

## Response to Reviewer 1

We sincerely appreciate the time and effort invested by this reviewer in ensuring that our final manuscript is technically sound. The revisions made during this second round are shown in red font below.

There are several instances referring to MODIS as "observed" or "observations". I recommend changing to "remotely sensed albedo" to account for the BRDF algorithm used to model albedo from remotely sensed surface reflectances.

We have thoroughly assessed both the main article and SI to ensure that all former references to MODIS albedo as "observations" have now been replaced with "remotely sensed albedo".

In Figure 2 caption, change "inhibited" to "precluded".

Changed verb as per suggested.

My original comment on Supplement Figures S17-S20 appears not to have been addressed:

"p. Supplement, Figures S17-S20

It appears that CLM4 is missing a large amount of data for the open sites relative to the other models. Specifically, it looks like a lot of snow-free data is omitted. Why? And how might this have affected the results (assuming it is not a plotting error)."

We are happy that Reviewer 1 noticed that the figures in question contained few data points relative to the others. When investigating the reason, we found a bug in our figure code that resulted in several data points being masked out. We have corrected this plotting error and produced new figures for S17-19.