

# An Introduction to ODV (Ocean Data View)

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Partnership for Observation of the Global Oceans

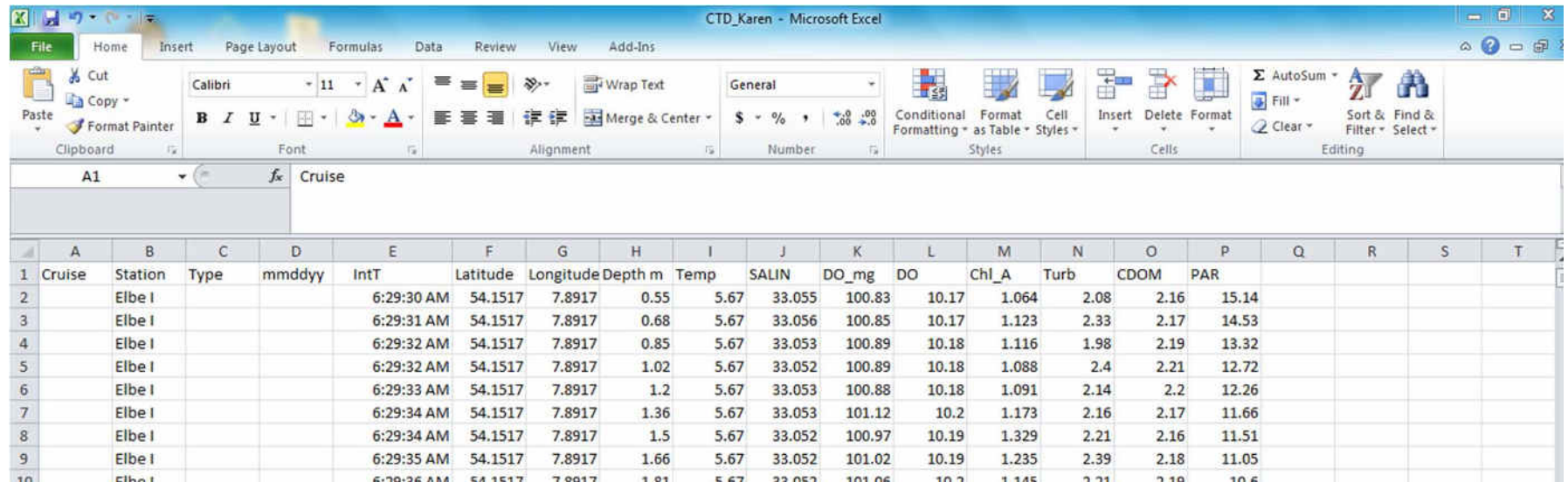


# ODV User Interface



# ODV Data Format

Data without meta data is not valid



|    | A      | B       | C    | D      | E          | F        | G         | H       | I    | J      | K      | L     | M     | N    | O    | P     | Q | R | S | T |
|----|--------|---------|------|--------|------------|----------|-----------|---------|------|--------|--------|-------|-------|------|------|-------|---|---|---|---|
| 1  | Cruise | Station | Type | mmddyy | IntT       | Latitude | Longitude | Depth m | Temp | SALIN  | DO_mg  | DO    | Chl_A | Turb | CDOM | PAR   |   |   |   |   |
| 2  |        | Elbe I  |      |        | 6:29:30 AM | 54.1517  | 7.8917    | 0.55    | 5.67 | 33.055 | 100.83 | 10.17 | 1.064 | 2.08 | 2.16 | 15.14 |   |   |   |   |
| 3  |        | Elbe I  |      |        | 6:29:31 AM | 54.1517  | 7.8917    | 0.68    | 5.67 | 33.056 | 100.85 | 10.17 | 1.123 | 2.33 | 2.17 | 14.53 |   |   |   |   |
| 4  |        | Elbe I  |      |        | 6:29:32 AM | 54.1517  | 7.8917    | 0.85    | 5.67 | 33.053 | 100.89 | 10.18 | 1.116 | 1.98 | 2.19 | 13.32 |   |   |   |   |
| 5  |        | Elbe I  |      |        | 6:29:32 AM | 54.1517  | 7.8917    | 1.02    | 5.67 | 33.052 | 100.89 | 10.18 | 1.088 | 2.4  | 2.21 | 12.72 |   |   |   |   |
| 6  |        | Elbe I  |      |        | 6:29:33 AM | 54.1517  | 7.8917    | 1.2     | 5.67 | 33.053 | 100.88 | 10.18 | 1.091 | 2.14 | 2.2  | 12.26 |   |   |   |   |
| 7  |        | Elbe I  |      |        | 6:29:34 AM | 54.1517  | 7.8917    | 1.36    | 5.67 | 33.053 | 101.12 | 10.2  | 1.173 | 2.16 | 2.17 | 11.66 |   |   |   |   |
| 8  |        | Elbe I  |      |        | 6:29:34 AM | 54.1517  | 7.8917    | 1.5     | 5.67 | 33.052 | 100.97 | 10.19 | 1.329 | 2.21 | 2.16 | 11.51 |   |   |   |   |
| 9  |        | Elbe I  |      |        | 6:29:35 AM | 54.1517  | 7.8917    | 1.66    | 5.67 | 33.052 | 101.02 | 10.19 | 1.235 | 2.39 | 2.18 | 11.05 |   |   |   |   |
| 10 |        | Elbe I  |      |        | 6:29:36 AM | 54.1517  | 7.8917    | 1.81    | 5.67 | 33.053 | 101.06 | 10.2  | 1.145 | 2.31 | 2.18 | 10.6  |   |   |   |   |



