



R/V *Shinseimaru* Cruise Report
KS-23-J10

Sea Trial of ROV *Hyper Dolphin*

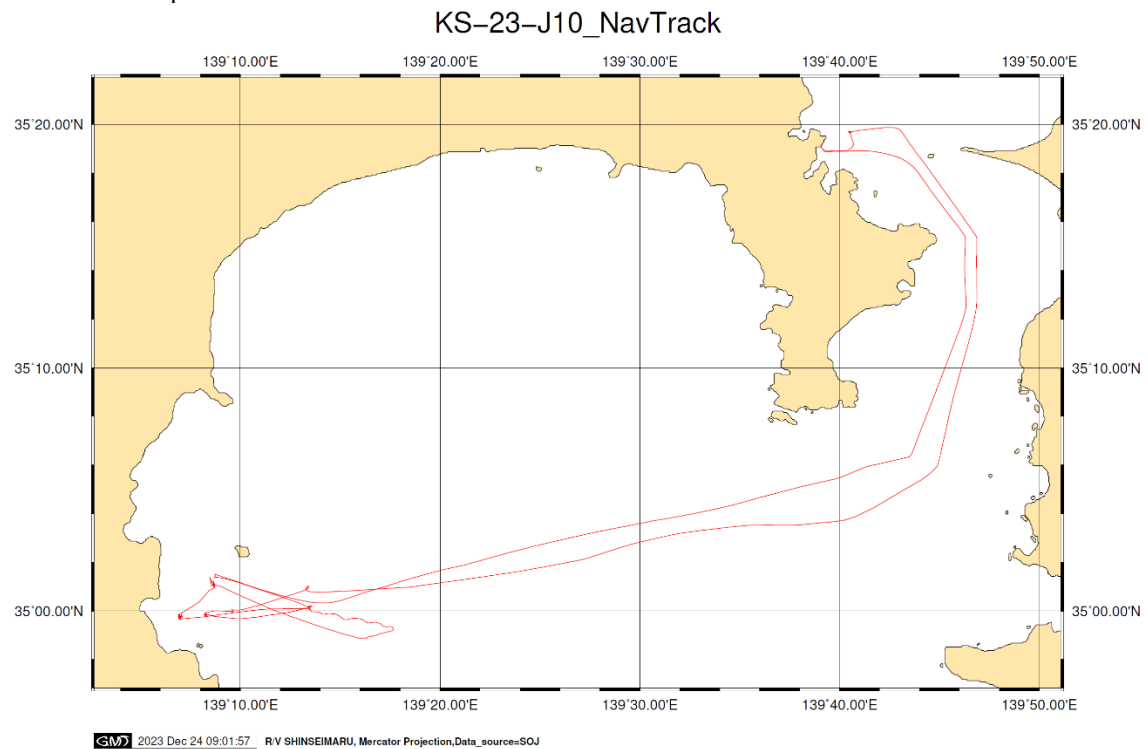
Research area:
North of Nankai Trough, Kumano Nada
Dec.20,2023-Dec.24, 2023

Japan Agency for Marine-Earth Science and Technology
(JAMSTEC)

1. Cruise Information

- Cruise ID: KS-23-J10
- Name of vessel: R/V *Shinseimaru*
- Title of cruise: Sea trial of ROV *Hyper-Dolphin*
- Chief Scientist: Yoshinobu Nambu
- Cruise period: December 20th, 2023 – December 24th, 2023
- Ports of departure/arrival: JAMSTEC Headquarter, Yokosuka/ JAMSTEC Headquarter, Yokosuka
- Research area:
 - Sagami Bay
[35° 06.0'N,139° 12.0'E], [35° 06.0'N,139° 24.0'E],
[35° 00.0'N,139° 24.0'E], [34° 54.0'N,139° 12.0'E]

- Research map



2. Research Proposal and Science Party

- Title of proposal
 - Sea trial of ROV *Hyper-Dolphin*
- Representative of the science party [Affiliation]
NAMBU YOSHINOBU [JAMSTEC]
- Science party (*on shore)

NAMBU YOSHINOBU	[JAMSTEC]
YAMAMOTO FUJIO	[JAMSTEC]
SUMIDA TOMOMI	[JAMSTEC]
MIYAZAKI MASAYUKI	[JAMSTEC]
NITTA YOICHIRO	[JAMSTEC]
YAMAMOTO AIKO	[JAMSTEC]
OGITA YOSHIYUKI	[JAMSTEC]
• NAKAJO HIDEHIKO	[JAMSTEC]

- SHINSEIMARU Crew

Captain	NAKAMURA YOSHIYUKI
Chief Officer	FURUKAWA YUKI
2nd Officer	KAJISA TOMONARI
Jr.2nd Officer	ASAJI KANTO
3 rd Officer	HIASA YURI
Chief Engineer	ABE TADASHI
1st Engineer	KUROSE WATARU
2nd Engineer	ONO KAZUKI
3rd Engineer	IKEZAKI KOHSHUN
Chief Electronics Op.	ISHIWATA HIROKI
2nd Electronics Op.	ONIKUBO RYUJI
Boat Swain	YOSHINO YUKI
Quarter Master	ISHIZUKA NAO
Quarter Master	OHJIRI YUTA
Quarter Master	NASU KENTA
Quarter Master	KURIHARA AKIRA
Sailor	SEGUCHI KEITO
Sailor	NAKANO MIZUKI
No.1 Oiler	SATO RYO
Oiler	SUMITOMO SHOTARO
Oiler	WATANABE SEIYA
Assistant Oiler	MANNA SHOTA
Assistant Oiler	SARAMOTO KOITARO
Chief Steward	HIRAYAMA KAZUHIRO
Steward	SHIRAISHI TATSUYA
Steward	KASHIWAGI KOICHIRO

