Dataset Expocode	**49HH20101217**
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Dataset	**Funding Info:** **Initial Submission (yyyymmdd):** 20160131 **Revised Submission (yyyymmdd):**
Campaign/Cruise	**Expocode:** 49HH20101217 **Campaign/Cruise Name:** KH-10-7 **Campaign/Cruise Info:** **Platform Type:** **CO2 Instrument Type:** Equilibrator-IR or CRDS or GC **Survey Type:** Research Cruise **Vessel Name:** R/V Hakuho Maru **Vessel Owner:** Japan Agency for Marine-Earth Science and Technology **Vessel Code:** 49HH
Coverage	**Start Date (yyyymmdd):** 20101217 **End Date (yyyymmdd):** 20110117 **Westernmost Longitude:** 37.88 E **Easternmost Longitude:** 111.43 E **Northernmost Latitude:** 24.54 S **Southernmost Latitude:** 64.47 S **Port of Call:** Port Louis, Mauritius **Port of Call:** Fremantle, Australia
Variable	**Name:** CRUISE **Unit:** **Description:**
Variable	**Name:** DATE **Unit:** **Description:** Observation date (mm-dd-yyyy)
Variable	**Name:** TIME **Unit:** **Description:** Observation time (hh:mm)
Variable	**Name:** LATITUDE **Unit:** **Description:** Latitude (degrees north)
Variable	**Name:** LONGITUDE **Unit:** **Description:** Longitude (degrees east)
Variable	**Name:** XCO2_AIR

Unit: micro mol/mol
Description: Mole fraction of CO2 in ambient atmosphere in dry air

Variable
Name: XCO2_AIR_FLAG
Unit:
Description: 2: Acceptable, 3:Questionable, 4: Bad, 9: Not measured with missing value "-999" on the left.

Variable
Name: XCO2_EQ
Unit: micro mol/mol
Description: Mole fraction of CO2 in air from equilibrator in dry air

Variable
Name: XCO2_EQ_FLAG
Unit:
Description:

Variable
Name: PRS_ATM
Unit: hPa
Description:

Variable
Name: PRS_ATM_FLAG
Unit:
Description: 2: Acceptable, 3:Questionable, 4: Bad, 9: Not measured with missing value "-999" on the left.

Variable
Name: PRS_EQ
Unit:
Description: Atmospheric pressure at equilibrator

Variable
Name: PRS_EQ_FLAG
Unit:
Description: 2: Acceptable, 3:Questionable, 4: Bad, 9: Not measured with missing value "-999" on the left.

Variable
Name: TMP_EQ
Unit: DEG_C
Description: Temperature at equilibration

Variable
Name: TMP_EQ_FLAG
Unit:
Description: 2: Acceptable, 3:Questionable, 4: Bad, 9: Not measured with missing value "-999" on the left.

Variable
Name: SST
Unit:
Description: In situ sea surface temperature

Variable
Name: SST_FLAG
Unit:
Description: 2: Acceptable, 3:Questionable, 4: Bad, 9: Not measured with missing value "-999" on the left.

Variable
Name: SSS
Unit: PSU
Description: Sea surface salinity

Variable
Name: SSS_FLAG
Unit:

	Description: 2: Acceptable, 3:Questionable, 4: Bad, 9: Not measured with missing value "-999" on the left.
Sea Surface Temperature	**Location:** The seachest located ca.5 m below the sea level **Manufacturer:** Murayama Denki Ltd. **Model:** RK(C) **Accuracy:** (°C if units not given) **Precision:** 0.1 (°C if units not given) **Calibration:** NIST-traceable calibration applying over the entire range. **Comments:**
Sea Surface Salinity	**Location:** Near equilibrator **Manufacturer:** JFE Advantech Co., LTd. **Model:** ACT20-D **Accuracy:** 0.15 **Precision:** 0.001 **Calibration:** pss78. Calibrated using standard seawater provided by Ocean Scientific International Ltd. **Comments:**
Atmospheric Pressure	**Location:** Near the upper deck of the ship, 13 m above the sea surface **Normalized to Sea Level:** yes **Manufacturer:** Ogasawara Keiki Co., Ltd. **Model:** 5840-A710 **Accuracy:** (hPa if units not given) **Precision:** (hPa if units not given) **Calibration:** **Comments:**
Atmospheric CO2	**Measured/Frequency:** Yes, every 2 hours. **Intake Location:** Mounted on the tip of pole on the upper deck, 15 m above the sea surface **Drying Method:** **Atmospheric CO2 Accuracy:** 0.1ppm **Atmospheric CO2 Precision:**
Aqueous CO2 Equilibrator Design	**System Manufacturer:** Nippon ANS Co. **Intake Depth:** 5 **Intake Location:** The seachest **Equilibration Type:** Shower head **Equilibrator Volume (L):** 0.85 (air), 6.5 (seawater) **Headspace Gas Flow Rate (ml/min):** 500 **Equilibrator Water Flow Rate (L/min):** 5 **Equilibrator Vented:** Yes **Equilibration Comments:** **Drying Method:** magnesium perchlorate, > 99% dry
Aqueous CO2 Sensor Details	**Measurement Method:** IR **Method details:** **Manufacturer:** LI-COR Corporate **Model:** LI-6252 **Measured CO2 Values:** xCO2(dry) **Measurement Frequency:** evely 10 min, except during calibration routines **Aqueous CO2 Accuracy:** 1ppm **Aqueous CO2 Precision:** **Sensor Calibrations:**

Calibration of Calibration Gases: Mooring
Number Non-Zero Gas Standards: 4
Calibration Gases:
Japan Fine Products Co., Ltd. (Japan)
4 cylinders
270 - 440 micro mol/mol
Every 2 hours.
Comparison to Other CO2 Analyses:
Comments:
Method Reference:
Inoue, H.Y., 2000. CO2 exchange between the atmosphere and the ocean: carbon cycle studies of the Meteorological Research Institute since 1968. In: Handa, N., et al. (Eds.), Dynamics and Characterization of Marine Organic Matter. Terra Scientific Publishing Co., Tokyo, pp. 509–531

Equilibrator Temperature Sensor

Location: At the top in the equilibrator
Manufacturer: THERMOTEX CO LTD
Model: Pt100
Accuracy: (°C if units not given)
Precision: (°C if units not given)
Calibration: NIST-traceable calibration applying over the entire range.
Comments:

Equilibrator Pressure Sensor

Location: At the top in the equilibrator
Manufacturer: GE Druck
Model: LPM8381
Accuracy: (hPa if units not given)
Precision: (hPa if units not given)
Calibration:
Comments:

Additional Information

Suggested QC flag from Data Provider: NA
Additional Comments:
Citation for this Dataset:
Other References for this Dataset: