



[Ocean Acidification Data Stewardship \(OADS\) Project](#)

NO-SOOP-Tukuma Arctica; ICOS

INVESTIGATOR(S):

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ABSTRACT: Underway surface measurements of pCO₂ taken from Tukuma Arctica

CITE AS:

IDENTIFICATION INFORMATION FOR THIS DATA PACKAGE:

NCEI ACCESSION:
NCEI DOI:
EXPCODE: 26RA20230610;
CRUISE ID:
SECTION/LEG:

TYPES OF STUDY:

Surface Underway;
 Surface underway;

TEMPORAL COVERAGE:

START DATE: 2023-06-12 END DATE: 2023-06-18

SPATIAL COVERAGE:

NORTH BOUNDARY: 65.027
 WEST BOUNDARY: -38.526 EAST BOUNDARY: 5.881
 SOUTH BOUNDARY: 57.848

GEOGRAPHIC NAMES:

PLATFORMS:

Tukuma Arctica (ID (ICES): 26RA);

RESEARCH PROJECT(S):

VARIABLES / PARAMETERS:

fCO₂_water_SST_wet [uatm]

Name: fCO₂ [uatm]
Dataset Variable Name: fCO₂_water_SST_wet [uatm]
Units: uatm
Observation type: Surface Underway
In-situ / Manipulation / Response variable: IN_SITU
Location of seawater intake: Midship
Depth of seawater intake: 5
Analyzing instrument: General Oceanics GO pCO₂ system
Equilibrator type: two stage showerhead (main equilibrator with water-jacket)
Equilibrator volume: 2.5 main, 0.5 vent
Is the equilibrator vented or not: true
Water flow rate: 2.5 - 3.5
Gas flow rate: 0.08
SEA CO₂ gas detector manufacturer: Licor
SEA CO₂ gas detector model: 6262

SEA CO₂ gas detector resolution: 0.2
SEA CO₂ gas detector uncertainty: 1
Standardization technique: Linearized by the manufacturer, regular calibration with 1 zero and 3 non-zero reference gases
Standardization frequency: every 3 hours
Water vapor correction method: 100% humidity at equilibrator temperature
At what temperature was pCO₂ reported: Equilibrator and SST
Uncertainty: 2
Quality flag convention: yes

pCO₂_water_SST_wet [uatm]

Name: pCO₂ [uatm]
Dataset Variable Name: pCO₂_water_SST_wet [uatm]
Units: uatm
Observation type: Surface Underway
In-situ / Manipulation / Response variable: IN_SITU
Location of seawater intake: Midship
Depth of seawater intake: 5
Analyzing instrument: General Oceanics GO pCO₂ system
Equilibrator type: two stage showerhead (main equilibrator with water-jacket)
Equilibrator volume: 2.5 main, 0.5 vent
Is the equilibrator vented or not: true
Water flow rate: 2.5 - 3.5
Gas flow rate: 0.08
SEA CO₂ gas detector manufacturer: Licor
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Standardization frequency: every 3 hours
Water vapor correction method: 100% humidity at equilibrator temperature
At what temperature was pCO₂ reported: Equilibrator and SST
Uncertainty: 2
Quality flag convention: yes

xCO₂ in atmosphere [umol mol-1]

Name: xCO₂ in atmosphere [umol mol-1]
Dataset Variable Name: xCO₂ in atmosphere [umol mol-1]
Units: uatm
Observation type: Surface Underway
In-situ / Manipulation / Response variable: IN_SITU
Location of seawater intake: Midship
Depth of seawater intake: 5
Analyzing instrument: General Oceanics GO pCO₂ system
Equilibrator type: two stage showerhead (main equilibrator with water-jacket)
Equilibrator volume: 2.5 main, 0.5 vent

Is the equilibrator vented or not: true
Water flow rate: 2.5 - 3.5
Gas flow rate: 0.08
SEA CO2 gas detector manufacturer: Licor
SEA CO2 gas detector model: 6262
SEA CO2 gas detector resolution: 0.2
SEA CO2 gas detector uncertainty: 1
Standardization technique: Linearized by the manufacturer, regular calibration with 1 zero and 3 non-zero reference gases
Standardization frequency: every 3 hours
Water vapor correction method: 100% humidity at equilibrator temperature
At what temperature was pCO2 reported: Equilibrator and SST
Uncertainty: 2
Quality flag convention: yes

pCO2 in atmosphere [uatm]

