Add different formats of data into ODV

Part 1:
ARGO netCDF Data

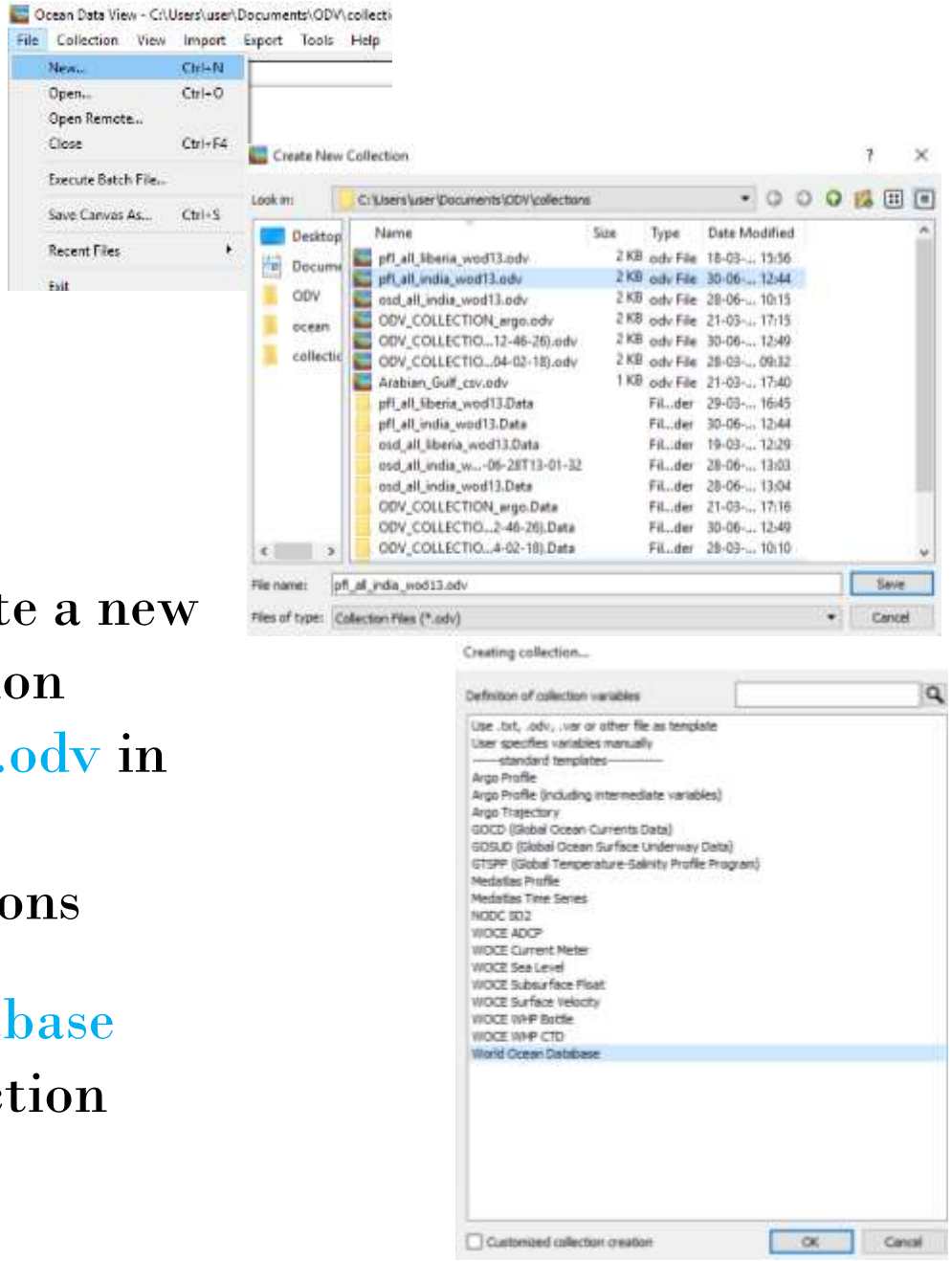
1. Create a new collection

- Open the PFL collection previously created.

OR

- Select File > New to create a new profile float based collection named pfl_all_india_wod.odv in the folder Documents\ODV\Collections

- Select World Ocean Database under Definition of collection variables window.



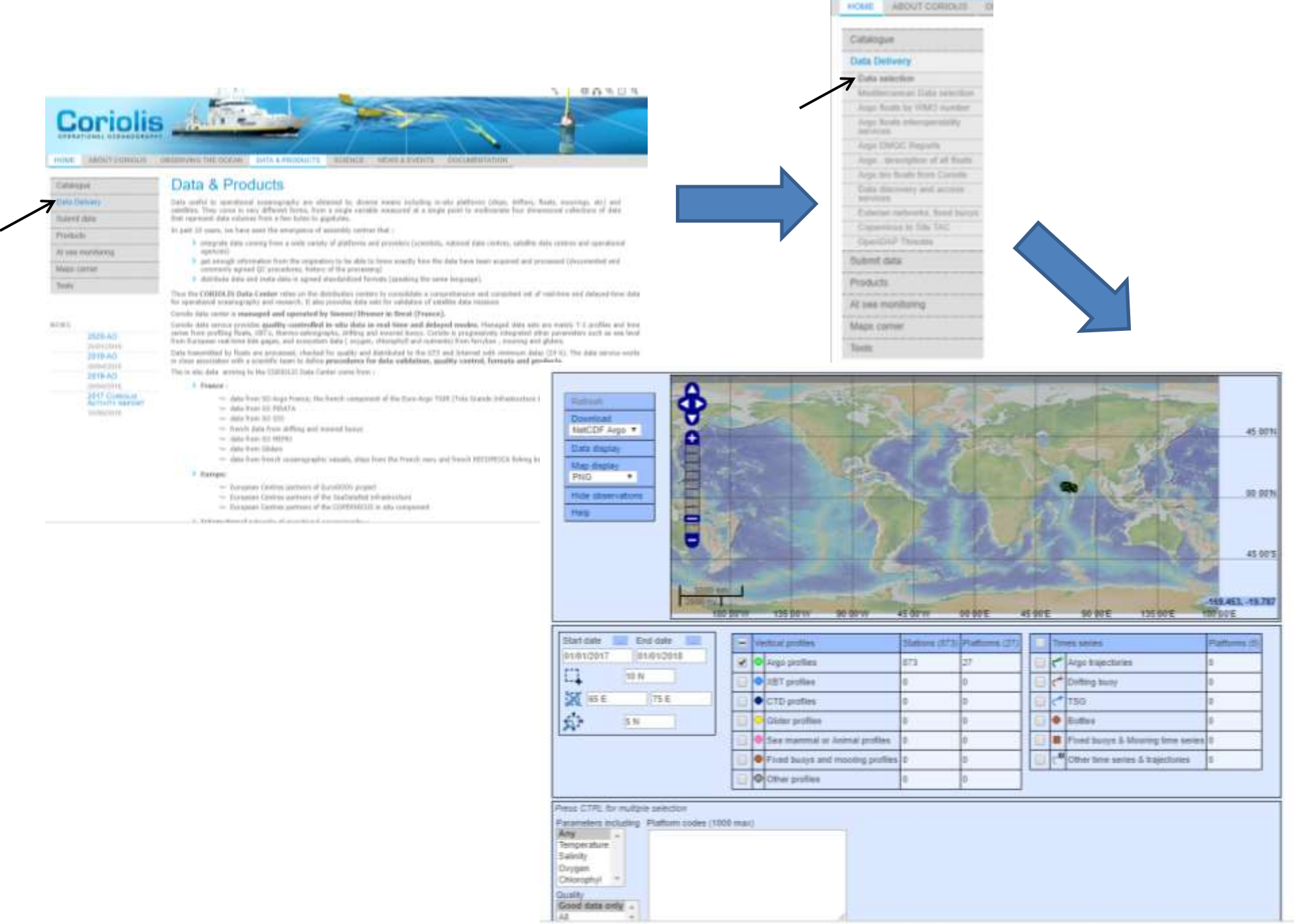
2. Download data from Coriolis

- The Coriolis data centre (http://www.coriolis.eu.org/Data-Products) provides quality-controlled in-situ data in real-time and delayed modes
- From the Coriolis data products site select Data Delivery > Make your own Data selection.
- Enter the coordinates and the start and end dates as shown.

Top (latitude): 10 degrees
Bottom (latitude): 5 degrees
Left (longitude): 65 degrees
Right (longitude): 75 degrees

Start Date: 01/01/2017
End Date: 01/01/2018

- Select Vertical Profiles > Argo Profiles, Uncheck Timeseries
- Check Any parameters and Good data only. The select Refresh to display the results.


Coriolis
Data & Products
Catalogue
Data Delivery
Submit data
Products
At sea monitoring
Maps corner
Tools
Download
NetCDF Argo
Data display
Map display
PNG
Hide observations
Help
Start date
End date
01/01/2017
01/01/2018
Vertical profiles
Argo profiles
XBT profiles
CTD profiles
Glider profiles
Sea mammal or Animal profiles
Fixed buoys and mooring profiles
Other profiles
Times series
Argo trajectories
Drifting buoy
TSG
Bottles
Other time series & trajectories
Press CTRL for multiple selection
Parameters including
Platform codes (1000 max)
Any
Temperature
Salinity
Oxygen
Chlorophyll
Quality
Good data only

Download data from Coriolis

- To download all the selected data choose Download > NetCDF Argo. Enter your email and wait for the notification that the data is ready.
- Then right-click on the link in the email and save to the folder Documents\ODV\Data
- Unzip the compressed the file to a folder named pfl_india_argo_coriolis_delayed_good. There will be a series of NetCDF (.nc) files in this folder.

Data Selection Export

Email

Your email is optional, you will receive a delivery notification when your data are ready

For any questions, please contact : codac@ifremer.fr

Extract your data

Data Selection Export

We are processing your data request.
The data will be delivered at : ftp://ftp.ifremer.fr/ifremer/coriolis/tmp/co0501/DataSelection_20190630_081234_8028469.tgz
You can close this window

Your data request from Coriolis

noreply@ifremer.fr

to me

1:53 PM (7 minutes ago)

Your data file is available at
ftp://ftp.ifremer.fr/ifremer/coriolis/tmp/co0501/DataSelection_20190630_081234_8028469.tgz
you can find a description of your file format (NETCDF) on this page

In publications, please use the following citation statement:
"These data were collected and made freely available by the Coriolis project and programmes that contribute to it (http://www.coriolis.eu.org)."

Best regards,
Coriolis data management team.

