

ICMGP 2024
CAPE TOWN • SOUTH AFRICA • 21 - 26 JULY

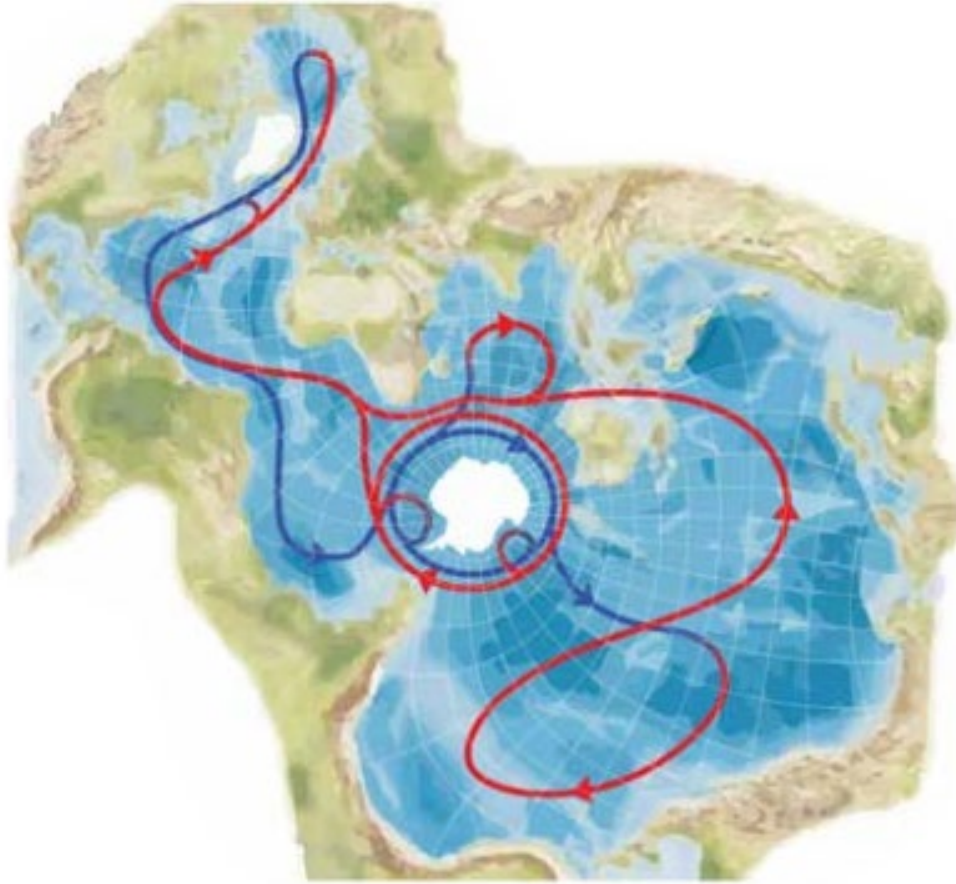
Atmospheric Hg Along a Southern Ocean Transect

Victor Mugabe

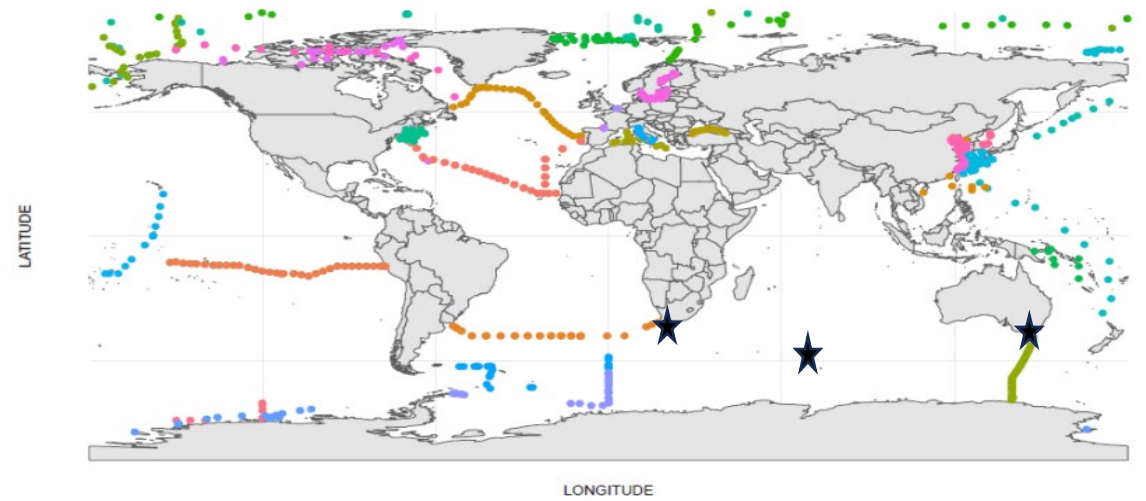
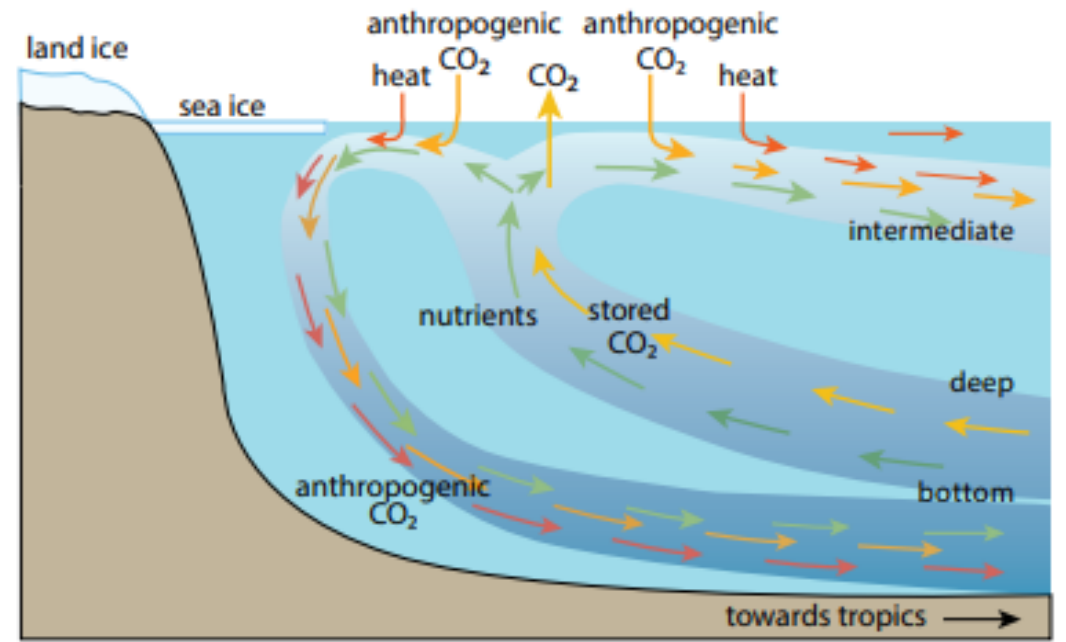
Susanne Fietz, Lynwill Martin, Helene Angot
Casper Labuschagne



Why Southern Ocean?