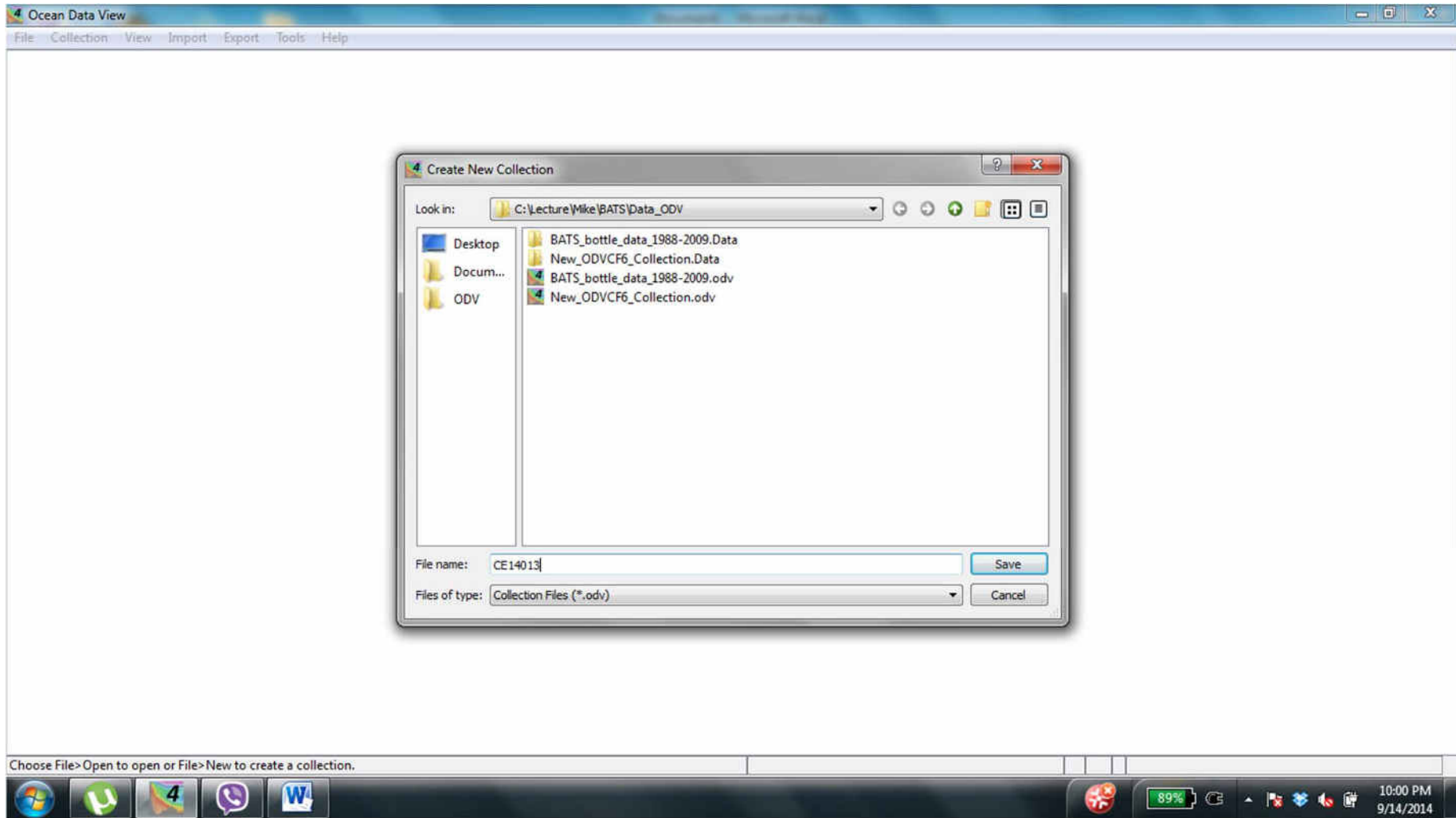
>> Text format

# New Window in ODV

**File >> New**

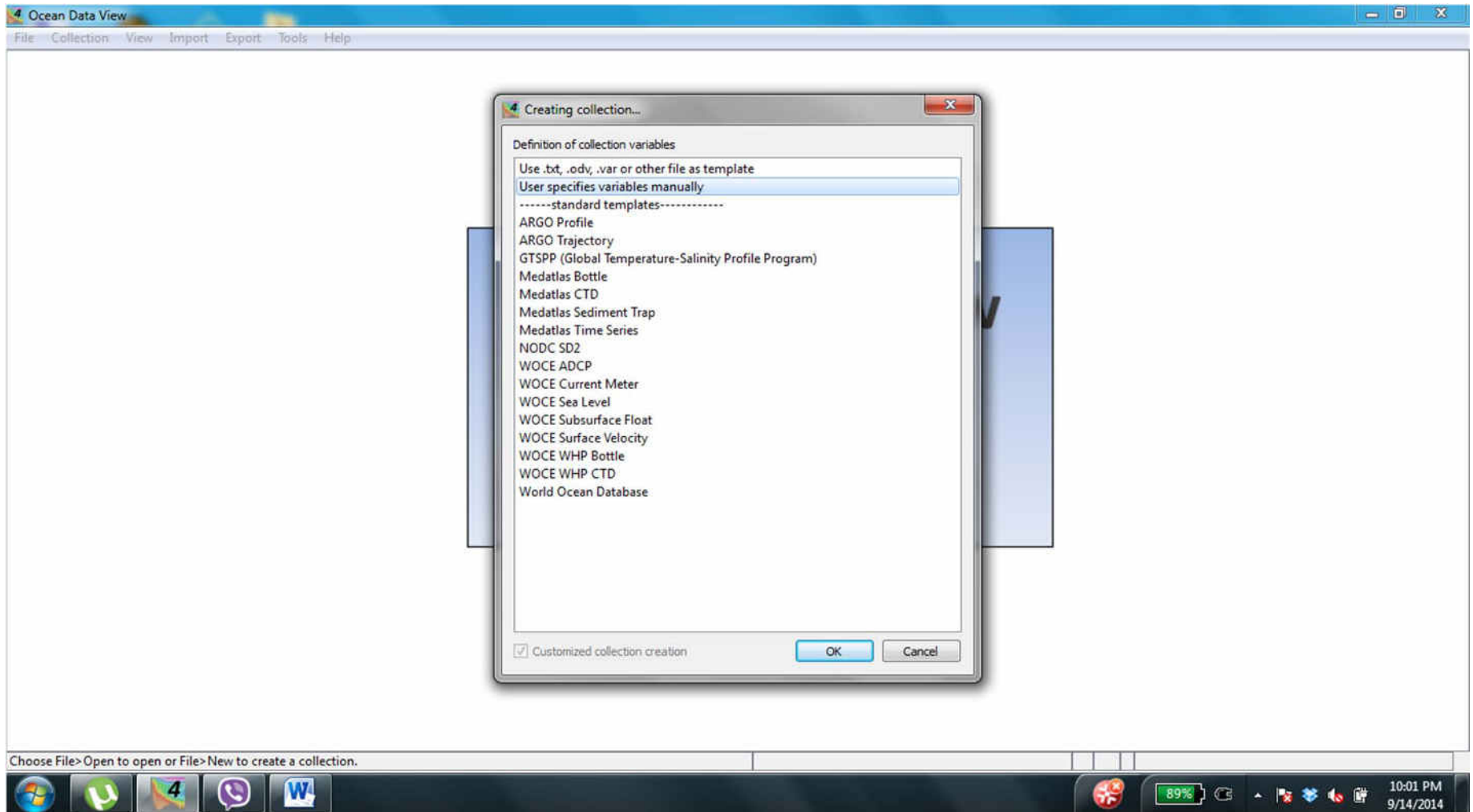


# Creating a New File

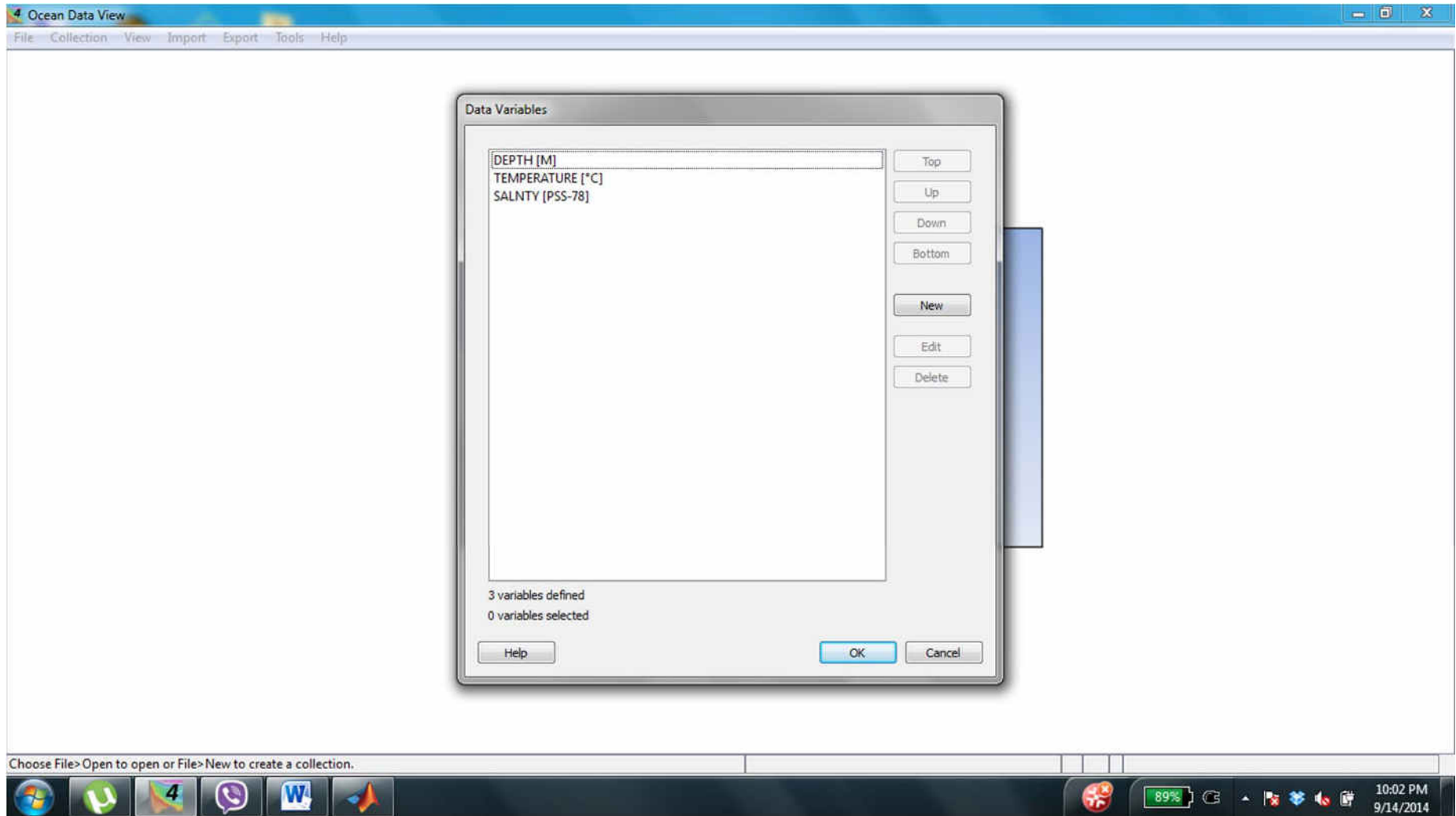


# Creating Collection

Use specific variable manually

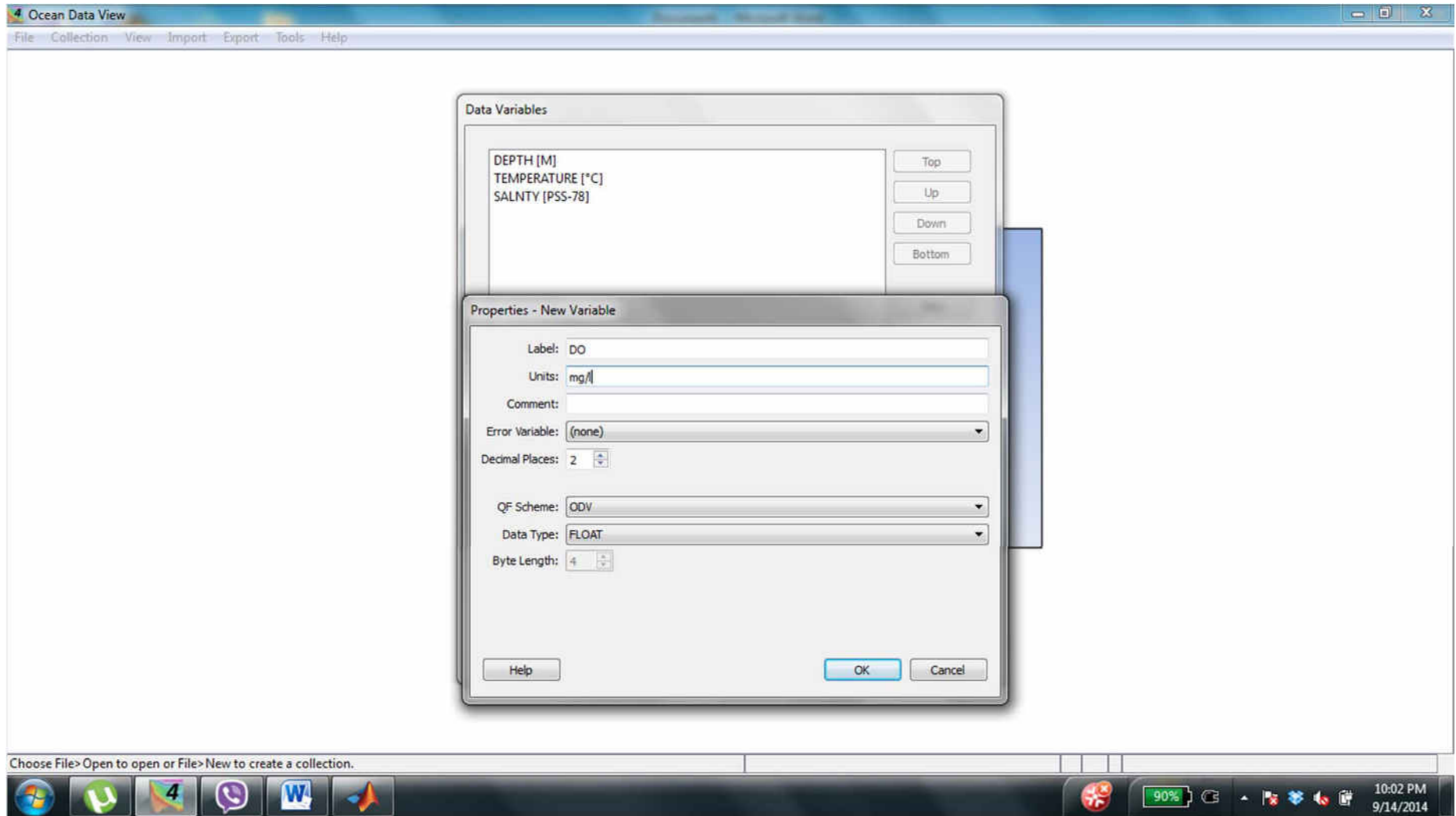


# Default Data Variables List

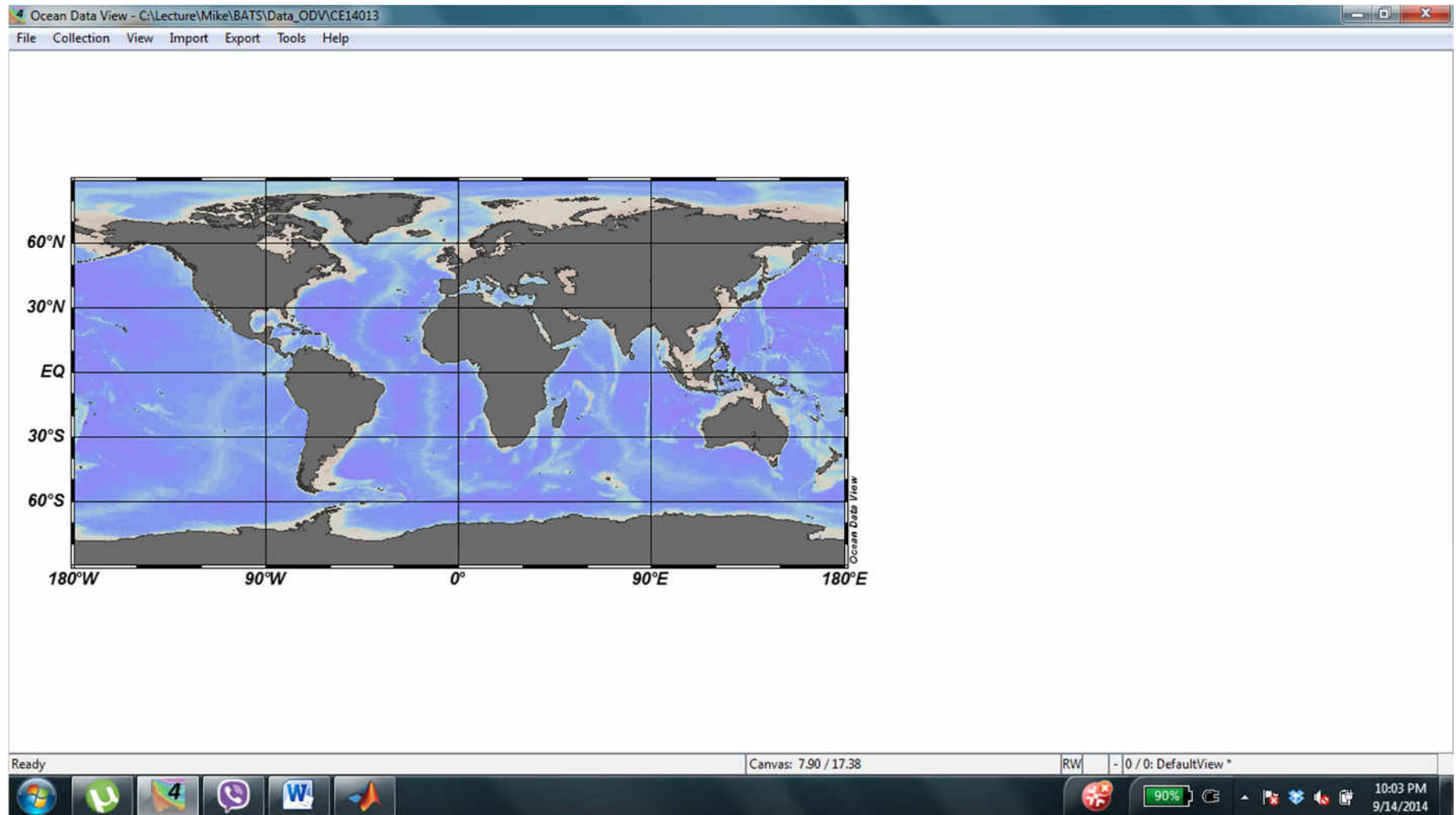


# How to Add New Variables?

**New >> Label >> Unit >> OK**

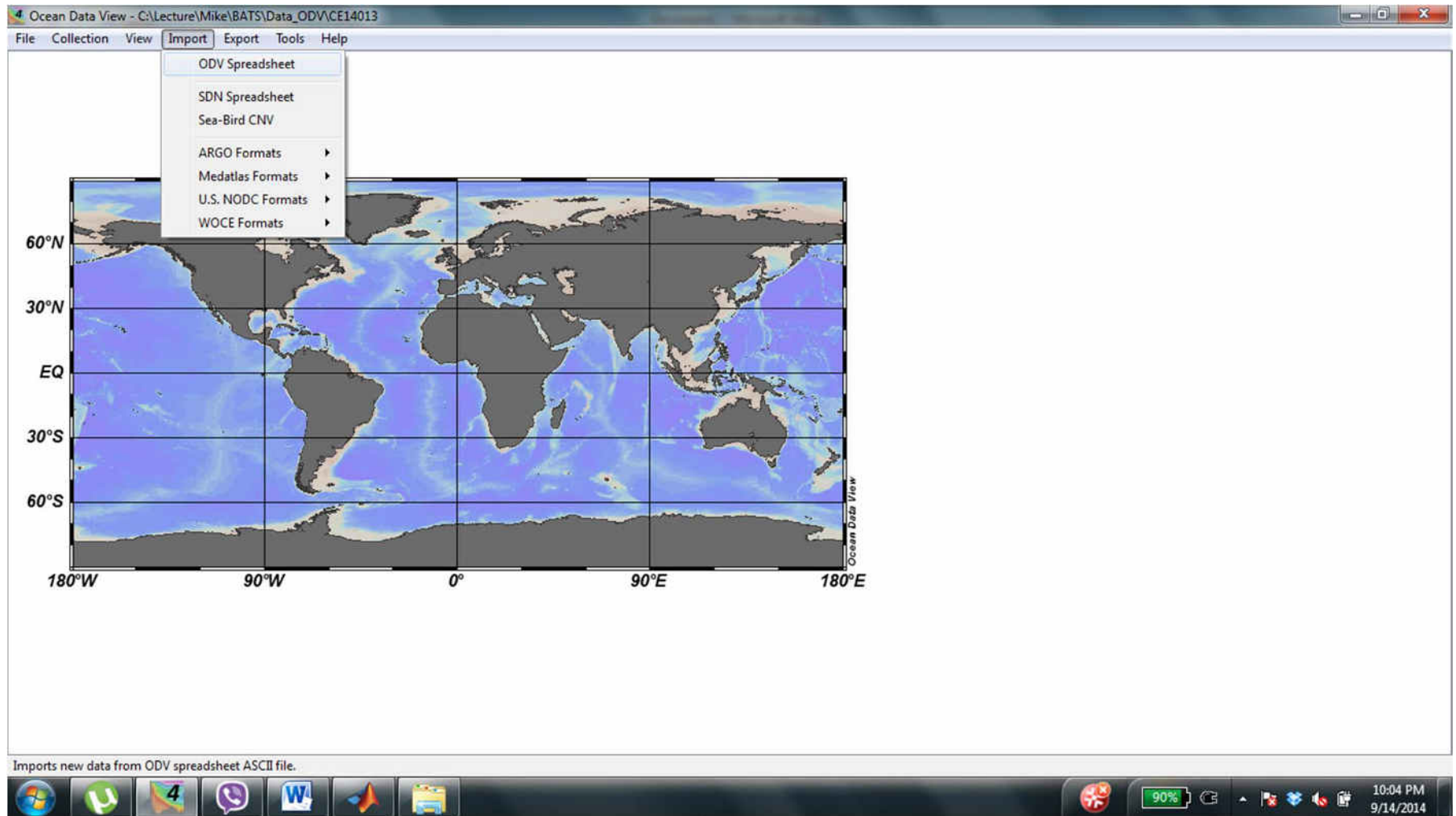


# ODV Template

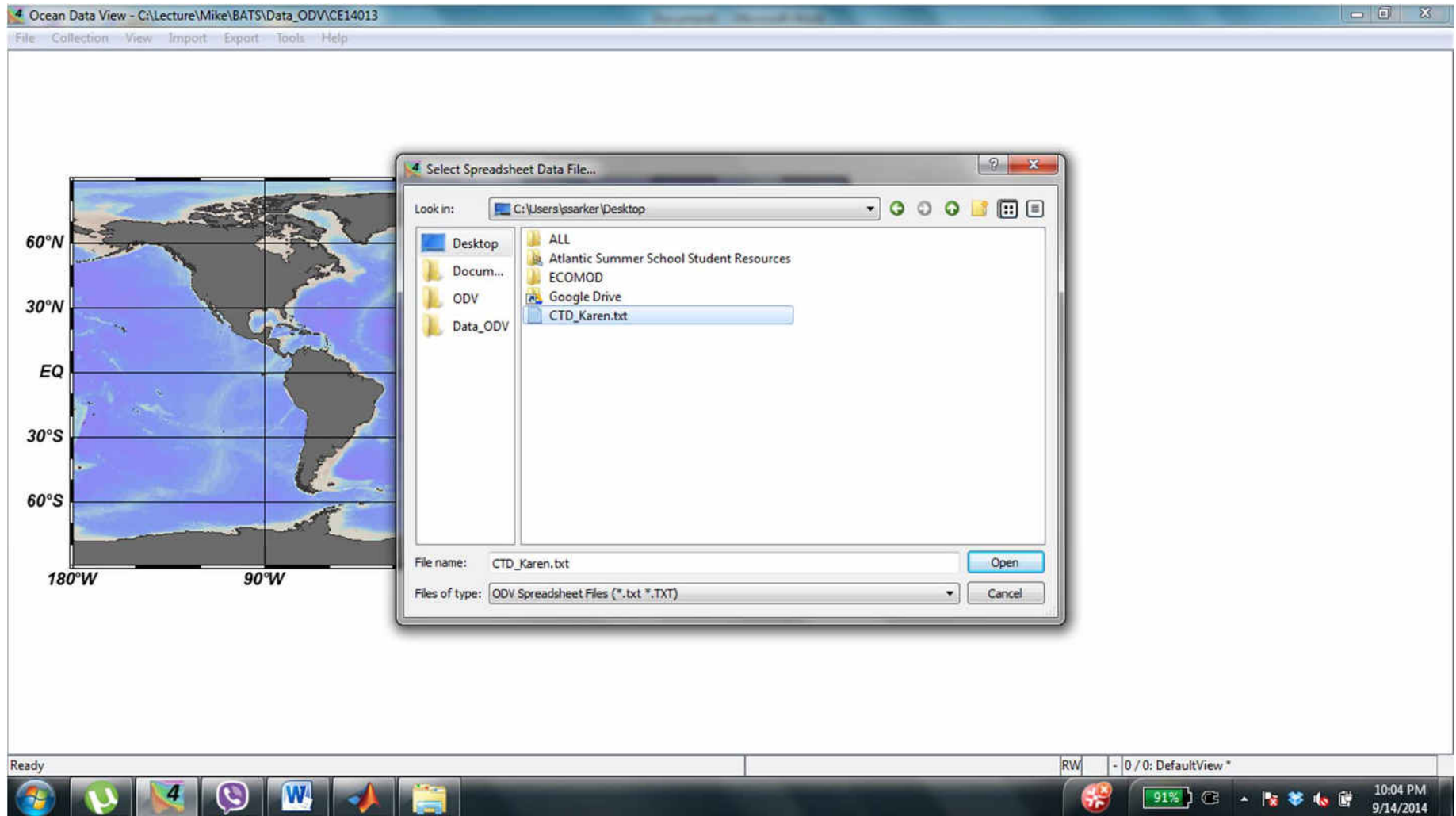


# Import Data File to ODV

**Import >> ODV Spreadsheet >> Select File >> OK**

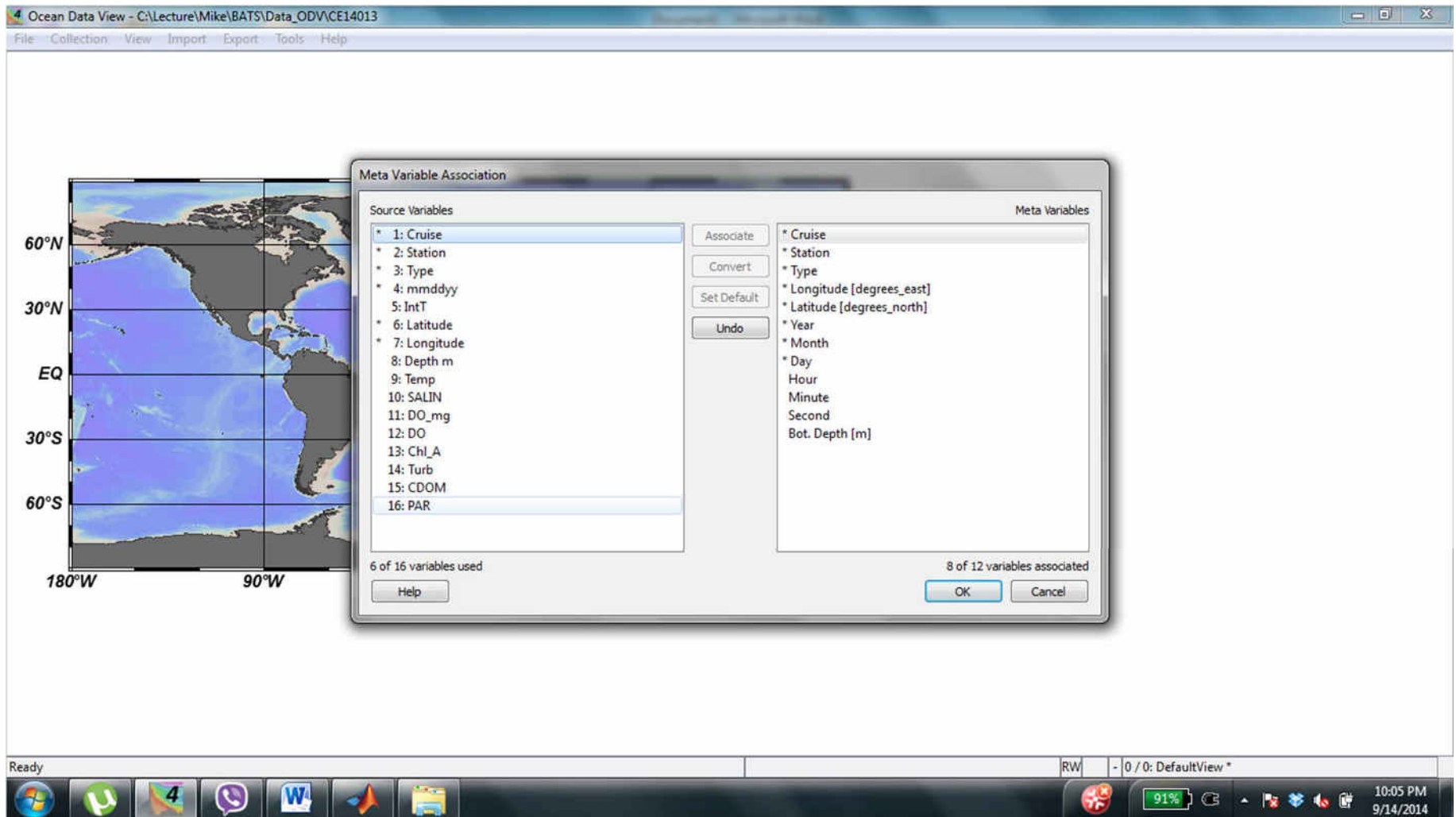


