

Review of "On the resonance hypothesis of tsunami and storm surge runup"

by Postacioglu, Özeren and Canli

The authors discuss the resonance hypothesis which has been proposed and investigated in a number of recent papers by e.g. Stefanakis, Dias and Dutykh (2011), Ezersky, Abcha & Pelinovsky (2013a-b), and Stefanakis, Xu, Dutykh and Dias (2015). In this connection, the authors emphasize the importance of radiation damping (partial reflection/transmission), which was ignored by the previous publications. I entirely agree with the authors, that this is an essential mechanism which needs to be addressed and incorporated. In the previous works (listed above), the reflection from the shoreline was modelled (physically or numerically) by locating the offshore boundary condition at a nodal point of the standing wave system. This actually makes little sense and has nothing to do with resonance. Hence the motivation for the present work is clear and relevant.

Unfortunately, the paper calls for some improvements. Generally, the conclusions tend to drown in mathematics and the paper is much too long. The more details you provide, the less clear is the overall conclusion. Several sections could easily be left out as for example section 4.2 (on nonlinear effects), which does not really add much to the overall picture. Also section 5 appears to be redundant mainly because a conclusion is never made. I am also not happy with section 6 dealing with the 2D ocean and a bay. This part would fit much better into a follow up paper.

I recommend that the authors make their conclusions and statements much more clear because I believe that the overall message deserves to come across to as many readers as possible. You do not achieve this but writing very lengthy papers filled with unnecessary mathematics.

Specific comments:

- 1) References to Stefanakis, Dias and Dutykh (2011); Stefanakis, Xu, Dutykh and Dias (2015) are not precise as some of the authors have been left out.
- 2) The authors use the notation "transient runup" in the sense that a monochromatic wave starts to be generated at a given instant. This is not the conventional definition of a transient phenomenon and the notation should be corrected accordingly.
- 3) Conclusions made on page 7, lines 5-10 are very much to the point. Bring them forward and make sure that they come across to the reader.