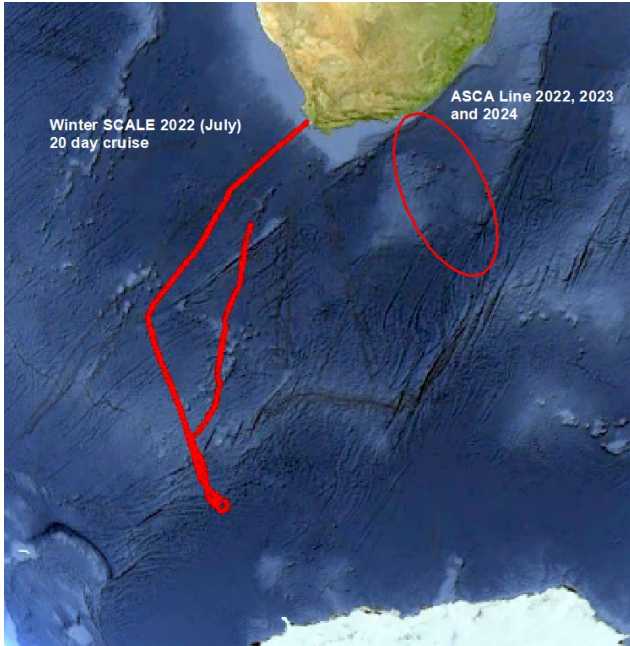
This figure shows the globe viewed under the Spilhaus projection with land on the fringes. Upper layer flow is shown in red and lower layer flow in blue.



Dastoor et al., 2024



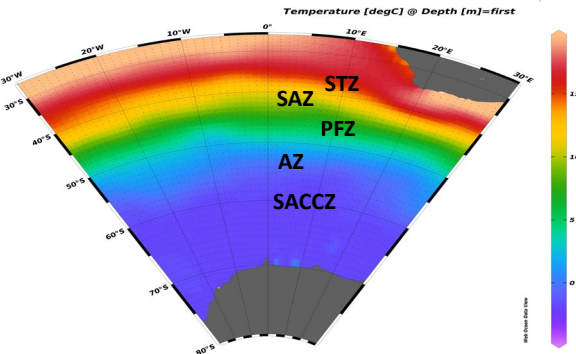
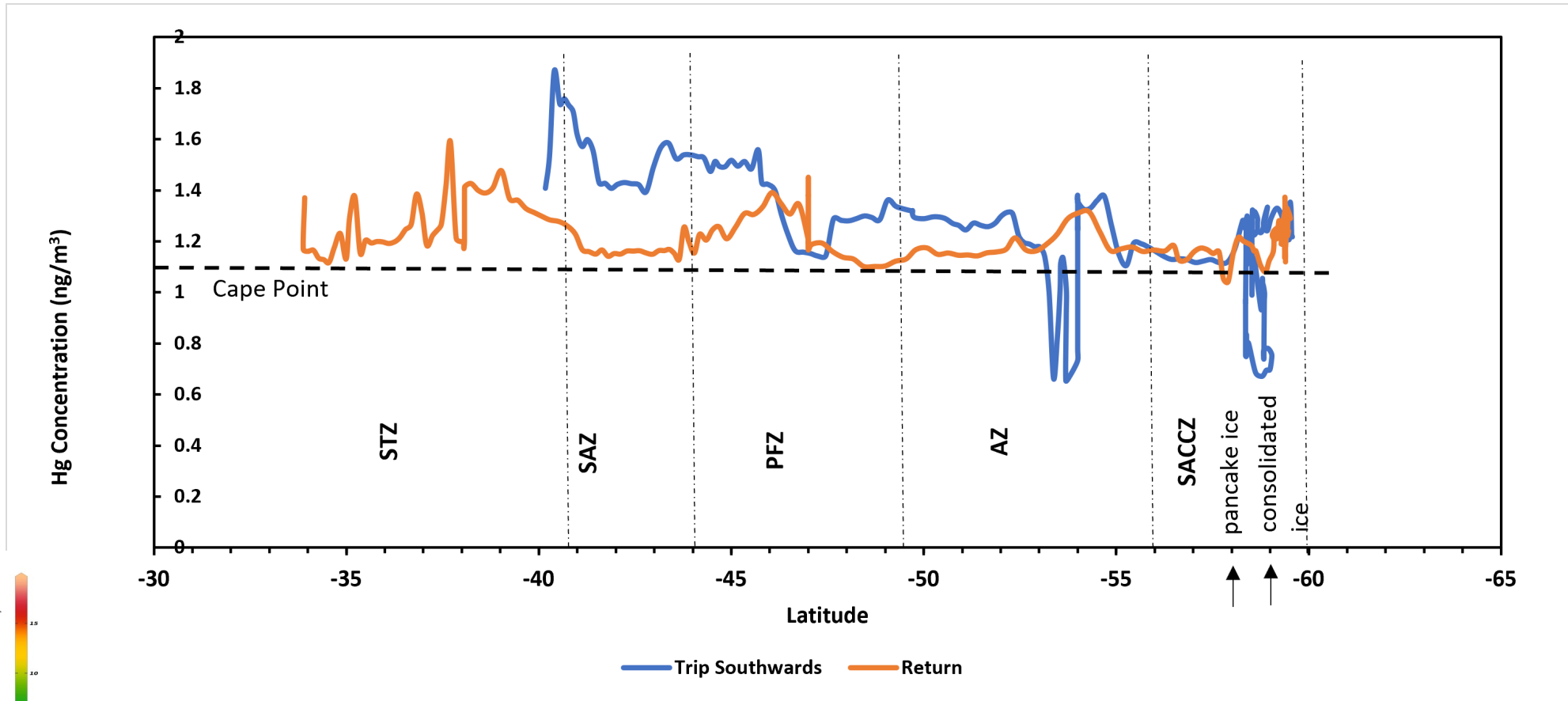
Data Collection



