

## ***Japan***

### ***Summary***

Japan GEOTRACES has been quite active this last year. The first ASIAN GEOTRACES cruise by R/V Hakuho Maru was completed and several international meetings were attended by Japanese scientists. Although Japan is in a very difficult situation now after the 11 March earthquake and tsunami, Japanese marine biogeochemists in the whole country are working hard together to reconstruct after the disaster, not only for the life, the economy, and the environment, but also for the ocean sciences. The next Hakuho Maru cruise to the Western North Pacific will sail within a month, and the zonal GEOTRACES cruise along 47N in the North Pacific has started preparations already. A new grant was awarded for international investigation and research for the next four years; broader international collaborations for our future expeditions/cruises are welcome.

### ***Meetings***

#### *International meetings:*

- Special session: “Strengthening interdisciplinary regional ocean networks: The dynamic rapidly changing East/Japan Sea”, twelve oral presentations; in the 5th PEACE (Program of the East Asian Cooperative Experiments) workshop, Korea, 11-12 September, 2010.
- Asian regional GEOTRACES workshop (2010 GEOTRACES Asia Planning Workshop) Taiwan, 4-6 October, 2010.

These meetings strengthened the cooperation of the Asian regional marine biogeochemical and ocean/environmental sciences community.

#### *National meetings:*

- National GEOTRACES symposium was planned for the Spring Meeting of Oceanography Society of Japan, 22 March 2011, but was canceled because of the disaster caused by the 11 March earthquake and tsunami. The abstracts (in Japanese) of fourteen presentations were posted on the Japanese GEOTRACES web page.
- National GEOTRACES Committee in the Science Council of Japan, was planned also for 22 March 2011 but was cancelled and postponed to autumn.

### ***Cruises***

#### Recent cruise:

- KH-10-2 cruise by R/V Hakuho Maru (Figure 6).  
“Marine biogeochemical studies and behavior of trace elements and isotopes in the East Asian Marginal Seas (ASIAN GEOTRACES)”, in the Japan/East Sea and northwestern Pacific, 11 June – 23 July 2010 (PI: J. Zhang).

The Hakuho Maru KH-10-2 cruise was successfully conducted by the Atmosphere and Ocean Research Institute (AORI) of the University of Tokyo, and the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), from 11 June to 23 July 2010 (a total of 43 days) in the Japan Sea (East Sea), western North Pacific and Okhotsk Sea. This cruise was proposed five years ago, and has been internationally recognized as the first regional GEOTRACES study in Asia (ASIAN-GEOTRACES). The main study theme of this cruise was marine biogeochemical observations in the Japan Sea (East Sea), Okhotsk Sea and western North Pacific. It had many specific objectives, including studies of the oceanic circulation and deep convection system, air-sea interaction, behaviors and structures of the subducted/advected water masses, marine biogeochemical cycles and fluxes of the TEIs and gasses, and ecosystems and associated spatio-temporal changes in this cruise. Results will enable the characterization of the physical, chemical, and biological processes and associated distributions, and their sensitivity to changing environmental conditions in the East Asian Marginal Seas and the western North Pacific region. A total of fifty-three scientists, graduate students and staff took part in the cruise to pursue international/regional collaborative studies on GEOTRACES. These scientists came from twenty-

two institutions in five countries. As one of our aims of the KH-10-2 cruise was educating young scientists from Asia, we performed a water-sampling workshop for more than forty chemical analyses, and four seminars (Science Coffee in Hakuho-Maru) by Japanese, Korean and Russian scientists. This cruise and all its results will form one of the cornerstones of the GEOTRACES program as its first regional GEOTRACES study in Asia and covering the various marginal seas connecting to the North Pacific, and also serve to greatly strengthen the cooperation of the Asian regional marine biogeochemical and ocean/environmental sciences community.

