Variability in the global energy budget and transports 1985-2017

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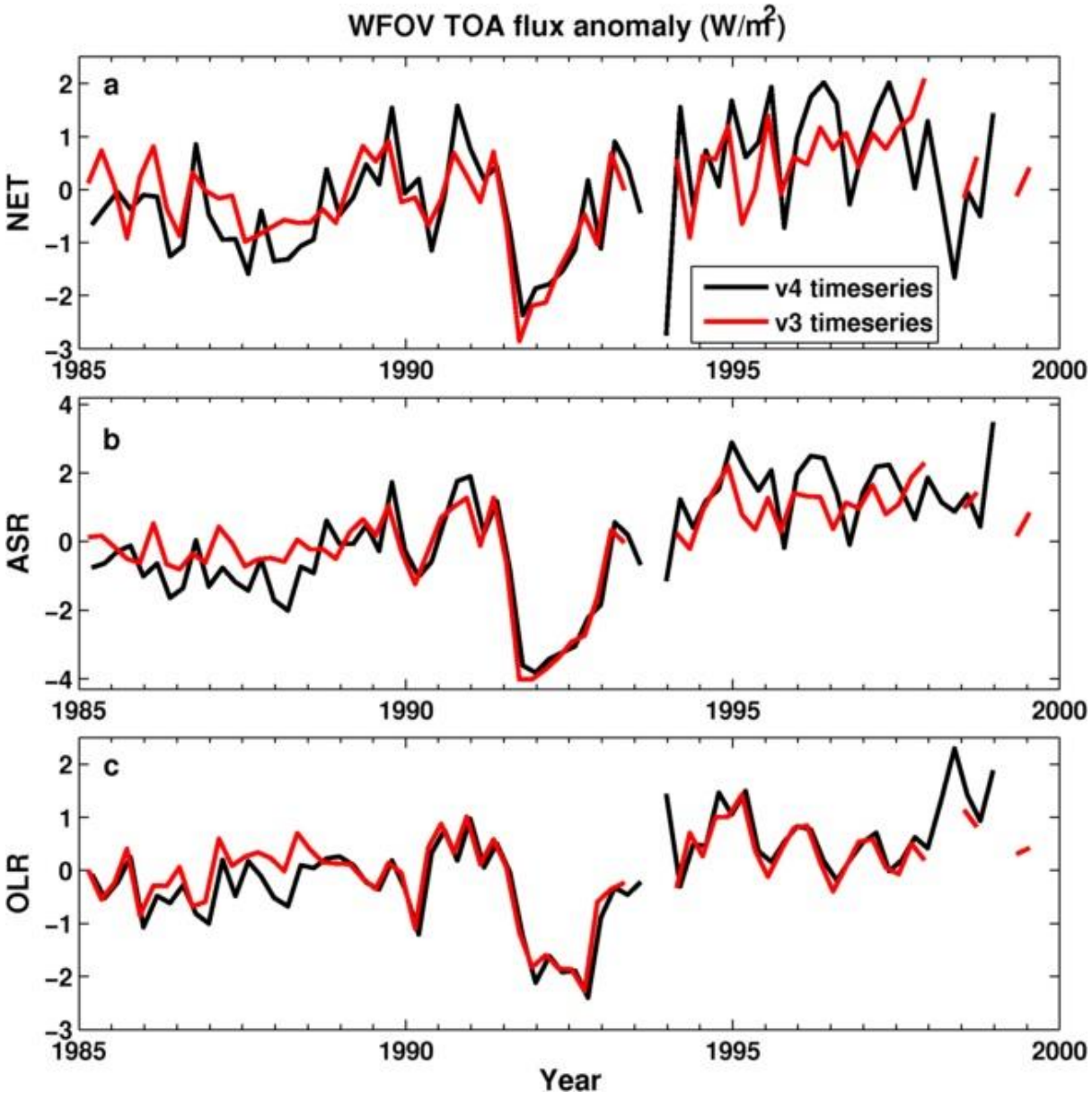

Figure S1. Anomaly time series of TOA radiative fluxes from WFOV v4 and v3 data sets.

