**Read-me TS-product Beta Version**

Each time-series station is identified by the entry under “TimeSeriesSite” and individual cruises are identified by “CRUISE”. If given, station-, cast- and bottle numbers are the same as in the original files otherwise these are created artificially. Nitrate values can contain nitrite concentrations, similarly, ALOHA’s particulate organic matter includes particulate inorganic components. All pH values are reported on the total scale at 25°C, contrarily, pCO2 temperature values are indicated in an extra column. If either temperature or pressure are not given the entire data-row is excluded. All values are converted to the same units (WOCE). The original files used to generate this product are given in the last column “DOI”.

The TS product only includes “good” data, i.e. only data with a WOCE-flag “2” (or an equivalent flag from unique flagging schemes). All other data are set to -999 and WOCE-flags to “9”. For each bottle data variable, the product includes i) the value itself; two types of quality-flags: ii) WOCE (\*\_FLAG\_W) and iii) the Best-Practice flags (\*\_BPf); iv) a precision (\*\_P) and v) an accuracy value (\*\_A).

The meanings of the BP Flags are:

* BPf==0: No data given
* BPf==1: Method follows all BP recommendations
* BPf==2: Method follows “must-have” BP recommendations
* BPf==3: Method does not follow BP recommendations (or no metadata given)

If possible, the precision and accuracy values are assigned as granular as possible (i.e. yearly). But if only one value was given for an entire time-series, the given value is only assigned to the most recent group of observations (i.e. after the last method change of that particular variable, such as an instrument change or similar). The units are the same as for the value.

While the time-series dataset product pilot is made available without any restrictions, users of the data should adhere to the fair data use principles: For investigations that rely on data from a particular time-series station, at least cite the original dataset DOI and any articles where the data are described, as well as, preferably, contact principal investigators to explore opportunities for collaboration and co-authorship. Contacting principal investigators comes with the additional benefit of expert insight into the specific site under investigation. This paper should be cited in any scientific publications that result from the usage of the pilot product.

Here a quick instruction how to load the data into a matlab table:

%% Load .csv table (at directory that contains dataset)

opts = detectImportOptions('TS\_product.csv');

opts.DataLines = 3;

opts.VariableNamesLine = 1;

opts.VariableTypes(7)={'string'};

A=readtable('TS\_product.csv',opts);

clear opts

%% Convert -999 to NaN (only for numeric data)

params=A.Properties.VariableNames;

for i=[3:6 8:length(params)-1]

str=strcat('A.',params{i},'(A.',params{i},'==-999)=NaN;');

eval(str)

clear str

end

clear params i