

Further evidence of diel vertical migration of copepods under Arctic sea ice during summer

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Table S1. Sampling time and location for phytoplankton biomass (Chl-*a*) in the water column under sea ice

Cast	Date (YYYY/MM/DD)	Sampling time (HH:MM)	Depth (m)	Chl- <i>a</i> (mg m ⁻³)			
				Total	< 2 μm	2 - 20 μm	> 20 μm
1	2014/08/11	11:30	2	0.026	0.007	0.002	0.017
			25	0.055	0.017	0.009	0.029
			60	0.194	0.120	0.022	0.050
2	2014/08/11	19:00	2	0.032	0.013	0.003	0.016
			8	0.028	0.011	0.003	0.014
			25	0.032	0.012	0.003	0.017
			60	0.113	0.066	0.020	0.027
3	2014/08/12	08:00	2	0.019	-	-	-
			8	0.023	-	-	-
			15	0.026	-	-	-
			25	0.032	-	-	-
4	2014/08/12	18:00	60	0.010	-	-	-
			2	0.026	-	-	-
			8	0.027	-	-	-
			15	0.032	-	-	-
5	2014/08/13	10:00	25	0.060	-	-	-
			60	0.293	-	-	-
			2	0.028	-	-	-
			8	0.029	-	-	-
6	2014/08/13	15:00	15	0.035	-	-	-
			25	0.051	-	-	-
			60	0.341	-	-	-
			2	0.035	-	-	-
7	2014/08/13	20:00	8	0.033	-	-	-
			15	0.039	-	-	-
			25	0.039	-	-	-
			60	0.039	-	-	-
7	2014/08/13	20:00	2	0.035	-	-	-
			8	0.037	-	-	-
			15	0.038	-	-	-
			25	0.051	-	-	-
			60	0.180	-	-	-

Table S2. Abundance (ind. m⁻³) and composition (Com, %) of mesozooplankton

Taxon	Abundance (ind. m ⁻³)	Composition (%)
Cnidaria	<1	0
Chaetognatha	1	9
Chordata	<1	0
Cladocera	<1	0
Copepoda	9	82
Amphipoda	<1	0
Euphausiacea	<1	0
Ostracoda	1	9
Isopoda	<1	0
Total	11	100

