

Mean Square Lg Amplitude Measurements for the Democratic People's Republic of Korea Underground Nuclear Tests

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We determined root mean square (RMS) amplitudes of Lg waves from the six known underground nuclear tests conducted by the Democratic People's Republic of Korea. We analysed waveform data from a dozen seismographic stations situated in the Republic of Korea, the People's Republic of China and the Russian Federation operated by the International Monitoring System, Global Seismic Network, and the Korea Meteorological Administration. The RMS Lg amplitude measurements indicate consistency between the stations situated in the continental crust. The measured RMS Lg amplitude at pairs of stations shows stability with an interstation standard deviation of as low as 0.03 magnitude units for the six explosions. The RMS Lg amplitude measurements on vertical records are well correlated to the teleseismic body wave magnitude m_b of the six explosions with a very small standard deviation ranging from 0.03 to 0.08 magnitude units. The stability of RMS Lg amplitudes suggests that it can be used to estimate the yield of the Democratic People's Republic of Korea's nuclear tests.

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Promotional text

Assigning magnitude and estimating the yield of the Democratic People's Republic of Korea announced tests.

Oral preference format

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