Readme for CTD Data obtained onboard the R/V Mirai (MR20-E01)

December 28, 2022

<< System Information >>

< Underwater unit >

SBE9plus (S/N 09P21746-0575, Sea-Bird Electronics, Inc.)
Pressure sensor:
Digiquartz pressure sensor (S/N 79492)
Calibrated Date: 10 July 2020
Temperature sensors:
Primary: SBE03-04/F (S/N 031464, Sea-Bird Electronics, Inc.)
Calibrated Date: 01 June 2019
Secondary: SBE03-04/F (S/N 03P2453, Sea-Bird Electronics, Inc.)
Calibrated Date: 27 February 2019
Conductivity sensors:
Primary: SBE04C (S/N 041203, Sea-Bird Electronics, Inc.)
Calibrated Date: 04 October 2019
Secondary: SBE04C (S/N 041206, Sea-Bird Electronics, Inc.)
Calibrated Date: 25 June 2019
Dissolved Oxygen sensor:
Primary: SBE43 (S/N 432211, Sea-Bird Electronics, Inc.)
Calibrated Date: 19 June 2019
Secondary: SBE43 (S/N 430949, Sea-Bird Electronics, Inc.)
Calibrated Date: 20 October 2018
RINKO III (S/N 0278(163010BA), JFE Advantech Co. Ltd.)
Calibrated Date: 12 June 2020
Fluorescence:
Chlorophyll Fluorometer (S/N 3618, Seapoint Sensors, Inc.)
Gain setting: 10X, 0-15 µg/l
Calibrated Date: N/A
Offset: 0.000
Photosynthetically Active Radiation:
PAR sensor (S/N 1025, Satlantic Inc.)
Calibrated Date: 06 July 2015
Carousel water sampler:
SBE32 (S/N 3227443-0391, Sea-Bird Electronics, Inc.)
Submersible Pump:
Primary: SBE5T (S/N 054595, Sea-Bird Electronics, Inc.)
Secondary: SBE5T (S/N 053293, Sea-Bird Electronics, Inc.)

< Deck unit >

SBE11plus (S/N 11P54451-0872, Sea-Bird Electronics, Inc.)

<< Quality Control >>

Corrections were applied based on the sampled water analyses for salinity, dissolved oxygen, and fluorescence. Details can be found in the MR20-E01 Cruise Report (Sections 5.15, 5.18-5.20).

QC information in ".wct" files is flagged as [1] Not calibrated, [2] Acceptable measurement, [4] Bad measurement, and [6] Interpolated over 1 dbar interval.

<< Data Format >>

“*.wct” file contains the final products of CTD profiles as ASCII after applying corrections based on sampled water analyses.
Parameters stored are;

- pressure (dbar)
- depth (m)
- temperature (primary) (°C)
- temperature (secondary) (°C)
- salinity (primary)
- salinity (secondary)
- conductivity (primary) (S/m)
- conductivity (secondary) (S/m)
- dissolved oxygen by RINKO III (using primary T/S) (micro-mol/kg)
- dissolved oxygen by RINKO III (using secondary T/S) (micro-mol/kg)
- dissolved oxygen by SBE43 (primary) (micro-mol/kg)
- dissolved oxygen by SBE43 (secondary) (micro-mol/kg)
- dissolved oxygen RINKO III (voltage)
- dissolved oxygen SBE43 (primary) (voltage)
- dissolved oxygen SBE43 (secondary) (voltage)
- fluorescence (mg/cum)
- PAR/irradiance (micro-mol photons/(m^2 s))
- potential temperature (primary) (°C)
- potential temperature (secondary) (°C)
- density (primary) (kg/m^3)
- density (secondary) (kg/m^3)