

ANNUAL REPORT ON GEOTRACES ACTIVITIES IN CHILE

May 1st, 2019 to April 30th, 2020

New Scientific Results

- Effect of DFe on domoic acid production at the Patagonian Archipelago.

Preliminary results from iron-enrichment bottle experiments at inner-waters of Western Patagonian Archipelago (51-50°S; Fig.1) suggest that addition DFe (5nM) enhance the net production of domoic acid by phytoplankton community.

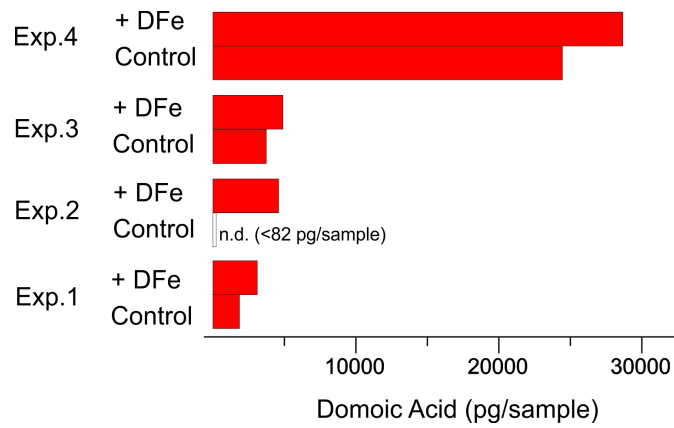


Figure 1: Iron-enrichment bottle experiments effect on domoic acid content of coastal water from 50-51°S during PROFAN cruise (Domoic acid work by Dr. Bernd Krock (AWI))

Cruises

- The PROFAN cruise (grant CONICYT-PIA AUB190003) was performed between 13 and 24 November 2019 on board the Research Vessel Cabo de Hornos. An acid cleaned plastic suction system was used to surface water for the determination of nutrients, biogenic silica, carbonate system parameters, toxins, chl-a and trace metals (iron) in unfiltered and filtered (0.45 and 0.02 μm) samples. The survey focused on the area of influence of Southern Patagonian Ice fields.

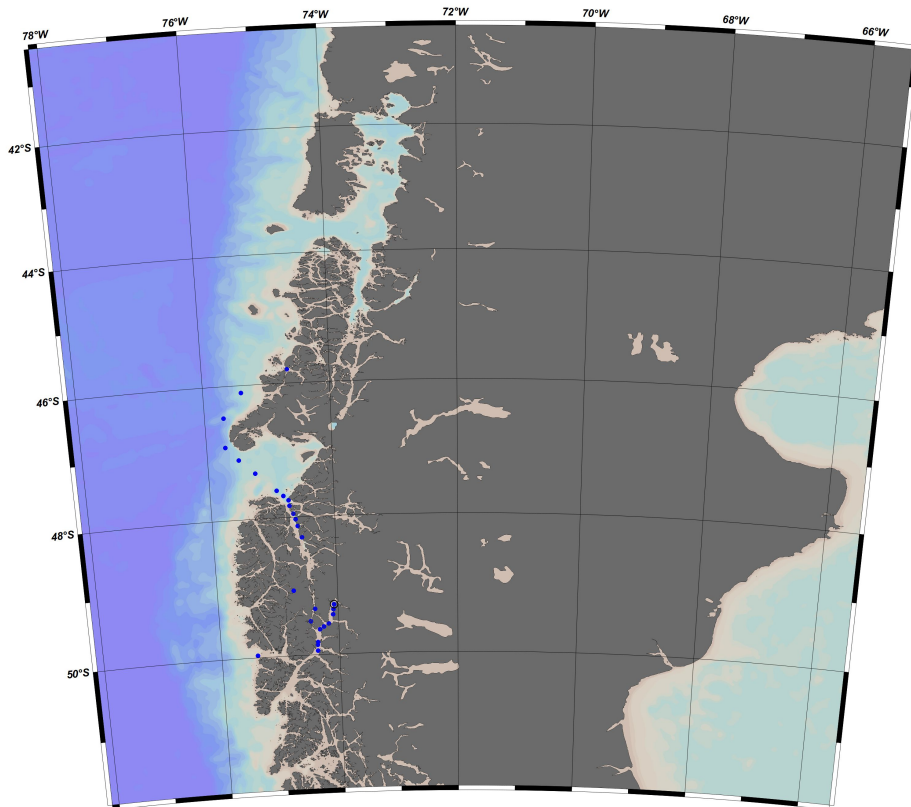


Figure 2. Underway surface water stations for the PROFAN 2019 cruise.

Other GEOTRACES Activities

- R. Torres is a Full Member of SCOR Working Group 145: Modelling Chemical Speciation in Seawater to Meet 21st Century Needs (MARCHEMSPEC).

GEOTRACES-related articles

- Hopwood, M.J., Carroll, D., Höfer, J., Achterberg, E.P., Meire, L., Le Moigne, F.A.C., Bach, L.T., Eich, C., Sutherland, D.A., González, H.E., 2019. Highly variable iron content modulates iceberg-ocean fertilisation and potential carbon export. *Nature Communications* 10, 5261.
- Wadham, J.L., Hawkings, J.R., Tarasov, L., Gregoire, L.J., Spencer, R.G.M., Gutjahr, M., Ridgwell, A., Kohfeld, K.E., 2019. Ice sheets matter for the global carbon cycle. *Nature Communications* 10, 3567.

GEOTRACES presentations in international conferences

- Hawkings, J.R., Sherrell, R., Conway, T., Wahham, J., Hendry, K.R., Pryer, H., Daneri, G., Torres, R., Bertrand, S., Kellerman, A., Beaton, A., Ng, H., Roccanova, J., Summers, B., Benning, L.G., Spencer, R., 2019. The influence of glacier cover on trace metal input and cycling in Patagonian fjords, Goldshmidt.

Submitted by Rodrigo Torres (rtorres@ciep.cl).