Name: pCO2 in atmosphere [uatm]
Dataset Variable Name: pCO2 in atmosphere [uatm]
Units: uatm
Observation type: Surface Underway
In-situ / Manipulation / Response variable: IN_SITU
Location of seawater intake: Midship
Depth of seawater intake: 5
Analyzing instrument: General Oceanics GO pCO2 system
Equilibrator type: two stage showerhead (main equilibrator with water-jacket)
Equilibrator volume: 2.5 main, 0.5 vent
Is the equilibrator vented or not: true
Water flow rate: 2.5 - 3.5
Gas flow rate: 0.08
SEA CO2 gas detector manufacturer: Licor
SEA CO2 gas detector model: 6262
SEA CO2 gas detector resolution: 0.2
SEA CO2 gas detector uncertainty: 1
Standardization technique: Linearized by the manufacturer, regular calibration with 1 zero and 3 non-zero reference gases
Standardization frequency: every 3 hours
Water vapor correction method: 100% humidity at equilibrator temperature
At what temperature was pCO2 reported: Equilibrator and SST
Uncertainty: 2
Quality flag convention: yes

fCO2 in atmosphere [uatm]

Name: fCO2 in atmosphere [uatm]
Dataset Variable Name: fCO2 in atmosphere [uatm]
Units: uatm
Observation type: Surface Underway

In-situ / Manipulation / Response variable: IN_SITU
Location of seawater intake: Midship
Depth of seawater intake: 5
Analyzing instrument: General Oceanics GO pCO2 system
Equilibrator type: two stage showerhead (main equilibrator with water-jacket)
Equilibrator volume: 2.5 main, 0.5 vent
Is the equilibrator vented or not: true
Water flow rate: 2.5 - 3.5
Gas flow rate: 0.08
SEA CO2 gas detector manufacturer: Licor
SEA CO2 gas detector model: 6262
SEA CO2 gas detector resolution: 0.2
SEA CO2 gas detector uncertainty: 1
Standardization technique: Linearized by the manufacturer, regular calibration with 1 zero and 3 non-zero reference gases
Standardization frequency: every 3 hours
Water vapor correction method: 100% humidity at equilibrator temperature
At what temperature was pCO2 reported: Equilibrator and SST
Uncertainty: 2
Quality flag convention: yes

xCO2 In Water - Calibrated In Dry Air [umol mol-1]

Name: xCO2 In Water - Calibrated In Dry Air [umol mol-1]
Dataset Variable Name: xCO2 In Water - Calibrated In Dry Air [umol mol-1]
Units: uatm
Observation type: Surface Underway
In-situ / Manipulation / Response variable: IN_SITU
Location of seawater intake: Midship
Depth of seawater intake: 5
Analyzing instrument: General Oceanics GO pCO2 system
Equilibrator type: two stage showerhead (main equilibrator with water-jacket)
Equilibrator volume: 2.5 main, 0.5 vent
Is the equilibrator vented or not: true
Water flow rate: 2.5 - 3.5
Gas flow rate: 0.08
SEA CO2 gas detector manufacturer: Licor
SEA CO2 gas detector model: 6262
SEA CO2 gas detector resolution: 0.2
SEA CO2 gas detector uncertainty: 1
Standardization technique: Linearized by the manufacturer, regular calibration with 1 zero and 3 non-zero reference gases
Standardization frequency: every 3 hours
Water vapor correction method: 100% humidity at equilibrator temperature
At what temperature was pCO2 reported: Equilibrator and SST
Uncertainty: 2
Quality flag convention: yes

Sea surface temperature

Dataset Variable Name: SST
Units: °C
Observation type: Surface underway
Variable Type: IN_SITU
Analyzing instrument: Seabird SBE38
Uncertainty: 0.001
Quality flag convention: yes

Salinity

Dataset Variable Name: SSS
Units: PSU
Observation type: Surface underway
Variable Type: IN_SITU
Analyzing instrument: Salinity not immediately available. As salinity has only very minor effect on the fCO₂ calculation (through pH₂O), we use a constant salinity of 35 for this Socat submission. We consider this as the better solution compared to publishing possibly biased salinity data here.
Quality flag convention: yes

DATA PACKAGES RELATED TO THIS ONE:**PUBLICATIONS DESCRIBING THIS DATA SET:****ADDITIONAL INFORMATION:****FUNDING Information:**

- Research Council of Norway
PROJECT TITLE: ICOS-2
PROJECT ID: 296012

SUBMITTED BY: Steve D Jones (steve.jones@uib.no)

SUBMISSION DATE:

REVISION DATE:

PREVIOUS VERSIONS: