

China-Taipei

Cruises

The first Taiwanese GEOTRACES test cruise will be carried out during July 14th-23rd 2013 in the Western Philippine Sea by using Taiwan most modern 2,700 ton research vessel, Ocean Research 5. The studied sites are shown in the Figure 1. The major objectives are to evaluate the sampling capability of OR/5 for trace metal clean sampling, to investigate the cycling and distribution of trace elements and their isotopes in the West Philippine Sea, and to determine the trace metal composition and fluxes in size-fractionated suspended particles and plankton, sinking particles and aerosols. Thirty scientists from 12 laboratories will join the cruise (PI: Tung-Yuan Ho), including the researchers from Xiamen University, HKUST, UC Santa Cruz, and the other 9 labs from Taiwanese research institutes. The 2nd Taiwanese GEOTRACES cruise will be carried out in March 2014 in the Western Philippine Sea.

Meetings

Tung-Yuan Ho, Yoshiki Sohrin, I-I Lin, and George Wong have proposed a GEOTRACES related session in 2013 AOGS meeting, with the following session title: (OS-19) Controls on the Biogeochemistry of the Northwestern Pacific Ocean and its Adjacent Marginal Seas. During the meeting, Tung-Yuan Ho and Yoshiki Sohrin have discussed the possibility to hold the other Asian GEOTRACES workshop in 2014 in Taipei, Taiwan.

Publications

There were about 10 marine trace metal biogeochemistry related research papers published by Taiwanese scientists in 2012-2013/6.

- Ho, T.-Y. (2013) Nickel limitation of nitrogen fixation by *Trichodesmium*. *Limnology and Oceanography* 58: 112-120.
- Ho, T.-Y., T.-H. Chu, and C.-L. Hu (2013) Interrelated influence of light and Ni on *Trichodesmium* growth. *Frontiers in Aquatic Microbiology*. doi: 10.3389/fmicb.2013.00139.
- Hsu, S.-C. C.-A. Huh, C.-Y. Lin (2012) Dust transport from non-East Asian sources to the North Pacific. *Geophysical Research Letters*. 39: DOI: 10.1029/2012GL051962
- Hung, C.-C., Gong, G.-C., Santschi, P.H., (2012) 234Th in different size classes of sediment trap collected particles from the Northwestern Pacific Ocean. *Geochim. Cosmochim. Acta*, 91, 60-74.
- Jiann, K.-T. and Wen, L.-S. (2012) Distribution and lability of dissolved iron in surface waters of marginal seas in southeastern Asia. *Estuarine Coastal and Shelf Science*. 10: 142-149.
- Lee, C.-S., C.-L. Wei, L.-S. Wen, D. D. Sheu, and W.-H. Lee (2013) Distribution and removal of silver and lead in the nearshore waters of western Taiwan. *Estuaries and Coasts*. 10.1007/s12237-013-9588-1
- Shen, C.-C., Wu C.-C., Cheng H., Edwards R. L., Hsieh Y.-T., Gallet S., Chang C.-C., Li T.-Y., Lam D. D., Kano A., Hori M., and Spötl C. (2012) High-precision and high-resolution carbonate 230Th dating by MC-ICP-MS with SEM protocols. *Geochim. Cosmochim. Acta*. 99: 71-86.
- Yang S.-C., D.-C. Lee, and T.-Y. Ho (2012) The isotopic composition of Cadmium in the water column of the South China Sea. *Geochimica et Cosmochimica Acta* 98: 66-77.
- Wei, C.-L., S.-Y. Lin, L.-S. Wen, and D. D. Sheu (2012) Geochemical behavior of 210Pb and 210Po in the nearshore waters off western Taiwan, *Marine Pollution Bulletin*, 64:214-220.

- Wei, C.-L., K.-T. Jiann, L.-S. Wen, and D. D. Sheu (2012) Distributions and removal fluxes of trace metals in the water column of the Hung-Tsai Trough off southwestern Taiwan, *Marine Pollution Bulletin*, 64: 1122-1128.

