

SOCOM AU1603 K-Axis POC

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Sample collection

Near-surface samples from SOCOM CTD stations were taken for POC analysis. Clean transfer from the niskins (<210 µm to remove zooplankton) to a closed dedicated filtration rig. The samples were size fractionated in: total POC and POC<20 µm. 20% of the filter area was removed for biogenic silica digest. Volume filtered varied from 1 to 2 L, the choice being dependent on CTD transmissometer and underway CO₂ data to achieve maximum loading without blockage. Filters used were Sterlitech 1.2µm silver membrane 13mm diameter.

More information on the cruise are available at:

<https://socom.princeton.edu/content/shipboard-data-reports>

Analysis description

A DOC adsorption blank, to account for contamination and dissolved organic carbon (DOC), was taken during sampling by stacking two filters in the filtration funnels and filtering the sample as normal. The upper filter will be the total (dissolved and particulate) organic carbon and nitrogen sample and the bottom filter will be the DOC adsorption blank. The organic carbon and nitrogen from the DOC adsorption blank was removed from the concentration of the total filters to retrieve particulate organic carbon (POC).

All samples (including blanks) were acidified to get rid of inorganic carbon and nitrogen.

The air-dried filters (60C) were analysed on 30/6/2016 for CTD4 and 6, 11/7/2016 for CTD 44. The decarbonated encapsulated POC samples were analysed by elemental analysis at the Central Science Laboratory, University of Tasmania by Dr Thomas Rodemann (EA TCD 960C, single point standardisation every 12 samples).

Abbreviations

DOC: Dissolved Organic Carbon

POC: Particulate Organic Carbon