Japan GEOTRACES National Report 2013

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Activities in 2013

- National sub-committee on GEOTRACES in the Science Council of Japan
    - 24 March 2013, Tokyo University of Marine Science and Technology
    - Discuss international and national problems and information on GEOTRACES program
- GEOTRACES Relevant Scientific Sessions
  - 2013 Asia Oceania Geosciences Society Annual Meeting (AOGS2013)
    - Controls on the Biogeochemistry of the Northwestern Pacific Ocean and its Adjacent Marginal Seas
    - 24 June 2013, Brisbane, Australia
    - Co-conveners: T-Y Ho , Y Sohrin, I-I Lin and G T F Wong
  - Annual Meeting of GSJ 2013
    - Trace metals and their isotopes in the ocean
    - 13 Sep 20, Tsukuba, Japan
    - Co-conveners: H Obata, J Zhang, K Norisuye and K Horikawa

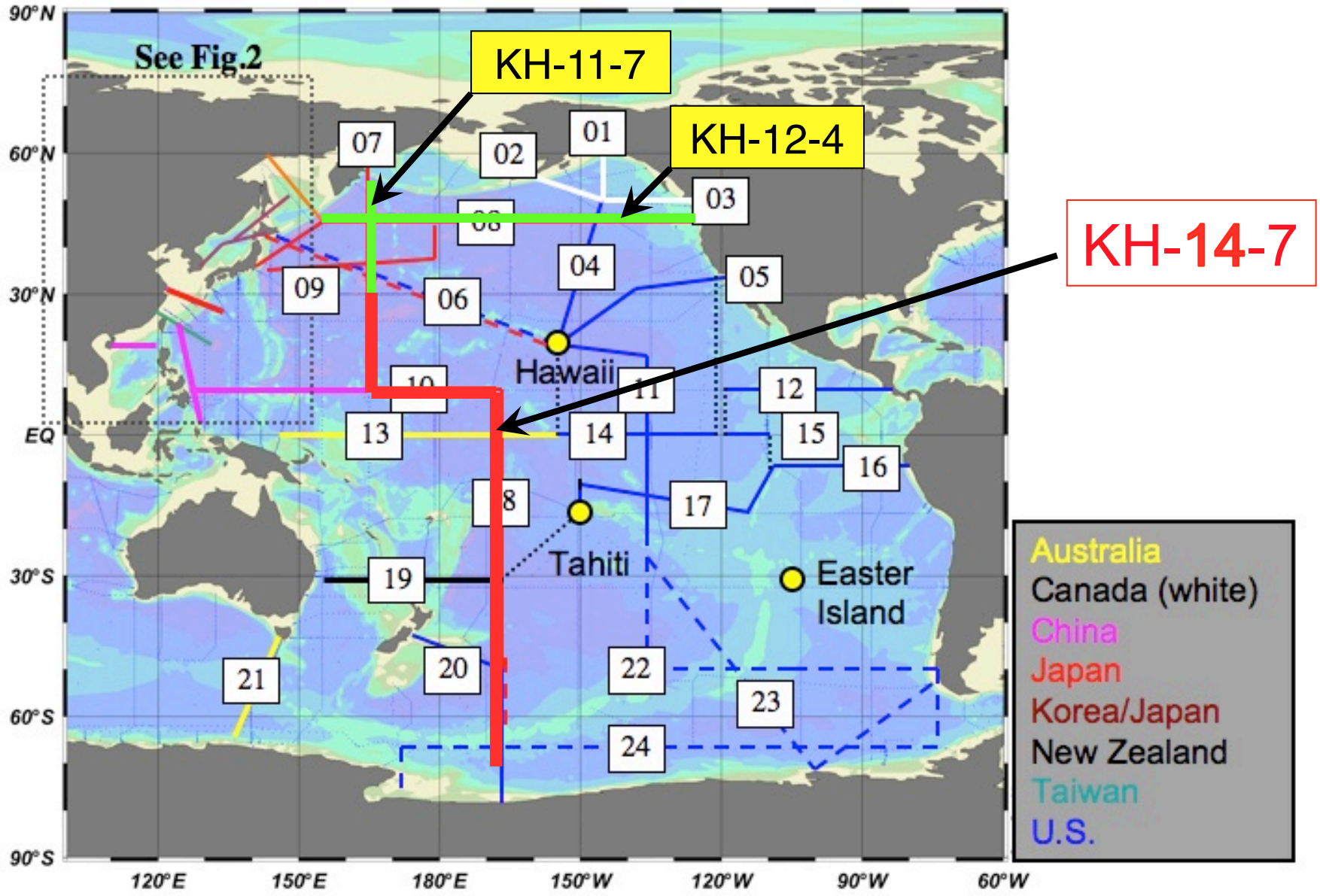
New research vessel R/V Shinsei Maru

- R/V Tansei Maru (JAMSTEC) was retired at the end of January 2013
- The successive new vessel Shinsei Maru (1630t, 15 scientists) has been constructed by JAMSTEC
- She is equipped with a Kevlar armored cable and a clean container laboratory, and will be used for trace element studies chiefly in coastal areas

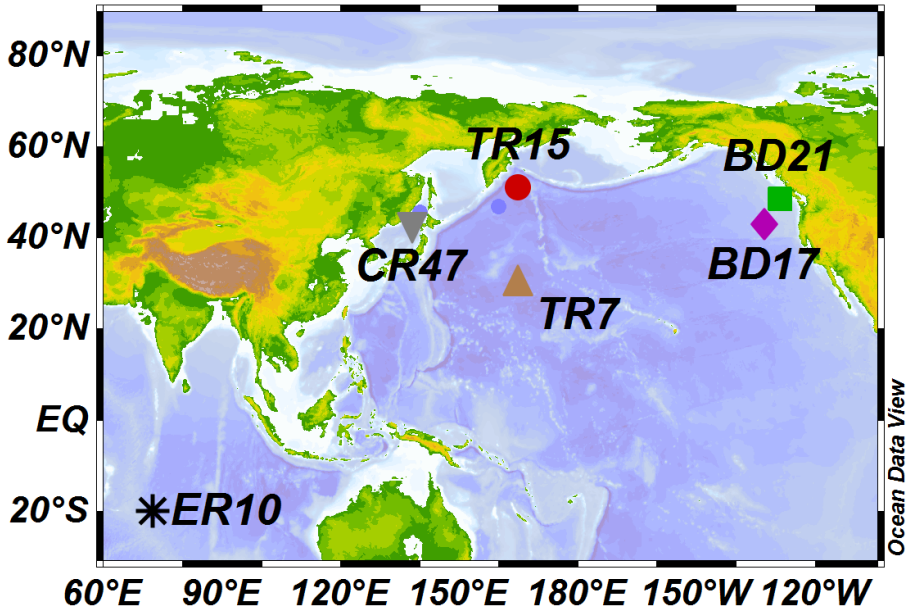
Future plans

- Cruises
  - GEOTRACES section GP10 and GP18, GEOTRACES cruise in the South Pacific, 2 Dec 2014- 26 Feb 2015 (PI: T. Gamo)
  - GEOTRACES section GP06, regional GEOTRACES cruise in the East China Sea, 2016 or 2017 (PI: J. Zhang)
- Scientific Meetings
  - 2014 Asia Oceania Geosciences Society Annual Meeting (AOGS2014)
    - 28 Jul to 01 Aug, 2014, Sapporo, Japan
  - Goldschmidt 2016
    - June 26 - July 1, Yokohama, Japan

