(* =mandatory field)
- **Investigator**:**(-)**
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- **Dataset_Info**:**(-)**
  - o Dataset_ID*:   TAO155W_0_Nov97_Jun05
  - o **Submission_Dates**:**(-)**
    - ▪ Initial_Submission: 20060509   (YYYYMMDD)
    - ▪ Revised_Submission: (YYYYMMDD)
- **Cruise_Info**:**(-)**
  - o **Experiment**:**(-)**
    - ▪ Experiment_Name*:
    - ▪ **Cruise**:**(-)**
      - ▪ Cruise_ID: (EXPOCODE)
      - ▪ Section: (Leg)
      - ▪ **Geographical_Coverage**:**(-)**
        - ▪ Geographical_Region:
        - ▪ **Bounds**:**(-)**
          - ▪ Westernmost_Longitude:
            Enter decimal fractions of degrees: -155 (+ = E, - = W)
            or Degrees, Minutes, Seconds:
          - ▪ Easternmost_Longitude:
            Enter decimal fractions of degrees:
            or Degrees, Minutes, Seconds:
          - ▪ Northernmost_Latitude:
            Enter decimal fractions of degrees: 0 (+ = N, - = S)
          - ▪ Southernmost_Latitude:
            Enter decimal fractions of degrees:
      - ▪ **Temporal_Coverage**:**(-)**
        - ▪ Start_Date: 19971114   (YYYYMMDD)
        - ▪ End_Date: 20050602   (YYYYMMDD)
  - o **Vessel**:**(-)**
    - ▪ Vessel_Name:
    - ▪ Vessel_ID:
    - ▪ Country:
    - ▪ Vessel_Owner:

Platform Identifier: Mooring
Mooring Location
Longitude: Enter decimal fractions of degrees: -155 (+ = E, - = W)
Latitude: Enter decimal fractions of degrees: 0 (+ = N, - = S)
Start_Date: 19971114   (YYYYMMDD)
End_Date: 20050602   (YYYYMMDD)

- **Variables_Info**:***(-)**
  - o **Variable:(-)**
    - ▪ Variable_Name*****: (show pick list)
    - ▪ Description_of_Variable: (E.g., in dry air)

**General notes:

- All measurements are at sea surface temperature and atmospheric pressure.

- This data sets covered many deployments and the system was calibrated before and after each deployment. There were periods when the system did not function properly resulting in a data gap until the next deployment. The dates of buoy recovery and deployment are shown below:

Date deployed	Date recovered
97 11 14	98 06 10
98 06 11	98 06 12
98 06 14	98 08 27
98 10 28	98 11 02
98 11 03	99 07 08
99 07 09	99 10 27
99 10 27	00 06 23
00 06 23	00 10 21
00 10 22	01 06 06
01 06 07	01 10 04
01 10 05	02 06 06
02 06 07	02 10 11
02 10 12	03 06 17
03 06 18	03 10 23
03 10 24	04 06 25
04 06 25	04 11 02
04 11 03	05 06 16

- During the equilibration cycle, a closed loop of air equilibrates with seawater for 10 minutes. Once the equilibration period is complete, the pump stops and the system opens to the atmosphere allowing the pressure to equilibrate with atmospheric pressure before the measurement is made.

- During the air cycle, fresh air is pumped through the detector for 1 minute. Once the pump stops, the system opens to the atmosphere allowing the pressure to equilibrate with atmospheric pressure before the measurement is made.

- The gas streams for both the air cycle and equilibrator cycle are partially dried before entering the detector. The marine air runs the reference cell and the equilibrated air runs through the sample cell. The Licor is directly reading the delta pCO2.

- Sampling occurs every 3 hours. Data are transmitted back daily.

- As a final step in the QC process, each data set is compared with the Marine Boundary Layer data from GlobalView-CO2.

GLOBALVIEW-CO 2: Cooperative Atmospheric Data Integration Project - Carbon Dioxide. CD-ROM, NOAA CMDL, Boulder, Colorado [Also available on Internet via anonymous FTP to ftp.cmdl.noaa.gov, Path: ccg/co2/GLOBALVIEW], 2005

Measured Information: (Variable Name/Description)
$dpCO_2$ – Difference of the partial pressure of the CO_2 in seawater and the partial pressure of the CO_2 in air (pCO_2 SW - pCO_2 Air).

- **Method_Description:*(-)**
  - **Equilibrator_Design:(-)**
    - Equilibrator_Type: (show pick list)   Bubble Equilibrator
    - Equilibrator_Volume: (L)   N/A
    - Water_Flow_Rate: (L/min)   N/A
    - Headspace_Gas_Flow_Rate: (L/min)   ~600 cc/min
    - Vented: (show pick list)   Yes
  - Measurement_Method: Dual-cell, non-dispersive infrared (NDIR) gas analyzer

  - Manufacturer_of_Calibration_Gas: NOAA CMDL (now Earth System Research Laboratory (ESRL)

  - **CO_2_Sensors:(-)**
    - **CO_2_Sensor:(-)**
      - Manufacturer: Licor
      - Model: Environmental_Control: LI-6252
      - Resolution: 0.01 ppm
      - Uncertainty: ± 1 ppm at 350ppm, 3 ppm maximum (stated)
      - CO_2_Sensor_Calibration: (For each calibration gas, document traceability to an internationally recognized scale, including date and place of last calibration. Include uncertainty of assigned value.)

        The LiCor 6252 is calibrated before each deployment with ranges of reference gases from CDML. CMDL standards are traceable to WMO x93 scale with a stated reproducibility of 0.06 micromole/mole.   That calibration is presumed to hold for the duration of the deployment. Because we are measuring a delta pCO_2 and not absolute values, an electronic noise or other variability would effect both cells equally and errors would cancel. After recovery, the calibration is confirmed in the laboratory with the CMDL standards again.

  - Method_References: (Publication(s) describing method)

    Friederich, G.E., P.G. Brewer, R. Herlein, and F.P. Chavez (1995). Measurement of sea surface partial pressure of CO_2 from a moored buoy. Deep-Sea Research, 42, 1175-1186.

    Chavez, F.P., J.T. Pennington, R. Herlien, H. Jannasch, G. Thurmond and G.E. Friederich (1997) Moorings and drifters for real-time interdisciplinary oceanography. Journal of Atmospheric and Oceanic Technology 14, 1199-1211.

  - Data_set_References: (Publication(s) describing data set)

    Chavez, F.P., P.G. Strutton, G.E. Friederich, R.A. Feely, G.A. Feldman, D. Foley, and M.J. McPhaden. (1999) Biological and chemical response of the equatorial Pacific Ocean to the 1997 and 1998 El Niño. Science 286, 2126-2131.

- Citation: (How to cite this data set)
- **Data_Set_Link:(-)**
  - URL*:(m s t)
  - Label*:(m s t)
  - Link_Note: (Optional instructions or remarks)(m s t)