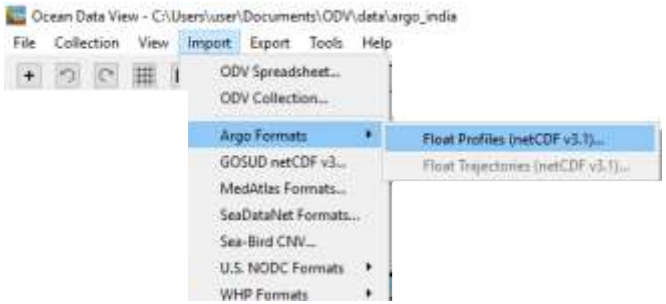
Production time: 0:10:44 (HH:MI:SS)

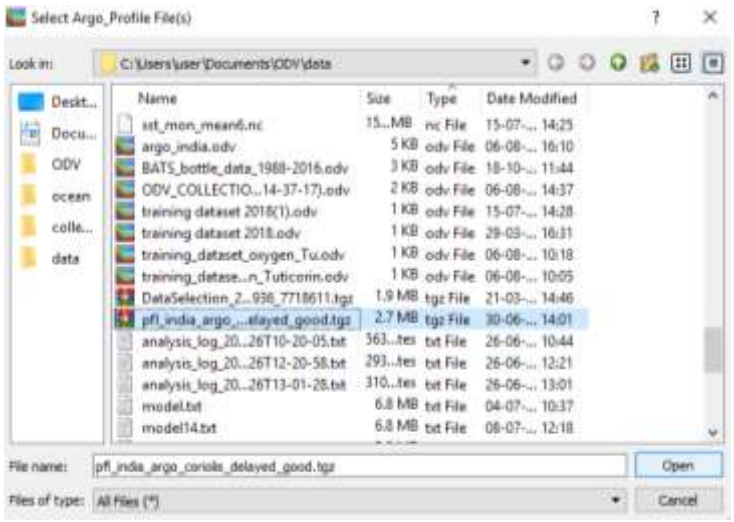
Your data selection parameters are :

- File format : NETCDF
- Bounding box (latitudes longitudes) : 5N 10N - 65N 75N
- Period (DD/MM/YYYY) : between '01/01/2017' and '01/01/2018'
- Data type(s) : ('Argo profiles')
- Required Physical parameters :
- Quality : GOOD
- Processing Level :

3. Import Data

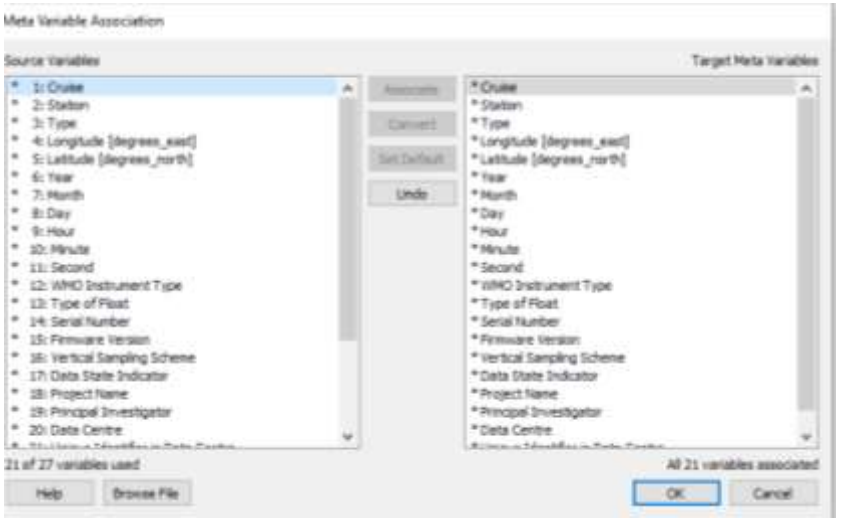
- To import the new Argo data, select Import > Argo Formats > Float Profiles
- Select All Files from File type.
- Navigate to the folder Documents\ODV\Data pfl_india_argo_coriolis_delayed_good.

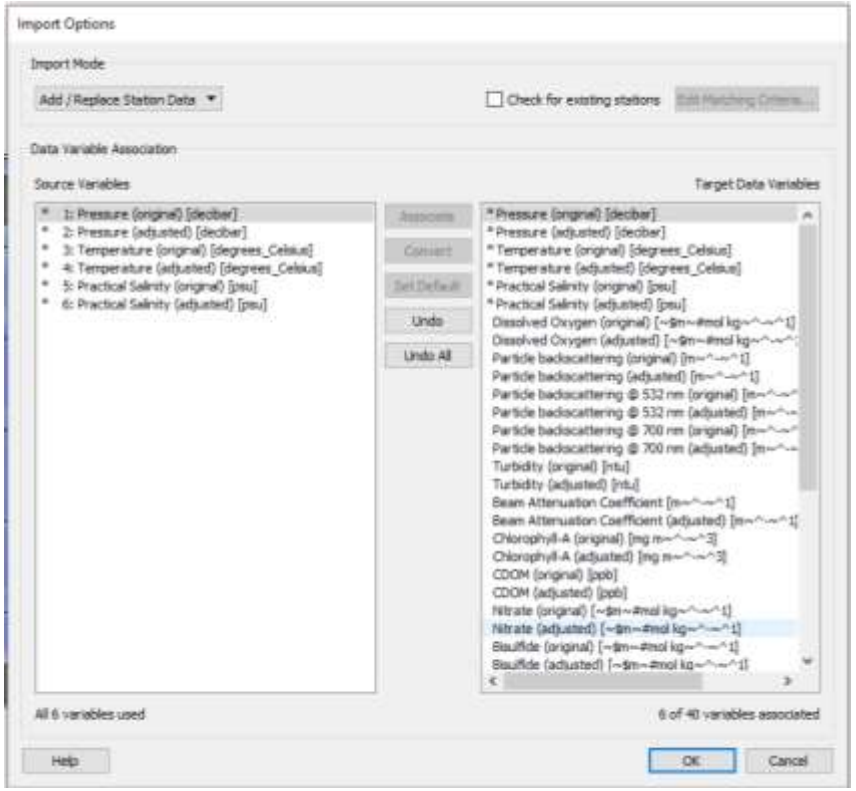


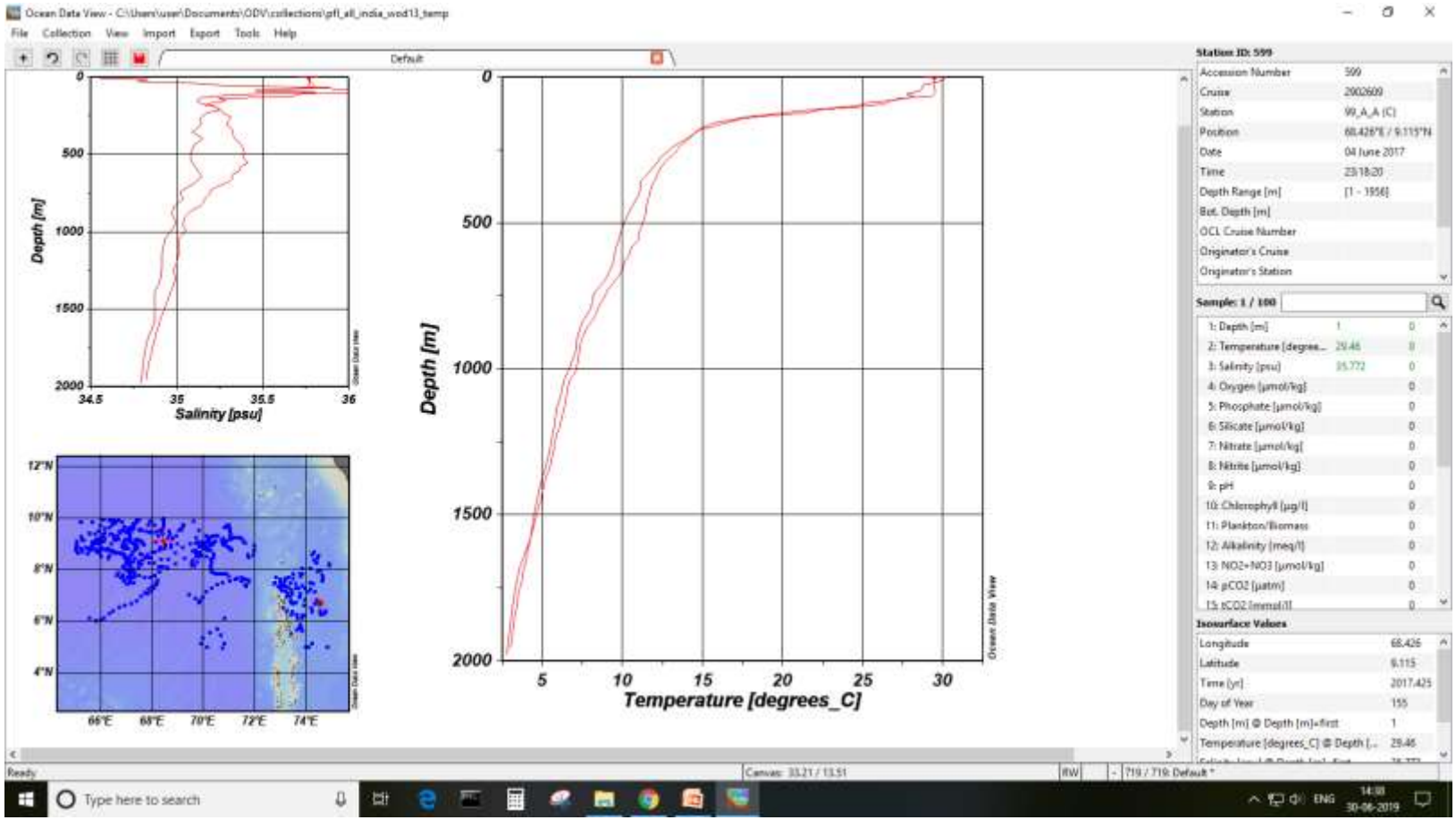


Import options

- The Import Options dialog is used to associate variables in the import files with ODV target variables. In most cases the they will differ, so it will be necessary to associate the two sets of variables.
- ODV automatically associates variables with matching labels (name and units) and marks the associated variables with an asterisk *.