# Import Data File to ODV



# Meta Variable Association

## Default



# Imported Variables Association

Ocean Data View - C:\Lecture\Mike\BATS\Data\_ODV\CE14013

File Collection View Import Export Tools Help

60°N  
30°N  
EQ  
30°S  
60°S  
180°W 90°W

**Import Options**

Import Mode  
Add / Replace Station Data ☒ Check for existing stations Edit Matching Criteria...

Variable Association

Source file variables

- 1: IntT
- \* 2: Depth m
- 3: Temp
- 4: SALIN
- 5: DO\_mg
- 6: DO
- 7: Chl\_A
- 8: Turb
- 9: CDOM
- 10: PAR

Associate  
Convert  
Use Default  
Undo  
Undo All

Target collection variables

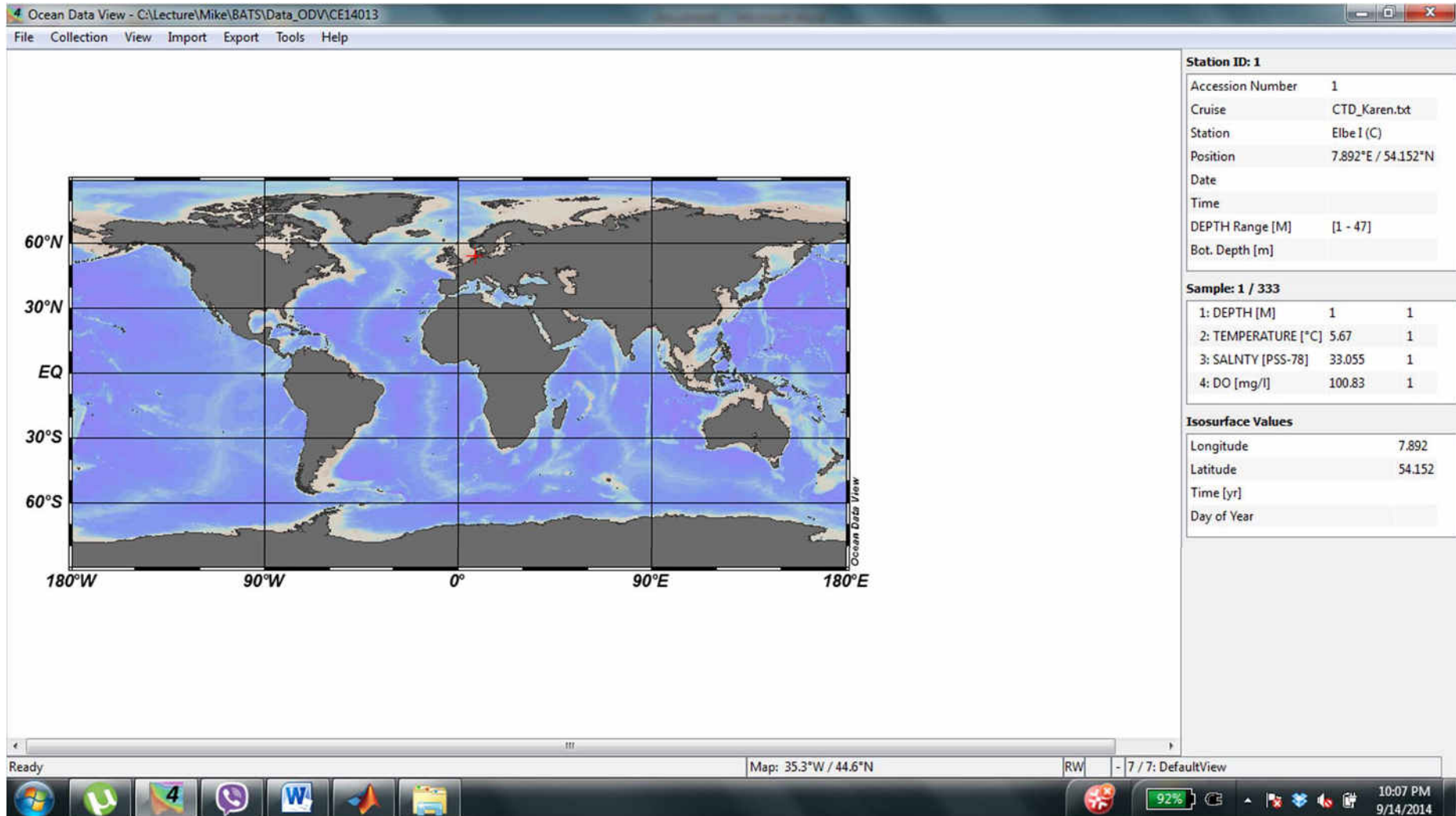
- \* 1: DEPTH [M]
- 2: TEMPERATURE [°C]
- 3: SALNTY [PSS-78]
- 4: DO [mg/l]

