

ANNUAL REPORT ON GEOTRACES ACTIVITIES IN TUNISIA

April 1st, 2018 to March 31st, 2019

New scientific results

- Trace element fractionation in core sediment

During GEOTRACES MedBlack Sea cruise, our work was focused on physicochemical parameters measurements, water sampling and short core sediment sampling. Trace elements necessitate trace metal clean CTD system sampling. Analysis are assessing nutrient, trace element (Fe, Pb, Cd, Zn, Co, Mo, Cu and Ni) and trace element fractionation, carried out on sediment in eastern and western surface sediment. The X-ray diffraction is applied on the clay fraction. Results salinity section plot shows some clearly recognizable water masses. Clay minerals assemblages have distinctive sources and their dispersal reflects different agents of transport in the eastern Mediterranean Sea. Nutrients show more oligotrophic condition in eastern area. The most important sources of dissolved silicate in the Mediterranean Sea come from the continental fluvial system and from groundwater discharges. Electronic microscopy shows dominance of diatoms, which play an important role in organic matter export to the deep sea. Trace element fractionation differentiates five fractions the forth first fractions constitute bioavailable fraction that is compared to deep water (near sediment water interface). This comparison shows at first the impotence of surface sediment as potential pump of trace element to the water column and the deep influence of continental discharges on surface sediment trace element accumulation and the deep water mainly for Fe, Cu and Co.

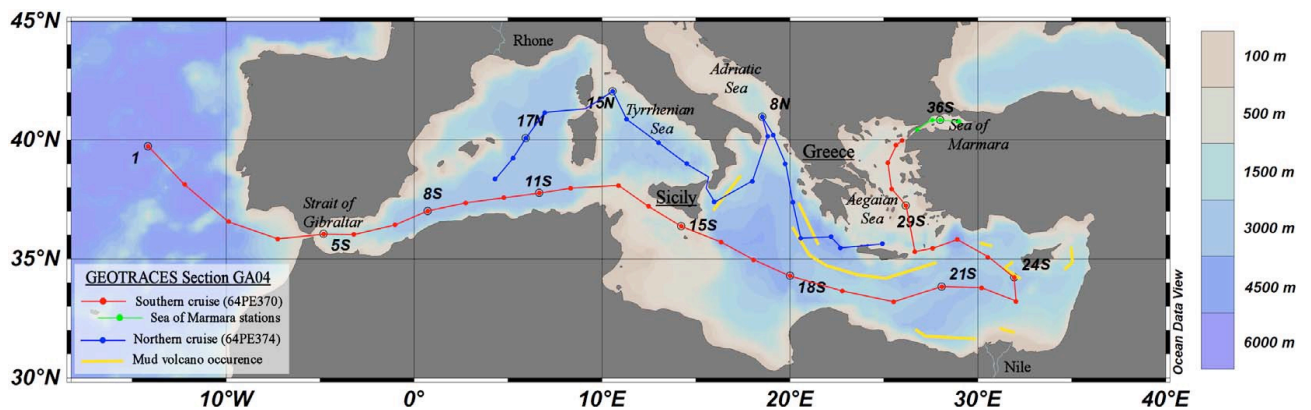


Figure 25. Sampling sites in Mediterranean Sea.

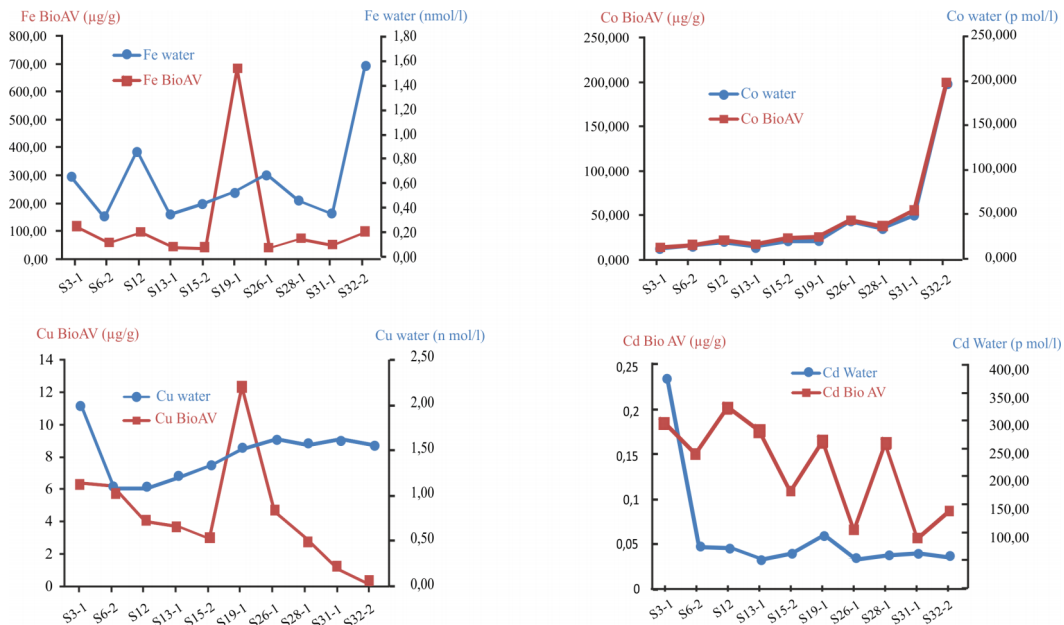


Figure 26. Trace element in deep water and surface sediment bioavailable fraction in Mediterranean sea.

Cruises

- Participation on Med and Black Sea cruise 64PE370.

GEOTRACES presentations in international conferences

- Smart & Intelligent Monitoring, Maintenance & Sustainable Repurposing System For Sealines Sealines Start-Up Action Proposal on Bluemed Project Initiative 28th of March, 2019 First workshop meeting Rosetti Marino Company Group Via Trieste 230, Ravenna Italy.

Nutrients, trace element in Western and Eastern Mediterranean sea surface sediment: environmental variability and anthropogenic footprint Zaaboub et al. Marine Environment Laboratory, National Marine Sciences and Technologies, Tunisia.

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