Dear Hannah,

Thank you so much for your response. I will respond to your comments here, but I would also be happy to discuss these further offline. I will reach out via email.

Intra-seasonal RSD variation plot
Yes, the three sites we selected for the intra-seasonal plots are relatively proximal. We selected these sites because they had the most data spanning different years and periods within the snow season. These sites give the best visualizations of change in relative snow depth throughout the season. Colorado sites generally have fewer data points (max. 2 per year) and are collected at uniform periods in the snow season. We will consider adding sites from Colorado to a second row in the figure. The conclusions would not change based on the addition of these plots. An example of CO sites with the most data points are shown below).
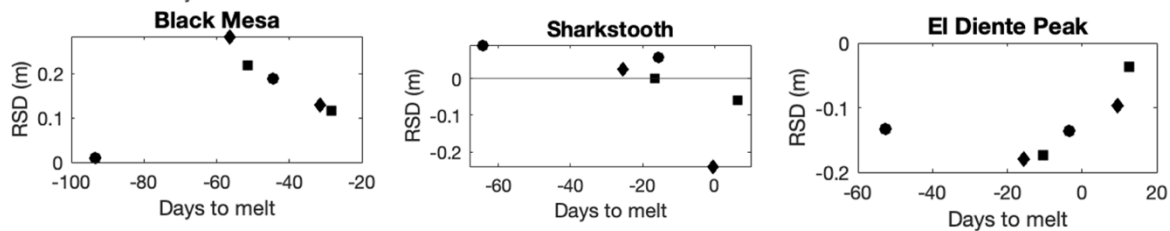

Figure 1. Days to melt vs RSD at three Colorado sites for the 1 km scale. We will consider adding these plots to Figure 10 in the manuscript.

Vegetation
Thanks for the clarification on this. It has not been our intention to construe vegetation as unimportant to snow distribution and relative snow depth. Our landcover and vegetation analysis is a secondary aspect of this manuscript and the linear regressions we conduct are quite simple. We wanted to see if any obvious relationships are apparent using widely available landcover and topography datasets. Our plan is to follow this paper up with a more complex analysis of landcover and topography using snow station and lidar data.

The most obvious issue with the relative FVEG metric is that it requires aggregation of all FVEG values within the study area to a single value. This means that any information on forest distribution aside from bulk forest cover is unaccounted for. I think this is a point that we could stress more in the manuscript – the distribution (as opposed to bulk sum) of forest cover is a key variable in the effect of vegetation on snow. We will also stress that the lack of significant relationships between RSD and relative elevation is because the relationship is too complex to be captured by a linear regression of FVEG aggregated to the km scale.

Prior to the next submission of the manuscript we will:
- Analyze other forest cover datasets such as canopy height (from NLCD or ASO).
- Attempt an analysis that uses a metric which includes the variability of vegetation across the landscape.

- Either delete the vegetation cover aspect of question 3 or re-word it to clarify that our analysis focuses on data aggregated to scales that may not be able to cover more complex snow dynamics.

High bias

Good point. The benefit of a persistent snowpack at a snow station is mentioned briefly in the introduction (lines 36-38). We will highlight this again in the discussion section.