
[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-P18]Numerical modeling of tsunami inundation using subgrid scale urban roughness parameterization

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Keywords:tsunami, inundation, upscaling, drag force

The importance of accurate numerical modeling of tsunami inundation in an urban area has clearly realized due to the devastating damage from 2011 Tohoku Earthquake Tsunami. Although, numerical inundation simulations using high resolution topography data (O(1m)), the medium resolution tsunami inundation model (O(10m)-O(100m)) needs and useful for tsunami hazard assessment. This study develops and validates a numerical model of tsunami inundation using upscaled urban roughness parameterization: Drag Force Model (DFM) which deals with the effect of structures as drag force acting on flow based on physical modeling. The validation of the DFM reveals that the DFM can express the effect of the flow direction and inundation ratio. However, the estimation of the drag coefficient and mesh size dependency are challenges.