

Hi Nina,

Thank you for your comments on the paper. The revised manuscript has included all the technical corrections. Our responses (blue) to your comments (*Italic*) are listed below.

- According to GMD guidelines (<https://www.geoscientific-model-development.net/submission.html>) abbreviations "need to be defined in the abstract and then again at the first instance in the rest of the text." Please remove all redundant abbreviation definitions:

A) "SO" is defined twice within the Abstract (Line 16, Line 22) and twice in the Text (Section 3, Section 4).

Removed "SO" definition in Line 22 and Section 4.

B) "SWCRE" and "LWCRE" are defined redundantly in Section 3 (after already being defined in the Abstract and Section 2).

Removed those defined in Section 3.

C) "E3SM" and "E3SMv2" are defined redundantly in Section 5 (after already being defined in the Abstract and Section 1).

Removed those in Section 5.

- According to GMD policy SI units should be used and spaces must be included between number and unit. Therefore please correct "440mb", "680mb" to "440 hPa", "680 hPa" etc.

Changed "440mb" and "680mb" to "440 hPa" and "680 hPa" in Line 210-211.

- Use the degree sign consistently throughout the manuscript (e.g. 60° N), which is currently missing at several places (Lines 167, 168, 190, 191, 293, 305 ...).

Changed all "60N" and "60S" to "60° N" and "60° S".

- Please add units to Figure labels where missing (e.g., Figure 12: SWCRE ...), whereby units should be written exponentially.

Added unit to Figure label.

- Following GMD instructions " the abbreviation "Fig." should be used when it appears in running text and should be followed by a number unless it comes at the beginning of a sentence, e.g.: "The results are depicted in Fig. 5. Figure 9 reveals that..." "

Changed.

*- Some abbreviations are defined in the Abstract and Text, but then barely used. For example, I can spot over 20 appearances of "stratocumulus" and only 2 appearances of "Sc" after "Sc" has been defined (if you plan to keep "Sc" I would also advise you to introduce "cumulus (Cu)" abbreviation).*

Changed "Sc" to "stratocumulus".

*- Line 31: "re-turning" should be "re-tuning".*

Changed.

Thanks,  
Yuying