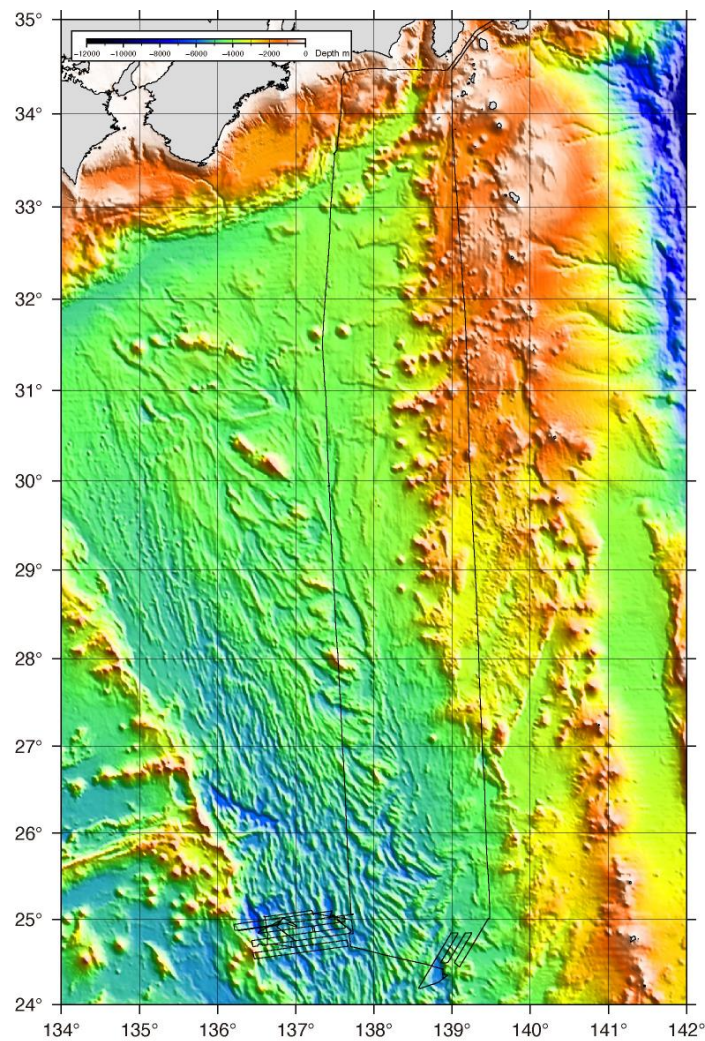


Cruise Summary

1. Cruise Information

- Cruise ID: YK22-18S
- Name of vessel: Yokosuka
- Title of cruise: Revealing the temporal variation of water inflow into the Shikoku Basin oceanic lower crust and uppermost mantle
- Chief Scientist [Affiliation]: Yasuhiko OHARA (Hydrographic and Oceanographic Department of Japan/JAMSTEC/Nagoya University)
- Cruise period: October 1, 2022 to October 13, 2022
- Ports of departure / call / arrival: Yokosuka to Yokosuka
- Research area: Shikoku Basin
- Research map



- Representative of Science Party [Affiliation]: Yasuhiko OHARA (Hydrographic and Oceanographic Department of Japan/JAMSTEC/Nagoya University)

2. Overview of Research Activities

- (Individual activity title): YK22-18S cruise overview
 - Purpose, background: Oceanic core complexes (OCCs), or megamullions, are domal bathymetric highs with axis-normal corrugations, and with exposure of serpentinized peridotites and gabbroic rocks, interpreted as exhumed footwalls of low-angle detachment faults. OCCs provide a valuable opportunity to directly study the architecture of oceanic lithosphere, together with the tectono-magmatic processes associated with its formation and evolution. Although the extensive multi-beam bathymetric mapping by Japan's continental shelf survey has revealed the presence of potential OCCs in the multiple portions of the Philippine Sea Plate, these OCCs are remained largely unsampled except only a few locations that were sampled as reconnaissance study sites. In order to advance our understanding of the lithospheric composition of the Philippine Sea Plate, we need to utilize the Philippine Sea OCCs as tectonic windows to sample the lower crust and upper mantle materials.
 - Activities (observation, sampling, development): The main activity of YK22-18S cruise was to make a systematic sampling of, and to obtain detailed geophysical data over the Western Shikoku Basin OCCs, here we named "Nankaido Megamullions".
 - Methods, instruments: We used DSV Shinkai 6500 for visual observation and bottom samplings.
 - Results: We were successful in completing five Shinkai dives as shown in below.

Date	Dive	Locality	Event	Time (JST)	Depth (m)	Latitude	Longitude	Observer	Samples
2022-10-04	6K-1652	Medial Sui-Shin Megamullion	On bottom	11:28	5329	24°55.4509'N	136°44.8451'E	Yasuhiko Ohara	Scoria and pumice
			Off bottom	15:04	5006	24°56.0932'N	136°45.4636'E	Valentin Basch	
2022-10-05	6K-1653	Medial Sui-Shin Megamullion	On bottom	11:28	5391	24°56.6008'N	136°47.9156'E	Yumiko Harigane	Mudstone
			Off bottom	15:07	4775	24°57.9955'N	136°47.9929'E	Aya Takeuchi	
2022-10-06	6K-1654	Breakaway of Awa Megamullion	On bottom	11:52	5695	25°02.6462'N	137°27.8403'E	Jonathan E. Snow	Mn-coated mudstone with heavily weathered peridotite and serpentinite clasts
			Off bottom	15:12	4956	25°02.3249'N	137°28.8495'E		
2022-10-08	6K-1655	Termination of Tosa Megamullion	On bottom	11:47	5668	25°03.3557'N	137°13.8357'E	Hiroyuki Yamashita	Plagioclase-peridotite, serpentinized peridotite, plagioclase-bearing peridotite with felsic vein, gabbro, oxide-gabbro and mudstone
			Off bottom	15:12	5042	25°03.3457'N	137°12.9875'E		
2022-10-09	6K-1656	24°25'N Massif	On bottom	11:34	5587	24°21.5970'N	138°53.1992'E	Yasuhiko Ohara	Gabbro, altered basalt, scoria, pumice and Mn-coated mudstone
			Off bottom	15:00	4787	24°22.1111'N	138°53.7017'E		