

Interactive comment on “Utilizing the Drake Passage Time-series to understand variability and change in subpolar Southern Ocean pCO₂” by Amanda R. Fay et al.

Anonymous Referee #2

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The authors report a thorough analysis of Southern Ocean pCO₂ dynamics. This is an important topic because the Southern Ocean is a major global carbon sink and its seasonality and long-term evolution need to be further constrained. The authors focus on the Drake Passage because of its high data coverage and compare Drake Passage time-series data with data products SOCAT version 4 and SOM-FFN. They also compare Drake Passage time-series data with less precise float data from the recent and ongoing SOCCOM program.

The manuscript is very well written with easy to follow logic and I therefore recommend publication pending minor revision. My main point is that the SOCCOM data

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are somewhat underexplored in this paper. I recommend the authors to provide some more details to the reader about SOCCOM data quality and to present a more detailed comparison of SOCCOM and Drake Passage time-series data for the period of overlap. Taking the two data sets independently would one extract similar seasonality patterns?

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