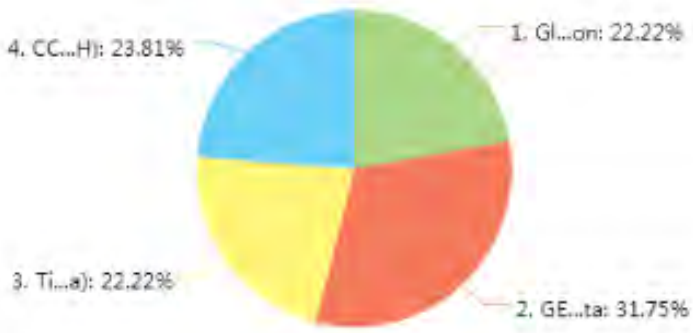
Homework

Which topic are you interested in the most?



保存图表

选项	数据量	百分比
1. Global Physical water circulation	14	22.22%
2. GEOTRACES IDP2017 data	20	31.75%
3. Time-series data (Station Aloha)	14	22.22%
4. CCHDO (Nutrient and/or pH)	15	23.81%
5. Hydrothermal vents	0	0%
6. Others (personal interests) 查看详细填写结果	0	0%

回答 **63** (100%)

Topics

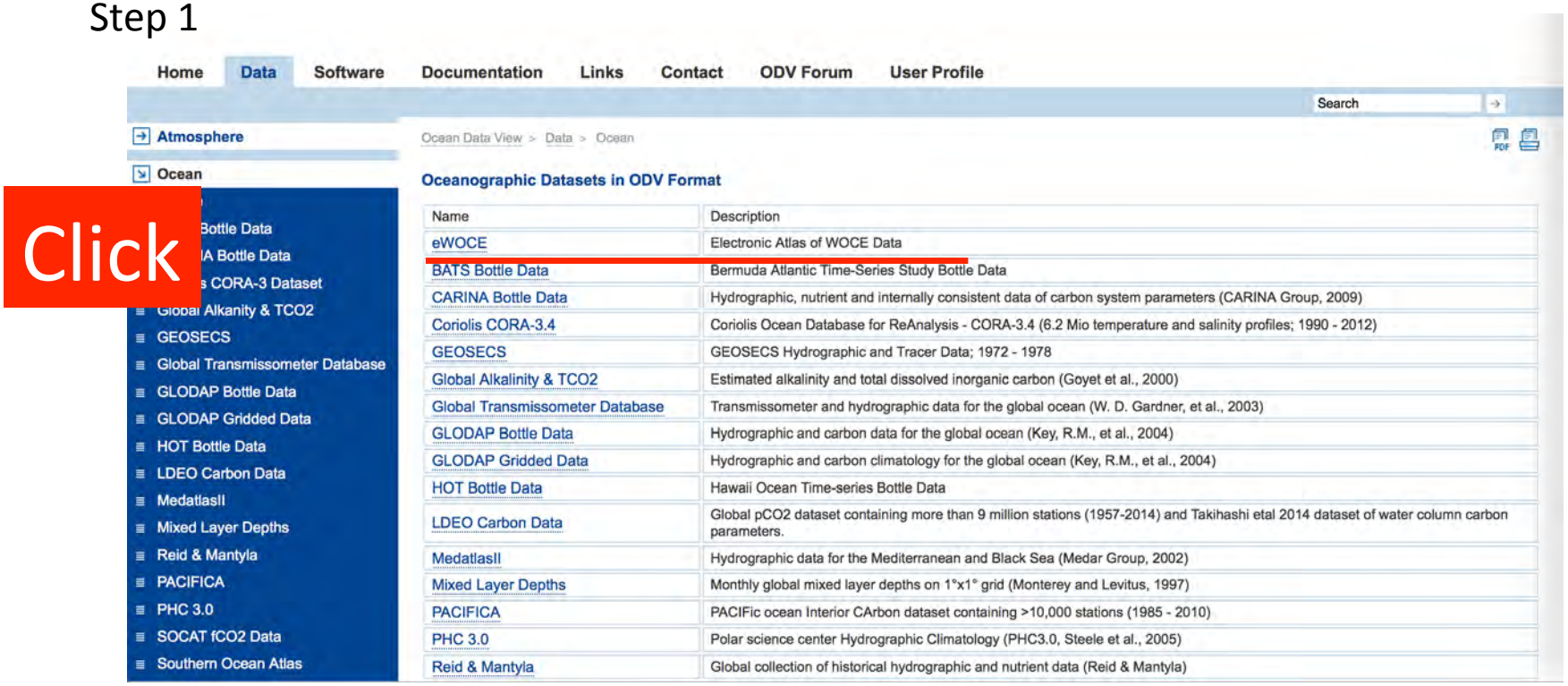
Pick a topic and make 1-2 plots, then make a presentation with Power point or keynote.
Add some comments and give a 2 mins talk tomorrow!

1. Global Physical water circulation
2. GEOTRACES IDP2017 data
3. Time-series data
4. GO-SHIP data

Download the following data set

1. Global Physical water circulation (eWOCE)

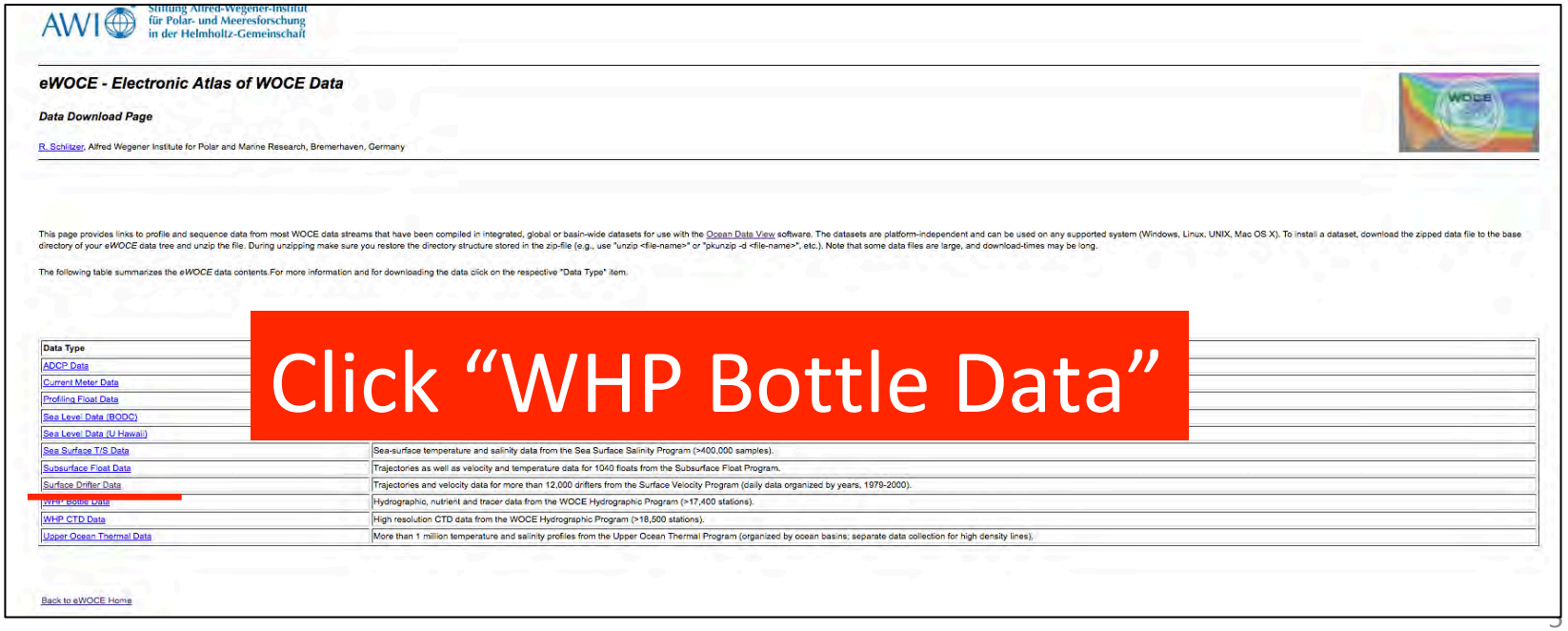
Step 1



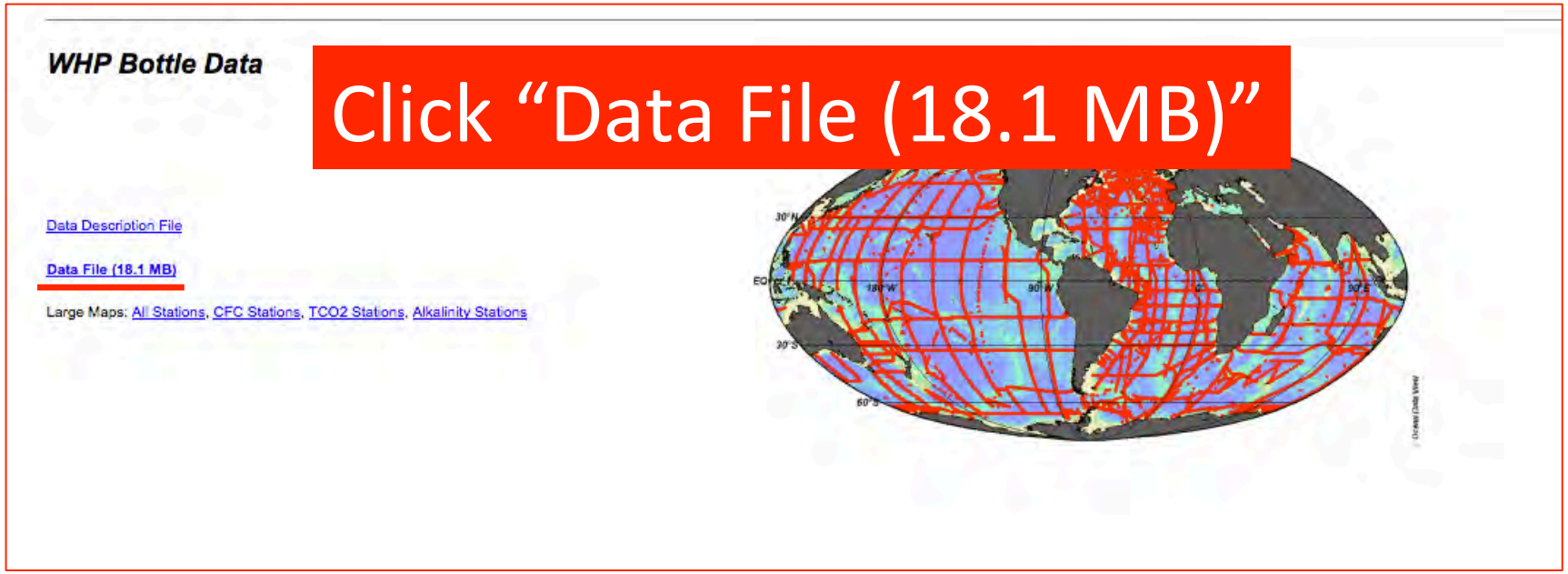
Step 2

Click “Download eWOCE data”
eWOCE - Electronic Atlas of WOCE
R. Schlitzer, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany
Download eWOCE Software
Visit eWOCE Gallery
View eWOCE Flyer
The World Ocean Circulation Experiment WOCE was the largest internationally coordinated oceanographic program ever conducted. It provides global ocean observations of unprecedented extent and quality for the decade from 1988 until 1998.
To facilitate their use, profile and sequence data from most WOCE data streams have been compiled in global or basin-wide datasets. When used with the Ocean Data View (ODV) visualization software, this compilation constitutes an Electronic Atlas of WOCE Data that permits graphical display and interactive analysis of the data in many different ways. With extensive interactive controls and the capability to add a wide variety of derived quantities, this electronic atlas complements the printed WOCE atlases.
An eWOCE Gallery shows more than 350 tracer distributions along sections from the WOCE Hydrographic Program (WHP). The gallery figures are accessed through interactive maps using your web browser. No additional software installation is required for viewing the gallery plots.
Configuration files for reproducing the gallery plots with Ocean Data View are provided with eWOCE. Starting from these template plots, users can easily produce (1) arbitrary property/property plots, (2) distributions on general iso-surfaces, (3) property difference distributions between repeats, (4) time-series plots, (5) geostrophic velocity sections and many other plot types. With eWOCE, the data can either be presented as color-shaded and/or contoured fields or as colored symbols or numbers at the measurement locations. In addition to the measured, basic variables, a large number of derived quantities can be calculated and analyzed just as the basic variables.
The eWOCE datasets can easily be extended with data from the World Ocean Database, the World Ocean Atlas 1994 or from many other data sources. As add-ons, eWOCE comes with a gazetteer of WOCE sections and with the GEBCO (General Bathymetric Chart of the Oceans) gazetteer of undersea features, which allow easy identification of sections and topographic features. In addition to research applications, eWOCE can be used for teaching and training purposes.
eWOCE is part of the final WOCE data release package and can be found on DVD 2. (WOCE Data Products Committee. 2002. WOCE Global Data, Version 3.0, WOCE International Project Office, WOCE Report No. 180/02, Southampton, UK; Nov. 2002).
AWI
Responsible: Dr. R. Schlitzer
Webmaster
Last modified: 6.11.2017

