

Non-standard ASCII to netCDF

CF Conventions

REQUIRE

Latitude

Longitude

Date/Time

...for EVERY observation

Bad ASCII

The screenshot shows a Microsoft Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Depth	Press	Temp	Theta	Conductivity	Sal	Density	DO	DO					
2	(m)	(db)	(C)	(C)	(S/m)	(psu)	(kg/m ³)	(ml/l)	(umol/kg)					
3	3.2	3.2	-1.6075	-1.6075	2.3629	29.4305	23.652	9.210	401.8					
4	3.2	3.2	-1.6076	-1.6076	2.3629	29.4306	23.652	9.195	401.2					
5	3.2	3.2	-1.6077	-1.6077	2.3629	29.4311	23.652	9.201	401.4					
6	3.2	3.2	-1.6077	-1.6077	2.3629	29.4307	23.652	9.204	401.6					
7	3.2	3.2	-1.6079	-1.6079	2.3629	29.4309	23.652	9.199	401.3					
8	3.2	3.2	-1.6078	-1.6078	2.3629	29.4311	23.652	9.206	401.7					
9	3.2	3.3	-1.6077	-1.6078	2.3629	29.4310	23.652	9.199	401.3					
10	3.2	3.3	-1.6076	-1.6076	2.3629	29.4309	23.652	9.200	401.4					
11	3.3	3.3	-1.6076	-1.6076	2.3629	29.4309	23.652	9.193	401.1					
12	3.3	3.3	-1.6076	-1.6077	2.3629	29.4306	23.652	9.198	401.3					
13	3.3	3.3	-1.6077	-1.6078	2.3629	29.4310	23.652	9.194	401.1					
14	3.3	3.3	-1.6079	-1.6079	2.3629	29.4308	23.652	9.196	401.2					
15	3.3	3.4	-1.6078	-1.6078	2.3629	29.4307	23.652	9.197	401.3					
16	3.3	3.4	-1.6080	-1.6080	2.3629	29.4309	23.652	9.198	401.3					

The cell at row 3, column A (A3) is highlighted and contains the text "3.2 3.2". The formula bar above the spreadsheet shows the value "3.2 3.2 -1.6075 -1.6075 2.3629 29.4305 23.652 9.210 401.8".

Better ASCII

station_1_2009 - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Styles Cells Editing

D1 Depth

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Latitude	Longitude	Date/Time	Depth	Press	Temp	Theta	Conducti	vity Sal	Density	DO	DO	
2	84.293	50.234	5/7/2009 19:30	(m)	(db)	(C)	(C)	(S/m)	(psu)	(kg/m^3)	(ml/l)	(umol/kg)	
3	84.293	50.234	5/7/2009 19:30	3	3	-1.625	-1.625	2.3827	29.7194	23.886	9.089	396.5	
4	84.293	50.234	5/7/2009 19:30	3	3	-1.6254	-1.6255	2.3827	29.7194	23.886	9.091	396.6	
5	84.293	50.234	5/7/2009 19:30	3	3	-1.6258	-1.6259	2.3827	29.7196	23.887	9.087	396.3	
6	84.293	50.234	5/7/2009 19:30	3	3	-1.6262	-1.6263	2.3827	29.7199	23.887	9.098	396.8	
7	84.293	50.234	5/7/2009 19:30	3	3	-1.6264	-1.6264	2.3827	29.7201	23.887	9.094	396.7	
8	84.293	50.234	5/7/2009 19:30	3	3	-1.6266	-1.6266	2.3827	29.7203	23.887	9.096	396.8	
9	84.293	50.234	5/7/2009 19:30	3	3	-1.6265	-1.6266	2.3827	29.7202	23.887	9.098	396.9	
10	84.293	50.234	5/7/2009 19:30	3	3	-1.6265	-1.6265	2.3827	29.7202	23.887	9.092	396.6	
11	84.293	50.234	5/7/2009 19:30	3	3	-1.6265	-1.6266	2.3827	29.7198	23.887	9.096	396.7	
12	84.293	50.234	5/7/2009 19:30	3	3.1	-1.6266	-1.6266	2.3827	29.7203	23.887	9.093	396.6	
13	84.293	50.234	5/7/2009 19:30	3	3.1	-1.6266	-1.6266	2.3827	29.7202	23.887	9.088	396.4	
14	84.293	50.234	5/7/2009 19:30	3.1	3.1	-1.6266	-1.6266	2.3827	29.7199	23.887	9.085	396.3	
15	84.293	50.234	5/7/2009 19:30	3.1	3.1	-1.6267	-1.6267	2.3827	29.7199	23.887	9.087	396.4	
16	84.293	50.234	5/7/2009 19:30	3.1	3.1	-1.6267	-1.6267	2.3827	29.72	23.887	9.08	396	

