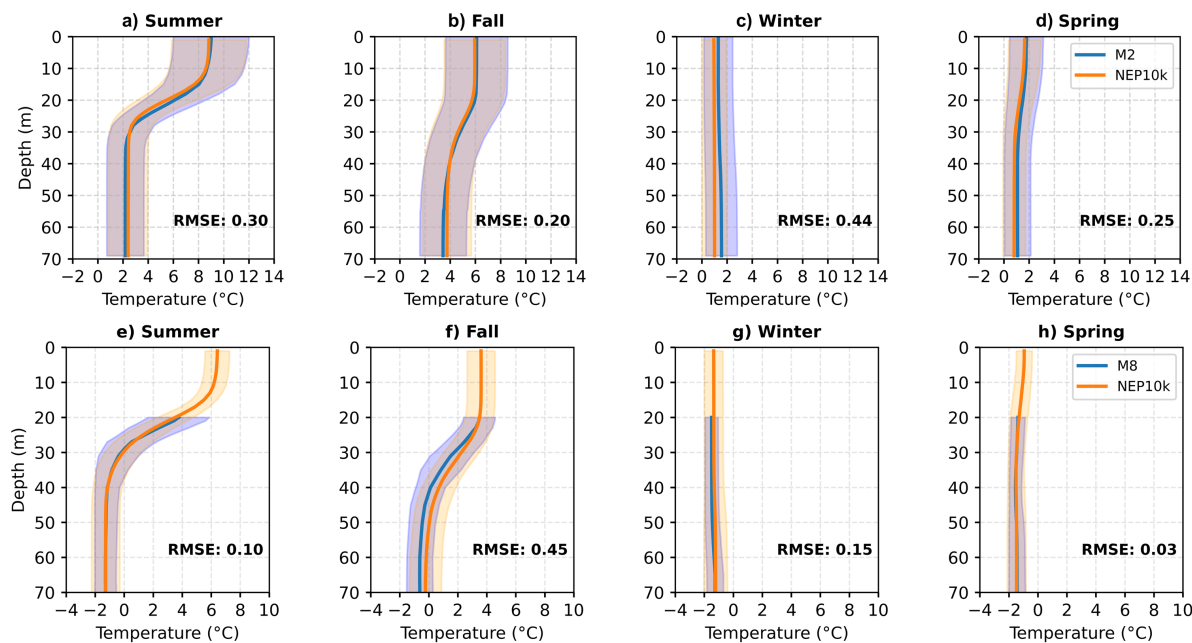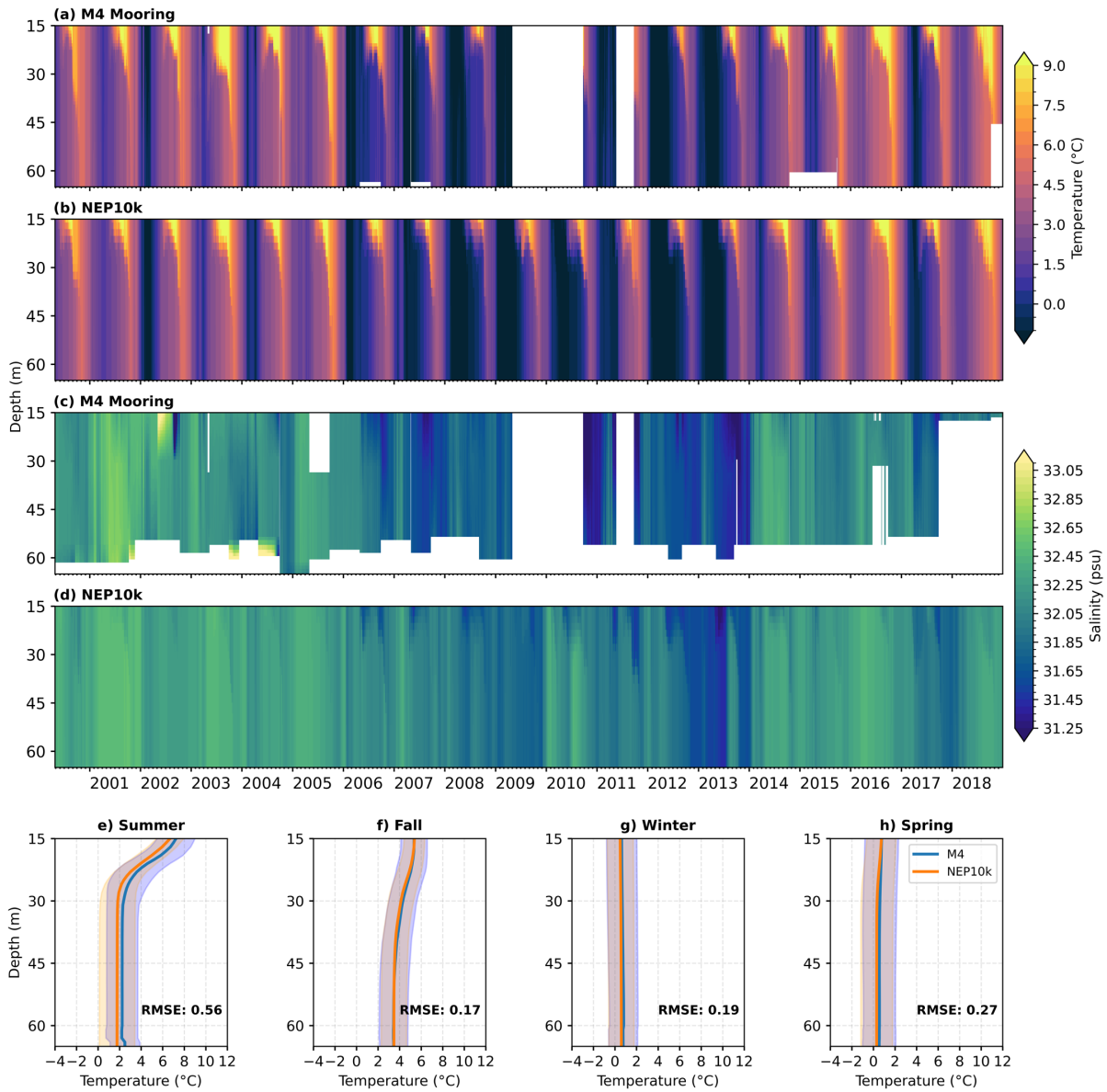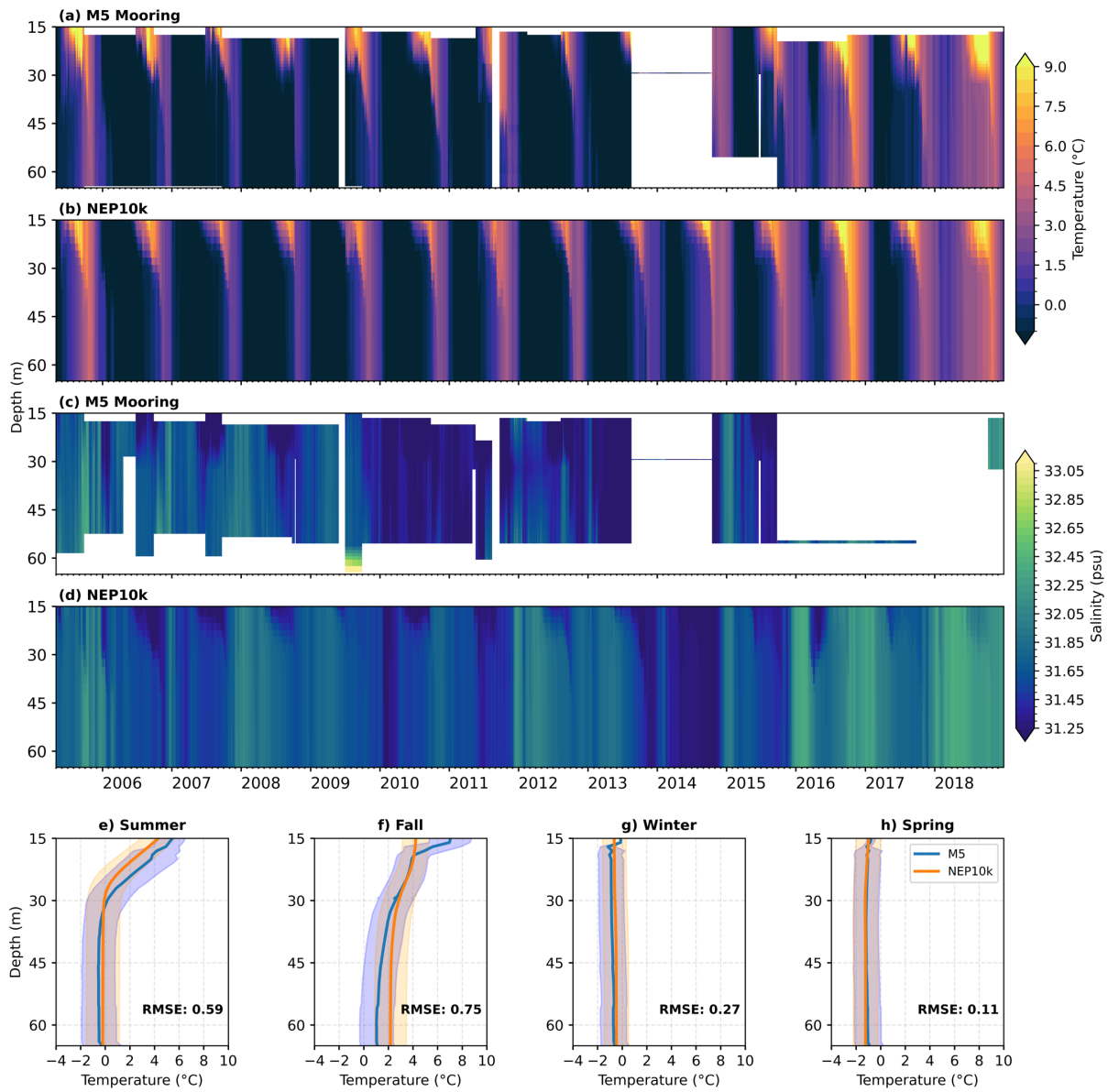