

# ***Interactive comment on “Assessment of Snow, Sea Ice, and Related Climate Processes in Canada’s Earth-System Model and Climate Prediction System” by Paul J. Kushner et al.***

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Received and published: 13 October 2017

This is a well-written and useful record of how well snow and sea ice are simulated in an earth-system model and a related seasonal prediction system, albeit with rather brief discussions for the large number of figures shown.

There should at least be references to how the land surface components of CanSIPS and CanESM2 represent snow, and any differences between them.

Without a figure showing annual cycles in snow cover extent, it is hard to judge how (physically) significant the trends in Figure 4 are. It would also be nice to see some

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time series of modelled and observed SCE to judge the trends and variability.

A reference could be added in the conclusions for the design of LS3MIP (<https://www.geosci-model-dev.net/9/2809/2016/>).

Figure 5: information that the IQR of observations is based on 5 datasets is repeated twice. Colour is redundant in this figure.

Figure 6: information that spatial means of trends have not been removed is repeated twice.

Figure 8: the latitude numbers could be rotated to be upright. Stating that the ORCA1 grid will be used without explanation or reference is not helpful.

Figures 11 and 14: contours are labelled, but colour bars would be helpful.

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Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2017-157>, 2017.

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