1 of 10 variables used 1 of 4 variables associated

Help OK Cancel

Ready RW - 0 / 0: DefaultView \* 91% 10:05 PM 9/14/2014

# Importing Data Point in ODV

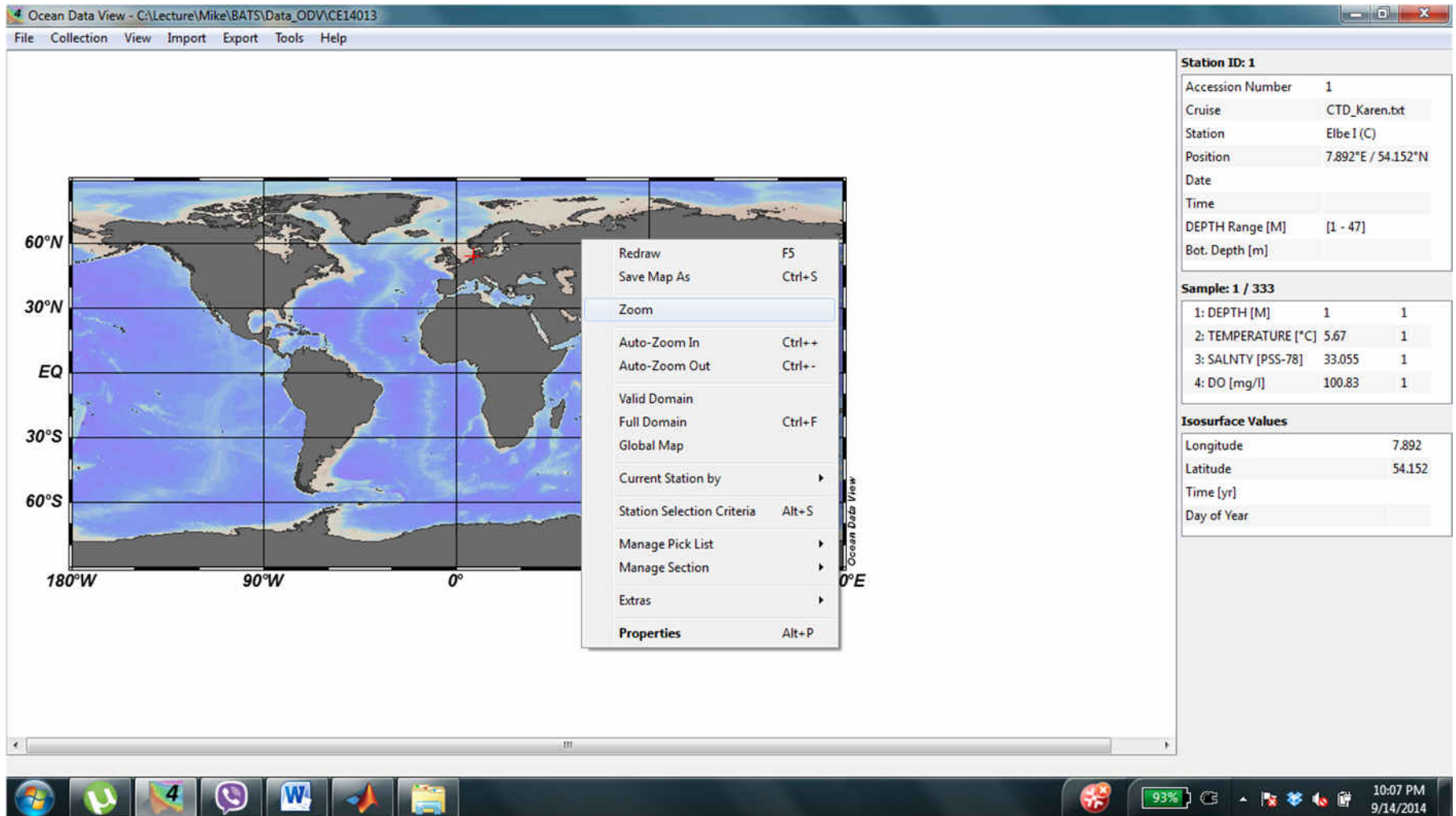


# Define Specific Study Area

Right click on template >> Zoom

Ocean Data View - C:\Lecture\Mike\BATS\Data\_ODV\CE14013

File Collection View Import Export Tools Help



Station ID: 1

|                  |                    |
|------------------|--------------------|
| Accession Number | 1                  |
| Cruise           | CTD_Karen.txt      |
| Station          | Elbe I (C)         |
| Position         | 7.892°E / 54.152°N |
| Date             |                    |
| Time             |                    |
| DEPTH Range [M]  | [1 - 47]           |
| Bot. Depth [m]   |                    |

Sample: 1 / 333

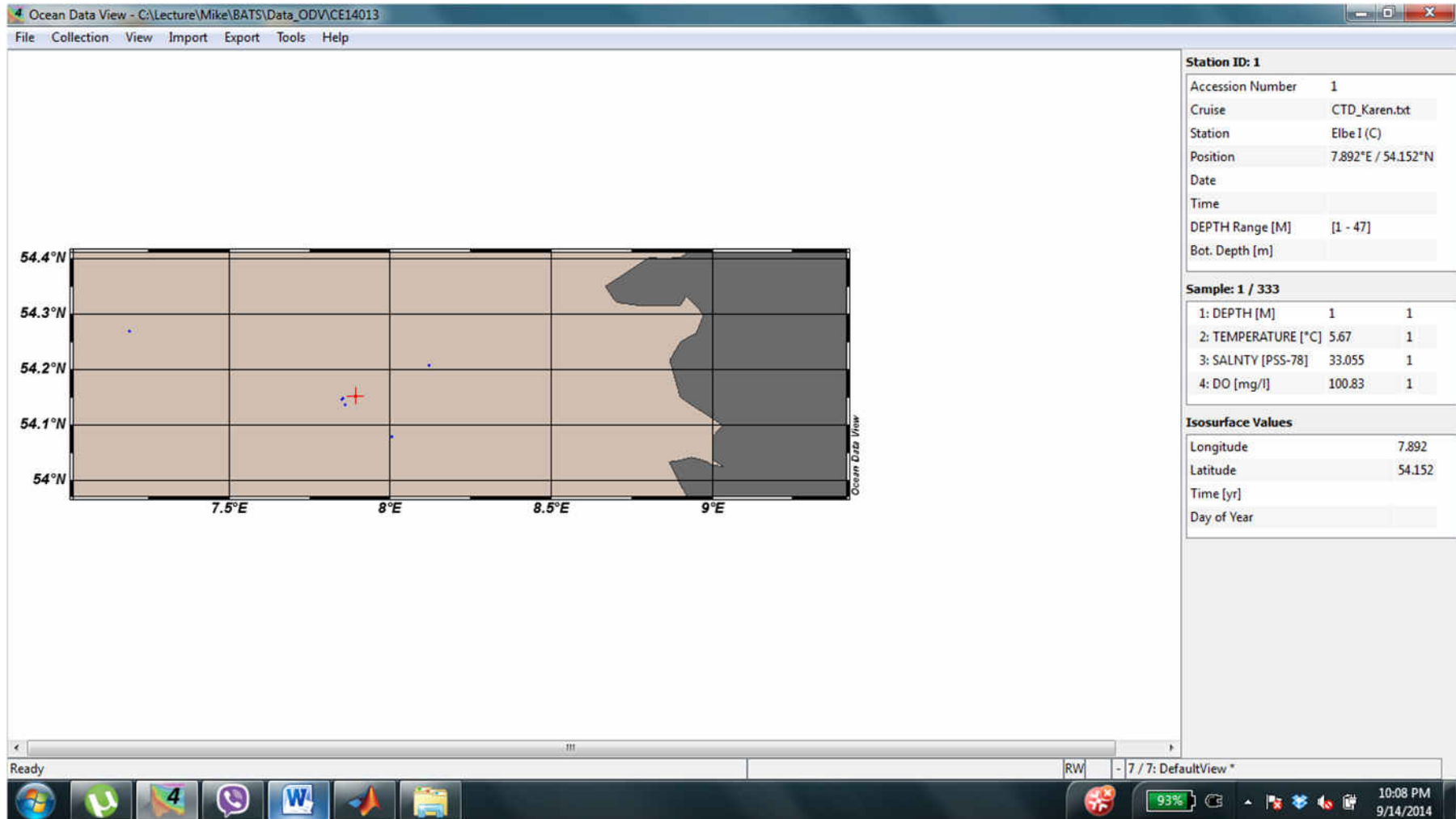
|                     |        |   |
|---------------------|--------|---|
| 1: DEPTH [M]        | 1      | 1 |
| 2: TEMPERATURE [°C] | 5.67   | 1 |
| 3: SALNTY [PSS-78]  | 33.055 | 1 |
| 4: DO [mg/l]        | 100.83 | 1 |

Isosurface Values

|             |        |
|-------------|--------|
| Longitude   | 7.892  |
| Latitude    | 54.152 |
| Time [yr]   |        |
| Day of Year |        |

Windows taskbar: 10:07 PM, 9/14/2014

# Define Specific Study Area



# Window Layout

View >> Layout Templates >> 5 Mixed Windows

The screenshot shows the Ocean Data View application window. The menu bar includes File, Collection, View, Import, Export, Tools, and Help. The 'View' menu is open, showing options like Undo / Redo, Station Selection Criteria (Alt+S), Derived Variables (Alt+D), Isosurface Variables, Window Properties, Window Layout (Alt+W), Layout Templates, Save View As, Save View, Load View (Shift+L), Browse Session Log File, and Settings. The 'Layout Templates' submenu is open, displaying various window configurations: Full Screen Map (F8), 1-6 STATION Windows (F9), 1-6 SCATTER Windows (F10), 1-6 SECTION Windows (F11), 1-11 SURFACE Windows (F12), 5 MIXED Windows (highlighted), and From View File. The background shows a map of the North Sea with latitude from 54.0°N to 54.4°N and longitude from 7.5°E to 9°E. On the right, a panel displays station information for Station ID: 1, including Accession Number 1, Cruise CTD\_Karen.txt, Station Elbe I (C), Position 7.892°E / 54.152°N, Date, Time, DEPTH Range [M] [1 - 47], and Bot. Depth [m]. Below this, Sample: 1 / 333 data is shown: 1: DEPTH [M] 1 1, 2: TEMPERATURE [°C] 5.67 1, 3: SALNTY [PSS-78] 33.055 1, 4: DO [mg/l] 100.83 1. Further down, Isosurface Values are listed: Longitude 7.892, Latitude 54.152, Time [yr], and Day of Year. The Windows taskbar at the bottom shows icons for Windows Explorer, Google Chrome, Ocean Data View, Telegram, Microsoft Word, and a folder icon, with a system clock showing 10:08 PM on 9/14/2014.

Ocean Data View - C:\Lecture\Mike\BATS\Data\_ODV\CE14013

File Collection View Import Export Tools Help

Undo / Redo  
Station Selection Criteria Alt+S  
Derived Variables Alt+D  
Isosurface Variables  
Window Properties  
Window Layout Alt+W  
Layout Templates  
Save View As  
Save View  
Load View Shift+L  
Browse Session Log File  
Settings

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  
5 MIXED Windows  
From View File

Station ID: 1  
Accession Number 1  
Cruise CTD\_Karen.txt  
Station Elbe I (C)  
Position 7.892°E / 54.152°N  
Date  
Time  
DEPTH Range [M] [1 - 47]  
Bot. Depth [m]

Sample: 1 / 333  
1: DEPTH [M] 1 1  
2: TEMPERATURE [°C] 5.67 1  
3: SALNTY [PSS-78] 33.055 1  
4: DO [mg/l] 100.83 1

Isosurface Values  
Longitude 7.892  
Latitude 54.152  
Time [yr]  
Day of Year

Applies a predefined window layout.

# Changing Variables

Right click on template >> z variables >> select variable

Ocean Data View - C:\Lecture\Mike\BATS\Data\_ODV\CE14013

File Collection View Import Export Tools Help

Window 1 STATION  
Press ENTER to add the data of the current station to the plot.  
TEMPERATURE [°C] >>

Window 2 STATION  
Press ENTER to add the data of the current station to the plot.  
SALINITY [PSS-78] >>

Window 3 SURFACE  
No Data

Window 4 SURFACE  
No Data

DEPTH [M]  
TEMPERATURE [°C]

Define a section using  
Manage Section>Define Section  
to add data to the plot.

TEMPERATURE [°C] >>

44.4°N  
54°N  
7.5°E 8°E 8.5°E 9°E

Selects a new Z variable for this data window.

