



Supplement of

Arctic Ocean simulations in the CMIP6 Ocean Model Intercomparison Project (OMIP)

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Supporting Information

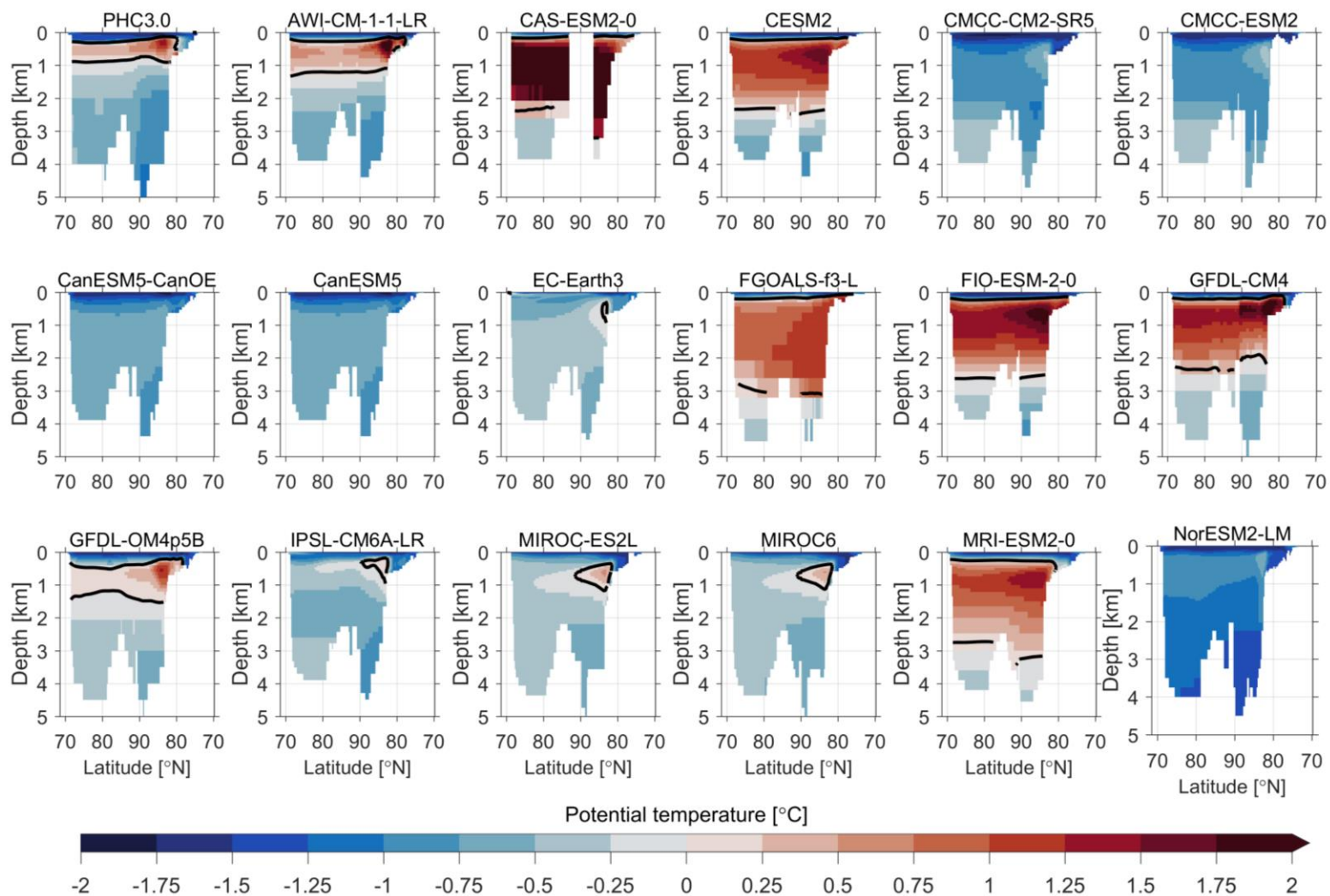


Figure S1. Potential temperature (unit: °C) along section S (Fig. 1) from the PHC3.0 climatology and OMIP-1 models averaged from 1971 to 2000. The black line is the 0 °C isotherm.

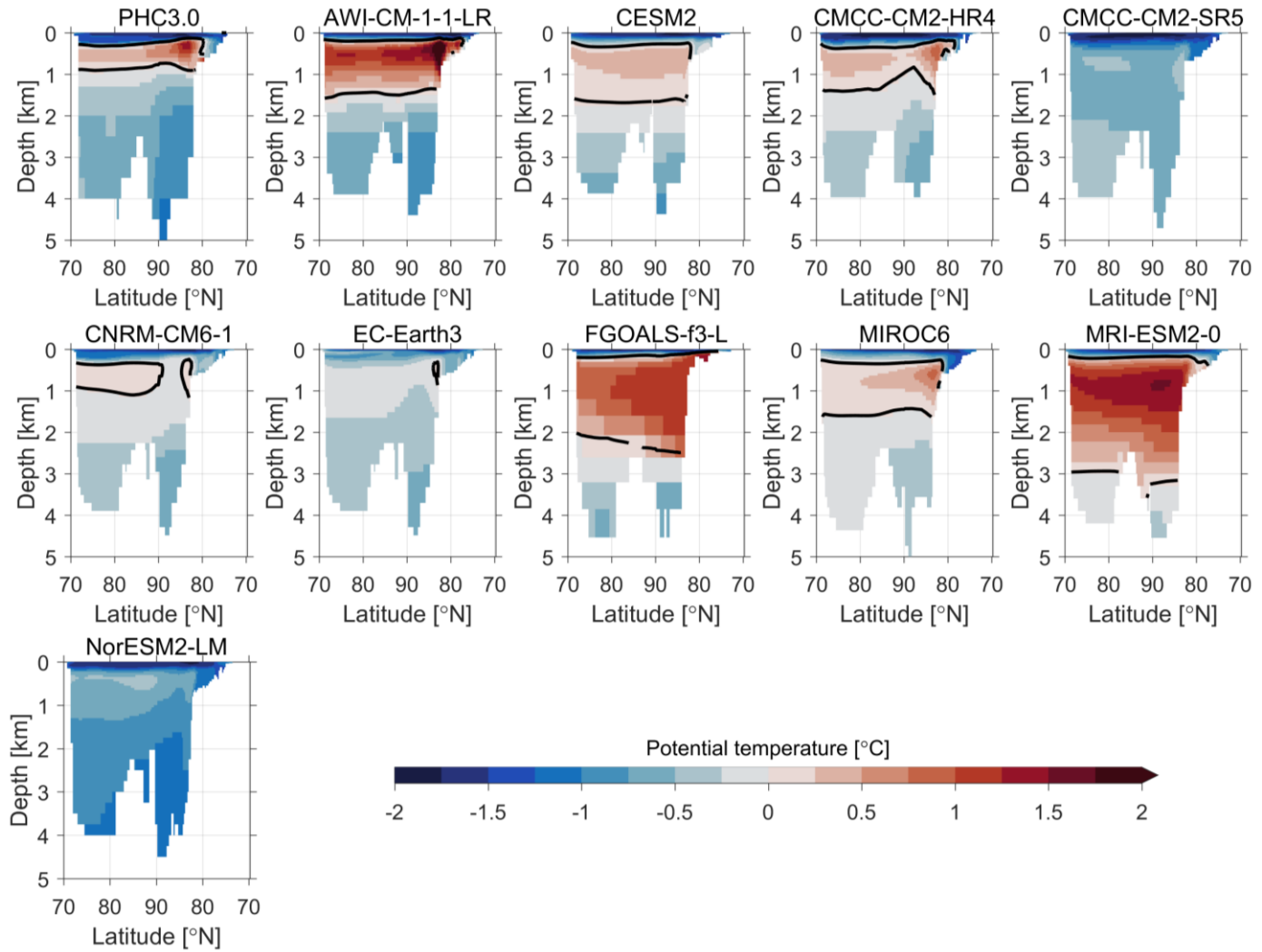


Figure S2. Potential temperature (unit: °C) along section S (Fig. 1) from the PHC3.0 climatology and OMIP-2 models averaged from 1971 to 2000. The black line is the 0 °C isotherm.

