During the proofreading we recognized that Table 2 has missing entries. We have added the necessary data sets. Indeeed, this is for completeness. We apologize for the inconvenience.

Table 2. Additional entries

Data Set , Variable, Unit, Reference

1) Small zooplankton biomass, HetC, mgCm-2 , MAREDAT (Buitenhuis et al., 2010, Moriarty & O’Brien, 2013)

2) Macrozooplankton biomass, idetz2c, mgCm-2, MAREDAT (Moriarty et al., 2013)

3) Mixed Layer Depth, MLD, m, Sallee et al., 2021

4) Surface Ocean partial pressure of CO2, pCO2., μatm, Surface Ocean CO2 Atlas (Bakker et al., 2016)

5) Air-sea CO2 flux, Co2f, mol C m-2 y-1, Chau et al., 2022

6) Surface Ocean partial pressure of CO2, pCO2, μatm, Chau et al., 2022

7) Annual air–sea CO2 flux, CO2f, PgC yr-1, Global Carbon Budget 2022 (Friedlingstein et al., 2022b (ESSD), Wright et al., 2021; Schwinger et al., 2016; Lacroix et al., 2021; Berthet et al., 2019; Hauck et al., 2020; Liao et al., 2020; Doney et al., 2009; Aumont et al., 2015; Nakano et al., 2011; Urakawa et al., 2020; Long et al., 2021a; Landschützer et al., 2016; Rödenbeck et al., 2022; Chau et al., 2022; Gloege et al., 2021; Zeng et al., 2014; Iida et al., 2015; Gregor and Gruber, 2021)

The updated Table is below.

**Table 2.** List of the observational data sets used to initialize the biogeochemistry model and assess its performance

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| --- | --- | --- | --- |
| Data set | Variable name | Unit | Reference |
| Dissolved inorganic carbon | DIC | mmol m-3 | Global Ocean Data Analysis Project version 2 (Lauvset et al., 2016) |
| Total alkalinity | Alk | mmol m-3 | Global Ocean Data Analysis Project version 2 (Lauvset et al., 2016) |
| Dissolved inorganic nitrogen | DIN | mmol m-3 | World Ocean Atlas (Garcia et al., 2014) |
| Dissolved inorganic silicon | DSi | mmol m-3 | World Ocean Atlas (Garcia et al., 2014) |
| Oxygen | O2 | mmol m-3 | World Ocean Atlas (Garcia et al., 2019b) |
| Chlorophyll a concentration | Chl | mg m-3 | OC-CCI- (Sathyendranath et al., 2019) andSouthern-Ocean-specific data set (Johnson et al., 2013) |
| Net primary production | NPP | mmol m-3 | CbPM (Westberry et al., 2008) andVGPM (Behrenfeld and Falkowski, 1997) |
| Small zooplankton biomass | HetC | mgCm-2 | MAREDAT (Buitenhuis et al., 2010, Moriarty & O’Brien, 2013) |
| Macrozooplankton biomass | Zoo2C | mgCm-2 | MAREDAT (Moriarty et al., 2013) |
| Mixed Layer Depth | MLD | m | (Sallee et al., 2021) |
| Surface Ocean partial pressure of CO2 | *p*CO2 | μatm | Surface Ocean CO2 Atlas (Bakker et al., 2016) and(Chau et al., 2022) |
| Air-sea CO2 flux | CO2f | mol C m-2 y-1 | (Chau et al., 2022) |
| Annual air–sea CO2 flux | CO2f | PgC yr-1 | Global Carbon Budget 2022 (Friedlingstein et al., 2022b, Wright et al., 2021; Schwinger et al., 2016; Lacroix et al., 2021; Berthet et al., 2019; Hauck et al., 2020; Liao et al., 2020; Doney et al., 2009; Aumont et al., 2015; Nakano et al., 2011; Urakawa et al., 2020; Long et al., 2021a; Landschützer et al., 2016; Rödenbeck et al., 2022; Chau et al., 2022; Gloege et al., 2021; Zeng et al., 2014; Iida et al., 2015; Gregor and Gruber, 2021) |
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