

# Electronic Supplementary Material to: Evaluation of Arctic Sea Ice Drift and its Relationship with Near-surface Wind and Ocean Current in Nine CMIP6 Models from China\*

Xiaoyong YU<sup>1,2</sup>, Chengyan LIU<sup>2</sup>, Xiaocun WANG<sup>3</sup>, Jian CAO<sup>4</sup>, Jihai DONG<sup>3</sup>, and Yu LIU<sup>5</sup>

<sup>1</sup>Binjiang College, Nanjing University of Information Science and Technology, Wuxi 214105, China

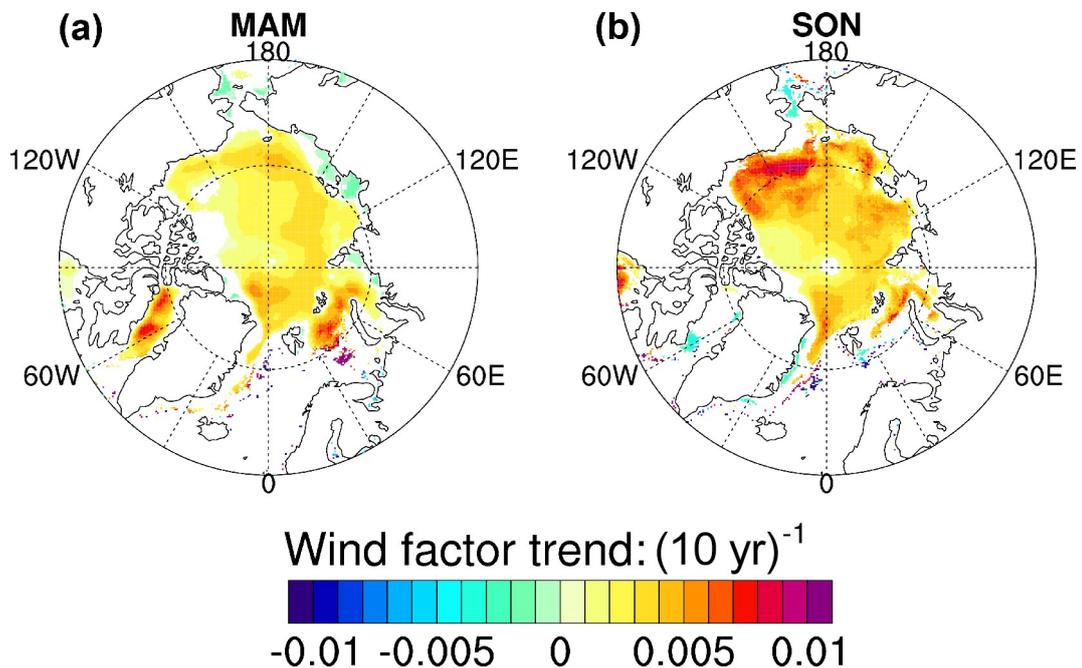
<sup>2</sup>Southern Marine Science and Engineering Guangdong Laboratory (Zhuhai), Zhuhai 519082, China

<sup>3</sup>School of Marine Sciences, Nanjing University of Information Science and Technology, Nanjing 210044, China

<sup>4</sup>School of Atmospheric Sciences, Nanjing University of Information Science and Technology, Nanjing 210044, China

<sup>5</sup>Marine Science and Technology College, Zhejiang Ocean University, Zhoushan 316022, China

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**Fig. S1.** The trend of (a) spring (MAM) and (b) autumn (SON) wind factors (defined as sea ice drift speed divided by near-surface wind speed) in the observation/reanalysis for the period of 1979–2014. The sea ice drift speed and near-surface wind are from NSIDC Polar Pathfinder and ERA-Interim, respectively. Areas where the confidence level of the trend is less than 95% are masked out.