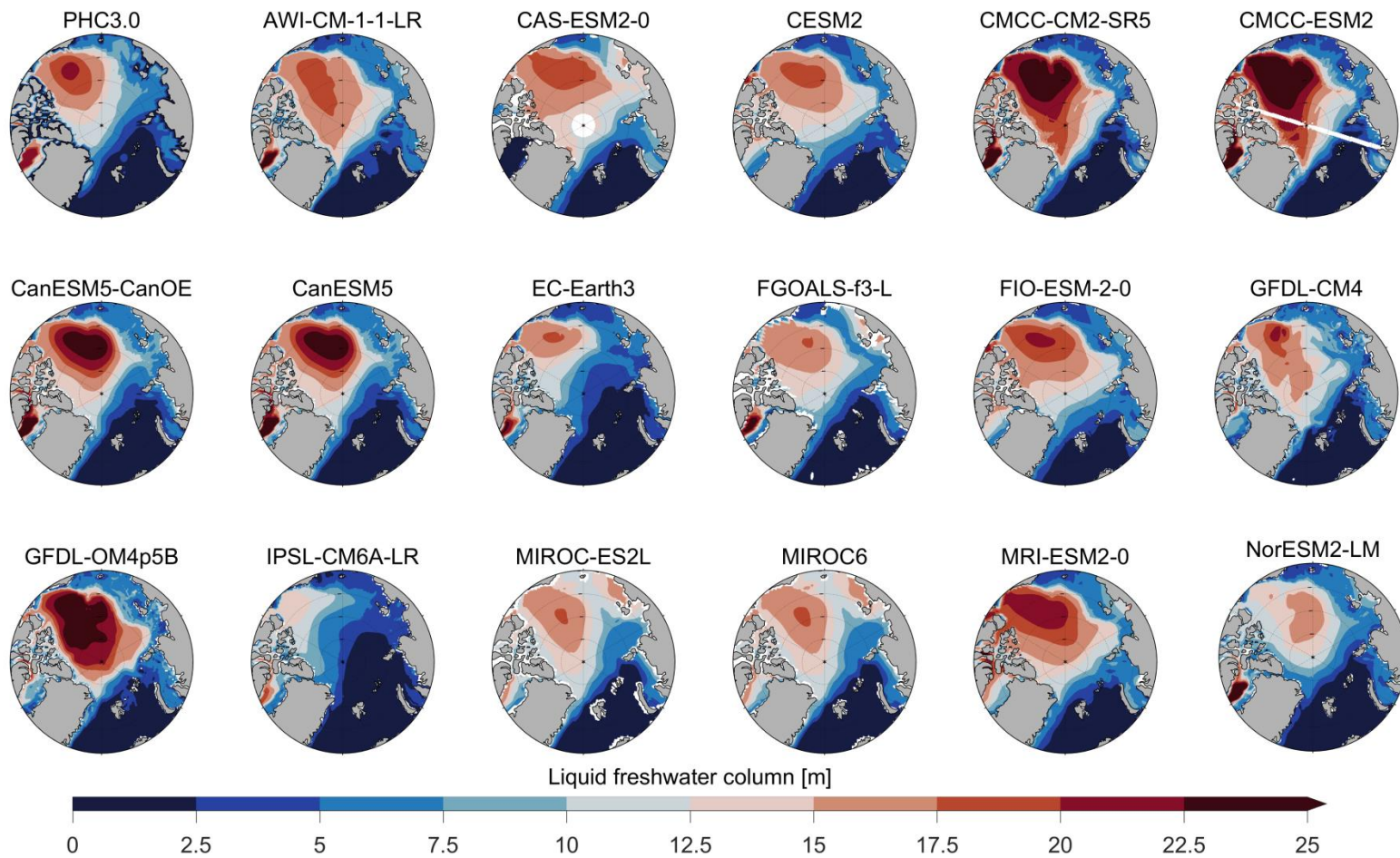


Figure S3. Liquid freshwater column (unit: m) from PHC3.0 climatology and OMIP-1 models averaged over 1971 to 2000.

