ANNUAL REPORT ON GEOTRACES ACTIVITIES IN BELGIUM
May 1st, 2016 to April 30th, 2017

New scientific results

- Primary production rates, N\textsubscript{2} fixation rates, \textsuperscript{234}Th export fluxes, POC export fluxes, particulate Ba profiles, trace element contents of the large (sinking) particle fraction and isotopic compositions (\(\delta^{15}N\), \(\delta^{18}O\)) of nitrate from the GEOVIDE cruise (GA01-GEOTRACES; transect Lisbon to Newfoundland, May-July 2014).
- Isotopic composition (\(\delta^{15}N\), \(\delta^{18}O\)) of nitrate from the SWERUS and ARKXXVIII/3 cruises.
- Primary production, N\textsubscript{2} fixation rates, nitrate isotopic compositions from the Belgica 2014/14 cruise (Bay of Biscay and Iberian Continental margin).
- Dissolved Ba from the Canadian Arctic GEOTRACES cruise (collaboration with H. Thomas, Dalhousie University).
- Trace metal geochemistry in the coastal sediments of the northwestern Black Sea.
- Influence of dissolved iron, phosphate and dust deposition on nitrogen fixation.

New publications (published or in press)


New publications (submitted)

Fonseca-Batista D., Riou V., Michotey V., Fripiat F., Li X., Deman F., Guasco S., Brion N., Elskens M., Chou L., Dehairs F. Significant N\textsubscript{2} fixation in productive waters of the temperate Northeast Atlantic, in review for Frontiers in Marine Sciences
Cruises

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).
- Understanding marine benthic hypoxia and its consequences on benthic-pelagic exchanges, diagenesis and the macrobenthos (BENTHOX), founded by FRS-FNRS (Fund for Scientific Research – FNRS), Wallonia-Brussels Federation.

PhD theses
- Lemaitre Nolwenn: Multi-proxy approach ($^{234}$Th, $^{Ba}$) of export and remineralization fluxes of carbon and biogenic elements associated with the oceanic biological pump, Joint PhD Université de Bretagne Occidentale, IUEM and Vrije Universiteit Brussel, 2017, 332 pp.
- Arnout Roukaerts: Primary production and nutrient cycling in Antarctic sea-ice and open waters. To be submitted summer 2017.
- Debany Fonseca Batista: Contribution of N2 fixation to primary and new production in the Atlantic Ocean. Finalized, spring 2017.
- Florian Deman: Sea ice primary production at the Pan-Antarctic scale and nutrient cycling in the Antarctic sea ice covered areas (both sea ice and water column). Started in Dec 2016.
- Audrey Plante: Study of marine benthic hypoxia and its consequences on the exchange at the sediment-water interface and diagenesis.

Meetings


Submitted by Frank Dehairs (Vrije Universiteit Brussel) and Lei Chou (Université Libre de Bruxelles).