Corrigendum

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We have become aware of a calculation error in Aylmer et al. (2020; hereafter A20). For the mean ice thickness, $\langle H_i \rangle$, and mean heat transport convergences, h_o and h_a, the area-weighting factor was omitted. This has not had a substantial impact, and the main results and the conclusions of A20 are unaffected.

Figure 2b shows the corrected time series of $\langle H_i \rangle$ (cf. Fig. 2b of A20). The annual-mean ice thickness was stated to be 1.44 m in the energy balance model (EBM); this should be 1.21 m, which remains a reasonable value. Using the unweighted average in Eq. (13) of A20 amounts to a 1% difference in the estimate of s_o/s_a compared to using the correct average. Testing of Eq. (13) of A20 with different values of B_{OLR} and B_{dn} (appendix B of A20) still yields estimates of s_o/s_a accurate to within 5% of the (corrected) experimentally derived values.

Because the heat transport convergences are roughly independent of latitude at high latitudes, the impacts on the K_a and F_{bp} sensitivity experiments (Figs. 4 and 5 of A20) are negligible. The sensitivities are affected by a few percent (Table 2).

The K_o sensitivity experiment (Fig. 3) is moderately affected because increases in h_o due to varying K_o are concentrated near the ice edge where the area weighting is greater. The range of variation of h_o is about 3 times larger than given in A20, and the seasonal sensitivities are about a factor of 3 smaller. The reduction in $\Delta\phi_i/\Delta h_o$ between the seasonal and perennial ice cover cases is about a factor of 40 (not 20 as given in A20). We stated that the value of h_o required to give a seasonally ice-free solution when varying F_{bp} was about the same as that when varying K_o—actually, it is about half, which is consistent with our discussion in section 4c paragraph 3. Overall, our qualitative description of the K_o sensitivity analysis holds with the corrected numerical results. Particularly, we concluded that in a seasonally ice-free climate, enhanced ocean heat transport convergence (OHTC) near the ice edge plays a less dramatic role than in a perennial-ice climate, which is (more) consistent with the numbers given here.

REFERENCE

Aylmer, J., D. Ferreira, and D. Feltham, 2020: Impacts of oceanic and atmospheric heat transports on sea ice extent. *J. Climate*, **33**, 7197–7215, https://doi.org/10.1175/JCLI-D-19-0761.1.

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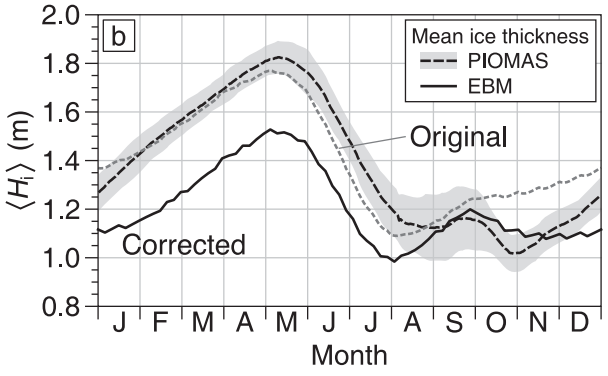

FIG. 2. (b) Area-weighted mean sea ice thickness in the EBM (black, solid), compared to observations (PIOMAS; black, dashed) and the erroneously calculated series without area weighting in A20 (gray, dashed).

TABLE 2. Updated summary of results, with significantly impacted values (more than 10% error in A20) in bold. For the seasonal case, values obtained when the ice-edge latitude is calculated as a mean only when ice is present (rather than the annual mean) are indicated with an asterisk (*).

p	Ice cover	$\Delta\phi_i/\Delta h_a$	$\Delta\phi_i/\Delta h_o$	s_a	s_o
K_a	Perennial	0.35	—	0.35	—
	Seasonal	0.83	—	0.83	—
	Seasonal*	0.44	—	0.44	—
K_o	Perennial	—	**~1.9**	—	**~ 1.7**
	Seasonal	—	**0.05**	—	**0.18**
	Seasonal*	—	**0.06**	—	**0.13**
F_{bp}	Perennial	—	0.43	—	0.68
	Seasonal	—	0.52	—	0.82
	Seasonal*	—	0.26	—	0.42

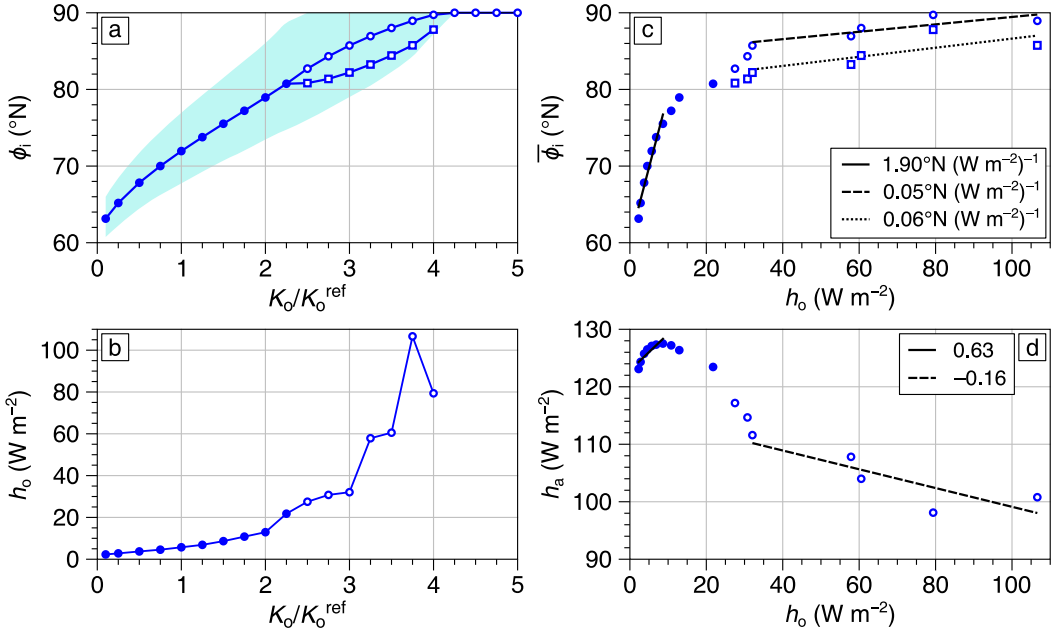

FIG. 3. Updated results of the K_o sensitivity experiment. Fits are made to the same subset of simulations as in A20. Note that (a) is unaffected.