station_1_2009

Enter

100%

Best (conforming) ASCII

The screenshot shows a Microsoft Excel spreadsheet titled 'station_1_2009'. The data is organized in a table with 13 columns (A-M) and 12 rows (1-12). The columns are labeled: A: Latitude, B: Longitude, C: Date/Time, D: Altitude, E: Press, F: Temp, G: Theta, H: Conductivity, I: Salinity, J: Density, K: DO, L: DO. The Altitude column (D) contains values: (m), -3, -3, -3, -3, -3, -3, -3, -3, -3, -3, -3. The Press column (E) contains values: (db), 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3.1. The Temp column (F) contains values: (C), -1.625, -1.6254, -1.6258, -1.6262, -1.6264, -1.6266, -1.6265, -1.6265, -1.6265, -1.6265, -1.6266. The Theta column (G) contains values: (C), -1.625, -1.6255, -1.6259, -1.6263, -1.6264, -1.6266, -1.6266, -1.6266, -1.6265, -1.6266, -1.6266. The Conductivity column (H) contains values: (S/m), 2.3827, 2.3827, 2.3827, 2.3827, 2.3827, 2.3827, 2.3827, 2.3827, 2.3827, 2.3827, 2.3827. The Salinity column (I) contains values: (psu), 29.7194, 29.7194, 29.7196, 29.7199, 29.7201, 29.7203, 29.7202, 29.7202, 29.7202, 29.7198, 29.7203. The Density column (J) contains values: (kg/m^3), 23.886, 23.886, 23.887, 23.887, 23.887, 23.887, 23.887, 23.887, 23.887, 23.887, 23.887. The DO column (K) contains values: (ml/l), 9.089, 9.091, 9.087, 9.098, 9.094, 9.096, 9.098, 9.092, 9.096, 9.093. The DO column (L) contains values: (umol/kg), 396.5, 396.6, 396.3, 396.8, 396.7, 396.8, 396.9, 396.6, 396.7, 396.6. The formula bar shows '-3'.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Latitude	Longitude	Date/Time	Altitude	Press	Temp	Theta	Conductivity	Sal	Density	DO	DO	
2	84.293	50.234	5/7/2009 19:30	(m)	(db)	(C)	(C)	(S/m)	(psu)	(kg/m^3)	(ml/l)	(umol/kg)	
3	84.293	50.234	5/7/2009 19:30	-3	3	-1.625	-1.625	2.3827	29.7194	23.886	9.089	396.5	
4	84.293	50.234	5/7/2009 19:30	-3	3	-1.6254	-1.6255	2.3827	29.7194	23.886	9.091	396.6	
5	84.293	50.234	5/7/2009 19:30	-3	3	-1.6258	-1.6259	2.3827	29.7196	23.887	9.087	396.3	
6	84.293	50.234	5/7/2009 19:30	-3	3	-1.6262	-1.6263	2.3827	29.7199	23.887	9.098	396.8	
7	84.293	50.234	5/7/2009 19:30	-3	3	-1.6264	-1.6264	2.3827	29.7201	23.887	9.094	396.7	
8	84.293	50.234	5/7/2009 19:30	-3	3	-1.6266	-1.6266	2.3827	29.7203	23.887	9.096	396.8	
9	84.293	50.234	5/7/2009 19:30	-3	3	-1.6265	-1.6266	2.3827	29.7202	23.887	9.098	396.9	
10	84.293	50.234	5/7/2009 19:30	-3	3	-1.6265	-1.6265	2.3827	29.7202	23.887	9.092	396.6	
11	84.293	50.234	5/7/2009 19:30	-3	3	-1.6265	-1.6266	2.3827	29.7198	23.887	9.096	396.7	
12	84.293	50.234	5/7/2009 19:30	-3	3.1	-1.6266	-1.6266	2.3827	29.7203	23.887	9.093	396.6	

Options

- Have PI's submit data in netCDF
- Have PI's submit data in CF -> netCDF compliant ASCII
- Accept any data in any form

.xls is the most used data format

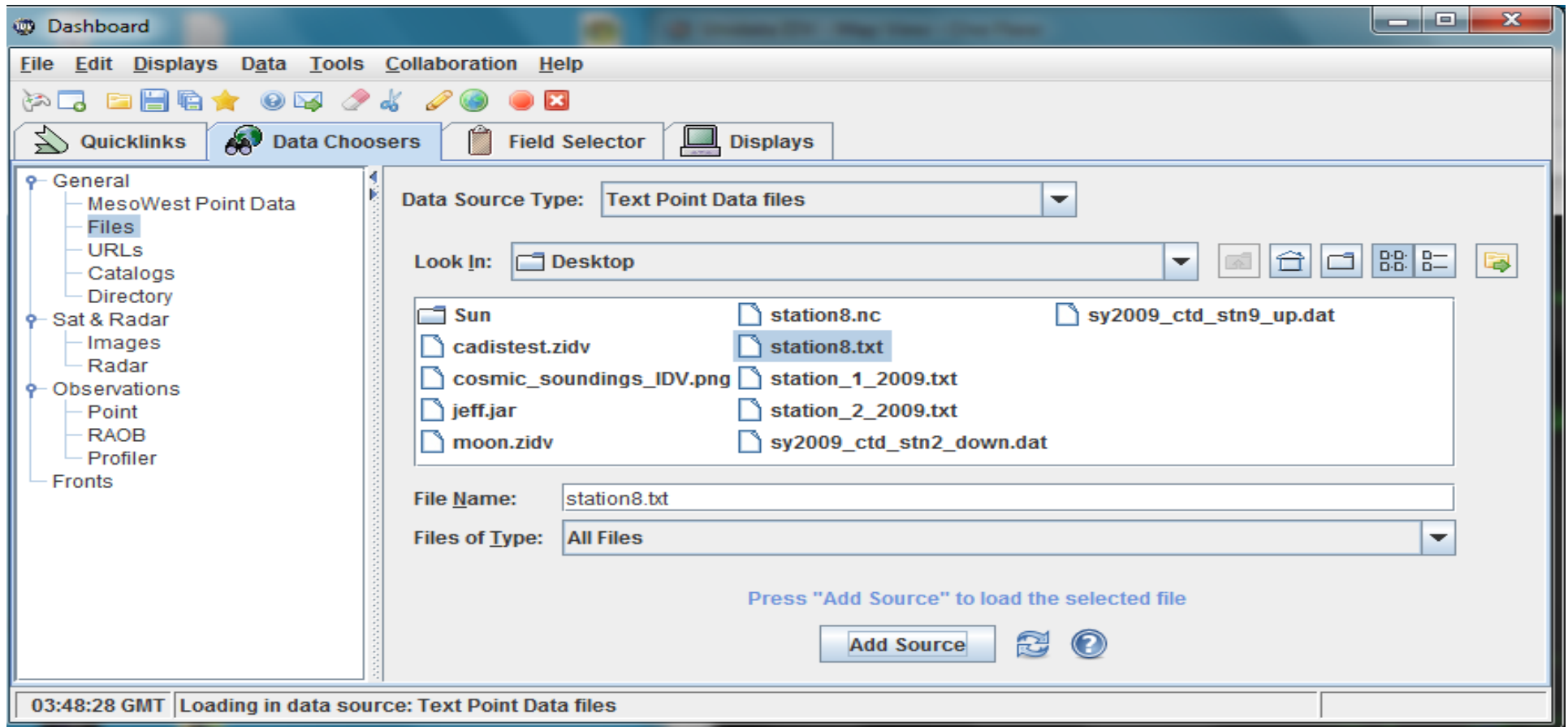
Complete (conforming) ASCII can readily be transformed to netCDF.