Station ID: 1

|                  |                    |
|------------------|--------------------|
| Accession Number | 1                  |
| Cruise           | CTD_Karen.txt      |
| Station          | Elbe I (C)         |
| Position         | 7.892°E / 54.152°N |
| Date             |                    |
| Time             |                    |
| DEPTH Range [M]  | [1 - 47]           |
| Bot. Depth [m]   |                    |

Sample: 1 / 333

|                      |        |   |
|----------------------|--------|---|
| 1: DEPTH [M]         | 1      | 1 |
| 2: TEMPERATURE [°C]  | 5.67   | 1 |
| 3: SALINITY [PSS-78] | 33.055 | 1 |
| 4: DO [mg/l]         | 100.83 | 1 |

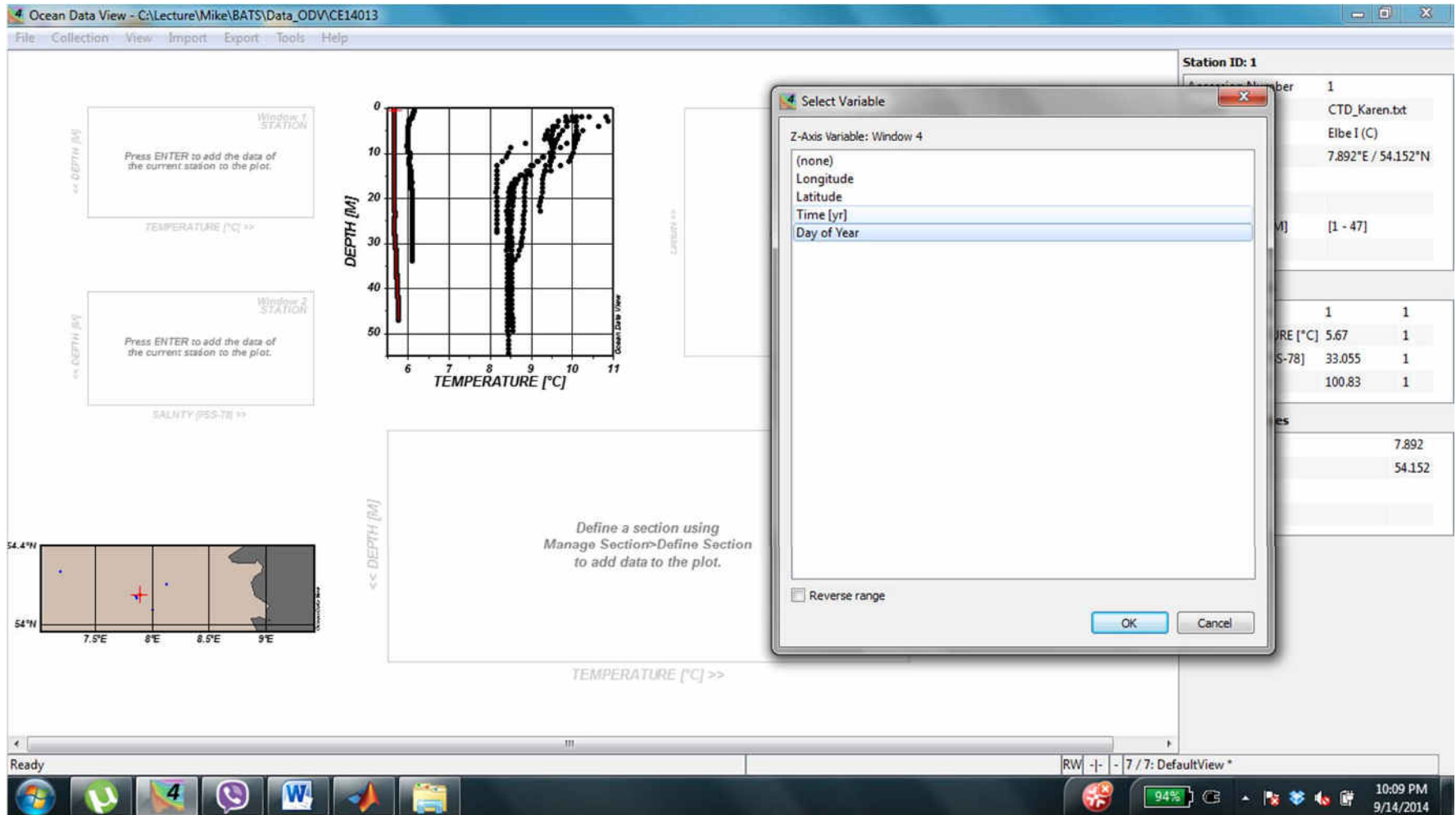
Isosurface Values

|             |        |
|-------------|--------|
| Longitude   | 7.892  |
| Latitude    | 54.152 |
| Time [yr]   |        |
| Day of Year |        |

Redraw F5  
Save Plot As Ctrl+S  
Zoom  
Z-Zoom  
Auto-Zoom In Ctrl++  
Auto-Zoom Out Ctrl+-  
Move to Foreground  
Move to Background  
Full Range Ctrl+F  
Set Ranges  
X-Variable X  
Y-Variable Y  
Z-Variable Z  
Extras  
Sample Selection Criteria Shift+S  
Properties Alt+P

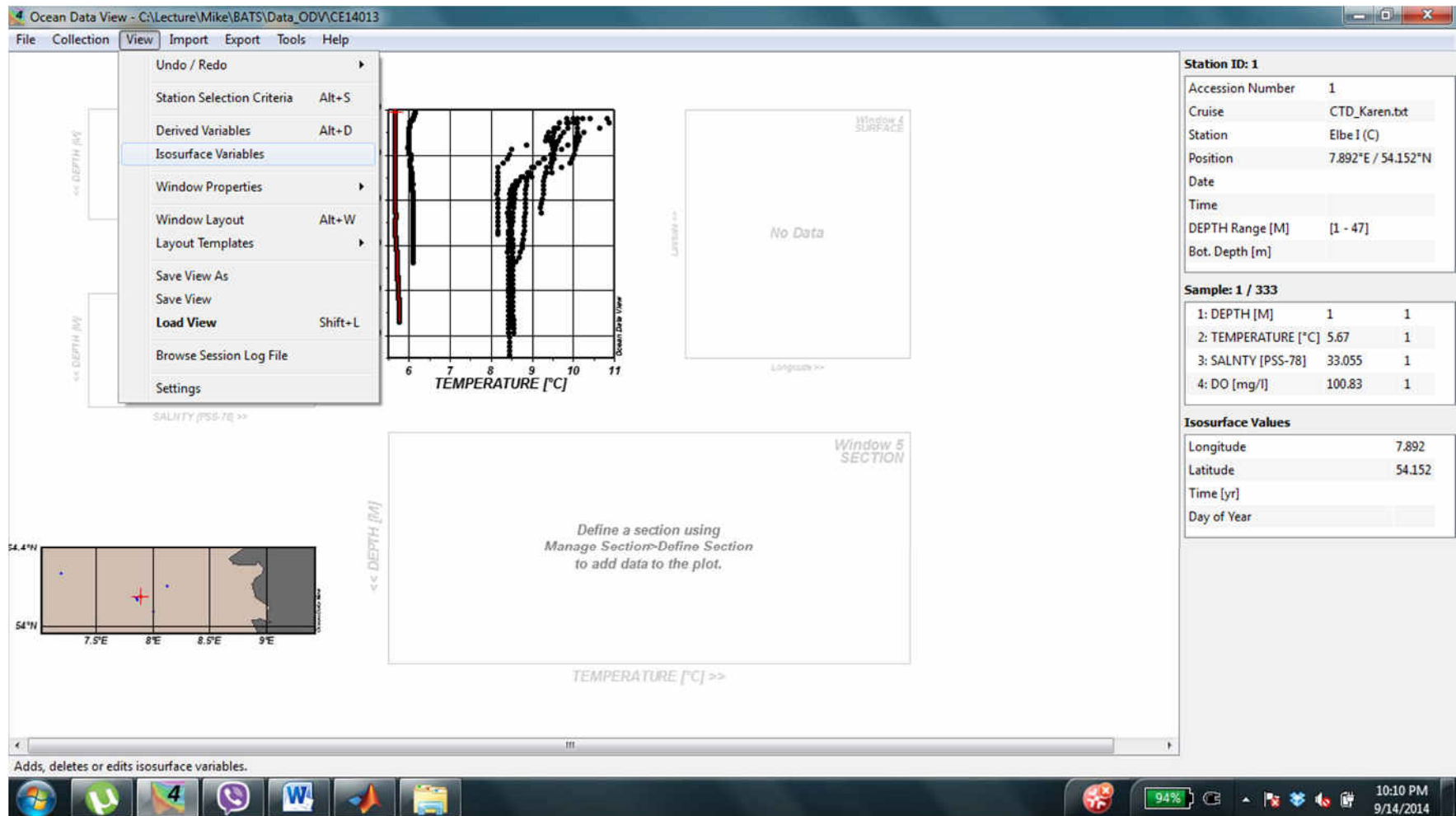
Windows taskbar: 10:09 PM 9/14/2014

# Changing Variables



# Changing Variables

View >> Isosurface variables >> Add



# Changing Variables

Ocean Data View - C:\Lecture\Mike\BATS\Data\_ODV\CE14013

File Collection View Import Export Tools Help

Window 1 STATION  
Press ENTER to add the data of the current station to the plot.  
TEMPERATURE [°C] >>

Window 2 STATION  
Press ENTER to add the data of the current station to the plot.  
SALNTY [PSS-78] >>

DEPTH [M]  
0  
10  
20  
30  
40  
50  
6

Isosurface Variables

New  
TEMPERATURE [°C] @ DEPTH [M] = first  
Add

Already Defined  
Longitude  
Latitude  
Time [yr]  
Day of Year  
Delete Edit V-Sync S-Sync  
Help OK Cancel

Station ID: 1  
Accession Number 1  
Cruise CTD\_Karen.txt  
Station Elbe I (C)  
Position 7.892°E / 54.152°N  
Date  
Time  
DEPTH Range [M] [1 - 47]  
Bot. Depth [m]

Sample: 1 / 333  
1: DEPTH [M] 1 1  
2: TEMPERATURE [°C] 5.67 1  
3: SALNTY [PSS-78] 33.055 1  
4: DO [mg/l] 100.83 1

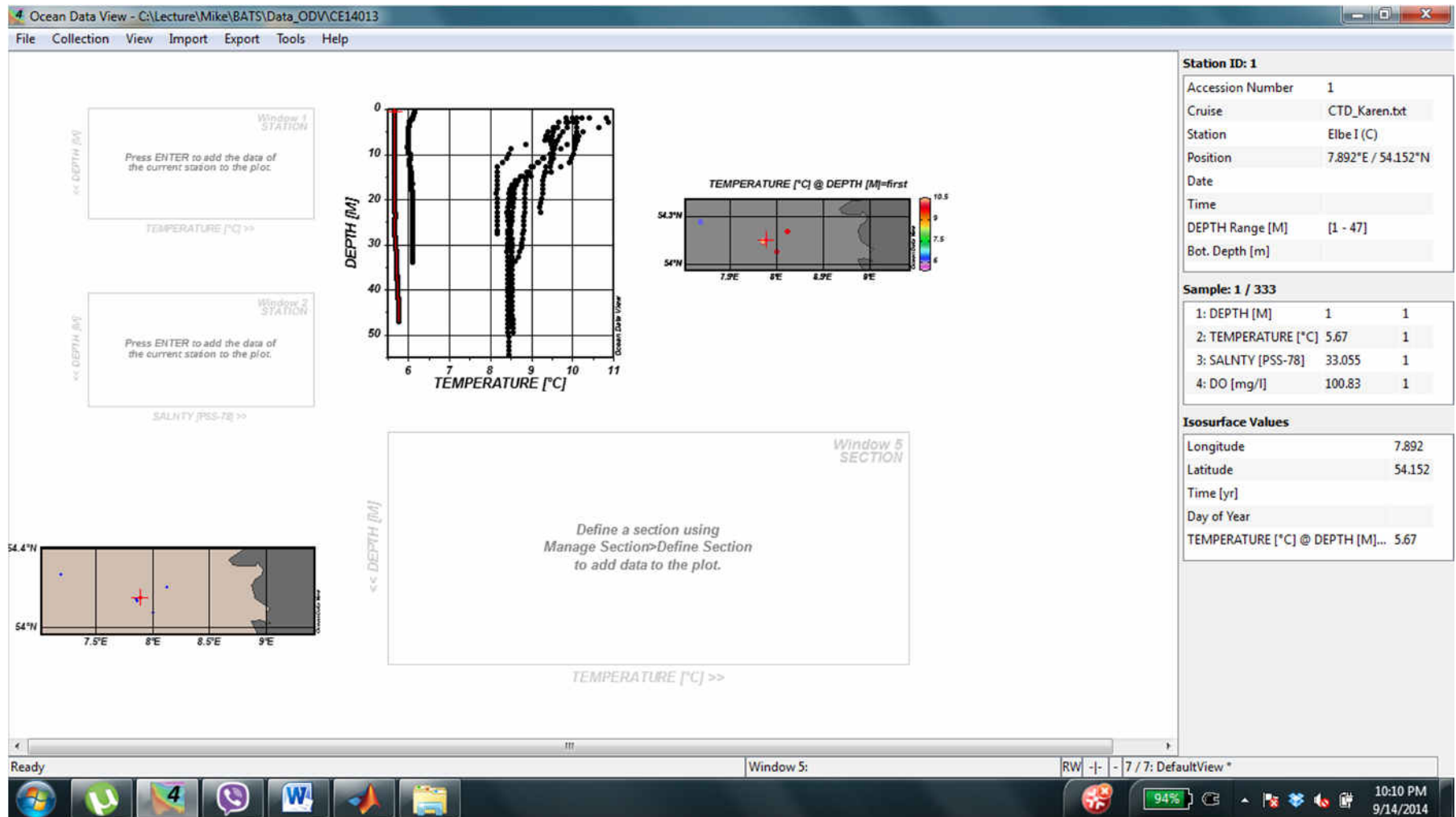
Isosurface Values  
Longitude 7.892  
Latitude 54.152  
Time [yr]  
Day of Year

