

## **Using aluminum and manganese to constrain the contribution of the Solomon Sea to the Equatorial Undercurrent trace metal pool**

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The Equatorial Undercurrent (EUC) is thought to be a source of trace metals to the iron deficient, high nutrient low chlorophyll region in the Eastern Equatorial Pacific, where about 26% of new production in the world's oceans occurs [1]. Understanding the sources of these elevated trace metals in the EUC is important for our understanding of the global carbon cycle.

One region that is thought to be a source of trace metals to the EUC is the Solomon Sea, where low latitude western boundary currents interact with the extensive coastlines of the Solomon Islands and Papua New Guinea, likely entraining coastal materials into the boundary currents. A study during the summer of 2012, PANDORA (cruise GP#12 of the GEOTRACES programme, [www.geotraces.org](http://www.geotraces.org)), was conducted on board the R/V l'Atalante to determine the hydrography and the geochemical makeup within the basin. Using aluminum and manganese data, we look to constrain the sources (aerosol, river, hydrothermal, margin) of trace metals to the Solomon Sea, as well as the contribution of these metals to the Bismarck Sea and EUC. Preliminary results suggest that additional inputs beyond the Solomon Sea are required to account for the trace metal distributions in both regions.

[1] Chavez, F.P. & Toggweiler, J.R., (1995). *Upwelling in the ocean: modern processes and ancient records*, 313–320.