Responses to Typesetter Comments 2-5
TC-2020-081
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Typesetter comment 2: Please give an explanation of why [Table 5] needs to be changed. We have to ask the handling editor for approval. Thanks.

In the version of the manuscript submitted for copy editing, there was an error in Table 5 (a table that was added in response to referee suggestions) such that the open water period lengths were placed in the outer-ice free period column (and vice versa) for the individual ensemble members of the CMIP6 models. Therefore in the final version, each highlighted value in Table 5 needs to be switched with the highlighted value in the same row. The magnitudes of the all-model spreads are not affected, but must also be switched between the two columns.

Table 5. Lengths of pan-Arctic, satellite-era (1979–2014) means of interseasonal transition periods in days. The satellite-era means and the all-model spreads (latest minus earliest) are calculated using the first ensemble member from each model. Models labeled with * show the spread in means between the first 30 ensemble members of that model. Model spreads are given in days, and all metrics are calculated between 66 and 84.5° N. TS2

	Melt season	Open-water period (15 %)	Outer ice-free period (80 %)
ACCESS-CM2	121	89	78
BCC-CSM2-MR	136	87	78
BCC-ESM1	125	78	73
CanESM5	130	95	88
CESM2	154	113	91
CESM2-FV2	148	101	83
CESM2-WACCM	147	99	84
CESM2-WACCM-FV2	148	100	88
CNRM-ESM2-1	132	110	95
CNRM-CM6-1	121	103	89
EC-Earth3	127	86	80
IPSL-CM6A-LR	165	111	95
MRI-ESM2-0	154	111	90
NorESM2-LM	147	96	89
NorESM2-MM	130	78	77
CESM LE	125	80	82
Satellite data	117	71	88
All-model spread	44	35	22
CanESM5 spread*	10	7	12
IPSL-CM6A-LR spread*	17	11	21
CESM LE spread*	12	9	9

Typesetter comments 3-5: Please give an explanation of why [three values in the text] need to be changed. We have to ask the handling editor for approval. Thanks.

The correction to Table 5 necessitates a few small changes to the text to accurately reflect the table. Typesetter comments 3 and 4 are placed where the ranges in open water and outer ice-free period lengths are described in the text, and these values need to be exchanged with each other to accurately reflect the table. Typesetter comment 5 is placed where the all-model spread in the open-water period is discussed, and this value needs to be changed from 35 days to 22 days to accurately reflect the exchange in the table. The results are not affected: the outer-ice free period remains the only interseasonal period that agrees with satellite data, and the melt season length still shows the largest model spread. The satellite data, CESM LE and 30-member model spreads are also not affected.

	Melt period	Seasonal loss-of-ice period	Freeze period	Seasonal gain-of-ice period	Melt season	Open water period	Outer ice-free period
ACCESS-CM2	18	9	8	7	49	41	52
BCC-CSM2-MR	17	12	7	7	47	39	53
BCC-ESM1	20	13	7	7	44	37	49
CanESM5	16	10	7	6	49	54	61
CESM2	21	8	7	7	59	46	56
CESM2-FV2	21	10	6	6	54	43	52
CESM2-WACCM	22	10	6	8	57	45	55
CESM2-WACCM-FV2	22	10	7	6	57	46	57
CNRM-ESM2-1	21	7	6	6	63	52	60
CNRM-CM6-1	18	8	8	5	63	50	60
EC-Earth3	17	10	12	8	59	40	51
IPSL-CM6A-LR	22	8	15	5	71	55	62
MRI-ESM2-0	20	11	7	7	56	49	60
NorESM2-LM	24	10	9	6	54	48	61
NorESM2-MM	19	14	9	7	52	51	61
CESM LE	16	12	14	10	83	39	56
Satellite data	21	12	29	10	58	49	61

Table S4. Satellite-era (1979–2014) spatial standard deviations across the Arctic (in days, between 66-84.5°N) of intra-seasonal periods (melt period, seasonal loss-of-ice period, freeze period and seasonal gain-of-ice period) and inter-seasonal periods (melt season, open water period and outer ice-free period) calculated using the satellite data and the first ensemble member from each model.

The correction to Table 5 also necessitates changes to Table S4. The open water period lengths were placed in the outer-ice free period column (and vice versa).