The Cryosphere Discuss.,
doi:10.5194/tc-2016-239-RC1, 2016

The Cryosphere Discussions
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Interactive comment on "Brief Communications: Observations of a Glacier Outburst Flood from Lhotse Glacier, Everest Area, Nepal" *by* David R. Rounce et al.

Anonymous Referee #1

Received and published: 6 December 2016

This Brief Communication describes outburst flood initiation by drainage through englacial conduits, a process that has been inferred from observations on debris covered glaciers in the Everest region, but rarely observed. As such, this communication makes an important contribution to the growing literature on outburst floods and I think publication as a communication is appropriate. I have a few general comments that I think should be addressed in a revision.

I am aware of few observations of englacial outburst floods, which is the primary reason why I think this Brief Communication should be published. Please highlight this important facet of the flood in both the title and abstract. One possible suggestion for a title would be: Observations of the role of englacial conduits in a Glacier Outburst

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Discussion paper

Flood from the Lhotse Glacier, Everest Area, Nepal.

Abstracts should present the key findings of the research rather than tell the reader to read the article. I suggest starting over from scratch.

Page 1, Line 7: Does the paper need to mention that the results of this paper are not the opinion of the WV DEP? Page 1, Line 18: the location of “unleashing” is not downstream. Page 1, Line 19: change “mass movement” to landslides, ice falls and/or avalanches. Also, this will sound picky, but the cause of the flood is the resulting wave that overtops the dam, leading to failure. The other triggers should probably also be described in the context of how they contribute to dam failure. Page 2: Line 25: Not clear why supraglacial ponds are indicative of active ice dynamics. Page 3, Line 10: The rationale for assuming that average velocity was 85% of the float velocity is?

Page 7, line 13: hydrostatic pressure exceeding cryostatic pressure seems an unlikely trigger for an englacial/supraglacial lake drainage mechanism. More plausible is that two lake basins at different elevations became connected by a permeable feature within the ice (such as a relic supraglacial channel; Benn et al., 2012 or Gulley and Benn, 2007). Line 15: It is not clear what is meant by “open up outlets of lower hydraulic potential” Page 8, lines 16-19: I don’t think that two events in two years can be called repetitive. Page 8, line 21: I think the authors need to clarify that this is possibly the first time that an englacial outburst flood has been witnessed. I’m not aware of any of similar observations on debris covered glaciers. Page 8, line 26: The authors have not presented any direct evidence that the subglacial drainage system played a role in this flood. Figure 1: Is there no way to create a DEM of the glacier surface? It would go a long way towards showing supraglacial flow paths.

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