

**ANNUAL REPORT ON GEOTRACES ACTIVITIES IN JAPAN**  
MAY 2014 – JUNE 2015

***General overview***

- We have completed the GEOTRACES GP19 cruise track during the R/V Hakuho Maru KH-14-6 cruise (from Dec. 2, 2014 to Feb. 26, 2015).
- The national GEOTRACES organization under the Science Council of Japan (SCJ) was continued as the GEOTRACES sub-committee under the SCOR committee in October 2014, when the SCJ started a new 3-year term.
- Fourteen papers have been published as below, and some of them were also presented during the annual meeting of AOGS (Asia Oceania Geosciences Society) held at Sapporo (Japan) in July-August 2014. There were more presentations in Japanese at the Annual Meetings of Geochemical Society of Japan, the Oceanographic Society of Japan, Japan Geoscience Union etc.

***New publications***

- Echegoyen, Y., Boyle, E.A., Lee, J.M., Gamo, T., Obata, H., Norisuye, K. (2014): Recent distribution of lead in the Indian Ocean reflects the impact of regional emissions. *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, 111, 15328-15331.
- Gamo, T., Okamura, K., Hatanaka, H., Hasumoto, H., Komatsu, D., Chinen, M., Mori, M., Tanaka, J., Hirota, A., Tsunogai, U., Tamaki, K. (2015): Hydrothermal plumes in the Gulf of Aden, as characterized by light transmission, Mn, Fe, CH<sub>4</sub> and d13C-CH<sub>4</sub> anomalies. *Deep-Sea Res. II*, in press.
- Kanna, N., T. Toyota, J. Nishioka (2014): Iron and macro-nutrient concentrations in sea ice and their impact on the nutritional status of surface waters in the southern Okhotsk Sea, *Progress in Oceanography*, 126, 44-57.
- Kim, T-J., Obata, H., Kondo, Y., Ogawa, H., Gamo, T. (2015): Distribution and speciation of dissolved zinc in the western North Pacific and its adjacent seas. *Marine Chemistry*, in press.
- Kim, T-J., Obata, H., Gamo, T., Nishioka, J. (2015): Sampling and onboard analytical methods for determining subnanomolar concentrations of zinc in seawater. *Limnol. Oceanogr. Methods*, 13, 30-39.
- Kumamoto, Y., M. Aoyama, Y. Hamajima, M. Murata and T. Kawano (2015): Impact of Fukushima-derived radiocesium in the western North Pacific Ocean about ten months after the Fukushima Dai-ichi nuclear power plant accident, *Journal of Environmental Radioactivity*, 140, 114-122.
- Minami, T., Konagaya, W., Zheng, L., Takano, S., Sasaki, M., Murata, R., Nakaguchi, Y. & Sohrin, Y. (2015): An off-line automated preconcentration system with ethylenediaminetriacetate chelating resin for the determination of trace metals in seawater by high-resolution inductively coupled plasma mass spectrometry. *Analytica Chimica Acta*, 854, 183-190, doi: <http://dx.doi.org/10.1016/j.aca.2014.11.016>.
- Murata, A., K. Hayashi, Y. Kumamoto and K. Sasaki (2015): Detecting progression of ocean acidification from the saturation state of CaCO<sub>3</sub> in the subtropical South Pacific, *Global Biogeochemical Cycles*, in press.
- Nägler, T. F., Anbar, A. D., Archer, C., Goldberg, T., Gordon, G. W., Greber, N. D., Siebert, C., Sohrin, Y. & Vance, D. (2014): Proposal for an International Molybdenum Isotope Measurement Standard and Data Representation. *Geostandards and Geoanalytical Research*, 38, 149-151, doi: 10.1111/j.1751-908X.2013.00275.x.

- Nishioka, J., T. Nakatsuka, K. Ono, Y. N. Volkov, A. Scherbinin, T. Shiraiwa (2014): Quantitative evaluation of iron transport processes in the Sea of Okhotsk, *Progress in Oceanography*, 126, 180-193.
- Nishioka, J., H. Mitsudera, I. Yasuda, H. Liu, T. Nakatsuka, Y. N. Volkov (2014): Biogeochemical and physical processes in the Sea of Okhotsk and the linkage to the Pacific Ocean, *Progress in Oceanography*, 126, 1-7.
- Suzuki, A., Obata, H., Okubo, A., Gamo, T. (2014): Precise determination of dissolved platinum in seawater of the Japan Sea, the Sea of Okhotsk, and the western North Pacific. *Marine Chemistry*, 166, 114-121.
- Takano, S., Tanimizu, M., Hirata, T. & Sohrin, Y. (2014): Isotopic constraints on biogeochemical cycling of copper in the ocean. *Nature Communications*, 5, doi: 10.1038/ncomms6663.
- Tanita, I., Takeda, S., Sato, M. and Furuya, K. (2015): Surface and middle layer enrichment of dissolved copper in the western subarctic North Pacific. *La mer*, 53 : 1-18.

### ***International Meetings***

- Norisuye, K., Takano S., Sohrin, Y., Ho, T.-Y., Morton, P., Choi, M.S. Bismuth of anthropogenic origin supplied to the modern western North Pacific. *Asia Oceania Geosciences Society* (2014). OS01-D2-PM2-PB-008, 29 July.
- Obata, H., Nishioka, J., Kim, T., Norisuye, K., Takeda, S., Wakuta, Y., Gamo, T. Clean seawater sampling for trace metals during Japanese GEOTRACES cruises. *Asia Oceania Geosciences Society* (2014). OS01-D2-PM2-PB-006, 29 July.
- Takano, S., M. Tanimizu, T. Hirata, and Y. Sohrin. Biogeochemical Cycling of Copper Isotopes in the Ocean. (14-11) in AOGS2014. 2014, 7. 29. Sapporo.
- Zheng, L., Y. Sohrin, T. Minami, and W. Konagaya. The Determination of Bioactive Trace Metals in Seawater Using an Automated Preconcentration Device and the Distribution of These Metals in the North Pacific Ocean. (14-12P) in AOGS2014. 2014, 8. 1. Sapporo.

### ***Cruises***

- GEOTRACES section cruise (GP19) by *R/V Hakuho-Maru* (KH-14-6 cruise, 2 Dec. 2014-26 Feb. 2015)

Submitted by Toshitaka Gamo (gamo@aori.u-tokyo.ac.jp).