- *Hyper-Dolphin* Operation Team

Operation Manager	KIDO TEPPEI
2nd ROV Operator	TAKENOUCHI ATSUSHI
2nd ROV Operator	TAYAMA YUDAI
2nd ROV Operator	SAKAKIBARA YUTA
2nd ROV Operator	YAMAGUCHI TAIKEN
3rd ROV Operator	IWATA KUNIHIRO

3. Research/Development Activities

- Sea trial of ROV *Hyper-Dolphin*

In the Sagami Bay, annual sea trial of *Hyper-Dolphin* was conducted at water depths up to 1,177 m to confirm the integrity of the equipment and system after land maintenance. Operation training using maneuvers and manipulators were also performed during two dives.

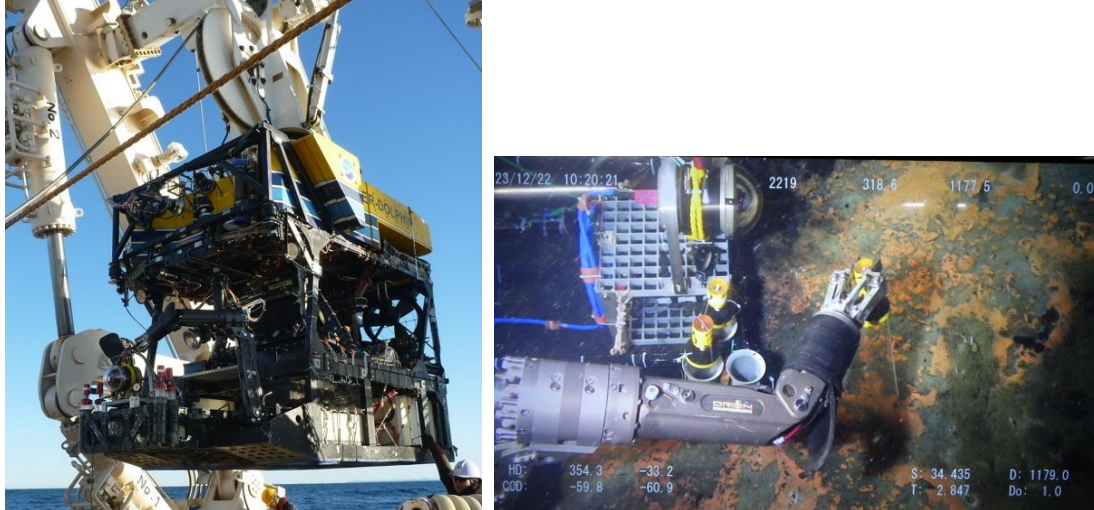


Fig.3.1. ROV *Hyper-Dolphin* and sediment sampling

During the dive #2219, sea trial and two additional works were performed in the Sagami Bay (WD = 1,175m). Manipulator operation, camera photography, vehicle operation training and acoustic positioning system test were also conducted. 8K camera system was connected to *Hyper-Dolphin*'s payload, and images were transmitted to the ship in real time. 5 sediment samplings were also done at sea bottom. Sediment samples were temporarily processed in the ship's laboratory.

The *Hyper-Dolphin* was continued to be tested during the dive #2220 in the Sagami Bay (WD = 868m). 8K camera system was installed on the seafloor by *Hyper-Dolphin* and its image data was recorded on an internal device while sediment samplings were conducted.

- additional work 1: Sediment sampling for deep-sea bioresource open Innovation Project
deep-sea bioresource open innovation project provides microbiological and environmental genetic resources such as microbial strains, deep-sea sediments for isolation of microbes and for environmental DNA, and environmental DNA sequences, to industry and academy for industrial purposes. During this cruise, deep-sea bioresource open innovation project takes deep-sea sediment samples for the resources and samples for environmental parameters associated with them such as pore-water geochemistry, sediment organic geochemistry and microbial diversity.

- additional work 1: Performance test and filming of high-resolution camera system (8K)
A high-resolution camera system owned by JAMSTEC is installed on the seafloor or connected to HPD to test the performance of the camera system and filming of the deep sea, including scenes of HPD's work.

4. Cruise Log

Date	Local Time	Description
2023/12/20 Wed.	08:00	Scientists party onboard a vessel
	09:00	Departed from JAMSTEC Headquarter, Yokosuka
	09:30	Onboard lecture
	12:51	Deployed XBT
		Prepared for dive
2023/12/21 Thu.		Waited for weather conditions, off Hatsushima
2023/12/22 Fri.	06:00	Departed from off Hatsushima
	06:45	Arrived at dive point, Sagami Bay
	08:35	Launched HPD, Dive #2219
	09:26	Landed sea bottom (WD = 1,175m)
	10:07	Conducted function test and additional works
	10:48	Left sea bottom (WD = 1,177m)
	11:43	Recovered HPD
	12:00	Departed from dive point
	13:00	Arrived at off Hatsushima, prepared for next dive
2023/12/23 Sat.	06:00	Departed from off Hatsushima
	07:00	Arrived at dive point, Sagami Bay
	08:16	Launched HPD, Dive #2220
	09:06	Landed sea bottom (WD = 868m)
	10:34	Conducted function test
	11:08	Left sea bottom (WD = 855m)
	11:50	Recovered HPD
	12:00	Departed from Sagami Bay
2023/12/24 Sun.	09:00	Arrived at JAMSTEC Headquarter, Yokosuka

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 JAMSTEC.

<http://www.godac.jamstec.go.jp/darwin/explain/1/e#report>
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