

# **Survey Report**

## **Global Change and Air-Sea Interaction Research**

North China Sea Branch  
of State Oceanic Administration

Nov.28<sup>th</sup> 2018

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## **General Information**

### **(1) Cruise Name**

Global Change and Air-Sea Interaction Research

### **(2) Sponsoring Institutions**

Institute Name: North China Sea Branch, State Oceanic Administration

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### **(3) Chief Scientist**

Zhang Hongxin

### **(4) Research Vessel Information**

Research Vessel Name : XIANGYANGHONG NO.6

Nationality (Flag State): China

Identification Number (IMO/Lloyds No.): CN 19932475287

Type/Class: R/V

Overall Length (meters): 91m

Maximum Draught (meters): 5m

Displacement/Gross Tonnage: 3462 tons

Cruise Speed: 11 knots

Maximum Speed: 13 knots

## **2. Survey Information**

### **(1) Entry Time for Application**

From July 10<sup>th</sup> to September 30<sup>th</sup> of 2014.

### **(2) Actual Entry Time for Survey**

From June 30<sup>th</sup> to July 6<sup>th</sup> of 2014.

### **(3) The Reason for Entering the Application Region ahead of the Schedule in the Application**

During the survey, the weather forecast indicated that the survey area would be influenced by the typhoon *Neoguri* from July 3<sup>rd</sup>. In this case, in order to ensure the security of the staff and the vessel, the time of entering the research area on July 10<sup>th</sup> was advanced to June 30<sup>th</sup>, so that the vessel could take shelter from the typhoon near the Guam.

### **(4) Survey Stations for Application**

The research area for the application submitted to the U.S. Department of State, was located in the central part of the Western Pacific Ocean, with the range of longitude of 143°E and latitude of 13°N~22°N.

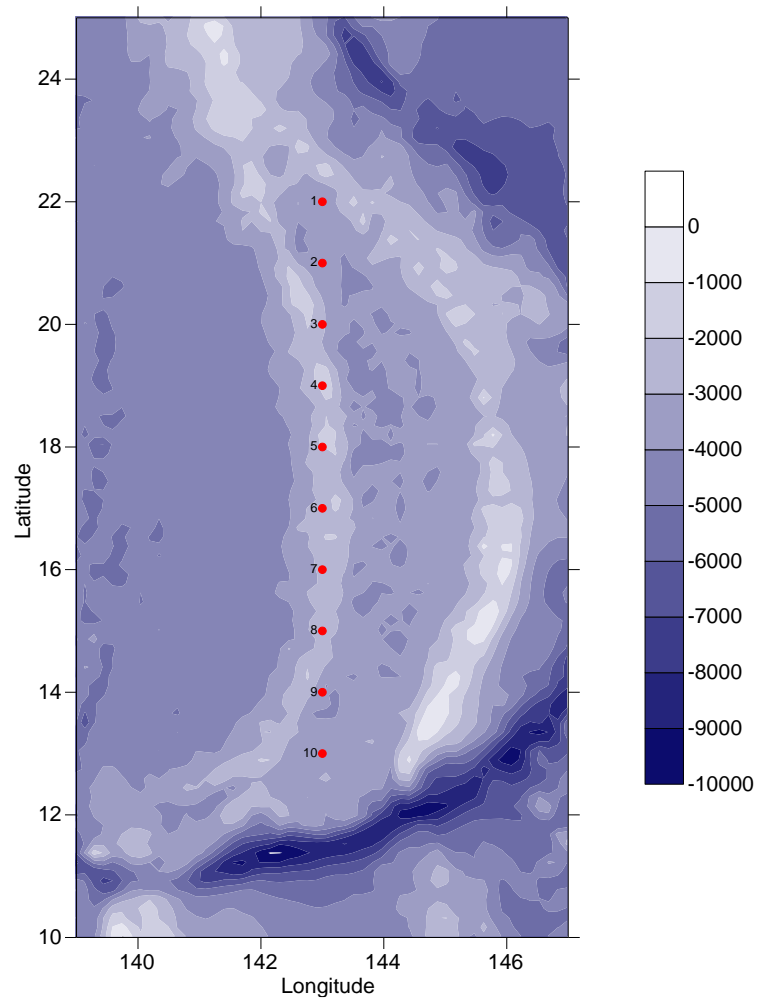


Fig.1 The survey stations for application

Table 1 Location of the Survey Stations for Application

No.	Longitude (°)	Latitude (°)
1	143 E	22 N
2	143 E	21 N
3	143 E	20 N
4	143 E	19 N
5	143 E	18 N
6	143 E	17 N
7	143 E	16 N
8	143 E	15 N
9	143 E	14 N
10	143 E	13 N

Table 2 the Survey Stations for Actual Measurement

No.	Longitude	Latitude
P01	143°03.500'E	22°00.265'N
P02	142°59.798'E	21°00.414'N
P03	142°59.917'E	20°00.031'N
P04	143°00.219'E	19°00.228'N
P05	142°42.765'E	18°01.460'N
P06	142°59.907'E	16°59.800'N
P07	142°59.961'E	16°00.743'N
P08	142°59.788'E	15°00.009'N
P09	142°59.839'E	14°00.448'N
P10	143°00.740'E	12°57.836'N

Table 3 Sequence of the survey stations when doing research

No. of the survey stations	Actual sequence when doing research
P01→P10	P01→P02→P03→P04→P05→P06→P07→P08→P09→P10

