
 [JJ] Evening Poster | H (Human Geosciences) | H-DS Disaster geosciences

[H-DS10]Tsunami and Tsunami Forecast

convener:Naotaka YAMAMOTO CHIKASADA(National Research Institute for Earth Science and Disaster Resilience), Kentaro Imai(Japan Agency for Marine-Earth Science and Technology), Hiroaki Tsushima(気象庁気象研究所)

Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

This session discusses issues related to improving real-time and long-term prediction accuracy of tsunami from earthquakes, landslides, and volcanoes, which include such as a better understanding of tsunami dynamics, new real-time tsunami observing systems deployed in the open ocean and coastal waters, methodologies of more rapid and accurate prediction during tsunami emergencies, more extensive and accurate inundation maps, and long-term tsunami potential forecast.

[HDS10-P06]Estimation of a plausible model of the earthquake fault as the source of the Great Meiwa Tsunami based on the assessment of the run-up height by Okinawa Prefecture in 2015

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Keywords:the Great Meiwa Tsunami, tsunami flooding assessment, fault, underwater landslide

The Great Meiwa Tsunami (hereafter “the Tsunami”) which occurred in the southwestern Ryukyu area on March 10th 1771 in lunar calendar (April 24th in solar calendar) brought about the enormous disaster such as about 12,000 casualties and damages of about 2,000 houses in Yaeyama and Miyako districts. Considering that 2004 Sumatra earthquake and 2011 eastern Japan great earthquake were caused by an earthquake fault of several hundreds of kilometers in length, in 2015, Okinawa Prefecture implemented re-calculation of tsunami flooding along the shore caused by faults of much larger length/width/slip that had not been assumed (hereafter “the 2015 Assessment”). The author already reported in JpGU2016 (HDS19-P04) the comparison between the result of the 2015 Assessment and that by the description of the historical record in Miyako district “O-Toiai-Gaki” (discovered in 1987) together with the result of the field work to verify the description. As for Yaeyama district, Goto et al. (2012) reported precisely the height of the traces by the Tsunami through their field work and traditions. The author will report the result of comparison between the expected run-up height by the 2015 Assessment and that by those studies in both Miyako and Yaeyama districts in order to estimate a plausible model of the earthquake fault which caused the Tsunami. The ratio between the result of the field works and the 2015 Assessment is 0.4-0.8 for most locations of both Miyako and Yaeyama districts, except for Miyara Bay and the surroundings in Ishigaki Island where the ratio is about 1.0 (run-up height is 20-24m). Considering that the estimated run-up height at and around the Miyara Bay along the southern coast of Ishigaki Island, an additional possible submarine landslide which might take place on the southern slope of the Kuroshima Knoll should also be taken into account as one of the sources of the Tsunami.