

Will landscape responses reduce glacier sensitivity to climate change in High Mountain Asia?

Specific comments

- Ln 73: Double check this and provide a citation.
- Figure 1: Clarify in caption that sediment supply is to the glacier, not from the glacier. Also, replace “Ice glacier” with “Clean ice glacier” as this is what is used in text. Reviewer 2 made a comment about this.
- Paragraph 169–189: Uses “explore” three times. Please change.
- Glacier lake outburst floods, in my understanding, is not capitalized.
- Ln 222: Something strange in this sentence. It seems to suggest that negative mass balance refers to lakes, not glaciers. Please rephrase.
- Ln 230: I could be wrong as a non-expert, but my impression is that “modeling research” or “regional research” could be a better representation of previous work mentioned above. Also is there a chance that a review article on this research could be cited here?
- Ln 241: Could “water pressures” be explained? The connection is unclear to me.
- Ln 261: Please add citations for the glacierMIP work?
- Ln 265: Please define “these features.”
- Ln 274: “PT scenario will likely increase the resilience...” The increase happens regardless of our MIL or PT scenario. Would a better way to phrase this sentence be: “PT scenario accounts for increased resilience...”?
- Ln 280: As no citation is given at the end of the sentence, please change the “will” to a “could”.
- Ln 311: is “although” needed? Same for Ln 331?
- Ln 316: “these glaciers?? move into high-elevation cirques”? “Conditions” sounds a bit strange.
- Ln 312: Should ice-debris landforms be included/mentioned here?
- Ln 320: is “more rapidly” meant rather than greater? It is not clear what exactly is greater.
- Ln 321: “rock glaciers to develop” would “transition to occur” be more accurate?
- Ln 332: “precisely how”. Could this be replaced with a more concrete example, for instance, it is difficult to examine the precise timing/variability amongst glaciers and/or regions? As it is, I find that this sentence may undermine much of the message in the paper.
- Ln 340: Can some clarification be added here? Do the authors mean glaciers generally “the glaciers”? a particular glacier? or group of glaciers, for instance in a region?
- Ln 357: Consider removing this sentence and referencing the figures.
- Ln 362-363: While the sensitivity of the glaciers is discussed, could speculative statements be made (and supported) about the role the pathway or geomorphic impact?
- Figure 2: In the bar plots, what is 7.3? please add a scale to mention what they represent?
- Figure 2: LIA is noted in the figure, however, “Holocene Neoglacial Maximum” (Ln 347) or “Neoglacial” (395) are used in the text. Please make consistent.
- Figure 2: Along the recommendations of Reviewer 1, please include the Karakoram on the map, as this region is discussed in lines 408-409. Likewise, as the Khumbu region is referenced in paragraph at 418, please mention which region that it is in.

- Ln 404: MIS defined multiple times (see above). Also, would it make sense to add dates? and use either LGM or Last Glacier Maximum, but not both.
- Paragraph 399-414: This paragraph would be strengthened if a stronger link was made with the different pathways and the role of geomorphic activity.
- Ln 432-433: “supports the PT scenario...” As an outsider to the field, could a more detailed explanation be made as to why this behavior supports the PT pathway, as opposed to other factors such as glacier response time.
- Ln 485: given the specific findings (90% loss by 2100), please add a citation.
- Ln 500: “More research...” can this sentence be shortened?
- Ln 501–504: There has been some drilling in Khumbu to these ends, I believe. Please add a citation.
- Table 1. Remove blank column and consider added a column with average of the different studies to easily differentiate the differences amongst the regions.