Non-standard data formats will likely not be supported by funding agencies in the future.

How to ingest non-standard ASCII data into the IDV for display and export to netCDF

- Step one – Add missing fields to file to become CF netCDF compliant: via Excel or editor of choice and save as a .txt file (Tab, space, or comma separated)
- Latitude
- Longitude
- Date/Time

Step Two: Import file to IDV
from Dashboard “File” -> “Open”
..as “Text Point Data files”, then “Add
Source”



A “Point Data” GUI will pop-up.
 -Select appropriate “Delimiter”

Point Data

Delimiter: Comma Semicolon Tab Space

Skip Pattern:

Start line:

> Depth Press Temp Theta Conductivity Sal Density DO DO

(m) (db) (C) (C) (S/m) (psu) (kg/m^3) (ml/l) (umol/kg)

89.614 39.91 2009-05-18 03:43:00 3.4 3.4 -1.6472 -1.6473 2.4187 30.2332 24.304 8.928 389.3

Enter the field names and units. Leave name field blank to skip the field Preferences

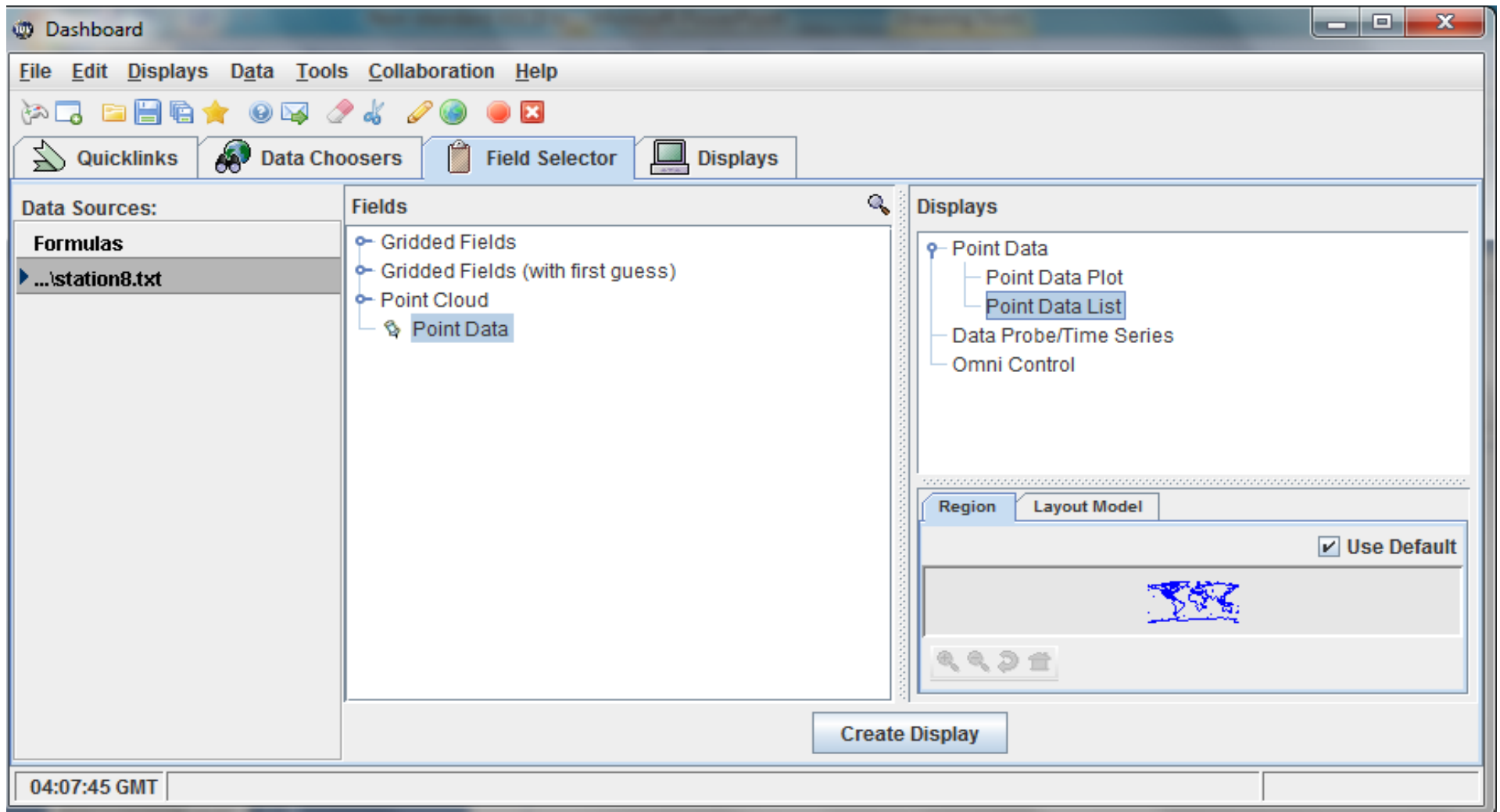
Value	Name	Unit/Date Format	Missing Value	Extra (e.g., colspan)
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Depth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Press	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Temp	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Theta	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Conductivity	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sal	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Density	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
DO	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
DO	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

OK Cancel

Use the up and down arrow keys to scroll down to where the data begins then enter the variable names and units of the data set as needed. You can use the “pull down” menus for some pre-populated fields.

Once entered save off via “Preferences” and name as desired, then this process will not need to be repeated for like datasets.

- The “Dashboard” will display and under “Fields”, select “Point Data” and under “Displays” select “Point Data List”, then “Create Display”



The “Dashboard” will display and you must now enter your desired variables via “Select Fields”. Generally, one will add all.

The screenshot shows a software interface titled "Dashboard" with a menu bar (File, Edit, Displays, Data, Tools, Collaboration, Help) and a toolbar. Below the toolbar are tabs for "Quicklinks", "Data Choosers", "Field Selector", and "Displays". The "Field Selector" tab is active, showing a sub-window with its own menu bar (File, Edit, View, Help) and a "Select Fields" button. To the right of the button are settings: "Only show every: 1 minutes" and a "Show Raw Data" checkbox. The main area displays a table with the following data:

