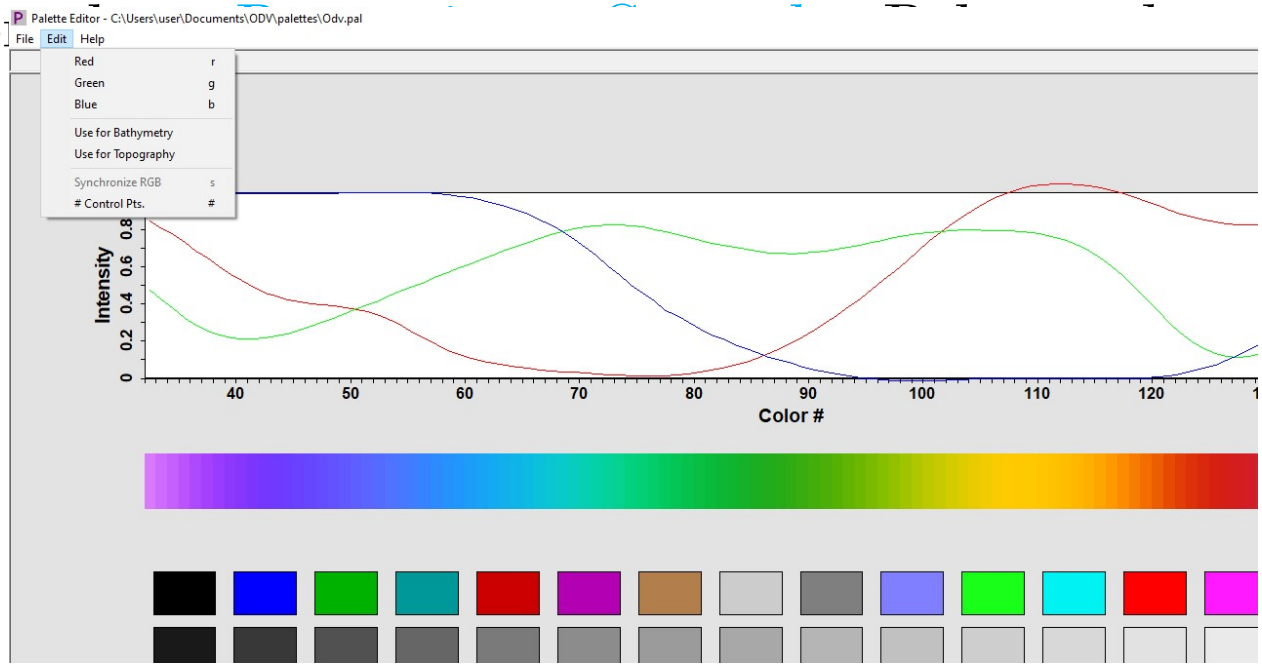
Additional options in ODV

Palette Editor

1 Surface Window > Oxygen at surface as z variable >

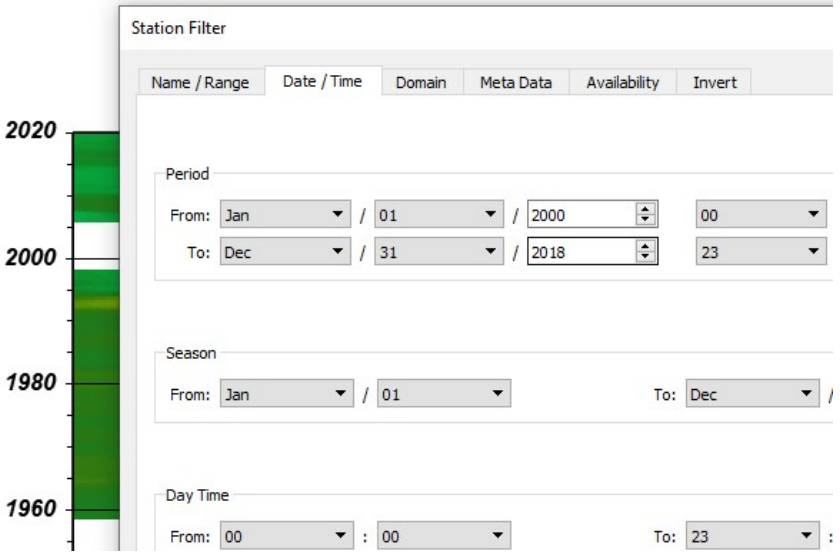
Tools > Palette Editor > Edit > change blue/green > save as new palette ODV2

Right click o
ODV2



Station Filter

- 1 Surface Window > Oxygen at surface as z variable >
- Right click map> Station Filter> Date/Time> enter 2000 to 2018
- Change y variable of plot to time/year to see the changes
- To get back the full values, go back to Station Filter> Date/Time > Relax Criteria
- Right click on plot> Full range to get back the entire time values

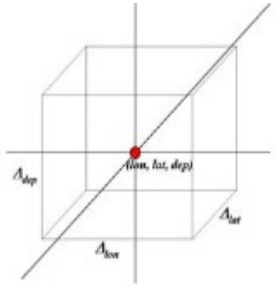


Box averaging

- Tools> Box averaging > select a created ascii file containing lat, lon, depth information at user-defined points at which box averaging need to be done.
- Output file will be listed containing mean of lat, long, depth, variable whose box averaging is done, standard deviation of the variable, no of data points used, no of points rejected

The format of the box definition file is as follows:

- plain ASCII, one box definition per line, 6 numbers separated by (one or more) spaces,
- meaning of numbers (see figure):
  lon lat dep (box center) Δ_{lon} Δ_{lat} Δ_{dep} (box sizes). Longitudes and latitudes are in decimal degrees, and depth is in meters.



Once you have specified a box definition file, ODV will start working. Note that while averaging, ODV will check for data outliers and will use only data within 3 standard deviations of the mean. The output will be written to the directory of the box definition file. The output file names consist of the box definition file name, the label of the variable that is processed and the extension *.est*.

The format of the *.est* output file is as follows:

- plain ASCII, one line of output per line in the box definition file, 10 values separated by TABS,
- meaning of values:
  lon lat dep (same as in box definition file) $\overline{lon}$ $\overline{lat}$ $\overline{dep}$ $\overline{val}$ σ n_u n_r.