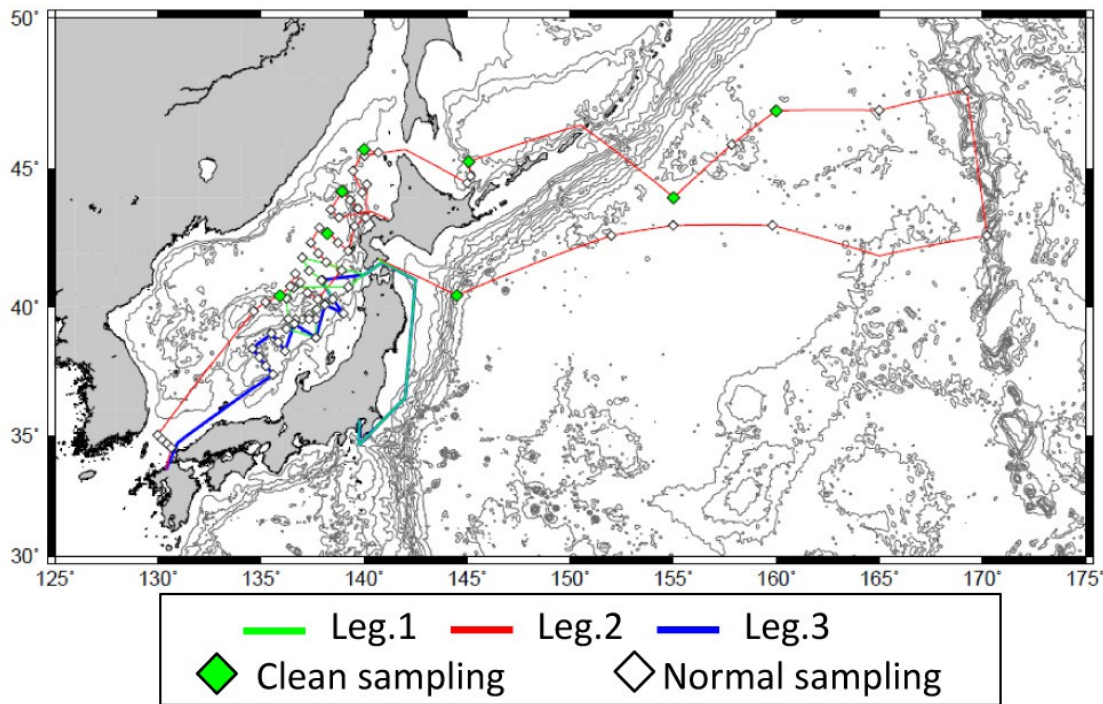


Figure 6. KH-10-02 Cruise Plan

**Cruise Planning:**

- KH-11-07 cruise by R/V Hakuho Maru (Figure 7).

“Marine biogeochemical studies and behavior of trace elements and isotopes in the Western North Pacific”, 16 July – 4 August 2011 (PI: J. Zhang).

Part of GEOTRACES section GP18, including the process studies focusing on cold seep biogeochemistry and earthquake mechanisms/radionuclide impact studies off NE Japan and Fukushima area.

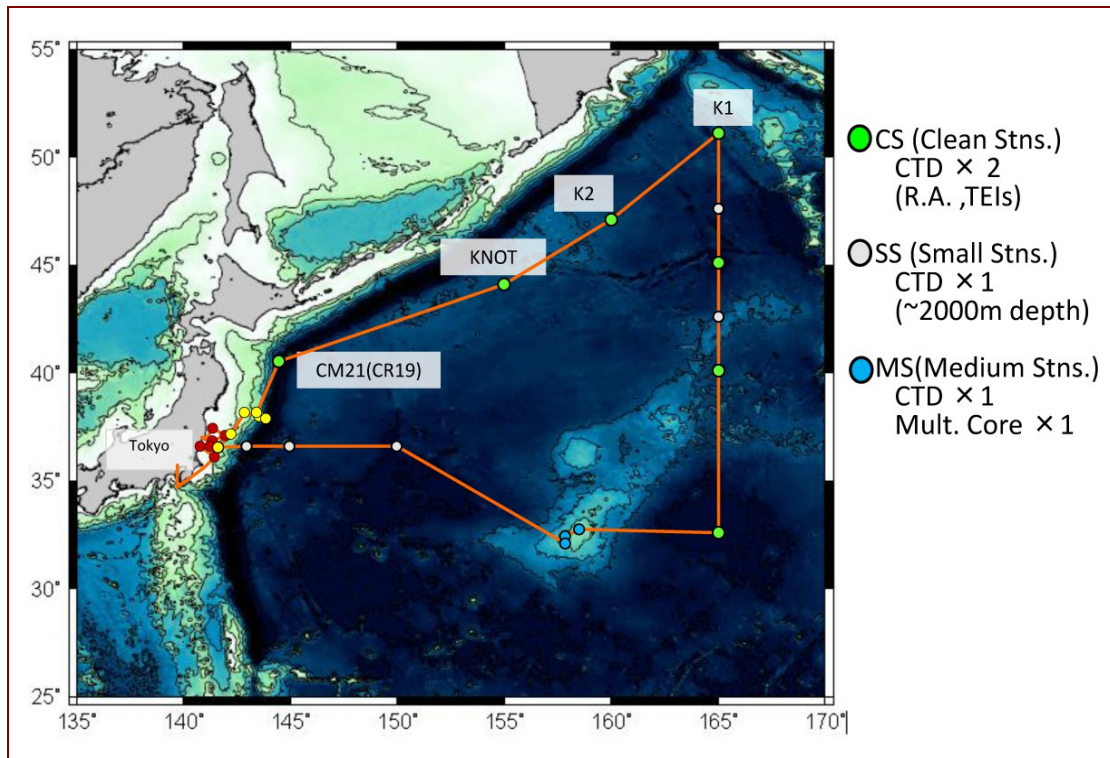


Figure 7. R/V Hakuho-MarukH-11-07 Cruise Plan (Jul 16-Aug 04)

- Cruise by R/V Hakuho Maru.

GEOTRACES section GP02, zonal GEOTRACES cruise in the North Pacific (47N), planned for summer, 2011 (PI: T. Gamo).

***New funding***

- Proposal for international investigation and research was funded.

Grant in Aid for Scientific Research; US\$ 0.4M, April 2011 – March 2014.