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Statement of Interest: US GEOTRACES Tahiti-Antarctica-Chile (GP17) section planning workshop

I am interested in participating in the GP17 Planning Workshop as I anticipate writing a proposal (as co-PI with Dr Clifton Buck) to study atmospheric deposition of trace elements and isotopes (TEIs) to the study region as part of the GP17 section. I am an early-career scientist, presently working as a post-doctoral researcher in Dr Buck's research group (expecting to transition to a research professional position later this year) and currently searching for a suitable faculty position.

I anticipate our proposed research to include the collection of both bulk and size-fractionated aerosols, along with wet deposition (rain and snow) samples during the GP17 cruise sections, with subsequent analysis of these samples for key TEIs. This data will be used to determine atmospheric deposition rates and the contribution of atmospheric deposition to surface water TEIs. We will also assess the fractional solubility of aerosol TEIs through the application of various chemical leaches to aerosol subsamples or replicate samples.

Aerosols are a key parameter of GEOTRACES and an essential source of TEIs to the surface ocean. Thus, the collection of aerosols and wet deposition samples along the GP17 cruise sections would be an important component of assessing TEI inputs to the study region. This is of particular importance as there have been relatively few previous measurements of atmospheric deposition of TEIs in the South Pacific and Southern Ocean. Furthermore, the fractional solubility of aerosol TEIs is a poorly constrained but important variable in determining the fate of atmospherically derived TEIs in the surface ocean. This work will contribute to continuing research into understanding the factors influencing variability in aerosol TEI solubility.