$\overline{lon}$ $\overline{lat}$ $\overline{dep}$ $\overline{val}$ are average longitude, latitude, depth and variable values of the data used, σ is the standard deviation of the variable values, n_u is the number of data points used and n_r is the number of data points rejected. A data point is rejected if its value differs from the mean $\overline{val}$ by more than 3 standard deviations σ.

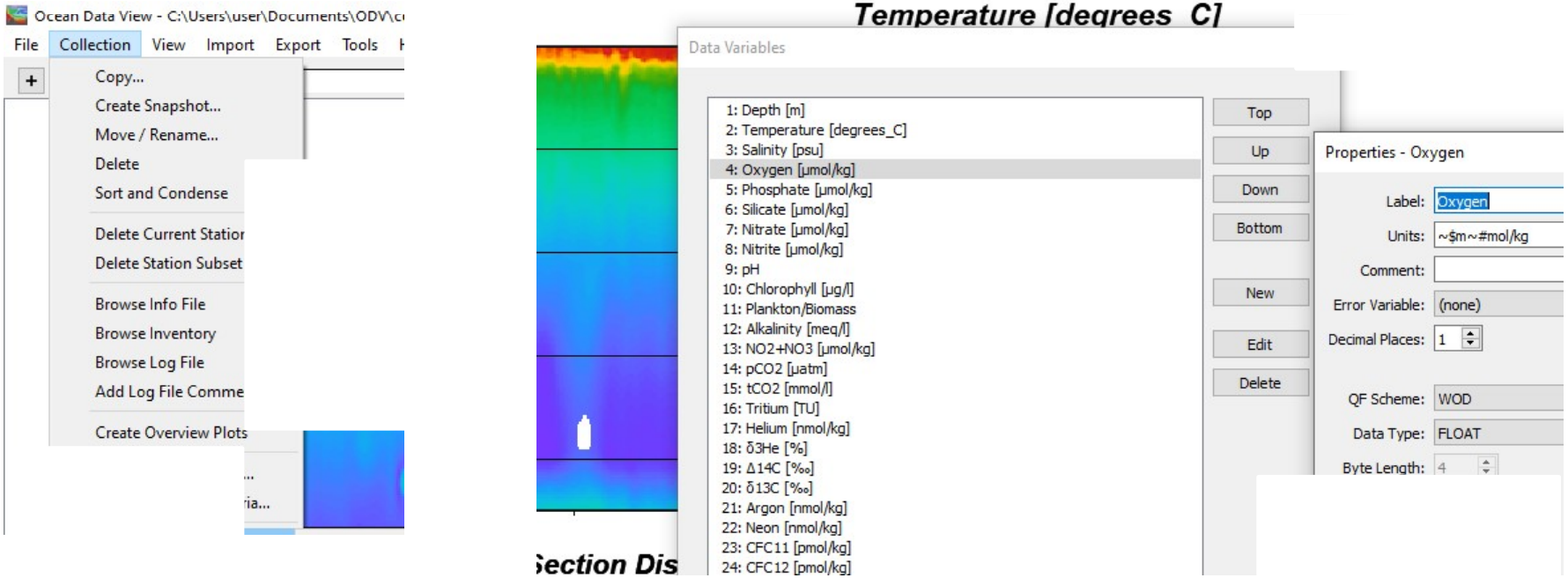
2D and 3D estimation

- Tools> 3D estimation> select a created ascii file containing lat, lon, depth information at user-defined points at 3D estimation for any variable needs to be done.
- Output file will be listed containing longitude, latitude, depth, estimated value, normalized distance of averaged data x, y, z positions from estimation point and number of data points used

- Right click on plot> Extras> 2D estimation
- 2D estimation is for gridded data with no depth information available. The inpu/output file does not contain depth

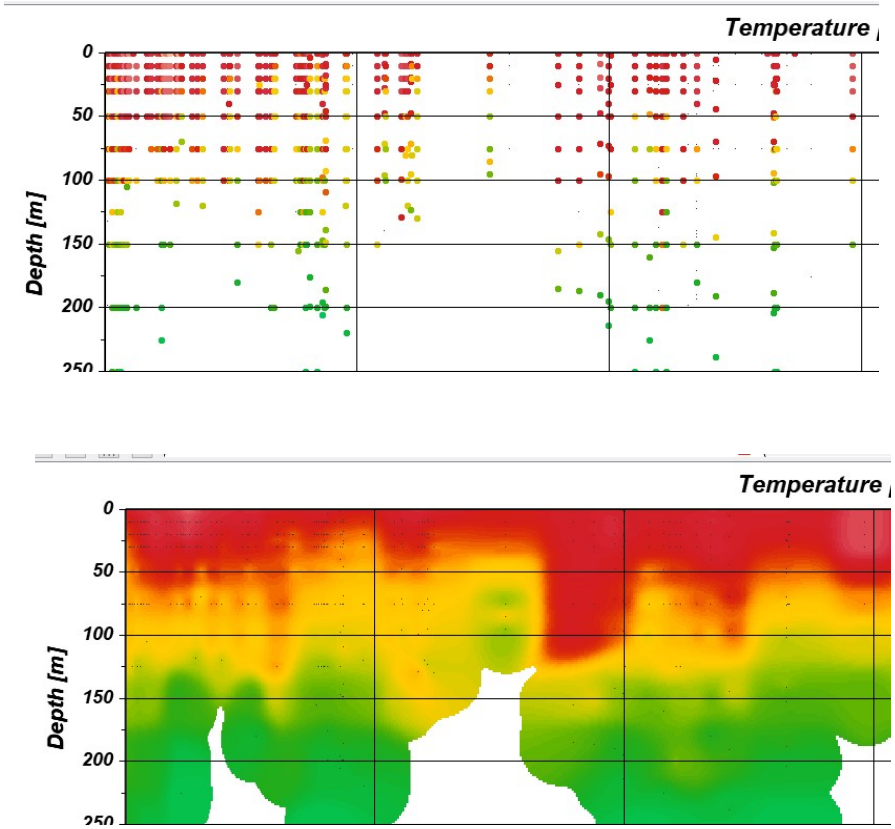
Change data properties

- Collection > Properties >Data Variables. Select any variable > Edit > Change units
- Same can be done with meta variables