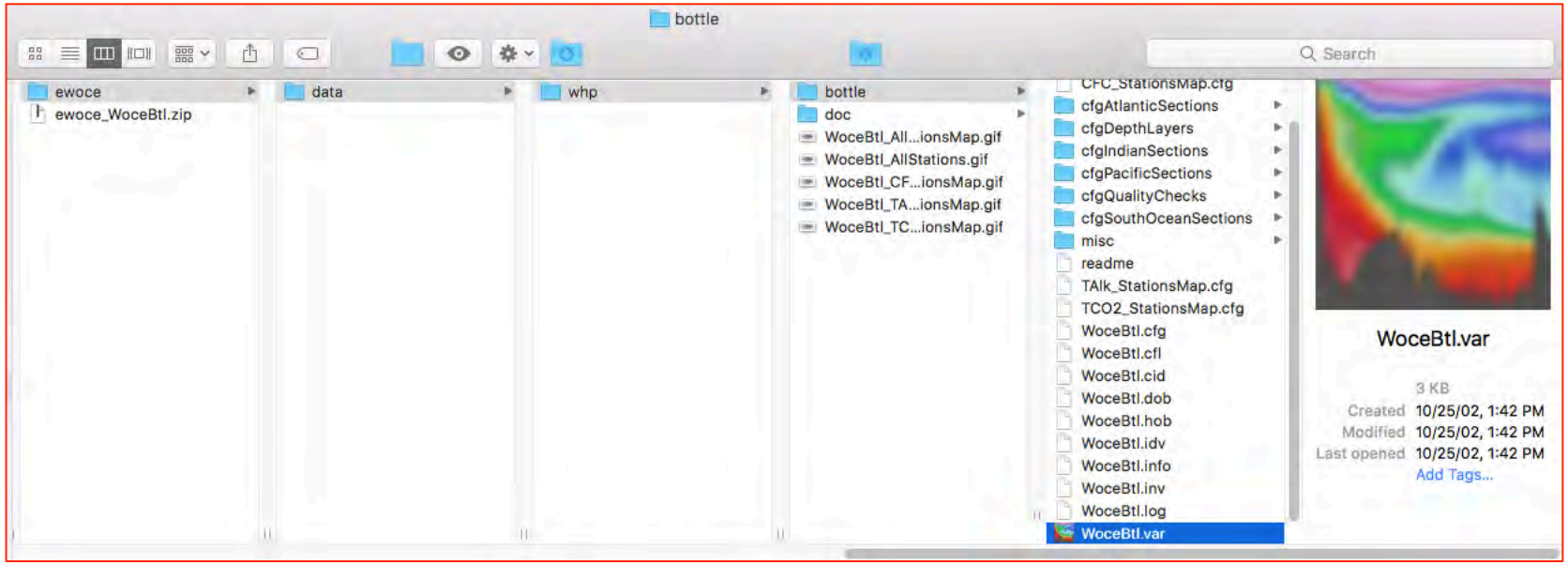
Step 3


Click “WHP Bottle Data”
eWOCE - Electronic Atlas of WOCE Data
Data Download Page
R. Schlitzer, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany
This page provides links to profile and sequence data from most WOCE data streams that have been compiled in integrated, global or basin-wide datasets for use with the Ocean Data View software. The datasets are platform-independent and can be used on any supported system (Windows, Linux, UNIX, Mac OS X). To install a dataset, download the zipped data file to the base directory of your eWOCE data tree and unzip the file. During unzipping make sure you restore the directory structure stored in the zip-file (e.g., use "unzip <file-name>" or "pkunzip -d <file-name>", etc.). Note that some data files are large, and download-times may be long.
The following table summarizes the eWOCE data contents.For more information and for downloading the data click on the respective "Data Type" item.
Data Type
ADCP Data
Current Meter Data
Profiling Float Data
Sea Level Data (BODC)
Sea Level Data (U Hawaii)
Sea Surface T/S Data
Sea-surface temperature and salinity data from the Sea Surface Salinity Program (>400,000 samples).
Subsurface Float Data
Trajectories as well as velocity and temperature data for 1040 floats from the Subsurface Float Program.
Surface Drifter Data
Trajectories and velocity data for more than 12,000 drifters from the Surface Velocity Program (daily data organized by years, 1979-2000).
WHP Bottle Data
Hydrographic, nutrient and tracer data from the WOCE Hydrographic Program (>17,400 stations).
WHP CTD Data
High resolution CTD data from the WOCE Hydrographic Program (>18,500 stations).
Upper Ocean Thermal Data
More than 1 million temperature and salinity profiles from the Upper Ocean Thermal Program (organized by ocean basins; separate data collection for high density lines).
Back to eWOCE Home

Step 4



Step 5: Unzip the downloaded file, and then click “WoceBtl.var” to check if it works.

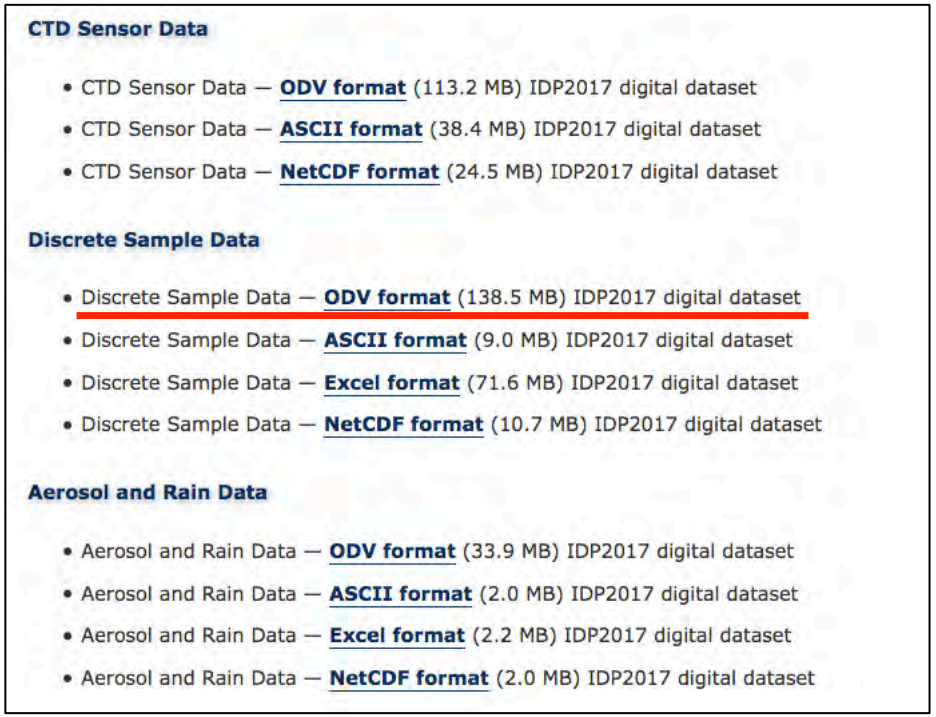


2. IDP 2017 data

Download “**Discrete Sample Data**
ODV format(138.5 MB) IDP2017 digital dataset”

https://www.bodc.ac.uk/geotraces/data/idp2017/

Click



CTD Sensor Data

- CTD Sensor Data — **ODV format** (113.2 MB) IDP2017 digital dataset
- CTD Sensor Data — **ASCII format** (38.4 MB) IDP2017 digital dataset
- CTD Sensor Data — **NetCDF format** (24.5 MB) IDP2017 digital dataset