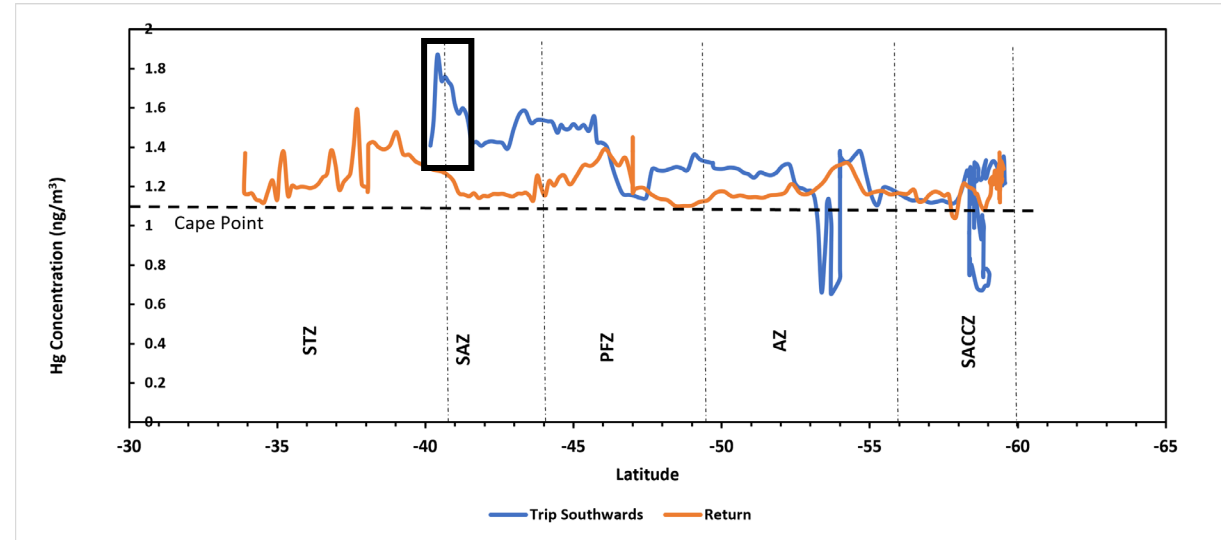
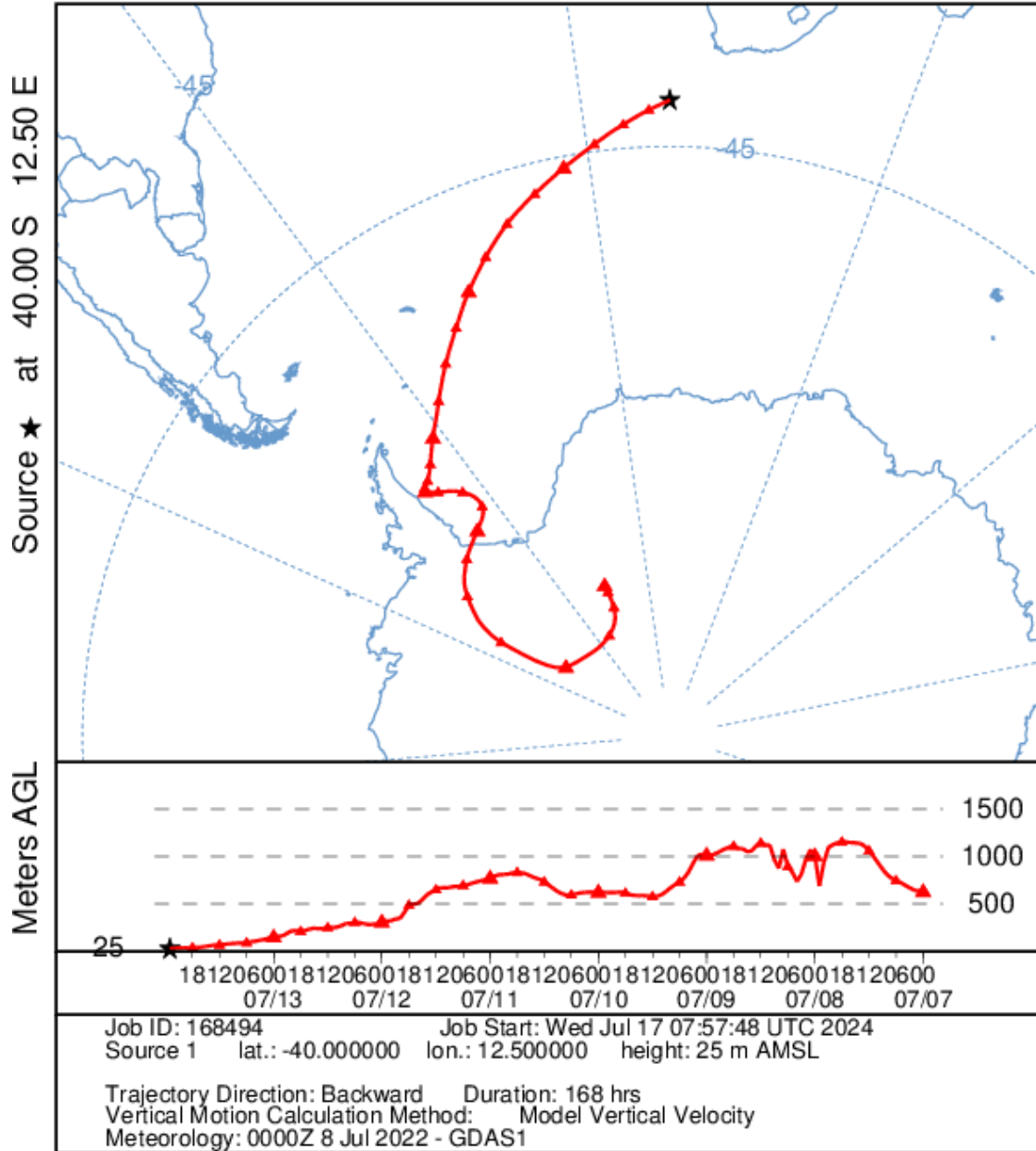
SCALE 2022 Results

Research Aim: Explaining Hg observations in SO in winter.

