

R/V SONNE Test Cruise P5

Aberdeen – Bremerhaven, 02- 09. 10. 2014

Short Report

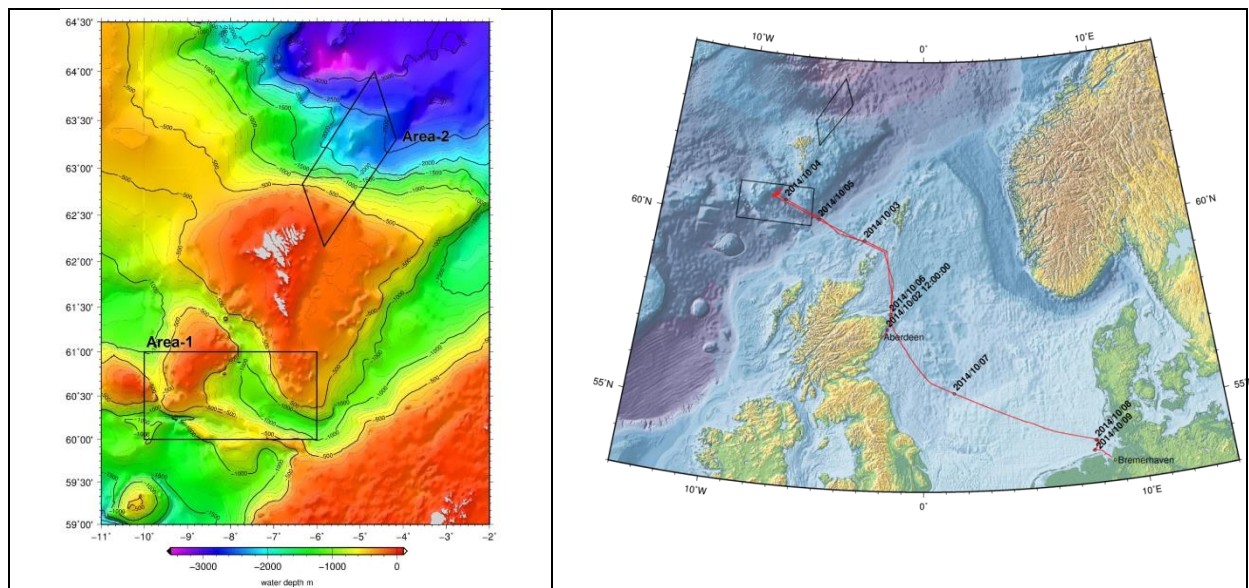
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1. Objectives

The new German research vessel SONNE underwent a series of test cruises before her commissioning at the 17. 11. 2014. Test cruise SONNE-P5 was planned to test the hydro-acoustic systems and to test the handling and operation of equipment which is deployed by the 18mm deep sea wire and by the 18mm glass fiber/coaxial hybrid cable in relatively deep water in the vicinity of the North Sea. In consequence two areas (Fig. 1) in the Faroese EEZ were chosen: area 1 at the Wyville Thomson Ridge (water depth up to 1000m), area 2 the continental slope north east of the Faroese Islands (water depth max. 3000m). As a scientific by-program we planned to survey potential sites of cold water coral occurrence with a camera system and to take near bottom water samples with a CTD/Rosette for isotope measurements.



3. Narrative

Wednesday, 01.10.14: The scientific party of cruise SONNE Trial 5 embarked the ship at noon. SONNE was in the rods about 1,5 miles off Aberdeen harbor. During the afternoon we installed our scientific equipment.

Thursday, 02.10.14: We left Aberdeen rods at noon and started our voyage towards the Faroe Islands. During the afternoon the wind increased blowing from SW direction.

Friday, 03.10.14: We reached the way point north of the Orkneys at 08:00h and changed the heading to 290°. The wind speeds now reached BFT 8 to 9 and wave heights were about 8m. This weather situation retarded our advance drastically.

Saturday, 04.10.14: During the night the wind speed decreased and in consequence SONNE could increase speed again. Still a heavy swell maintained. We reached our first working station at area 1 at 16:00h and started work with a CTD cast for a sound velocity profile by 920m water depth (Stat. 1). Afterwards we drove an OFOS transect (Stat. 2). During the evening and night we made a hydro-acoustic survey on the eastern slope of the Faroe Bank (Stat. 3). Next morning the survey had to be cancelled beforehand since the weather had deteriorated again during the night.