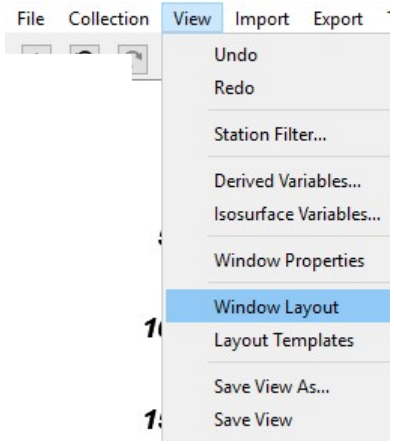


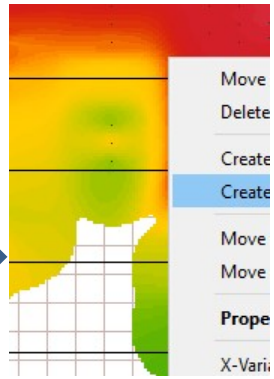
Overlay plots

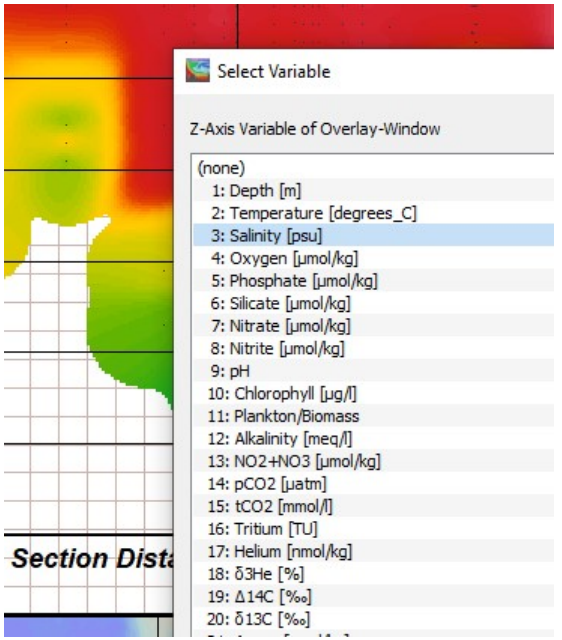
- Open the osd_wod collection previously created.
- Define a new section along a thickly data populated region. A section can be a curve or any zigzagged feature.
- Plot temperature as Z variable and interpolate data using weighted average gridding.

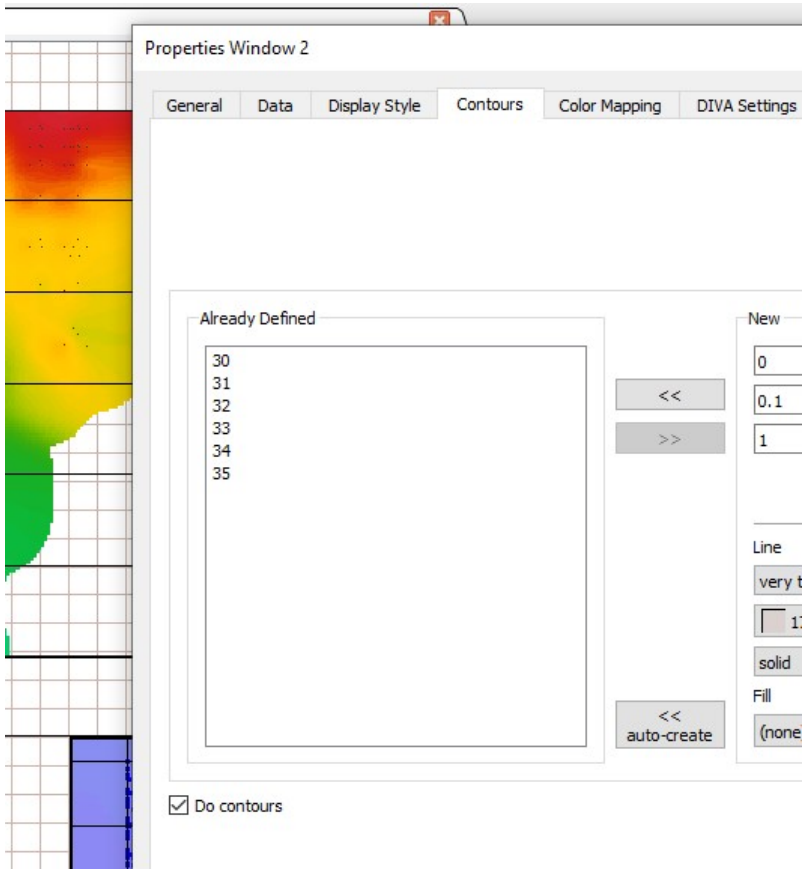


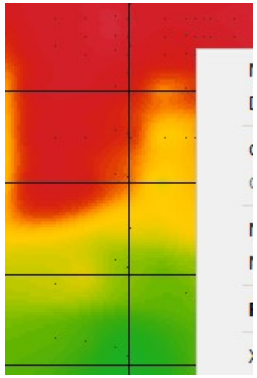
- To overplot salinity contours on temperature, go to File > View > Window Layout
- Or alternatively, click on the # icon on the menu bar.
- Now right click on the image, select Create overlay window.
- Go back to figure, again right click, select properties, make sure the data tab shows the new variable – salinity
- Go to contours, select do contours and add a range of contours, with increments
- Go back to the figure, right click and select Accept