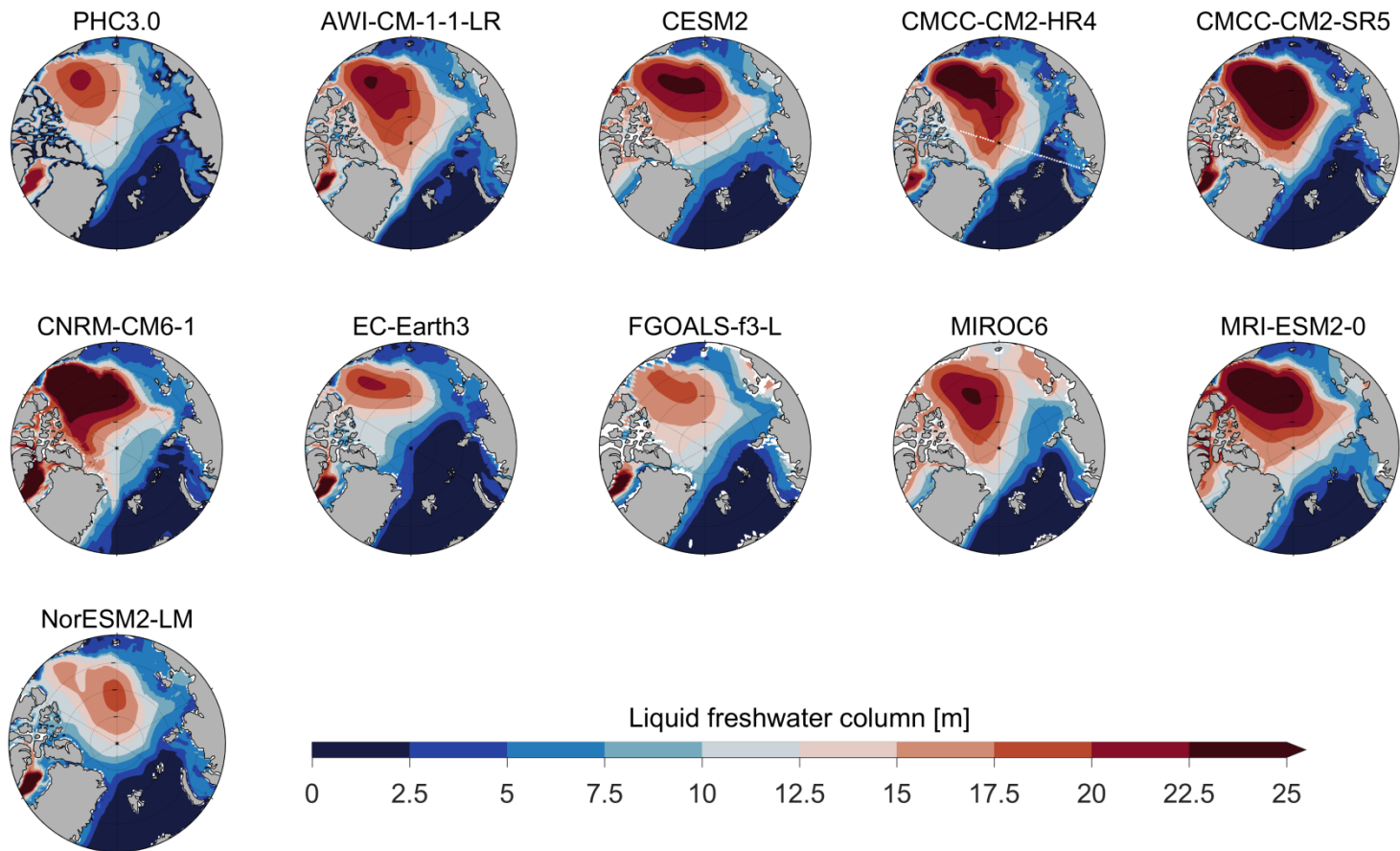


Figure S4. Liquid freshwater column (unit: m) from PHC3.0 climatology and OMIP-2 models averaged over 1971 to 2000.

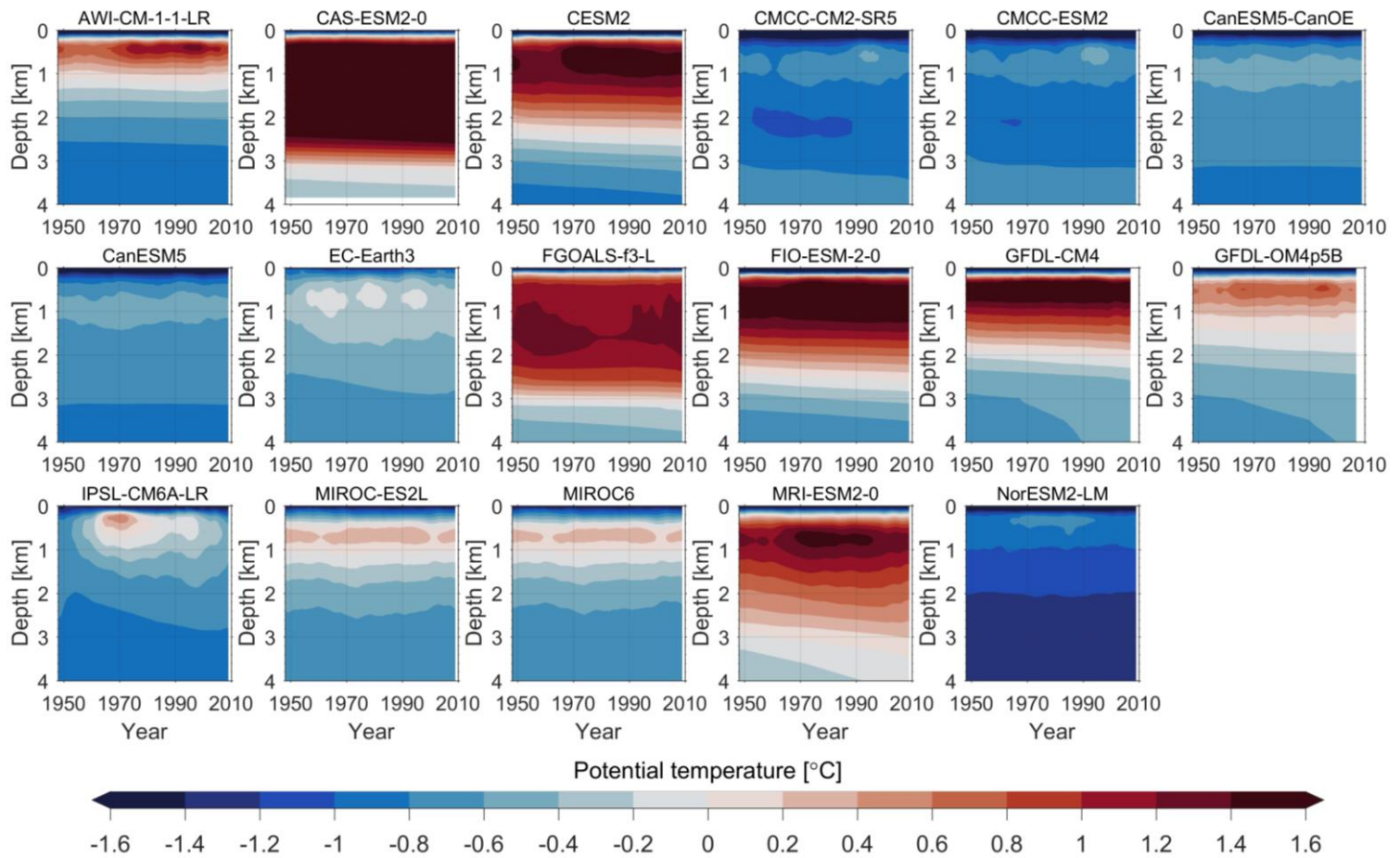


Figure S5. Hovmöller diagram of basin-mean potential temperature (unit: °C) for the Eurasian Basin from OMIP-1 models.

