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Open Access Earth System Science Data Discussions

Interactive comment on "Autonomous seawater pCO_2 and pH time series from 40 surface buoys and the emergence of anthropogenic trends" *by* Adrienne J. Sutton et al.

Anonymous Referee #3

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In this manuscript, the authors present a data package that incorporates measurements from 40 buoys with pCO2 and, in some cases, also pH sensors. The authors make a good case for why this dataset is of additional value compared to getting data independently from each buoy at NCEI. The authors also provide time of trend emergence estimates where the record is long enough and compare results for open ocean, coastal, and coral reef sites. This makes the paper interesting not just for potential users of the data, but also for researchers that might want to compare their own data trends to data from these buoys.

I appreciated the specific section on data availability and how to use and properly

acknowledge the dataset, which apparently is still too complicated for some data users.

This manuscript and product are timely and will be very useful for a variety of researchers, so I recommend publication after addressing the following minor issues:

Page 4 lines 10-15: what type of equilibrator is used? Is it a membrane? Page 4, line 20-26: At what temperature is pHT reported? Is there enough data at this point to evaluate the most adequate of the two sensors for long term monitoring? Page 9, lines 26-28. How likely do you think it is that this warm event will happen again? If you are discussing ToE and this event could happen again in the next 1-2 decades, wouldn't it make sense to keep it in the record for the ToE calculations and comparisons?

Minor edits: Page 2 Line 30: change "although" for "however" Page 4, line 20: add reference to Table 1 Page 8, lines 22-23: "reflecting the influence of short term of the local active reef community" please rewrite this.

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