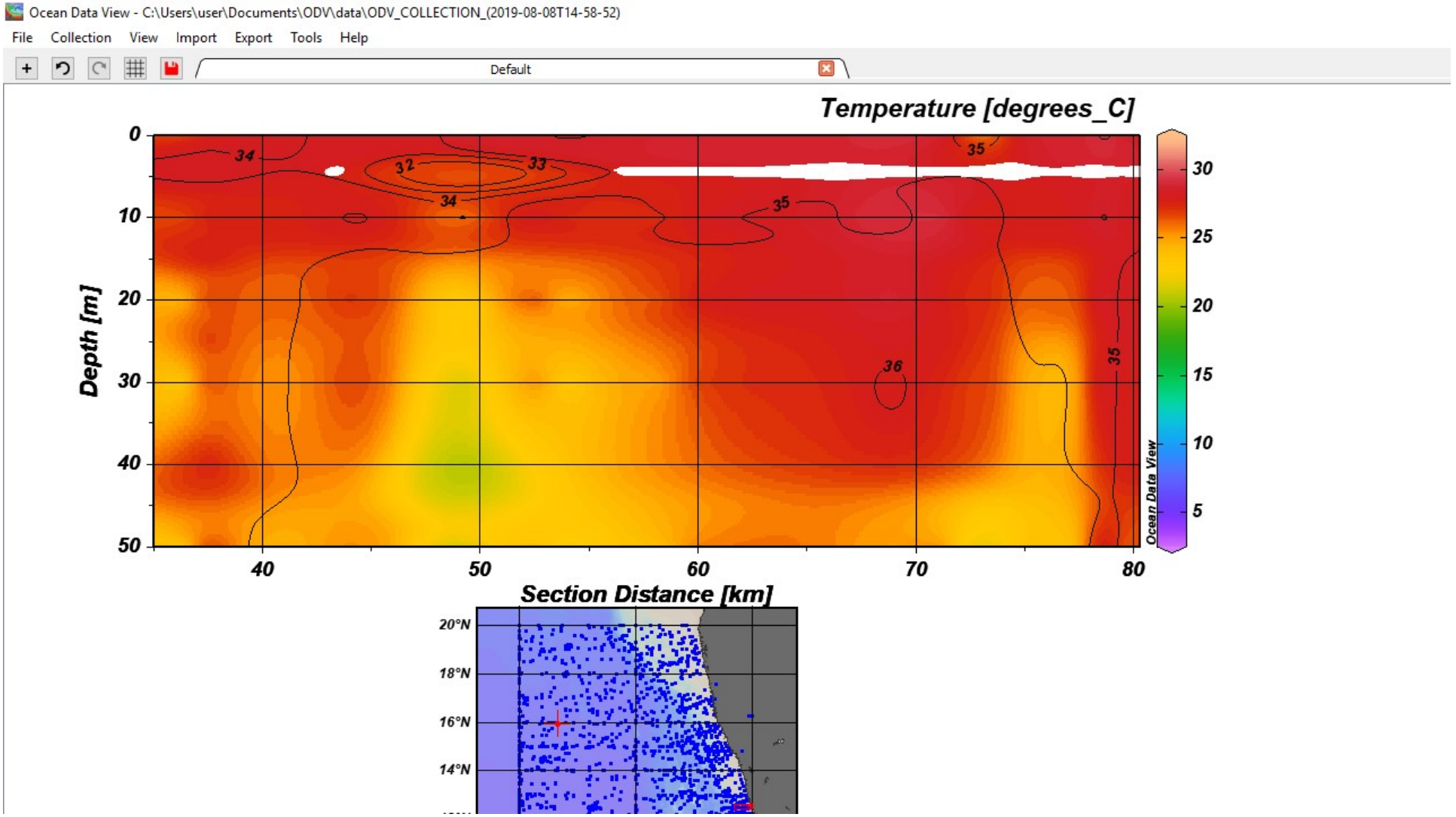

File
Collection
View
Import
Export
Undo
Redo
Station Filter...
Derived Variables...
Isosurface Variables...
Window Properties
Window Layout
Layout Templates
Save View As...
Save View


Move
Delete
Create
Create
Move
Move
Prope
X-Vari


Select Variable
Z-Axis Variable of Overlay-Window
(none)
1: Depth [m]
2: Temperature [degrees_C]
3: Salinity [psu]
4: Oxygen [µmol/kg]
5: Phosphate [µmol/kg]
6: Silicate [µmol/kg]
7: Nitrate [µmol/kg]
8: Nitrite [µmol/kg]
9: pH
10: Chlorophyll [µg/l]
11: Plankton/Biomass
12: Alkalinity [meq/l]
13: NO2+NO3 [µmol/kg]
14: pCO2 [µatm]
15: tCO2 [mmol/l]
16: Tritium [TU]
17: Helium [nmol/kg]
18: δ3He [%]
19: Δ14C [‰]
20: δ13C [‰]
Section Dista


Properties Window 2
General
Data
Display Style
Contours
Color Mapping
DIVA Settings
Already Defined
30
31
32
33
34
35
<<
>>
<<
auto-create
New
0
0.1
1
Line
very t
solid
Fill
(none
Do contours