Date/Time	Latitude	Longitude	Altitude [m]
2009-05-18 03:43:00Z	89.6	39.9	-3.4
2009-05-18 03:43:00Z	89.6	39.9	-3.4
2009-05-18 03:43:00Z	89.6	39.9	-3.4
2009-05-18 03:43:00Z	89.6	39.9	-3.4
2009-05-18 03:43:00Z	89.6	39.9	-3.5
2009-05-18 03:43:00Z	89.6	39.9	-3.5
2009-05-18 03:43:00Z	89.6	39.9	-3.5
2009-05-18 03:43:00Z	89.6	39.9	-3.5
2009-05-18 03:43:00Z	89.6	39.9	-3.6
2009-05-18 03:43:00Z	89.6	39.9	-3.6
2009-05-18 03:43:00Z	89.6	39.9	-3.6
2009-05-18 03:43:00Z	89.6	39.9	-3.6
2009-05-18 03:43:00Z	89.6	39.9	-3.7
2009-05-18 03:43:00Z	89.6	39.9	-3.7
2009-05-18 03:43:00Z	89.6	39.9	-3.7
2009-05-18 03:43:00Z	89.6	39.9	-3.7
2009-05-18 03:43:00Z	89.6	39.9	-3.8
2009-05-18 03:43:00Z	89.6	39.9	-3.8
2009-05-18 03:43:00Z	89.6	39.9	-3.8
2009-05-18 03:43:00Z	89.6	39.9	-3.8
2009-05-18 03:43:00Z	89.6	39.9	-3.9
2009-05-18 03:43:00Z	89.6	39.9	-3.9

The status bar at the bottom left shows "04:31:53 GMT".



