Goldschmidt 2023 Abstract
https://doi.org/10.7185/gold2023.19381

# Distribution of Particulate Trace Metals along the GEOTRACES GP21 South Pacific Ocean transect

**KATHLEEN J. GOSNELL**[1], DOMINIK JASINSKI[1], EDEL MARY O'SULLIVAN[1], SANDRA POEHLE[2], CHRISTOPHER GALLEY[3], RAINER KIKO[1], ZVI STEINER[1] AND ERIC P. ACHTERBERG[1]

[1]GEOMAR Helmholtz Centre for Ocean Research Kiel
[2]Jacobs University Bremen
[3]University of Ottawa

Presenting Author: kgosnell@geomar.de

Marine particles preform a critical role in the cycling of trace metals in the oceans. Essential biological as well as abiotically associated trace metals are transported from surface waters into the deep ocean via sinking of particles. During transport the metals can be scavenged or desorbed, or remineralized with organic matter, resulting in characteristic indicators of productivity or the lack of. Distributions of trace metals can also be an inference of physical or geological features, such as sediment resuspension, nepheloid layer or hydrothermal vents. Available data on the distributions of particulate trace metals is severely lacking for many oceanic regions, especially in the southern hemisphere. Results will be presented for dynamic particulate trace metals (i.e. Mn, Fe, Co, Ni, Cu and Zn) collected in the Southern Pacific Ocean during the GP21 GEOTRACES cruise (February - April 2022). Both labile and dissolved factions will be examined for the transect. The results will include particle sources along the geologically active Eastern Pacific Rise, as well as the Kermadec Arc and continuing deep sea underwater volcanic system. Impacts of these geological highlights on the strength and supply of trace metals will be assessed against the particle size and distribution measurements collected from the Hydroptic Underwater Vision Profiler throughout the transect.