



Indian Ocean transoceanic tsunamis affecting La Réunion Island, France

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PREPARTOI project (“Prevention and research for the mitigation of the tsunami risk in the French territories of the Indian Ocean”, acronym equivalent to « get-ready ») started in the beginning of 2010. The first stage of this integrated tsunami risk assessment project consisted of evaluating the tsunami hazard on La Réunion Island through collecting and synthesizing all available data about past tsunamis and their effects on the island. This study was implemented through archive and field research early 2010, and later during a post-tsunami survey following the 26 October 2010 event.

Seven transoceanic tsunami events were identified as having impacted La Réunion Island between 1883 (explosion of Krakatau volcano) and December 2010 (Mentawai earthquake). All these events were triggered by earthquakes of a magnitude higher or equal to $Mg=7.7$ and located along the Indonesian margin. The maximal runup reached 3.5m. The effects of these tsunamis are mainly concentrated in the harbors where they damaged many boats, especially in 2004 and 2010. Although the tsunami hazard is historically quite moderate on the island’s coasts, the high concentration of people along the shore and in low elevation areas underlines a high vulnerability resulting in a high risk.