

Dear Silvio,

First of all, we want to thank you for your time and suggestions. We have implemented some changes in the document. Below, we will address all the comments made in order.

L15: We replaced the highlighted area in yellow (location's atmosphere) and rewrote the sentence as: "The height of the 0°C isotherm ( $H_0$ ), which commonly signals the freezing level, denotes the lowest altitude within the atmosphere where the air temperature reaches 0°C."

L27: We replaced the semicolon with a comma.

L39.1: We replace "ascent expansion" by "ascent, expansion".

L39.2: We replace ". While in leeward" with ", while in leeward side".

L56: We mean that they are contrary to what was specified previously. We clarified this by adding the explanation in the sentence: "Conversely, the negative phase of the SAM produces contrasting effects compared to those previously mentioned".

L59: We removed the comma from the text.

L70: We removed "in".

L71: We added "height of the".

L79.1: We replaced it with " $H_0$ ", a concept defined in L14.

L79.2: We corrected the word by "estimate".

L80.1: We corrected the word by "gridded".

L80.2: We removed "subsequently".

L81: We corrected the word by "analyse".

L124: We removed the period from the text.

L129: We removed the period from the text.

L149: We replaced the semicolon with a comma.

L152, 177: We decided don't change the abbreviature of "m a.s.l" for some reasons:

1. In some parts of the text, the final period overlaps with the parentheses, which can cause confusion in the writing (for example, in L233).
2. The abbreviation is clearly stated in the abstract, so the way it was established should not generate doubts or misunderstandings.

However, if it is deemed important to define it in such a way, we can change them.

L158: We corrected the word by “depict”.

L165.1: We replaced the semicolon with a comma.

L165.2: We replaced the comma with a “that”.

L204: We made some changes to provide more context to this sentence: “We used this definition to contrast the  $H_0$  values in a histogram, analysing the values across all of Patagonia, the western zone, and the eastern zone from 1959 to 2021 (Figure 5). The histogram indicates that the average and median values for the entire region are 1691 and 1519 m a.s.l., respectively (Table S3). Since the median is lower than the mean, the distribution shows positive skewness or is right-skewed. Additionally, the upper extreme values (95th percentile) reach 3424 m a.s.l., while the lower extreme values (5th percentile) are around 488 m a.s.l. (Figure S1). A clear contrast in the  $H_0$  distribution between western Patagonia (blue line) and eastern Patagonia (red line) can be observed. Western Patagonia has a lower height, indicated by a higher frequency of lower  $H_0$  values, with an average and median reaching 1568 and 1347 m a.s.l., respectively. On the other hand, eastern Patagonia shows a higher frequency of relatively higher values, with an average and median of 1818 and 1708 m a.s.l., respectively. The two regions differ by approximately 251 m a.s.l. (mean) to 362 m a.s.l. (median) for the entire period. These values are shown in the supplementary material (Figure S1).”

L206: We remove the commas in this line.

L211: We added “height”.

L227: We corrected the word by “summer”.

L229: We corrected the word by “indicate”.

L241: We added “height”.

L244.1: We removed and changed “At the” by “In”.

L244.2: We replaced by “ $H_0$ ”.

L244.3: We removed and changed “of” by “at”.

L276: We corrected the word by “winter”.

L296.1: We added “height”.

L296.2: We check the text and there is not a space between the word “distribution”. Probably it’s a mistake in conversion \*.docx to \*.pdf format.

L304: We added “(2020)”.

L334: We added “height”.

L339: We added “height”.

L340: We added “height”.

L344: We remove “the”.

L369: We added “elevation of the”.

L371: We remove the comma.

L372.1: We replaced the semicolon with a comma.

L372.2: We remove “would”.

L372.3: We corrected the word by “experiences”.

L378: We added “elevation”.

L391: We change this phrase to “in the leeward side”.

L406: We remove the comma.

L423: We added “height”.

L479: If you agree, we wanted to add the “Review statement section” where we make mention of the contributions of those involved. Otherwise, we can skip this section.

In the references, adjust the names of the journals. In the previous version, they were not abbreviated according to the criteria, but now that change is corrected and is included in the version I am uploading.