Discrete Sample Data

- Discrete Sample Data — **ODV format** (138.5 MB) IDP2017 digital dataset
- Discrete Sample Data — **ASCII format** (9.0 MB) IDP2017 digital dataset
- Discrete Sample Data — **Excel format** (71.6 MB) IDP2017 digital dataset
- Discrete Sample Data — **NetCDF format** (10.7 MB) IDP2017 digital dataset

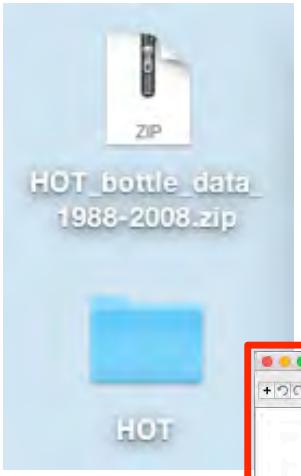
Aerosol and Rain Data

- Aerosol and Rain Data — **ODV format** (33.9 MB) IDP2017 digital dataset
- Aerosol and Rain Data — **ASCII format** (2.0 MB) IDP2017 digital dataset
- Aerosol and Rain Data — **Excel format** (2.2 MB) IDP2017 digital dataset
- Aerosol and Rain Data — **NetCDF format** (2.0 MB) IDP2017 digital dataset

Note: The citation to use for IDP2017 is that given in the download agreement (since the IDP2017 paper is not published yet), that is:

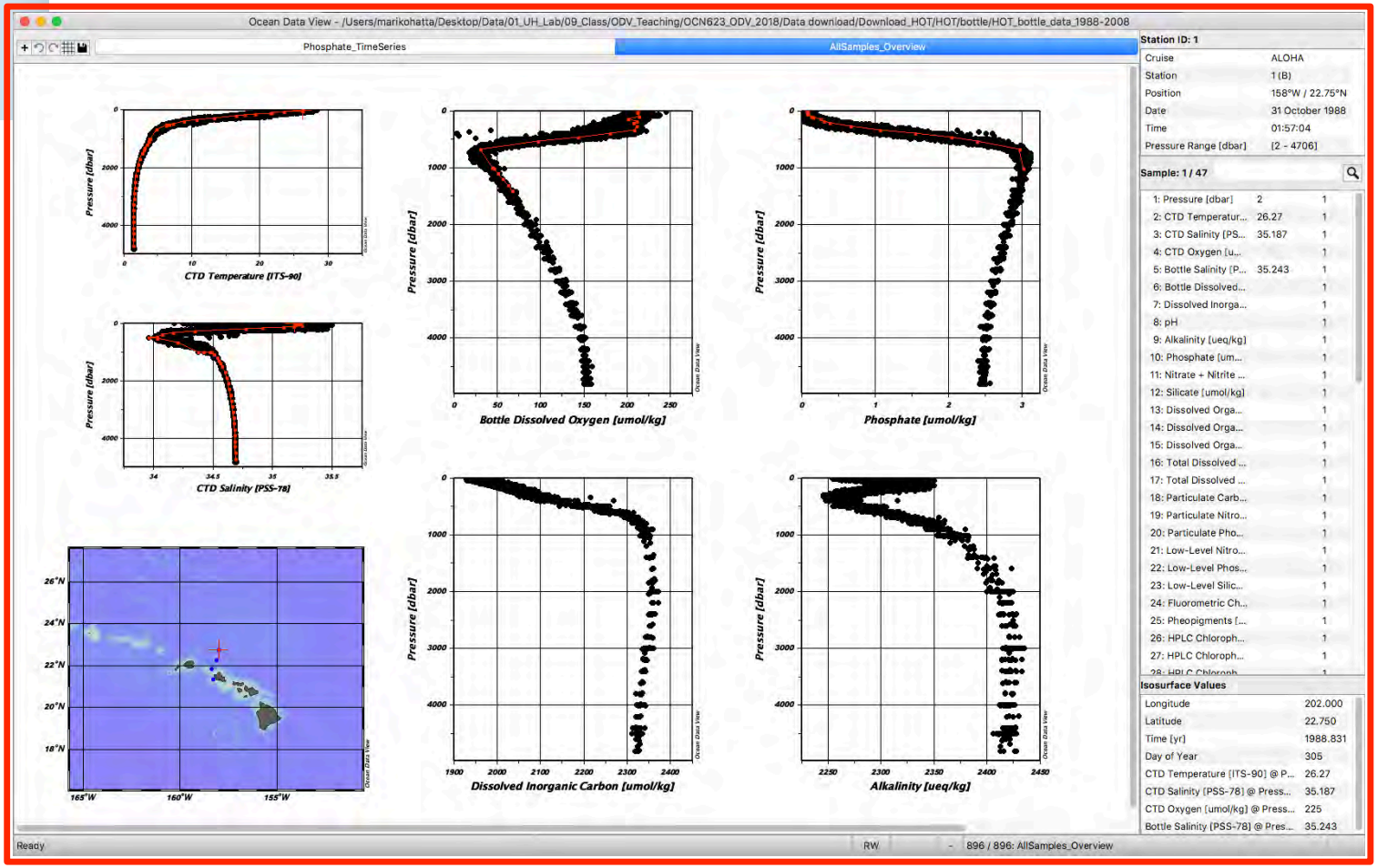
3. Time-series data

Use the downloaded data for the class.



3. Time-series data

Use the downloaded data for the class.

