
MR01–K02 Cruise Summary



1. Cruise Title

Research on the Subtropical Gyre and the Subpolar Gyre in the North Pacific Ocean

Cruise code: MR01–K02

Ship: R/V Mirai

Captain: Masaharu Akamine (total 36 crew members)

2. Objectives

The Kuroshio in the western North Pacific is called as the Kuroshio Extension and forms the clear northern boundary of the sub-tropical gyre. The Kuroshio Extension is active and generates cold and warm eddies very frequently. There is a large possibility that these eddies play an important role in the meridional exchange of heat and freshwater across the Kuroshio Extension. But there has been no study to evaluate the role of these eddies. MR01–K02 was planned as one of activities to clarify the physical and dynamical structure of eddies along the Kuroshio Extension. In addition to the physical oceanographic research MR01–K02 was carried out as the joint cruise of variety of adopted subjects, such as the ocean lidar, sediments, and aerosol.

3. Period

From May 14, 2001 (departed Yokosuka, Kanagawa)

Through May 28, 2001 (arrived at Sekinehama, Aomori)

4. Chief Scientist of the Cruise

Yasushi Yoshikawa / JAMSTEC

E-mail: yoshikaway@jamstec.go.jp

5. Overview

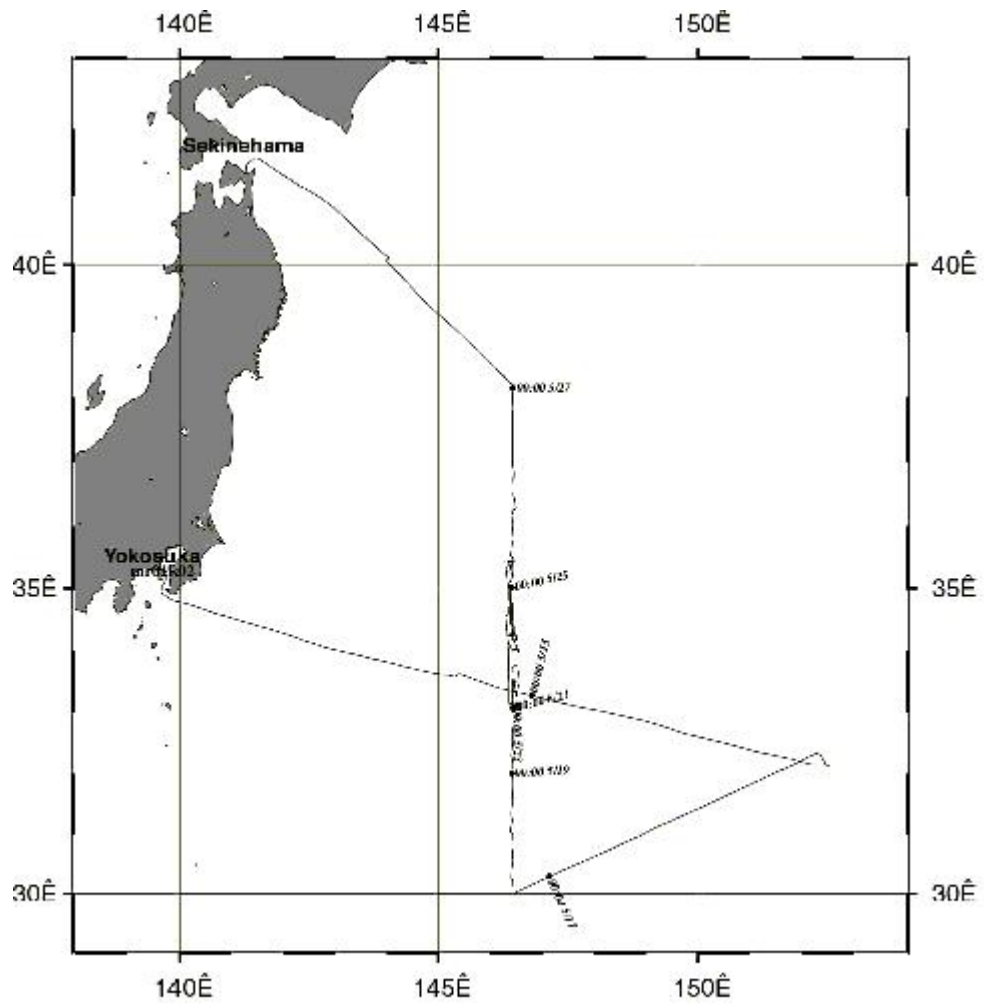
MR01–K02 cruise began on 14 May 2001, as department from the Yokosuka New Port. Cruise track was composed of four sections. The first section was a track from Yokosuka to 32–10N 152–30E. On this section, 41 XBT castings were carried out. Continuous monitoring, including aerosol monitoring by the ACE–ASIA Group, was also begun. CM–buoy was recovered at 32–09N 152–27E. The second section was from 32–10N 152–30E to 30–00N 146–25E. On the track 27 XBT castings were carried out. The third section was the main section in this cruise. On the meridional section from 30–00N to 38–00N along 146–25E, 28 CTD lowering with LADCP/RMS and 5 XCTD casts were carried out. Deployment of MMP buoy at 33–05N and deployments of two CM buoys at 34–15N and at 35–25N, were also carried out. Sediment was sampled by using piston core sampler at 33–05N. Meteorological observations by released radiosonde were carried out every 12 hours and the aerosol capture balloon was moored. On the forth track from 38N 146–25E to

Sekinehama port, 18 XCTD castings were carried out. The cruise was closed on 28th May at Sekinehama port. Though preliminary results will be reported in following sections in detail, here we would like to declare our great success on this cruise.

6. Participants List

- a. CTD/LADCP,CM-Mooring, and ADCP/XBT/XCTD
Yasushi Yoshikawa, Hirofumi Yamamoto, Takaki Hatayama (JAMSTEC)
Humio Mitsudera (IPRC)
- b. TCO₂ and pCO₂
Akihiko Murata (JAMSTEC)
- c. Ocean Lidar
Takeshi Kawano (JAMSTEC)
- d. Sediment
Toshiya Kanematshu (JAMSTEC)
- e. Aerosol
Kazuhiko Miura, Ryo Ashikawa, Takahito Inaba (Science University of Tokyo)
Kazutake Ohta (ORI, The University of Tokyo / Japan Science and Technology Corporation)
Atsushi Ooki (ORI, The University of Tokyo)
Sou Matsunaga (Hokkaido University)
Yuji Fujitani (Hokkaido University)
Ippei Nagao (Nagoya University)
Nobuo Sugimoto, Ichiro Matsui (National Institute for Environmental Studies)
Akihide Kamei (Communications Research Laboratory)
Shungo Kato (Research Center for Advanced Science and Technology, The University of Tokyo)
- f. Technical Staff
Takeo Matsumoto, Hiroshi Matsunaga, Naoko Takahashi, Kentaro Honda,
Katsunori Sagishima, Taeko Ohama, Kaori Akizawa, Ai Yasuda, Asako Kubo,
Masumi Ishimori, Hiroaki Muraki, Yuichi Sonoyama, Soichi Moriya,
Yutaka Matsuura, Makoto Shimogawara,
Daisuke Terada, Tokiko Takabayashi, Yuko Ohno, Shinichi Kaneko (MWJ)
Masaki Hanyu, Akinori Uchiyama, Shinya Iwamida (GODI)

7. Cruise Track



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