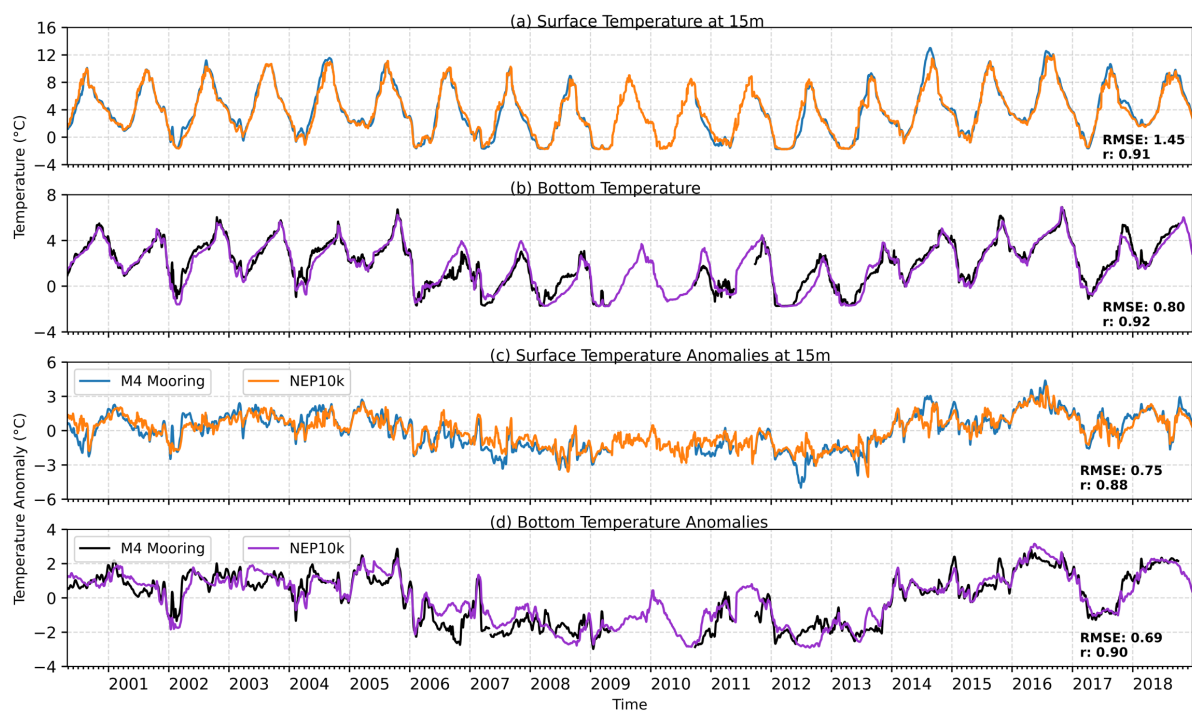## Supplementary Figures

Figure S1: Seasonal variations of temperature with depth at (a-d) M2 and (e-h) M8 with their respective standard deviations (shading). All correlation values are significant (p<0.001).
