IDC) did not correctly identify mb. The final processing of the US Geological Survey (USGS), the International Seismological Center (ISC) and the Kazakhstan National Data Center IGI NNC RK (KNDC) includes both processing of the main shock and the first event.

The work investigates the structure of short-period wave fields of such earthquakes basing on the analysis of records of small aperture seismic arrays located on the territory of Kazakhstan (Karatayu, Makanchi, Akbulak) included into the IGR NNC RK monitoring network. The recommendations for correct seismic processing of such earthquakes are given. A hypothesis on forming of complex focuses of large Hindu Kush deep-focus earthquakes is proposed.