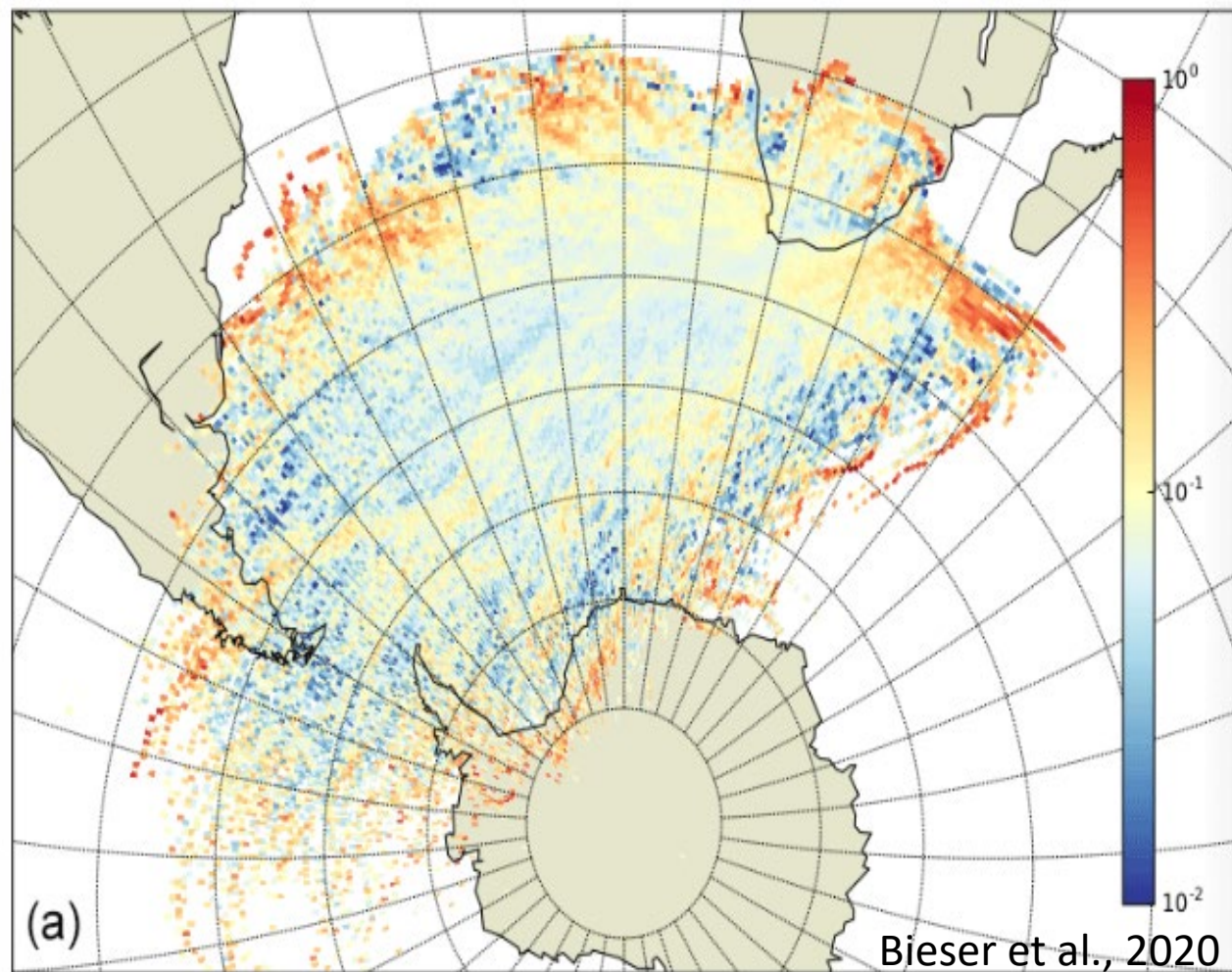
Winter (July 2022)



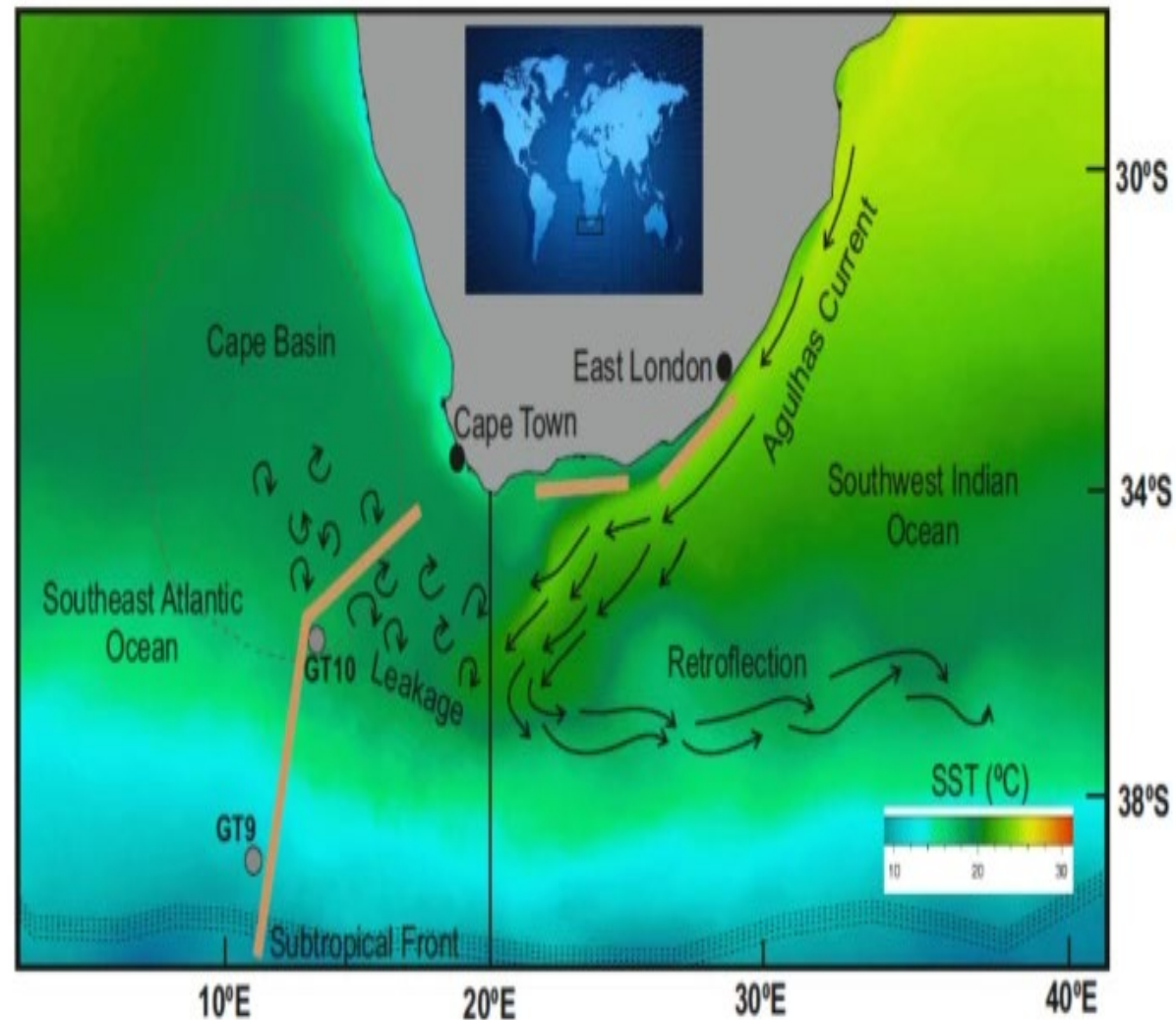
NOAA HYSPLIT MODEL
 Backward trajectory ending at 2300 UTC 13 Jul 22
 GDAS Meteorological Data