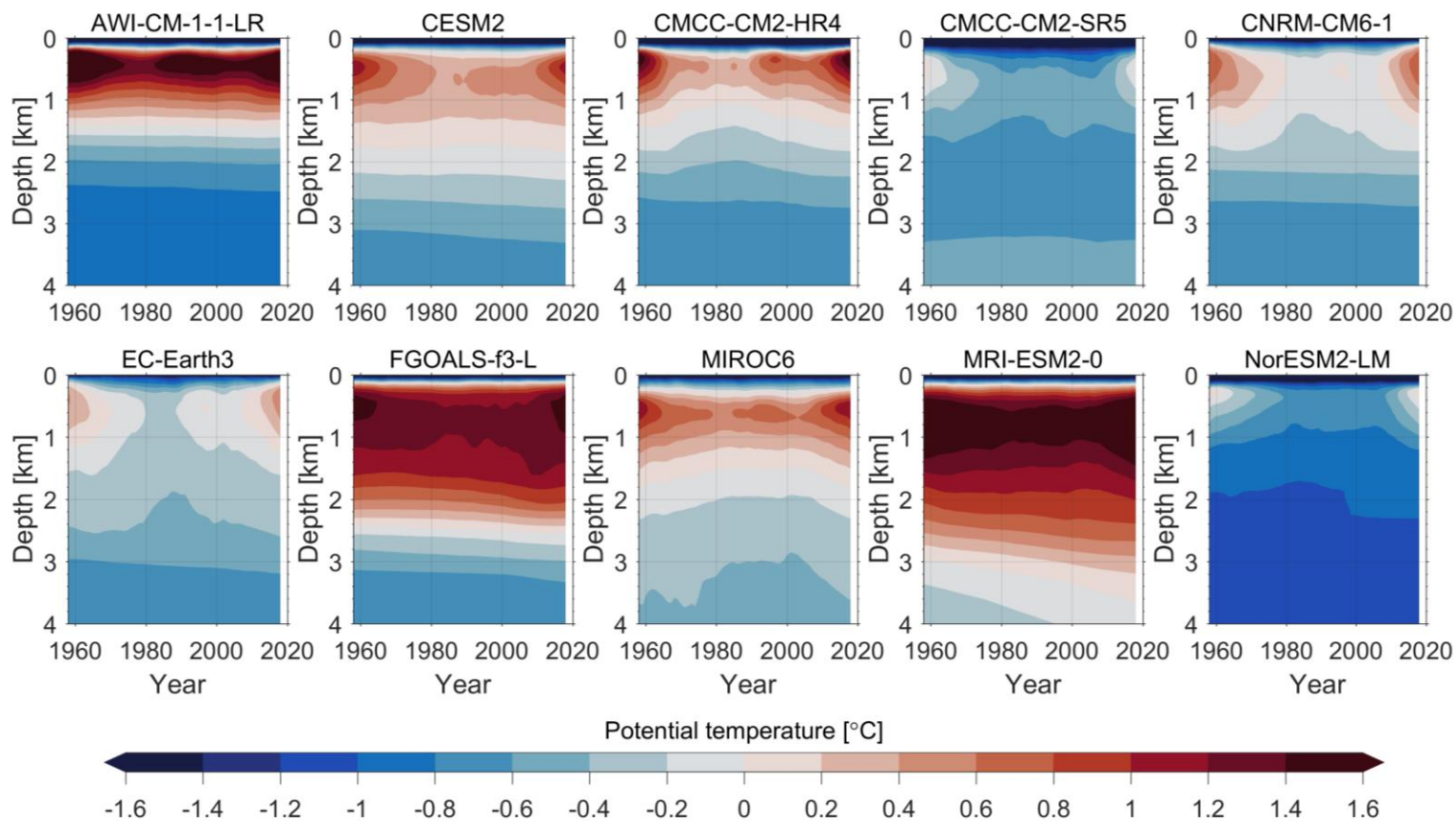


Figure S6. Hovmöller diagram of basin-mean potential temperature (unit: °C) for the Eurasian Basin from OMIP-2 models.

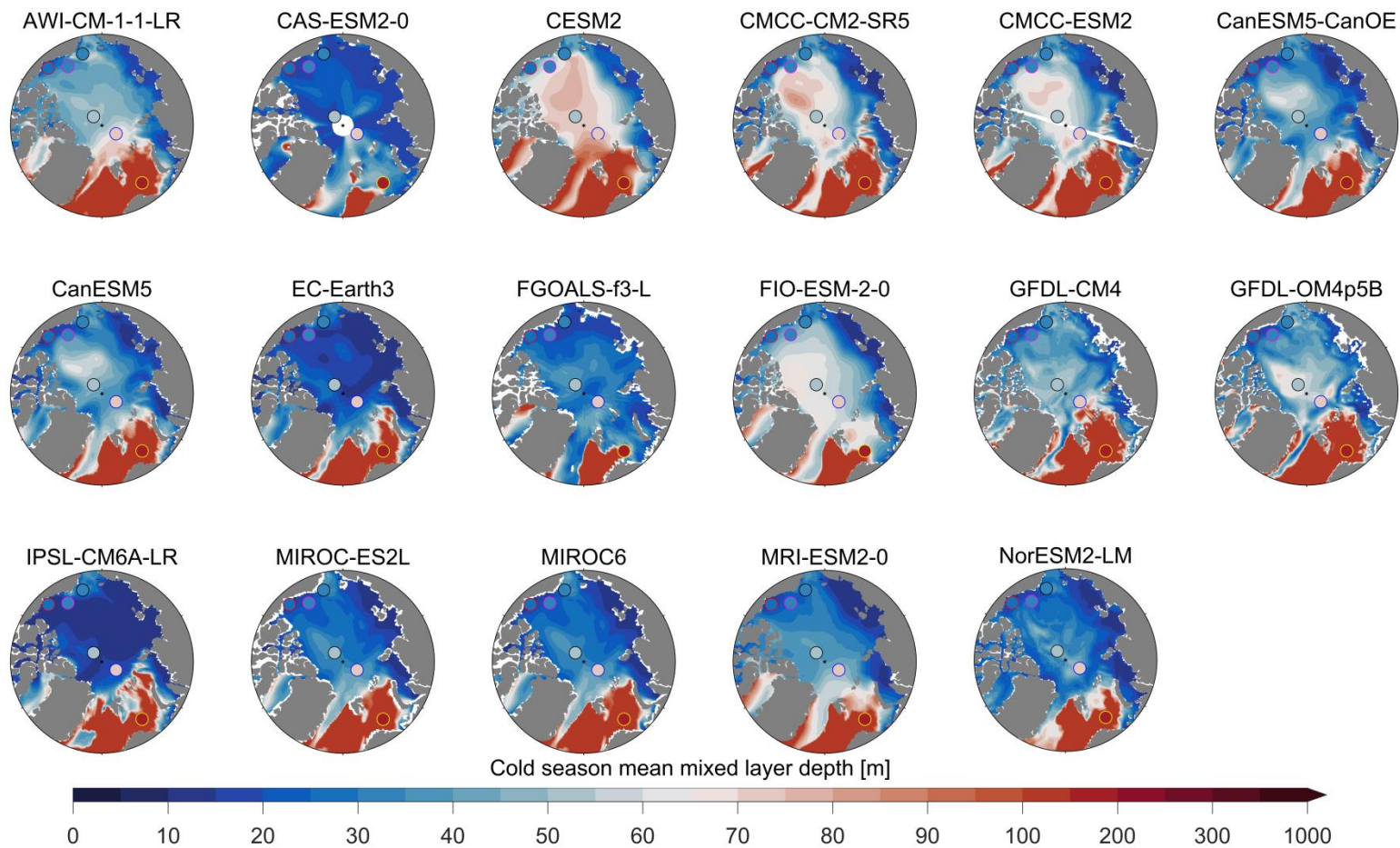


Figure S7. Cold season (November-May) mixed layer depth (unit: m) from OMIP-1 and observations (dots). The average period for OMIP-1 is from 1979 to 2009 and the observations are based on the period of 1979 to 2012.

