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المستودع الرقمي للمدرسة العليا للري



The title (العنوان):

**Assessment of the tsunami hazard on the Algerian coast:  
Scenario study of a tsunami generated by an earthquake on the  
Bay of Algiers.**

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**Abstract :** The western Mediterranean coasts have been hit by tsunamis in the past and can be opposed to this risk at any time. The North African margin is the main area prone to destructive earthquakes that sometimes trigger tsunamis and potentially harm human life and coastal city property. The present study consists of numerical modeling of a wave of tsunami acting on the Algerian coasts for an earthquake of magnitude Mw 7.55 with length and width of the fault (73.3 x 29.9 km) and a vertical slip of 3.5 meters. This numerical modeling is based on a code of calculations developed based on the two-dimensional hydrodynamic model sources Telemac-2D, making it possible to map the heights of the waves and maximum speeds generated by the tsunami. The simulation indicates that the maximum values for the surface heights are about 1.2 meters and 30 to 50 m/s for the flow velocities. The results show that our study area is more exposed to the inundation hazard by a tsunami causing significant damage to basic infrastructure. The results obtained are exported to a GIS information platform allowing the development of an illustrative cartography of the hydraulic characteristics of the tsunami's wave generated and the arrival time and displacement of the inundation with the location of vulnerable areas to inundation. This constitutes a decision-making tool for land use planning decision-makers and a means of Risk mitigation in the event of potential earthquakes causing tsunamis in the region

**Key words :** The western Mediterranean ; The tsunami hazard on the Algerian

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