Agulhas Current as a possible source of Hg in Atlantic Ocean

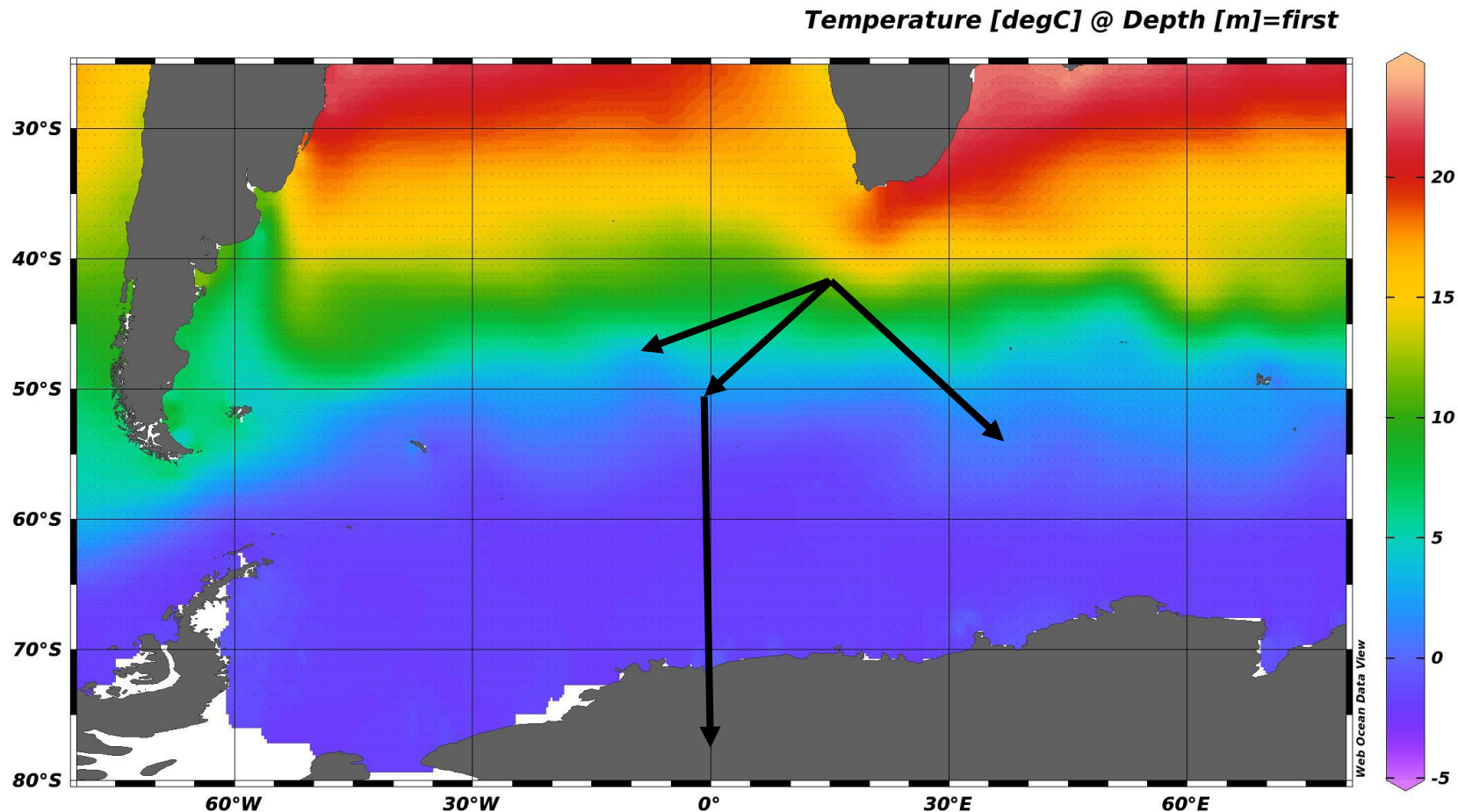


Prevalence of highest (90th percentile) GEM concentrations over 10 years



Samanta et al., 2023

Next SA cruises into the Southern Ocean with planned Hg measurements



South Atlantic/Southern Ocean:
Cape Town - Gough Island
Spring: Sept-Oct 2024

Southern Ocean:
Cape Town – Antarctica
Summer: Dec-Feb 2025

Western South Indian/Southern Ocean:
South Africa – Marion Island
Autumn: April 2024

