

Cruise Summary

1. Cruise Information

- 1) Cruise ID, Name of Vessel: NT13-07, R/V Natsushima
- 2) Title of the Cruise: “NT13-07 Hyper-Dolphin Dive Research, FY2013
- 3) Principal Investigator: Takao Yoshida (Japan Agency for Marine-Earth Science and Technology (JAMSTEC))
- 4) Title of Proposal and Representative of Science Party [Affiliation]:
 - I) Transfer analysis of intracellular bacterial symbiont from *Calymptogena* clams to next generation (Tetsuro Ikuta [JAMSTEC])
 - II) Investigating habitat environments of *Calymptogena* spp., and sampling the bivalves for development of a rearing system for invertebrates in chemosynthetic ecosystem (Masaaki Konishi [Department of Biotechnology and Environmental Technology, Kitami Institute of Technology])
 - III) Development for the latest ocean bottom seismic and tilt measurements (Hajime Shiobara [Ocean Hemisphere Research Center, Earthquake Research Institute, University of Tokyo])
- 5) Cruise Period: April 2, 2013 ~ April 10, 2013
- 6) Port Call: from JAMSTEC (April 2, 2013) to JAMSTEC (April 10, 2013)
- 7) Research Area: Off Hatsushima, Sagami Bay and Off Boso
- 8) Research map: (Fig.1)
- 9) Science Party: Tetsuro Ikuta, Yuki Hongo, Hidetaka Nomaki, Yoshihiro Takaki, Yukiko Nagai, Katsunori Yanagawa, Yuriko Nagano, Shinro Nishi, Hisako Hirayama, Kazuna Shitaka (Institute of Bigogeosciences, JAMSTEC), Masaaki Konishi (Department of Biotechnology and Environmental Technology, Kitami Institute of Technology), Hajime Shiobara (Ocean Hemisphere Research Center, Earthquake Research Institute, University of Tokyo), Tatsuhiro Fukuba (Marine Technology and Engineering Center, JAMSTEC), Aki Ito (Institute for Research on Earth Evolution, JAMSTEC), Akihiro Tame (Marine Works Japan Ltd.), Makoto Sugimura (Enoshima Aquarium), Satomi Minamizawa (Nippon Marine Enterprises, LTD)

2. Overview of Observations

In this cruise, three proposals participated. To investigate these objectives, we planned to four dives at Off Atami, Sagami Bay and one dive and one operation day at Off Bouso, Sagami Bay (nine days in total). During the cruise, several biological samples, such as *Calyptogena* clams, *Bathymodiolus* mussels, tubeworms, etc., and segment by MBARI cores were collected. Detailed analyses of these samples will be performed after the cruise. We also deployed ocean bottom seismometers for the latest broadband seismic and tilt measurements and for areas of the ultra deep sea.

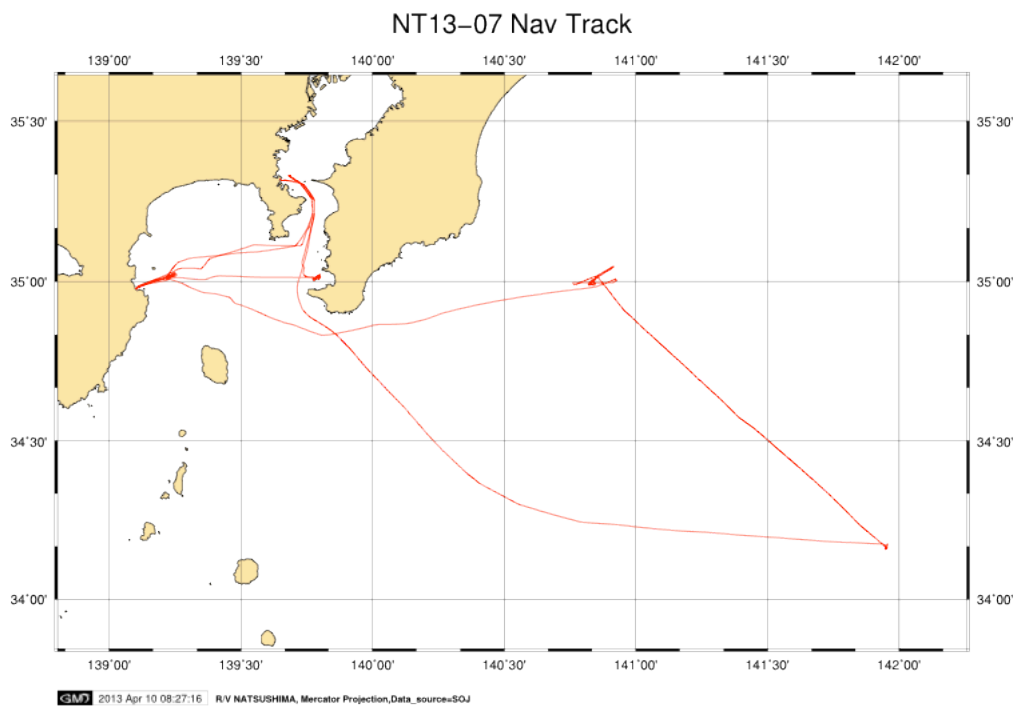


Fig1. The track chart of the R/V Natsushima research cruise NT13-07