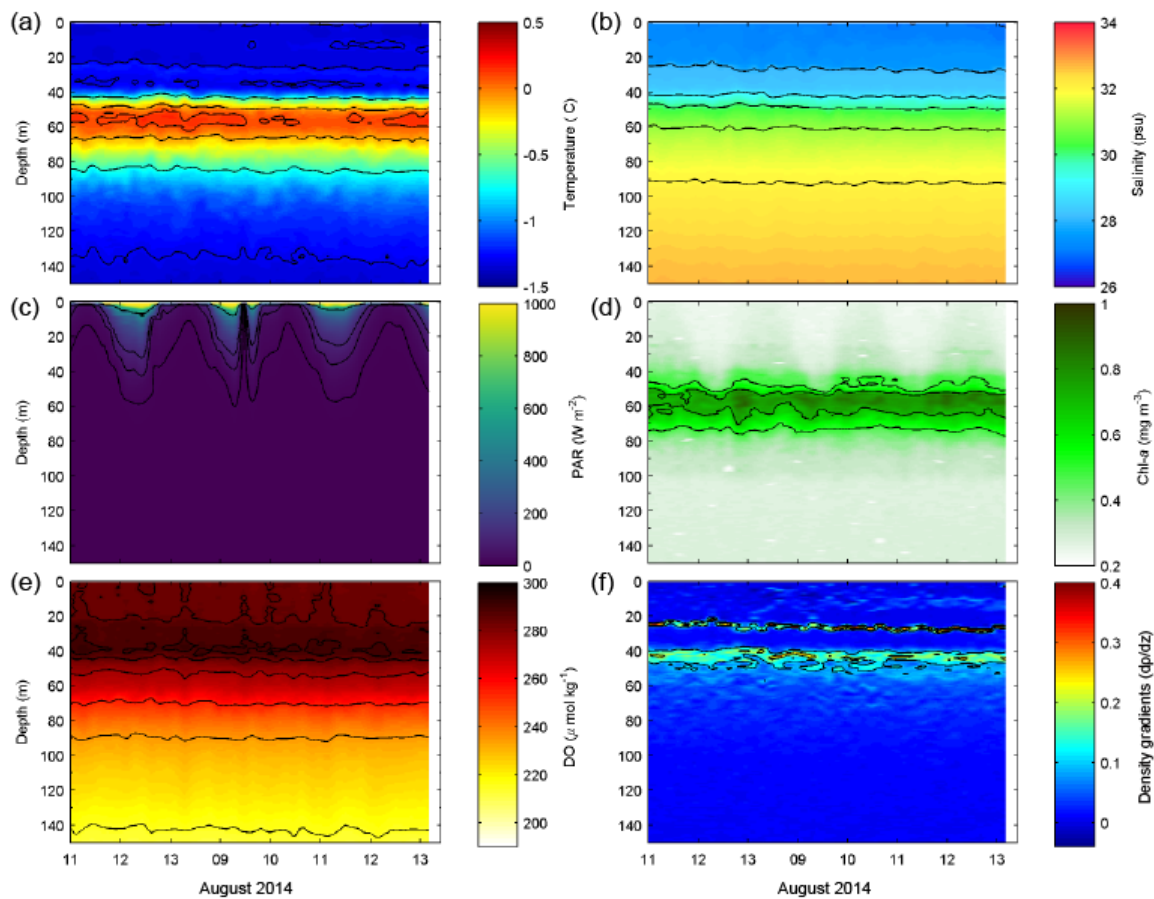


Fig. S1. Temporal variability of vertical structure for (a) potential temperature, (b) salinity, (c) photosynthetically active radiation (PAR), (d) fluorescence, (e) dissolved oxygen and (f) density gradient.

