

Replies to the referee comment by Doug Benn

We thank Doug Benn for his kind review of our manuscript. His specific comments (in blue) and our corresponding responses are given below.

5 12: insert 'of' after 'fraction' 14: 'cover' should be 'covered' 16: insert 'a' after 'of' 18: 'Bannerjee and Shankar, 2013). But...' should be 'Bannerjee and Shankar, 2013), but...' (i.e. no sentence break) 25: 'subsides' is not a good word here. 'The debris is buried in the snowpack' would be better. 26: delete
10 'the' before 'it' 29: '...net mass balance. So much so...' should be '...net mass balance, so much so...' (i.e. no new sentence) 31: 'activities' should be 'activity' 45: 'much smaller' should be replaced with 'less negative' 73: 'causes' should be 'cause' 185: 'line' should be 'lines' 194: 'quite' should be 'very'
Above suggestions would be incorporated in the revised manuscript.

15 196: This statement is not correct - and the following discussion does not clarify the issues very well. AAR's of 0.6 on alpine glaciers reflect the area of snowfield required to balance ablation rates on bare ice. On an avalanche-fed, debris covered glacier, the conditions are different. First, avalanches dump large masses
20 of snow in a small area - hence the accumulation area is smaller than would be the case if accumulation occurred by direct snowfall. Secondly, ablation under debris is typically much less than for bare ice, so larger ablation areas are needed to melt the same amount of ice. So, smaller accumulation area + larger ablation area = smaller AAR. These points should be made clear in the discussion.
25 We agree that the interpretation of the low AAR value of Hamtah glacier could be made clearer. We would revise the manuscript accordingly.