Dear Reviewer, #2

Thank you very much for your valuable comments. We revised our manuscript following your comments. We filled in reviewer comments in the black and author replies in the blue. All line numbers of this manuscript have linked to our revised manuscript.

Reviewer comment:

line 433: the phrase " leading to the coldest winter season" should be revised to "leading to the warmest winter season"

Author reply:

We have revised the phrase “leading to the coldest winter season” to “leading to the warmest in winter from 2022–2023” at line 428.

Reviewer comment:

line 435: Figure 11a should be revised to Figure 11b

Author reply:

We have corrected the Figure number to “Fig. 11b” at line 430.

Reviewer comment:

line 458: in the caption of the Figure 11, April 2022 to April 2023 should be corrected to June 2022 to May 2023. and also the sign convention should be revised to positive in Figure 9d, as southerly wind increases.

Author reply:

We have corrected the period to “June 2022 to May 2023” at line 458 and revised the southerly wind to be represented as a positive value in Figure 11d.

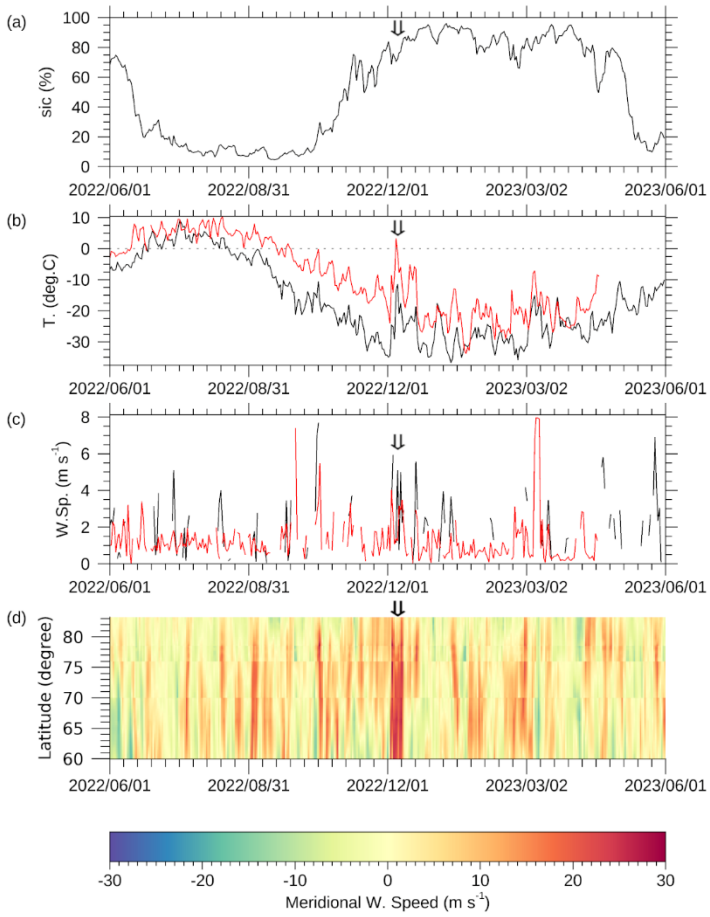

Figure 11: Sea ice and meteorological conditions from June 2022 to May 2023 corresponding to snow depths ranging from 0.00–1.15 m at St. 9. (a) shows the sea ice concentration on the eastern side of NOW. (b) shows the temperature at 2 m a.g.l. in Siorapaluk (red line) and St. 9 (black line). (c) shows the southern component of the wind speed at 2 m a.g.l. in Siorapaluk (red line) and 10 m a.g.l. on the eastern side of the NOW (black line). (d) shows the meridional wind speed at 700 hPa along the eastern side of Baffin Bay. The values on the eastern side of the NOW were averaged over 75.0°–80.0°N and 75.0°–65.0°W. The values on the eastern side of Baffin Bay were averaged over 75.0°–65.0°W from 75.0° to 80.0°N, 75.0°–65.0°W from 75.0° to 80.0°N, 75.0°–65.0°W from 75.0° to 80.0°N and 75.0°–65.0°W from 75.0° to 80.0°N. The positive and negative values of the meridional wind speed are the southern and northern parts of the wind, respectively. The black arrows denote the date from 5–6 December 2023.