

## Dissolved Pb stable isotopes in the Bay of Bengal

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Our previous study [1] on Pb stable isotopes in the Indian Ocean found  $^{206}\text{Pb}/^{207}\text{Pb}$  and  $^{208}\text{Pb}/^{207}\text{Pb}$  isotope ratios in the water column are higher in the Bay of Bengal compared to those in the Arabian Sea. The result implies that the high isotope ratios in the Bay of Bengal were influenced by source rocks containing minerals with high isotope ratios, such as K-feldspar, from the High-Himalaya and that the isotope ratios in seawater in the Bay of Bengal were elevated via exchange process of Pb between seawater and particles and/or sediments derived from Ganges-Brahmaputra [1].

In this study we show our new Pb isotope data in seawater obtained during the KH-13-4 cruise (Aug., 2013). Seawater samples were collected at a deep open ocean station in the Bay of Bengal (NR-1, 6°N 90°E) and two shallow stations of BA-1 (21°N 91°E) near the Mouths of the Ganges and MY-6 (15°N 96°E) near the Gulf of Martaban. Sample collection followed the GEOTRACES protocol using clean Niskin-X samplers.

The  $^{206}\text{Pb}/^{207}\text{Pb}$  and  $^{208}\text{Pb}/^{207}\text{Pb}$  ratios in NR-1 ranged from 1.150 to 1.166 and from 2.428 to 2.446, respectively. These values are consistent with our previous results [1]. The  $^{206}\text{Pb}/^{207}\text{Pb}$  and  $^{208}\text{Pb}/^{207}\text{Pb}$  ratios at the two shallow stations ranged from 1.179 to 1.185 and from 2.469 to 2.481, respectively. The values from these shallow stations were higher than the open ocean values, but relatively close to isotope ratios reported for K-feldspars from the High Himalaya [1]. Our present data support the previous indication in the Bay of Bengal. Since our open ocean site is located 10 to 15 degrees south of the river mouth deltas, these sources are probably important over the wide area of the Bay of Bengal. Using newly obtained isotopic data as an endmember, we will discuss the reversible exchange process between dissolved and particulate Pb in the deep water column of the Bay of Bengal.

[1] Lee et al. (2015) *GCA* **170**, 126-144.