Topographic change of the sea floor after the 2013-2015 eruption of Nishinoshima

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Nishinoshima is an insular volcano consisting of basalt and andesite located on the volcanic front of the Izu-Ogasawara arc. The first historic eruption occurred in 1973-1974, forming Nishinoshima Shin-to which was connected to the pre-historic Nishinoshima island later. After about 40 year quite period, on November 20, 2013, the eruption activity resumed in the sea to the southeast of Nishinoshima, shifting from a severe phreatomagmatic eruption to a Strombolian eruption (magma eruption). After the Vulcanian eruption on November 17, 2015, no eruptive activity has been observed. The 2013-2015 eruption event is characterized by the expansion of the area of the island due to extensive lava flow which lasted for two years. As a result, the area of Nishinoshima as a whole became about 2.68 km^2 from about 0.22 km^2 before the activity.
Since the restart of the eruption in November 2013, the Japan Coast Guard has conducted the three cruises for bathymetric survey in 2015 and 2016, as well as monthly-basis airborne observations in cooperation with Tokyo Institute of Technology.
We will present the result of bathymetric surveys around Nishinoshima.

Keywords: Nishinoshima volcano, Bathymetric survey, eruption

