

Sea surface water monitoring

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(1) Objective

Our purpose is to obtain temperature, salinity, fluorescence, and pH data continuously in near-sea surface water.

(2) Parameters

Temperature
Salinity
Fluorescence
pH

(3) Instruments and Methods

The Continuous Sea Surface Water Monitoring Bath (Figure 1) has three sensors and automatically measures temperature, salinity, fluorescence, and pH in near-sea surface water every 15 minutes. This system is located in the laboratory. Sea water was continuously pumped up to the laboratory from an intake placed below the sea surface and flowed into the system through a vinyl-chloride pipe.



Figure 1. Continuous Sea Surface Water Monitoring Bath

i) Instruments of sensors

Specifications of each sensor in this system are listed below.

Temperature and Conductivity sensor

Model: SBE-37SM MicroCAT, SEA-BIRD ELECTRONICS, INC.
Serial number: 2730

Multi-excitation fluorescence sensor

Model: Multi-Exciter, JFE Advantech
Serial number: 0040

pH sensor

Model: HPS-14, Kimoto Electric
Serial number: 505063001

(4) Results

Periods of measurement during this cruise are listed in Table 1 and Figure 2. The measured data are plotted in Figure 3.

(5) Data archives

These data obtained during this cruise will be submitted to the Data Management Group (DMG).

Table 1. Events list of the Sea surface water monitoring during IODP358

System Date [UTC]	System Time [UTC]	Events	Remarks
2018/10/10	22:00	All the measurements started and data was available.	Start
2018/10/13	01:45	Arrival at C0002	
2019/03/02	06:45	Departure from C0002	
2019/03/03	17:00	Arrival at C0024	
2019/03/25	05:45	Departure from C0024	
2019/03/29	10:15	All the measurements stopped.	End