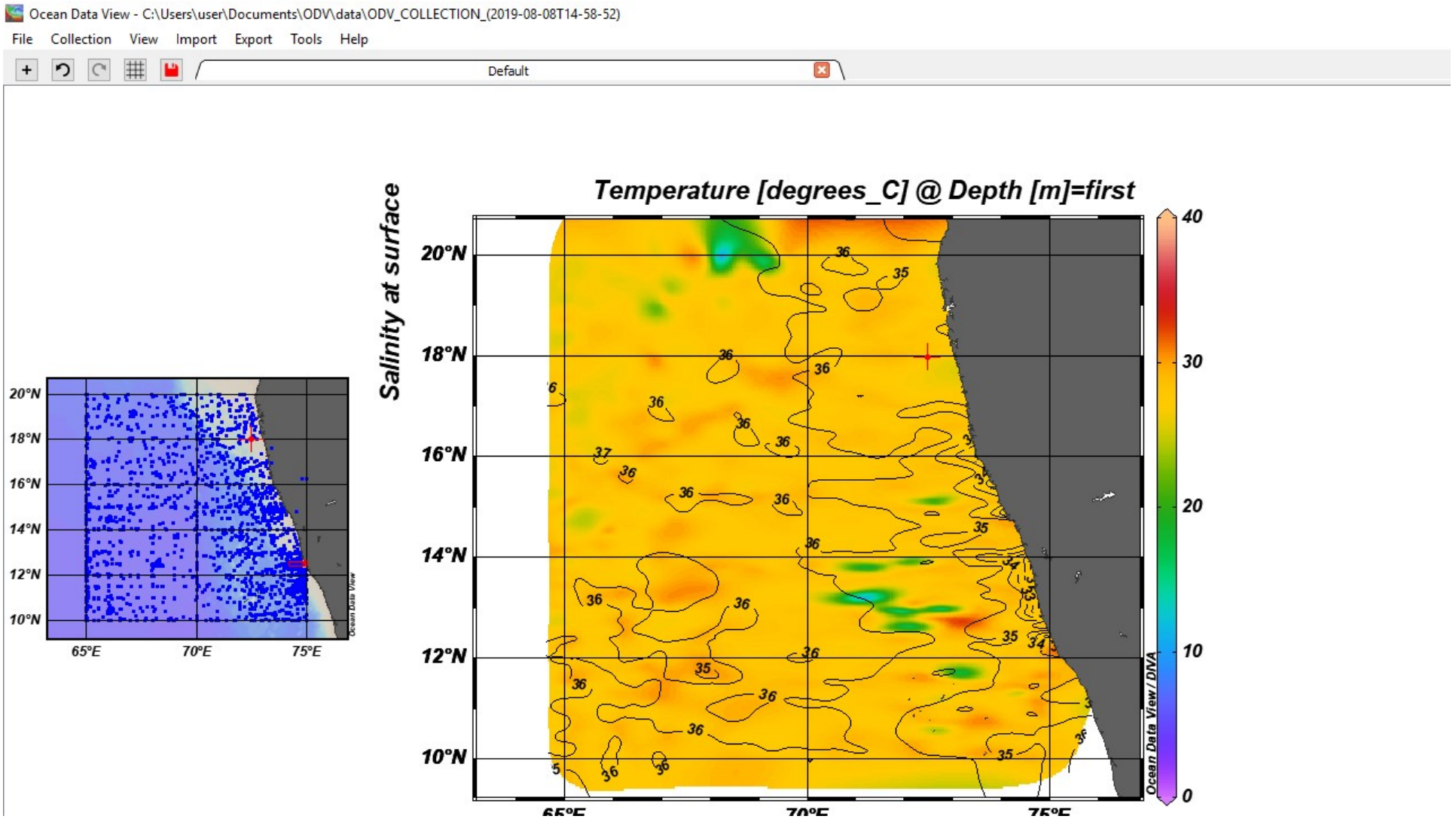



Ocean Data View - C:\Users\user\Documents\ODV\data\ODV_COLLECTION_(2019-08-08T14-58-52)
File Collection View Import Export Tools Help
Default
Temperature [degrees_C]
Depth [m]
0
10
20
30
40
50
34
32
33
34
35
35
36
35
40
50
60
70
80
Section Distance [km]
30
25
20
15
10
5
Ocean Data View
20°N
18°N
16°N
14°N

- Overlay window will be active only after data interpolation.
- To go back to the filled plot of temperature contours to change its properties, now it can only be accessed through File > View > Window properties > Window 1.
- For the window 2 (salinity contours) remove the colorbar from Properties > Data > colorbar settings > Position > No colorbar.

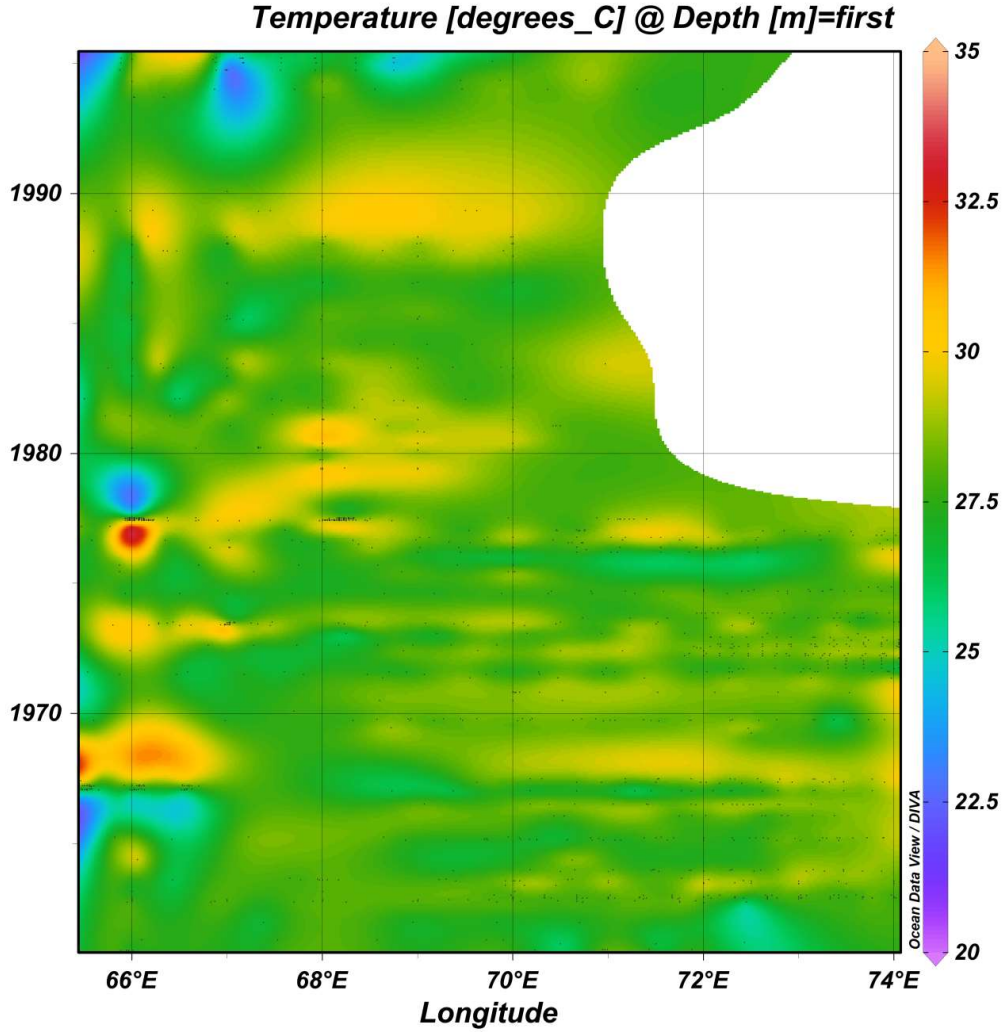
Task:

- Repeat the same for a surface plot, Reject the outliers.


