

Interactive comment on “Tracing glacial disintegration from the LIA to the present using a LIDAR-based hi-res glacier inventory” by A. Fischer et al.

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Of the research questions raised on p5198: "(i) is the increasing retreat rate found by Abermann valid for all Austrian glaciers, or are the reverse precipitation trends found by Auer (2007) also reflected by glacier retreat rates? (ii) How large are the current retreat rates compared to past retreat rates? and (iii) can we define a relation which allows the calculation of area decrease as a function of climate change?", only (ii) is directly addressed. The manuscript would be much stronger if it attempted to draw some conclusions about all of the above.

5197-line5 “All these research” should be “All this research”

C2575

5197-16 delete “of older data”

5198-17 “downwasting of glacier area” is incorrect. downwasting is the thinning of ice, not loss of area (only of volume)

5199-6 Avoid use of the passive voice so that it is evident who did the action. Rather than “inventories have been compiled...” use “X has compiled inventories...”

5199 Data - section 2.1 should only describe how the inventories were compiled and updated. the results should be moved to a later section.

5199-9 please explain what is meant by homogenized

5201-23 “to the glacier” is repeated

5202 section 3.2 needs more detail on the methodology. for example, provide a graphic illustrating delineation of glacier margins based on surface roughness in lidar data. show how orthophotos were used to update glacier margins. Move information on accuracy to data section and to uncertainty discussion in section 5.

5205-24 do not begin a sentence with numerals. Spell out “Fifty percent...”

5205-19 GI II should be GI III

5207-10 two decimal places in accuracy estimates is not warranted

5208-3 how was the figure of 10% arrived at? could it be 20%? 30%? In fact, isn’t there a fundamental limitation in estimating LIA glacier area (as opposed to just mapping the ablation zone margins)? i.e, there is no firm basis for estimating accumulation area.

5208-10 GLIMS has established a system for identifying glaciers and parent-child relationships. Reference Raup, B.H., and Khalsa, S.J.S. (2010) GLIMS analysis tutorial, 15 pp. Available at http://www.glims.org/MapsAndDocs/assets/GLIMS_Analysis_Tutorial_a4.pdf

5210-11: no results were presented to support this conclusion

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5210-23: I did not notice any such proposed relationship between summer temperatures and area change

5216 Table 1, include acquisition dates

Interactive comment on The Cryosphere Discuss., 8, 5195, 2014.

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