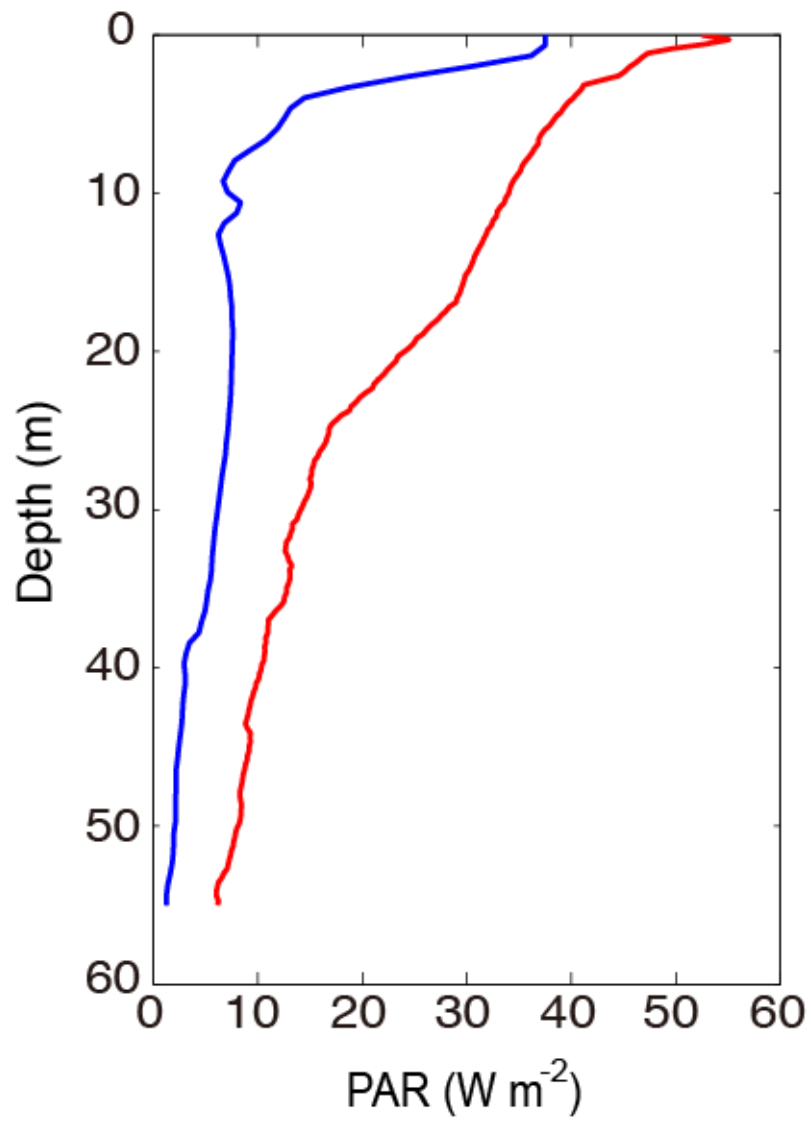


Fig. S2. Profiles of photosynthetically active radiation (PAR) in the ice-covered (blue line) and open waters (red line).

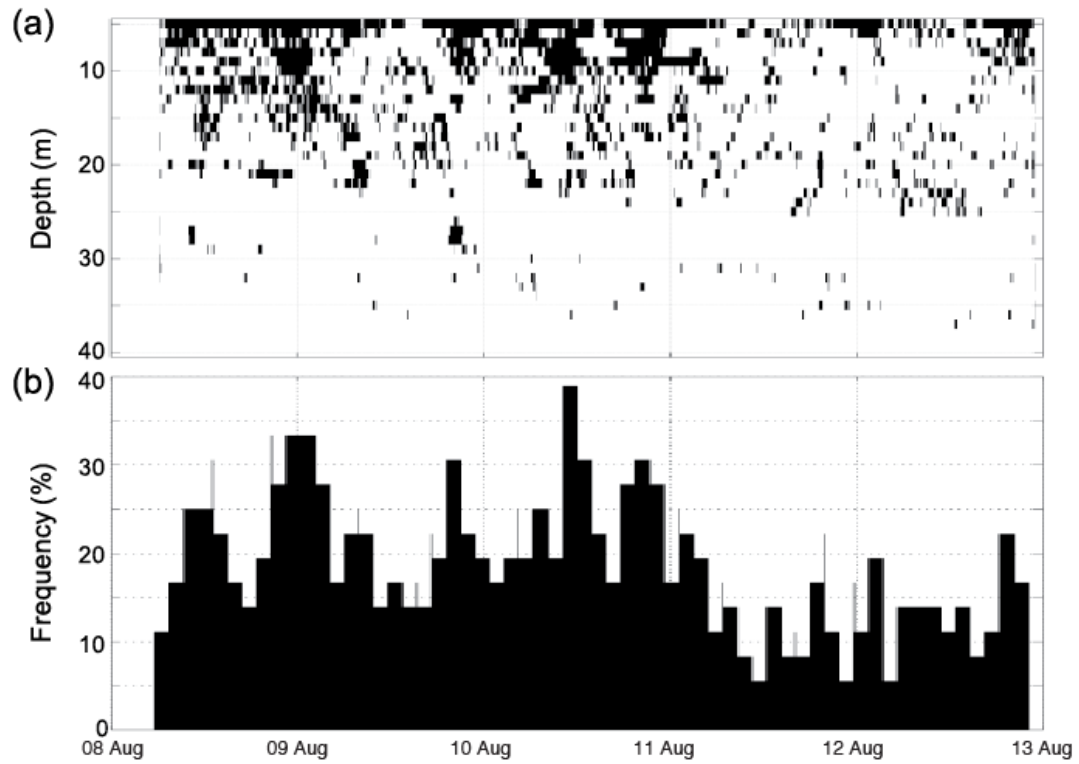


Fig. S3. (a) Vertical distribution of Richardson number (Ri) from surface to 40 m depth under sea ice and (b) Histograms of $Ri < 0.25$. The black space in (a) represents $Ri < 0.25$ with strong vertical mixing.