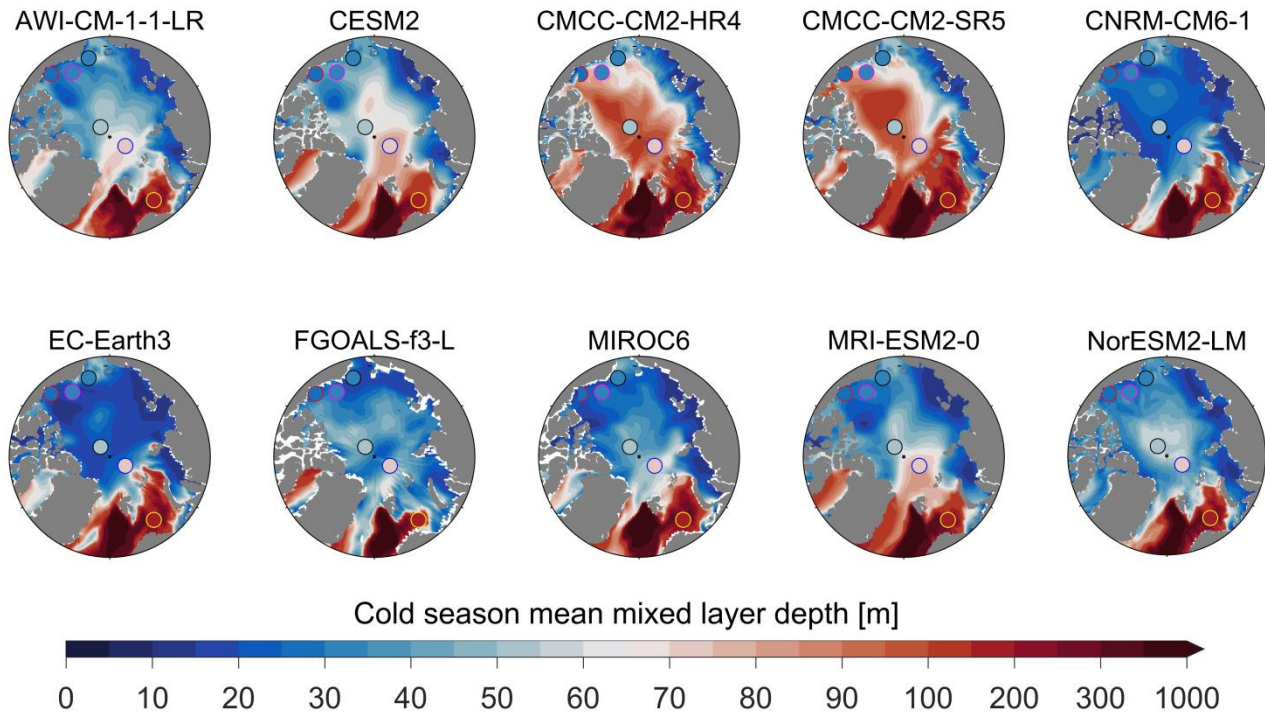


Figure S8. Cold season (November-May) mixed layer depth (unit: m) from OMIP-2 and observations (dots). The average period for OMIP-2 is from 1979 to 2012 and the observations are based on the period of 1979 to 2012.

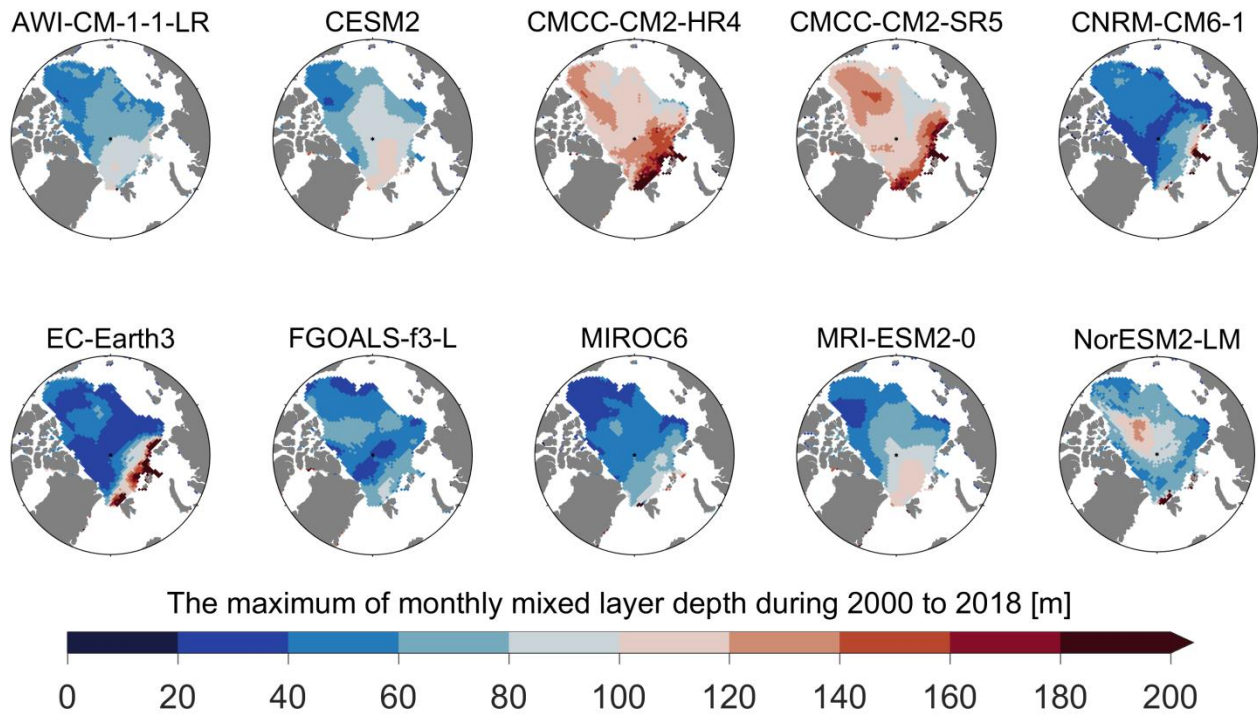


Figure S9. The maximum of monthly mixed layer depth during 2000 to 2018 in OMP-2 models.

