

Characteristics of tsunami waves observed in Korean peninsula

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Korean peninsula has relatively low level of seismic activity compared to the regions around plate boundaries. Only some moderate earthquakes with magnitude of 5~6 were observed since 20th century and there was no local tsunami. However the peninsula experienced tsunami several times which was generated by large offshore earthquakes of Japan. Especially the 1983 and 1993 tsunamis in western offshore of Honshu and Hokkaido induced damages along the eastern coast of the peninsula by about 5 m of inundation in maximum.

The tsunami waves by the two tsunamis were observed at tidal stations along the eastern coast of the peninsula and the dominant period was about 16 minutes. But the dominant period at Ulleung island where approximately 150 km far from the eastern coast was about 8 minutes. This shorter period at Ulleung island may affected by bathymetry. Compared to these tsunamis, the 2011 off-Tohoku tsunami was observed with longer period, about an hour, at southern part of the peninsula. This difference in dominant period may be due to the dimension of tsunami source.

Even though there have been few cases that observe tsunami in the peninsula, we could compare the characteristics of the observed waves considering tsunami source, bathymetry and site condition. We will discuss more about the characteristics including the case of the off-Yamagata tsunami in 2019.

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