Sunday, 05.10.14: A severe gale with 9 BFT wind force stopped our activities. Since the weather forecast did not give a better perspective but even forecasted worse conditions we decided to stop our activities in the Faroese EEZ. At 08:00h we started our passage back to the German Bight steaming against a wind with maximum speeds about 28cm/sec.

Monday, 06.10.14: We continued our passage through the severe gale blowing from southeast direction towards the German Bight. The wind force maintained by an average of ca. 22m/sec.

Tuesday, 07.10.14: We continued our passage to the German Bight. The wind still blowing from southeast direction had decreased to an average of 14m/sec.

Wednesday, 08.10.14: We arrived at the Isle of Helgoland at 11:00h and started station work in the deep trough south of the island. We started with a CTD cast (Stat. 4) which was followed by an OFOS-transect (Stat. 5). We then turned to EM-122 hydro-acoustic surveying (Stat. 6) and carried out a hydro-acoustic survey of the complete deep trough of Helgoland until next morning.

Thursday, 09.10.14: Around 08:00h the hydro-acoustic survey ended. We left the Helgoland area after some technical tests by the ship's scientific service. We called at Bremerhaven at 19:30h.

Friday, 10.10.14: In the morning we unloaded the scientific equipment. Afterwards the scientific party left the ship thus finishing SONNE cruise P5.

4. Results

Due to the extremely bad weather situation (Fig. 2) we managed to reach area 1 in the Faroese EEZ only. Our working time was restricted to ca. 12h which gave us time for a CTD/Ro cast, a short sea floor camera survey with the OFOS (Ocean Floor Observation System) and a bathymetric survey with the “Kongsberg EM-122 and EM 710” swath echo sounders. We also used the approach and departure tracks within area 1 for the testing of the swath echo sounders. No corals were found by the OFOS survey. All other results were only of technical importance for the ship.

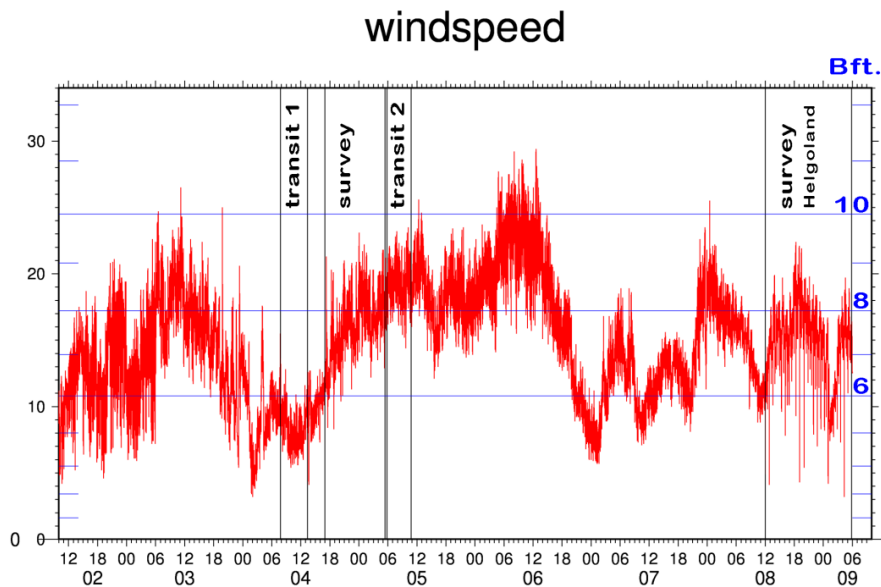


Fig. 2: Wind speeds during cruise SONNE P5.

5. Station List

Station	Gear	No.	Date	Time	Coordi		nates 1	Depth	Coordi		nates 2	Time	Depth
SOII/P5			2014	(UTC)	Lat.	Long.	(m)		Lat.	Long.	(UTC)	(m)	
1	CTD	1	04.10.	16:47	60° 44,98'N	8° 0,10'W	915						
2	OFOS	1	04.10.	17:54	60° 44,98'N	8° 0,10'W	915	60° 44,97'N	8° 0,62'W	18:30	903		
3	SEP	1	04.10.	19:13	60°, 751 N	8, 014 W	907						
4	CTD	2	08.10.	09:59	54° 08,77N	7° 51,57'E	52						
5	OFOS	2	08.10.	10:18	54° 08,76'N	7° 51,49'E	56	54° 08,60'N	7° 51,23'E	10:50	50		
6	SEP	2	08.10.	19:13	54, 146 N	7, 849 E	57						

Abbreviations:

OFOS: Ocean Floor Observation System (Coord.1 at bottom; Coord. 2 off bottom)

SEP: Swath Echosounder Profile