



Field survey of the 1945 Makran Tsunami in Southeastern Iran

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The earthquake of 27 November 1945 is the only instrumentally recorded tsunamigenic event along the Makran subduction zone, even though historical records suggest that four similar events may have taken place in the past 1000 years.

In October 2010, and under sponsorship by UNESCAP, we conducted a field survey of the 1945 tsunami based on the interview of elderly witnesses along a section of coast line extending from Jask to Pasabandar. We were able to collect run-up (or splash) data at 9 locations spanning about 275 km of coastlines, mostly in Sistan-and-Beluchistan province. Apart from a lone data point surveyed at 6.8 m in Souraf in the West, the general pattern of run-up features an increase from 2-3 m around the Bay of Chahbahar to 10 m at Pasabandar, next to the Pakistani border. Witnesses systematically describe a series of 3 waves arriving around 3:30 to 4:30 a.m., local time, suggesting that they may have been generated by an ancillary delayed phenomenon such as an underwater landslide. None of our witnesses had an ancestral memory of similar events, suggesting that the predecessor earthquake of 1851 was of significantly smaller magnitude.

An additional dataset of 11 run-up values was obtained for the 2004 Sumatra tsunami, consistently in the 2 to 4 m range, with occasional delayed response in harbors, due to the late arrival of dispersed high-frequency components setting ports in resonance.