Field Selector



All Fields

Temperature
Potential_Temperature
Conductivity
Salinity
Density
DO1

Current Fields

Date/Time
Latitude
Longitude
Altitude
Pressure



Add >

< Remove

Apply

OK

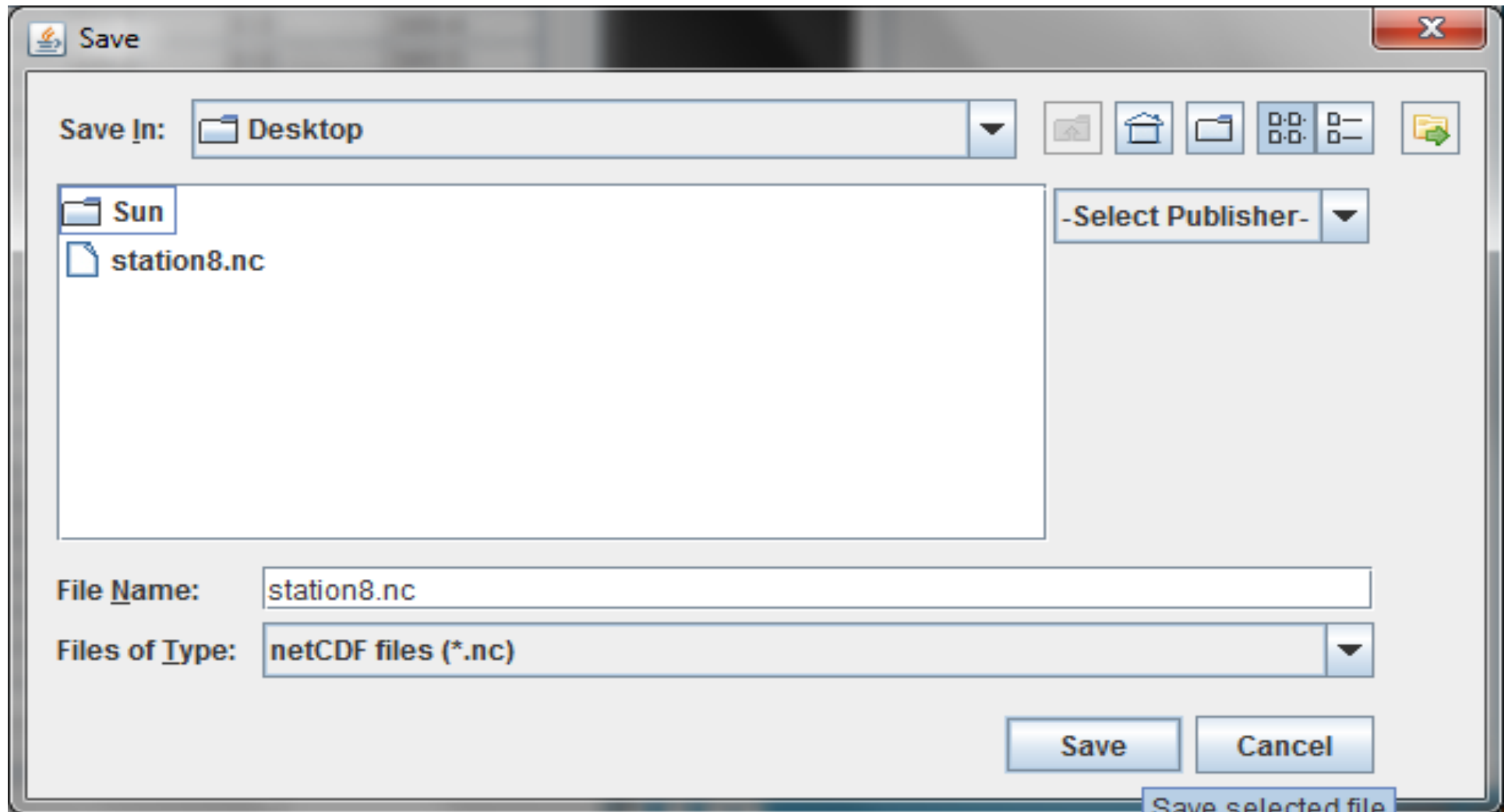
Cancel

Then, “File” -> “Save” -> Export all data to NetCDF

The screenshot shows a software interface with a main menu (File, Edit, Displays, Data, Tools, Collaboration, Help) and a toolbar. Below the toolbar are tabs for Quicklinks, Data Choosers, Field Selector, and Displays. The main window is titled 'Dashboard' and contains a sub-window titled 'View 1'. The sub-window has its own menu (File, Edit, View, Help) and a toolbar. The 'File' menu is open, showing options: Remove Display, Save, Reload Data, and a 'Only show every 1 minutes' filter. The 'Save' option is selected, opening a sub-menu with: Save Data in Cache..., Save Display as Favorite..., Save Display as Bundle..., Export Table to CSV..., and Export all data to NetCDF... (highlighted). The