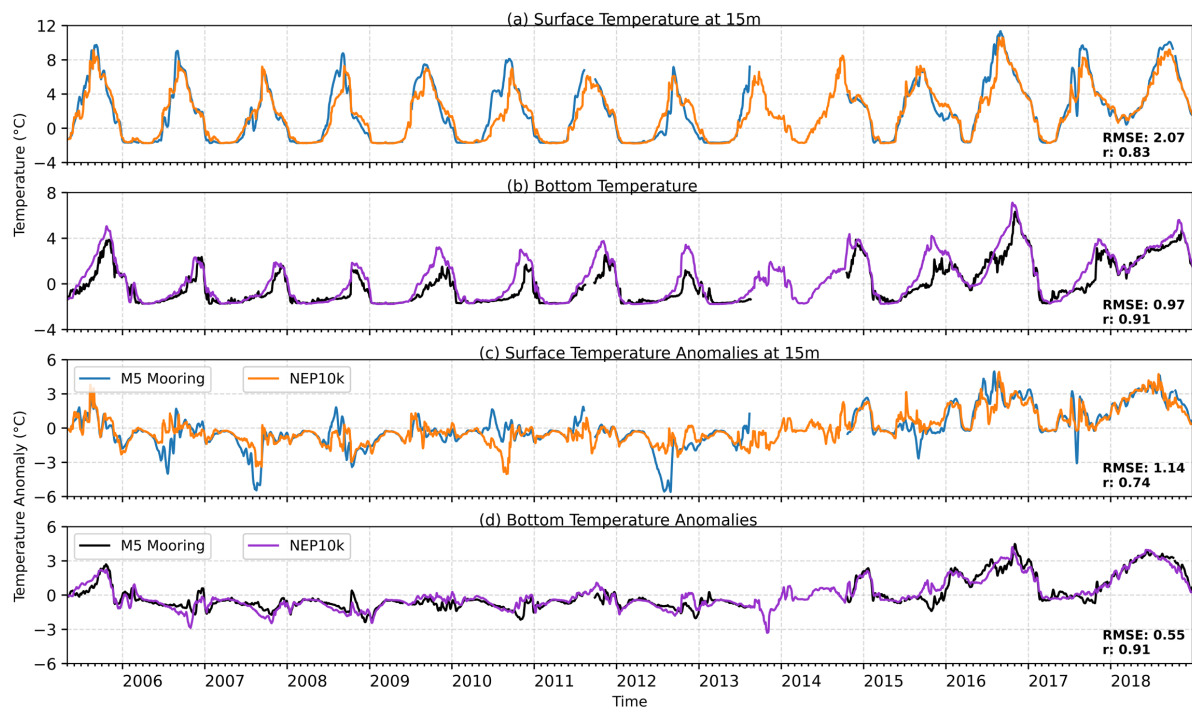
Figure S2: Depth versus time contours of temperature for (a) observations and (b) model, and salinity for (c) observations and (d) model, and seasonal variations of temperature with depth (e-h) at M4 mooring with their respective standard deviations (shading).
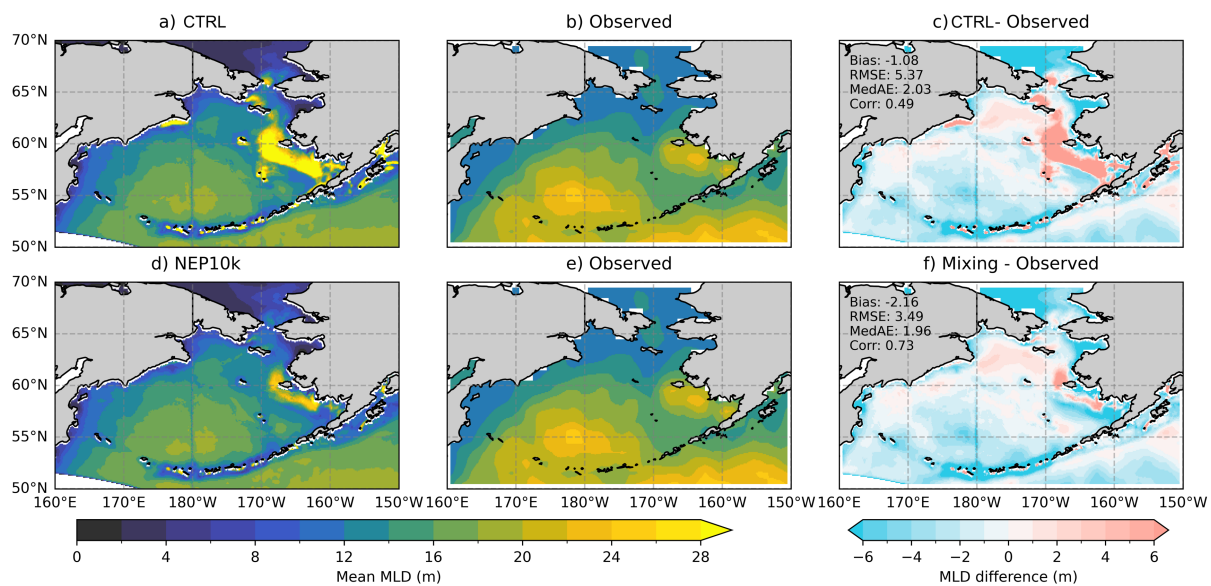
Figure S3: As in Figure S2, except for M5.

Figure S4: Same as in Fig. 14 except for M4.

Figure S5: Same as in Fig. 14 except for M5.

4

Figure S6: June-July-August mean mixed layer depth from (a) the CTRL simulation, (b) observations, (c) CTRL minus observations, (d) MOM6-NEP10KP1.1, (e) observations, and (f) MOM6-NEP10KP1.1 minus observations.