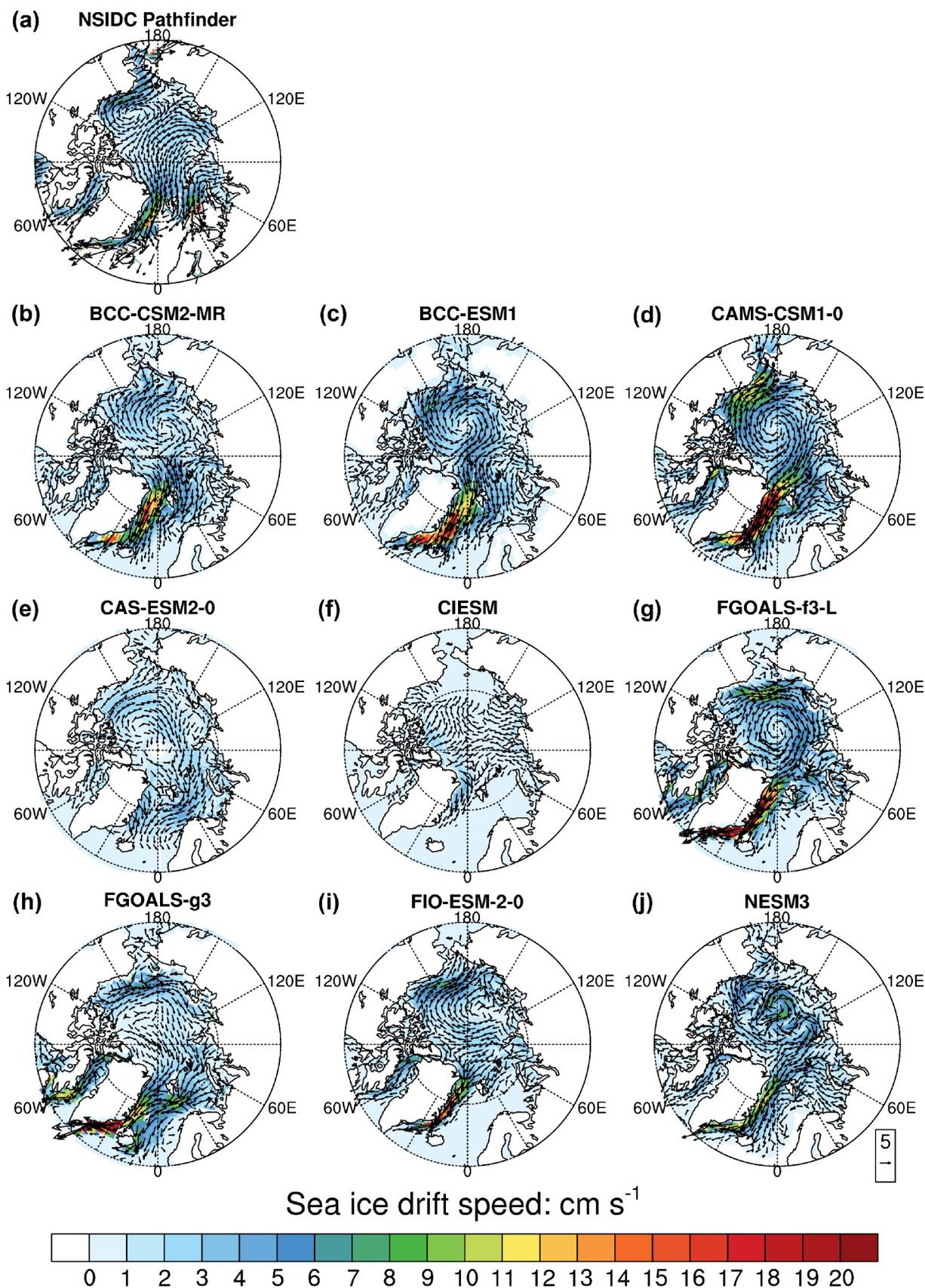
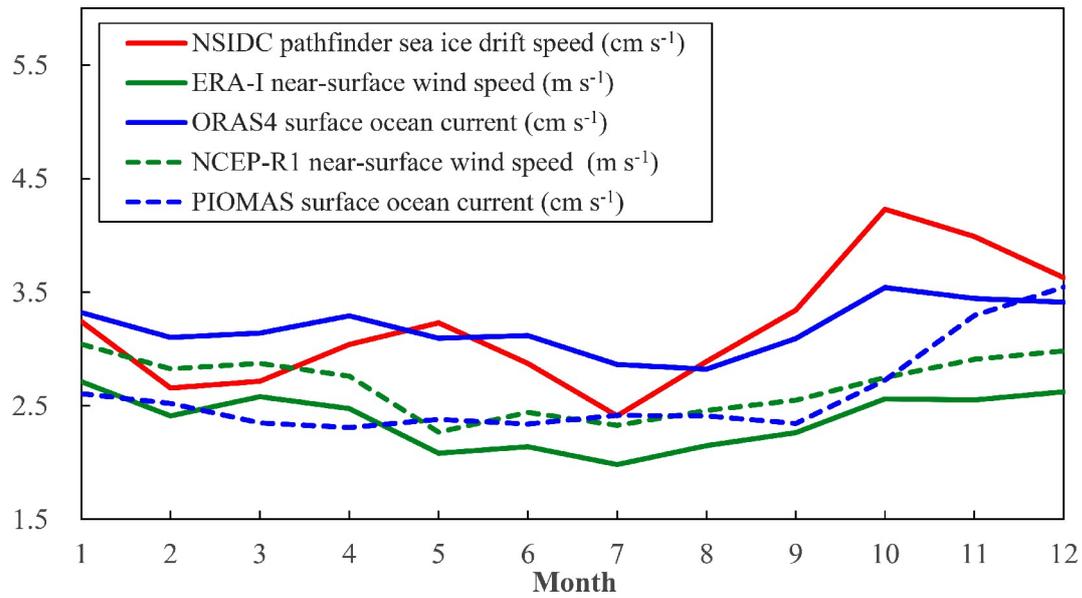
