



## **Impending tsunami hazard along the central segment of the Chilean margin**

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The Chilean tectonic margin is capable of generating very large earthquakes that could trigger tsunamis. Particularly, the central segment offshore Valparaiso could trigger large events such as the 1730  $M_w > 9$  that affected coastal communities in the surroundings and was registered in Japan. In this study we consider a range of magnitudes whose recurrence periods have been estimated and develop a hybrid probabilistic tsunami hazard assessment for the cities of Viña del Mar and Valparaiso.

Our approach is based on several statistical techniques to assess the recurrence time of earthquakes, and apply stochastic realizations to generate slip distributions to provide a more realistic model for the region.

Four nested grids were used based on GEBCO and nautical charts with a spatial resolution up to one arcsecond. Our results show that a 1730-like event could impact these cities with runups up to 22 m. These type of studies are crucial for updating the tsunami evacuation maps and overall mitigation strategy for Chile.