

Earthquake damage of the 2017 Pohang earthquake in South Korea

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Pohang earthquake with a magnitude of ML 5.4 occurred on November 15, 2017. This earthquake caused more damage than the 2016 Gyeongju earthquake (ML 5.8). Modified Mercalli intensities were assigned from residential property damage report in the Pohang area. Major damage type was wall crack of building. Maximum intensity was MMI VIII. Result of damage analysis from damage report reveals that the main damage area was distributed within a radius of about 20 km distance from the epicenter. And sand and mud volcanoes were observed in many places.

Between 16 November and 31 December 2017, 10 temporary seismic stations were deployed to record aftershocks and site effect of the Pohang earthquake. Ground motion generated by an earthquake is controlled by several factors, such as source characteristics, propagation path, surface geology, topography. Using recordings of aftershocks, we analyzed the ground motion at two seismic stations near the epicenter and another two seismic stations located on sedimentary rock and bedrock. We compared amplitude and predominant frequencies of ground motion with damage analysis results. Mapping and characterization of the damage for this earthquake is an opportunity to provide useful information on the damage of future possible earthquake in South Korea.

Keywords: Pohang earthquake, earthquake damage, ground motion