

## The Nd isotopic composition of seawater in the Southwest Pacific Ocean

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The Nd isotopic composition of seawater has been recognized as a “quasi-conservative” tracer for water mass circulation, and has been widely applied in studies of present and past oceanic circulation. However, few data are available for some areas, such as oceanic regions south of 30°S in the Pacific Ocean where the change of water mass originated in the Southern Ocean could be monitored.

Here, we report two vertical profiles of isotopic composition of Nd in seawater samples collected at 20°S (station SX-20) and 30°S (station SX-22) along a longitude of 170°W in the Southwest Pacific Ocean. The minima  $\epsilon_{Nd}$  values of -8.0 and -6.9 at depths around 800 to 1000 m correspond to Antarctic Intermediate Water (AAIW). The clear difference in  $\epsilon_{Nd}$  value between upper deep water (2000–3000 m; -6.5 to -4.6) and lower deep water (> 4000 m; -9.2 to -8.6) seems to be associated with Upper and Lower Circumpolar Deep Waters (UCDW and LCDW respectively). Recently, Molina-Kescher *et al.* (2014) reported the similar feature for a depth profile of station at 45.7°S, 151.7°W.

Our study demonstrates the uniqueness of Nd isotopic composition distributions in the Southwest Pacific Ocean, which would facilitate to trace water masses in this region.

[1] Molina-Kescher *et al* (2014) *GCA* **127**, 171-189