

The Cryosphere Discuss., author comment AC1
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Reply on RC1

W Brian Whalley

Author comment on "Comment on "Ice content and interannual water storage changes of an active rock glacier in the dry Andes of Argentina" by Halla et al. (2021)" by W. Brian Whalley, The Cryosphere Discuss., <https://doi.org/10.5194/tc-2021-88-AC1>, 2021

Thank you for your remarks.

- My commentary is based on observations via Google Earth imagery. This makes it possible for any reader to look at the field evidence and surrounding areas. Charles Darwin noted, 'How odd it is that anyone should not see that observation must be for or against some view if it is to be of any service' (Ayala, 2009). This quotation highlights issues in the philosophy of science and the nature of evidence both of which I touch upon in my responses hereafter. I have numbered the main points sequentially for the benefit of the reader.
- My original comments, and indeed my responses posed here, are intended to show readers the field evidence as I see it; 'it is essential to the scientific process that any hypothesis be "tested" by reference to the natural world that we experience with our senses' (Ayala, 2009).
- Although it may not be 'possible to determine the origin of rock glaciers', the reviewer acknowledges that my argument is 'sufficiently convincing' to warrant using the glacial model for the Dos Lenguas (DL) rock glacier. My comments are based on observations from various glacier-rock glacier landsystems in the area. I chose to illustrate it with one specific example, but I fill in some more detail in my responses to others below.
- In the responses I use the following convention to help readers identify locations on Google Earth (GE) by pasting in the numbers in the GE search bar between square parentheses. Thus, Dos Lenguas (DL) can be identified as decimal latitude and longitude [-30.24664,-69.78667]. A transect along the 'fall line' on the feature starts at the top with the last term (260) being a bearing in degrees from the preceding couplet as origin: {-30.24235,-69.76730,260}. This decimal degree convention is more useful

to georeference features at various scales and transects for recording purposes than the traditional ° ' ". See Whalley (2021a, 2021b; collated references are at the end) for illustrations about the notation for studying rock glaciers elsewhere.