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The Cryosphere Discussions
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Interactive comment on "Buoyant calving and ice-contact lake evolution at Pasterze Glacier (Austria) in the period 1998–2019" *by* Andreas Kellerer-Pirklbauer et al.

Anonymous Referee #2

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General comments

The paper 'Buoyant calving and ice-contact lake evolution at Pasterze Glacier (Austria) in the period 1998-2019' by Kellerer-Pirklbauer et al. presents important insights in new type of processes appearing during the present phase of rapid glacier recession in the Alps. The multimethod and long term investigation of the formation of lakes with ice contact, relocation of debris and calving events is key for estimating present and future retreat rates not only in the Alps, but in all mountain regions where the over-deepened glacier tongues disintegrate. The overall presentation is well structured and clear, the language is quite free of spelling and grammar errors and clear. What actually

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is missing and would be very helpful, is the quantification of loss by calving during the period to the total ablation at the glacier tongue, showing how large the contribution of this new process actually is. This would be nice to read in the abstract also, just for example the specific mass loss/year at the lake and the mean direct specific surface mass balance at areas in the same elevation without contact to the lake.

Specific comments

145: are you referring to a calendar year or a mass balance year? What exactly would be the implication of the temperatures during the winter?

Technical corrections

233: pixels? 235: 0.95 m 236: .Thus, . . .? 266: 0.1 m? 283: of about 1.4 km 362: MEZ?, pm missing at the end of the line 441: 4 106 m3? Figure 4: please check again the legend, you use a thin black line outlining the hillshade, and at the same time for the outflow

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