Dear Professor Benjamin Smith,

Thank you for your valuable suggestions and I have already revised and modified the revision according to your suggestions. The following are a few answers to some questions.

(1) “A comparison between the mean precipitation and the maximum might be more informative.”

Answer: I have already revised and compared the maximum precipitation with the mean precipitation.

“Annual precipitation data for 1980–2012 from the three nearest meteorological stations (Bomi, Zuogong and Zayu), indicated that the maximum precipitation was 1.3 times the mean precipitaion in the decade (1153 mm in 1988 vs. 891 mm) at Bomi (29°52′N, 95°46′E, 2736 m a.s.l.). At Zuogong (29°40′N, 97°50′E, 3780 m a.s.l.) the maximum precipitation was 1.5 times the mean (683 mm in 1987 vs. 405 mm), while at Zayu (28°39′N, 97°28′E, 2423 m a.s.l.) it was 1.4 times the mean (1091 mm in 1988 vs. 792 mm). Assuming variations in precipitation at the high-elevation glacier areas reflect those of the three nearest meteorological stations, the increased accumulation could certainly have influenced terminus activity. In complex terrain the accumulation distribution varies greatly so the response of glaciers may differ; some individual glaciers did advance between 1980 and 1988.”

(2) “I would recommend that the information about the improvement in the registration between the two DEMs be illustrated with a histogram of the elevation differences before and after the registration procedure.”

Answer: Thank you for your suggestion. I have already added a histogram of the elevation differences before and after the registration.

“Relative horizontal and vertical distortions between the two datasets, can be corrected with statistical approaches based on the relationship between elevation difference, slope and aspect (Nuth and Kääb, 2011). Elevation differences in off-glacier regions were used to analyze the consistency of the TOPO and SRTM C-band DEMs (Fig. 4). After co-registration, histogram statistics of the elevation differences for off-glacier regions showed that elevation difference in off-glacier regions concentrated on the mean elevation difference from 4.94 m to 0.67 m. It is concluded that elevation difference in off-glacier regions have stabilized, the pre-processed DEMs were acceptable and suitable for the estimation of changes in glaciers mass balance.”

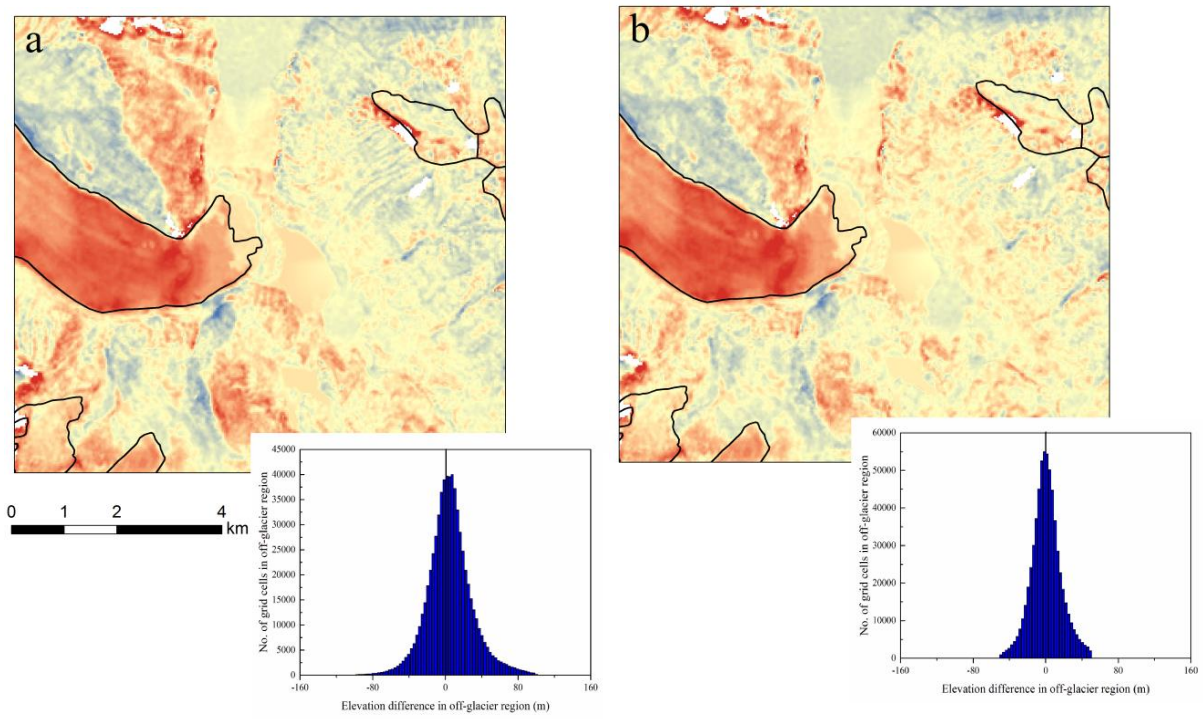

Figure 4. Elevation differences estimated between SRTM and TOPO DEMs before (a) and after (b) co-registration, north slope of the Kangri Karpo. Location of the data example is shown in Fig. 6A.

(3) "The referee's comment seems to be a polite suggestion that there may not be any surging glaciers in the region, so the authors' suggestion on page 11, lines 20-21, that the glaciers were advancing because of surges, may not be correct."

Answer: Thank you for your valuable suggestions and I have already revised this sentence.
"Overall, negative elevation changes were found for all glaciers except two on the southern slope of the Kangri Karpo (Fig. 6C). Comparing the average changes of these two tongues from 1980–2000 and 2000–2014, positive changes were found between October 1980 and February 2000, and negative changes after 2000. Unfortunately, the situation in the accumulation areas of these glaciers is unknown due to data voids. This activity might be interpreted as the result of higher precipitation (Shi et al., 2006)"

(4) "The authors' response to the referee 2's comment about the climate controls is a step in the right direction, but the discussion needs to be more quantitative."

Answer: Thank you for your valuable suggestions and I have already revised this sentence.

"Rainfall increased slightly in the Kangri Karpo during 1980–2012. This increase in precipitation resulted in more glacier accumulation yet the glaciers experienced an intense mass deficit. Other factors must be playing a more important role in this deficit. In the case of temperature, warming was present in the Kangri Karpo during 1980–2012. Meteorological sration records indicate that average air temperature increased in the Kangri Karpo Mountains more than

0.2 ℃ per decade (with confidence level <0.05), higher than the rate of warming in global (0.12 ℃ per decade, 1951–2012). The rate of warming on the northern slope is slightly larger than that on the southern slope. Meteorological sration records showed that average air temperature increased at 0.27 ℃ per decade and 0.25 ℃ per decade in Bomi and Zuogong station, higher than Zayu station slightly (0.2 ℃ per decade). While a small warming rate was present from 1980–2000 it increased to large warming rate thereafter. This is consistent with how the glaciers have changed. In the Kangri Karpo they have experienced a substantial area reduction and mass deficit. The mean mass deficit in drainage basin 5O282B (on the northern slope) was larger than that in drainage basin 5O291B (on the southern slope) during 1980–2014. Furthermore, the rate of glacier shrinkage and mass loss from 1980–2000 was less than from 2000–2015. Thus, the changes leading to glacier wastage in the Kangri Karpo can be attributed to climate warming."

Best Regards,
Wu Kunpeng and other authors