

# **Numerical modelling for 1746 Peruvian tsunami**

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Callao is tsunami prone given its low-lying coastline and its proximity to the subduction zone defined by the interaction of the Plate the South American Plate: the main local seismogenic source. In addition, other physical and social features make segments of the community especially vulnerable to tsunami risk.

This work presents a study of the tsunami following the disastrous earthquake that occurred on the 29 of October 1746 in Callao, central coast Peru. Our analysis is carried out by means of numerical modelling.

Numerical modelling of tsunami was performed by using TUNAMI code of Disaster Control Research Center (DCRC) Tohoku University. The model is based on the linear shallow water theory. Seismic deformation modelling is based on the theory of Manshina and Smylie. Since the source fault of the earthquake has not yet been identified, we study three tsunamis produced by likely potential sources.

The tsunami run-up results are compared with historical antecedents and other empirical studies to produce a scenario inundation map.