



# 1 Advances in tsunami hazard assessment in the western Mediterranean Sea

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Tsunami hazard in the Mediterranean Sea, especially in its western part, has been rather poorly assessed so far. However historical events are reported, for instance originating from earthquakes along the North Africa margin, such as in 1365 and in 1856. The latter tsunami was seemingly observed in the Balearic islands, as was the tsunami triggered by the 2003 Boumerdes-Zemmouri earthquake.

The numerical modeling of the 2003 tsunami succeeded in explaining the general impact as well as the tide gauge observations in the Balearic Islands, and allowed a discussion among the earthquake sources able to be responsible for the tsunami (Alasset et al., 2006).

We use the same finite-difference modeling using the series of nested bathymetric grids focusing on the Balearic to study the impact of a 1856-like earthquake that could trigger a tsunami, and simultaneously we also test the influence of the parameters of the source (magnitude, fault length...). We are also interested in assessing tsunami hazard on other western Mediterranean coastlines, such as France and Italy. Our results in the Balearic are therefore discussed to draw some amplification laws that could possibly be applied elsewhere. In addition we try to define what kind of maximum tsunami is likely to be expected in this region of the Mediterranean Sea.