doi : 10.17596/0002641

Shinsei-maru Cruise Report

KS-19-9

Long-term ocean bottom broadband seismic and geodetic observation above the slow slip event area off Boso Peninsula

[No practical research activity due to bad sea condition]

SE off Boso Peninsula

June 9 – 12, 2019

Joint Usage/Research Center for Atmosphere and Ocean Science (JURCAOS)
Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

1. Cruise Information

Cruise ID KS-19-09
Name of vessel Shinsei-maru
Title of cruise Long-term ocean bottom broadband seismic and geodetic observation above the slow slip event area off Boso Peninsula
Chief Scientist [Affiliation]
Hajime Shiobara [Earthquake Research Institute, University of Tokyo]
Cruise period June 09 – 12, 2019
Ports of departure / arrival Yokosuka / Yokosuka
Research area SE off Boso Peninsula
Research map Refer Map1

2. Research Proposal and Science Party

Title of proposal Long-term ocean bottom broadband seismic and geodetic observation above the slow slip event area off Boso Peninsula
Representative of Science Party [Affiliation]
Hajime Shiobara [Earthquake Research Institute, University of Tokyo]
Science Party (List) [Affiliation, assignment etc.]
Hajime Shiobara [University of Tokyo, chief]
Aki Ito [JAMSTEC, co-chief]
Yuki Kawano [University of Tokyo, support]
Crews of the R/V Shinsei-maru
Captain Takaaki Shishikura
Chief Officer Yasuhiko Sammori
2nd Officer Ryo Yamaguchi
3rd Officer Kanta Ozawa
Chief Engineer Eiji Sakaguchi
1st Engineer Naohito Tadooka
2nd Engineer Takaatsu Inomoto
3rd Engineer Kota Fujii
Chief Electronic op. Tokinori Nasu
2nd Elect. Op. Takayuki Mabara
3rd Elect. Op. Ryosuke Matsui
Boatswain Yosuke Kuwahara
Able Seaman Tatsuo Fujii
Able Seaman Hiroaki Nagai
Able Seaman Kenji Nakae
Able Seaman Toru Nakanishi
Able Seaman Hideaki Nakata
Sailor Towa Yamashita
No.1 Oiler Yukihiro Yamaguchi
Oiler Katsuyuki Miyazaki
Oiler Masayuki Fujiwara
Oiler Toshinori Matsui
Oiler Toru Hidaka
Chief Steward Kazuma Sonoda
Steward Jun Sato
Steward Shinobu Ohyu

Hyper dolphin team
Submersible Op. Manager Teppei Kido
1st Submersible Tec. Officer Homare Wakamatsu
2st Submersible Tec. Officer Shigeru Kikuya
2st Submersible Tec. Officer Yudai Sakakibara
2st Submersible Tec. Officer Yudai Tayama
3st Submersible Tec. Officer Taiken Yamaguchi

Observation engineer
Marine Technician　Kimiko Serizawa

3. Research Activities

3.1. Aim of research

To understand the process of earthquake occurrence, iterative modeling studies of observation, analysis and simulation. It requires several tens or hundreds of years for usual earthquakes, but with the slow slip event (SSE) off Boso Peninsula, we can do it within about 15 years. This study aims to know correct slip distribution of the SSE by seismic and geodetic observations just above the SSE area, as the first step.

Since 2012, we have continued the ocean bottom pressure gauge (OBP) and other observations in this area. For the 2014 SSE, our data detected the vertical displacement and this result is published. The new ocean bottom instrument for broadband seismometer and tiltmeter (BBOBST-NX) had been deployed here from April 2013, and it recorded the 2014 SSE, but the tilt record was not clear. So, we started the BBOBST-NX observation again from July 2015 for two years at the KAP3 site (Map2). In this cruise, we perform the recovery of this BBOBST-NX by using the ROV, and also deploy the new one to continue the observation with several OBPs deployed by other cruises in this area.

3.2. Result

We had prepared the instrument, BBOBST-NX, to be deployed and the Hyper dolphin, but the sea condition at the research area was not able to perform any scientific activities we planned through the cruise period. The surface current at the KAP3 site in the morning 05h on June 10, 2019 was about 2.5 kt.

