GLODAPv2.2020: A data product of internally consistent ocean biogeochemical observations

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Abstract - The **Global Ocean Data Analysis Project (GLODAP**, www.glodap.info**)** data product provides access to quality controlled surface to bottom ocean biogeochemical data, with an emphasis on seawater inorganic carbon. **GLODAPv2.2020** is an update of the previous version.

GLODAPv2.2020 includes measurements from more than 1.2 million water samples from the global oceans collected on 946 cruises. The data for the 12 core variables have undergone extensive quality control, especially systematic evaluation of bias.

Data are available at https://www.nodc.noaa.gov/ocads/oceans/GLODAPv2_2020/

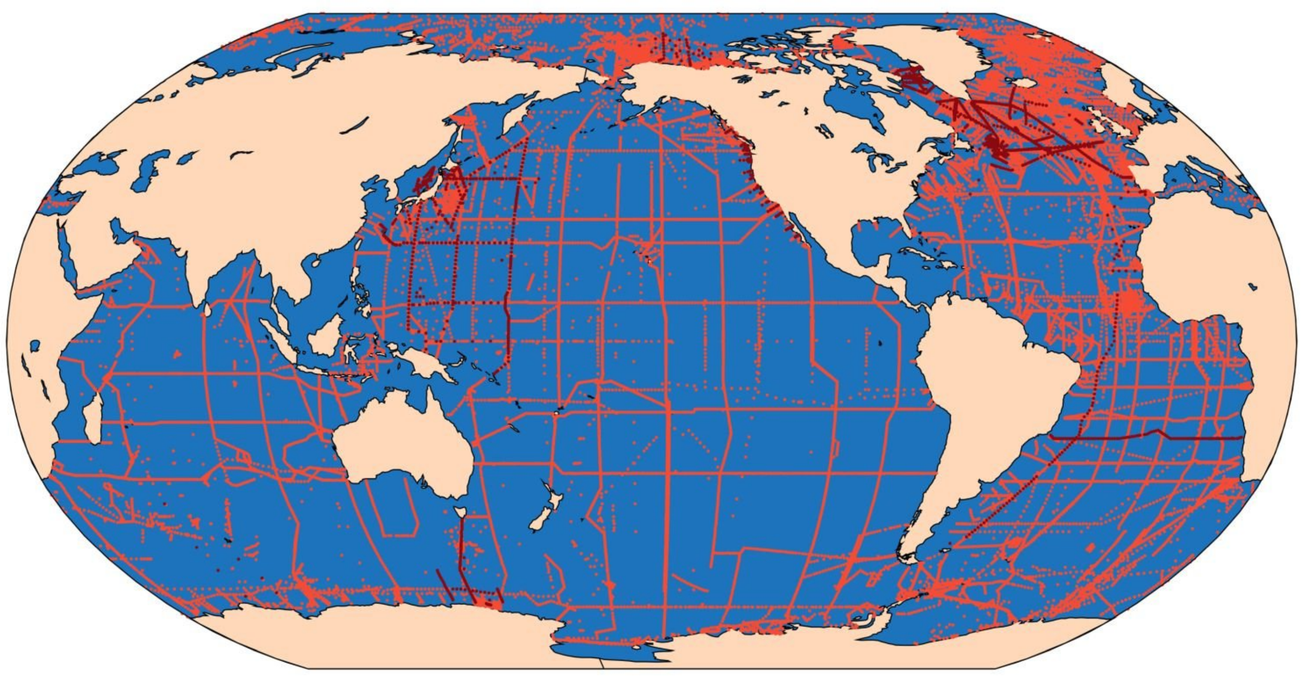

Figure 1. *Station locations of all stations in GLODAPv2.2020. Stations in dark red indicate stations new to this edition.*

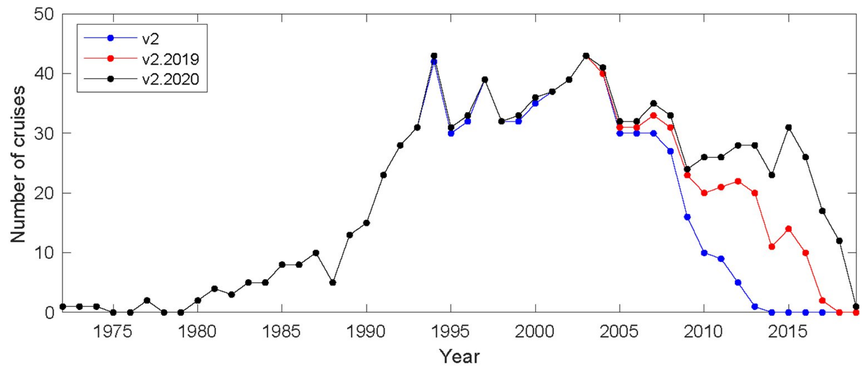

Figure 2. *Number of cruises per year in GLODAPv2, GLODAPv2.2019, and GLODAPv2.2020.*