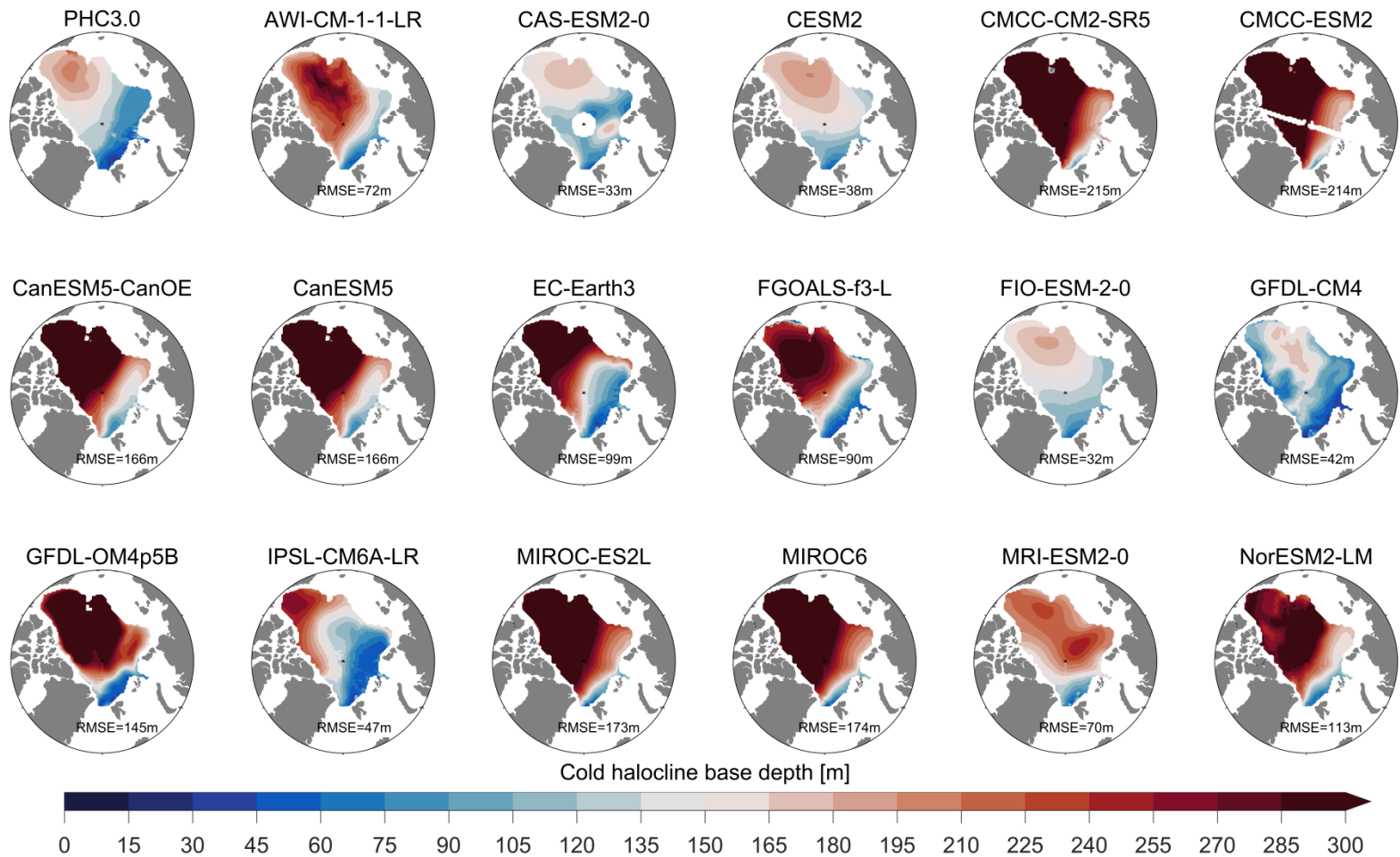


Figure S10. Cold halocline base depth (unit: m) from PHC3.0 climatology and OMIP-1 models average over 1971 to 2000. The root-mean-square error (RMSE) averaged over the Arctic Ocean is labeled in each panel.

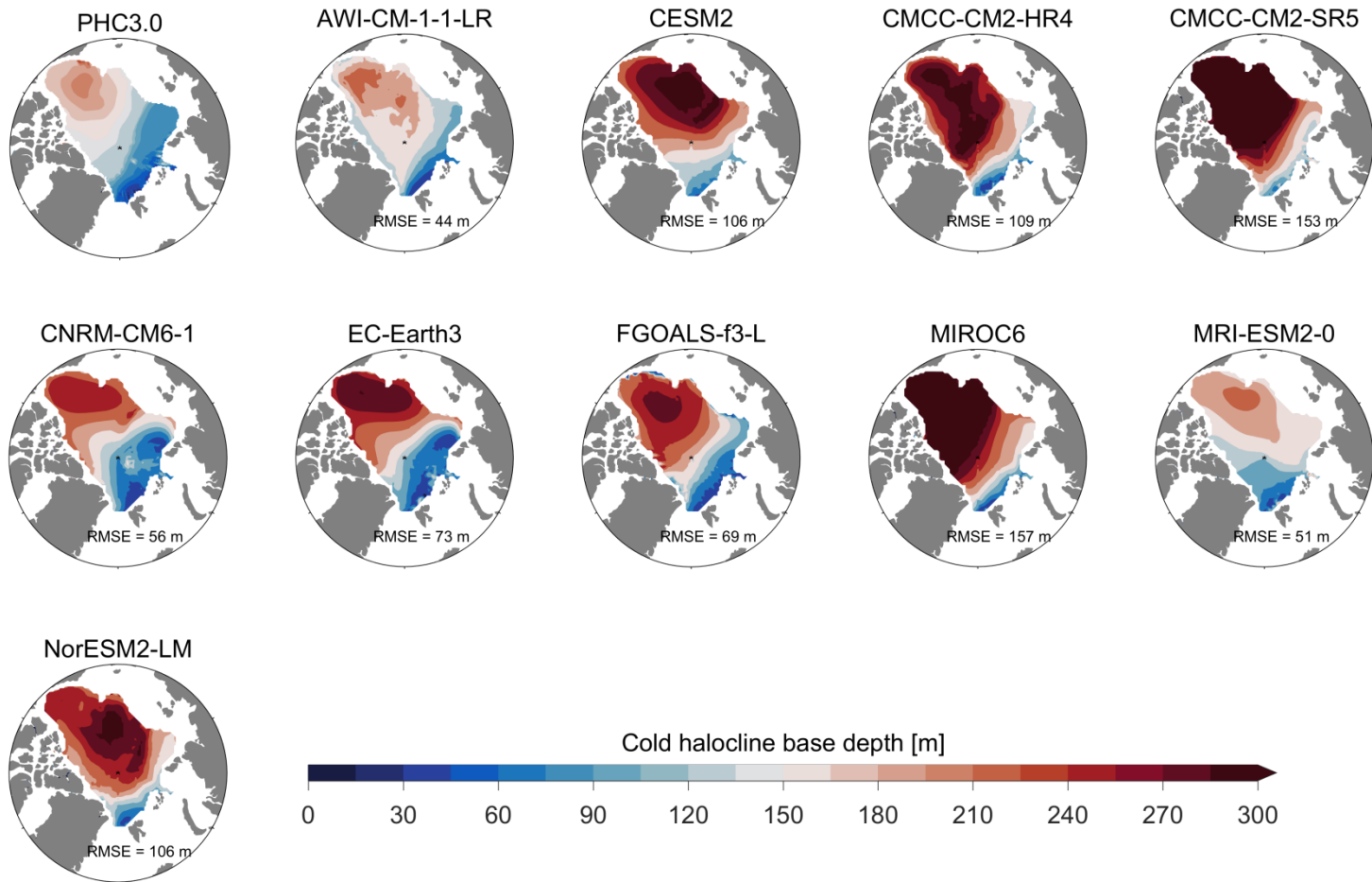


Figure S11. Cold halocline base depth (unit: m) from PHC3.0 climatology and OMIP-2 models average over 1971 to 2000. The root-mean-square error (RMSE) averaged over the Arctic Ocean is labeled in each panel.