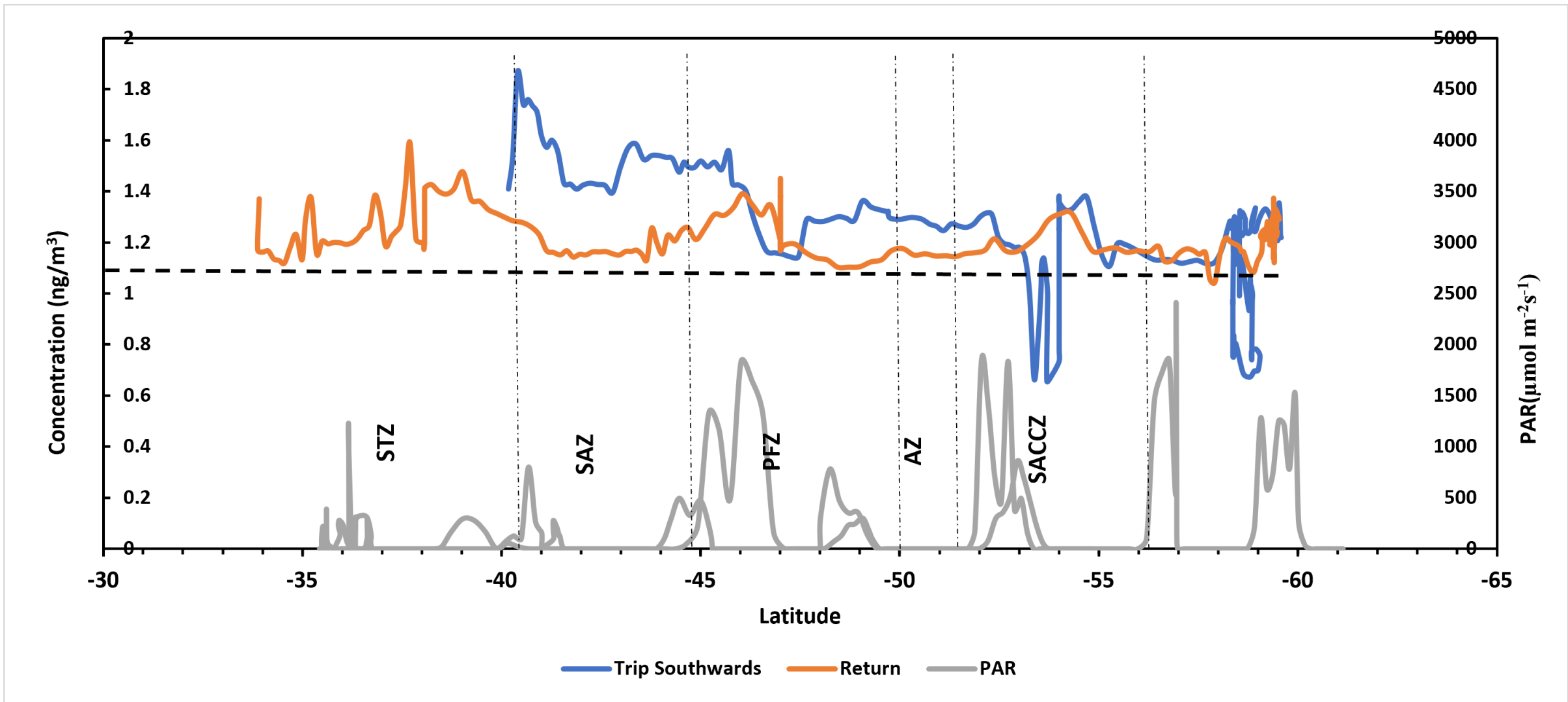
Southern Ocean:
Cape Town – Antarctica
Winter: July 2025

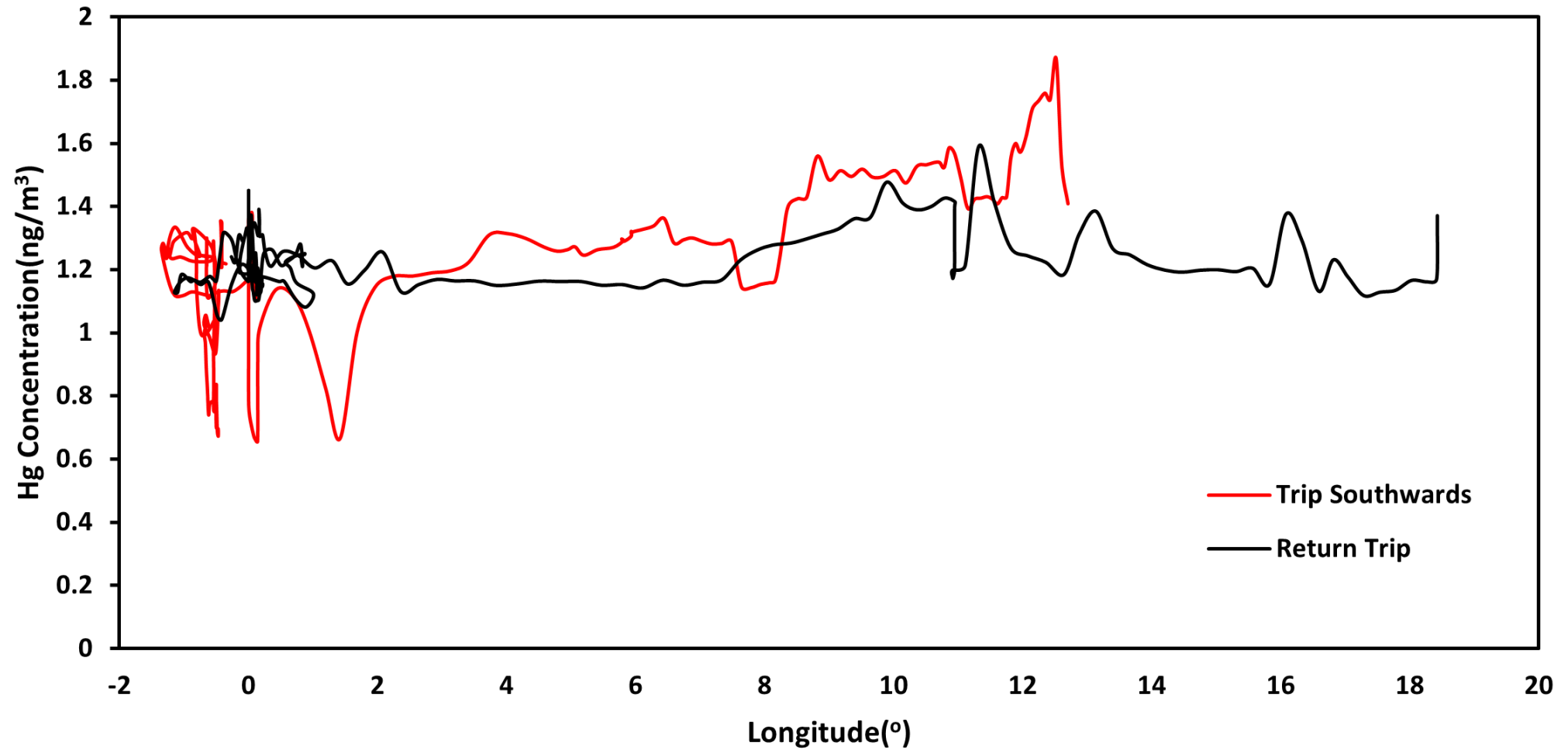
Research Aim: Comparing seasonal variability of atmospheric Hg along a SO transect

