

Anonymous referee #3

Our responses to your comments are marked in *italic* below

The authors have carefully responded to the range of points and issues raised by myself and my two co-reviewers.

There are a few matters that still require attention. Once they have been addressed I will be pleased to recommend acceptance.

I think the paper would benefit from a better introduction to the study. For example, at line 35 sea ice loss itself is mentioned here but there is no corresponding reference. Given the importance of this trend in the analysis I suggest referencing here, e.g., the recent paper of Li M (2021) Trends and variability in polar sea ice, global atmospheric circulations and baroclinicity. Ann. NY Acad. Sci. 1504: 167-186 doi: 10.1111/nyas.14673.

Accepted, reference to the paper is added.

Lines 36-37: The role of the downward long wave is a good point here. Add the supporting reference of Lee S, Gong T et al., 2017: Revisiting the cause of the 1989-2009 Arctic surface warming using the surface energy budget: Downward infrared radiation dominates the surface fluxes. Geophys. Res. Lett. 44: 10,654–10,661 doi: 10.1002/2017GL075375.

Accepted, reference to the paper is added.

Line 42: The text speaks of 'linkages' here, and in just a few other places in the document. However, 'teleconnection' is used many times (including the title). It is not clear that the authors are referring to different phenomena when using these terms. I find the use of the two terms needlessly confusing, and suggest just using 'teleconnections' throughout.

Accepted, all 'linkages' are changed to 'teleconnections'.

Lines 105-106: '500 mb' should be '500 hPa'.

Corrected.

Lines 106-107: The North Atlantic Oscillation, AO and the Barents Oscillation are not really 'teleconnection indices' (even though they do have impacts on teleconnections). Better terminology would be 'large-scale indices of the atmospheric circulation' or something similar.

Compatible change in terminology is needed at lines 110 and 111.

We changed 'teleconnection indices' to 'large-scale indices'.