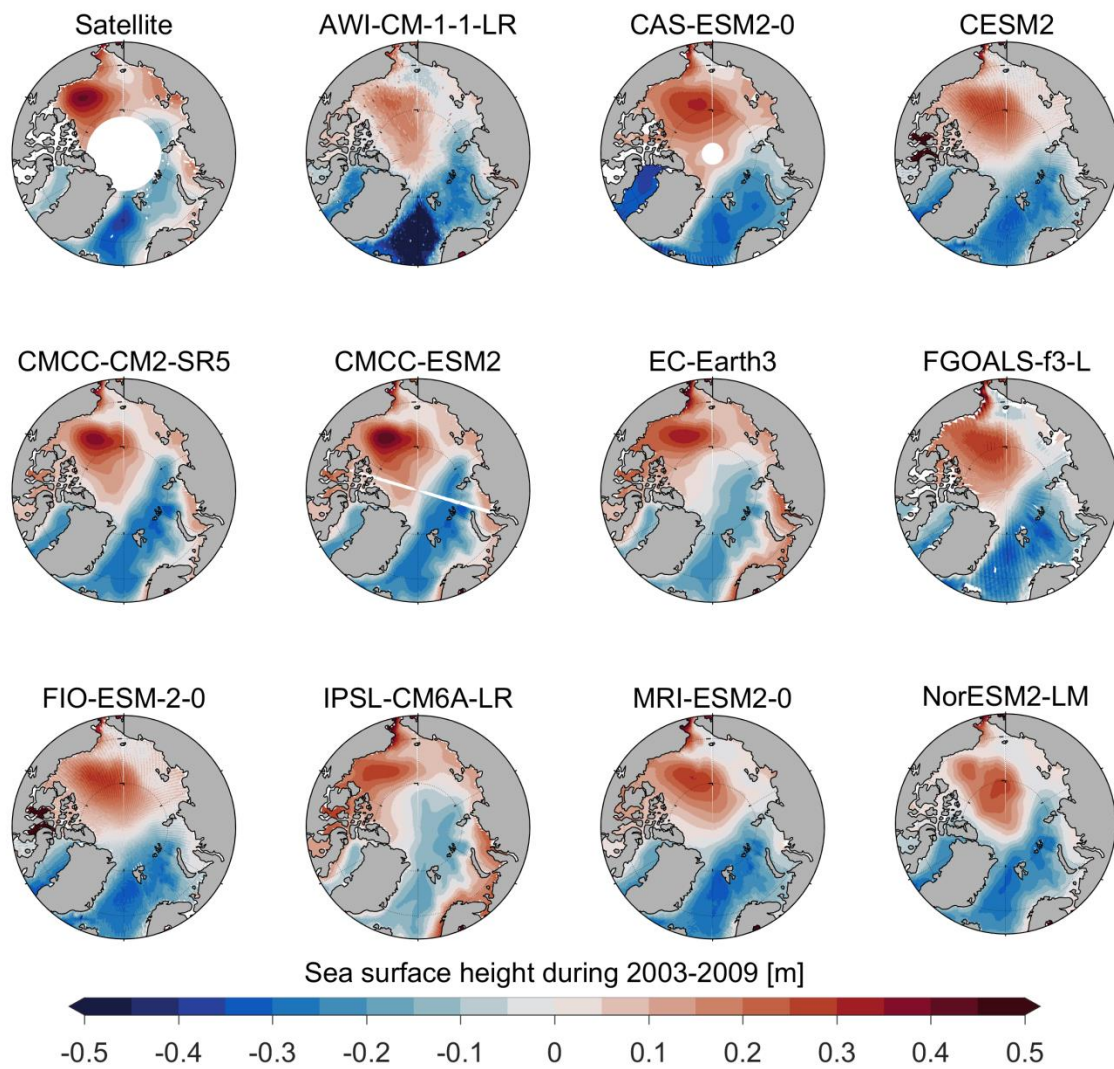


Figure S12. Sea surface height (m) from satellite observation and OMIP-1 simulations during 2003–2009.

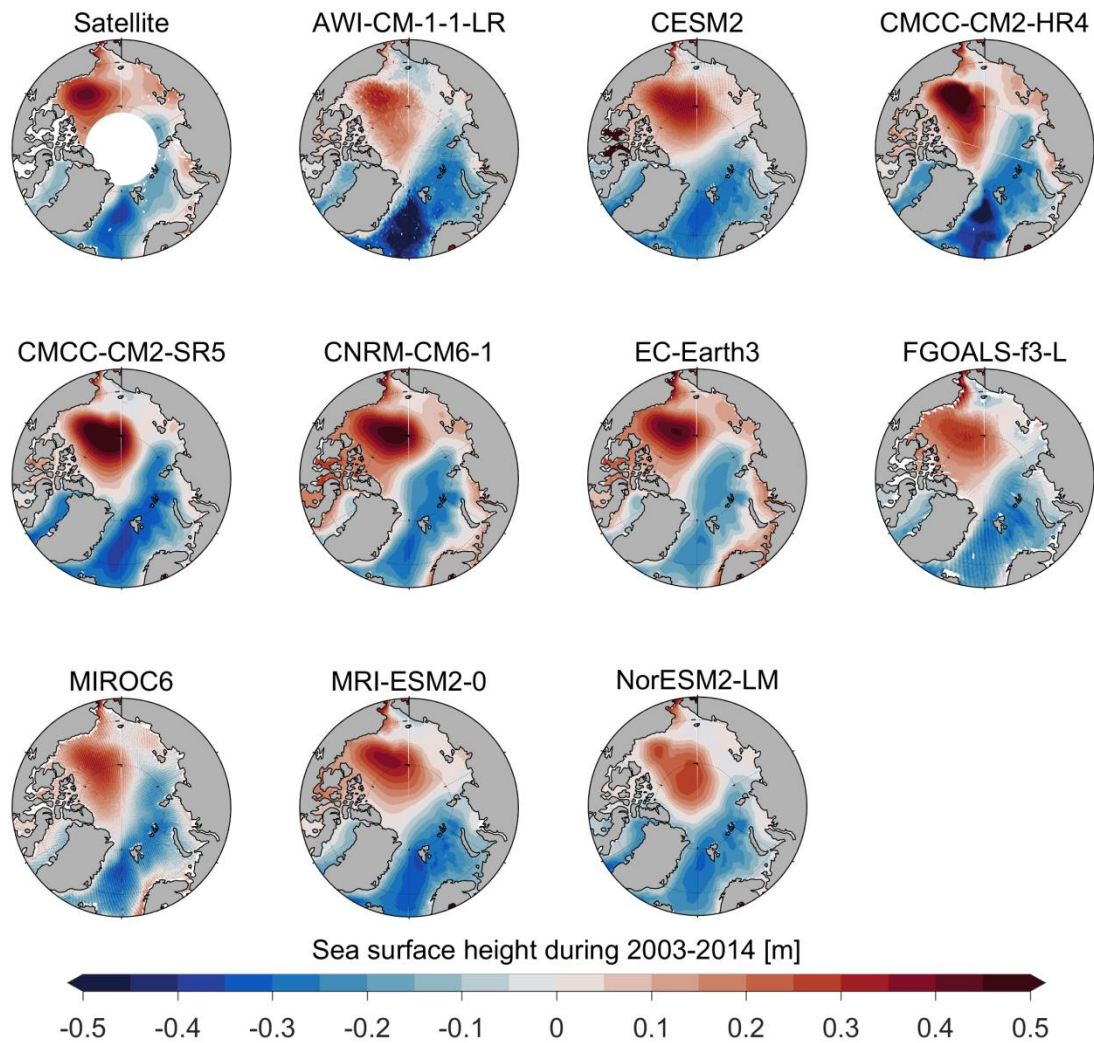


Figure S13. Sea surface height (m) from satellite observation and OMIP-2 simulations during 2003–2014.

