Supplementary figures

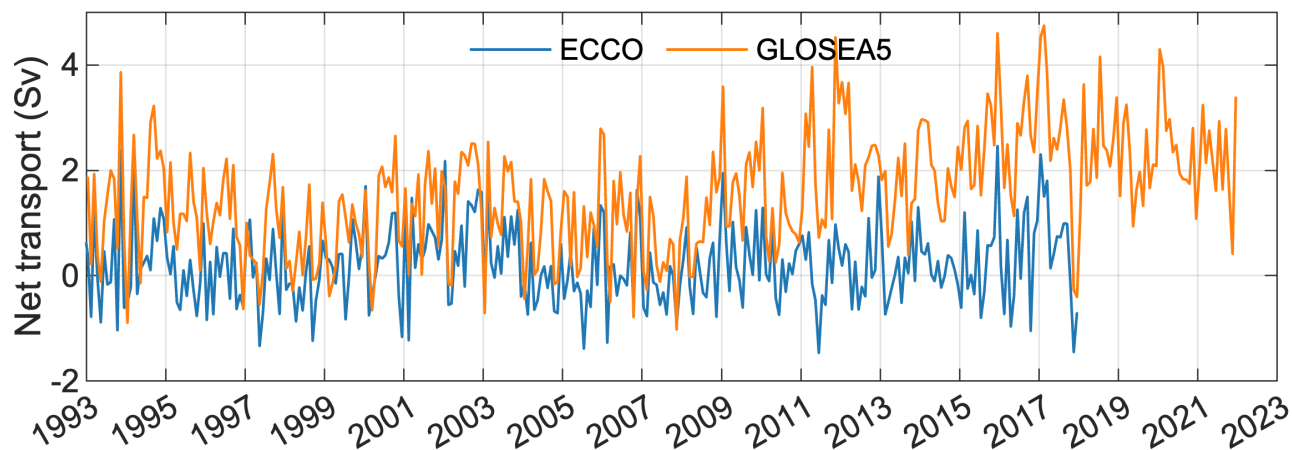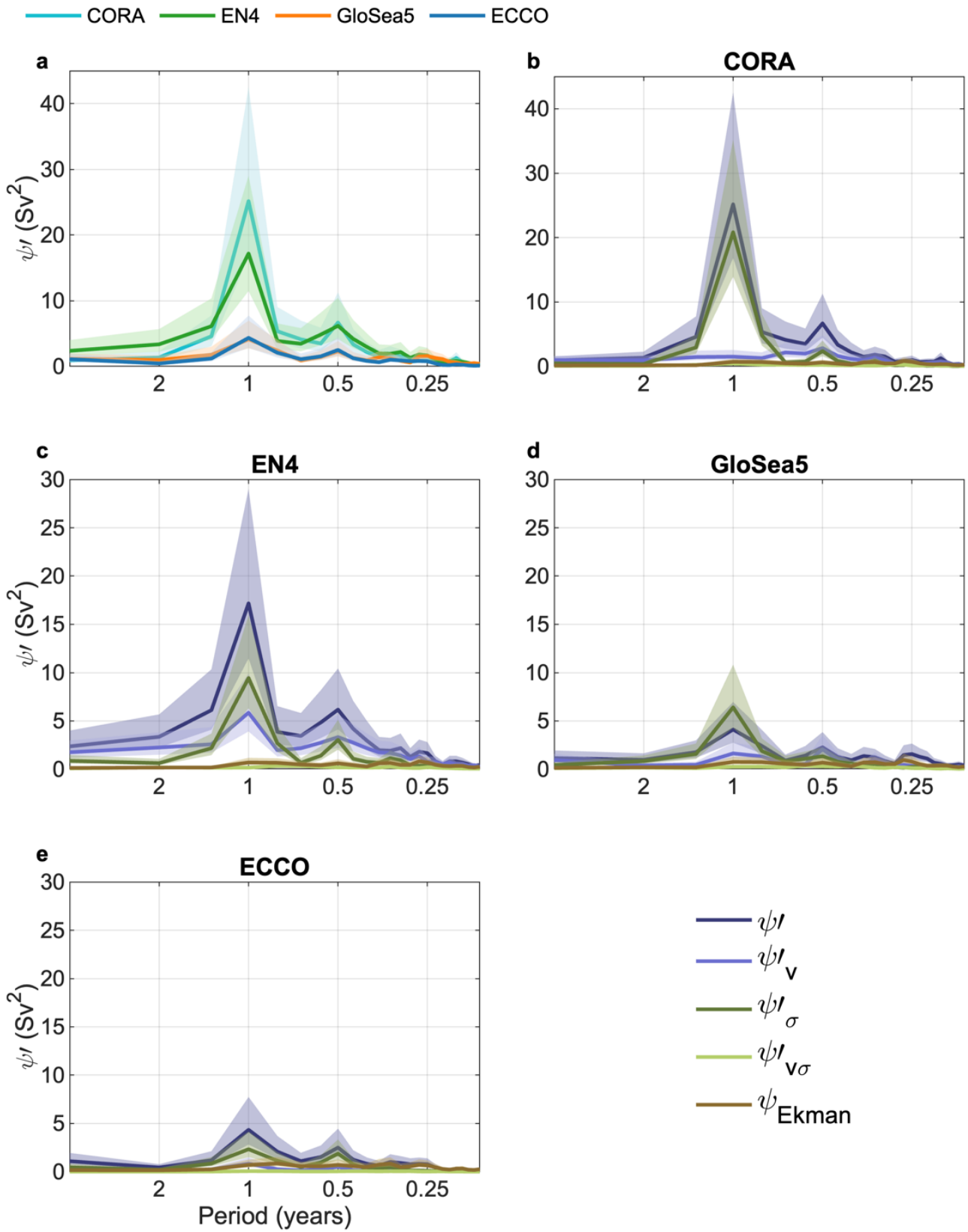**Figure S1: Time series of net transports across the OVIDE line in Sv (1 Sv = 10^6 m^3 s^{-1}) for ECCO (blue) and GloSea5 (orange).**

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Figure S2 : Spectra in variance preserving form of ψ′ (panel a) for the 4 analyses and spectra of the decomposition (Eqn. 7) for each analysis (panels b – e).
