



The hazard of tsunami and seiche in Iran

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Since a few locally generated tsunamis have been reported in Iran during the past 300 years, the hazard of tsunamis has received considerably little attention.

Among all the coastal regions in Iran, Makran has the highest risk of tsunami. The Makran overlies the subduction of the oceanic crust of the Oman Sea under Iran. This process generates intermediate-depth earthquakes (focal depth < 80 km) with magnitudes as high as 8.0. However, the seismicity in this region is feeble and scattered. The last major tsunami-generating earthquake in the Makran was on 28th of November 1945 with $M=8.1$. The resulting tsunami reached a height of ten meters in some Makran ports and caused heavy damages.

In the Caspian Sea there are only two reports of large waves along its southern shores relating to earthquakes inside the land in a period of 400 years. In the case of Persian Gulf, only one record is available.

In such regions with a low-level of seismicity and poor historical data on tsunami run-up, the most applicable method for estimating the tsunami hazard is the identification of zones of uniform seismicity and the set of active faults. The maximum expected run-up heights within the given period of time could be evaluated by establishing the magnitude-frequency relation for each zone and calculation of synthetic catalogues of run-up heights on the basis of numerical modeling of tsunami propagation.

In this study some preliminary results of tsunami and seiche hazard estimates in southern Caspian basin, Persian Gulf and the Oman Sea are presented.