

Interactive comment on “High resolution bed level change and synchronized biophysical data from 10 tidal flats in northwestern Europe” by Zhan Hu et al.

Edward Anthony (Referee)

anthony@cerege.fr

Received and published: 8 July 2020

This is an interesting and useful paper that opens up on bed-level changes and their drivers in tidal flats in NW Europe. The paper basically presents high-resolution bed-level data obtained from SED sensors, an innovative method of measuring short-term substrate variations on tidal flats, coupled with biophysical characteristics, and shows the potential link with drivers, notably storms. My main concern revolves around the wave-height measurements (data description and table 1).

Suggestions for improvement basically concern presentation problems listed below.

C1

The term bed level needs to be hyphenated throughout when used in the adjectival form of 'bed-level changes' (this is done in Fig. 4c!). I would consider data as being in the plural form: 'data are' instead of 'data is', etc.

1. Title: Awkward title. High-resolution bed-level change is linguistically rather strange as I do not see how bed level change can be of high or low resolution. Measurements or data are of high or low resolution but not change. I suggest 'Synchronized high-resolution bed-level and biophysical data from'
2. Abstract: Line 73: deployment of labour Line 76: delete 'rare' to read: providing an opportunity
3. Site description: Line 84: delete 'the' to read from northwestern Europe and use lettering when indicating the number of sites: seven sites, one site, etc. Site 1, 7 etc is OK as you are identifying your sites. Line 96: repetition of measuring. Maybe use: The coordinates of the monitoring stations as well as the bathymetry of the measuring transects...
4. Methods: I know this is not a study on long-term net sedimentation-erosion rates but how do you account for subsidence from the SED data? Line 143: water-level data were obtained from nearby tidal gauge stations... Line 144: Diatoms act as bio-stabilizers...
5. Data description: Line 173: I am highly surprised by mean Hs values of 0.1 cm and 0.008 cm? These are meaningless and tantamount to zero wave energy! How did you measure such values? A 1 mm-high wave!!! I would suggest you refrain from quoting these values (this also goes for the very low Hs values in Table 1), and focus more on the higher Hs values and their variations in Figure 3 which are more meaningful and pertinent to bed-level change.
6. Conclusions Line 22: Due to the lack of 'relevant' (instead of desired).
7. Table and figures: Table 1: Surprised at the significant wave height data values!

C2

Figure 1: Please add geographical coordinates and scale. Figure 2: Please add a scale in (b) to show length of SED probe. Figure 3. Use black bar to indicate wave height in figure legend.

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2020-78>, 2020.

C3