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The topic of this manuscript is very interesting and important.

The authors successfully developed a powerful proxy for global LCA that is applicable not only over the ocean but also over land. The results are striking and beneficial for a lot of readers, although the proxy is empirical. The manuscript is well-written and well-organized. I appreciate that the authors squarely show all the results of 12 proxies and their cross-correlations. It should be also appreciated that the authors examined not only special-seasonal correlation but also temporal (seasonal plus interannual) regressions.

I basically recommend publication of the manuscript after the authors make minor revisions.

(I have reviewed this manuscript in the past. The authors already addressed most of my concerns and revised the manuscript properly.) I still would like to suggest only two things, which can be easily done. (Although the authors say that they will submit another paper which includes the following analyses, I guess they are important to clarify the contents of this manuscript and to avoid confusion for the readers. But it depends on the editor's and other reviewers' judgements.)

Suggestions:

(A) Analysis using all samples over the ocean (Fig. 12 and related tables):

For example, the EIS range in the panel of EIS for Ocean in Fig. 12 is very wide. I guess data with extremely large EIS and small LCA are from sea ice regions. I understand that one of the advantages of the authors' new proxy is that it can be used not only over the ice-free ocean but also sea ice regions (and over land, of course). However, the relationships between LCA and the indices are usually supposed to be used only over the ice-free ocean. Therefore, I guess readers want to see the comparison of their relationships only over the ice-free ocean (using all samples). In addition, readers will be confused by the very low correlation for EIS etc. in Fig. 12 and related tables. Can you eliminate data over sea-ice from the 'OCEAN' panels (and modify tables), if they are included?

(B) Analysis using only stratiform clouds:

In many studies related to low clouds and the proxies, the definition of low clouds is stratiform clouds that include stratocumulus, stratus, and fog. But, in the authors' study, low clouds include cumulus too. I think it is one of the advantages of this study and it is good. However, I guess many readers want to see the results using the same definition of low clouds that has been conventionally used, especially over the ocean (only for the ice-free ocean). So, could you add the figure and tables as supporting information, and give short discussion about the difference between including and not including cumulus (the authors don't need to analyze the relationships for individual low-level cloud types, just for stratiform clouds which have the same definition in previous studies)?