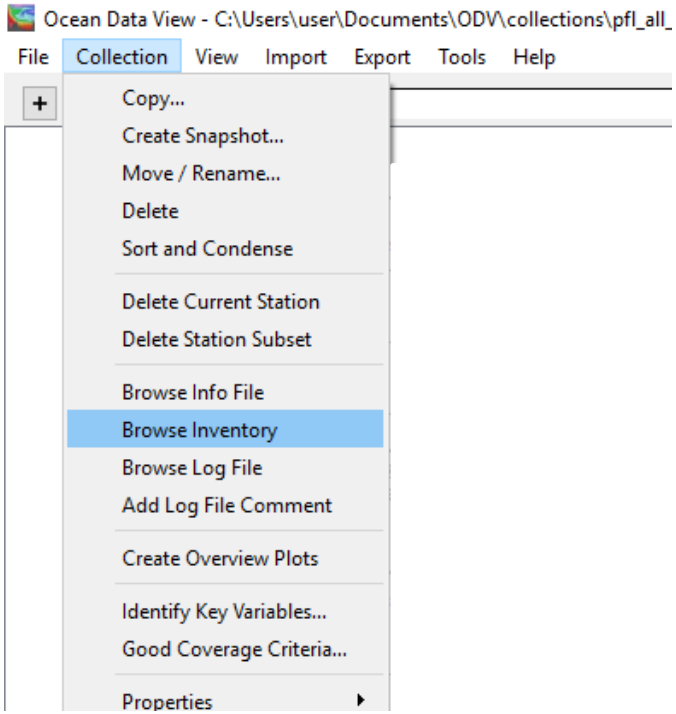





Ocean Data View - C:\Users\user\Documents\ODV\collections\pfl_all_india_wod13_temp
File Collection View Import Export Tools Help
Default
Depth [m]
Salinity [psu]
Temperature [degrees_C]
Station ID: 599
Accession Number 599
Cruise 2002609
Station 99_A_A (C)
Position 68.428°E / 9.115°N
Date 04 June 2017
Time 23:18:20
Depth Range [m] [1 - 1956]
Bot. Depth [m]
OCL Cruise Number
Originator's Cruise
Originator's Station
Sample: 1 / 100
1: Depth [m] 1 0
2: Temperature [degree... 29.46 0
3: Salinity [psu] 35.772 0
4: Oxygen [µmol/kg] 0
5: Phosphate [µmol/kg] 0
6: Silicate [µmol/kg] 0
7: Nitrate [µmol/kg] 0
8: Nitrite [µmol/kg] 0
9: pH 0
10: Chlorophyll [µg/l] 0
11: Plankton/Biomass 0
12: Alkalinity [meq/l] 0
13: NO2+NO3 [µmol/kg] 0
14: pCO2 [µatm] 0
15: tCO2 [mmol/l] 0
Isosurface Values
Longitude 68.426
Latitude 9.115
Time [yr] 2017.425
Day of Year 155
Depth [m] @ Depth [m]=first 1
Temperature [degrees_C] @ Depth [... 29.46
Ready
Type here to search
ENG
14:08
30-06-2019

4. Data Inventory

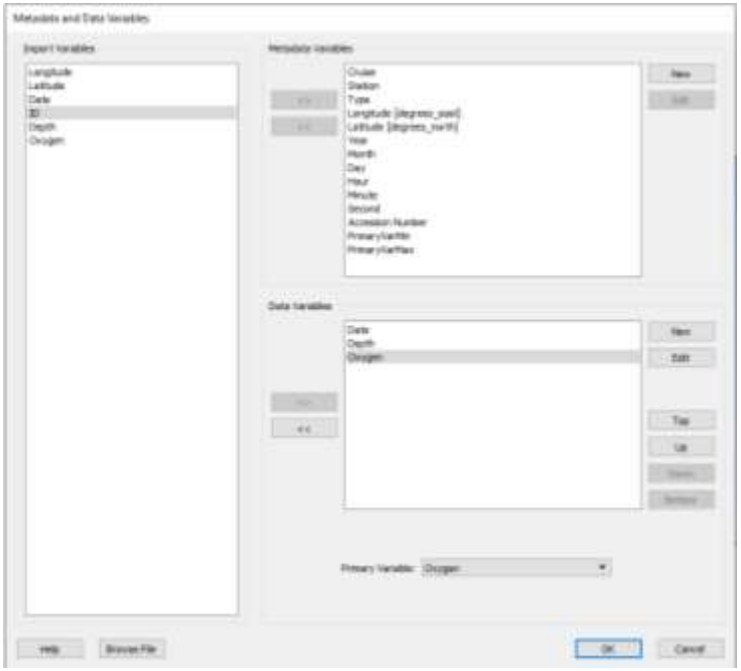
- To view the cruise inventory of the collection, select Collection > Browse Inventory.
- By default this file will be saved Products > Products > ODV > pfl_all_liberia_wod13.Data >CruiseInventory.txt.
- You can open the file in Excel/Notepad



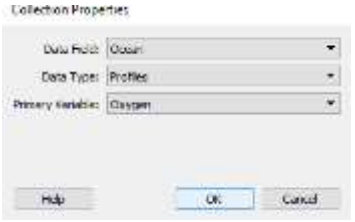
Part 2:
Import ascii data into ODV

1. Import data

- ODV requires mandatory metadata, such as the geographic location of a station, the date of observation, and the names of the station and cruise



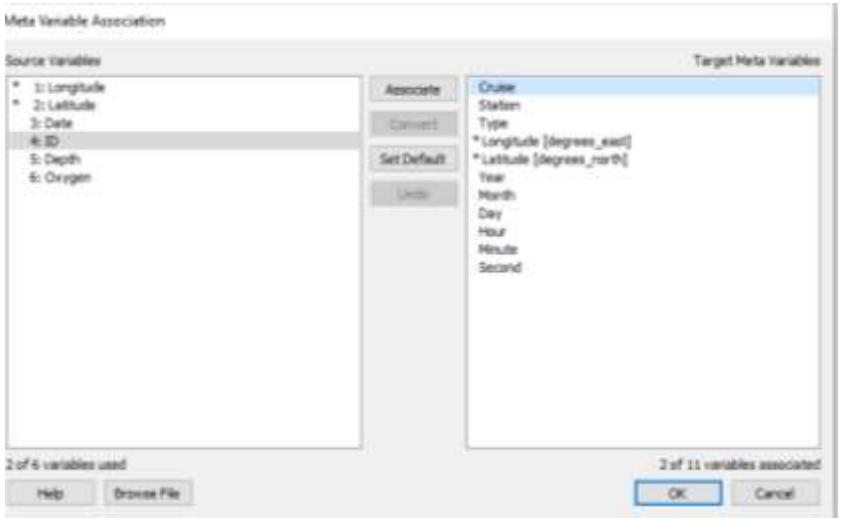
- Select File > Open then navigate to the training_dataset_oxygen.txt file in the Documents\ODV\Data folder and open it. The Spreadsheet File Properties dialogue shows the data that will be imported. Select OK.

