SOCCOM AU1603 K-Axis POC

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**Sample collection**

Near-surface samples from SOCCOM 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 1.2um silver membrane 13mm diameter.

More information on the cruise are available at:

<https://soccom.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 CarbonPOC: Particulate Organic Carbon

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METHODS # DO NOT INCLUDE THIS SECTION IN PDF

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Near-surface samples from SOCCOM CTD stations were taken for POC & PON analysis. 1-2 L of sample was filtered in the dark through glass fiber filter (GF/F) having a diameter of 25 mm. Filters were immediately stored in aluminium foil packages in a liquid nitrogen Dewar (-80 ºC).

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**Dry blank method**

A dry blank (unused filter), to account for contamination was also taken at the time of sampling. To account for this contamination the POC and PON extracted from the dry blank was removed from the POC and PON extracted for each sample respectively. Unfortunately, a “wet” blank filter to account for the effect of dissolved organic carbon (DOC) and dissolved organic nitrogen (DON) adsorption was not taken.

**Wet blank method**

A DOC/DON adsorption blank, to account for contamination and dissolved organic carbon (DOC) and nitrogen (DON), 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/DON adsorption blank. The organic carbon and nitrogen from the DOC/DON adsorption blank was removed from the concentration of the total filters to retrieve particulate organic carbon (POC) and nitrogen (PON).

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).

Analysis were performed Nov 7, 2017 by Georges Paradis ([georges.paradis@ucsb.edu](mailto:georges.paradis@ucsb.edu)) following the method described at <http://msi.ucsb.edu/services/analytical-lab/chn-analysis>.

Analysis were performed by Dr Thomas Rodemann at the Central Science Laboratory, University of Tasmania, using a Thermo Finnigan EA 1112 Series Flash Elemental Analyser, following the method described at:

<http://www.utas.edu.au/research/central-science-laboratory/facilities/elemental-analyser>

Samples were shipped and analyzed at UCSB.

POH: Particulate Organic Hydrogen