

## **Trace metal distributions in the South West Indian Ocean (SWINGS cruise): a focus on iron and manganese**

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Some trace metals (i.e. Fe, Mn) are bio-essential and play a crucial role in CO<sub>2</sub> exchanges with the atmosphere by (co)limiting primary productivity. Until recently, most studies have focused on the study of the dissolved pool of trace metals (dTM). Besides their role in scavenging processes, particulate trace metals (pTM) however are an important reservoir that could be either directly assimilated by phytoplankton or may become bioavailable following biological, chemical and physical processes. The oceanic distributions of pTM being scarce, especially in the Southern Ocean, the processes governing the oceanic biogeochemical cycles of TM are still poorly constrained.

In order to help filling this gap, samples for dTM and pTM were collected during the SWINGS GEOTRACES cruise in the South West Indian Ocean (MD229/GS02 – January-March 2021, R/V Marion Dufresne). Several regions were investigated along the transect, from the South African margin, through the sub-antarctic islands (Marion-Prince Edward, Crozet, Kerguelen, Heard & Mc Donald) and the Fawn Trough.

The dTM and pTM concentrations will be presented and the discussion will focus on the estimation of the different lithogenic, authigenic and biogenic contributions of the pTM pool. A special attention will be given to the ocean dynamics, that are driving many distributions.