

ANNUAL REPORT ON GEOTRACES ACTIVITIES IN BELGIUM

April 1st, 2019 to April 30th, 2021

New scientific results

- Dissolved Ba from the Canadian Arctic GEOTRACES cruise (collaboration with H. Thomas, Dalhousie University & Helmholtz-Zentrum Geesthacht).
- Reactive iron and sulfur geochemistry in the coastal Black Sea sediments

New projects and/or funding

- OCeANIC, nitrous Oxide and nitrogen Cycling in Antarctic sea Ice Covered zone, Belgium - China Research Cooperation, The role of the oceans in the climate system (CLIMocean).

New GEOTRACES publications

- Laura M. Whitmore, Alan M. Shiller, Tristan J. Horner, Yang Xiang, Maureen E. Auro, Dorothea Bauch, Frank Dehairs, Phoebe J. Lam, Jingxuan Li, Maria T. Maldonado, Chantal Mears, Robert Newton, Angelica Pasqualini, H el ene Planquette, Robert Rember, Helmuth Thomas, Strong margin influence on Arctic Ocean barium cycle revealed by Pan-Arctic Synthesis, JGR-Oceans, in review.
- Deman F., D. Fonseca-Batista, A. Roukaerts, M. I. Garc ıa-Ib a nez, E. Le Roy, D. N. Thilakarathne, F. Dehairs, F. Fripiat, 2021. Nitrate isotopic composition along the GEOTRACES GA01 (GEOVIDE) section in the North Atlantic, Global Biogeochemical Cycles, 35, <https://doi.org/10.1029/2020GB006887>.
- Roukaerts A., F. Deman, F. Van der Linden, G. Carnat, A. Bratkic, S. Moreau, D. Lannuzel, F. Dehairs, B. Delille, J.-L. Tison, and F. Fripiat, 2021. The biogeochemical role of a microbial biofilm in sea ice: Antarctic landfast sea ice as a case study, Elementa, <https://doi.org/10.1525/elementa.2020.00134>.
- Lemaitre, N., H. Planquette, F. Dehairs, F. Planchon, G. Sarthou, M. Gallinari, S. Roig, C. Jeandel, M. Castrillejo, 2020. Particulate trace element export in the North Atlantic (GEOTRACES GA01 transect, GEOVIDE cruise), ACS Earth and Space Chemistry, <https://doi=10.1021/acsearthspacechem>.
- Mears C., H. Thomas, P. Henderson, M. Charette, H. MacIntyre, F. Dehairs and C. Monnin, 2020. Using 226Ra and 228Ra isotopes to unravel water mass distribution in the Canadian Arctic Archipelago, Biogeosciences, doi.org/10.5194/bg-2020-78, 2020.
- Van der Linden F., W. Champenois, J.-L. Tison, S. Moreau, G. Carnat, M. Kotovitch, F. Fripiat, F. Deman, A. Roukaerts, F. Dehairs, A. Louren o, F. Vivier, T. Haskell, B. Delille, 2020. Sea ice CO2 dynamics across seasons: impact of processes at the interfaces, Journal of Geophysical Research – Oceans, 125, 6, doi.org/10.1029/2019JC015807.
- Fonseca-Batista D., X. Li, V. Riou, V. Michotey, F. Deman, F. Fripiat, S. Guasco, N. Brion, N. Lemaitre, M. Tonnard, M. Gallinari, H. Planquette, F. Planchon, G. Sarthou, M. Elskens, J. LaRoche, L. Chou and F. Dehairs, 2019. Evidence of high N2 fixation rates in the temperate Northeast Atlantic, Biogeosciences, 16, 999-1017, <https://doi.org/10.5194/bg-16-999-2019>.

Completed GEOTRACES PhD or Master theses

- Florian Deman: Sea ice primary production at the Pan-Antarctic scale and nutrient cycling in the Antarctic sea ice covered areas (sea ice and water column), Vrije Universiteit Brussel & Université de Liège, In progress.
- Audrey PLANTE, Marine benthic hypoxia and its consequences for sediment-water exchanges and early diagenesis. PhD thesis, Université libre de Bruxelles & Université de Liège, September 2020, 204pp.
- Naman AHMED BUTT, A study of iron sulfides in Black Sea sediments. Master's thesis, Université libre de Bruxelles, September 2020, 78pp.

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