

ANNUAL REPORT ON GEOTRACES ACTIVITIES IN TURKEY

May 1st, 2021 to April 30th, 2022

New GEOTRACES or GEOTRACES relevant scientific results

Turkish oceanographic teams mostly turned their attention to the Black Sea - Marmara Sea system in much of 2021 and up until mid-2022. New GEOTRACES relevant results include new findings on the seasonal dynamics of hypoxia in the Sea of Marmara and how this modulates benthic fluxes of iron and manganese. Also, on-board measured vertical profiles of iron and manganese have also been produced from the suboxic and anoxic part of the water columns

GEOTRACES or GEOTRACES relevant cruises

Three expeditions, with the R/V Bilim of the Institute of Marine Sciences, Middle East Technical University of Turkey, was held in the Black Sea, Bosphorus Strait and the Sea of Marmara in June 2021, September 2021 and March 2022. Access to Black Sea was not possible in March 2022 due to the risk with the sea mines released into the Black Sea as a result of Russia's aggression on Ukraine. For the chemical oceanographic community this will pose a major risk in the next months.

New projects and/or funding

Most important development of the report term was the acceptance of Dr Mustafa Yücel's (METU-IMS) proposal for EU Horizon Europe, European Research Council ERC Consolidator Grant in the call ERC-CoG-2021. The project, DeepTrace has been accepted for funding and will start in January 2023, to run until December 2027. This 5-year, 2.4 M Euro prestigious European project advance a ground-breaking mechanistic, analytical and predictive understanding of how the life-supporting metals cycle across Earth's deep-sea ecosystems such as the Black Sea and hydrothermal vents, developing the application of metal nanoparticles as tracers of planetary redox habitability and bridging together the study of Earth's Oceans with the Ocean Worlds of the Solar system. A web site for the project is under construction.

Several PhD and postdoc openings are available and details can be found at:

<https://ims.metu.edu.tr/announcement/erc-deeptrace-project-seeking-phd-candidates>

New GEOTRACES or GEOTRACES-relevant publications (published or in press)

Yücel M, Sevgen S and Le Bris N (2021). Soluble, Colloidal, and Particulate Iron Across the Hydrothermal Vent Mixing Zones in Broken Spur and Rainbow, Mid-Atlantic Ridge. *Front. Microbiol.* 12:631885. doi: 10.3389/fmicb.2021.631885/2022

Alimli N and Yücel M (2022). Seafloor iron mobilization across the deep-water redox gradients of the Black Sea and the Sea of Marmara. EGU22-9601 <https://doi.org/10.5194/egusphere-egu22-9601> EGU General Assembly 2022

Submitted by Dr. Mustafa Yucel (myucel@ims.metu.edu.tr).