GEOTRACES Pacific Sections



$\delta^{65}Cu$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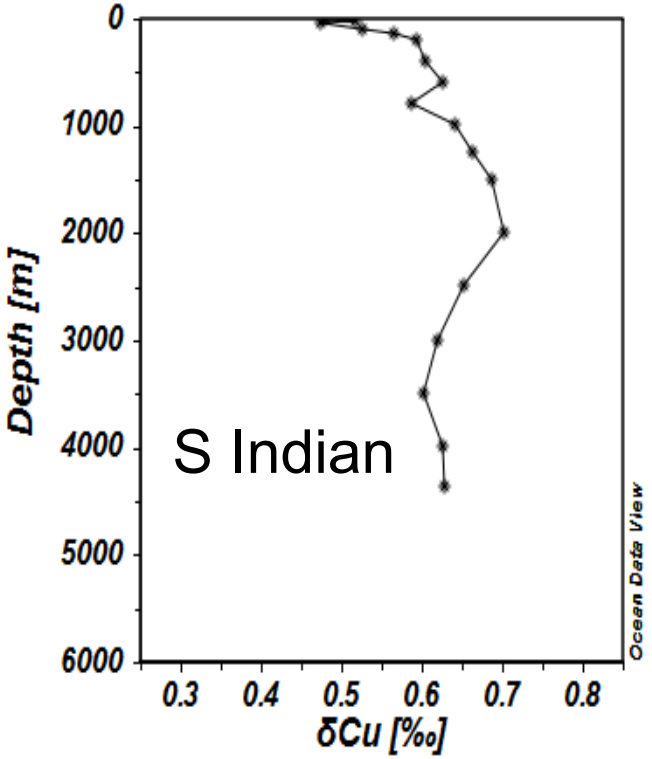
Ocean Data View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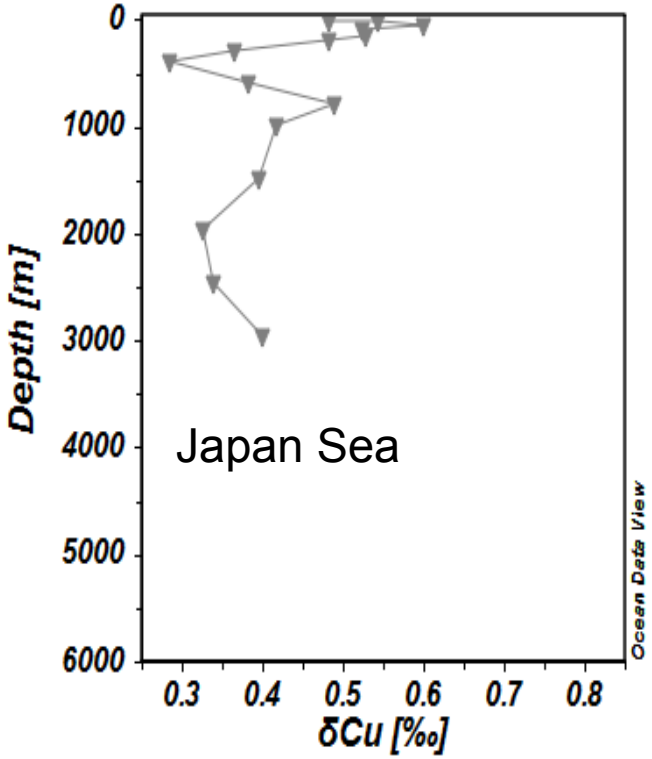
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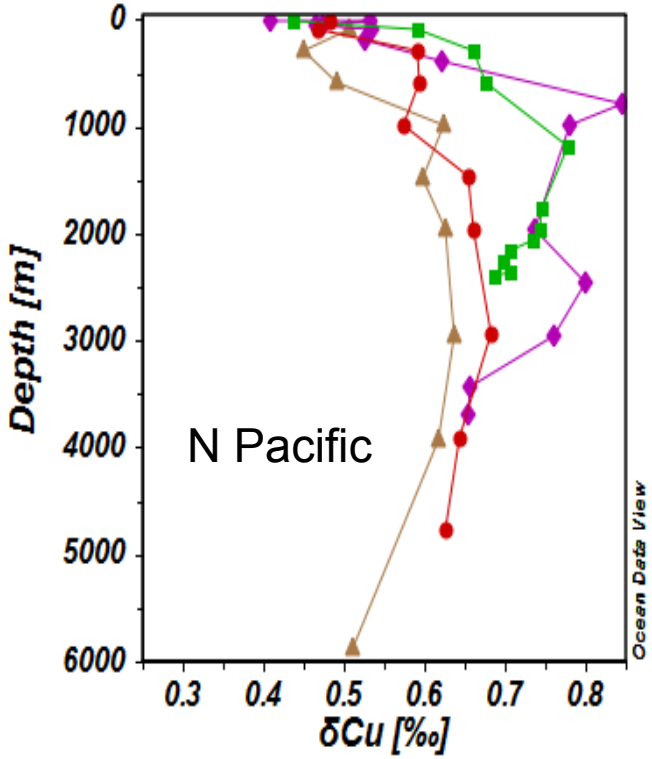
Ocean Data View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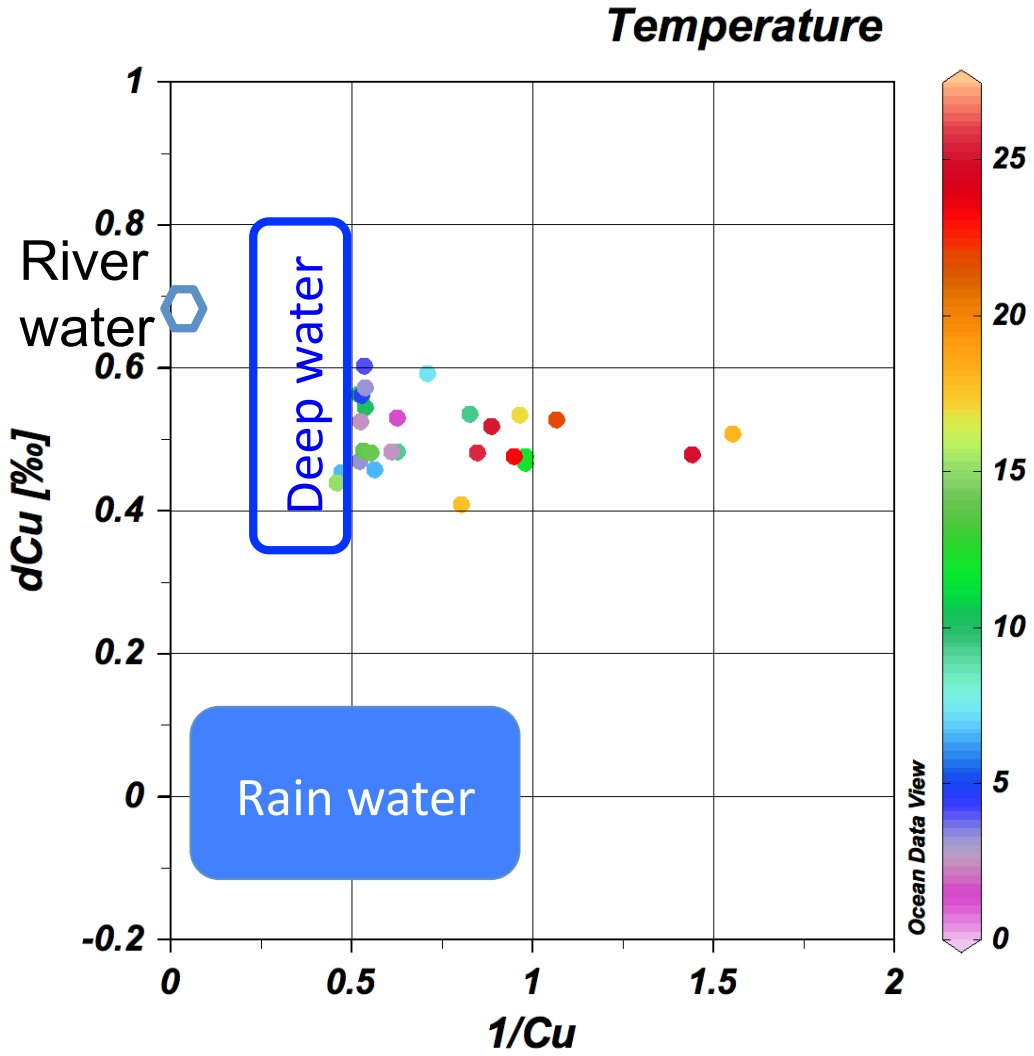
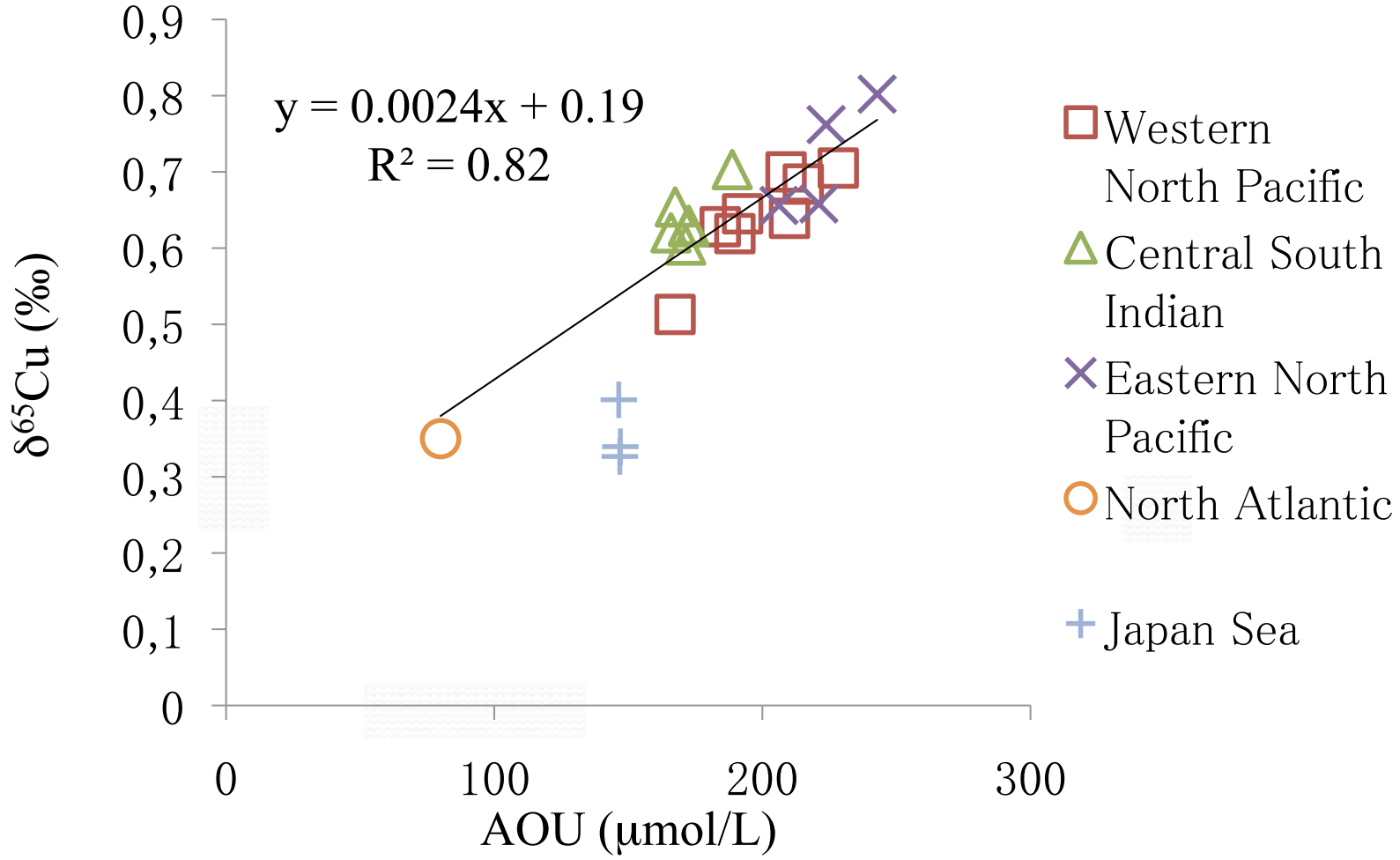
Ocean Data View