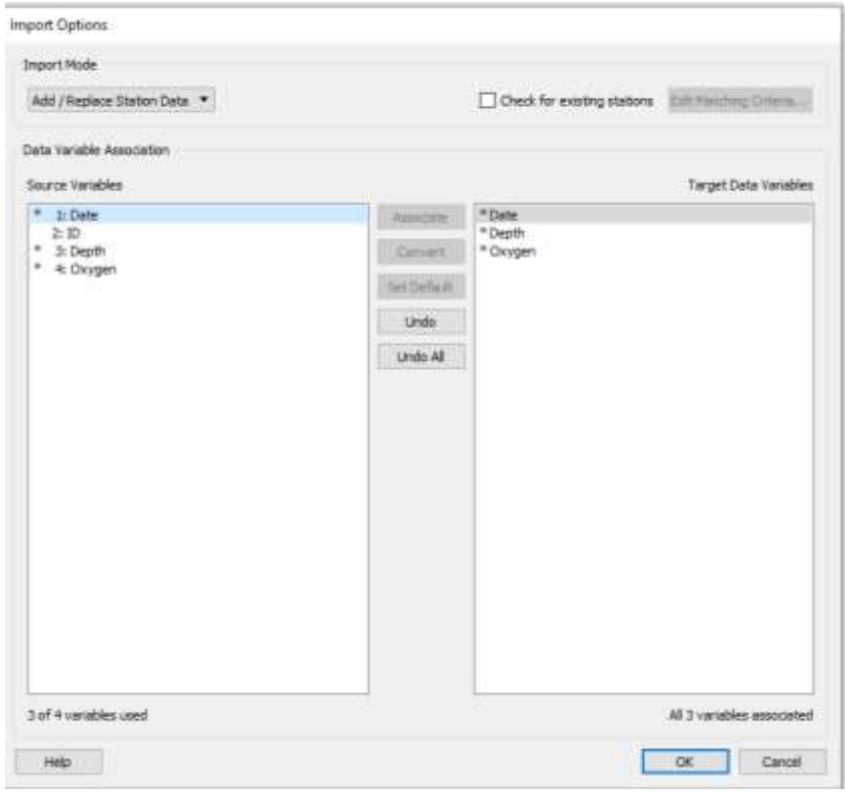


- Remove ID from data variable list and select oxygen as primary variable

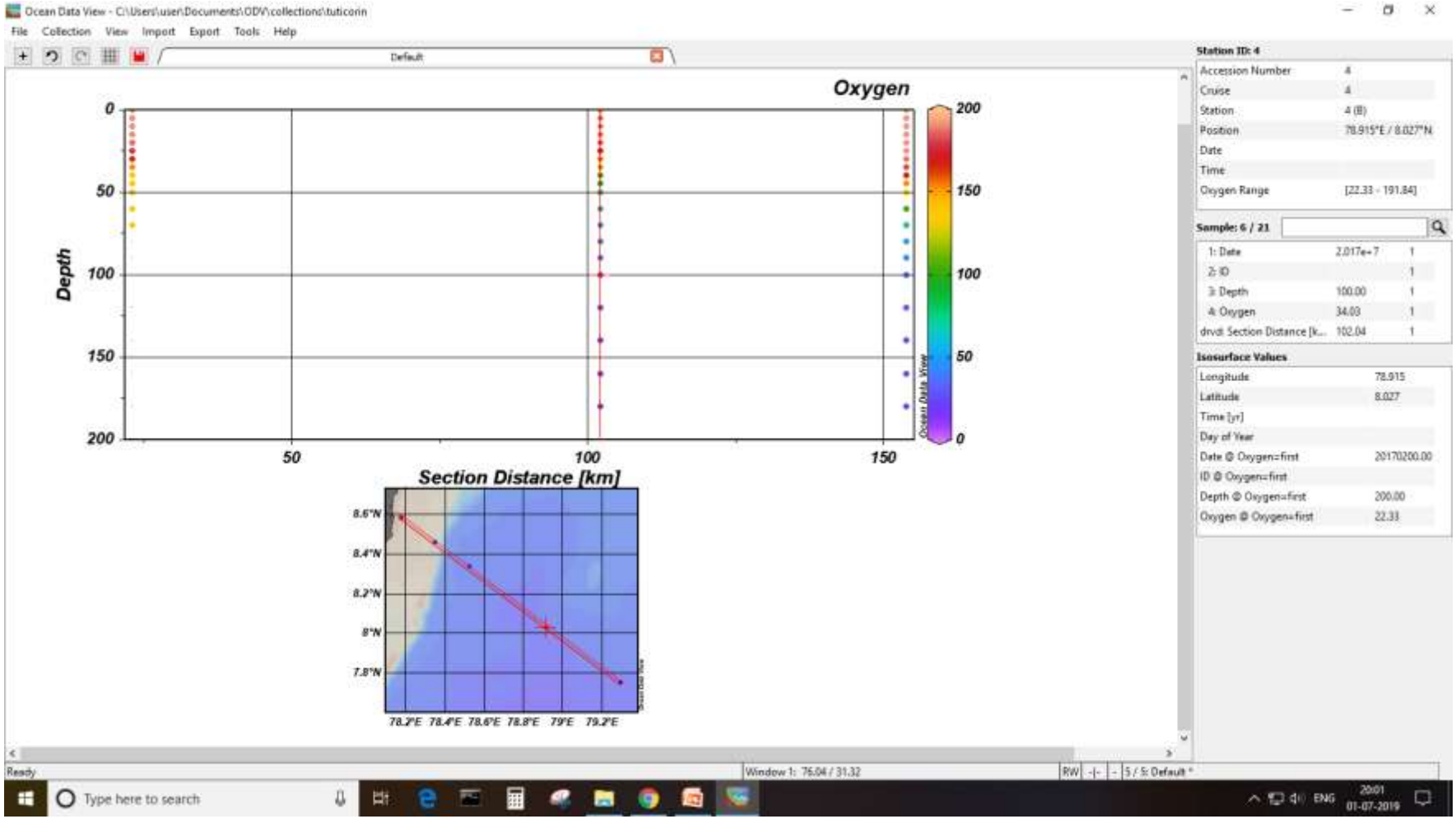
2. Associate variables

- The next step is to match-up between the incoming data (in the spreadsheet) and the fields in the ODV collection structure. Already associated variables are marked by asterisks (*).
- Associate ID with cruise
- Select OK.





3. Task:


Ocean Data View - C:\Users\user\Documents\ODV\collections\tuticorin
File Collection View Import Export Tools Help
Default
Oxygen
Depth
0
50
100
150
200
50
100
150
200
150
100
50
0
Section Distance [km]
8.6°N
8.4°N
8.2°N
8°N
7.8°N
78.2°E 78.4°E 78.6°E 78.8°E 79°E 79.2°E
Station ID: 4
Accession Number 4
Cruise 4
Station 4 (8)
Position 78.915°E / 8.027°N
Date
Time
Oxygen Range [22.33 - 191.84]
Sample: 6 / 21
1: Date 2.017e+7 1
2: ID 1
3: Depth 100.00 1
4: Oxygen 34.03 1
drvdi: Section Distance [k... 102.04 1
Isosurface Values
Longitude 78.915
Latitude 8.027
Time [yr]
Day of Year
Date @ Oxygen=first 20170200.00
ID @ Oxygen=first
Depth @ Oxygen=first 200.00
Oxygen @ Oxygen=first 22.33
Ready
Window 1: 76.04 / 31.32
RW
5 / 5: Default
Type here to search
ENG
20:01
01-07-2019

4. Generic ODV spreadsheet format

- If you plan to use ODV to regularly import spreadsheet data, it is recommended to use a standard ODV template.
- The Column Header Row contains a label for each column of the file.
- The csv file should contain columns of Longitude, Latitude and atleast any one variable, along with their headers.
- The leftmost columns are the metadata columns, followed by the data column pairs (which can include a qualifying flag column).

Generic ODV spreadsheet format

- The column Type is used to designate the instrument used to collect the data, e.g. bottle, CTD, etc.
- The following metadata column header labels are mandatory and should be included EXACTLY as written:

  Cruise, Station, Type, yyyy-mm-ddThh:mm:ss.sss, Longitude [degrees_east, Latitude [degrees_north], Bot. Depth [m]

- The metadata is followed by the data variables.
- Each column for a data variable can have an optional quality flag QF. Depth [m], QF, Temperature [°C], QF, Salinity [PSU], QF, etc

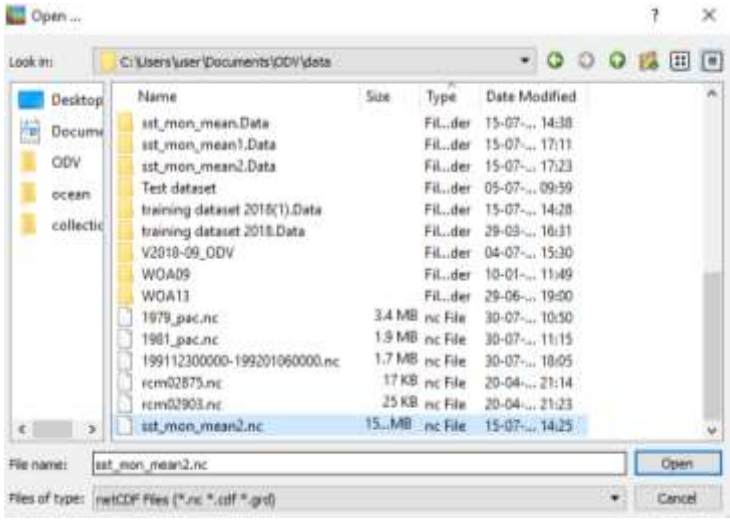
5. To import a generic spreadsheet data

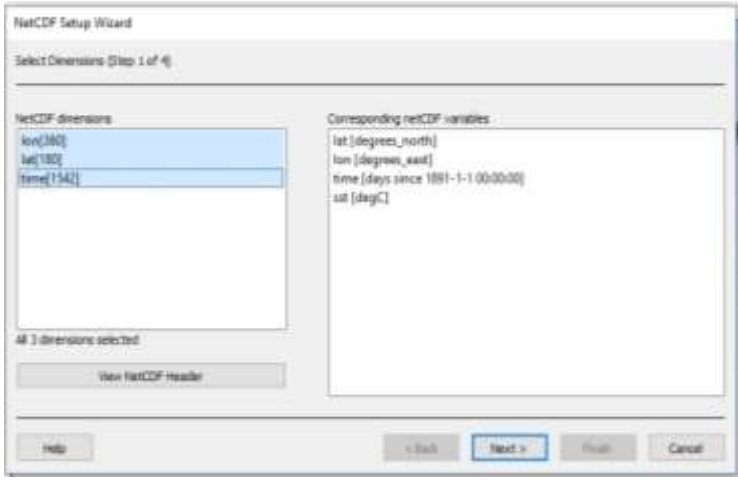
- Open ODV. To load in the data, you may either access the File menu and click Open and select your file or simply drag your text file into the window itself.
- ODV will then indicate how many stations have been imported and from what directory. Click OK to proceed.
- Depending on the size of the data file, you may have to perform Sort and Condense if the data was poorly sorted. Click Yes if you are prompted to do so.

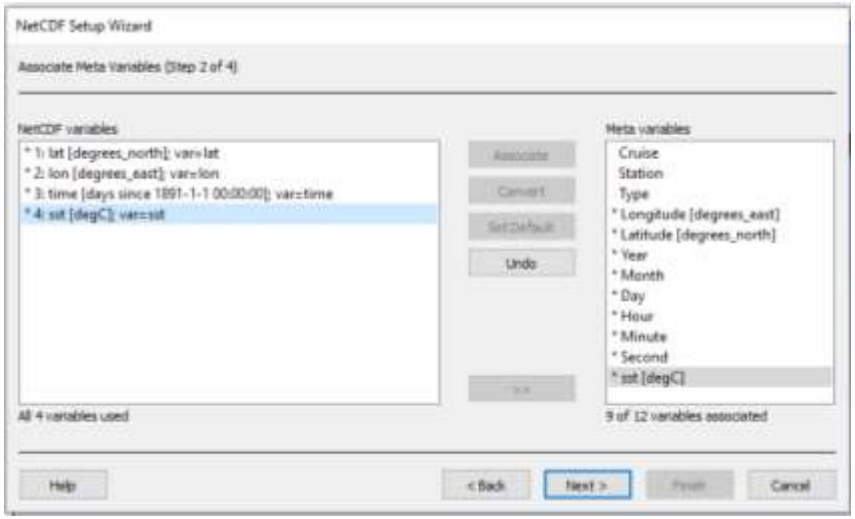
Part 3:
Import NETCDF data

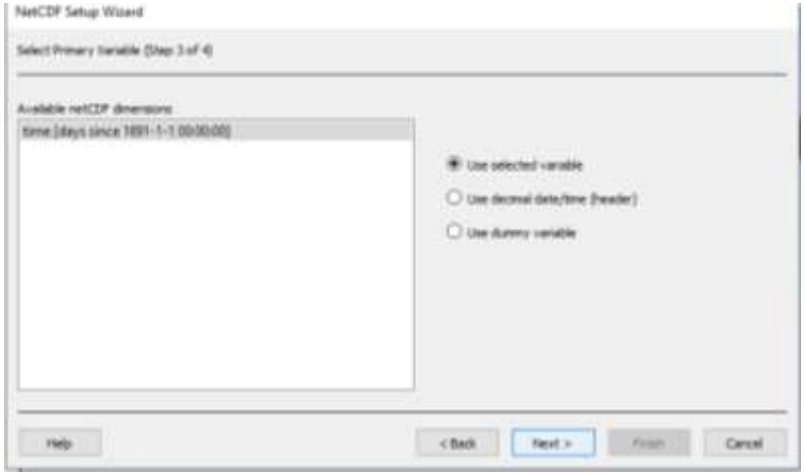
Open netcdf data

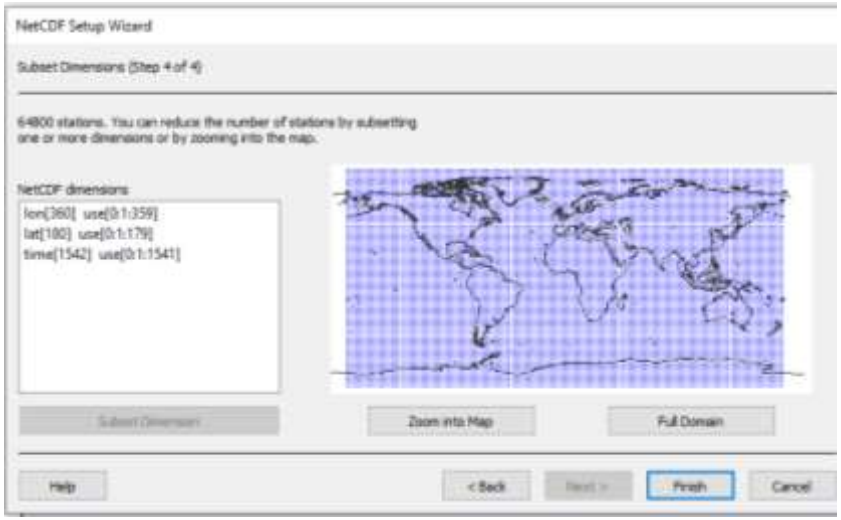
- Goto File > Open and select the NC file sst_mon_mean
- Netcdf setup wizard shows up showing the input variables, click NEXT after the the select dimension.
- Under Associate meta-variables, Add SST to the right hand side list by clicking on >>
- Select time as days since 1981 as primary variable as primary variable and in the last step select the option to subset the time dimension.