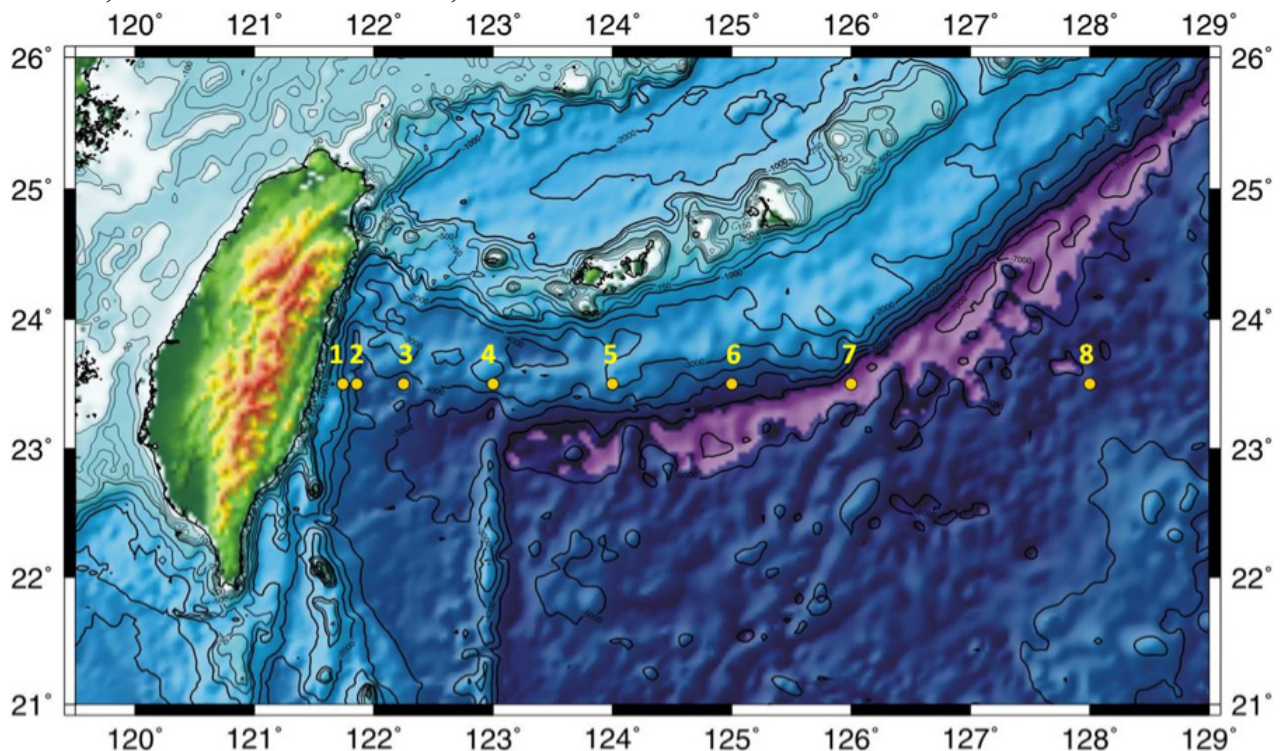


Figure 1. The 8 sampling stations of Taiwan 1st GEOTRACES test cruise. OR/5 equips with a 20-ft trace metal clean van, 12 L and 20 L Teflon coated Go-Flo bottles, and trace metal clean surface water pump but so far with normal hydrowire, CTD rosettes and winches. With the effort of related scientists, OR/5 management agency, TORI, is considering purchasing the related trace metal cleaning apparatus in 2014. The 2013 cruise will thus mainly focus on particle related studies, including total suspended particles, size-fractionated particles and plankton, sinking particles, total suspended aerosol, size-fractionated aerosols *et al.* The station 8 will become a GEOTRACES crossover station between Japan and Taiwan.

Submitted by: Tung-Yuan Ho