

ANNUAL REPORT ON GEOTRACES ACTIVITIES IN NAMIBIA

April 1st, 2019 to March 31st, 2020

New GEOTRACES or GEOTRACES relevant scientific results

The University of Namibia's (UNAM) research center in Henties bay hosts an international summer school during April – May. This Regional Research Graduate Network in Oceanography (RGNO) is a SCOR Capacity and Collaboration Building Project. This research workshop focuses on understanding the biogeochemical and microbial processes in upwelling systems (i.e. the Northern Benguela). It provides research based training with a holistic ecosystems approach (http://www.microeco.ethz.ch/rgno_namibia_18-21/RGNO_Namibia.html). In conjunction with the Ministry of Fisheries and Marine Resources (MFMR), ship time is allotted on the Mirabilis research vessel (RV) for sediment coring and water column sampling.

As part of the 2019 RGNO, researchers, Luke Bridgestock, Tzu-Hao Wang (Oxford University, UK) and Sümeyya Eroğlu (University of Münster, Germany), participated in a cruise along the Namibian margin on the RV Mirabilis. Sediment, pore water and seawater samples were collected along 23°S and 20°S transects for trace metal analysis.

In addition, these samples were also used for analyses of key TEIs and organic carbon compositions, with the aim of understanding metal-organic associations in marine sediments. Surface seawater and suspended particulate samples for TEI analyses were also collected using a peristaltic pump following protocols adapted from the GEOTRACES cookbook. Preliminary results from key pore water samples were generated by L. Bridgestock (detailed in Figure 1).

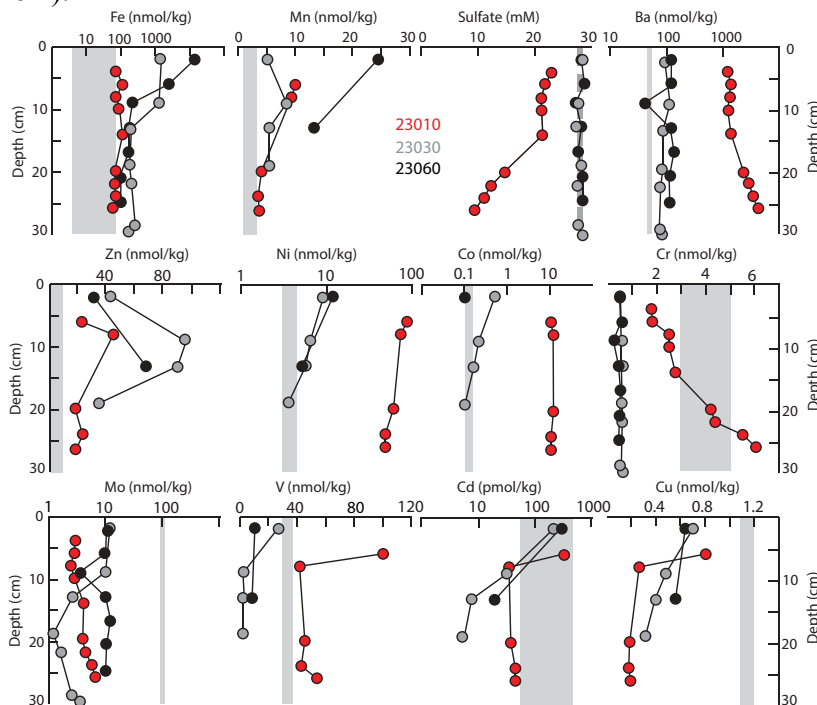


Figure 1: Preliminary pore water results for key trace metals for sediment 3 cores transecting the Namibian continental shelf. Grey bars denote seawater concentrations, derived from either measurement of samples collected during the cruise (Fe, Mn, Ba, Ni, Co, Cd) or literature data (sulfate, Cr, Mo, V, Zn, Cu).

GEOTRACES or GEOTRACES relevant cruises

- RGNO cruise on the MFMR research vessel in 2019. Samples were collected from the sediment and the water column for trace metal analysis.

New projects and/or funding

- Determining the effects of trace metals in dust on a phytoplankton community in the Northern Benguela using a mesocosm approach. This is a collaboration between UNAM and North Western University, South Africa.

Outreach activities conducted

- As part of the 2019 RGNO workshop, Luke Bridgestock and Tzu-Hao Wang ran a teaching activity on micronutrient cycling in the ocean, involving the use of the GEOTRACES Intermediate Data Product and Ocean Data View.
- Sümeyya Eroğlu have a presentation on ‘Reconstruction of oxygen minimum zone dynamics using molybdenum isotopes’ during the RGNO symposium.

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