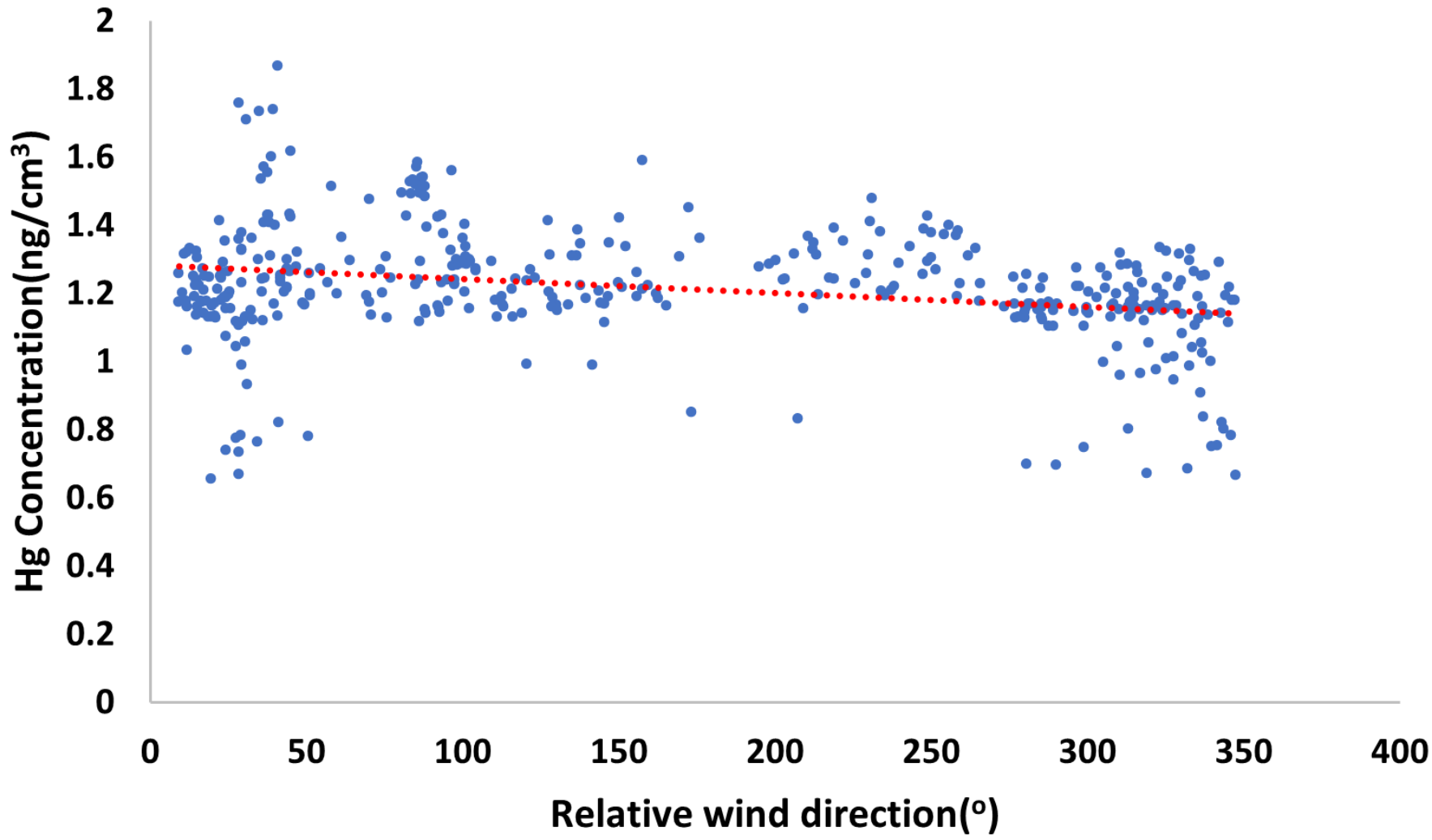


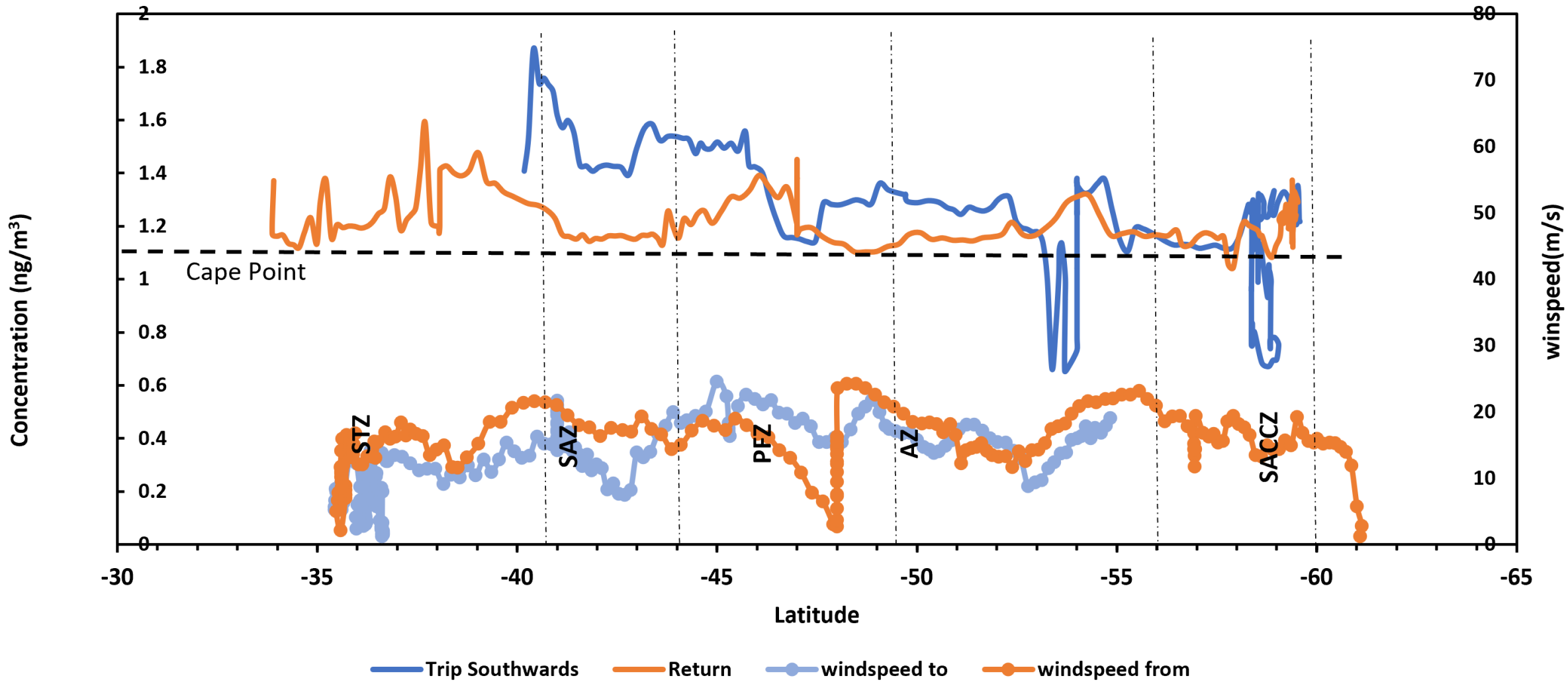
Come and chat with me!