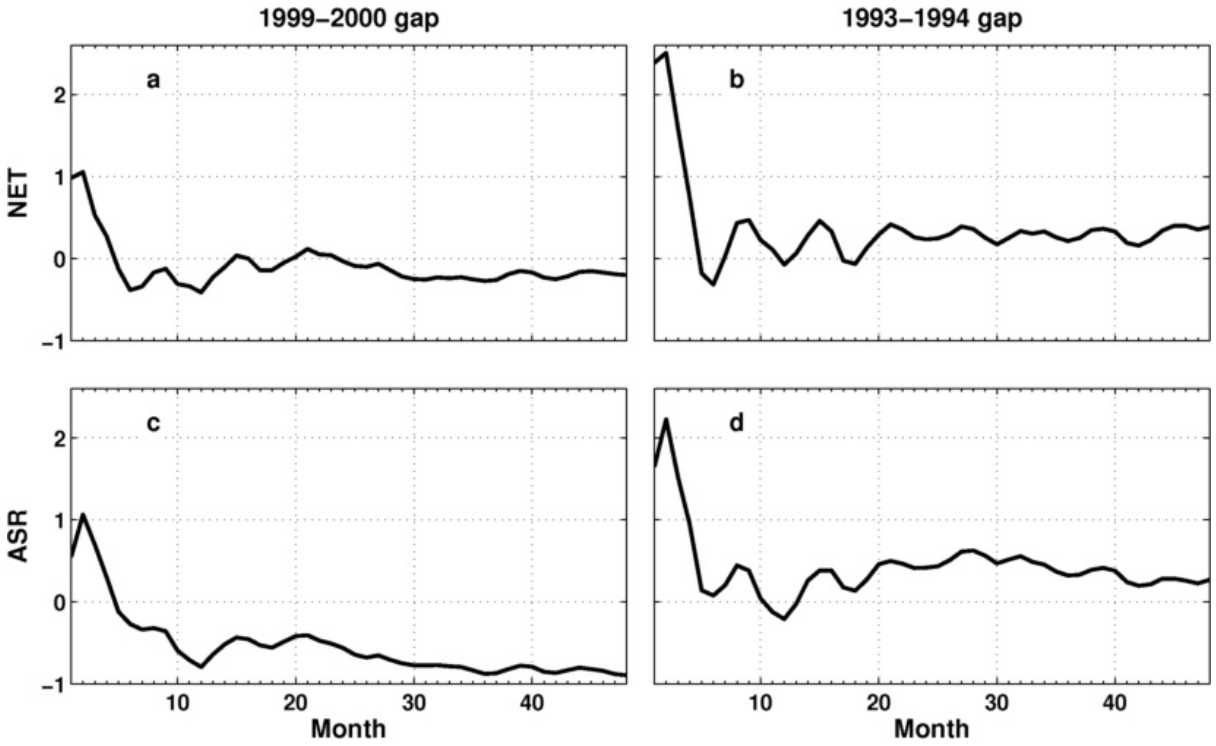

Figure S2. Adjustment of NET and ASR on both sides of 1993-1994 gap and 1999-2000 gap based on AMIP6 ensemble means. X-axis represents how many months are used for the average on both side of the gap.

