

## A global assessment of tsunami hazards over the last 400 years

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This work is our contribution towards World Tsunami Awareness Day, which was proposed by the United Nations (UN) in 2015. We conducted a global tsunami hazard assessment for local regions, including low tsunami risk areas, based on a 400-year database which allows insight on potential future tsunamis based on the seismic gap. The resulting tsunami hazard could be displayed on a global map and enable us to easily observe the local effects of tsunamis. Two criteria were selected to represent the past 100 major earthquake generated tsunamis: first, the earthquakes must be larger than magnitude 7.5 and secondly, occurred after the year 1600. Based on the results of the simulation, the locations of modern tsunamis (from the periods of 1970 to 2016) greater than 2 meters in height, are limited to areas affected by the 2004 Indian Ocean Tsunami, and the 2011 Great East Japan Tsunami. Regardless, damaging tsunamis have been witnessed everywhere in the world, especially along the Pacific Rim. This observation shows the importance of assessing or knowing the hazards based on historical events beyond our memory. Comparisons between tsunami height and wave force show that only using the tsunami height might underestimate the building damage. We wish that as a part of the World Tsunami Awareness Day related activities, our results and findings will increase tsunami awareness at the global scale, especially in comparatively low tsunami risk areas, and reduce human loss from future tsunamis.

Keywords: Tsunami hazard assessment, Global scale, World tsunami awareness day