

## ***Interactive comment on “The role of moisture transport for precipitation on the interannual and inter-daily fluctuations of the arctic sea ice extension” by Luis Gimeno-Sotelo et al.***

### **Anonymous Referee #2**

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The paper presents a novel analysis of the role of “moisture transport for precipitation” on the interannual and interdaily fluctuations of in Arctic sea ice extent. The study complements an earlier study of the authors that focused on the long-term trend. Interesting differences/contrasts are found between the patterns on these different time scales, which has important implications on understanding the ongoing and future changes in the Arctic sea ice. I have a few minor comments for the authors to consider to improve the presentation.

Overall suggestion: the two components of the analysis, i.e., interannual and interdaily, needs to be better consolidated by some serious reworking of the text. Currently the

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paper reads as if it's a merger of two separate analyses. For example, there're quite a few different time scales between interannual and interdaily, and so the introduction should have done a much better job explaining why these two time scales are selected for the current study. Similarly, there's too sudden a jump in topic from 4.1 to 4.2.

Overall suggestion on table/figure captions: most of the captions are overly simplistic – an extreme example being Figure 3 caption. Please add some necessary details to guide the readers. (I understand some of the details are provided in the main body of the paper, but captions should be as informative as possible.)

Title: I think the “the role in ...” is more commonly used than “the role on ...”.

L23-24: I couldn't understand this last sentence of the abstract without reading the paper; please re-write/elaborate.

L90: “rewides”: resides?

L110 is a repetition of L108.

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