Ocean Data View - C:\Users\user\Documents\ODV\data\ODV_COLLECTION_(2019-08-08T14-58-52)
File Collection View Import Export Tools Help
Default
Salinity at surface
Temperature [degrees_C] @ Depth [m]=first
20°N
18°N
16°N
14°N
12°N
10°N
65°E
70°E
75°E
40
30
20
10
0
Ocean Data View / DIVA

Hovmoller Diagram

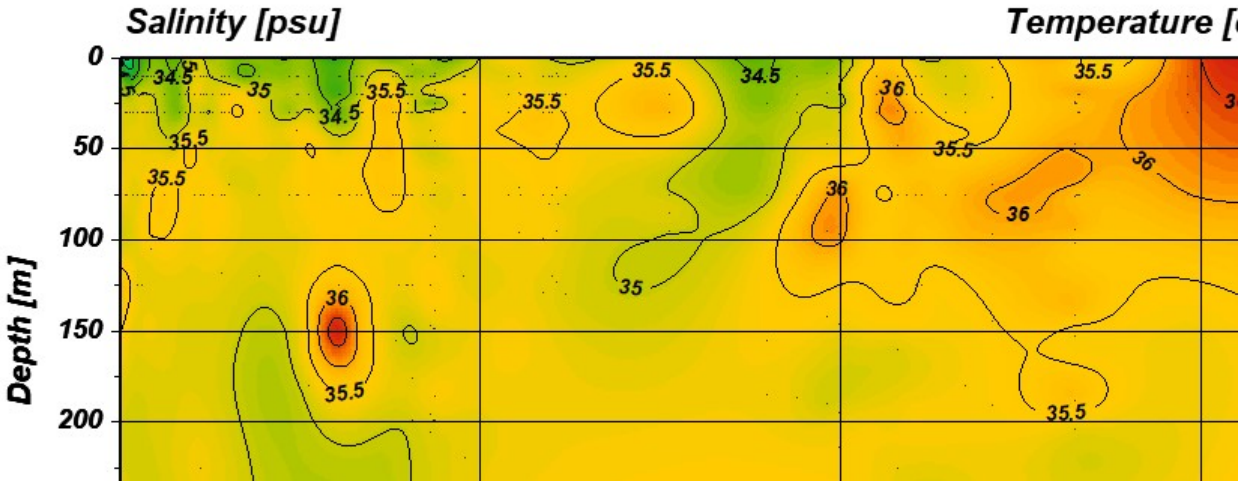
- Try a surface temperature plot with gridding.
- Change the y variable to time in years and zoom into the figure to get the desired filled region.
- This is similar to a Hovmoller (time-longitude) diagram, but without area averaging.



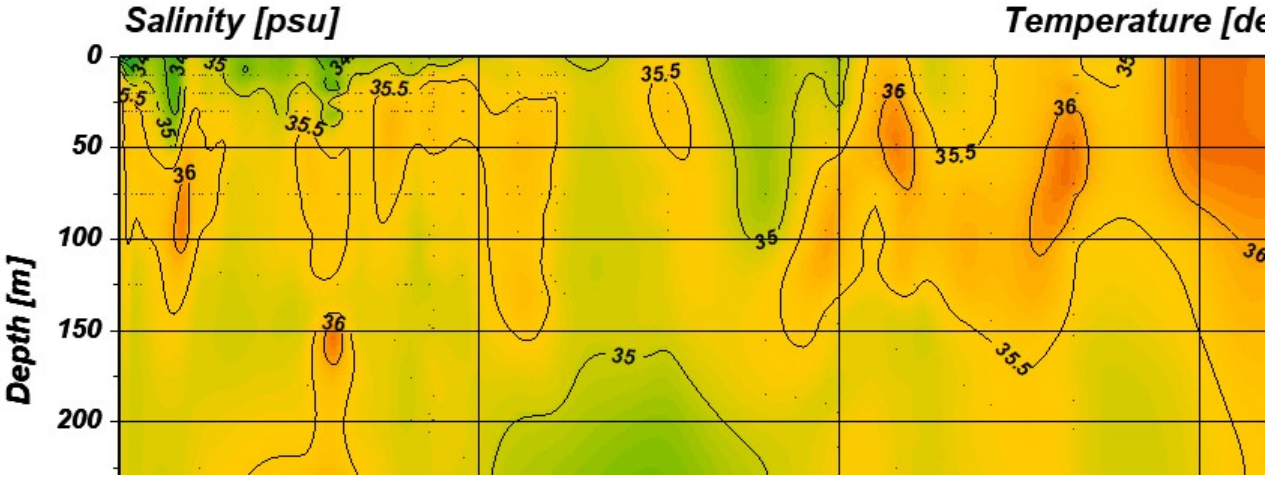
Isopycnic gridding

- Isopycnic gridding should always be used in areas with sharply sloping isopycnals, such as regions with strong currents and fronts.
- Note that this option is only enabled only if potential density derived variable is defined and DIVA gridding is used in SECTION mode
- To do this check the Isopycnic gridding box on the Display Style page of the window's Properties dialog