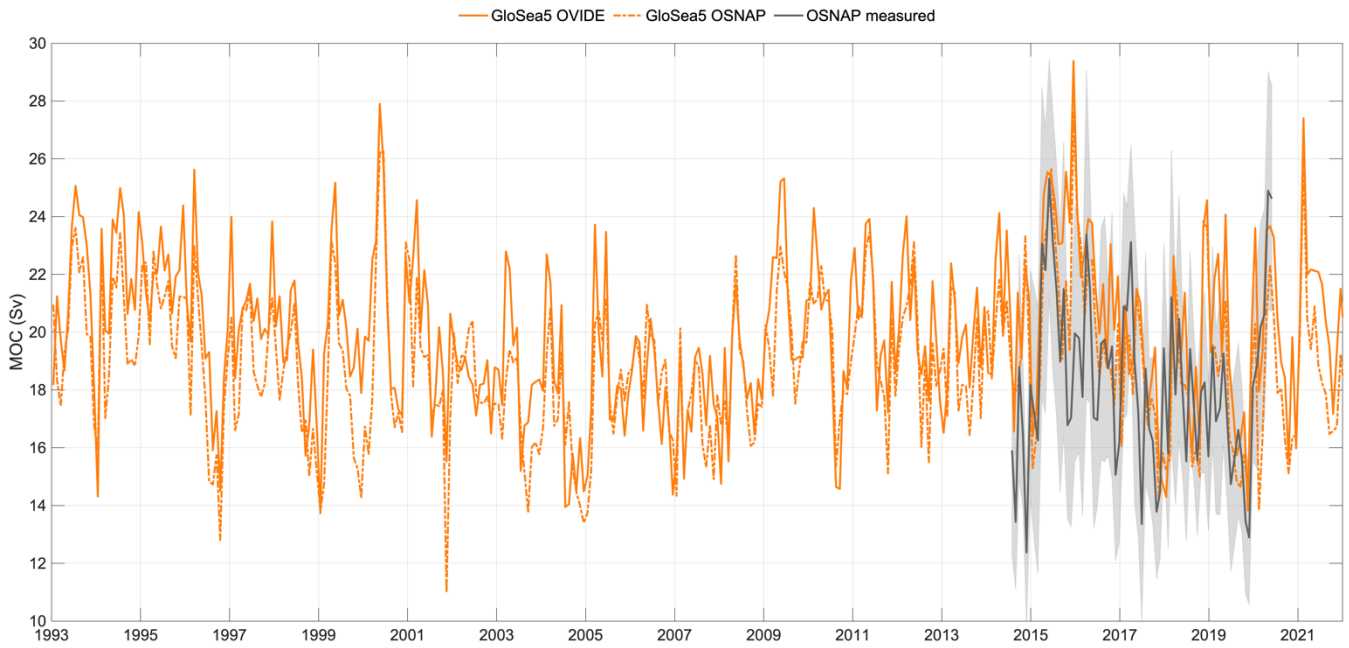
Figure S3: Times series of MOC strength (Sv) at OVIDE (orange continuous line) and OSNAP (orange dashed line) from GloSea5 and OSNAP measured (dark grey continuous line, and grey shading for the error) from Fu et al. (2023). The correlation coefficient between the two time series in Glosea5 is 0.83 (pvalue = 0.00). Correlation between OSNAP MOC in GloSea5 and measured MOC is 0.49 (pvalue = 0.00).