Manuscript Number: NHESS-2019-325

<u>Full Title:</u> Runup, Inundation, and Sediment Characteristics of December 22 2018 Indonesia Sunda Strait Tsunami

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The authors conducted a field survey a month after the 22 December 2018 Anak Krakatau tsunami event. The paper presented and discussed the measurements of runup height, inundation distance, tsunami direction, and sediment characteristics at selected sites. The followings are my comments on the manuscript.

Major Comments and Recommendations:

<u>Page 1, Lines 8-9:</u> You had better rewrite the sentence "The affected area of the tsunami included a coastal area located at the edge of Sunda Strait, Indonesia." in such a way "The tsunami affected the coastal areas located at the edge of Sunda Strait, Indonesia."

<u>*Page 1, Lines 13-14:*</u> The sentence is grammatically incorrect. "Tsunami propagated radially from its source and arrived in coastal zone with direction was between 25° and 350° from North.". Please rewrite.

<u>Page 1, Lines 26-27</u>: There is an incorrect statement in the sentence "The southwestern slope of the mountain experienced a landslide below the sea surface that resulted in.." because the landslide not only occurred below the sea surface but also there is a subaerial part of the landslide.

<u>Page 2, Lines 12-15:</u> Any reference for such kind of information "It connects the two main islands of Java and Sumatra, whose population accounts for 79% of Indonesia's population. About 6.9 million people live in the coastal area of the strait in Banten Province and Lampung Province." OR "The strait, between Merak and Bakauheni, is the busiest inter-island crossing in Indonesia, with more than 50,000 passengers/day and more than 20,000 vehicles/day."

<u>*Page 4, Lines 14-15:*</u> "A relatively long inundation (284.2 m) was also found at Tanjungjaya 2, a site 15 with a relatively high runup." Any information on the steepness of the slope which can justify the situation given in this information?

<u>*Page 6, Lines 12-13:*</u> "We identified boulders moved by a tsunami wave and runup at three survey sites based on information from eyewitnesses and **their physical state.**" The phrase in **bold** is redundant.

<u>Page 6, Lines 12-13:</u> "In addition, from the physical criteria given by Morton et al. (2007) and Paris et al. (2010), it was most likely that the boulders were moved by the tsunami." It is needed to mention a little bit about the "physical criteria" mentioned in this sentence and how you related it to your case.

<u>Page 6, Lines 33-34:</u> "and pw is the density of sea water." Unit is missing. "The velocities were calculated **from Equation 3?** to be $u \ge 4.5$ m/s and $u \ge 4.0$ m/s for the 10.4-ton (Fig. 8a) and 9.4-ton (Fig. 8b) boulders, respectively." If so, please add the highlighted words.

<u>*Page 7, Line 28:*</u> "...and the direction of the tsunami was between 25° and 350° from North." Better to add the highlighted words.

It is better to explain the reasons (local morphological conditions, ground material, ground slope etc.) of the discrepancies between theoretical deposit limit and the measured deposit limit at the locations where they do not fit well such as Sukarame, Tanjungjaya 1 and Cagar Alam.

Any information on the tidal situation of the area? Is there any detiding process performed on the measured values?

In conclusion part especially, why needed to use past tense for some findings? They are still valid. For example, "The largest boulder **had (has)** a diameter of 2.7 m and a weight of 10.4 tons. From the boulder movement, the tsunami velocity at the ground surface **was (is)** estimated to be more than 4.5 m/s. Sand size statistics **were (are)** also given in this report. The sediment grain size ranged from very fine sand to boulders, with medium sand (diameter: 0.25-0.5 mm) and coarse sand (diameter: 0.5 -1.0 mm) being dominant. All sediment samples tested in the laboratory **had (has)** a well sorted distribution, indicating that the grain sizes were relatively uniform.

Figures and Typos:

Page 3, Line 13: "terestrial" → "terrestrial"

Figure 3: Only places and arrows are shown in the pictures of Figure 3 which are not satisfactory for inferring the wave direction at these locations. Indication of the locations where each picture belongs to is necessary. Writing also the coordinates may be a good idea.

Figure 4 and Page-4, Lines 27-35: Can you please indicate the survey point IDs of the arrows shown in Figure 4 as well as the ones stated in these lines such as "Tanjung Lesung (sites 7-13)" or, for example, where is this Tanggamus area? Then, the statements in these lines on Page 4 will make sense while reading and looking at the figure.

<u>Page 4, Line 34:</u> "Table 1 contains the quantity of tsunami wave direction arrived in coastal area." Better rewrite this sentence in such a way "Tsunami wave direction from North arrived in coastal area is given/presented in Table 1 for the field survey sites."

<u>Page 4, Line 35:</u> "north" \rightarrow "North", please correct this type of typos throughout the manuscript.

<u>Page 5, Lines 3-4</u>: "Prehistoric (paleo-) tsunamis have been identified from sediment deposits (Atwater 1992; Dawson and Shi 2000; Peters, Jaffe and Gelfenbaum 2007)." Is this sentence a general statement since it is not clear if it is a general statement or mentioning about a specific study for a region for example? Better rewrite the sentence as "Prehistoric (paleo-) tsunamis have been identified from sediment deposits in several/many studies/publications (Atwater 1992; Dawson and Shi 2000; Peters, Jaffe and Gelfenbaum 2007).

Page 5, Line 16: "Four deposit pits were less than 50 m from the shoreline (11)." What is this 11 here?

<u>Page 5, Line 18:</u> "...and created a deposit a short distance from the..." \rightarrow "...and created a deposit **at** a short distance from the..."

Page 5, Line 23: "reconstructing tsunamis runup from sedimentary characteristics."

Page 6, Line 24: "Other smaller chunks also moved." → "Other smaller chunks were also moved."