

## ***Interactive comment on “Global Hawk dropsonde observations of the Arctic atmosphere during the Winter Storms and Pacific Atmospheric Rivers (WISPAR) field campaign” by J. M. Intrieri et al.***

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Dear Reviewer 1, Thank you for your excellent comments and feedback. Below are our point responses.

Referee #1 Comments/Responses 1. (Intro, lines 1-16): Focusing exclusively on the Arctic sea ice misleads reader from the main point of the paper. I suggest motivating the need of this observing system, for instance, with the lack of high-resolution in situ proñAles in poorly observed regions for diagnosis of atmospheric structures, and less

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emphasis on climate monitoring.

The Intro text was edited to broaden from solely sea ice to the Arctic environment, in general. Intro text was edited as well to reflect less emphasis on climate monitoring.

2. Intro: I suggest adding a short review on how Global Hawk relates to other existing UASs in terms of performance, coverage, etc.

We inserted this sentence in Intro paragraph 3: The Global Hawk is classified as a high-altitude long-endurance (HALE) UAS platform which distinguishes it from other UAS that are smaller, fly at lower altitudes, carry less weight in payload, and have vastly limited ranges in comparison. Note: delete the redundant use of HALE on Intro line 17.

3. p 4072, line 17: Is RD94 the standard sonde or the one deployed in Global Hawk. Please clarify.

The RD-94 is the standard sonde deployed from manned aircraft. The “mini-dropsondes” are used on the GH. Additional text was added in Section 2 to clarify.

4. p 4073, line 13: You mention surface; I wonder how you obtain the sfc pressure, and does the sonde iñCoat and continue transmitting?

The sondes that we deployed do not obtain data after impact (we assume that all them hit the sea ice surface). Once fall speed is zero, no further data are recorded. Additional text was added to clarify.

5. Fig 4: I suggest displaying differences rather than absolute values (same in Fig. 6; Figure 7 is nice!).

We explored this option but, upon comparison, the new figure was not substantially more informative so it was left as is.