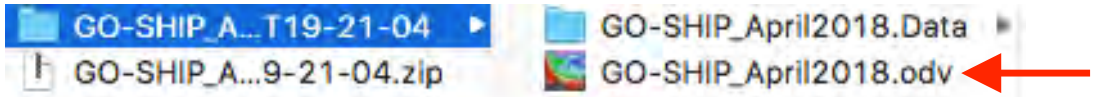


http://rsta.royalsocietypublishing.org/content/374/2081/20150288

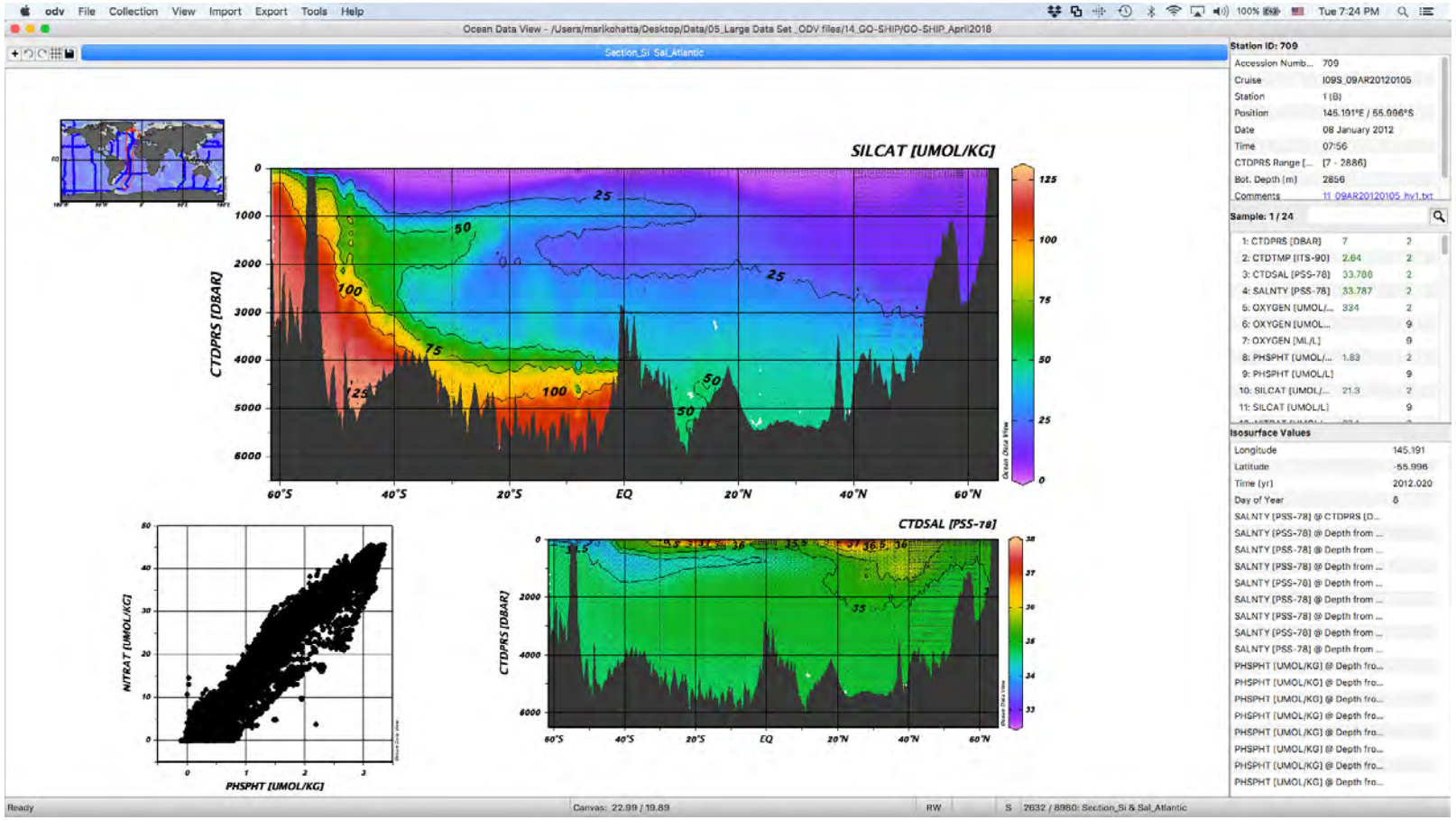
http://www.whoi.edu/sbl/liteSite.do?litesiteid=28952&articleId=259189