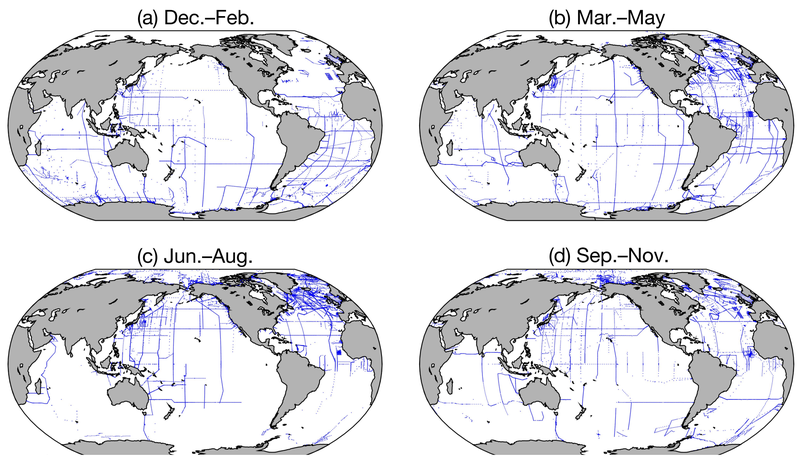

Figure 3. *Seasonal distribution of data in GLODAPv2.2020*

Key features of GLODAPv2.2020

- A total of 946 cruises in v2.2020
- Includes more than 1.2 million water samples
- The data for the 12 core variables (salinity, oxygen, nitrate, silicate, phosphate, dissolved inorganic carbon, total alkalinity, pH, CFC-11, CFC-12, CFC-113, and CCl4) have undergone extensive quality control, especially systematic evaluation of bias.
- The data are available as:
  - Single files as submitted by the data originator but updated to WOCE exchange format
  - Merged data product with adjustments applied to minimize bias.
- The data product is estimated to be consistent to better than
  - 0.005 in salinity,
  - 1% in oxygen,
  - 2% in nutrients
  - 4 µmol kg^{-1} in dissolved inorganic carbon and total alkalinity
  - 0.01–0.02 in pH
  - 5% in the halogenated transient tracers.

Key NEW features of GLODAPv2.2020

- 106 additional cruises
- Extension of time coverage until 2019
- Inclusion of discrete fCO_2 values in the merged product files.

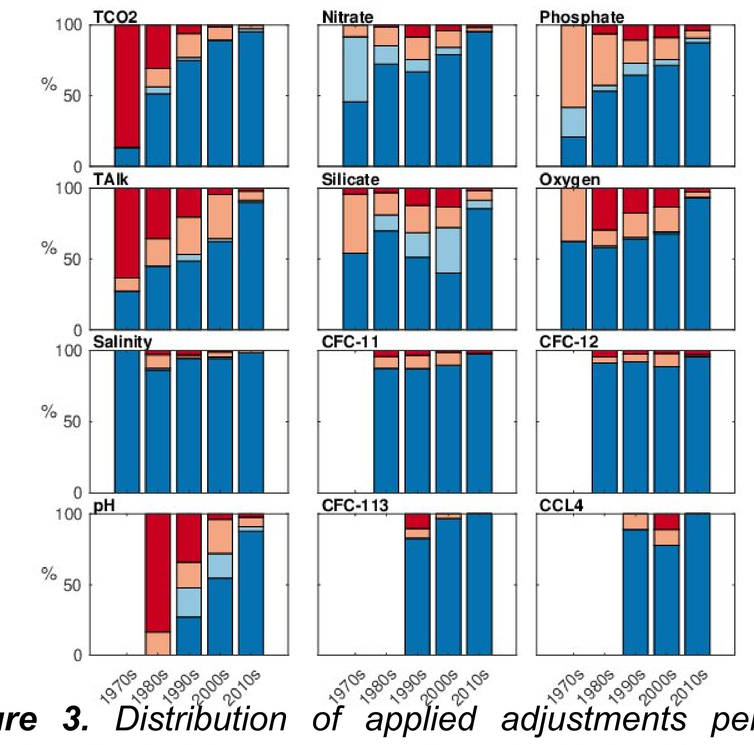

Figure 3. *Distribution of applied adjustments per decade; Dark blue - not adjusted; Light blue - adjustment < minimum; Orange - adjustment between limit and 2 times limit, Red - adjustment > 2 times limit.*

FAIR Data Use Statement: If you make heavy use of data from a single cruise or a limited set, please contact the PIs for possible collaboration. Always cite the latest ESSD article on GLODAP when using the data, see below.

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