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Location of North Korea's Third Underground Nuclear Test

On February 12, 2013 North Korea executed the third underground nuclear test at their test site in the vicinity of P'unggyeri. The event excited strong regional Pn and Pg phases compared to the weak regional Lg phase. The seismic waveforms were very similar to those of the North Korea's first and second underground nuclear tests, which suggested nearly collocated epicenters of the three explosion sources. A grid search was utilized to decide the relative location of the third event compared to the first event with a net of 100 m x 100 m grid meshes and the observed Pn arrival times. The epicenter of the third event was determined at the global minimum of residuals. The coordinate of the epicenter is 41.275°N, 129.064°N which is located 400 meters south of the second event.

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