



Preliminary Report
of
the *R/V KAIMEI* Cruise KM21-07 Leg1



FY2021 KM21-07 Leg1 Cruise

in the Nankai-Trough

September 7 – 12, 2021

Institute for Marine-Earth Exploration and Engineering (MarE3)

Japan Agency for Marine-Earth Science and Technology

(JAMSTEC)

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PREFACE

This cruise was planned to confirm the performance of Seamap streamer cable and its recording system which have been repaired in Malaysia since 2019. We conducted two-dimensional seismic reflection survey in the Nankai-Trough and Hyuga-Nada. MCS system including both Seamap streamer cable and recording system were checked during cruise.

1. Participants aboard the R/V *KAIIMEI* cruise

YAMAMOTO Fujio*	JAMSTEC
TSUKIOKA Satoshi	JAMSTEC
MIURA Seiichi	JAMSTEC
SHIRAISHI Kazuya	JAMSTEC
HAMADA Yohei	JAMSTEC
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FUJIWARA Takanori	Mitsubishi Shipbuilding Co.,Ltd
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*Chief of the cruise

Marine Technician

OHWATARI Yuuki	Nippon Marine Enterprises, Ltd.
IWAMARU Hikaru	Nippon Marine Enterprises, Ltd.
SUZUKI Keita	Nippon Marine Enterprises, Ltd.
HORIUCHI Yoshiki	Nippon Marine Enterprises, Ltd.
YAMANAKA Kenya	Nippon Marine Enterprises, Ltd.
DOI Haruki	Nippon Marine Enterprises, Ltd.
SERIZAWA Kimiko	Nippon Marine Enterprises, Ltd.
HORIUCHI Misaki	Nippon Marine Enterprises, Ltd.
TERADA Ikumasa	Nippon Marine Enterprises, Ltd.
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SHIMOMURA Norio	Nippon Marine Enterprises, Ltd.

2. Specification of MCS system

2-1. Recording system

24 bits digital recording system is used for seismic data recording. All data are stored on the NAS (Network Attached Storage) and LTO-7 tape as SEG-D format.

- Model : New Technology Recording System (NTRS)
- A/D Convertor : 24 bits
- Sampling Interval : 1, 2 msec
- Maximum recording length : 16sec (in case of 1776 ch, 2msec sampling int.)
- Data format : SEG-D
- Recording media : NAS, LTO-7 tape

2-2. Streamer cable

1776 channels (5,550meters length) digital streamer cable is used to receive seismic signal. All data are digitized and are sent to shipboard recording system.

- Model : Seamap solid streamer cable
- Cable diameter : 51mm OD
- Cable length : 5,550m
- Number of channels : 1776
- Group interval : 3.125m
- Number of hydrophones per channel : 8

