Corrigendum

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In the original article by Messori et al. (2018) titled “On the drivers of wintertime temperature extremes in the high Arctic,” composite plots for various atmospheric variables are shown at different lags relative to a set of warm and cold Arctic temperature extremes. We have become aware of an error in some of these figures. This error does not change our interpretation of the results or the conclusions of the paper.

The error is that some warm and cold events that were later excluded from the chosen analysis set were included in Figs. 5–8 of Messori et al. (2018). We present here the corrected composites (Figs. 5–8), which retain all of the salient features highlighted in Messori et al. (2018).

In addition, the lags displayed on the x axes in Fig. 9 and the lag labels in Fig. 13 of Messori et al. (2018) were incorrectly shifted by 1 day. We provide here revised versions of these figures (Figs. 9 and 13). Again, the salient features discussed in Messori et al. (2018)—and specifically the link between moisture intrusions and anomalies in cyclone frequency—are qualitatively unaltered.

Last, the captions to some of the other figures should be slightly altered:

The first sentence of the caption for Fig. 10 in Messori et al. (2018) should be “Shading shows (a) climatological density of intrusion centroid trajectories per moisture injection event; (b) anomalies with respect to (a) for all injection events that existed for at least one time step between 6 and 2 days before the warm extremes; and (c) as in (b), but for the cold extremes.” (The day range here has been corrected from “between 7 and 3 days” to “between 6 and 2 days.”)

The second and third sentences of the caption for Fig. 11 in Messori et al. (2018) should be “Mean anomalies over the 4 days prior to and the day following 30 warm extremes of (d) cyclone frequency, (e) cyclogenesis, and (f) cyclolysis are also shown. (g)–(i) As in (d)–(f), but for 28 cold extremes.” [Here, the day range has been corrected from “5 days prior to” to “4 days prior to and the day following” and “(a)–(c)” has been changed to “(d)–(f).”]

The caption to Fig. 12 in Messori et al. (2018) should read: “Mean frequency over 30 warm extremes of (a) cyclones, (b) cyclogenesis, and (c) cyclolysis for the cyclones that existed north of 80°N for at least one time step during the 4 days prior to and the day following each warm extreme. Dashed circles show the 70° and 80°N parallels.” (Here the day range has again been corrected from “5 days prior to” to “4 days prior to and the day following.”)

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FIG. 5. Composite transects for warm extremes. The transect line is shown in Fig. 3b; Scandinavia is to the left, and the Bering Strait is to the right. Shading shows (a),(c),(e),(g) absolute temperature and (b),(d),(f),(h) temperature anomaly. Vectors show the component of the absolute wind in (a),(c),(e), and (g) and anomalous wind in (b),(d),(f), and (h) in the plane of the transect, with horizontal and vertical velocities scaled appropriately for the axes. White contours in (a),(c),(e), and (g) show potential temperature (contour interval of 4 K).

We reiterate that the conclusions drawn in Messori et al. (2018) concerning the origin and dynamics of the warm and cold spells are unaffected by these errors.

The supplemental material to Messori et al. (2018) presents figures corresponding to those in the main paper but computed for different subsets of the warm and cold extremes. These figures and captions were affected by the same errors as those in the main paper. An updated version of the supplemental material with corrected figures and figure captions is provided here. Again, we note that these corrected figures present no major qualitative differences relative to those originally published.

REFERENCE

Messori, G., C. Woods, and R. Caballero, 2018: On the drivers of wintertime temperature extremes in the high Arctic. *J. Climate*, **31**, 1597–1618, <https://doi.org/10.1175/JCLI-D-17-0386.1>.

FIG. 6. As in Fig. 5, but with shading showing (a),(c),(e),(g) specific humidity and (b),(d),(f),(h) specific humidity anomaly. Magenta lines in (a),(c),(e), and (g) show cloud fraction, contoured at 30% (thin), 50% (medium), and 70% (thick). Magenta lines in (b),(d),(f), and (h) show cloud fraction anomaly, contoured at +20% (solid) and -20% (dashed).

FIG. 7. As in Fig. 5, but for the cold extremes.

FIG. 8. As in Fig. 6, but for the cold extremes.

FIG. 9. Mean injection (a) event duration and (b) frequency integrated over 5-day windows, for all injection events that existed for at least one time step over lags from -22 to $+12$ days relative to the 50 warm (red) and cold (blue) temperature extremes. The x axis displays lags relative to the peak temperature anomaly; values are shown as a function of the central day of each window. Lower and upper dashed lines indicate the 1st- and 99th-percentile values of the two metrics, obtained from random sampling, as well as their means.

FIG. 13. Composite anomalies of cyclone frequency (shading) and intrusion density (contours) for 30 warm extremes at lags (a) from -10 to -8 , (b) from -8 to -6 , (c) from -6 to -4 , (d) from -4 to -2 , and (e) from -2 to 0 days relative to peak warmth. For comparison, (f) climatological intrusion density plotted in the same units as in (a)–(e) is shown. Contours in (a)–(e) begin at 0.4 (thickest contour) and increase by 0.15. Dashed circles show the 70° and 80°N parallels.