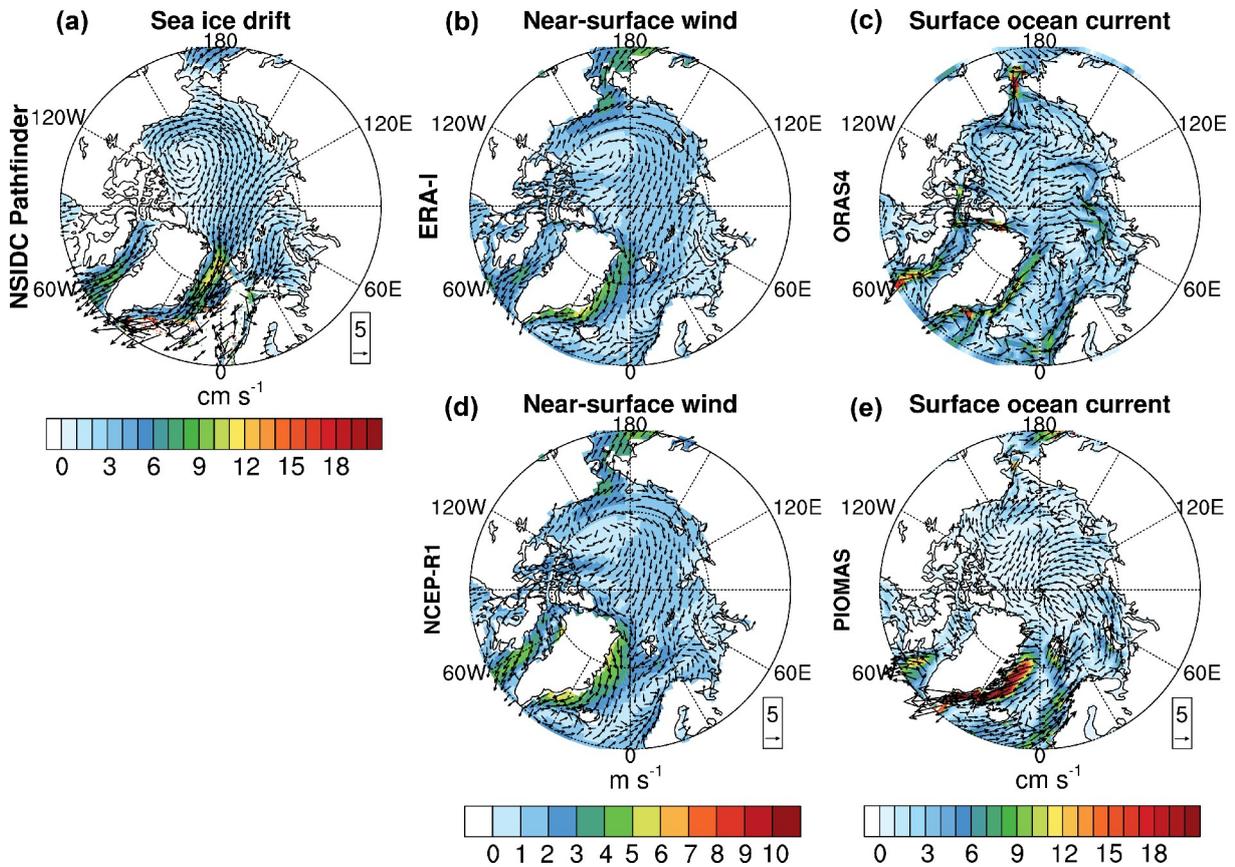


