



The Dayyer, Iran Gulf tsunami of 19 March 2017: A probable meteo-tsunami

Emile Okal (1), Amir Salaree (1), and Reza Mansouri (2)

(1) Northwestern University, Earth & Planetary Sciences, Evanston, IL, United States (emile@earth.northwestern.edu), (2) Persian Gulf University, bandar-Bushehr, Iran

On 19 March 2017, a surge from the Persian Gulf inundated significant parts of the Port of Dayyer on the southern coastlines of Iran. It, reportedly, capsized about 300 boats, caused ~\$10 million of damage and resulted in one death and five people missing. Although a significant storm had preceded the surge, there were indications of calm weather during the event in some of the remaining footage which could play a critical role in reconstructing the tsunami by studying it as a meteorological phenomenon. Here, we present the results of a field survey in the affected area which revealed a concentration of inundation along a ~30 km stretch of coastline with run-ups reaching 3 m at ~4 km west of Dayyer.

In the absence of any major seismic event at or around the occurrence of the tsunami, we consider landslides as well as atmospheric phenomena as potential sources for the event. We use simultaneous hydrodynamic dipoles as landslide scenarios (e.g. Synolakis et al., 2002) and simulate water amplitudes close to the coastlines using the MOST algorithm (e.g. Titov & Synolakis, 1995). We also use the Platzman's (1958) approach to model the surge as a meteo-tsunami. Our simulations suggest that the Dayyer tsunami was caused by a local system of atmospheric pressure gradient, as our landslide models fail to reproduce high amplitudes as documented in our field survey.