

## ***Interactive comment on “Coastal Change Patterns from Time Series Clustering of Permanent Laser Scan Data” by Mieke Kuschnerus et al.***

**Anonymous Referee #1**

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The paper presents a clustering analysis of time series of terrestrial LiDAR in a coastal environment. The paper is well-written and presented. I was able to follow the methodology used by the authors and to understand their conclusions. Since I'm not an expert in time series I recommend minor revisions, mainly about the graphical presentation of the results, but I must also warn to the Editor that the other(s) referee(s) might have a different opinion.

Figure 1 could use a pair of axis to help the reader locate him/herself when referring to figures 8,9,10,12. Also, in the text you mention that the origin of the local coordinate system is at the laser scanner location, but in the figure there is an (xo,yo) just next to the wooden stairs. Which is the correct origin. Also note that in the figure caption you mention 2019 as the scan date, but in the text (line 98) it is 2017.

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Figure 2 should be plotted with the same aspect as the test area shown in fig.1 (about 40x55m?)

Figures 8,9,10,12 - I found a bit hard at first to relate this with figure 1 (due the lack of axes), so in fig 8 maybe include also the view of fig.1? Perhaps indicate the same features of fig.1 (stairs, road,etc)? Also, did you checked if the colors are safe for colorblind people? If not I suggest a small application called ColorOracle (free, multiplatform) that allows you to simulate the three main colorblindness

In fig.9, try to move the legend so it won't cover any lines, and consider using not only colors, but also different line widths and symbols (dash, dot-dash, etc) so it will be easier to differentiate the lines visually

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Interactive comment on Earth Surf. Dynam. Discuss., <https://doi.org/10.5194/esurf-2020-34>, 2020.

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