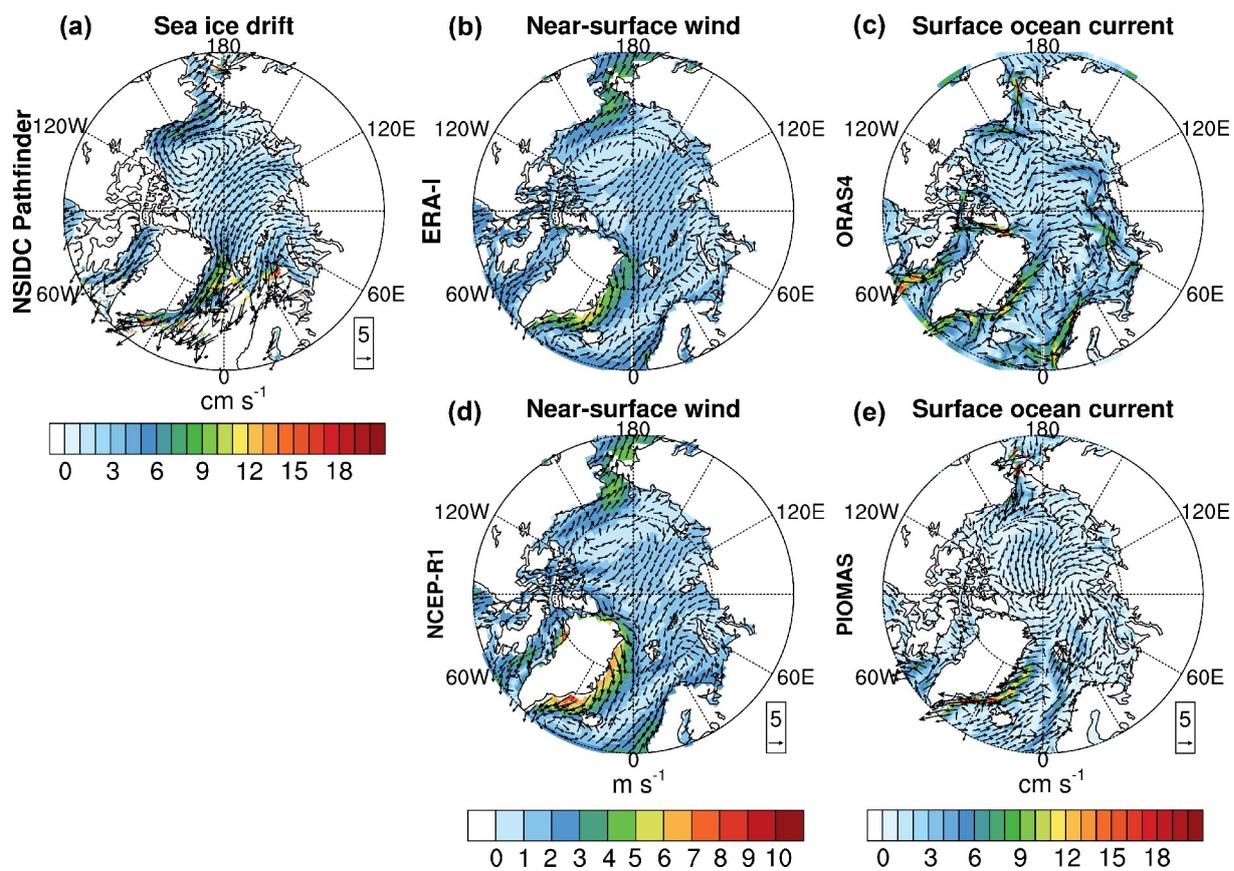
Fig. S3. Same as that in Fig. S2, but for autumn (SON).



