

Comment on wcd-2021-63

Anonymous Referee #2

Referee comment on "Tropical influence on heat-generating atmospheric circulation over Australia strengthens through spring" by Roseanna C. McKay et al., Weather Clim. Dynam. Discuss., <https://doi.org/10.5194/wcd-2021-63-RC2>, 2021

The study provides an analysis of the austral spring Australian maximum temperatures and their relationship with the dynamics in the tropics and extratropics. Using statistical analysis on observations and reanalysis, the study finds that Australian maximum temperatures in early spring can be partially explained by variability in the mid-latitudes associated with the Southern Annular Mode, while at the end of the season they are more related to tropical variability. The findings of this study provide new insights into the connection between maximum temperatures in Australia and modes of variability. I recommend acceptance for publication after minor revisions.

The introduction is quite long and broad; it can be shortened to keep to the point of the study. Cite only the studies that are essential for building the motivation and hypothesis of this study.

In methods, has the background warming trend been removed from temperature and other data detrended prior to the analysis?

Minor points:

L.139: Add a sentence to explain the aims of the study before listing what is presented in the next sections.

L.153: replace "omega" with 'velocity'

L.145,163,208: missing period at the end of the sentence.

L.1193: "E'arth"

L.232: Typo in "patterns"

L.298: "patterns"

L.305: delete "appears"

L.516: The end of the sentence is missing.

L.557: Delete 'heat'

Figure 1 caption: It seems that the end of the sentence was cut. Do you mean '39 independent samples'?

Figure 5 caption: Observed values are in 'pink' instead of blue?