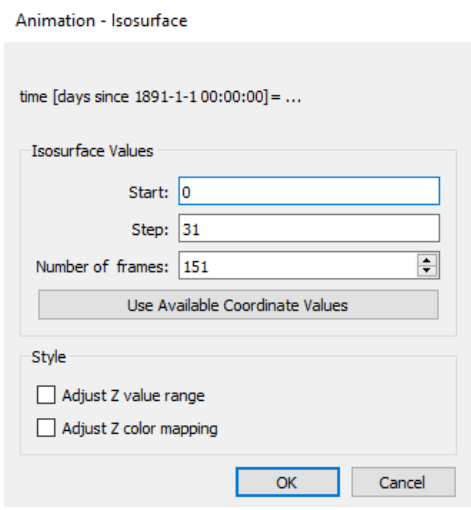






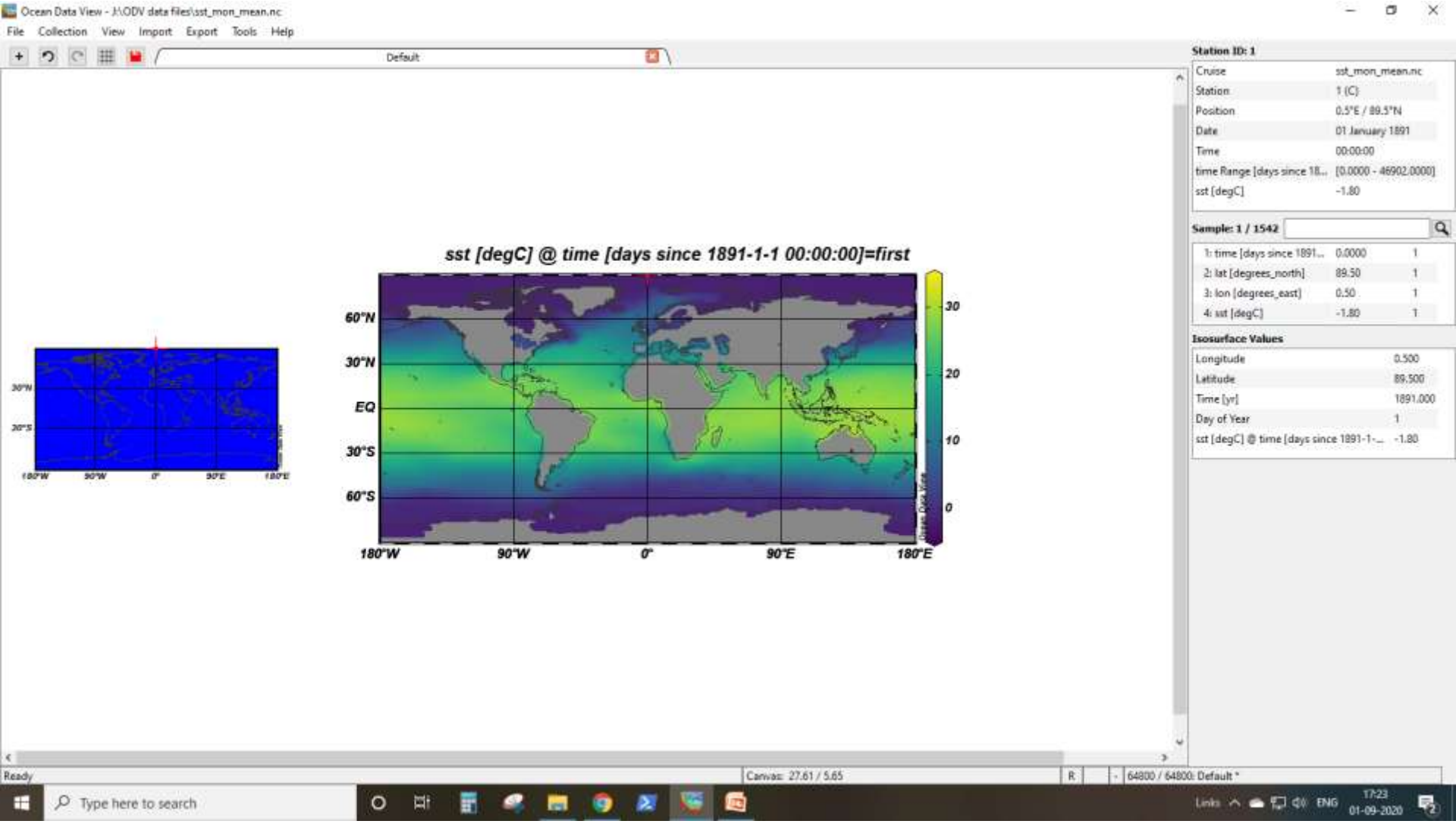






Subset the lat and lon dimensions to use all the values in the gridded data and the time dimension to include values upto 150 monthly timesteps

- To plot in surface mode, go to View > Layout Templates and select

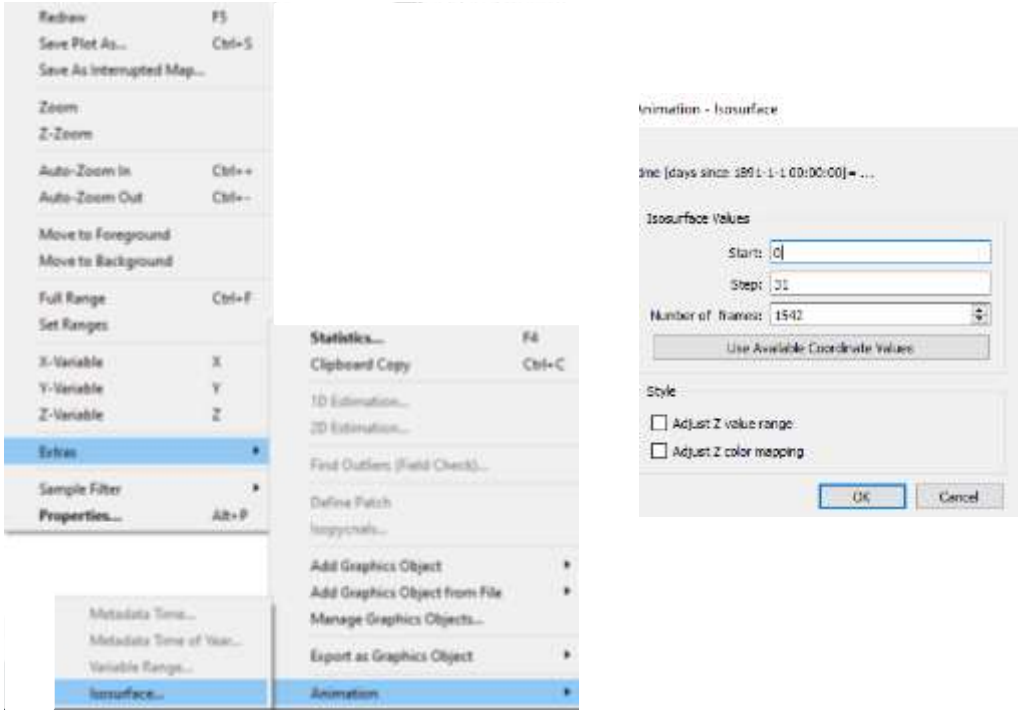


Change plot label

- Go to properties and untick the Automatic Label option
- To change the figure title click outside the canvas near the current title and Add Graphic Objects > Annotation
- Then add the text Monthly Mean SST during January 1901