4. Cruise Log

R/V "SHINSEIRARU" KS-19-9 Cruise Log

Date & Time	Note	Position/Weather/Wind/Sea condition
2019/06/09 Sun.		2019/06/09　12:00(JST)
09:00	Scientist party onboard a vessl	Southeast Off Miura
10:00	Sail out, proceeding to research area from Yokosuka	34-04.2N, 139-43.3E
10:30	Briefing about ship's life and safety	Overcast
16:10	Changed the destination to off Kamogawa due to bad weather forecast	NE-4 (Moderate breeze)
17:30	Arrived at off Kamogawa	3 (Sea Slight)
		1 (Low Swell Short or Average)
		Visibly: 8'
2019/6/10 Mon.		2019/06/10　12:00(JST)
01:30	Proceeded to research area	TATEYAMA WAN
05:00	Arrived at research area	35-00.6N, 139-48.9E
05:10	Suspended survey operation due to rough sea condition	Rain
	Proceeded to TATEYAMA WAN	North-4 (Moderate breeze)
11:20	Arrived at TATEYAMA WAN	2 (Sea Smooth)
		1 (Low Swell Short or Average)
		Visibly: 6'
2019/6/11 Tue.		2019/06/11　12:00(JST)
13:00	Proceeded to YOKOSUKA	TATEYAMA WAN
15:15	Arrived at YOKOSUKA	35-00.3N, 139-48.9E
	Let go starboard anchor	Fine but Cloudy
		North-4 (Moderate breeze)
		3 (Sea Slight)
		1 (Low Swell Short or Average)
		Visibly: 8'
2019/6/12 Wed.		
08:00	Hove up starboard anchor	
10:00	Disembarked scientist group & completed KS-19-9	

5. Notice on Using

This cruise report is a preliminary documentation as of the end of cruise.
This report is not necessarily corrected even if there is any inaccurate description (i.e. taxonomic classifications). This report is subject to be revised without notice. Some data on this report may be raw or unprocessed. If you are going to use or refer the data on this report, it is recommended to ask the Chief Scientist for latest status.
Users of information on this report are requested to submit Publication Report to Cooperative Research System Office.

