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# Comparison of Satellite Earth Observation and Seimic data to analysis the effect of Nuclear Tests in 2017 North Korea.

An underground nuclear test can produce a shockwave that lofts surface material. In 1996, a new phase in stopping all types of nuclear tests began with the Comprehensive Nuclear Test Ban Treaty Organization. However, the nuclear tests are still being performed by some countries, one of them is North Korea on September 3, 2017. The earthquake is one of implication from the nuclear test that can affect a few factors in the subsurface. Furthermore, the explosions also influence in the atmosphere and the surface of the nuclear test. In this research, we use the thermal and panchromatic band from LANDSAT 8, ASTER and also combined with the seismic data to analyses the characteristic effect of a nuclear test for more comprehensive monitoring. In a seismic method, the explosion energy will be converted to magnitude moment and distance that possible to refer the secure range of the nuclear test. While in satellite, the wide area of nuclear test is clearly shown from the ASTER data, and the emissivity from the thermal band also increase after the test was executed. The comparison of both methods is potentially used to develop change detection techniques to support a CTBT on-site inspection.

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