**Surface elevation and ice thickness data between 2012 and 2020 at the ablation area of Artesonraju Glacier, Cordillera Blanca, Perú.**

The manuscript focuses on surface elevation changes and ice thickness measurements in the ablation area of a main tropical glacier at the Cordillera Blanca. This is an interesting topic because of the scarcity of scientific observations reported from this region up to now. Its publication has the potential to be a relevant contribution filling a gap of information from this area. However, it requires a thorough revision by the authors to better present their case.

In general, there is unfortunately a lack of rigor in the writing. All figures could be largely improved, keeping only those that add value to the interpretation of the work done and making sure the captions are fully descriptive of the figures.

In the current state of the manuscript, it is very hard to focus on the details of the data and discuss the results presented here when both the surface elevation and ice thickness methodologies used have been poorly described. Because of the nature of the methods and conditions there is a substantial error/uncertainty intrusion that is attempted to be quantified here, but this is not well described and does not lead the reader to understand the estimations and final accounts.

The conclusions section is unsatisfying because this is a set of 6 years of measurements with good coverage of the ablation area, and although risk assessments or predictions are not within the scope of this manuscript, the authors do not require these series of observations to determine: a) "mass balance reduction" and b) an overdeepening at the base (I expect b) could have been seen from a single data set, for example, from 2014).


**General comments by section:**

L43: This paragraph in particular does not connect well. The introduction needs to be improved.

L55: The study area is poorly described.

L59: Where is the debris covered area? Was it relevant to the GPR observations?

L63: This section needs further description. How was the "coverage area" estimated?

L73: The reference provided for further information (Bello et al., 2020) is not relevant to understand the type of GPR used.

L87 and L88 repeat information.

L90: Use "v" instead of "c".

L95: The GPR data processing lacks a description of the geometrical correction, if any was made. The configuration of the antennas is triangular and depth estimations must consider the antennas geometry. Was it considered for the Migration process?

L131: The method description is unclear. First describe the methods and then the data sets.

L157: The "Error" section is confusing. I suggest adding the equations.

L166: where is 18.8 m coming from?

L176: "The analysis shows a maximum difference of 10 meters"? With reference to Table 4, this is not what is presented.

L176: "...which is less than the radar resolution $\varepsilon_{HGPR}$"?? How was the radar resolution obtained?

L181: How did you get these values?

L183-185 should be better described. Where is ±25.5 m propagated error coming from? And where is it used? Please be more specific. What is "ice thickness differences" referring to?

L202: "...standard deviation of 3.2 m" it does not coincide with the values on Table 5.

L254: The data availability section description doesn't match the data which is referred to.


**Figures:**

Figure 1: Reduce the "Symbology" box. Describe the insets in the caption.

Figure 2: I suggest removing the inset and possibly mark a box in Figure 1 to show the area of Figure 2. Add the position of all surface observations, if possible.

Figure 3: Improve the quality of the text in Figure 3 a). Was it really 10 m separation between the extremes of Tx and Rx?

Figure 4: Are these profiles fully processed? Is "time zero" corrected? Why is there a reflection below the interpreted surface?

Figure 5: The format of this figure could be improved. I suggest: reducing the font size, homogenize the symbols, separate the boxes, make the boxes in equal size and discuss the inclusion of this figure in the text.

Figure 6: This figure is almost not referred to in the text, although it could be a relevant one. Where are the stakes on the maps? Regarding Profile CC': When was it obtained? Why does it appear to cross the lake in Figure 1? Change symbols in a). What was the method used for the interpolation in b).

Figure 7. I don't understand the value of this figure. The order of years is confusing. The color scales are ineffective for the representation. There is no further discussion of this figure in the text.