

## ***Interactive comment on “Summer valley-floor snowfall in Taylor Valley, Antarctica from 1995–2017” by Madeline E. Myers et al.***

### **Anonymous Referee #1**

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This manuscript describes updated datasets on snow depth and snow cover in the Taylor Valley. The authors suggest these data may be used for trend analysis and to test hypotheses of weather patterns and forcing thereof. The manuscript is reasonably written and easy to follow, though further care and proof-reading to correct typographical errors would be useful. The dataset is certainly useful and analysis important for describing the snow patterns within the Taylor Valley. However, the manuscript lacks depth for publication as a research article. There is no clear objective other than to use data to re-analyze trends previously observed in the data. While I certainly see the value of these data and the analysis, I think the manuscript would be more appropriate as a data paper in another journal (because The Cryosphere does not offer a data paper format). Below are minor comments.

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Page 2 Line 9: is this temperature supposed to be negative?

P3 L15-20: The specific objectives are not very clear. It could help a reader determine precisely what the paper is trying to accomplish if these are re-written for better clarity

P4 L11-12: this is the first time this is phrased as a hypothesis, please state this in the introduction, this would help clarify objectives previously mentioned.

P6 L22:  $r^2$

P7 L15: what do you think the potential error in depth conversion to w.e. using a single density observation is? I understand the need for this method, but what magnitude of uncertainty does this bring with it?

P8 L12-13: So how much does density vary in the available observations?

P8 L28: How much do you think make it to the valley floor from the mountain peaks? I would think that so much sublimation would occur in the dry air and high wind speeds that little to no snow would make it that far. Just a thought.

Conclusions: A lot of these conclusions read more like discussion points. I suggest simply stating the conclusions directly.

Figure 3: Could you use colors that contrast a little more, please? It is very difficult to see the differences between the line colors.

Figure 4: It took me a bit to figure out the color symbology. A legend for the colors would be a great help.

Figure 7: What is the  $r^2$  and p-value for? Can you show the line for the regression?

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