

From: Patrick Rafter prafter@uci.edu
Subject: GP17 Workshop: Statement of Interest to attend / receive travel support
Date: January 12, 2020 at 3:44 PM
To: geotraces geotraces@ldeo.columbia.edu

PR

Please accept this letter as my request to receive travel support to attend and participate in the Tahiti-Antarctica-Chile (GP17) section planning workshop. A working title for the measurements I am proposing to make is:

Seawater 14C measurements: valuable for interpreting TEI measurements and quantifying anthropogenic carbon uptake

The transects for the GP-17 cruises provide a good opportunity for initial observations of Trace Elements and their Isotopes (TEIs) in addition to complementary geochemical measurements, such as the 14C of dissolved inorganic carbon (here simply “seawater 14C”). Along the GP17-OCE section, Pacific Deep Water (PDW) will have distinctively low 14C concentrations and seawater 14C measurements would directly complement the 3rd stated goal of the GP-17 OCE cruise (evaluating PDW input of TEIs to the Southern Ocean). Furthermore, the comparison of new seawater 14C measurements with prior work—1991, 2005, & 2014 along the Tahiti-Antarctica “P16S” line and the mid-’90s & mid-2000’s for the southeast Pacific—would be useful for quantifying the rate anthropogenic carbon uptake by the Southern Ocean. I’m hoping to attend the planning workshop to explore these and other potential applications of seawater 14C alongside the planned TEI measurements.

My scientific training and position as a researcher in the Keck Carbon Cycle Laboratory provide me with the experience and equipment to prepare and analyze seawater 14C along the GP17 transects. I also have research in progress (supported by grants from UC Irvine and UC-Mexus) measuring seawater 14C in the eastern tropical North Pacific.

Best,

Patrick

Patrick A. Rafter
Keck Carbon Cycle Laboratory Research Scientist
University of California, Irvine
www.prafter.com
@OceanAndClimate