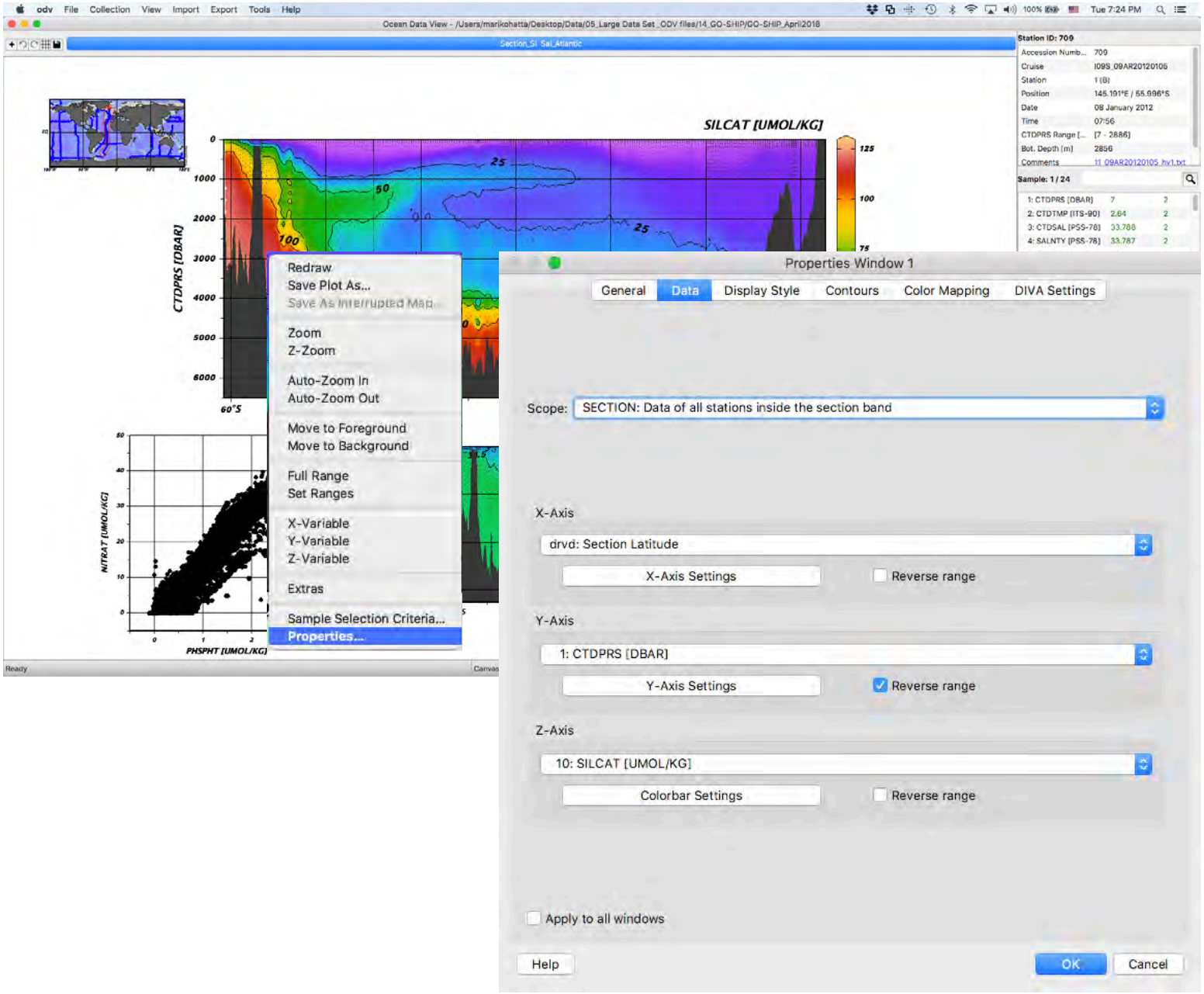
4. GO-SHIP data

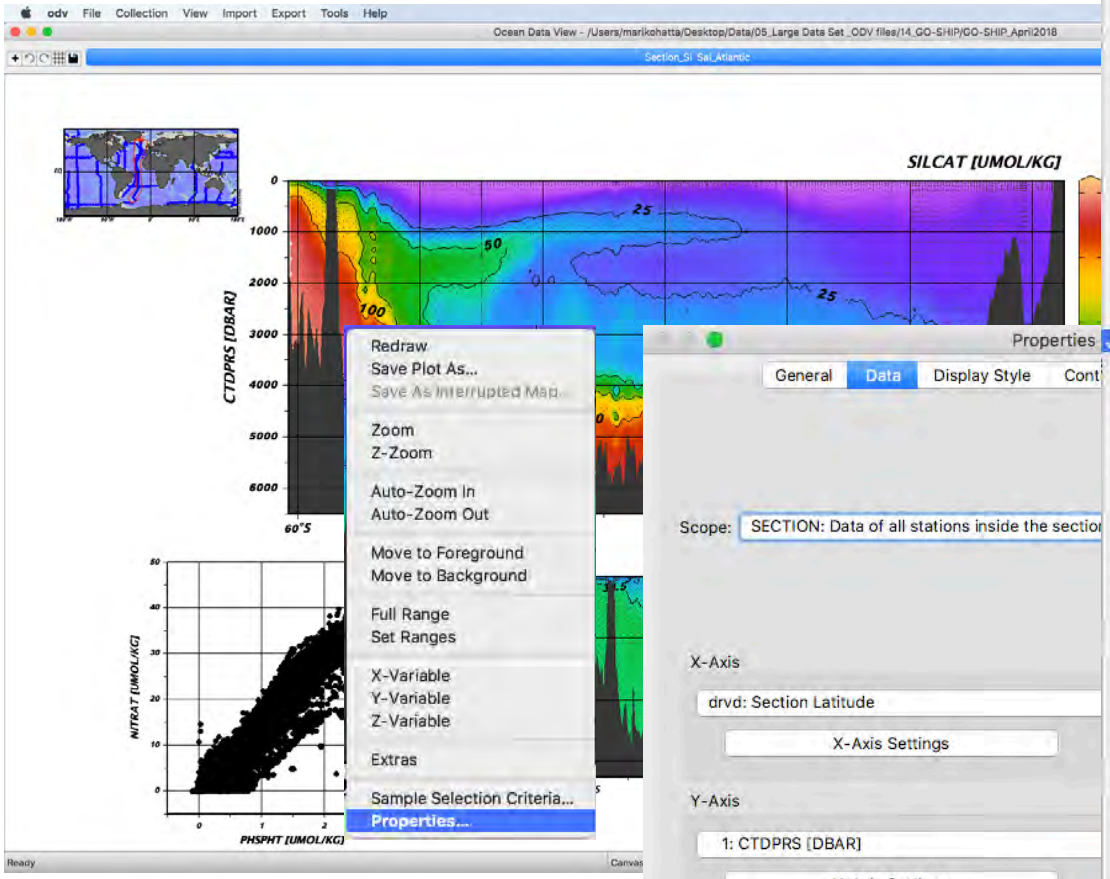
1. Unzip GO-SHIP file, then click “GO-SHIP.odv” file.

