Distributions of dissolved trace metals (Al, Mn, Fe, Co, Ni, Cu, Zn, Cd, and Pb) during GEOTRACES Japan KH-17-3 cruise in the subarctic North Pacific Ocean

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The subarctic North Pacific Ocean is known as the high-nutrient, low-chlorophyll (HNLC) region, where the trace metal concentration (especially Fe) is a critical factor for phytoplankton growth and influencing the biogeochemical cycles of elements. The trace metal concentration in this region is under the influence of ocean currents, neighbouring continental shelves, as well as westerlies transporting yellow dust and anthropogenic aerosols. Also, the marine ecosystem affects the trace metal distributions. Since the marine ecosystem and biogeochemical cycles in this region are reflecting the impacts by human activities and geographical factors mentioned above, there has been a growing attention of GEOTRACES studies related to trace metals in the Pacific Ocean recently[1, 2].

In this study, an off-line automated solid-phase extraction system (SPE-100)[3] was used to preconcentrate trace metals (Al, Mn, Fe, Co, Ni, Cu, Zn, Cd, and Pb) in seawater samples (without UV irradiation), and the nine dissolved trace metals were determined by ICP-MS. Seawater samples were collected during the R/V *Hakuho Maru* KH-17-3 cruise from June to August in 2017. In this presentation, we are going to report the full-depth sectional distributions of the nine trace metals from several sampling stations along 47°N (CL-1 to CL-8) during the cruise.

[1] Zheng, L., Sohrin, Y. (2019), *Sci. Rep.* **9**, 11652.
[2] Zheng, L. *et al.* (2019), *Geochim. Cosmochim. Acta* **254**, 102–121.
[3] Minami, T. *et al.* (2015), *Anal. Chim. Acta* **854**, 183-190.