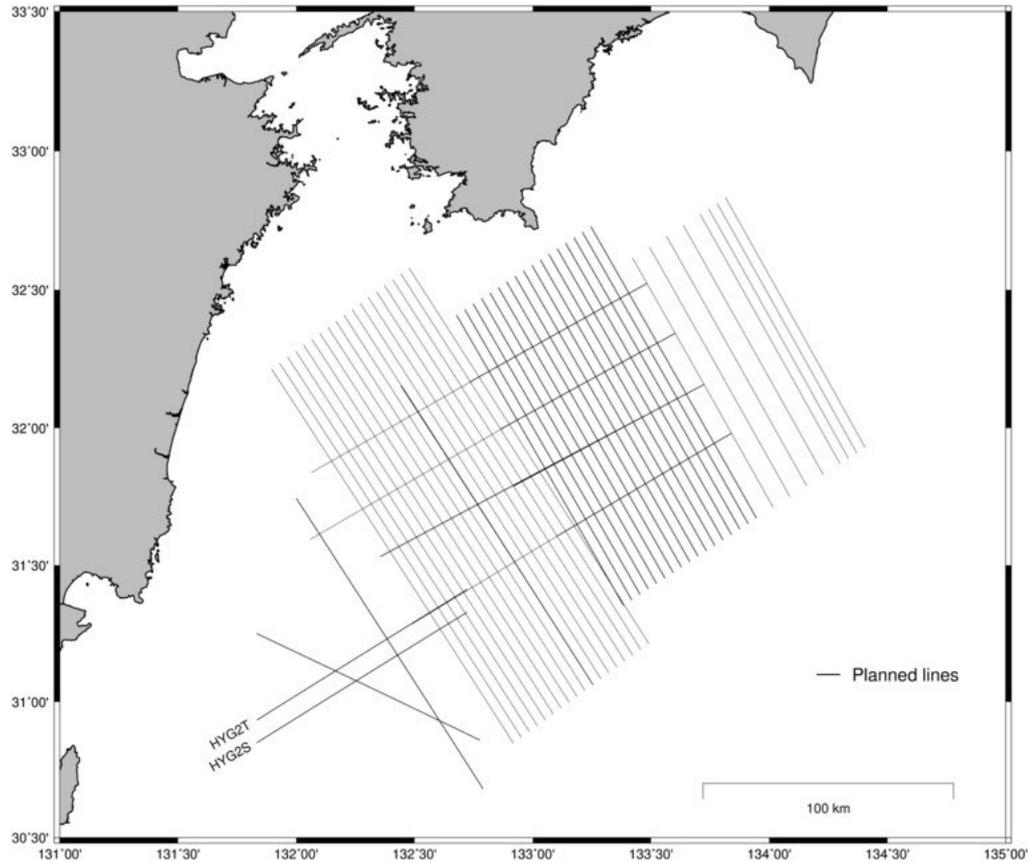
2-3. Airguns

48 airguns are controlled by gun controller installed at No.2 laboratory.

- Model : BOLT TECHNOLOGY 1500LL and 190LL
- Number of Array : 4 (48 airguns)
- Total volume : 10,600cu in (2,000psi)

3. Survey area

Fig. 1 shows KM21-07 Leg1 survey area. The Nankai Trough and Hyuga-Nada area and planned survey lines are shown in this figure.



4. Cruise track

KM21-07 Leg1 cruise was started from JAMSTEC pier on September 7 and then, the vessel went to the proposed seismic line in the Nankai Trough area. Once we arrived at streamer cable deployment point, XCTD measurement was performed. Then we deployed a streamer cable and four airgun arrays. MCS survey was conducted at 2 lines.

Finally, the vessel arrived Off Miyazaki port on September 12 and we ended KM21-07 Leg1 cruise. Fig. 2 shows ship's tracks for the entire cruise and table 1 shows activity log during the cruise.

KM21-07_Leg1 NavTrack

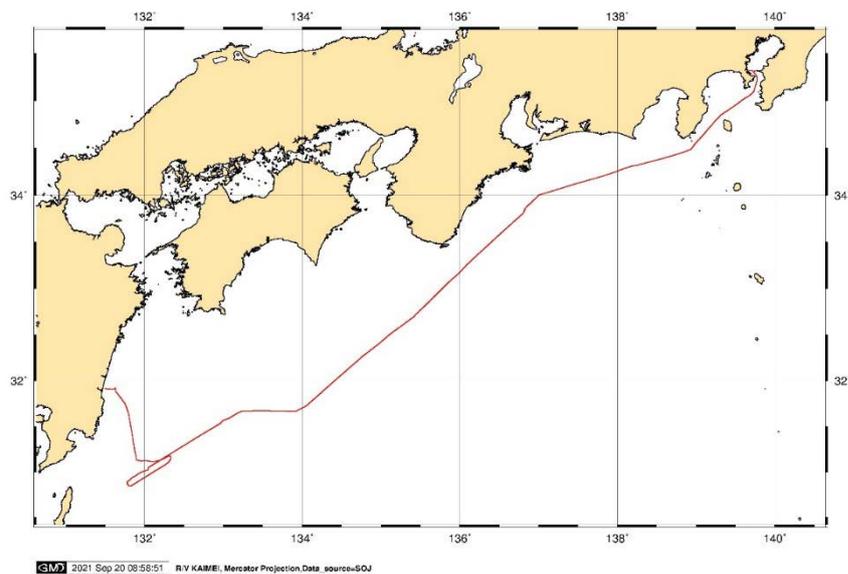


Table 1 Cruise log

Date & Time (JST)	Description
2021/09/06 Mon.	
19:05	Scientists and Marine technician party came on board
2021/09/07 Tue.	Noon Position: 34-59.0N, 139-31.6E (Sunosaki)
09:30	Let go all shore lines & left JAMSTEC for sea-trial area
2021/09/08 Wed.	Noon Position: 32-12.3N, 134-39.9E (Muroto-Misaki)
16:30	Arrived Survey area
16:33	Conductecd XCTD
17:18	Deployed streamer cable
2021/09/09 Thu.	Noon Position: 31-40.2N, 133-15.5E (Tosa Oki)
15:47	Finished streamer cable deployment
20:47	Finished airgun deployment
21:40	Started line HYG2T
2021/09/10 Fri.	Noon Position: 31-10.9N, 132-17.6E (Toi Misaki)
21:07	Finished line HYG2T
2021/09/11 Sat.	Noon Position: 31-06.9N, 132-08.6E (Toi Misaki)
01:17	Started line HYG2S
06:04	Finished line HYG2S
08:20	Started airgun recovery
11:20	Started streamer cable recovery
18:24	Finished recovery
18:45	Sailed to Off Miyazaki port
2021/09/12 Sun.	Noon Position: 31-39.2N, 132-04.2E (Toi Misaki)
08:00	Arrived Off Miyazaki port
08:50	Sailed back to suvey area

5. Preliminary results

5-1. Survey lines

The red lines with line name on Fig. 3 indicate the survey lines where the MCS data was recorded during cruise.

