Supplementary material for

"A suite of coupled ocean-sea ice simulations examining the effect of changes in sea-ice thickness distribution on ice-ocean interaction in the Arctic Ocean"

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S1. Small-scale sea ice features and concurrent sea ice and ocean surface velocity
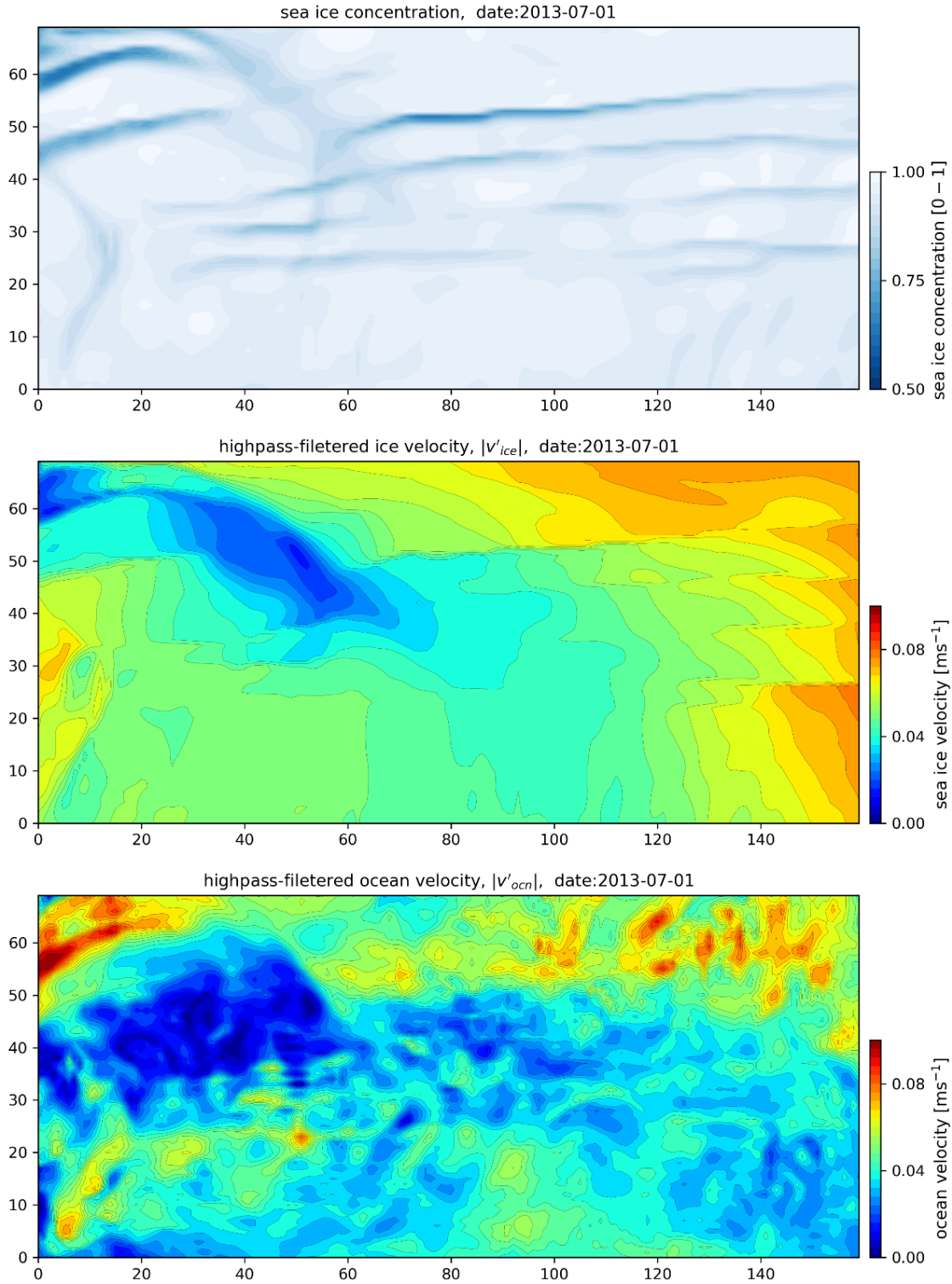
Figure S1. An example of small-scale sea ice features and concurrent ice and ocean surface velocity: daily snapshots of (a) sea ice concentration, (b) ice velocity, and (c) ocean surface velocity within the rectangular box shown in Fig. 1b. The top-left (top-right) corner of the panels correspond to the corner closest to Greenland (the North Pole) in the rectangular box in Fig. 2b. The ice and ocean fields are from PRE run, and the snapshot is from July 1,, 2013. Discontinuities in sea ice drift speed and concurrent oceanic eddy formation are visible.

