

Review of manuscript (major revision)

Journal: HESS

Title: **Assessing glacier melt contribution to river runoff at Universidad glacier, central Andes of Chile**

Author(s): Claudio Bravo et al.

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General comments

The authors have appropriately addressed most specific and technical corrections suggested before. My impression is that the manuscript has substantially gained in both a precise description of methods and results as well as a more thorough discussion putting modelling results into a broader context e.g. for water users in the region and future research.

Unfortunately, there is confusion about the percentages of glacier contribution and the corresponding period. Some of the new text inserts again do not meet publication criteria due to typing and grammar errors (see e.g. p.11!). Please take this serious, I mentioned these evident deficiencies through the whole manuscript before. Furthermore, some last doubts/imprecisions should be addressed.

In summary, I recommend minor revision correcting these last issues detailed below.

Specific comments

1 / 18: does glacier contribution account for 10-13% for the whole period (November 2009 to March 2010) or even 3-34%? do you really differentiate between November to March and December to March? quite confusing! Table 3 does not include November - I guess you have not revised and adapted all sections, do so now!: 1 / 18; 10 / 03; 10 / 9-11; 11 / 06; 13 / 13

3 / 21: the ‘mega-drought’ conditions in Central Chile are still prevailing, right? considering that we are already in 2017 and you want to emphasize this present effect of drought you could extend “2015-2016” (and, if available, include some latest bibliography) – also in the other sections

10 / 21-23: the good agreement you mention does not result from data availability itself, improve this part

11 / 17-18: is the “positive trend” of 0.3 m³/s/y significant or not? if not, you cannot refer to a “positive trend”

11 / 31: start a new sentence “However, the possibility...” and sharpen your argumentation as a) I understood that drought conditions are still going on and b) this sentence calls for a consequence, e. g. “... in the future and therefore more research is needed in order to address these issues.”

12 / 07-10: the periods are both three months, from January to March for 2004 and 2005 with corresponding melt values of 4950 mm w.e. (2004) and 3960 mm w.e. (2005)? a little bit confusing

12 / 29-30: both studies you are mentioning in the context of the importance of groundwater flows were performed in climatically different regions, the outer tropics in Peru and central Chile. Baraer et al. 2014 refer particularly to the dry season (of each year) - please clarify

13 / 32: although it is very likely, please cite your statement “increasing demand for water in the region”

Technical corrections

1 / 19: better reduce “during November 2009 and March 2010.”

2 / 02: Delete (Garreaud, 2013), already cited in line 3

2 / 38: correct “between November and January”

3 / 04: “depending on” the aspect

3 / 18-19: delete “(after March 2010 no more data/observations were obtained from the glacier)”, no additional information

3 / 26-27: three times “installed”, avoid redundancies

4 / 17-18: “dirty” is a very colloquial and “impurities” a very broad term, better write “partially covered by debris and aerosols”

4 / 30: add “up” after “summed”

4 / 31-32: be consistent with the use of units “between 7 mm w.e. °C⁻¹ d⁻¹ and 9 mm w.e. °C⁻¹ d⁻¹” or just “from 7-9 mm w.e. °C⁻¹ d⁻¹”

5 / 16: again “between ... and ...”

5 / 28: use past instead of present “We restricted”

5 / 29: be consistent with other date formats in your manuscript “29 January”

7 / 14: better write “from a catchment with a total area of 86 km² which is partially covered by...”

7 / 24: use singular “The geometry... was measured”

8 / 16: again “between ... and ...”

9 / 13-14: avoid redundancies “some melting, with values around...”

9 / 22: use “16:00 h... 10:00 h” or “4:00 pm ... 10:00 am”, be consistent with the same format used in 8 / 16-17 and other sections

10 / 08: correct “Tinguiririca basin” and add “to” after “due”

11 / 14: divide “Tinguiririca basin”

11 / 19: again “between 1975 and 2001”

11 / 21-22: better write “positive discharge trends for several rivers in central Chile”

11 / 23: correct “Tinguiririca”

11 / 24: “indicating that”

11 / 24-25: be careful, a typical grammar issue in your manuscript “tends to occur”

11 / 26: correct “it is uncertain” and write “whether” (avoidable with a normal grammar check!)

11 / 28: correct “is yet to occur”

11 / 30: use plural “Estimations of”

11 / 37: use the English form for “Peru”

11 / 39: eliminate “due to increasing latitude” and use plural “reduce”

12 / 01: use plural “Local factors”

13 / 10: add “asl” after “~3800 m”

13 / 28: eliminate first “forestry” and “irrigation”, both are redundant

13 / 30: not clear “medium to long term trends” – you refer to future discharge trends, clarify

13 / 31: more precise is “glacier contribution to river discharge”