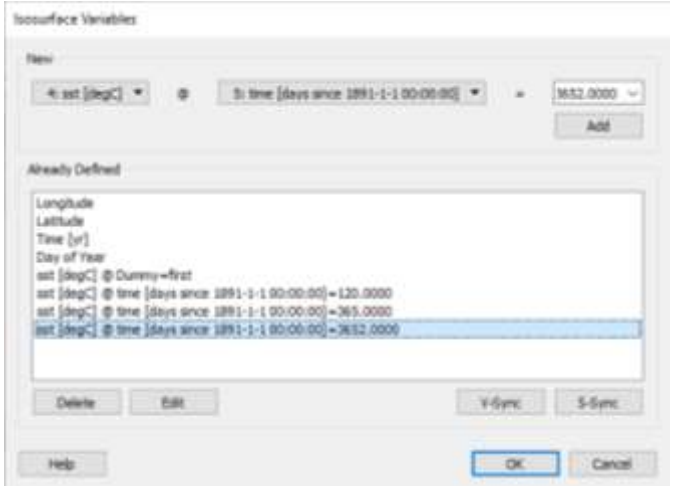
Animations

- Right click on the figure, Go to Extras > Animation > Isosurface

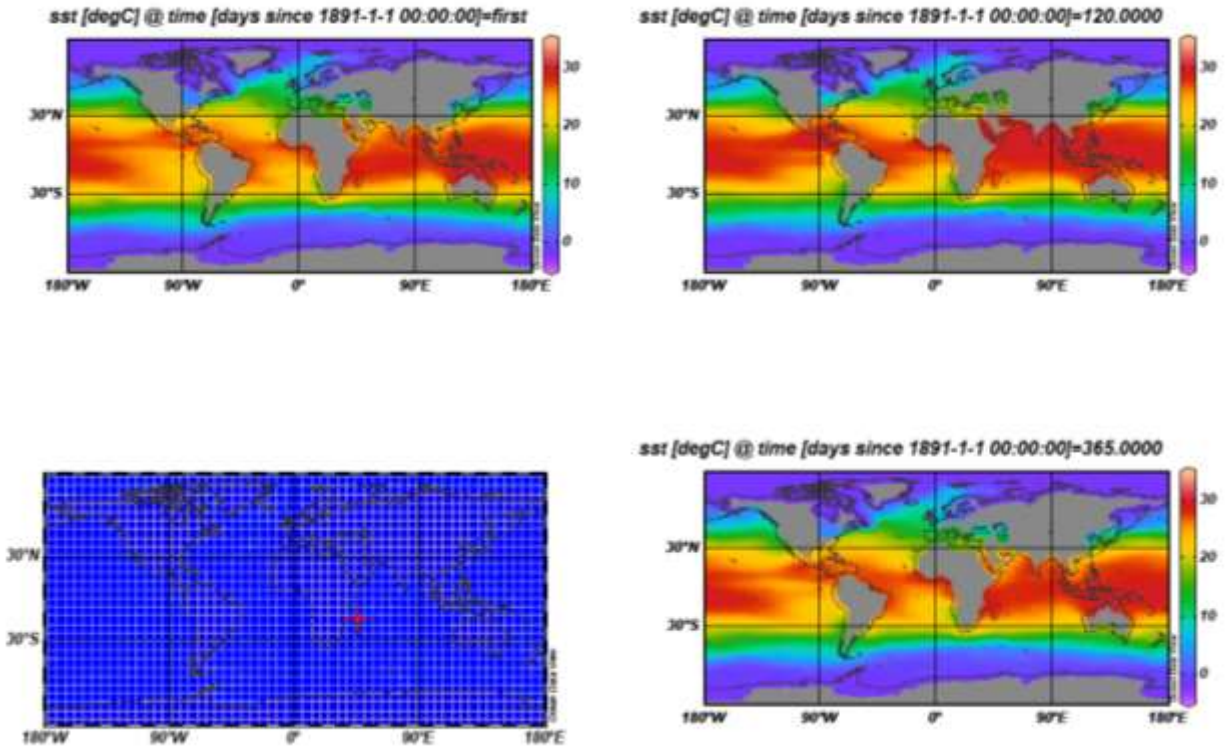


Create monthly plots

- To plot sst during the months May 1891, January 1892 and January 1901, go to View > Isosurface variables and add SST @ time = 120, 365 and 3652 respectively



- Go to Layout Templates > 3 Surface



- Go to File > Save canvas as to get the above layout in jpeg format
- By clicking on any data point in any window, the corresponding time will be shown in the left top window labelled STATION ID

Other options

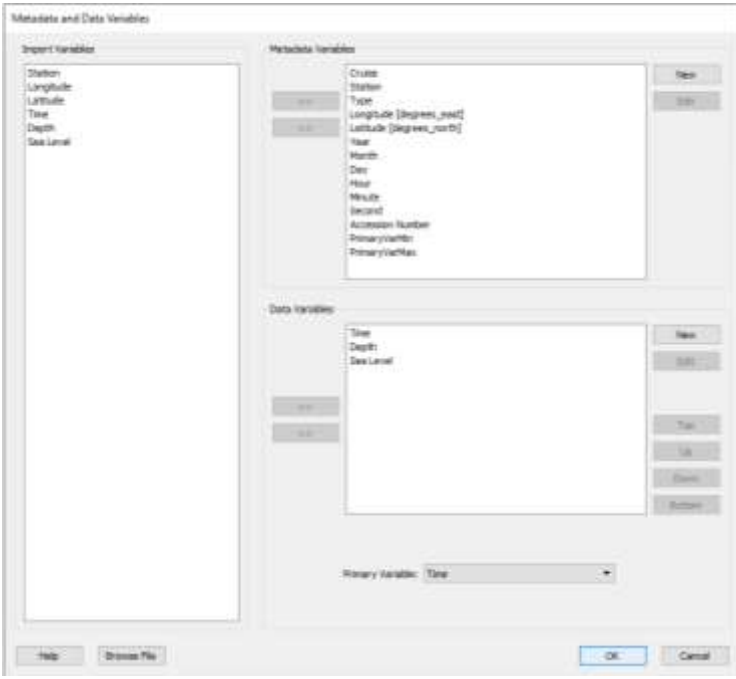
- Go to Collections > Browse info file to see the properties of the netcdf file

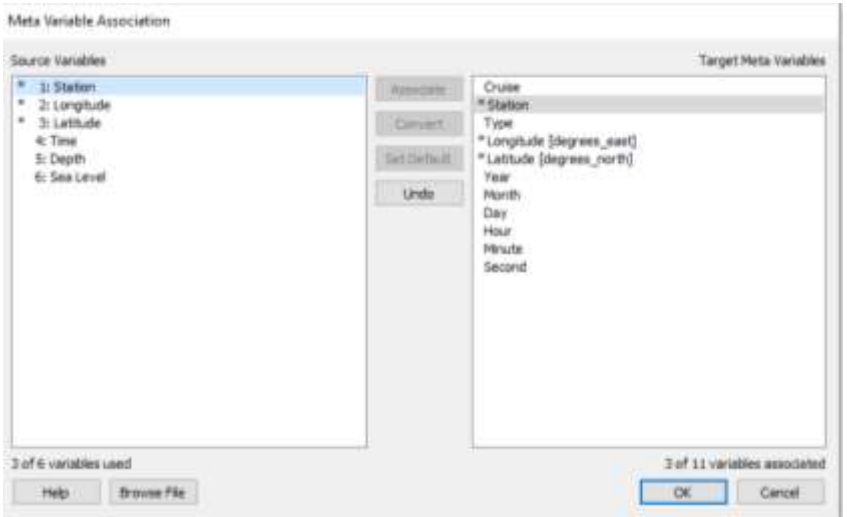
Task

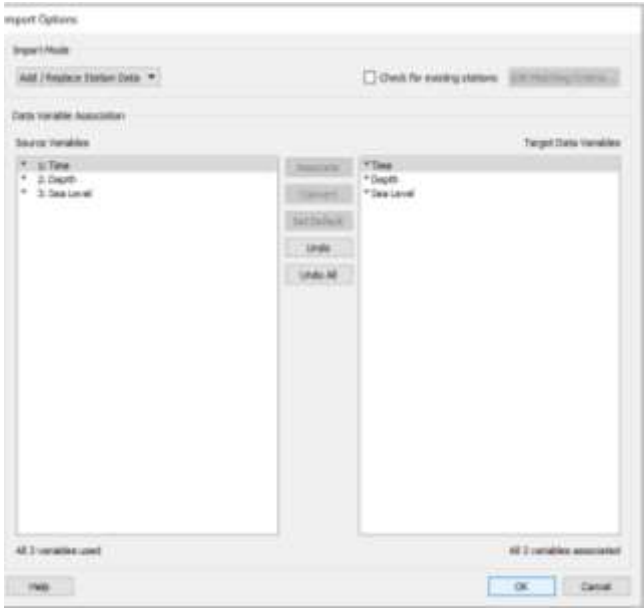
- Plot a section in Arabian Sea with section distance on x-axis, time on y axis and sst on z axis with DIVA gridding. This is similar to a hovmoller diagram. Notice the warming along equatorial region.

Part 4:
Timeseries data

- Select File > Open then navigate to the timeseries_trial.csv file in the Documents\ODV\Data folder and open it.
- Match the meta variables and data variables, and click OK.
- Select timeseries as datatype and as primary variable



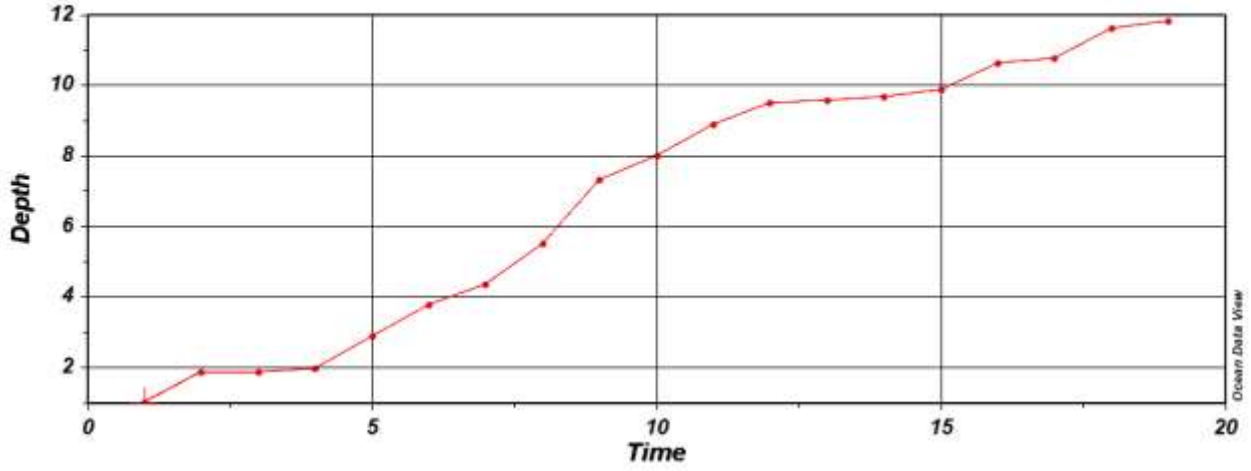


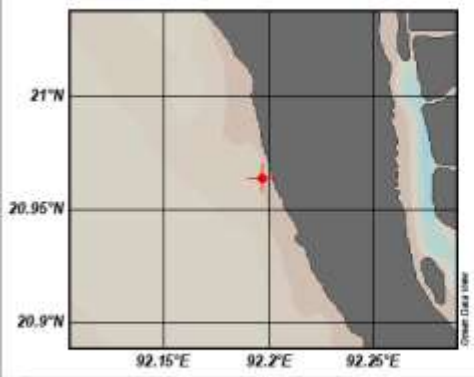


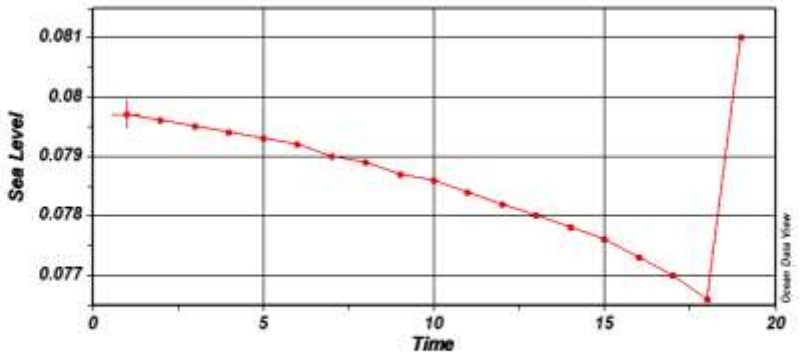
Ocean Data View - C:\Users\user\Documents\ODV\data\timeseries_trial1

File Collection View Import Export Tools Help

Default







Station ID: 1

Accession Number	1
Cruise	timeseries_trial1.csv
Station	1 (B)
Position	92.197°E / 20.964°N
Date	
Time	
Time Range	[1.00 - 19.00]

Sample: 1 / 19

1: Time	1.00	1
2: Depth	1.01	1
3: Sea Level	0.08	1

Isosurface Values

Longitude	92.197
Latitude	20.964
Time [yr]	
Day of Year	
Time @ Time=first	1.00
Depth @ Time=first	1.01
Sea Level @ Time=first	0.08