DIVA gridding with automatic scales



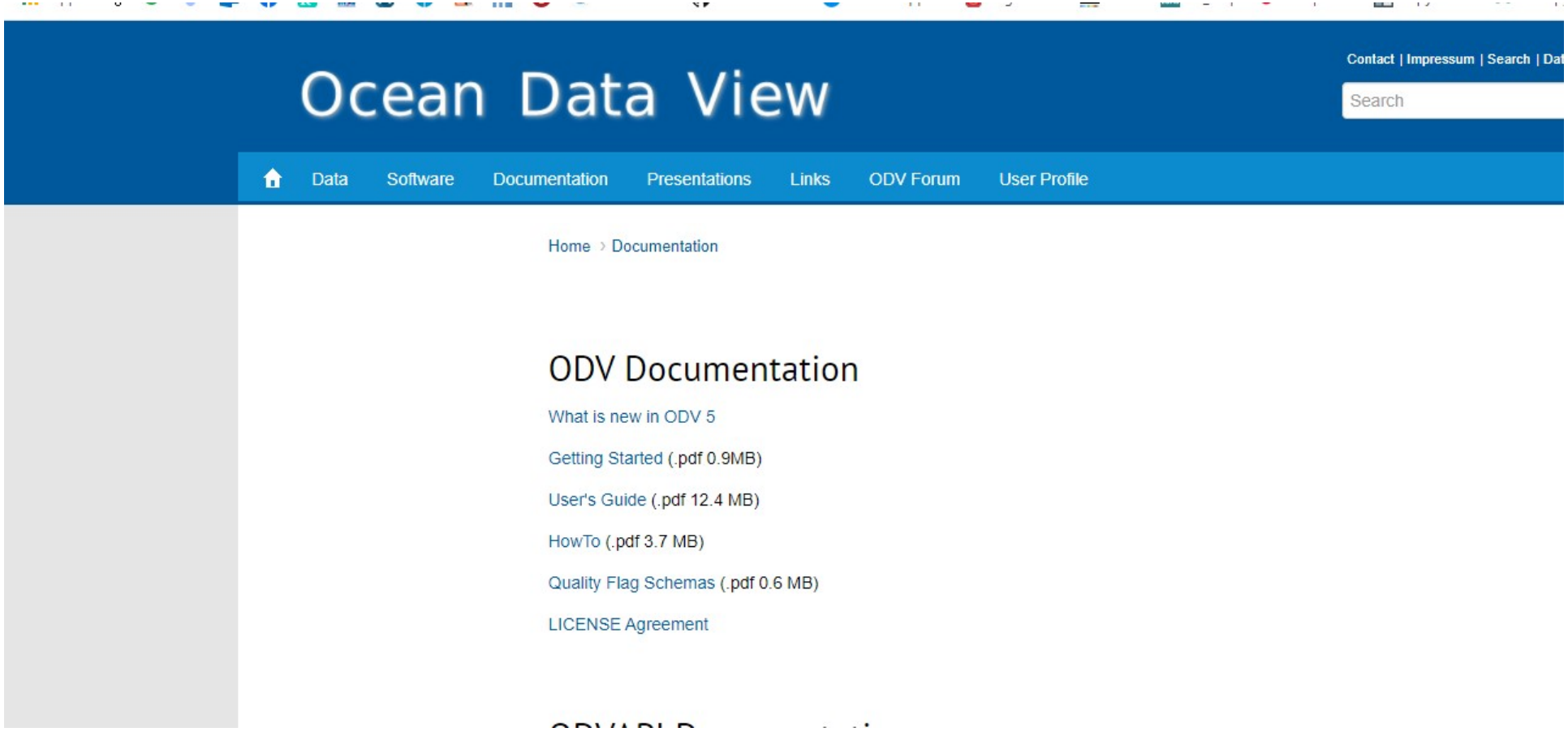
Isopycnic gridding



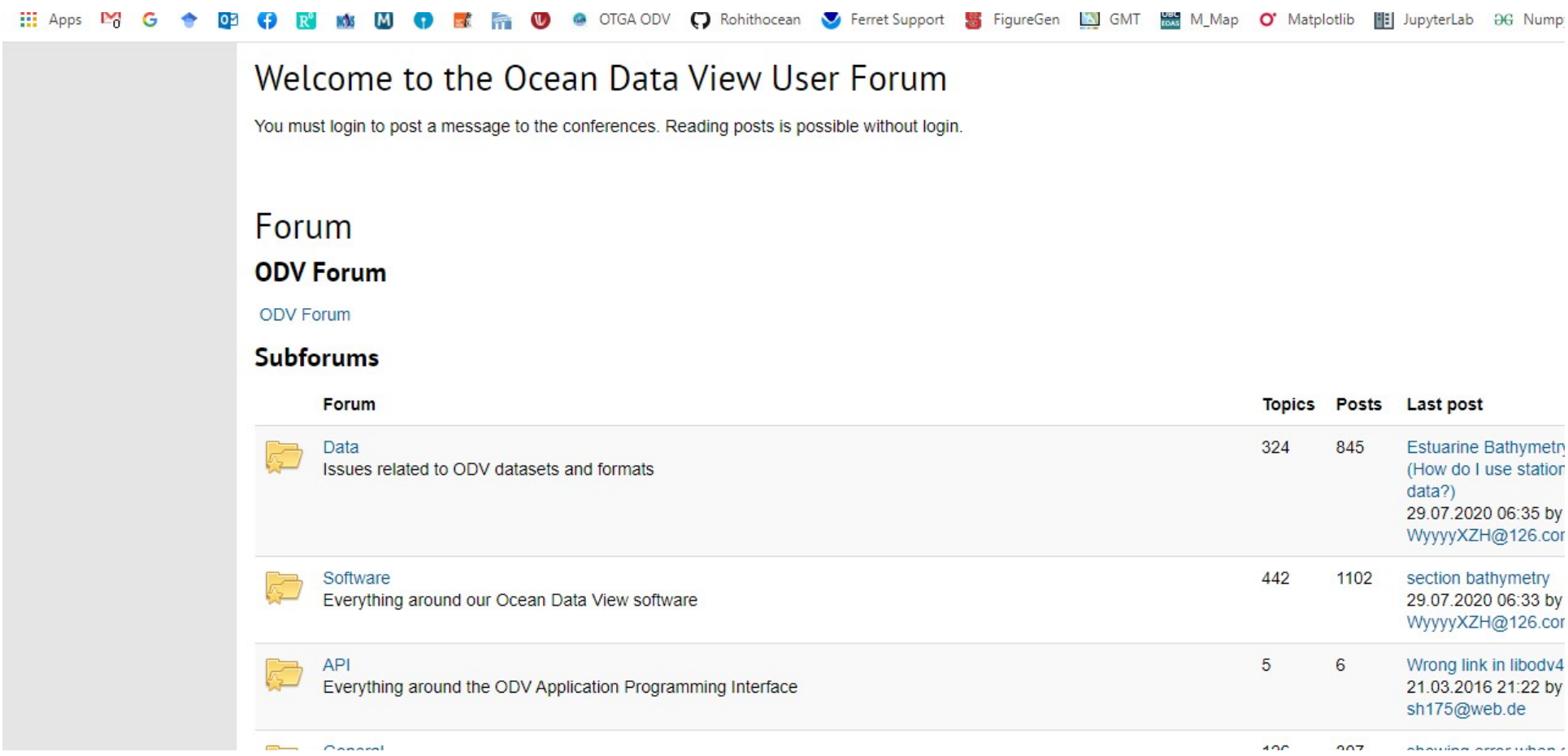
- Save the whole layout using File > Save Canvas As