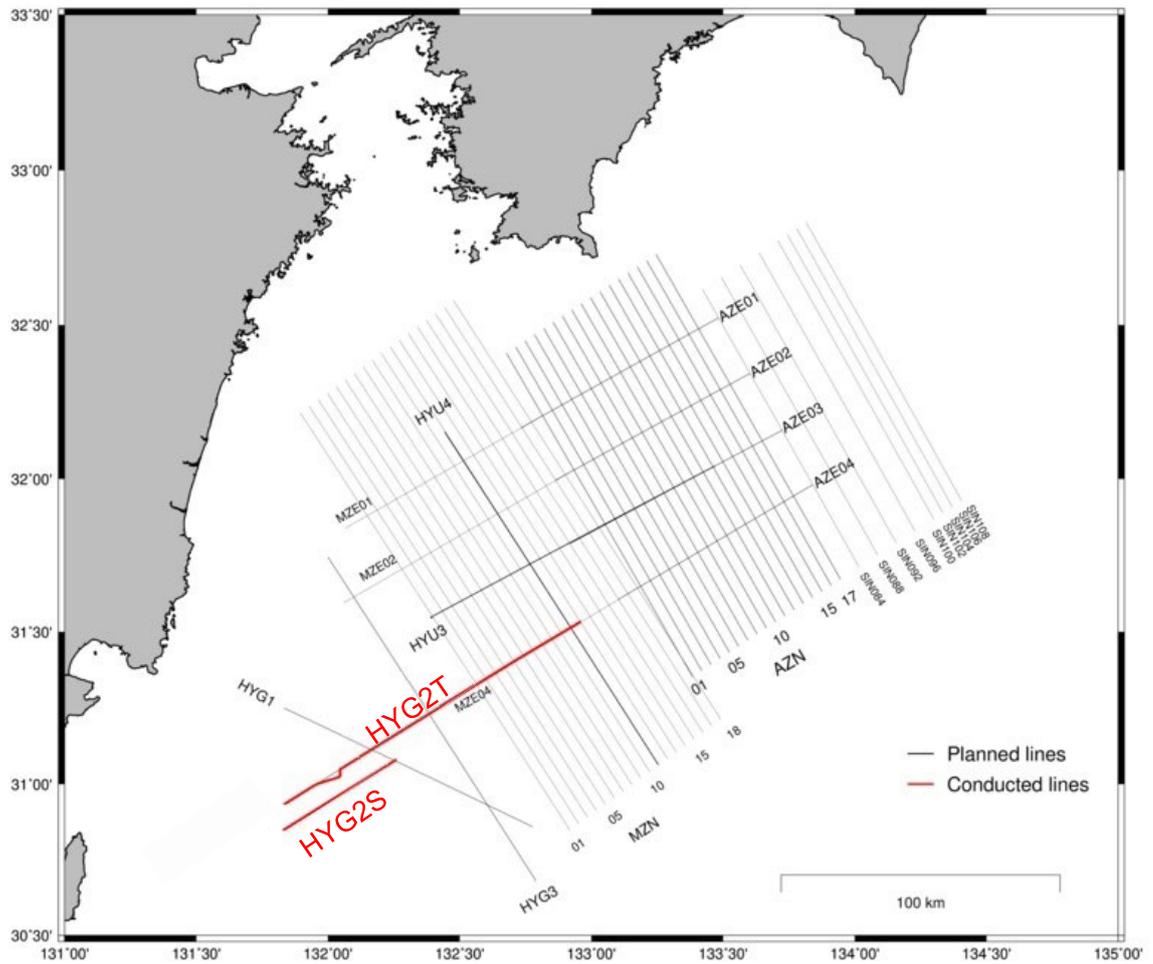


Fig. 3 MCS survey lines

5-2. MCS data processing

Raw MCS reflection data was processed for the purpose of quality control during the cruise. The final data processing will be done at Yokohama Institute for Earth Sciences.

6. Acknowledgement

We thank Captain KIMURA Naoto, crew and technical staffs of our experiments conducted during the KM21-07 Leg1 cruise, for their kind and thoughtful supports during the cruise.

※ 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.

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