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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Tsunami Hazard assessment and Scenarios Database for the Tsunami Warning System for the coast of Oman" *by* Íñigo Aniel-Quiroga et al.

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General Comments:

An interesting description of a warning system for Oman, as well as a hazard assessment using a deterministic approach. The methodology for developing the scenario database based on the investigation of regional seismicity, and the model used for creating the database both seem fairly simplistic, though perhaps adequate. The language used in the paper is fairly poor, and, while I don't think it detracts much from the submission, I do think a revision should include more attention to grammar. More of a concern might be the overall accuracy of the designed warning system, and the

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limited number of sources used in the hazard assessment. I'll leave the decision as to whether there is enough new material here to warrant publication to the reviewers.

Specific Comments:

While a scenario database catalog has proved a useful tool for NOAA's tsunami warning system, an important difference between the NOAA system and the one described in this paper is in the direct deep-water measurement of the tsunami. This measurement data during a tsunami constrains the scenario output, compensating somewhat for inevitable inaccuracies in seismic parameters, particularly in the far-field.

The authors mention choosing the "closer pre-computed scenario" (line 54), but neglect to elaborate on how: the closest epicenter, or are different epicenters used for different magnitudes? How will the epicenter and magnitude be obtained, and what is the error in each of these likely to be? Small errors in these parameters (not to mention variations in strike, dip, and rake) can lead to large errors in inundation and wave height estimates in the near field. While refinements in epicenter and magnitude estimates during an event can result in smaller errors, these can take time: perhaps a discussion of estimates of the time it takes to obtain these from seismometer data, and what effect errors in epicenter would have on the forecast might help for this paper, and for the forecast system designed.

A mention of the 1945 event was made, but no mention of the data collected during that event (there is both tide gauge and inundation witness data available), or any attempt at validating the model with data. Even a comparison with anecdotal data can help when it comes to validation, and without it the modeling accuracy is unknown.

Lastly, if 3181 scenarios were run for the database, why were only 7 chosen for the assessment? Since the assessment was a simple deterministic approach, and a composite was made, perhaps all (or at least a larger number) might be used for the composite.

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