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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Potential flood volume of Himalayan glacial lakes" *by* K. Fujita et al.

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We thank the reviewer for his valuable comments. Our replies are denoted by a header [Reply].

The manuscript is at present difficult to read from section 2 onwards because it is not clearly structured - some changes are suggested for improvement: It should be explained clearly at one place what you did with the five lakes in your training group. At present this information is split into single sentences spread within the whole text. Keep the research design and technicalities (details of DEM generation etc.) separate – it's completely mixed at present (e.g. p. 19, l17 to p20 l6). The whole section "Error evaluation" is difficult to understand in terms of what was done why. Reformulate.

[Reply] We will change the structure.

The abbreviation SLA stands for both steep lakefront area and steep lookdown area at present. Choose one of these and stick with it.

[Reply] We corrected 'lookdown' in caption of Fig. 1 and in footnote of Table 1 into 'lakefront'.

Sentence at p20 l5-6: it is not clear why you did this. Elsewhere you say that for the pre-GLOF state of the five training lakes you used Hexagon imagery.

[Reply] We replaced 'the ASTER data' by 'the Hexagon KH-9 DEMs' and inserted 'training' between 'the five' and 'glacial lakes'.

P20 l15-20 this is the crucial part where you derive the 10 degree threshold. Reformulate so that it is 100% clear how exactly you came to number 10 – at present it is not visible in Table 1. You could e.g. draw a figure where you would show a section across the moraines of these five lakes (in the style of Fig. 1) pre and post flood.

[Reply] We added a figure (Figure R5) for cross sections pre-/post-GLOF of the five lakes.

P20 l27: make it clear that these are three of the five training lakes.

[Reply] We did it.

P21 l2-4: Reword so that it is more easily understandable that 23 out of 44 lakes, classified by Mool et al. (2001a, b) as potentially dangerous, are deemed safe by you since you identified that they do not have SLA.

[Reply] We will rewrite this part to avoid misunderstanding.

There is a logical twist at p23, l26-27. If you are discussing the stability of moraines damming glacial lakes you cannot include bedrock-dammed lakes.

[Reply] No logical twist. We meant that some rock dammed lakes might be included in the analysis. We inserted the following sentence: As an extreme case, some rock

dammed lakes might be mistakenly included in the analysis though we confined our targets to moraine dammed lakes. Such a bedrock dam should be less susceptible to breaching„,

The first part of the conclusions (p 23, l14 to p24, l7) should be moved to the discussion; only the remaining part brings conclusions of the ms.

[Reply] We will change the structure and enrich the remaining conclusion.

Reference to Clague and Evans (1994) does not appear in the text. Check the punctuation in the reference list. After the list of authors you sometimes have only a period or only a colon.

[Reply] We deleted Clague and Evans (1994). We corrected the style of reference list. But 'Kamra' in Iwata et al. (2002) has no first name so that period is unnecessary.

Figs: A figure of a lake excluded from the study (3b) is unnecessary.

[Reply] We don't think so because readers may not be familiar with the type of glacial lakes.

Panels c and d of Fig. 3 that are referred to in the text (p23, l4 resp 12) do not exist.

[Reply] We corrected Figs. '3c and 3d' to '7c and 7d'.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 15, 2013.

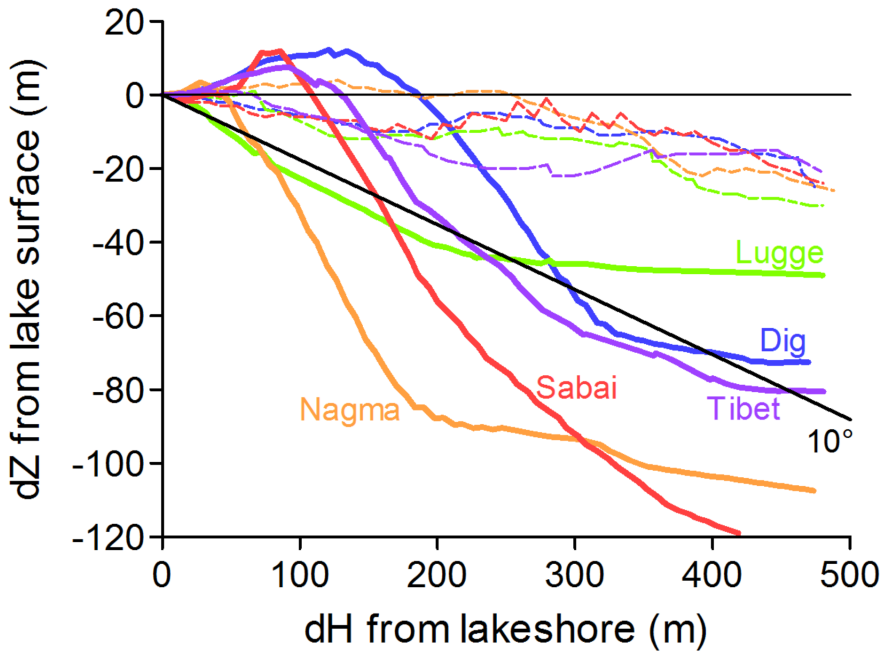

Fig. 1. Figure R5. Cross sections along the outlet of five training glacial lakes in the Himalayas (see also Fig. 4).