

Interactive
Comment

Interactive comment on “Reduction of maximum tsunami run-up due to the interaction with beachfront development – application of single sinusoidal waves” by N. Goseberg

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Received and published: 18 July 2013

The referee was generally supportive of the contribution as well as the presented experimental data though he/she suggested a number of corrections before final publication. The authors read the reviewer’s comments thoroughly and adjusted the manuscript accordingly. On the basis of the suggested additional discussion items which the author highly appreciates the following corrections and comments to the specifics are listed below:

1. The reviewer suggests including the relative run-up where no MR is included into

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Fig. 10, 11 and 12 by means of incorporating it into the polynomial fit which allows demonstrating how the influence of the MR behaves in the region between the actual data and the no MR data. The suggested idea is implemented in to the Fig. 10 and 11. Data of relative run-up without MR is presented, yet it is not incorporated into the fitting, since parabolic fitting as used by the author is not suitable for that region of fitting. Instead, the fitting curve is extended into the extrapolation region by using a linear function between the last data point of the MR region to that of no MR run-up. Please consider the supplements for the resulting plots.

2. It is suggested to further elaborate and discuss on Fig. 15 and 16 in order to clarify the results presented. It is hence suggested to add a paragraph at the end of the discussing chapter 5 which reads as follows:

“Besides analyzing the overall run-up reduction due to the presence of MR elements Fig. 15 and 16 depict some characteristic stages of the wave run-up and subsequent draw-down process in the vicinity of the first MR row. Compared with non-obstructed conditions, a shock wave is generally generated at the first row of obstacles which starts propagating back offshore as soon as the wave tip reaches the MR elements. In addition, the wave is retarded and a volume of water is held back, since it is supposed to flow back to the sea through the opening between the MR elements in the first row. This is of great importance with respect to prototype conditions since it confirms the common belief that receding waters draw back slower in the vicinity of build environment than in regions where open land is found at the coastline.”

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/1/C536/2013/nhessd-1-C536-2013-supplement.zip>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 1119, 2013.

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