

Cruise ID: 49WA20160714 (WK1607)

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- Dataset Info:

- Dataset ID: 49WA20160714.csv
- Funding Info: Global Environment Research Account for
National Institutes by the Ministry of Environment,
Japan

- Submission Dates:
 - Initial Submission: 2017/1/14
 - Revised Submission:
- Cruise Info:
 - Survey/Experiment Type: Research Cruise
 - Survey/Experiment Name: WK1607
 - Cruise ID: 49WA20160714
 - Section:
 - Geographical Coverage:
 - Geographical Region: western North Pacific
 - Ports of Call: Shiogama
 - Bounds:
 - Westernmost Longitude:
 - +141.2 Degrees, Minutes, Seconds: E
 - Easternmost Longitude:
 - +147.3 Degrees, Minutes, Seconds: E
 - Northernmost Latitude: +42.9 Degrees, Minutes, Seconds: N
 - Southernmost Latitude:
 - +36.8 Degrees, Minutes, Seconds: N
 - Temporal Coverage:
 - Start Date: 2016/7/14
 - End Date: 2016/7/24
 - Vessel:
 - Vessel Name: Wakataka-maru
 - Vessel ID: 49WA
 - Country: Japan
 - Vessel Owner: Fisheries Research and Education Agency

- Variables Info:

- Variable:

- Variable Name: XCO2_EQ
 - Description of Variable: umol/mol
 - Variable Name: XH2O_EQ
 - Description of Variable: mmol/mol
 - Variable Name: EQ_PRE
 - Description of Variable: hPa
 - Variable Name: EQ_TMP
 - Description of Variable: deg C
 - Variable Name: SST
 - Description of Variable: deg C
 - Variable Name: SSS
 - Description of Variable: no unit
 - Variable Name: ATM_PRE
 - Description of Variable: hPa

- Method Description:

- Sampling and Equilibrator Design:

- Depth of sea water intake: 5m
 - Location of sea water intake: Bottom of ship
 - Equilibrator type: menbrane equilibrator
 - Equilibrator volume:0.4 L
 - Water_Flow_Rate: 2.0 L/min
 - Headspace_Gas_Flow_Rate:100 ml/min
 - Vented: No
 - Drying method for CO2 in water:
 - electronic dehumidifier DH109C
 - Additional information:

- System Design:

- Measurement Method: automated version of Saito et al. [1995]

- Manufacturer of Calibration Gas: Nissan-Tanaka Co. Ltd.
- CO₂ Sensor:
 - Measurement Method: NDIR
 - Manufacturer: Li-COR
 - Model: LI-6262
 - Environmental Control:
 - xCO₂ value submitted are corrected for xH₂O by sensor's program
 - Frequency: every 1 min
 - Precision of CO₂water: xCO₂ 1.6 umol/mol
 - Precision of CO₂air:
 - Accuracy of CO₂water: xCO₂ 1.6 umol/mol
 - Accuracy of CO₂air:
 - CO₂ Sensor Calibration:
 - LI-6262 was calibrated at factory on Feb. 2012. CO₂ concentration in standard gas cylinder was calibrated once at purchasing against NIES standard gas cylinder, which are traceable to WMO scale
 - Manufacture of CO₂ Calibration gases: Nissan Tanaka Co. LTD., 0ppm and 450 ppm
 - Method References: Saito et al., A compact seawater pCO₂ measurement system with membrane equilibrator and nondispersive infrared gas analyzer, Deep-Sea Res., 42, 2025-2033, 1995
- CO₂ in Marine Air:
 - Measurement:
 - Location and Height:
 - Sea surface Temperature:

- Location: bottom of ship, just after the bottom seawater intake
- Manufacturer: JFE Advantec.
- Model: ACT-RS
- Accuracy: 0.02 deg C
- Precision: 0.02 deg C
- Calibration: last calibrated on 2015/02/16 at FRA lab., against JMO standard scale mercury thermometer
- Other comments:
- Sea surface Salinity:
- Location: branched just in front of water intake of equilibrator
- Manufacturer: Sea-Bird
- Model: SBE45
- Accuracy: 0.005
- Precision: 0.003
- Calibration: last calibrated on Jan. 2012 in manufacture factory
- Other comments:
- Equilibrator Temperature:
- Location: midst of equilibrator vessel
- Manufacturer: Rikagaku-kogyo Inc.
- Model: platinum resistance thermometer sensor, grade Pt100
- Accuracy: 0.15 deg C
- Precision: 0.15 deg C
- Calibration: last calibrated on 2015/12/9 at FRA lab., against JMO standard scale mercury thermometer
- Other comments:
- Equilibrator Pressure:

- Location: just after air outlet from equilibrator
- Manufacturer: Nagano Keiki
- Model: GC30 Digital Differential Pressure
- Gauge
- Accuracy: 0.1 hPa
- Precision: 0.1 hPa
- Calibration: last calibrated on 2015/12/9 at FRA lab., against Water pressure Gauge
- Other comments:
- Atmosphere Pressure:
 - Location: just right side of equilibrator
 - Manufacturer: T&D Co. LTD.
 - Model: TR-73U
 - Accuracy: 0.15hPa
 - Precision: 0.15hPa
 - Calibration: last calibrated on Nov.25 2011 at FRA lab. against JMA-calibrated aneroid barometer
 - Other comments: pCO₂ system is settled in CTD room and open to atmosphere
- Other sensors:
 - Manufacturer:
 - Model:
 - Resolution:
 - Uncertainty:
 - Calibration:
 - Other comments:
- Accuracy Info:
- Method References:
 - Method References:
 - Data Set References:
 - Additional Information:

- Citation:
- Measurement of Calibration Report:
- Measurement Type: underway measurement underway
data underway measurements
- Metadata Source: