Earth Syst. Sci. Data Discuss., referee comment RC1
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Comment on essd-2022-71

Anonymous Referee #1

Referee comment on "A new estimate of oceanic CO_2 fluxes by machine learning reveals the impact of CO_2 trends in different methods" by Jiye Zeng et al., Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2022-71-RC1, 2022

Zeng et al. used three machine algorithms (neural network, random forest, and gradient boosting) to estimate ocean pCO2 on a 1x1 grid from 1980-2020. They trained each algorithm to learn SOCAT fCO2 observations using full-coverage fields (SST, SSS, MLD, CHL, LAT, LON, YEAR) as inputs to each algorithm. The output from these algorithms were averaged to create the final product and a bulk parameterization was used to estimate flux. Their flux estimates were lower than the 6 products used in the global carbon budget 2021.

Please also note the supplement to this comment:
https://essd.copernicus.org/preprints/essd-2022-71/essd-2022-71-RC1-supplement.pdf