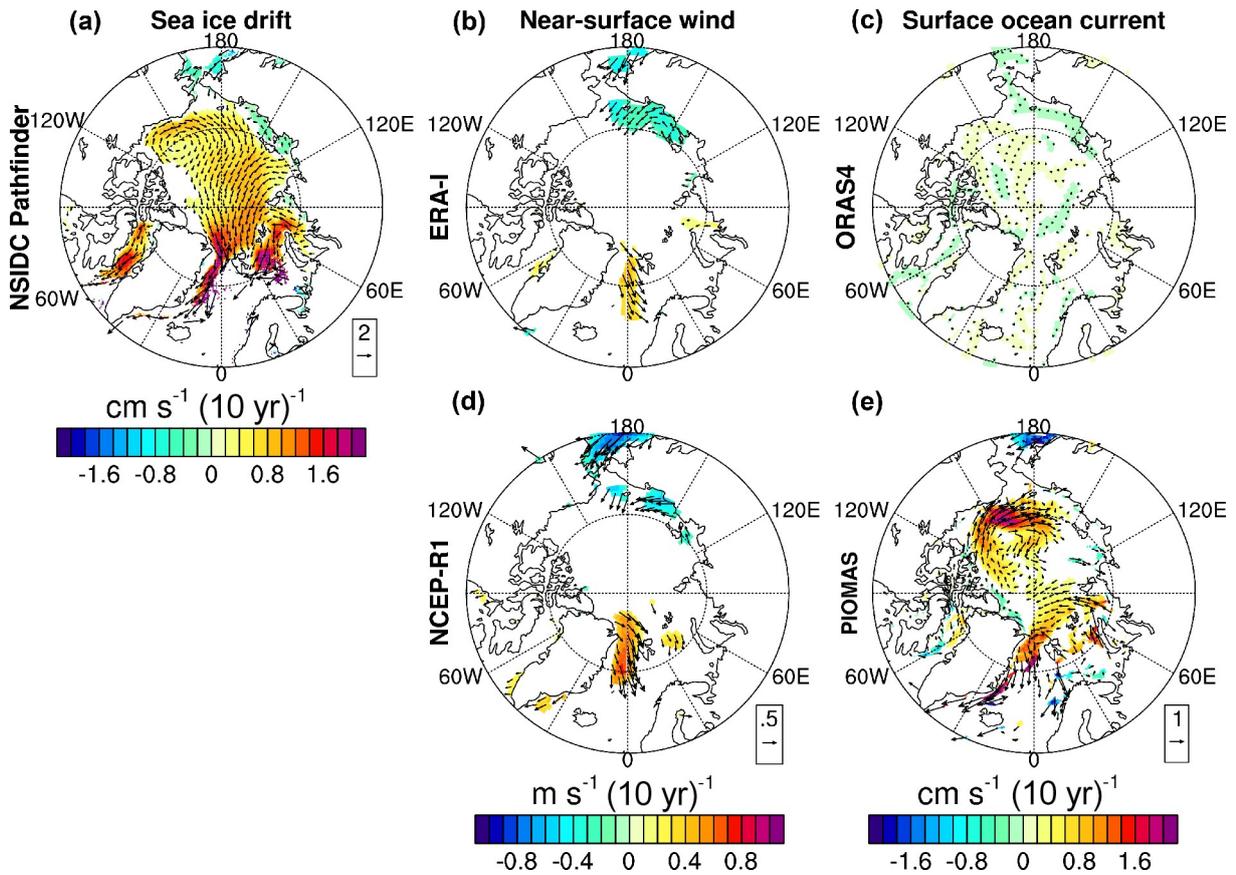
**Fig. S4.** The seasonal cycle of Arctic basin-wide mean sea ice drift speed in NSIDC Polar Pathfinder ( $\text{cm s}^{-1}$ , solid red line), near-surface wind speed in ERA-Interim ( $\text{m s}^{-1}$ , solid green line) and NCEP/NCAR reanalysis ( $\text{m s}^{-1}$ , dash green line), and surface ocean current in ORAS4 ( $\text{cm s}^{-1}$ , solid blue line) and PIOMAS ( $\text{cm s}^{-1}$ , dash blue line). The domain of the spatial mean is the same as the SCICEX domain, which is marked as the red box in Fig. 1a.