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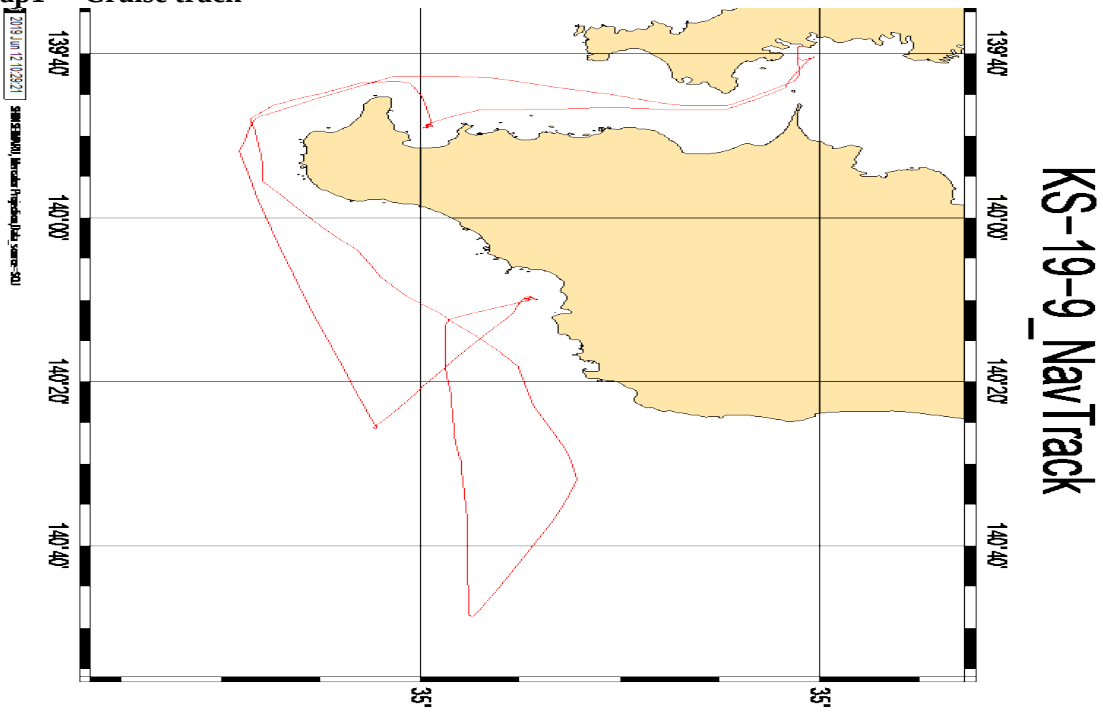
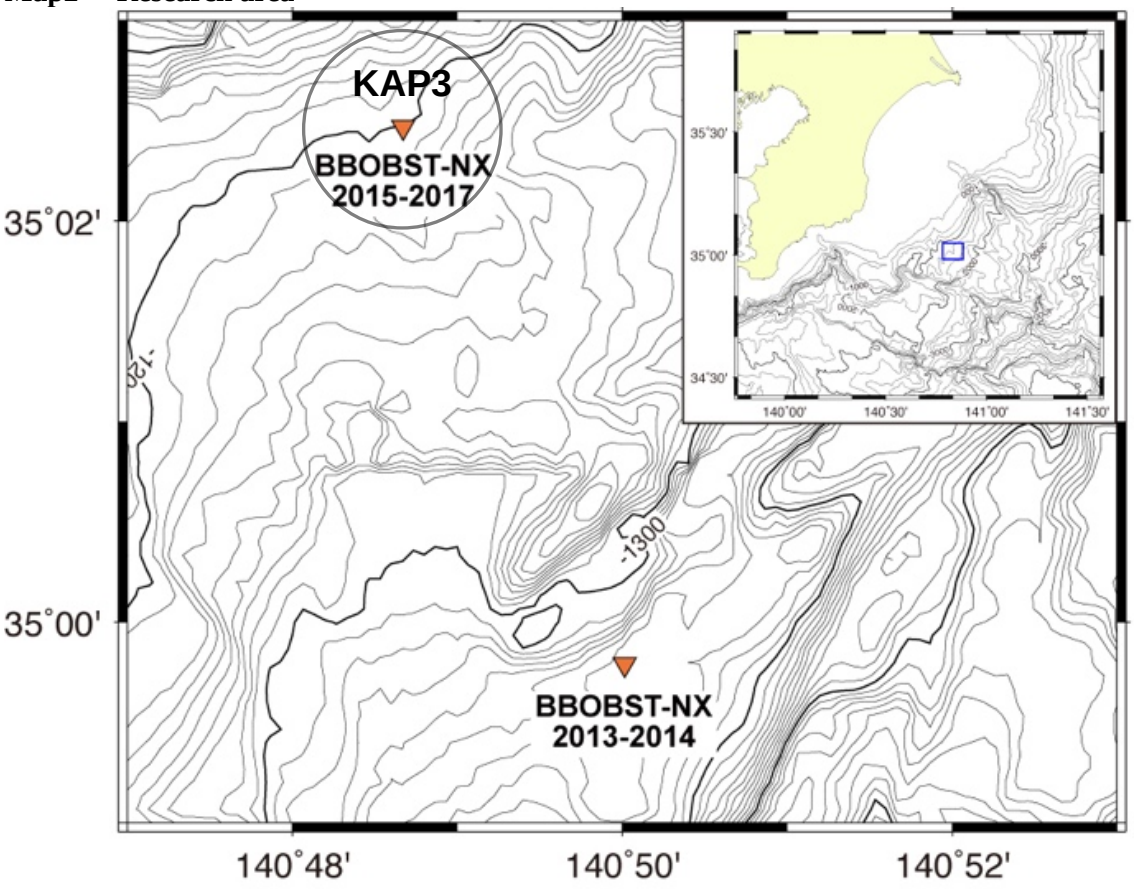
Map1 **Cruise track**



Map2 **Research area**



The circle at the KAP3 site shows the area diameter of 1 nm.