Dear. Dr. Saavedra,

Thank you for the revised manuscript. “Changes in Andes Mountains snow cover from MODIS data 2000-2016” (tc-2017-72). Following previous comments, you extended the study period, thank you. I respect your decisions regarding the use of Landsat and on the use of in situ data.

I have several suggestions for minor technical changes, but I do have one major concern that needs to be rectified. I am not sure but I think that it relates to the precipitation component of the ERA-Interim dataset. If you look at Figure 8b, you can see a very distinct artifact in the mapped data, especially in the inset. There is an “edge” that runs parallel to the line of longitude, and if you look closely at the main map, there are other short edges in the data that align with lines of latitude. The result is that there appears to be a distinct bias in the precipitation data. The main edge is roughly aligned with the continental divide. What are the effects of this artifact, especially on the subsequent latitude-elevation band analysis (Figure 9), and MLR analyses (Figure 10)?

If this error is introduced by the ERA-Interim dataset, then its use needs reconsideration. If the problem cannot be rectified, then it would seem that the manuscript may have to return to the shorter study period of the earlier version. In any case, this will take some time to resolve so I suggest minor revisions. Please take time to make the appropriate changes. The artifact is obvious, and I am surprised that it was not noticed, treated, or discussed in this revised version of the paper.

Sincerely,

Peter

Minor comments:

P1,L24: Delete “in magnitude”

P1, L34: Change “warming” to “increasing”

P2, L5: comma after (17°S to 31°S)
P2, L13: Change “related with” to “related to”
P2, L16 and elsewhere: There is always a space between the value the “°” symbol for temperatures
P3, L4-6: Change “The Andes Mountains cross seven countries (Vene … tina) along more than 8,000 km across a wide range of latitudes … They represent … and are the longest mountain chain…” to “The Andes Mountains cross seven countries (Vene … tina) and a wide range of latitudes … They represent … and are the longest (8,000 km) mountain chain…”
P3, Figure 1: Please put a black box in the main map around the area that is “zoomed in to” in the inset, and thicker lines connecting the two.
P4, L5: Comma after “area”
P4, L7: Change “In these latitudes” to “At these latitudes”

P5, Figure 2 (and other similar composed figures): It is not obvious that the West/East relates to continental divide. Perhaps you should include this in the caption. How about changing "Mean monthly hydroclimate variables by latitude…" to "Mean monthly hydroclimate variables by location with respect to the continental divide and latitude…"
P5, L16: Change "continuing in real time monthly" to "continues in real-time monthly increments"
P5, L18: Given the different resolutions of these datasets and the 0.5° working resolution of the paper, please include a line about how the data were combined and the interpolation of the ERA-Interim data. Was there any fitting of one to the other?
P6, L8: Change "surface temperature regions (SST)" to "surface temperature (SST)"regions"
P6, L15: Please define NOAA here and delete from P14, L8.
P6, L22: Change "America" to American"
P6, L38: R is used for all analysis, so move much of the text from P7, L10-11, to here. Change "Saavedra et al. (2017). For the remaining pixels we used the" to "Saavedra et al. (2017). For the remaining pixels we conducted geo-statistical analysis on the data using the statistical computing R software (R core Team, 2013). We used the"
P7, L14 and elsewhere: the parameters r and r^2 should be italicized. This affects text throughout the main document, tables and figures.
P7, L26: Delete "show"
P8, L17: Comma after "29°S"
P10, L4: change ""common range of change values are in the range of" to "common change values are on the order of"
P13, Figure 6: The line symbol for the continental divide is not visible in the legend or the figure.
P15, L11: Change "is represented as a line for significant (not significant) in thick, (SP,S-), (thin, lines." To "is represented where significant as a thick line (SP,S-) and a thin line where not significant (SP,NS+)."
P15, L12: Change "of UDELv4 and ERA-Interim datasets" to "from UDELv4 to ERA-Interim datasets"
P15, Figure 7: Lines for N3 and MEI are indistinguishable. Traces are also very pixelated. I hope that final line art diagrams for this manuscript will be vector based and smooth. Classes of Niño/Niña events are difficult to distinguish and need more contrast.
P16, Figure 8: Obvious artifact in (b). Can't see the line symbol for the continental divide in the figure or legend
P19, Figure 10: Obvious artifact in (a) and (b).
P20, Figure 11: (b), is this PRI or RI? Please coordinate with caption. (c) part of figure title is missing. (d) is this RI or PRI?
P22, L16: Effect of apparent precipitation anomaly on results?
P23, L28: What is the effect of the apparent precipitation-related anomaly on this conclusion?