S2. Changes in sea ice strength
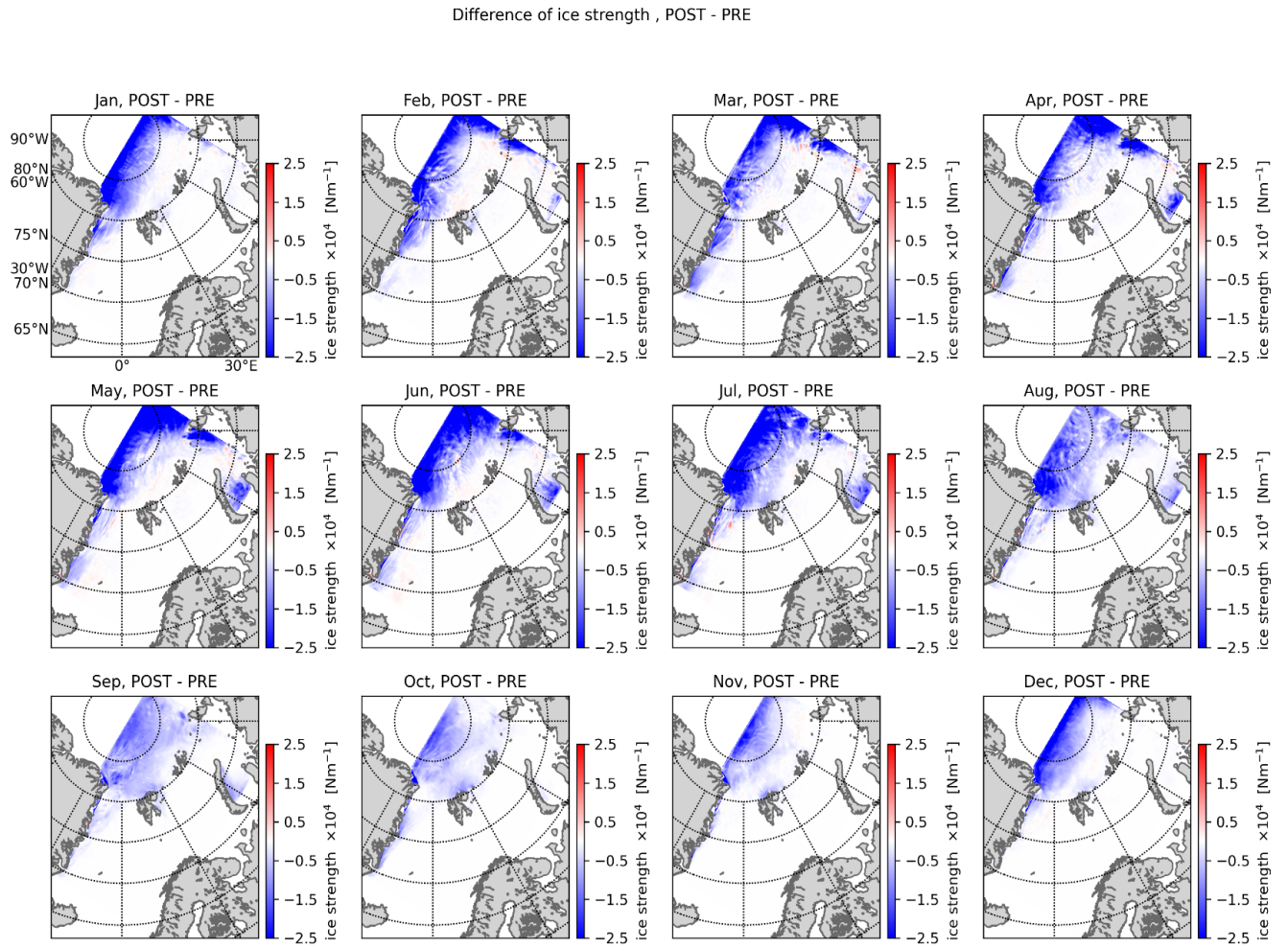
Figure S2. Difference of compressive sea ice strength between PRE and POST runs (monthly mean).

S3. Changes in vertical viscosity
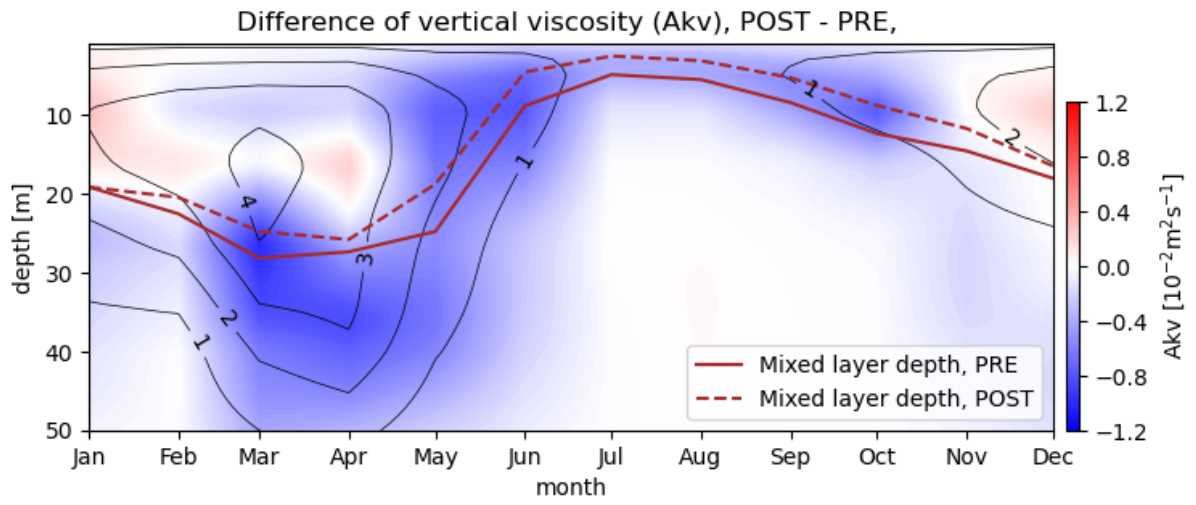
Figure S3. Difference of vertical viscosity between PRE and POST runs. The model employs the Generic Length Scale (GLS) vertical mixing scheme (k - kl scheme corresponding to Mellor-Yamada 2.5 mixing scheme).