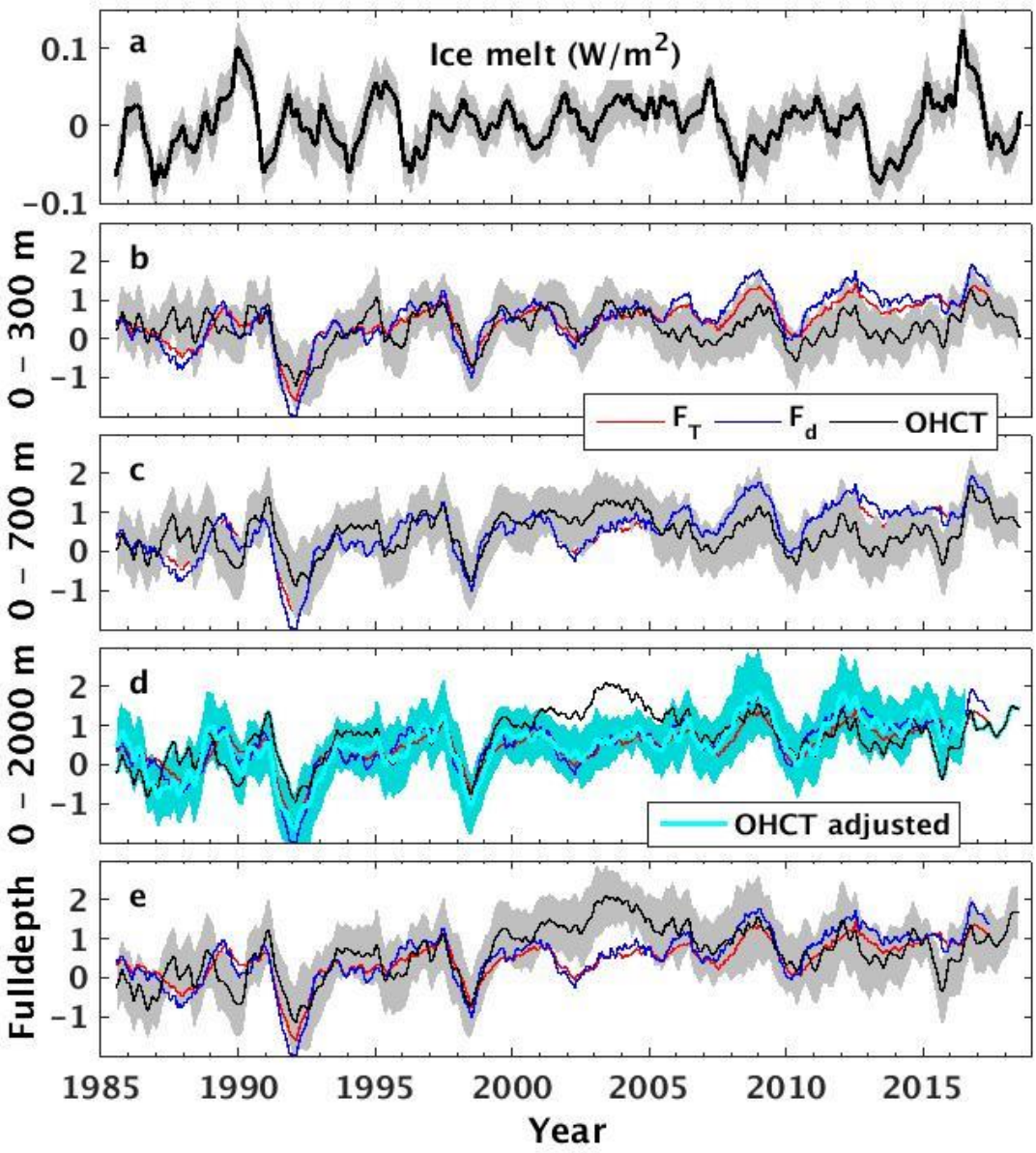

Figure S3. (a) Global mean time series of energy needed for sea ice melt. Solid black line is from five ensemble member mean of ORAS5, and the grey shading area is the mean ± one standard deviation. (b-e) are global mean OHCT for different depths, together with the net TOA radiative flux F_T and net ocean surface energy flux F_d. The shading area is the ensemble mean OHCT ± one standard deviation. The cyan line in (d) is the adjusted OHCT constrained to the corresponding annual mean of F_d. All lines are twelve month running mean.