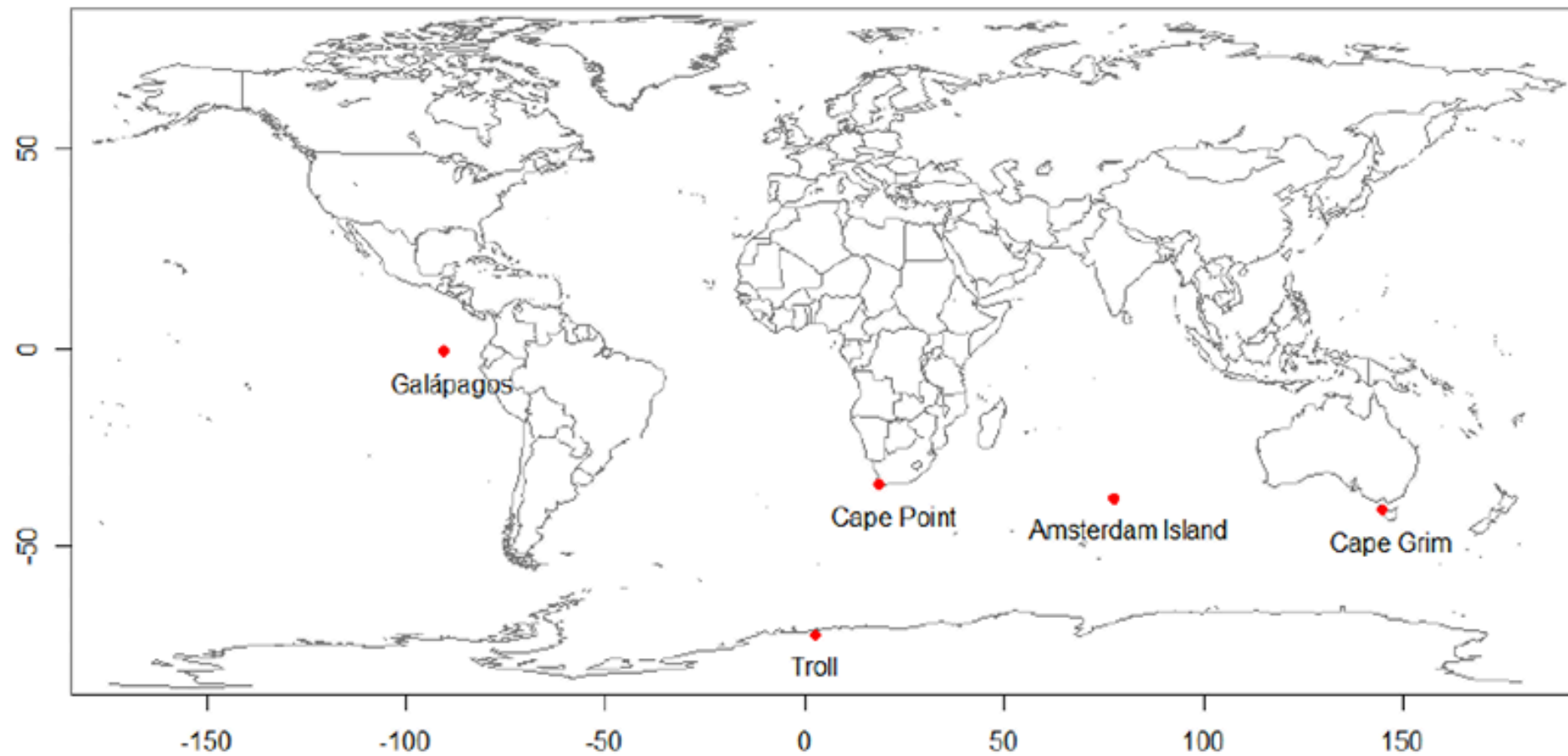


Figure 1. The location of the sites whose data are reported in this paper.