We would like to thank the reviewer for the very helpful and constructive comments in suggesting improvements in our original manuscript. Below we provide point-by-point responses to the comments, where any proposed changes would be finalized during the revision of the manuscript made in the next stage.

Reviewer # 1:

As mentioned in my summary above, I was surprised how little additional analysis there was in this manuscript beyond exploring the dataset. Especially since the algorithm development and discussion is published elsewhere, I would like to see additional analysis here. On line 249, you say "A more comprehensive analysis of HMA SWE between multiple products will be addressed in an upcoming intercomparison paper using HMASR." Can that intercomparison not be included here? This did not seem like a very long manuscript, and understanding how the HMASR dataset compared, and likely improves, upon currently available datasets would strengthen this manuscript.

The paper was originally conceived primarily as a "data paper" to emphasize the new dataset that focuses on seasonal snow over HMA. It was submitted to Earth System Science Data (ESSD) where we were told it was out of scope because it had "too much analysis" due to the inclusion of analysis of the space-time climatology of seasonal snow. Admittedly, this places this paper somewhere between a typical data paper and a more typical research article that uses existing datasets. The rationale for not including additional analysis was to maintain this paper as primarily a standalone description of a new estimate of seasonal snow climatology over HMA. Including additional analysis through an intercomparison lens will not only push this paper over the length limits, it will likely require giving short shrift to both this new dataset and the other datasets included in the intercomparison. The intercomparison paper we are currently drafting is easily a standalone paper itself and therefore merging the two will, in our opinion, water down both sets of material. Hence our preference is to keep this paper short and to the point in terms of providing a new estimate of seasonal snow climatology, while pointing the readers to the new dataset where further analysis can be performed. In the revised manuscript we will further flesh out the space-time climatology and variability of the new dataset through additional analysis.

On line 62, you say that most reanalysis datasets dot not assimilate snow observations, but on lines 72 and 74 you mention that JRA-55 assimilates ground snow depth and satellite snow cover and ERA5 uses in situ snow depth and satellite snow cover in the assimilation. Please rephase the sentence on line 62 to indicate that some datasets do assimilate snow related observations.

Thank you for your suggestion. We will rephrase the sentence on line 62 as suggested.

You only process tiles with tile-averaged elevation above 1500 m. Do you have an estimate for how much snow is "missed" with this assumption?

It is difficult to explicitly compute how much snow is missed with this spatial screening in our dataset, but the tile-average threshold was chosen to conservatively capture the vast majority of the seasonal mountain snow over HMA. This choice was made for computational reasons to avoid including a significantly larger number of additional tiles that have negligible snow. We can include more areas (at lower elevations) in future versions of this product.

Could you provide a few additional details on your setup of the SSiB3 model? How many snow layers? Could you provide a few additional details of the Liston snow depletion curve? Readers may not look back at previous publications.

We will give more details on the setup of the SSiB3 model, and provide a few additional details of the Liston snow depletion curve in the revised manuscript.

Since you use observations from Landsat 5, 7, and 8, is there any need to do any sort of correction between the three versions? Is the fSCA calculation/band math the same in each version?
The methodology (i.e. end-member mixing analysis) used across Landsat datasets is the same. However, the retrieval uses the specific bands associated with each sensor (i.e. associated with Landsat 5, 7, and 8 ETM, ETM+, and OLI sensors). Intercomparison of fSCA showed no large systematic differences across sensors. It is therefore assumed that any differences that do occur are within the specified Landsat measurement error standard deviation of the products (i.e. 10% of fSCA) that is used in the reanalysis to represent retrieval error/uncertainty.

If additional analysis does make the manuscript too long, I recommend condensing the text on lines 307 to 329 since it states what is already shown in Table 1.
We will condense the text between 307 and 329 as suggested.