

## Cruise Summary

**1. Cruise number/ Leg number/ RV:** NT08-07/ Leg 2/ Natsushima

**2. Title of the Cruise:** “Hyper-Dolphin” Research Dive, Deep-sea Research, FY2008.

**3. Proposal numbers/ Titles/ Representatives :**

**S08-17/** Studies on adaptation mechanisms to hydrogen sulfide through analyses of thiotaurine and the taurine transporter./ Koji INOUE, Ocean Research Institute, The University of Tokyo

**S08-26/** Verification of endemicity of animal species in hydrothermal vent and seamount on the Ogasawara Arc./ Hiromi WATANABE, Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

**4. Principal Investigator:** Koji Inoue, Ocean Research Institute, The University of Tokyo

**5. Researchers:**

Koji INOUE, Hiromi WATANABE, Takashi SATO, Tomoko KOITO, Takefumi YORISUE, Yuji ISE, Haruhiko TOYOHARA, Takayuki ISHIDA, Hiroshi MIYAKE, Shuhei IKEDA, Noriyuki ENDO, Tomo KITAHASHI, Nozomi ITO, Yu HASEGAWA, Suguru NEMOTO, Atsuko SUGITA, Benny K. K. CHAN, Satoshi OKADA

**6. Investigation Area:** Izu-Ogasawara Area (Myojin Knoll)

**7. Schedule:** From April 11, 2008 to April 17, 2008

**8. Track Line Chart of the Vessel:** indicated in Fig.1.

### Summary of Cruise

In this cruise (NT08-07, Leg 2), we had 7 dives of ROV/hyper-Dolphin (Dive #818-824), during four days distributed to us. Scientists selected from two research proposals, S08-17 (Inoue group) and S08-26 (Watanabe group) participated in this cruise.

The major purpose of Inoue group is to analyze the structure and function of thiotaurine, a sulfur-containing amino acid, and the genes of its transporter (taurine transporter, TAUT), which have been suggested to be involved in detoxification and symbiosis. During the cruise, we collected hydrothermal vent-specific animals including deep-sea mussels, crabs and shrimps mainly using a suction sampler and manipulators. The samples were dissected and frozen for molecular and biochemical analyses, and live samples were also maintained for laboratory experiments and exhibition in Enoshima Aquarium.

The research objective of Watanabe group is to elucidate endemicity, i.e., independency of so-called “hydrothermal vent-specific” species from “seamount-specific” and deep-sea-specific species. For this purpose, we collected plankton samples using suction sampler, benthic animals using core samplers and quadrat frame, at three sites, hydrothermal vent area, non-hydrothermal area inside the caldera, and non-hydrothermal area on the caldera edge. We will estimate continuity and discontinuity of distribution of each species after sorting and identification of the samples.

In addition, we recovered experimental materials set around the vents at NT06-23 cruise, e.g., pieces of vent chimney for barnacle transplantation experiments, and plates to attract barnacle larvae for settlement. We also loaded 3D camera on ROV during the last dive, and recorded thermal vents and organisms as three dimension movies.

# NT08-07 Leg2 Nav Track

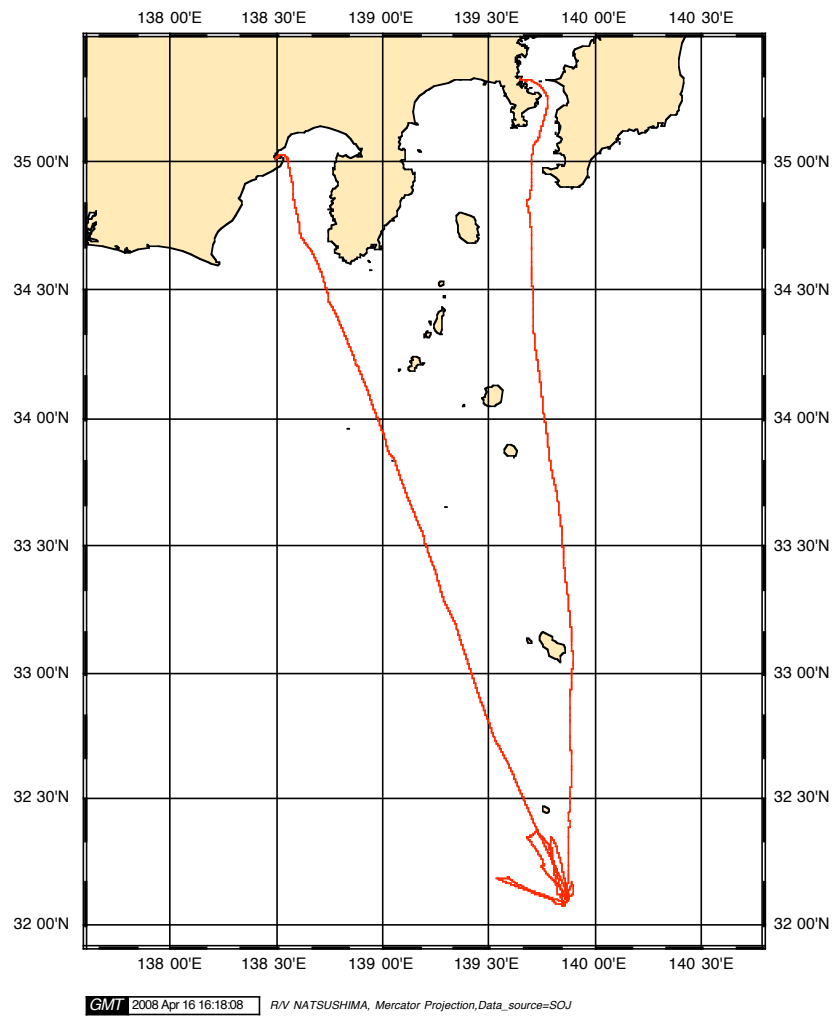


Fig. 1. Track line chart of RV Natsushima during NT08-07 Leg 2.