54.4°N  
54°N  
7.5°E 8°E 8.5°E 9°E

TEMPERATURE [°C] >>

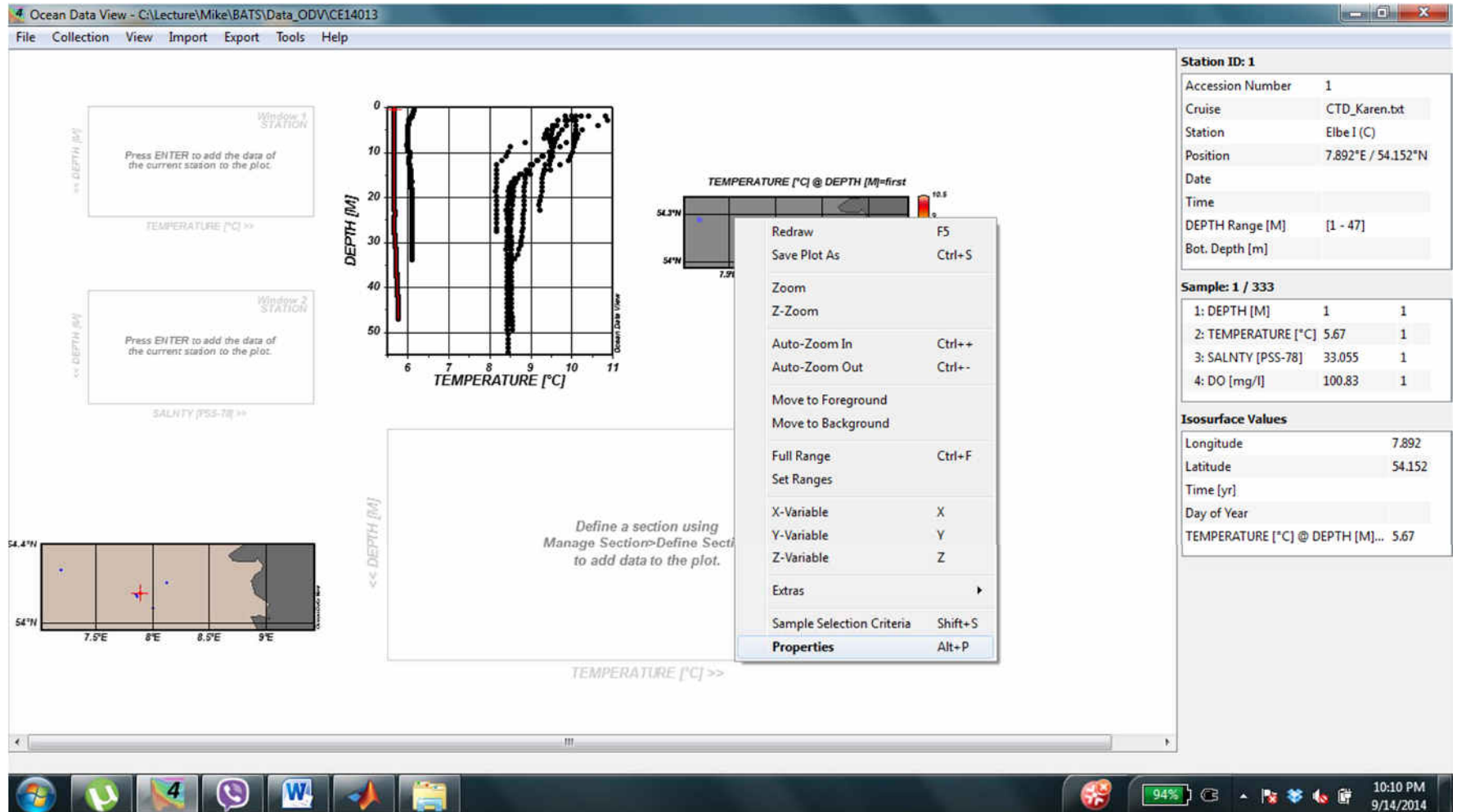
Ready RW - 7 / 7: DefaultView \* 10:10 PM 9/14/2014

# Changing Variables



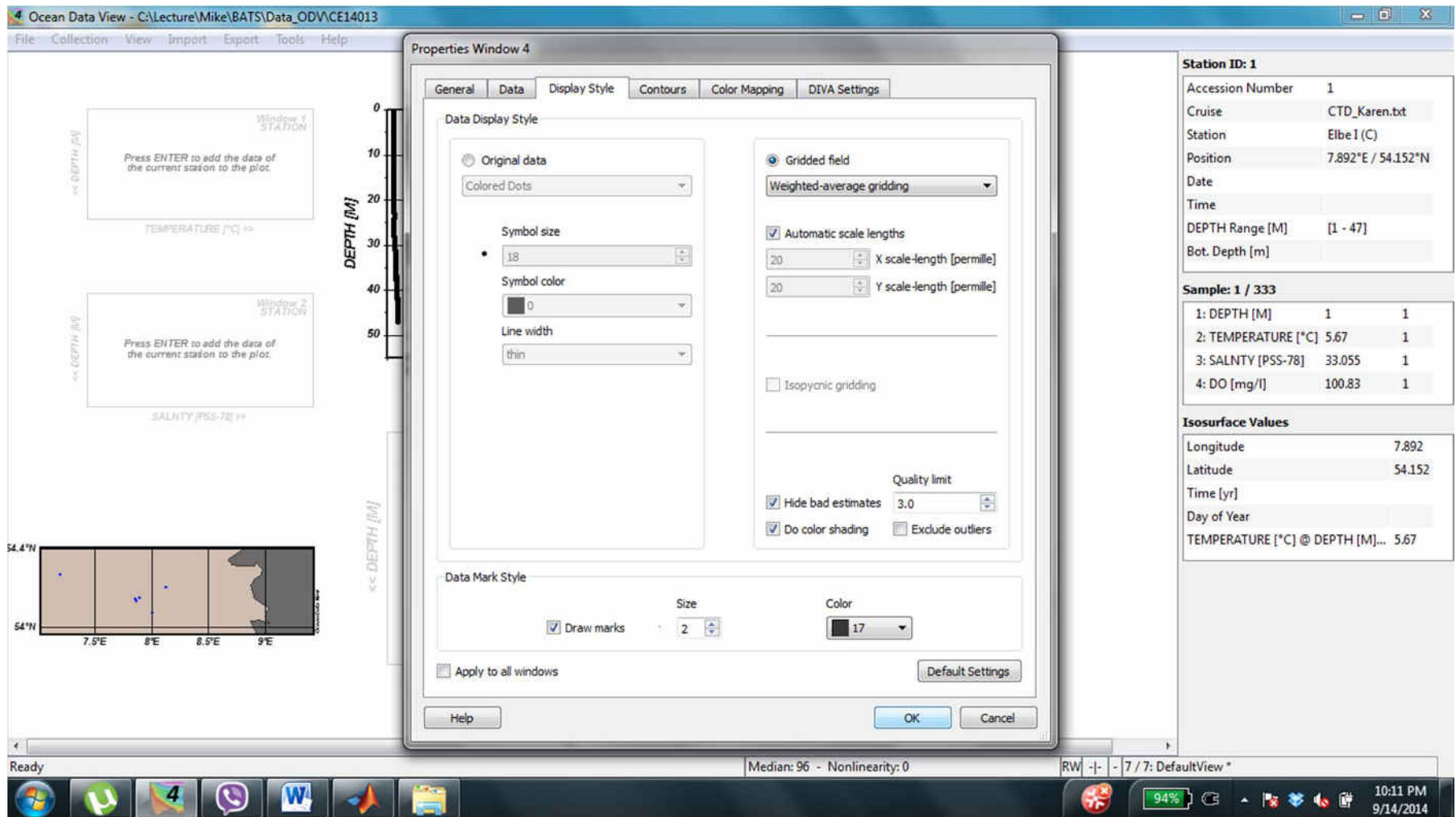
# Surface Interpolation

Right click on template >> Properties >> Display style >> Gridded Field



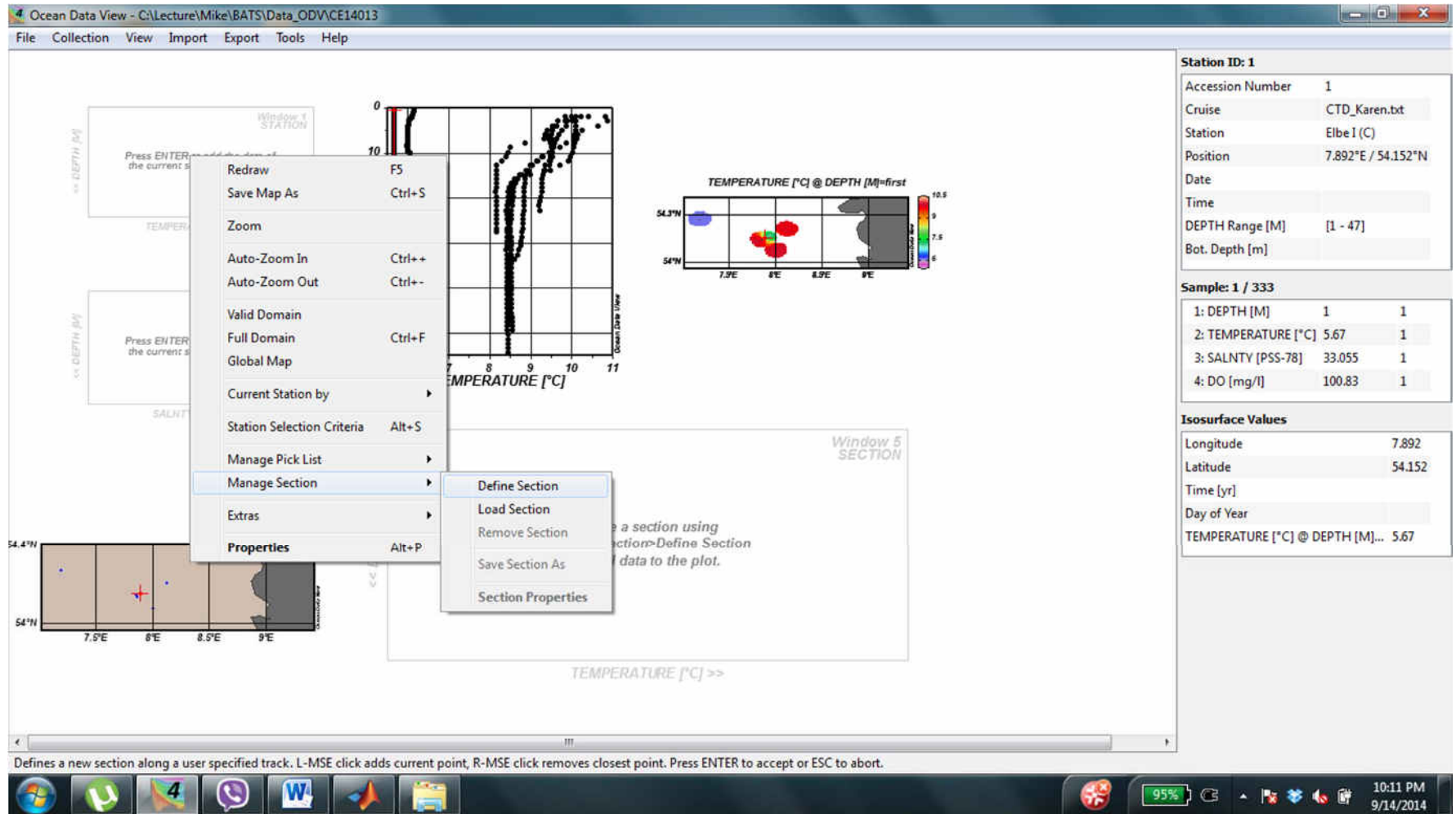
# Surface Interpolation

Right click on template >> Properties >> Display style >> Gridded Field

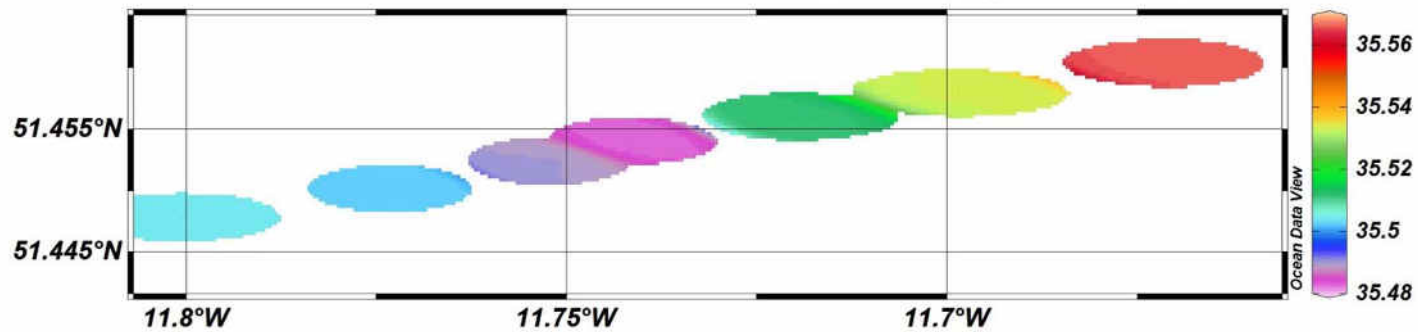


# Surface Interpolation

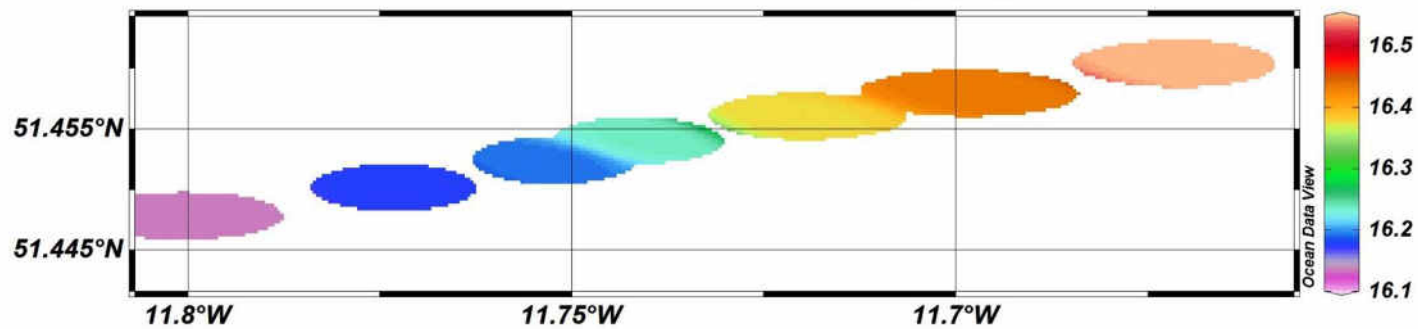
Right click on template >> Properties >> Display style >> Gridded Field