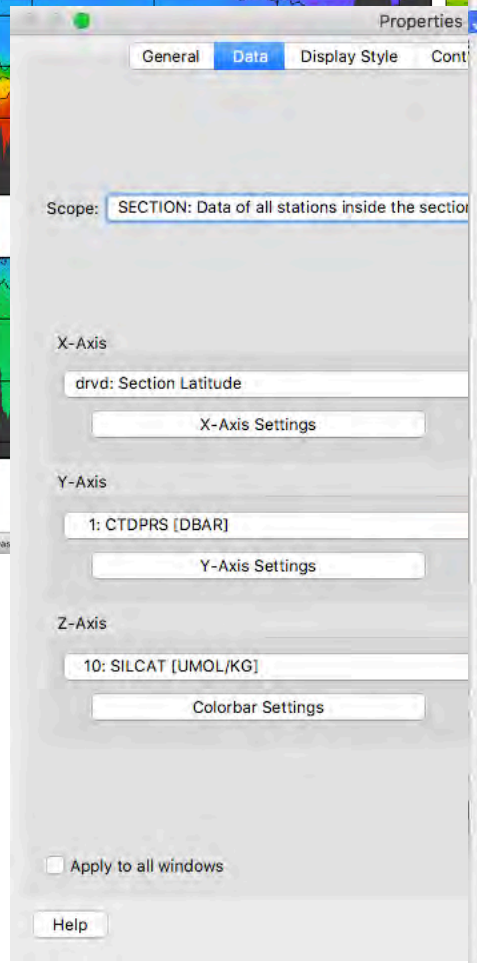


2. Change the Section plot (SILCAT) to CFC-11.



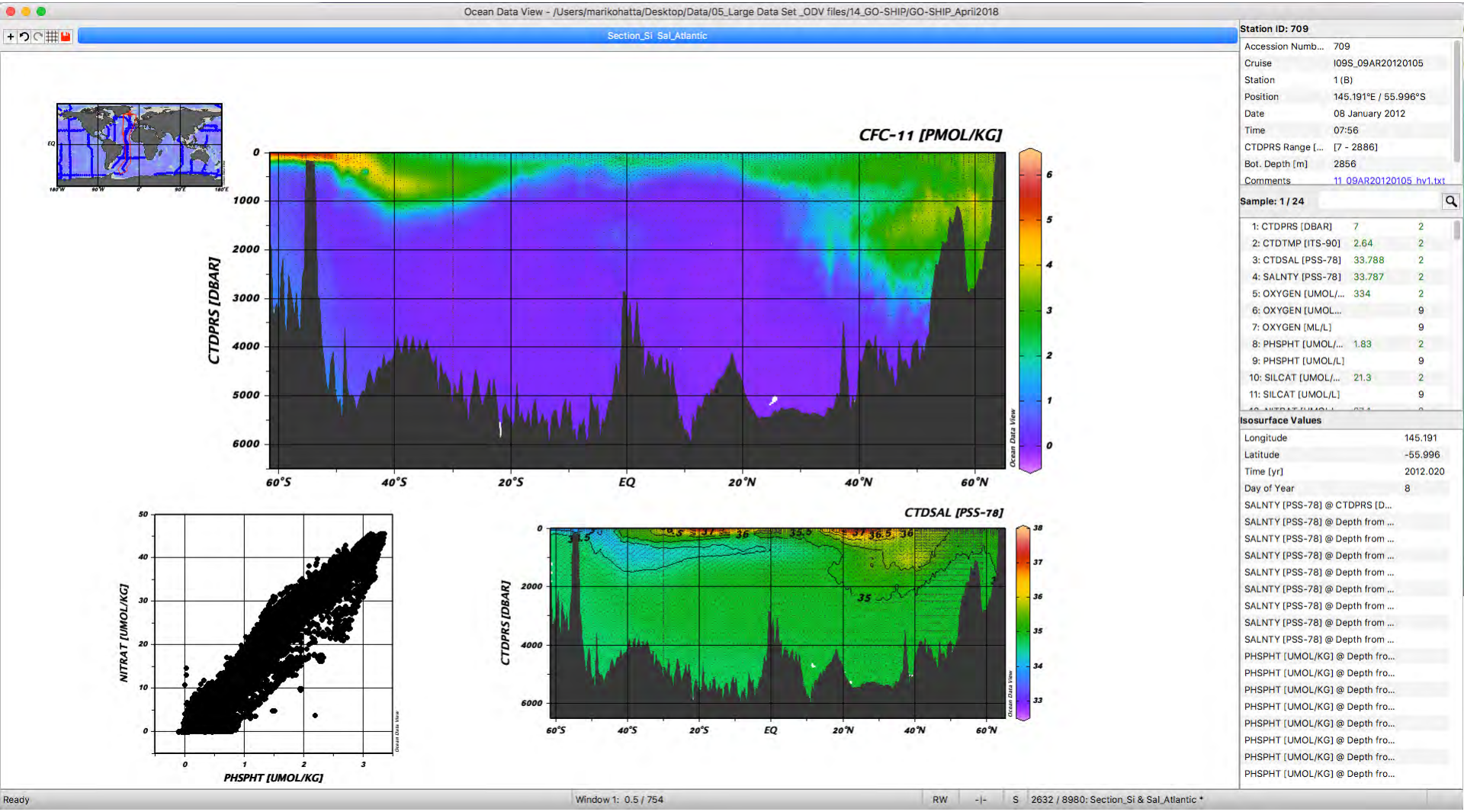

odv File Collection View Import Export Tools Help
Ocean Data View - /Users/marikohatta/Desktop/Data/05_Large Data Set_ODV files/14_GO-SHIP/GO-SHIP_April2018
Section_SI_Sal_Atlantic
SILCAT [UMOL/KG]
CTDPRS [DBAR]
NITRAT [UMOL/KG]
PHSPHT [UMOL/KG]
60°S
Redraw
Save Plot As...
Save As Interrupted Map...
Zoom
Z-Zoom
Auto-Zoom In
Auto-Zoom Out
Move to Foreground
Move to Background
Full Range
Set Ranges
X-Variable
Y-Variable
Z-Variable
Extras
Sample Selection Criteria...
Properties...
Ready
Station ID: 709
Accession Numb... 709
Cruise I09S_09AR20120105
Station 1 (B)
Position 145.191°E / 55.996°S
Date 08 January 2012
Time 07:56
CTDPRS Range [... [7 - 2886]
Bot. Depth [m] 2856
Comments 11_09AR20120105_hy1.txt
Sample: 1 / 24
1: CTDPRS [DBAR] 7 2
2: CTDTMP [ITS-90] 2.64 2
3: CTDSAL [PSS-78] 33.786 2
4: SALNTY [PSS-78] 33.787 2
Properties Window 1
General
Data
Display Style
Contours
Color Mapping
DIVA Settings
Scope: SECTION: Data of all stations inside the section band
X-Axis
drvd: Section Latitude
X-Axis Settings
Reverse range
Y-Axis
1: CTDPRS [DBAR]
Y-Axis Settings
Reverse range
Z-Axis
10: SILCAT [UMOL/KG]
Colorbar Settings
Reverse range
Apply to all windows
Help
OK
Cancel


odv File Collection View Import Export Tools Help
Ocean Data View - /Users/marikohatta/Desktop/Data/05_Large Data Set_ODV files/14_GO-SHIP/GO-SHIP_April2018
Section_SI_Sal_Atlantic
SILCAT [UMOL/KG]
CTDPRS [DBAR]
NITRAT [UMOL/KG]
PHSPHT [UMOL/KG]
60°S
Redraw
Save Plot As...
Save As Interrupted Map...
Zoom
Z-Zoom
Auto-Zoom In
Auto-Zoom Out
Move to Foreground
Move to Background
Full Range
Set Ranges
X-Variable
Y-Variable
Z-Variable
Extras
Sample Selection Criteria...
Properties...
Ready

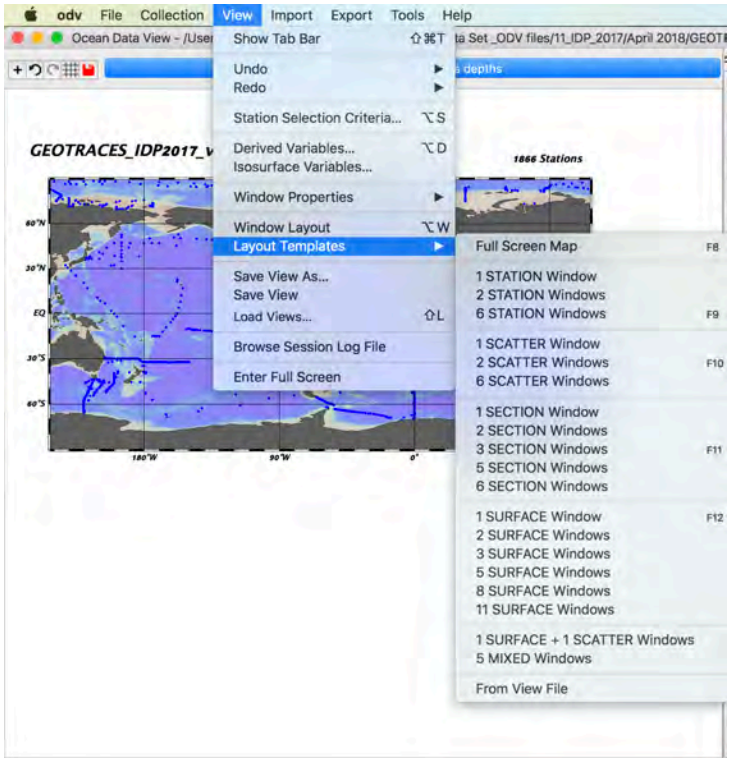

Properties
General
Data
Display Style
Scope:
SECTION: Data of all stations inside the sectio
X-Axis
drvd: Section Latitude
X-Axis Settings
Y-Axis
1: CTDPRS [DBAR]
Y-Axis Settings
Z-Axis
10: SILCAT [UMOL/KG]
Colorbar Settings
Apply to all windows
Help

