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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Numerical Simulations of the 2004 Indian Ocean Tsunami Deposits Thicknesses and Emplacements" *by* Syamsidik et al.

Anonymous Referee #4

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Thank you for the efforts to understand the process of sediment accumulation by the tsunami a decade ago. The following are more detailed comment for the improvement of the paper

1. Fig. 15-18 are not readable

2. How to treat the open boundary conditions in D3D-flow model. Fig. 12 shows the boundary input for D3D-flow. Where this time series is obtained? How the others look like? Riemann or Neumann type conditions applied?

3. Please elaborate the data used for the simulation. Page 6, line 6: .. and other nautical charts? How details? Data resolution? This is very important also to be

included in the conclusion due the fact that the geometry of the beach is quite complex, especially for the smallest model domain.

4. Page 9, line 20. Where are these observation points located? Figure 13 does not show the location.

5. Still in page 9, please define the steep and mild slopes discussed in this paper. In fig. 13, why the obs no. 2 and 3, after 09.00, the sediment accumulation keep increasing?

6. Fig. 5: I think the authors would like to show readers that the points (observation or survey locations) should be within/inside the inundations limits. Point for Birek is outside the limits.

7. As it was discussed in page 2, it would be better also to produce and discuss extent of sediment deposition from the coastline (spatial distribution). The discussion on this topic is more meaningful and can also be used for disaster risk reduction related issues.

8. Please consider in the conclusion about the quality of the bathymetry/topography data that significantly influence the model results. This means there are so many weaknesses in this paper.

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