ODV User Guide

https://odv.awi.de/

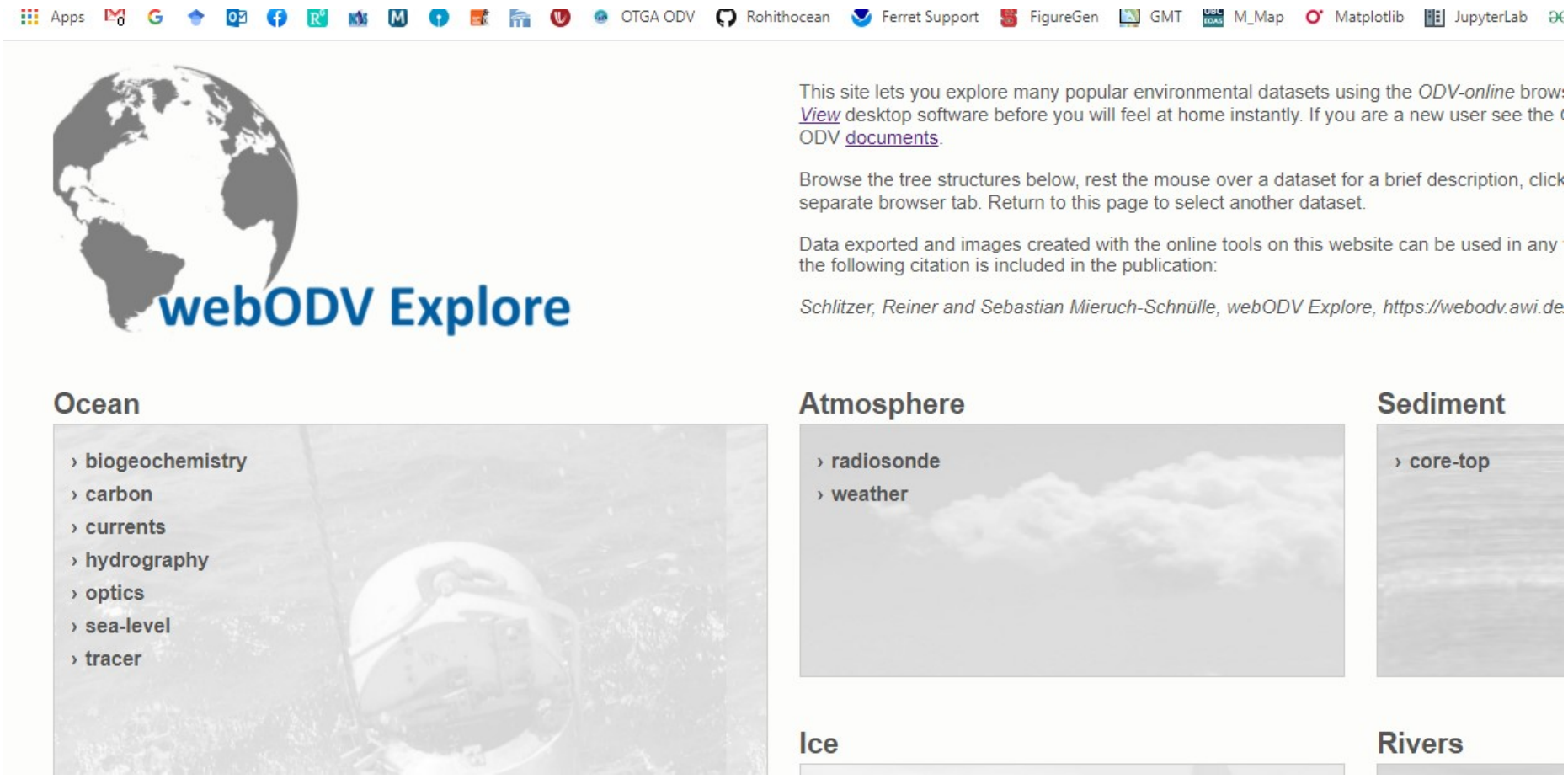


ODV user Forum



WEB BASED ODV

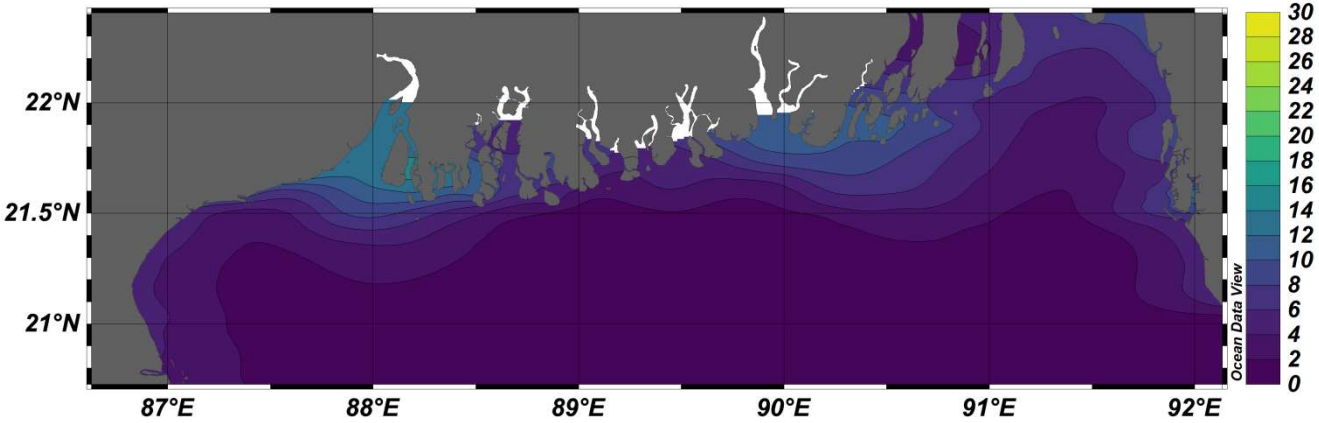
https://webodv.awi.de/explore/



TASK

Using model_test data plot the following:

(1) July minus Jan amplification with contour lines



(2) July minus Jan amplification
Plus u and v fluxes as overlay arrows