

Cruise Summary

1. Cruise Information

(1) **Cruise ID:** KH-22-8

(2) **Vessel:** R/V HAKUHO MARU

(3) **Cruise Title**

Fauna and evolution of benthic organisms inhabiting trench areas in the northwestern Pacific

(4) **Chief Scientist**

Shigeaki Kojima (Graduate School of Frontier Sciences, UT)

(5) **Representative of the Science Party**

SH22-13 Shigeaki Kojima (Graduate School of Frontier Sciences, UT)

H22-01 Ichiro Yasuda (AORI)

SGS22-02 Tomoshi Ichinose (Graduate School of Agriculture and Life Sciences, UT)

(6) **Research Titles**

SH22-13 Fauna and evolution of benthic organisms inhabiting trench areas in the northwestern Pacific

H22-01 Study on the turbulence and double-diffusive mixing and impacts with fast-response thermistors

SGS22-02 Diversification of fatty acid synthesis mechanisms in deep-sea amphipods

(7) **Cruise Period**

2022/09/30 - 2022/10/17

(8) **Ports of departure/call/arrival**

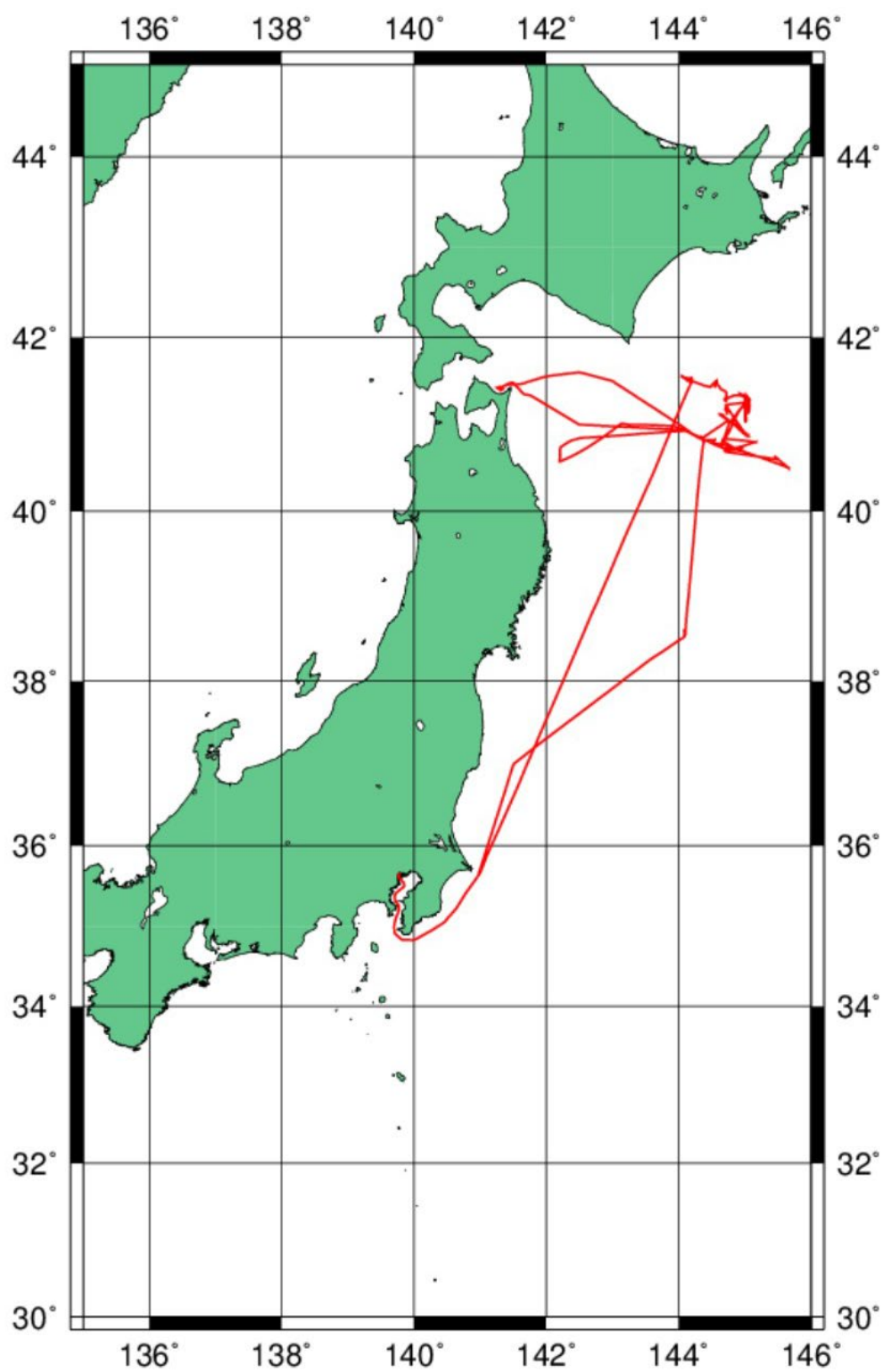
Harumi - Daiba

(9) **Research Area**

Areas around the southern Kuril Trench and the Japan Trench

(10) Cruise Track

KH22-8



2. Overview of the Observation

In order to analyze genetic deviation and/or speciation processes of deep-sea benthic organisms between the Kuril and Japan Trenches, which were isolated from each other by the subduction of the Erimo Seamount and another landward seamount 0.3 million years ago, and reveal evolution in trench areas, we collected benthic organisms at six sites around the southernmost part of the Kuril Trench, six sites around the northernmost part of the Japan Trench, and a single site in the central part of the Japan Trench by using a 4m beam trawl, a 3m Agassiz-type trawl, and an epibenthic sled. We will determine the faunas through morphological classification and DNA barcoding and analyze their evolutionary processes based on data of nucleotide sequences and SNP analyses. In addition, to estimate planktonic larval dispersal between two trenches, we recovered four mooring systems with current meters, which were deployed around the Erimo Seamount during a cruise of R/V Shinsei-Maru in 2020 and conducted measurement of physical environments using CTD, LADCP, and AFP07 at 11 sites.