

Topographic change and crustal deformation associated with December 2018 eruption of Krakatau volcano in Indonesia

*Hiroshi Yarai¹, Tomokazu Kobayashi¹, Shinya Yamada¹

1. GSI of Japan

Krakatau volcano is located in the Sunda Strait between Java Island of Indonesia and Sumatra Island. A high tsunami occurred on this Sunda Strait on December 22, 2018, causing major damage. It is estimated that this tsunami was caused by the collapse of Krakatau volcano. Therefore, in order to grasp the topography change of Krakatau volcano, we analyzed SAR intensity image observed by the Japanese earth observation satellite "Daichi 2" (ALOS-2) before and after the eruption. As a result of the analysis, a clear topographic change was observed in the southwestern part of the island on December 24 after eruption. It is thought that the southwestern part of the island collapsed by this 24th.

Furthermore, for capturing crustal deformation before and after the eruption, SAR interferometry was carried out using Daichi-2 SAR data. As a result, the displacement of the LOS's distance increased in the islands surrounding the Anaku Krakatau Island. Although the characteristic of the change suggests contraction centered around the Anak and Krakatau Island, it is not isotropic but it extends somewhat north and south. Therefore, the source may not be a simple mogi source.

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