[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-P12]Similarities of far-field tsunami decay processes in the cases of Peru and Chile tsunamis

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We have investigated decay processes of far-filed tsunamis observed at tidal stations in Japan. Tsunami events examined in this investigation are the two Peru tsunamis in June 24, 2001 and August 16, 2007, and three Chile tsunamis in February 27, 2010, April 2, 2014 and September 17, 2015. Tsunami time series data of 33 tidal stations of the Japan Meteorological Agency from Hokkaido to Okinawa were used. We used not raw tsunami data itself but the MRMS amplitude defined by Hayashi et al. (2010). MRMS amplitudes are averaged for all station after aligning each tsunami arrival time. Averaged MRMS amplitudes in the period of 0-12 hours from tsunami arrival time (the early part) are classified into two types. One type is that MRMS amplitude indicates rapid increase and decrease, and the other type indicates relatively gentle change. The source regions of the former type are off the central coast of Chile, the latter is of Peru and the northern coast of Chile. Patterns of decay processes after 12 hours from tsunami arrival time was similar during the five events. Correlational analyses of amplitude changes in the period of 12-48 hours from tsunami arrival time (the later part) indicate strong correlation between five events. The amplitude factors evaluated in the later part coincide differences of amplitudes in the early part. The amplitude factors was proportional to a square root of seismic energies calculated from the magnitude of the earthquake. This result suggests that average tsunami duration can be forecasted at the time of earthquake occurring.