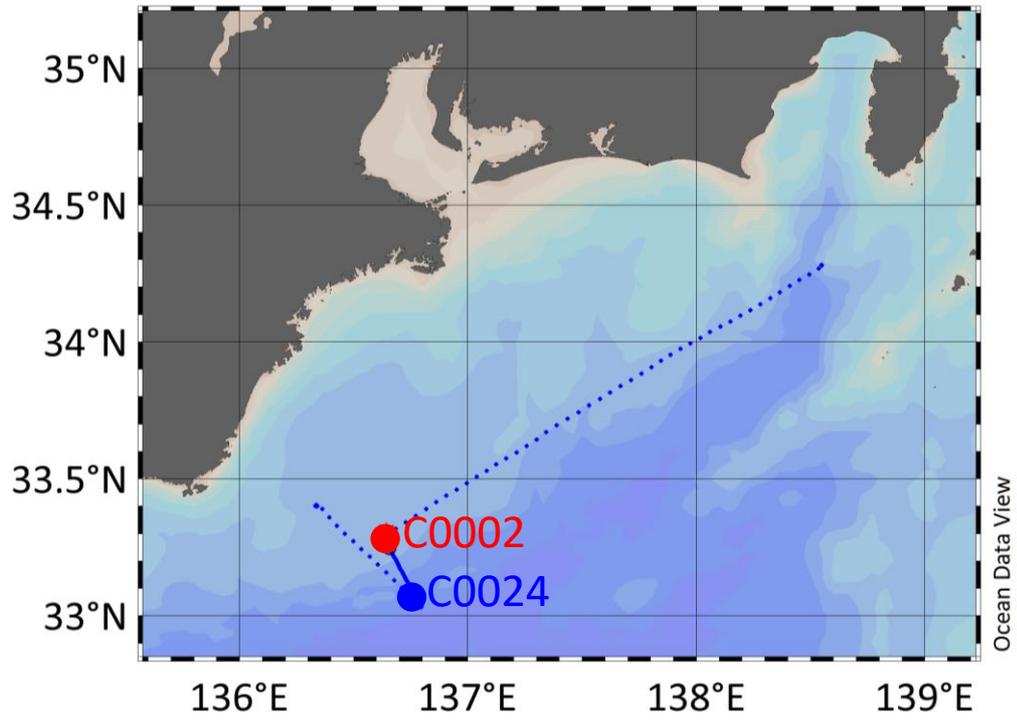


Figure 2. Map of ship track and stations during IODP358

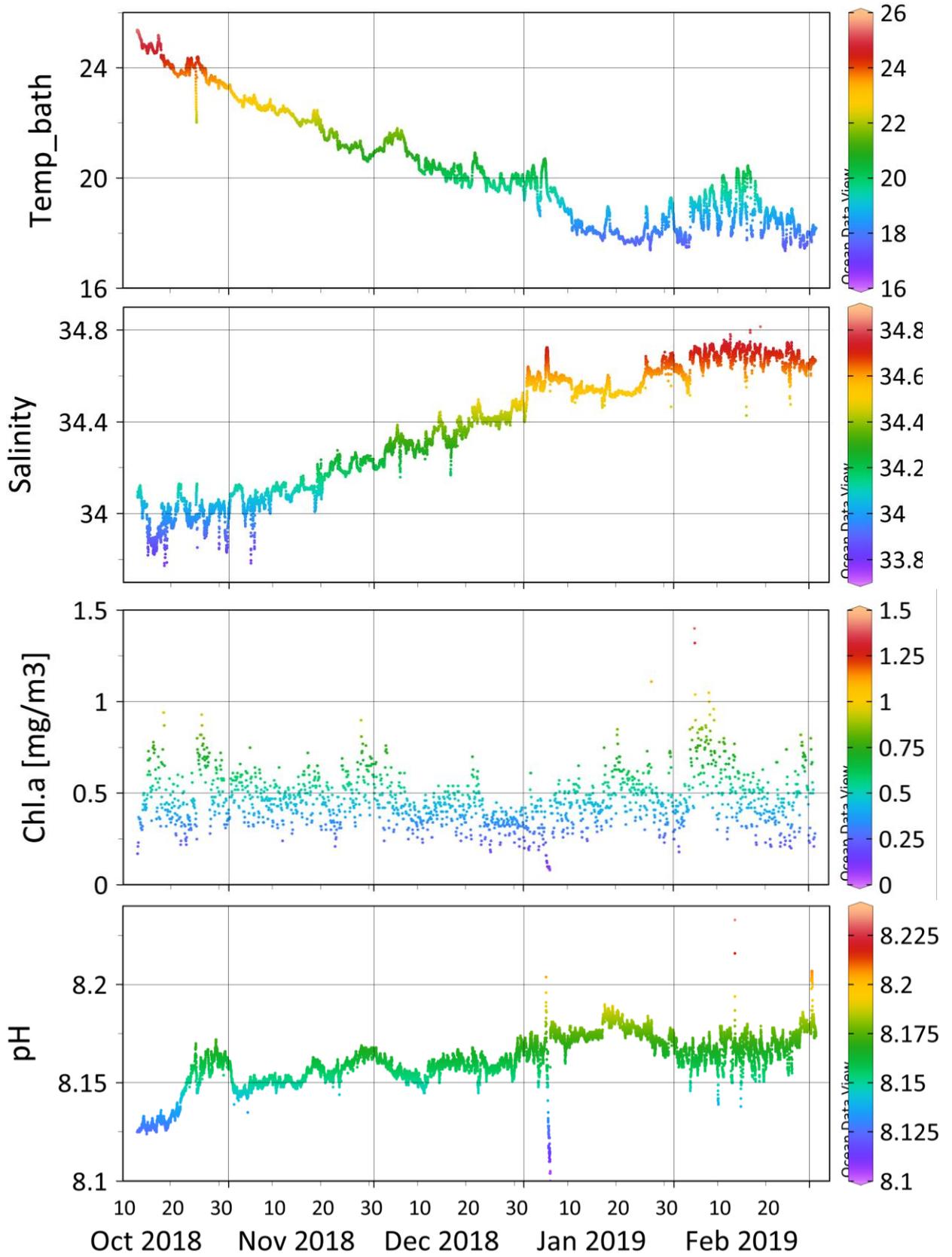


Figure 3. Temporal distribution of temperature, salinity, chlorophyll-a concentration converted from fluorescence at 470 nm and pH at C0002.