δ^{65}Cu vs. 1/Cu in surface water (<120 m)



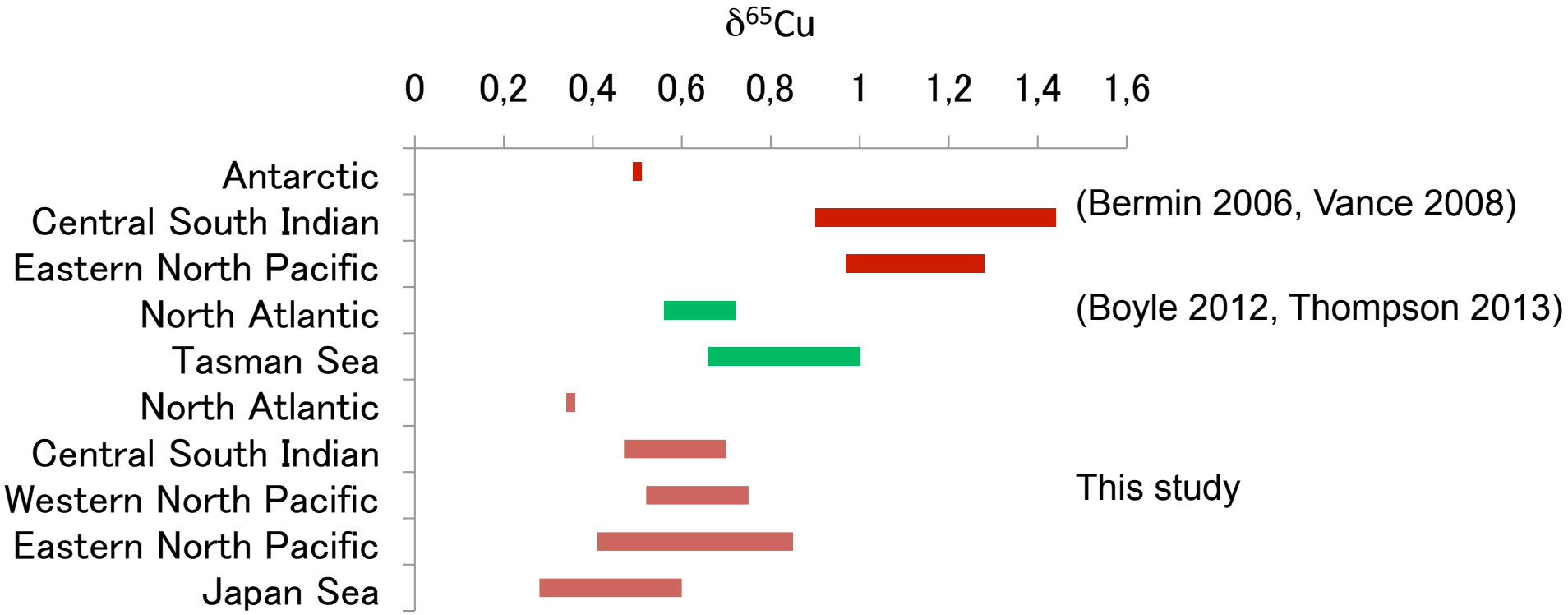
- Average river water: δCu = 0.68‰, Cu = 18.8 nmol/kg (Vance et al. 2008)
- Surface water has lower Cu concentration and lower δCu than river water
- δCu can be partly explained by mixing of river, rain, and deep water
- There are additional fractionation mechanisms

δ^{65}Cu vs. AOU in deep water (≥2000 m)



- δCu increase with the age of deep water

Comparison of δCu in seawater with literature data



- Heavy δCu in seawater has been explained by formation of organic complexes
- Our values are closer to those for settling particles (0.1 - 0.4‰) and manganese nodules (0 - 0.6‰)