

Dissolved and particulate REE distributions in the tropical and subtropical Indian Ocean (SWINGS cruise)

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Distributions of dissolved and particulate rare earth elements (REE) were established in samples collected as part of the SWINGS GEOTRACES cruise (MD229/GS02 along a section starting at La Reunion 21° S-55°30' E) and ending at Marion islands (46°S 37°E) in the south west Indian ocean. Particular attention was paid to documenting the REE behaviors in the Aghulas current and return currents, as well as along the South African and Marion-Prince Edwards margins. In addition, two stations above the SWIR (Southwest Indian Ridge) allowed identifying hydrothermal activity. Dissolved and particulate REE distributions were also characterized in this particular environment.

In the open ocean, dissolved REE concentrations display nutrient-like profiles, with Nd (Yb) concentrations varying between *ca* 7 (2) and more than 30 (8) pmol/l between the surface and the deepest part of the profiles. Particulate REE are more than 10 times less concentrated. Data compare well with those acquired by Garcia-Solsona et al. (2014) along the BONUS-GOODHOPE section.

Specific behavior at the land-ocean interfaces and above the ridge will be discussed in the framework of this talk. Kd calculations will also be proposed.

Garcia-Solsona, E.; **Jeandel, C.**; Labatut, M.; **Lacan, F.**; Vance, D.; Chavagnac, V. (2014). Rare Earth Elements and Nd isotopes tracing water mass mixing and particle-seawater interactions in the SE Atlantic *Geochimica et Cosmochimica Acta*, 125, 351–372. doi:10.1016/j.gca.2013.10