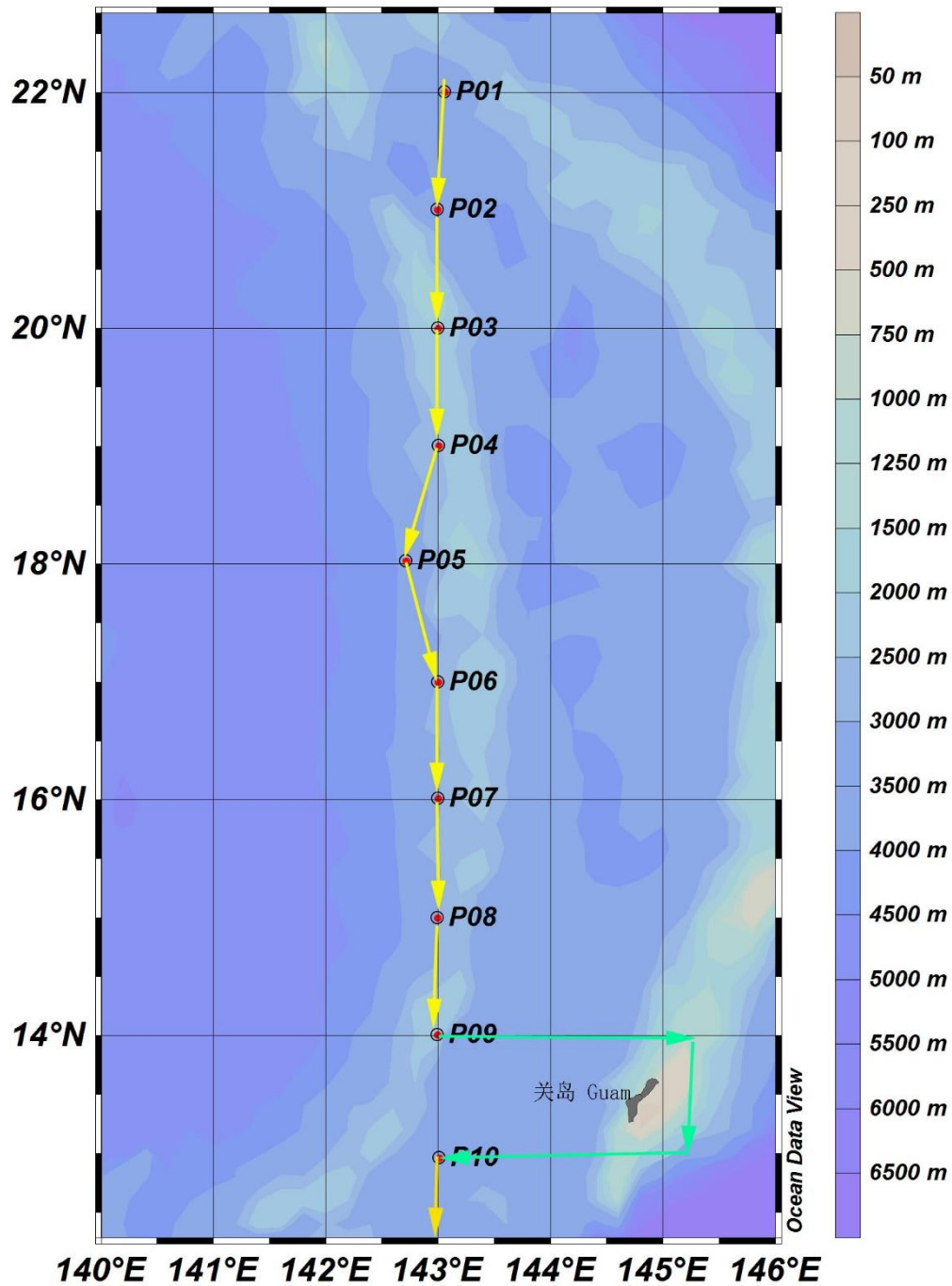


Fig. 2 The actual cruise route

(**Note:** In the sea area of 15° N on July 3<sup>rd</sup>, with the influence from the tropical depression Neoguri (then developed into super typhoon, and impacted Japan finally), the sea state was very severe. When sailing in this sea area, our vessel took anti-typhoon action and sailed against the wave. After finishing the survey at the No.P09, the vessel sailed to the east of Guam to take shelter from the typhoon, and powered off all the equipment onboard during the sheltering period.)

(5) The Research Content and Data for Application

Table 4 Research Content for application

No.	Type of the samplers and data	Method	Note
1	Water temperature, Conductivity, Density and Turbidity	CTD observation	---
2	Dissolved oxygen, Chlorophyll	CTD observation	---
3	Ocean current	LADCP current observation	---
4	Ocean current	Vessel-mounted 38kHz ADCP	---
5	Temperature and salinity	Expendable XCTD	Deployed twice totally
6	Chlorophyll a	Acetone extraction	---
7	Nutrients	Segmented flow analysis	---
8	DO	DO Titration method	---
9	pH	Acidity Determination method	---
10	pCO <sub>2</sub>	CO <sub>2</sub> Online Monitoring System	---
11	Phytoplankton	Vertical trawling	---
12	Zooplankton	Vertical trawling	---

Please refer to data folder for the detailed data in the Table 4.