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Abstract: Earthquakes and tsunamis along Morocco's coasts have been reported since historical times. The threat posed by tsunamis must be included in coastal risk studies. This study focuses on the tsunami impact and vulnerability assessment of the Casablanca harbour and surrounding area using a combination of tsunami inundation numerical modelling, field survey data and geographic information system. The tsunami scenario used here is compatible with the 1755 Lisbon event that we considered to be the worst case tsunami scenario. Hydrodynamic modelling was performed with an adapted version of the Cornell Multigrid Coupled Tsunami Model from Cornell University. The simulation covers the eastern domain of the Azores-Gibraltar fracture zone corresponding to the largest tsunamigenic area in the North Atlantic. The proposed vulnerability model attempts to provide an insight into the tsunami vulnerability of building stock. Results in the form of a vulnerability map will be useful for decision makers and local authorities in preventing the community resiliency for tsunami hazards.

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