Ready Canvas: 23.36 / 8.71 RW 1 / 1: Default *

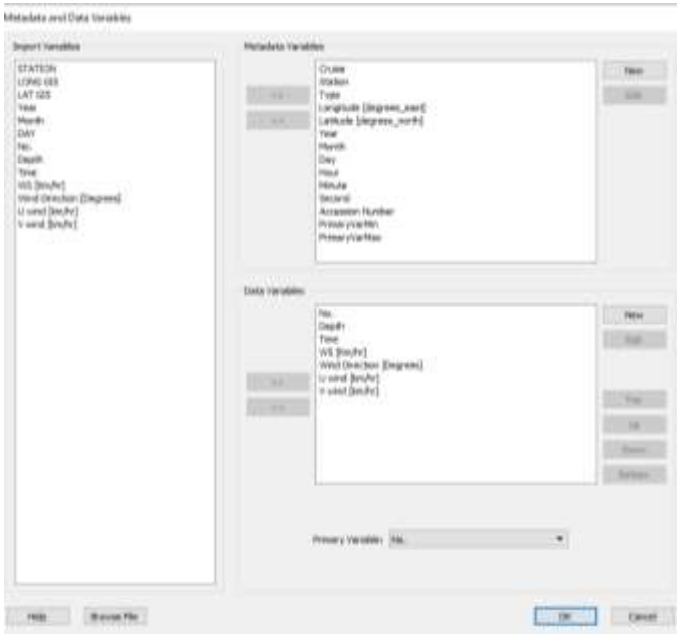
Type here to search

ENG 10:19 07-08-2019

Part 5:
Vector dataset

Open data

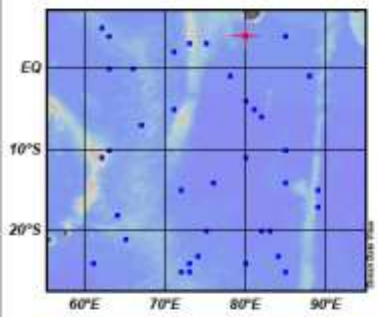
- Select File > Open then navigate to the training_dataset_vector.csv file in the Documents\ODV\Data folder and open it.
- Match the meta variables and data variables, and click OK.
- Select general as datatype and WS as primary variable

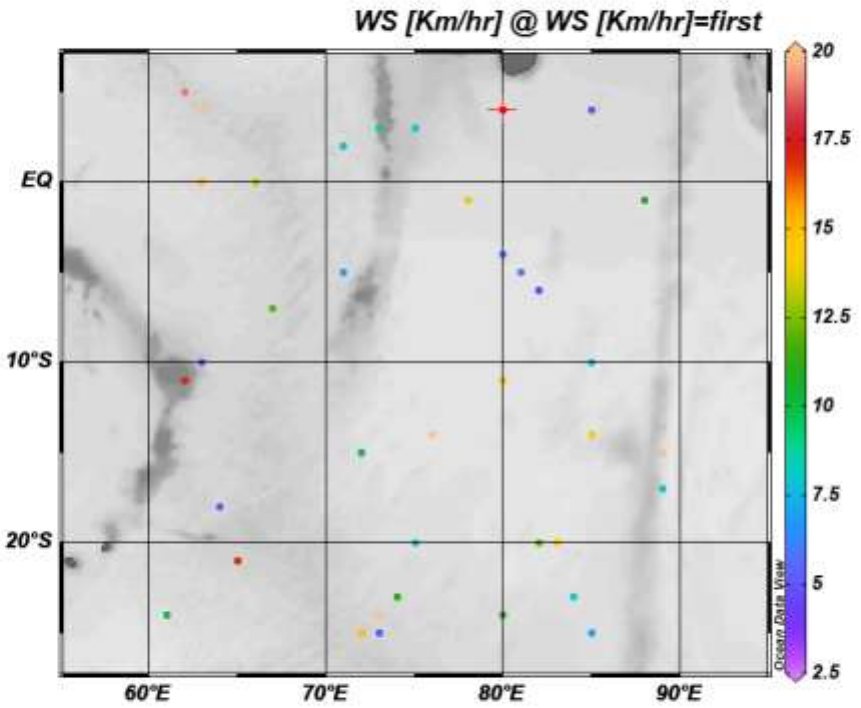


Ocean Data View - C:\Users\user\Documents\ODV\data\training_dataset_vector

File Collection View Import Export Tools Help

Default





Station ID: 1

Accession Num...	1
Cruise	training_dataset_vector.csv
Station	3 (B)
Position	80°E / 4°N
Date	28 January 2006
Time	
WS Range [Km/...	[17.50 - 17.50]

Sample: 1 / 1

1: No.	1626.00	1
2: Depth	1.00	1
3: Time	2006.00	1
4: WS [Km/hr]	17.50	1
5: Wind Direction [De...	90.00	1
6: U wind [km/hr]	-7.84	1
7: V wind [km/hr]	15.64	1

Isosurface Values

Longitude	80.000
Latitude	4.000
Time [yr]	2006.074
Day of Year	28
No. @ WS [Km/hr]=first	1626.00
Depth @ WS [Km/hr]=first	1.00
Time @ WS [Km/hr]=first	2006.00
WS [Km/hr] @ WS [Km/hr]=first	17.50

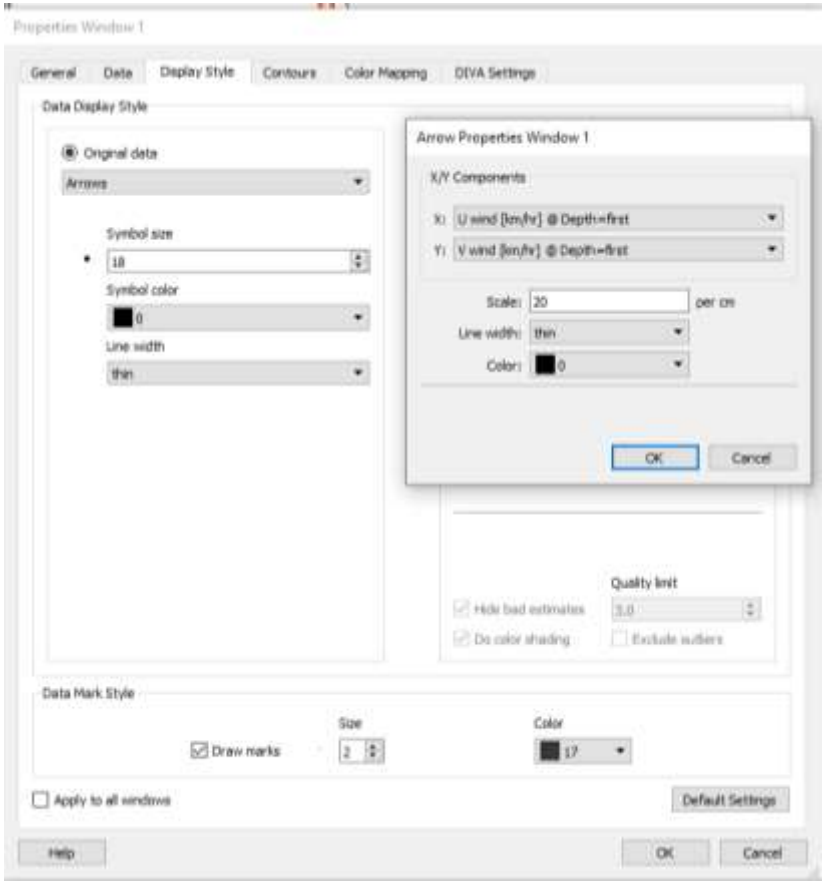
Ready | Window 1: 74.9°E / 1.6°N | RW | 39 / 39: Default *

Type here to search

ENG 10:27 07-08-2019

Plot vector

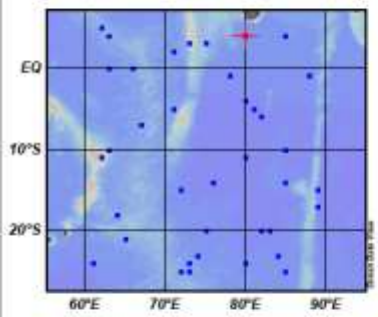
- Create isosurface variables of u and v at depth = first (surface)
- Right click on the figure, go to Properties > Display Style >
- Select Arrows and assign U an V velocities as X and Y respectively. Change scale to 20, or according to the desired arrow length.

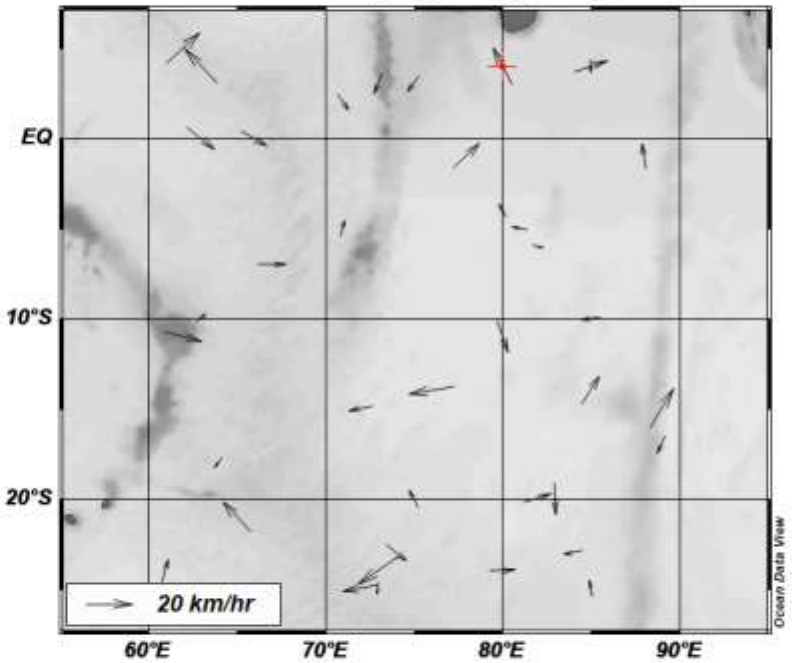


Ocean Data View - C:\Users\user\Documents\ODV\data\training_dataset_vector(1)

File Collection View Import Export Tools Help

Default





Station ID: 1

Accession Num...	1
Cruise	training_dataset_vector.csv
Station	3 (B)
Position	80°E / 4°N
Date	28 January 2006
Time	
WS Range [Km/...	[17.50 - 17.50]

Sample: 1 / 1

1: Depth	1.00	1
2: Time	2006.00	1
3: WS [Km/hr]	17.50	1
4: Wind Direction [De...	90.00	1
5: U wind [km/hr]	-7.84	1
6: V wind [km/hr]	15.64	1

