General Comments

Cao and Gruber investigate the performance of five modern reanalyses (JRA-3Q, ERA5, MERRA-2, JRA-55 and NCEP2) over cold regions, with a focus on air temperature and snow water equivalent (SWE). The manuscript has been revised and addresses many of the comments that myself and the other referee had, resulting in a more robust analysis of the deficiencies of reanalyses over cold regions. I recommend that the manuscript be published following a few minor changes listed below.

Specific Comments

P1, L22: Why are reanalyses of higher importance over cold regions? It would be helpful to make the connection to spatial and temporal gaps in the observational record here.

Table 1, Page 4: Could the authors include the values of the spread for each variable over the study region as a whole? This would provide a strong visual contrast between performance over cold regions, and performance elsewhere.

P5, L110-114: If the difference between the 4DVar and all 5 reanalyses is not statistically significant, I would argue that this suggests that they are comparable; similar to what is mentioned for maxSWE. I suggest that the authors mention that the spread of the MAAT and relative maxSWE for the 4DVar is similar to that of all 5 products. Instead, focus on the main differences (i.e. that the spread for MAAT is up to 45% larger over cold regions, and that parametric uncertainty is an order of magnitude smaller than the structural uncertainty, etc.

P6, L145-147: The authors mention the importance of cold regions to understanding how the climate system responds to future changes. Do the authors have any suggestions for future research on the most critical changes that could be made to address the degraded performance over cold regions? I feel like this aspect is missing from the implications section.

Technical Comments

P6, L152: Replace “ERA5 is from Climate Data Store” with “ERA5 is from ***the*** Climate Data Store”