(none)
1: CTDPRS [DBAR]
2: CTDTMP [ITS-90]
3: CTDSAL [PSS-78]
4: SALNTY [PSS-78]
5: OXYGEN [UMOL/KG]
6: OXYGEN [UMOL/L]
7: OXYGEN [ML/L]
8: PHSPHT [UMOL/KG]
9: PHSPHT [UMOL/L]
10: SILCAT [UMOL/KG]
11: SILCAT [UMOL/L]
12: NITRAT [UMOL/KG]
13: NITRAT [UMOL/L]
14: NITRIT [UMOL/KG]
15: NH4 [UMOL/KG]
16: CFC-11 [PMOL/KG]
17: CFC-12 [PMOL/KG]
18: CCL4 [PMOL/KG]
19: CFC113 [PMOL/KG]
20: CFC-11 [PMOL/L]
21: CFC-12 [PMOL/L]
22: CCL4 [PMOL/L]
23: CFC113 [PMOL/L]
24: SF6 [FMOL/KG]
25: TRITUM [TU]
26: DELHE3 [PERCNT]
27: DELHE3 [/MILLE]
28: HELIUM [NMOL/KG]
29: HELIUM [UMOL/KG]
30: HELIUM [NCC/G]
31: NEON [NMOL/KG]
32: ALKALI [UMOL/KG]
33: TCARBN [UMOL/KG]
34: PCO2TMP [DEG C]
35: PCO2 [UATM]
36: PCO2 [UATM@20]
37: PCO2 [UATM@4]
38: FCO2TMP [DEG C]
39: FCO2 [UATM]
40: PH_TEMP [DEG C]
41: PH_SWS
42: PH_TOT
43: PH
44: DOC [UMOL/KG]
45: POC [UG/KG]
46: POC [UMOL/L]
47: TOC [UMOL/KG]
48: TOC [UMOL/L]
49: DON [UMOL/KG]
50: PON [UG/KG]
51: PON [UMOL/L]
52: TDN [UMOL/KG]
53: TON [UMOL/KG]
54: TON [UMOL/L]
55: CHLORA [UG/KG]
56: FLUOR [MG/M^3]
57: XMISS [%TRANS]
58: DELC14 [/MILLE]
59: DELC13 [/MILLE]
60: 14C-DOC [/MILLE]

Done!



Pick any parameter that you are interested in, and save the plot as jpeg image.



Full Screen Map F8

1 STATION Window
2 STATION Windows
6 STATION Windows F9

1 SCATTER Window
2 SCATTER Windows F10
6 SCATTER Windows

1 SECTION Window
2 SECTION Windows
3 SECTION Windows F11
5 SECTION Windows
6 SECTION Windows

1 SURFACE Window F12
2 SURFACE Windows
3 SURFACE Windows
5 SURFACE Windows
8 SURFACE Windows
11 SURFACE Windows

1 SURFACE + 1 SCATTER Windows
5 MIXED Windows

From View File

Pick a topic and make 1-2 plots (any plot based on your interests), then make a presentation with Power point or keynote.
Add some comments and give a 2 mins talk tomorrow!

1. Global Physical water circulation

   i.e. Temperature/salinity sections, T/S diagram etc.

2. GEOTRACES IDP2017 data

   i.e. Fe distribution section, Vertical profiles in Western Pacific, Specific density surface plot of geochemical parameters etc.

3. Time-series data

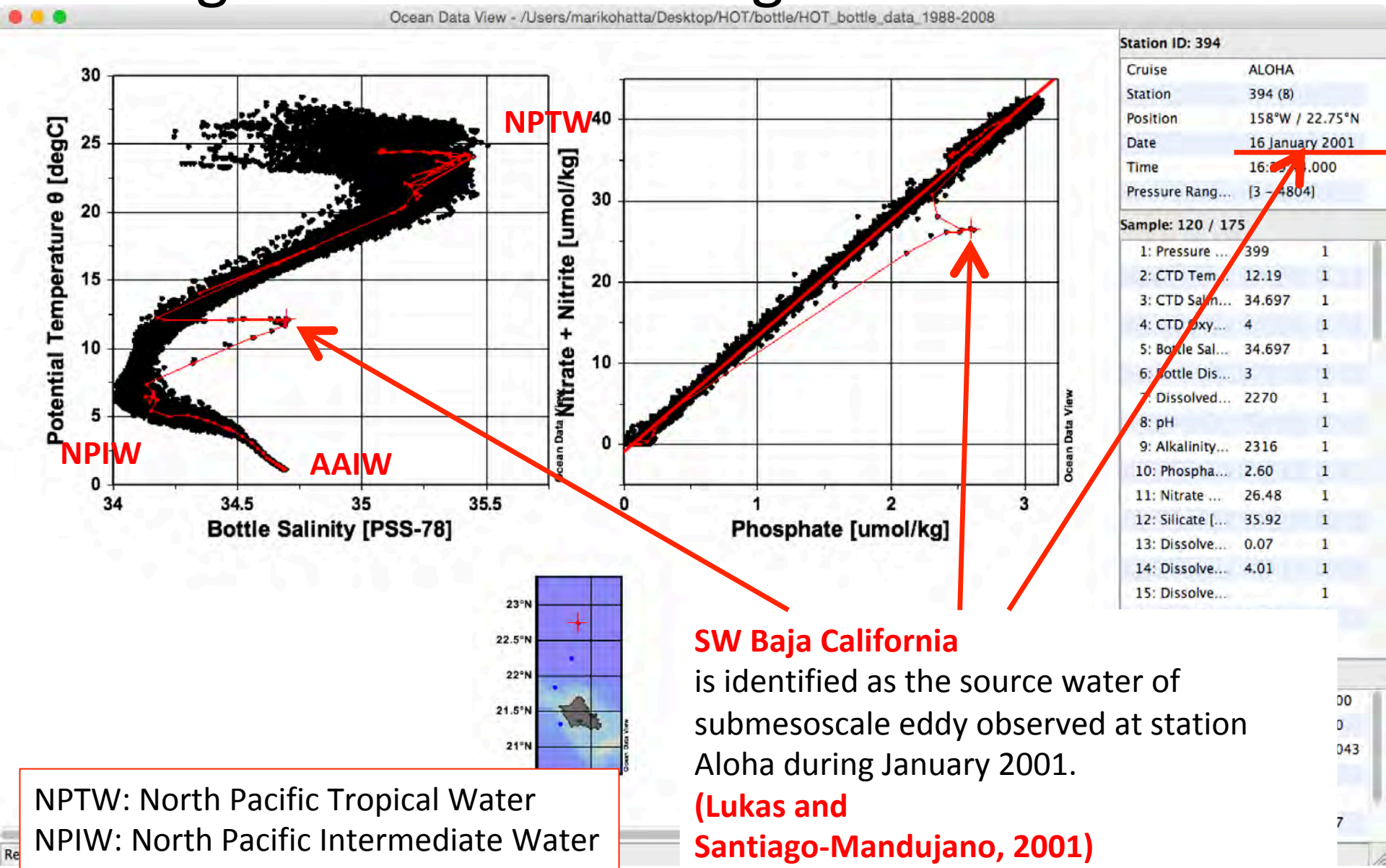
   i.e. Nitrate time series section plot, seasonal variation of N/P ratio etc.

4. GO-SHIP data

   i.e. N/P ratio in the various ocean, pH distribution, carbon etc.

T-S diagram & nutrient diagram

For example…



SW Baja California is identified as the source water of submesoscale eddy observed at station Aloha during January 2001. **(Lukas and Santiago-Mandujano, 2001)**

NPTW: North Pacific Tropical Water
NPIW: North Pacific Intermediate Water
AAIW: Antarctic Intermediate Water