Isosurface Values

Longitude	80.000
Latitude	4.000
Time [yr]	2006.074
Day of Year	28
Depth @ WS [Km/hr]=first	1.00
Time @ WS [Km/hr]=first	2006.00
WS [Km/hr] @ WS [Km/hr]=first	17.50
Wind Direction [Degrees] @ WS [K...	90.00
U wind [km/hr] @ Depth=first	-7.84
V wind [km/hr] @ Depth=first	15.64

Ready | Canvas: 20.86 / 0.77 | RW | 39 / 39: Default *

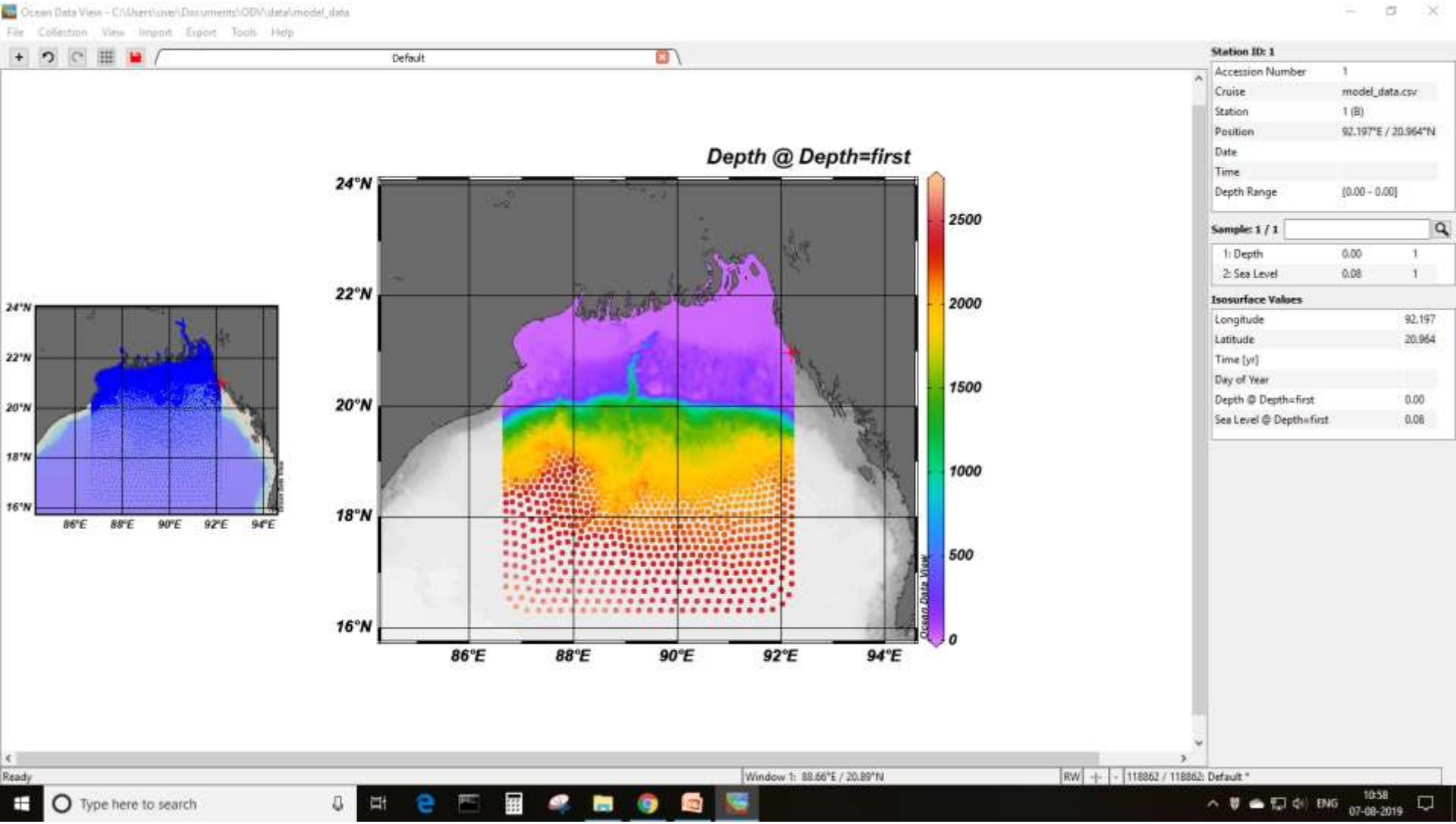
Type here to search

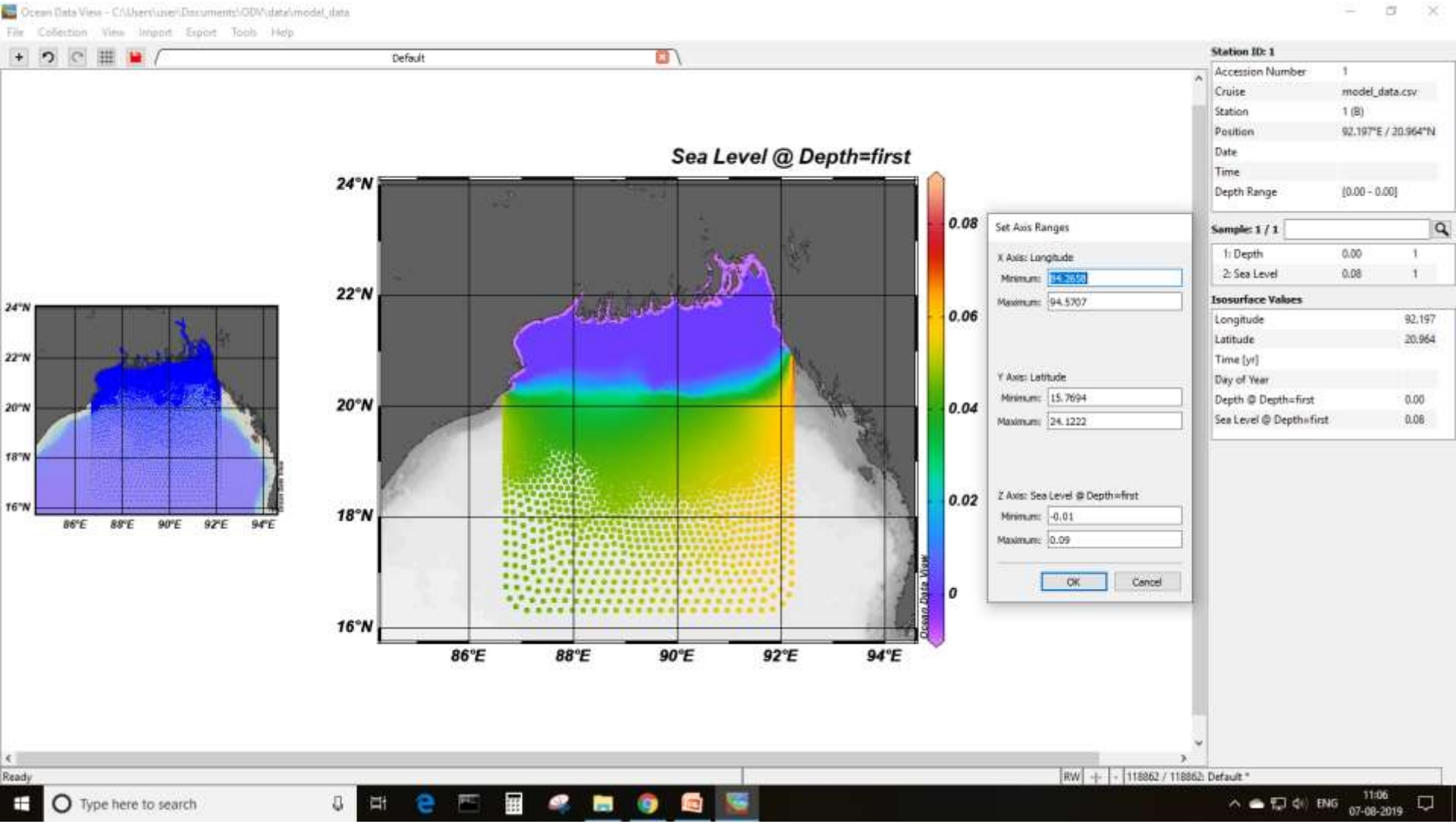
ENG 10:52 07-08-2019

Part 6:
Model data

Import data

- Select File > Open then navigate to the model_data_timeseries.csv file in the Documents\ODV\Data folder and open it.
- Match the meta variables and data variables, and click OK.
- Select general as datatype and depth as primary variable


Ocean Data View - C:\Users\user\Documents\ODV\data\model_data
File Collection View Import Export Tools Help
Default
Depth @ Depth=first
24°N
22°N
20°N
18°N
16°N
86°E
88°E
90°E
92°E
94°E
2500
2000
1500
1000
500
0
Station ID: 1
Accession Number 1
Cruise model_data.csv
Station 1 (B)
Position 92.197°E / 20.964°N
Date
Time
Depth Range [0.00 - 0.00]
Sample: 1 / 1
1: Depth 0.00 1
2: Sea Level 0.08 1
Isosurface Values
Longitude 92.197
Latitude 20.964
Time [yr]
Day of Year
Depth @ Depth=first 0.00
Sea Level @ Depth=first 0.08
Ready
Window 1: 88.66°E / 20.89°N
118862 / 118862: Default *
Type here to search
ENG
10:58
07-08-2019


Ocean Data View - C:\Users\user\Documents\ODV\data\model_data
File Collection View Import Export Tools Help
Default
Sea Level @ Depth=first
24°N
22°N
20°N
18°N
16°N
86°E
88°E
90°E
92°E
94°E
0.08
0.06
0.04
0.02
0
Ocean Data View
Set Axis Ranges
X Axis: Longitude
Minimum: 84.2658
Maximum: 94.5707
Y Axis: Latitude
Minimum: 15.7694
Maximum: 24.1222
Z Axis: Sea Level @ Depth=first
Minimum: -0.01
Maximum: 0.09
OK
Cancel
Station ID: 1
Accession Number 1
Cruise model_data.csv
Station 1 (B)
Position 92.197°E / 20.964°N
Date
Time
Depth Range [0.00 - 0.00]
Sample: 1 / 1
1: Depth 0.00 1
2: Sea Level 0.08 1
Isosurface Values
Longitude 92.197
Latitude 20.964
Time [yr]
Day of Year
Depth @ Depth=first 0.00
Sea Level @ Depth=first 0.08
Ready
RW
118862 / 118862: Default *
Type here to search
ENG
11:06
07-08-2019

Create isosurface variable as sea level at time equals 2.