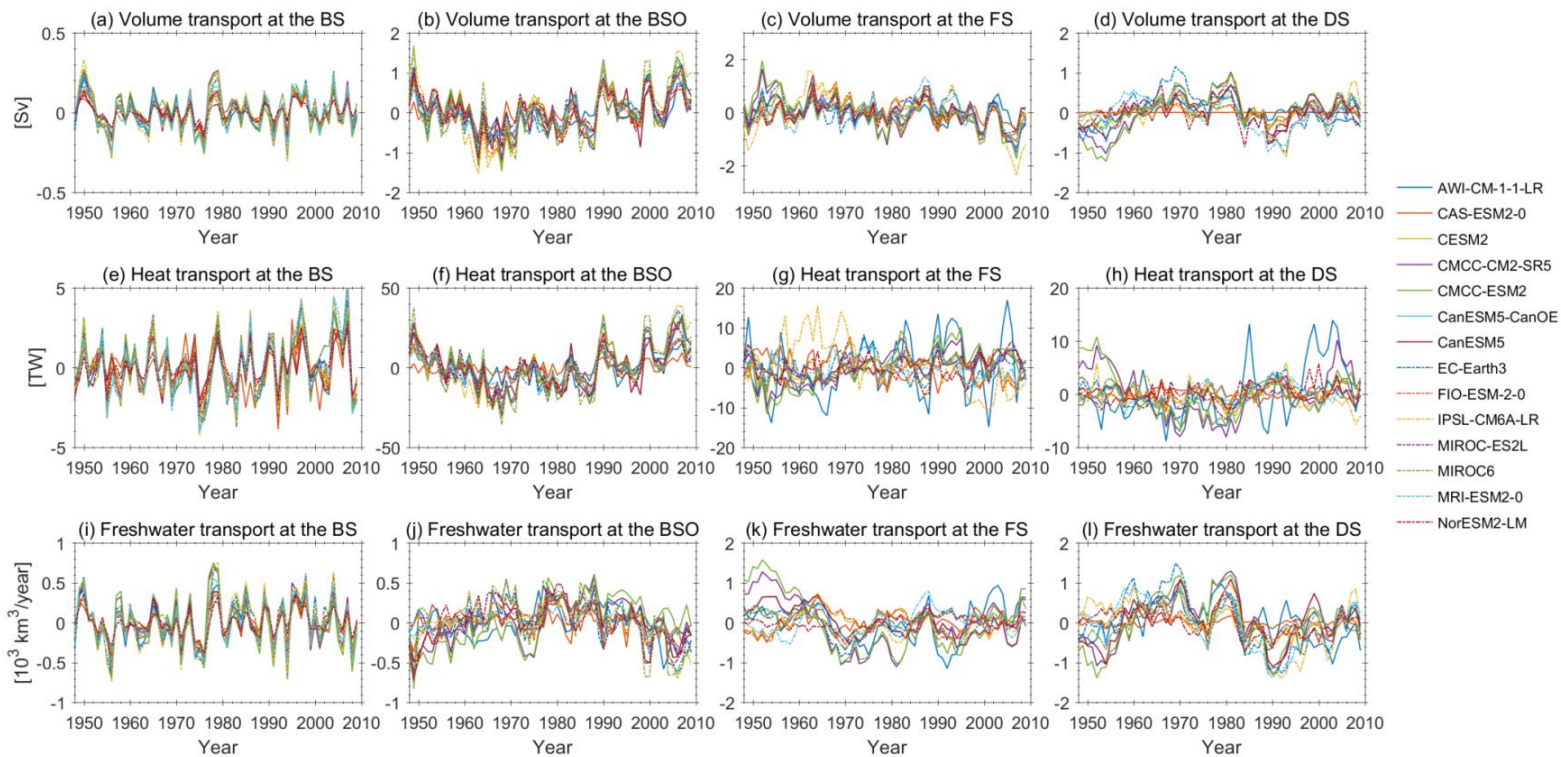


Figure S14. Ocean volume, heat, and liquid freshwater transport anomalies through the Bering Strait (BS), Barents Sea Opening (BSO), Fram Strait (FS), and Davis Strait (DS) in OMIP-1.

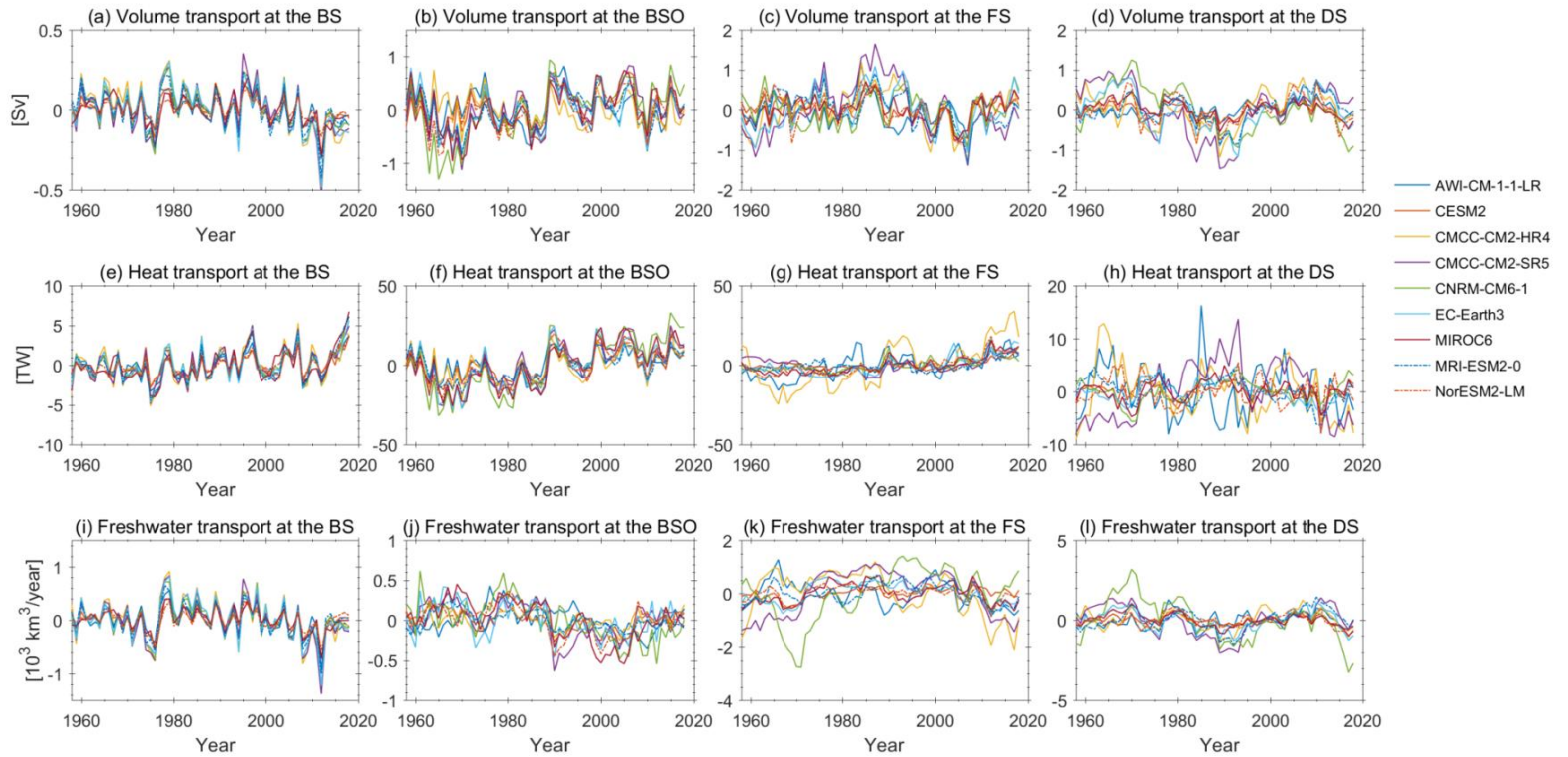


Figure S15. Ocean volume, heat, and liquid freshwater transport anomalies through the Bering Strait (BS), Barents Sea Opening (BSO), Fram Strait (FS), and Davis Strait (DS) in OMIP-2.