

Interactive comment on “Quantifying ice loss in the eastern Himalayas since 1974 using declassified spy satellite imagery” by Joshua M. Maurer et al.

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Received and published: 9 May 2016

General comments _____

This manuscript addresses glacier variation over long period (1974–2006). The consistent procedure for generating DEMs use with HEXIMAP enables DEM differentiation with high accuracy, and overcomes procedure-dependent error. The estimated regional mass budget shows little discrepancy with previous studies. However, authors explanation about the discrepancy come from difference of analysed time span (previous studies only cover last decade) is reasonable.

Specific comments _____

C1

P5 L9-10: Could you show the rate of estimated thickness change in each elevation band in Figure? For example, stack histogram in Fig. 4 might be better (extrapolated data with another color on blue histogram bar).

P6 L28: Does "standard error (SEM)" mean "standard error of the mean (SEM)" or "standard error (SE)"?

P8 L12-13: The geodetic mass balance by Kääb et al. (2012) also includes East Nepal. Strictly speaking, elevation difference around Bhutan is more negative. In Gardelle et al. (2013), they re-calculated it as -0.52 ± 0.16 in Table 5. The value should be used here.

P10 L13: Fig.4 is appropriate figure for checking summary of glacier variation tendency for each glacier type. However, such aggregation of each data make unclear each glacier characteristics. Is it possible to add ice thickness change profile of each glacier as colored lines into Fig.4? If it makes Fig. 4 ambiguous, please add it as another new figure.

P10 L13–20: You have mentioned the three possibilities of the small lowering elevation bands (about 4600–4800 m) here. I recommend to investigate the reason by checking individual glaciers. Number of glaciers in these elevation bands (about 4600–4800 m) are 2 and 6 (from Fig. 4), so it is not laborious work. I guess your second possibility is correct.

P11 L1–20: As I commented before, figure about ice thickness change profile for each glacier should be add. It make easy to understand discussion here.

Figure 3: Description about elevation change for each glaciers (Glaciers a and b ...) should be moved to main text.

C2

typing errors _____

P9 L17, P15 L29: Correctly, his family name is not Watanbe but Watanabe. It is erratum by the journal 'Mountain Research and Development'.

Interactive comment on The Cryosphere Discuss., doi:10.5194/tc-2016-48, 2016.