

Comments on the manuscript

**“Simulation of tsunami generation, propagation and coastal inundation
in the Eastern Mediterranean” (Ref. n. OS-12-673-2015)**

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This paper illustrates the application of a Boussinesq model, complemented by a tsunami generation model, for the analysis of the evolution of earthquake-induced tsunamis in the Eastern Mediterranean. Specific focus is in the analysis of tsunami waves evolving around the islands of Crete and Sicily.

The topic of the paper is clearly of interest for the readers of *Ocean Science*. However, improvements are needed prior that final publication be granted:

1. Section 2.1. In view of the scope of the paper, the introduction could refer to the recent works of

M. Antuono, V. Liapidevskii & M. Brocchini (2009). “Dispersive Nonlinear Shallow Water Equations.” *Stud. Appl. Maths.* **122(1)**, 1-28.

M. Antuono & M. Brocchini. (2013). “Beyond Boussinesq-type equations: Semi-Integrated models for coastal dynamics” *Phys. Fluids* **25**, 016603, doi: 10.1063/1.4774343, 21 pp

which provide significant improvements with respect to typical Boussinesq-type models for both numerical solution features (Grosso et al., 2009) and the overall flow structures (Antuono & Brocchini, 2013);

2. section 2.3. The model validation is the weakest part of the paper: a model used for 2DH simulations has only been validated by means of one simple 1DH test. A number of 2DH tests are available in the literature for this sort of benchmarking and at least one of them should be used for evaluating the present model performances. This is crucial with specific reference to propagation and inundation dynamics over complex topographies, like those analyzed in the rest of the paper.