**Fig. S5.** Spatial pattern of the spring (MAM) long-term (1979–2014) mean direction (vector) and speed (shading) of sea ice drift (left), near-surface wind (middle), and surface ocean current (right) in the observation/reanalysis (NSIDC Polar Pathfinder for sea ice drift speed, ERA-Interim and NCEP/NCAR reanalysis (NCEP-R1) for near-surface wind speed, and ORAS4 and PIOMAS for surface ocean current).



**Fig. S6.** Same as that in Fig. S5, but for autumn (SON).



**Fig. S7.** The trend of spring (MAM) sea ice drift (left), near-surface wind (middle), and surface ocean current (right) in the observation/reanalysis (NSIDC Polar Pathfinder for sea ice drift speed, ERA-Interim and NCEP/NCAR reanalysis (NCEP-R1) for near-surface wind speed, and ORAS4 and PIOMAS for surface ocean current). Colors and arrows represent the trend in the magnitude and vector components of sea ice drift, near-surface wind, and surface ocean current, respectively. Areas where the confidence level of the magnitude trend is less than 95% are masked out.

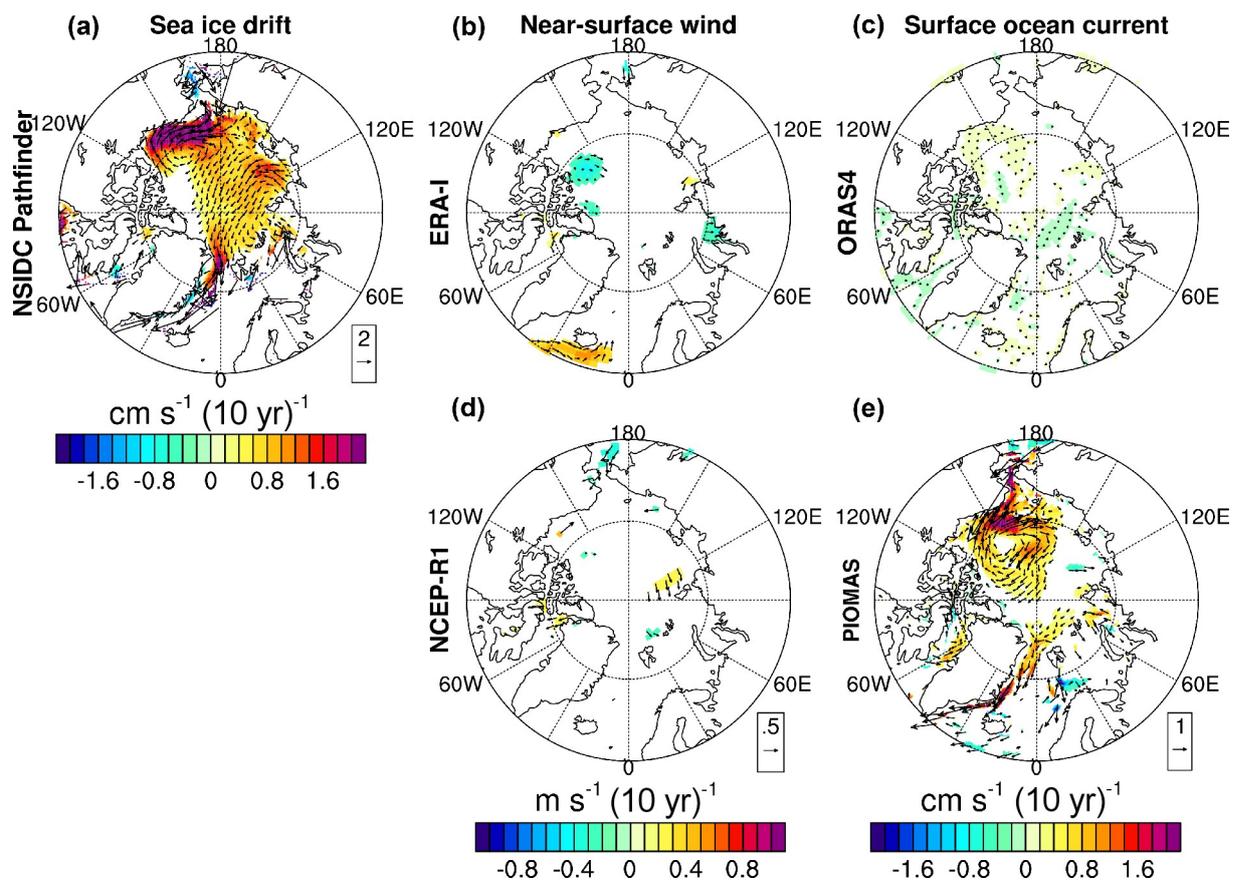


Fig. S8. Same as that in SI Fig. 7, but for autumn (SON).