

Dear Editor,

Thank you for your decision. We revised the manuscript according to your suggestions. Comments and replies are shown in Century style and **Arial bold with line number**, respectively. Revised/added descriptions are colored by red in the main text.

Thank you very much for the careful revisions. From my point of view the effort was really worth it as it is now much better and contributes well to the understanding of the evolution of debris-covered glaciers. However, I have some minor comments left which should not be too difficult to address:

L. 31/32: Please do not cite more than 5 paper in a row. I suggest to split into the studies which address Langtang and those which address Khumbu regions.

[reply] We split the citations into two regions [L30-32].

L. 36: You may think to consider here: Basnett et al., 2013. Influence of debris-cover and glacial lakes on the recession of glaciers in Sikkim Himalaya, India. *J. Glaciol.* 59 (218), 1035–1046.

[reply] We added Basnett et al. (2013) and deleted the period [L37].

L. 171: For density scenario 1 I suggest to use 850 ± 60 kg /m³ which has now been established in many geodetic studies without further density information.

[reply] We recalculated the mass balance based on this density, which changed from -0.18 to -0.17. The density uncertainty (± 60) increased the mass balance uncertainty by 0.01 for each scenario setting but did not affect final one (in detail, 0.166 to 0.174 so that 0.17 did not change). We changed related values [L10, L173, L184, L189, L228, L229, L308, L342 and Table 3].

L. 174: Provide a rationale for this ELA.

[reply] We think that the description "since the debris-free surface of Kanchenjunga Glacier possesses a positive elevation change" provides the reason. We did not change here.

L. 222 – 233: This section contains both methods and results. Move the methods to the method part.

[reply] We moved the method-like descriptions to L178-183, and slightly changed the wording of the result description [L228].

L. 238: These studies are all authored of co-authored by me. I suggest to remove Pellicciotti et al. 2015 (it was updated by Ragetti et al. 2016) and include another study not authored by me.

[reply] We replaced Pellicciotti et al. (2105) by Gardelle et al. (2013) [L240].

L. 290: I suggest to remove the “older” studies (Bolch et al., 2011; Nuimura et al., 2012; Gardelle et al., 2013) but include therefor the most recent relevant ones, e.g. Bolch et al. 2017, TC (if you want as it uses also KH-9 data, but I do not force as it focusses on Karakoram), Brun et al. 2017, Nat. Geosc., Lin et al. 2017, Scientific Reports.

[reply] We replaced the three studies by the latest three you suggested [L292].

L. 309: I notice that these studies overlap within the uncertainty ranges. Hence, I'd formulate the differences a bit more with caution although the provided explanation based on the hypsometry differences is very reasonable.

[reply] Acknowledging this suggestion, we added the phrase you pointed out "though these studies overlap within the uncertainty ranges" [L312]. We tested the hypsometry effect by replacing hypsometry, which is response to the next comment.

L. 317: The explanation that also the smaller debris-covered fraction for Kanchenjunga Glacier yields to a less negative geodetic mass balance

compared with Khumbu Glacier is not so obvious. Provide more evidence or formulate with more caution.

[reply] We tested the hypsometry effect by replacing hypsometry of Kanchenjunga by that of Khumbu, which results in $-0.29 \text{ mm w.e. a}^{-1}$, more similar value to the observed Khumbu Glacier. We added the description [L319-321].

L. 331: I am not so convinced that the Kanchenjunga Glacier can be seen as representative for this region. Provide more evidence of formulate with more caution.

[reply] Because no evidence is available (that's why we did this study), we weakened the assertion by rephrasing the last sentence as: "Although we believe that the mass balance of Kanchenjunga Glacier could thus be viewed as representative of the region, more measurements should be accumulated for the regional mass balance in the easternmost Nepal Himalaya." [L337-339]

L. 337-344: These lines are important but do fit better in the discussion. Here you can highlight better that your results seem to be robust despite the low data coverage and large uncertainties. You could also highlight similar problems with unmeasured accumulation areas (as present in several studies, e.g. Maurer et al., King et al.)

[reply] For the former comment, we think that the following description already addressed the same thing: "While we believe the TIN editing method employed in this study greatly improves the relative accuracy of the generated DEMs (5.5 m or $\sim 0.16 \text{ m a}^{-1}$), the time-consuming manual editing process limited us to generating DEMs for only a single glacier." Acknowledging your suggestion, however, we added the phrase as: "and thus provides the robust DEMs". [L344]

For the latter comments, we inserted the following sentences in the result section: "The unmeasured accumulation area due to poorly contrasted bright snow surface is a common issue in the recent similar studies (e.g., Maurer et al., 2016; King et al., 2017)." [L234-235] and in the conclusions:

"This issue of unmeasured accumulation area is pointed out in the recent relevant studies for Himalayan glaciers." [L349-350]