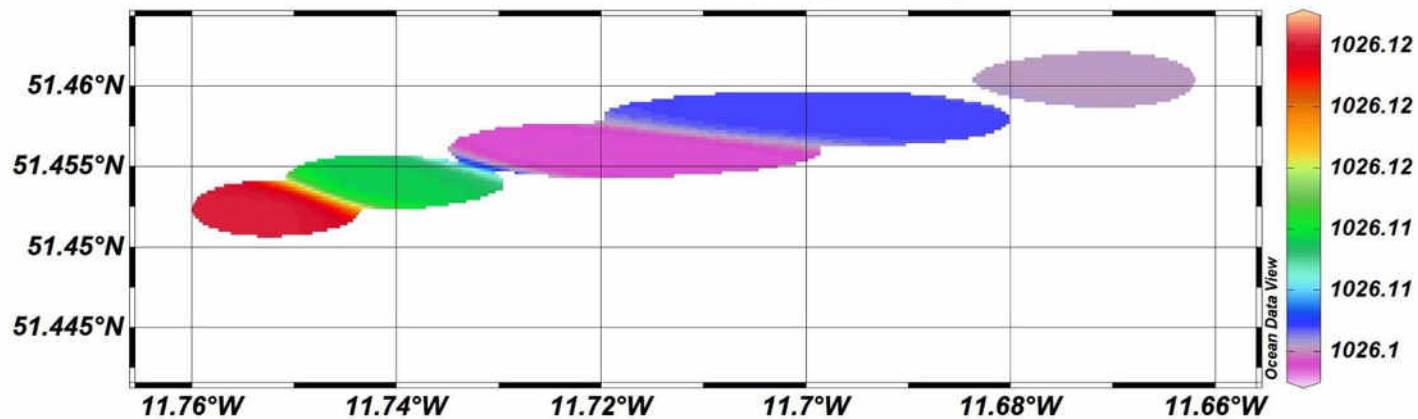
**SALNTY [PSS-78] @ DEPTH [M]=first**



**TEMPERATURE [°C] @ DEPTH [M]=first**



**Density [Kg/m^3] @ DEPTH [M]=first**



# Visualizing transect data

Right click on station template >> Manage section >> Define Section >> Section coordinate

The screenshot shows the Ocean Data View software interface. The main window displays a map of a transect area with latitude from 54.1°N to 54.4°N and longitude from 7.5°E to 8°E. A red line indicates the transect path. A 'Section Properties' dialog box is open, showing the following settings:

- Section title: (empty)
- Section Coordinate: ☒ Longitude
- Bathymetry: ☒ Station bottom depth
- Mean Width: 2.38 km
- Bathymetry Color: 19

The right panel shows the 'Station ID: 1' details:

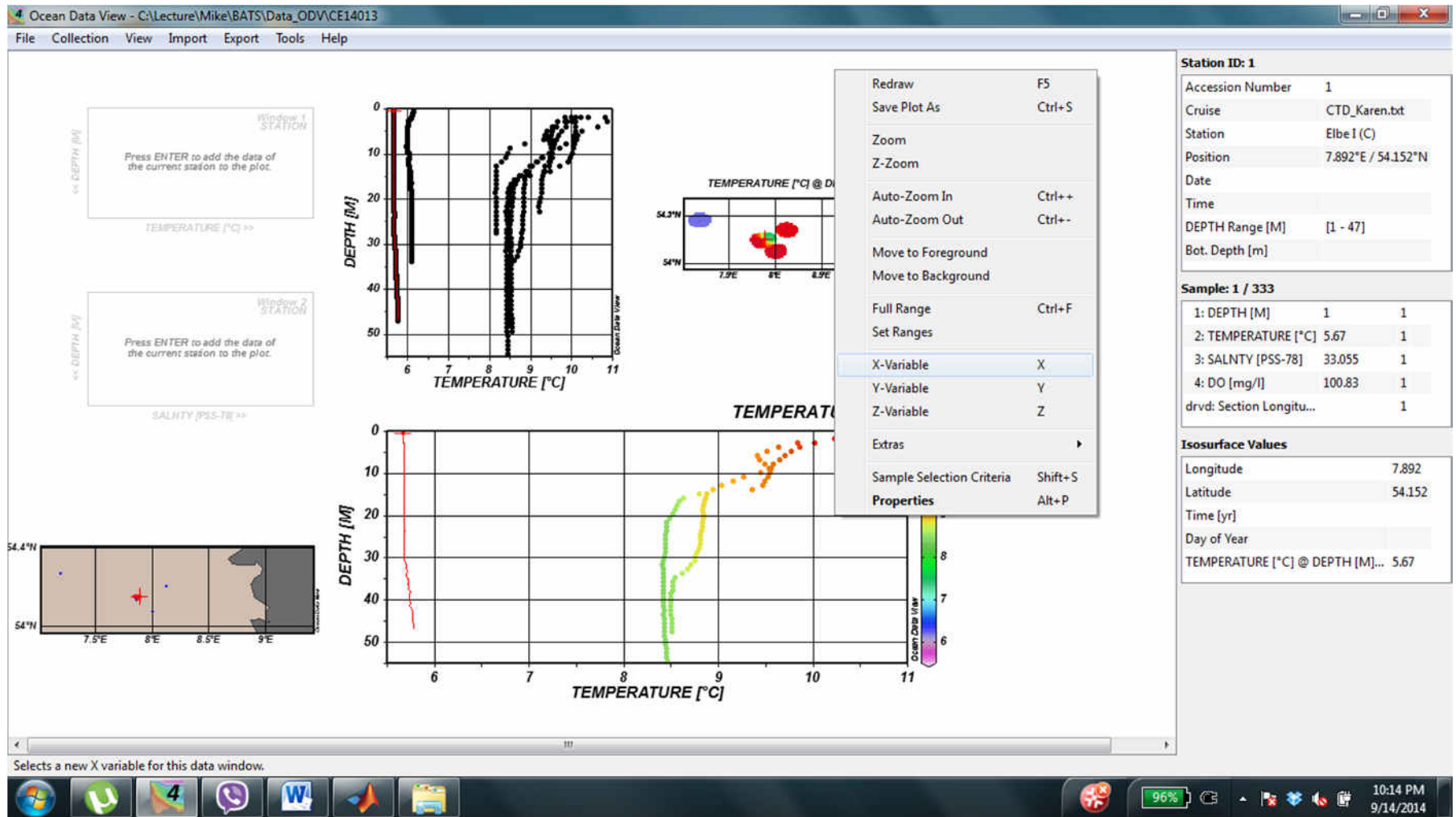
|                  |                    |
|------------------|--------------------|
| Accession Number | 1                  |
| Cruise           | CTD_Karen.txt      |
| Station          | Elbe I (C)         |
| Position         | 7.892°E / 54.152°N |
| Date             |                    |
| Time             |                    |
| DEPTH Range [M]  | [1 - 47]           |
| Bot. Depth [m]   |                    |

Below this, 'Sample: 1 / 333' is shown with a table of data:

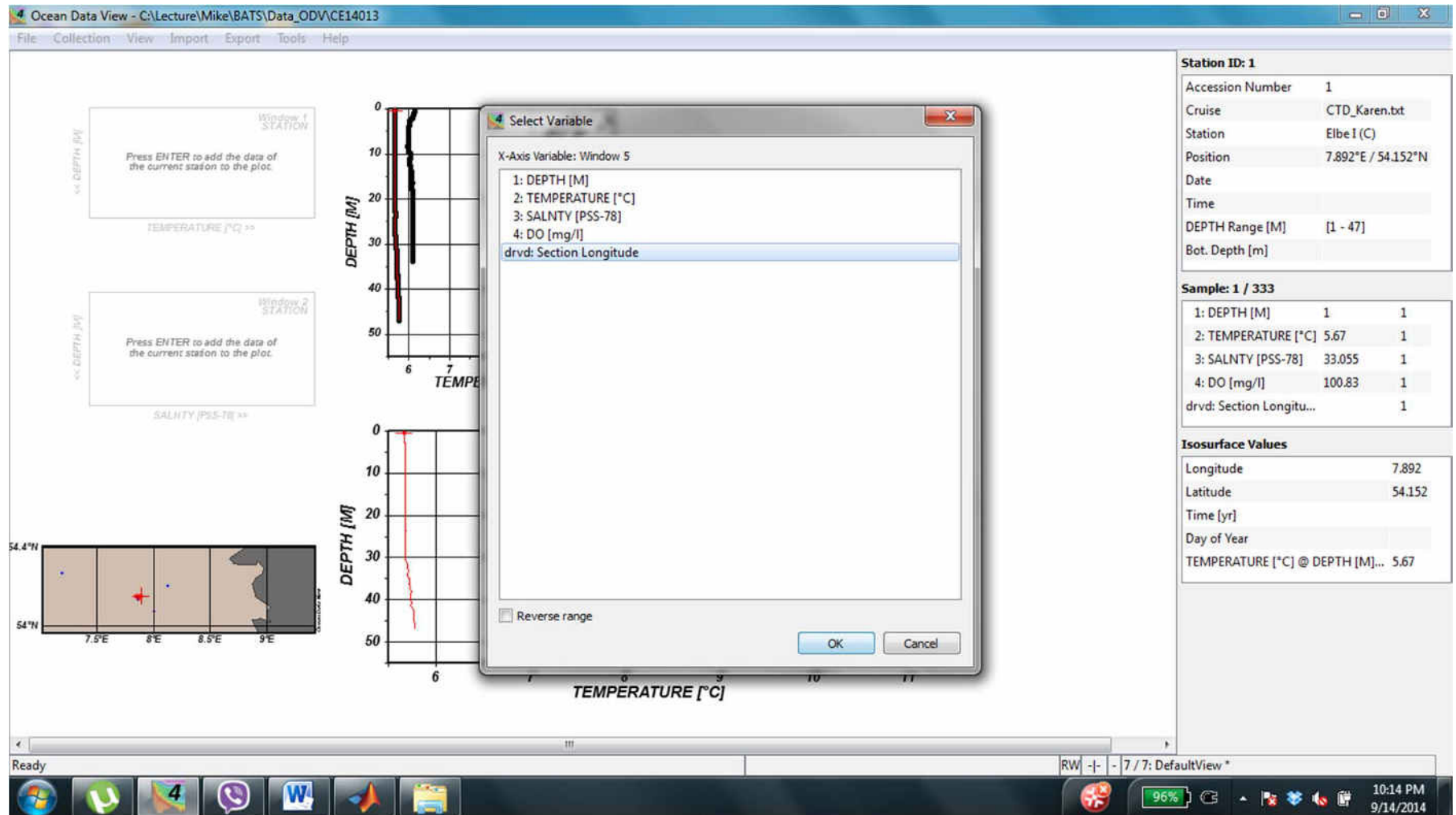
|                     |        |   |
|---------------------|--------|---|
| 1: DEPTH [M]        | 1      | 1 |
| 2: TEMPERATURE [°C] | 5.67   | 1 |
| 3: SALNTY [PSS-78]  | 33.055 | 1 |
| 4: DO [mg/l]        | 100.83 | 1 |

The bottom status bar shows 'Get Points: L-MSE add point, R-MSE delete point, ENTER accept, ESC abort' and '7 / 7: DefaultView \*'. The taskbar at the bottom shows the Windows logo, a green '4' icon, and the system clock at 10:12 PM on 9/14/2014.

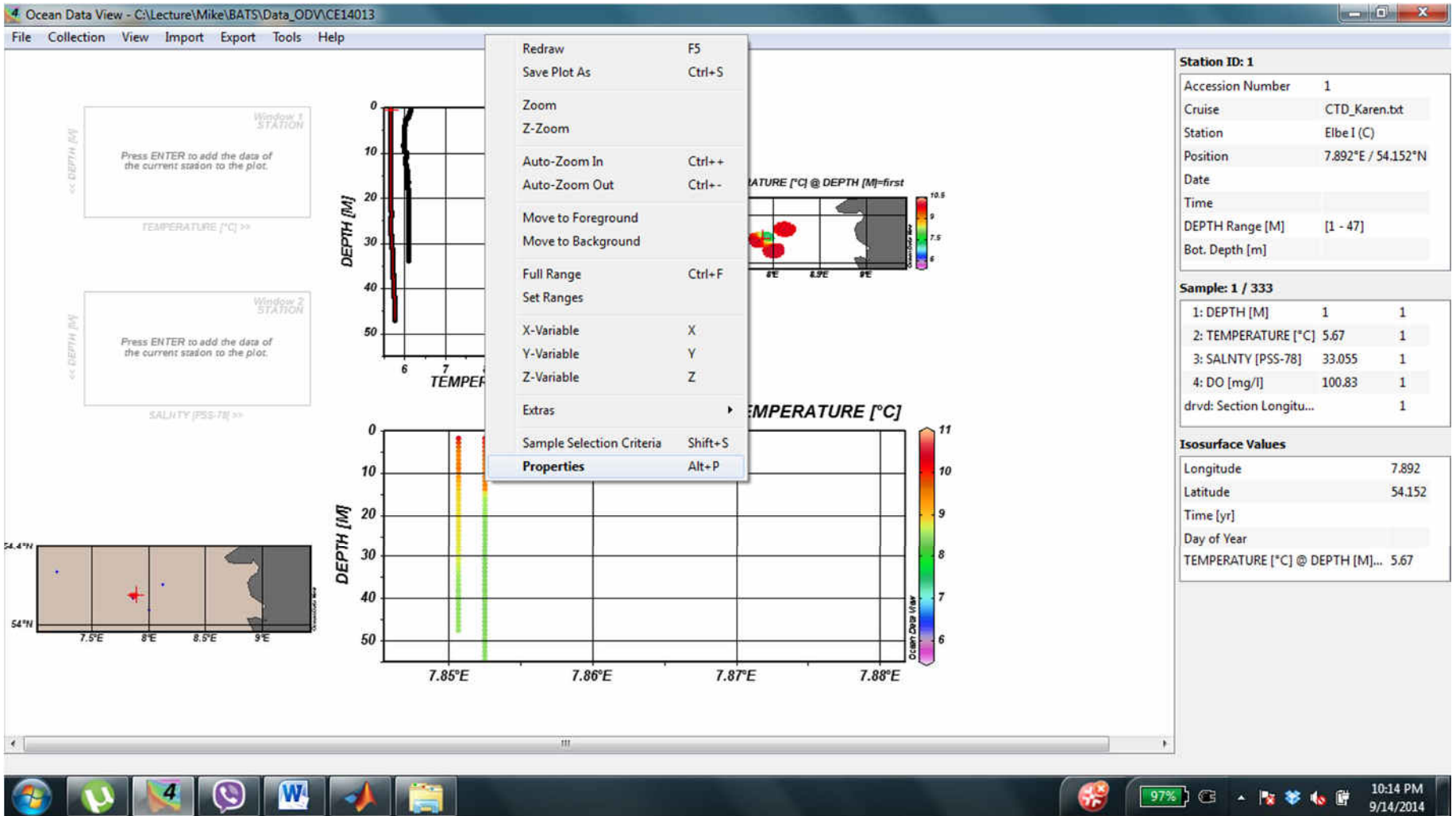
**Right click on section template >> X variables**



