

Estimation of a Relative Depth and Yield of DPRK's Third and Fourth UNE

Democratic People's Republic of Korea(DPRK) has carried out five underground nuclear tests since 2006 at P'unggyeri test site. For DPRK's UNEs, the explosions have been performed almost at closely located test sites. In this case, with an assumption of well coupled explosions, estimates on the relative depth and yield of UNE can be attained by a spectral division of the two seismograms recorded at the same station because the source area's geological contribution to yield and attenuation effect along the seismic propagation path can be canceled out. We tried to estimate relative depth and yield between DPRK's 3rd and 4th UNE using spectral division of Pn and Pg phases. The yield ratio, as a function of amplitude ratio at low frequency and depth ratio, is estimated along with another expression with corner frequency ratio and depth ratio. These two relationships give a solution of relative depth and yield between two events with 95 % confidence intervals.

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