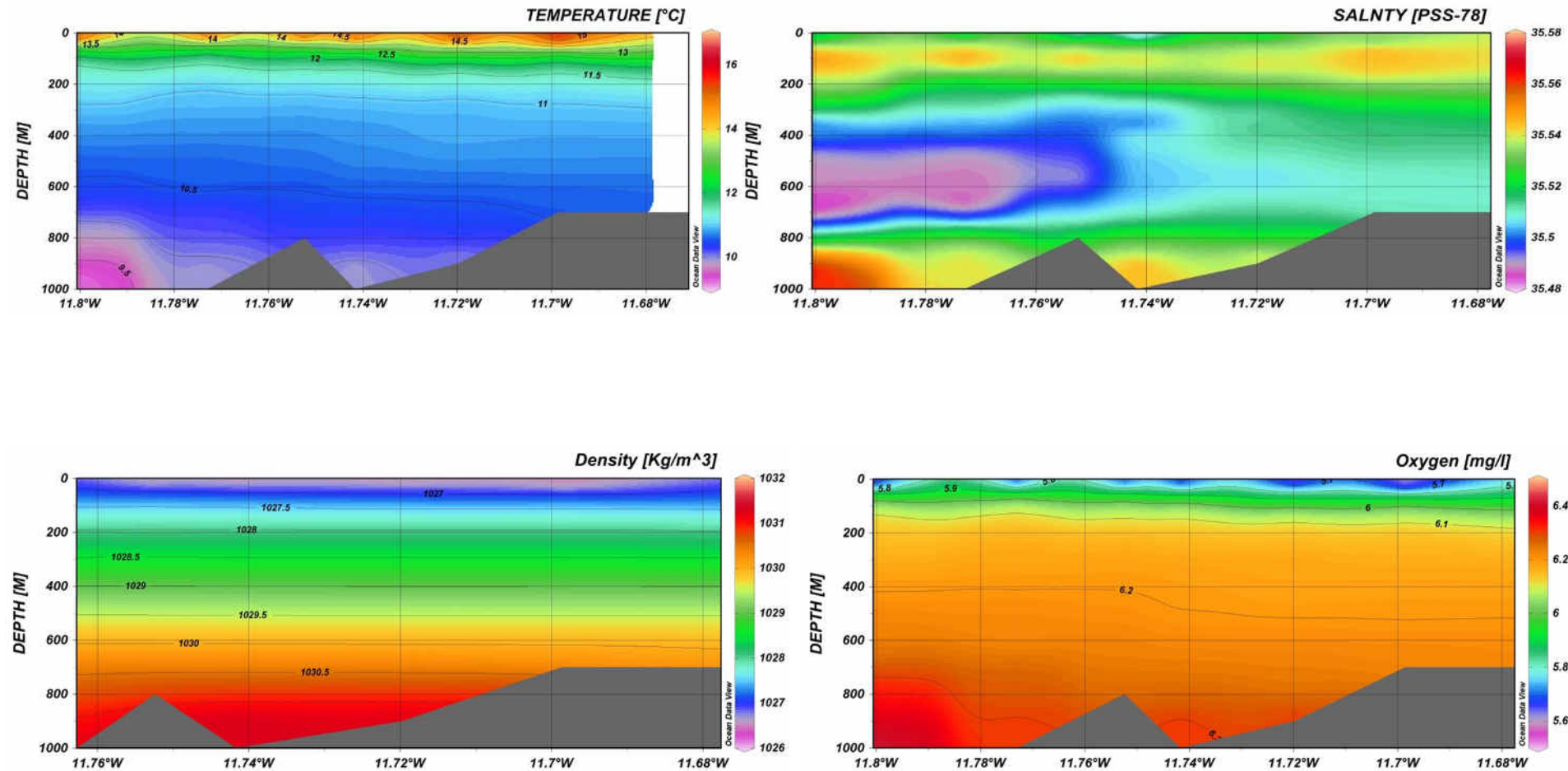
# X- Variable in section template



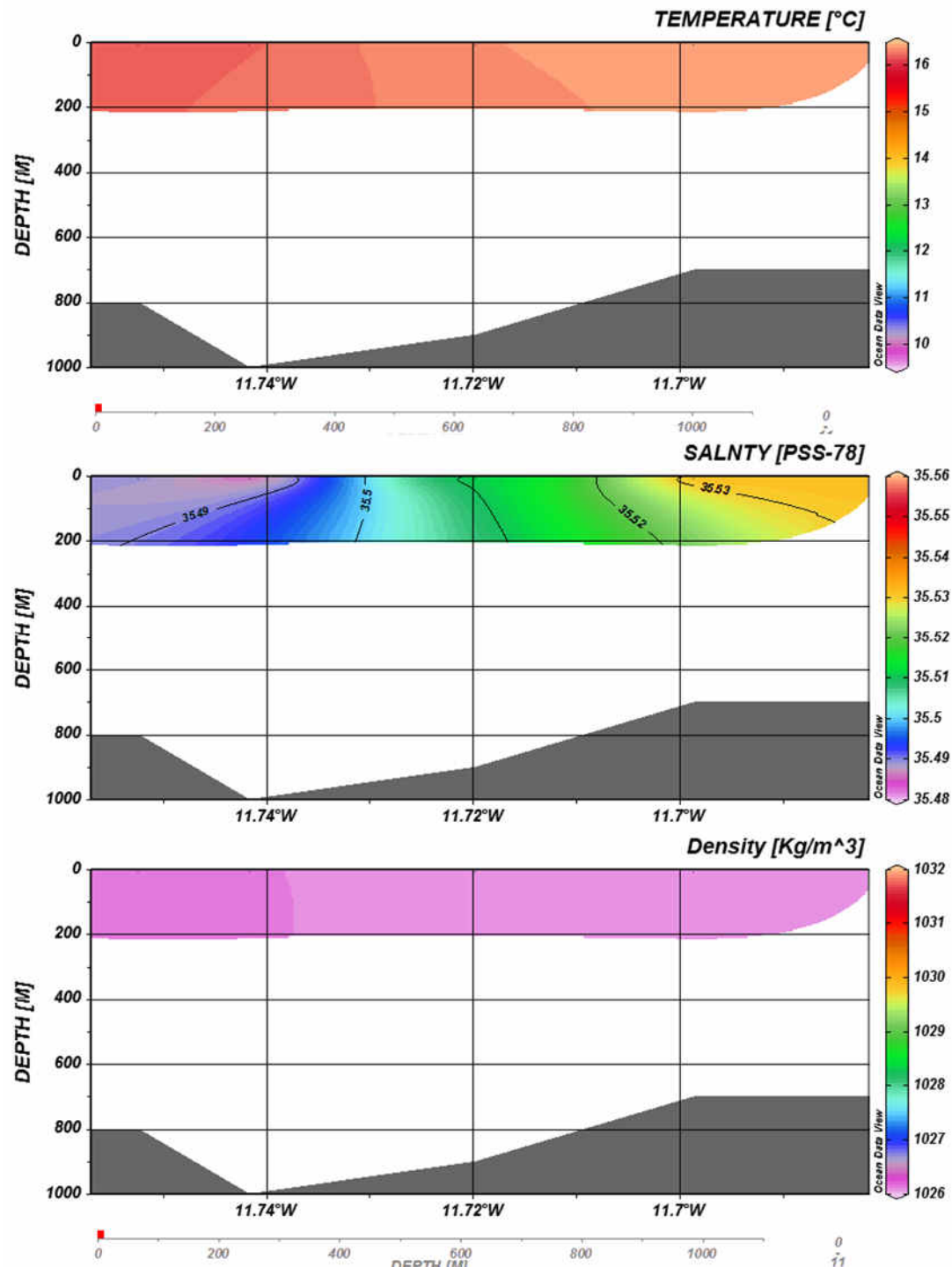
# Interpolation



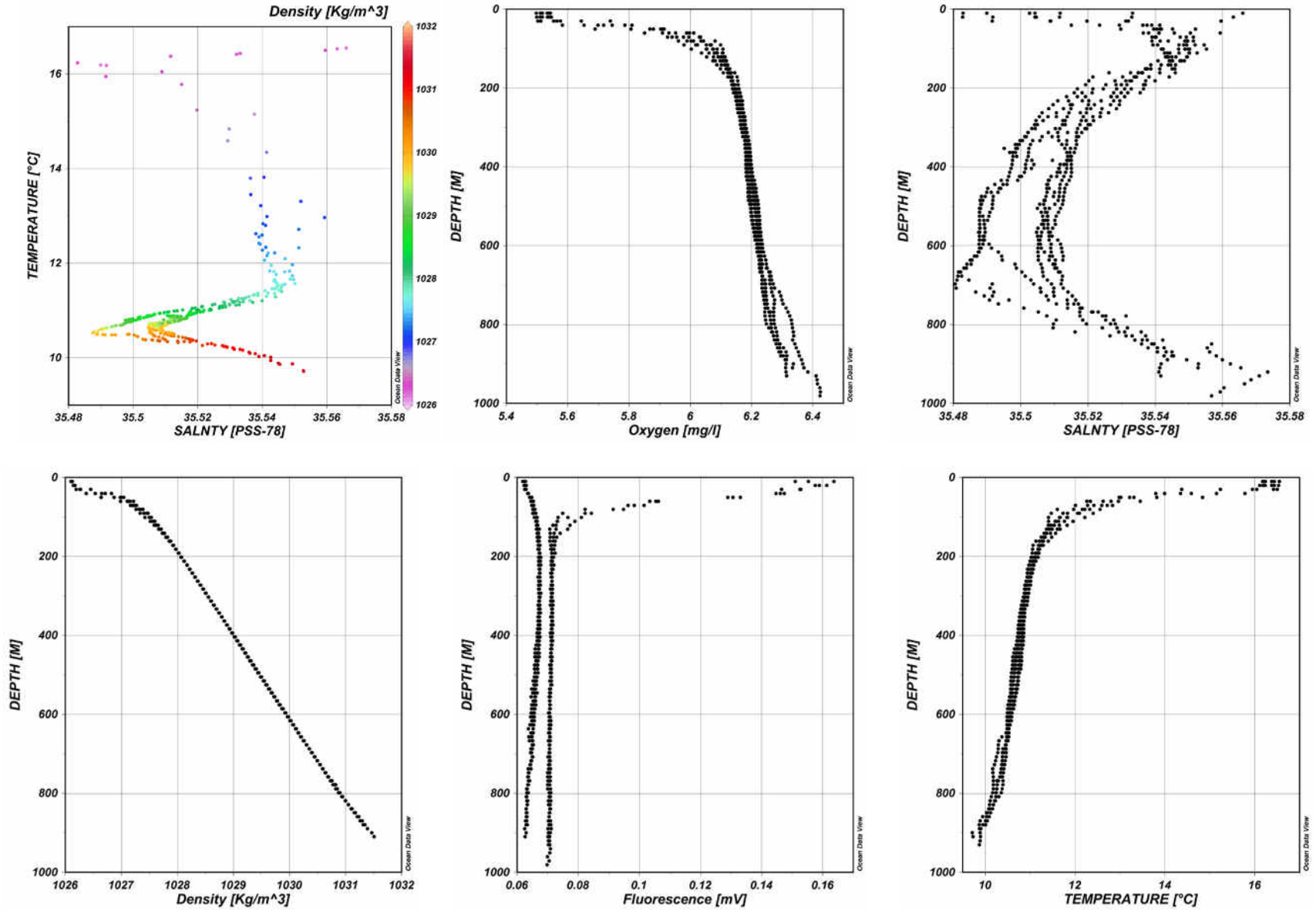
# Section Plot



# Section Plot



# Scatter Plot



# Statistics

Window 1 Statistics

Summary

|                   | -----Visible data----- |             |          | -----All data----- |           |
|-------------------|------------------------|-------------|----------|--------------------|-----------|
|                   | Mean                   | Stand. Dev. | # Points | Minimum            | Maximum   |
| Section Longitude | : 348.271              | + 0.01977   | 320      | [ 348.248          | 348.301 ] |
| DEPTH [M]         | : 414.7                | + 242.9     | 320      | [ 10.1             | 909.9 ]   |
| Density [Kg/m^3]  | : 1029.01              | + 1.267     | 320      | [ 1026.1           | 1031.51 ] |

Distributions

X Histogram

Y Histogram

Z Histogram

Gridding Misfits

X/Y Distribution

Fitted Curves (based on visible data)

Least-squares line

Orientation: X ( Y )

Number of gridpoints: 30

Averaging length-scale [permille]: 80

Construct Curve

Show Curve

Least-squares line

Section Longitude = a \* DEPTH [M] + b

a= -7.59963e-06 [ / M]

b= 348.274 []

rms= 0.0196543

r= -0.0933741

n= 320

Help

Clipboard Copy

Close

**THANK YOU**