main window displays a table of data with columns: e..., Temperat..., Potential..., Conductiv..., Salinity, Density, and DO1. The table contains 20 rows of data. The status bar at the bottom shows '04:33:05 GMT'.

e...	Temperat...	Potential...	Conductiv...	Salinity	Density	DO1
-1.6	2.4	30.2	24.3	8.9	389.3	
-1.6	2.4	30.2	24.3	8.9	389.4	
-1.6	2.4	30.2	24.3	8.9	389.3	
-1.6	2.4	30.2	24.3	8.9	389.4	
-1.6	2.4	30.2	24.3	8.9	389.4	
-1.6	2.4	30.2	24.3	8.9	389.5	
-1.6	2.4	30.2	24.3	8.9	389.4	
-1.6	2.4	30.2	24.3	8.9	389.7	
-1.6	2.4	30.2	24.3	8.9	389.8	
-1.6	2.4	30.2	24.3	8.9	389.6	
-1.6	2.4	30.2	24.3	8.9	389.7	
-1.6	2.4	30.2	24.3	8.9	389.9	
-1.6	2.4	30.2	24.3	9	390.6	
-1.6	2.4	30.2	24.3	8.9	390	
-1.6	2.4	30.2	24.3	9	390.2	
-1.6	2.4	30.2	24.3	8.9	389.7	
-1.6	2.4	30.2	24.3	8.9	390.1	
-1.6	2.4	30.2	24.3	8.9	390	
-1.6	2.4	30.2	24.3	9	390.5	
-1.6	2.4	30.2	24.3	9	390.3	
-1.6	2.4	30.2	24.3	9	390.2	
-1.6	2.4	30.2	24.3	9	390.7	
-1.6	2.4	30.2	24.3	8.9	390.2	
-1.6	2.4	30.2	24.3	9	390.5	

Name *.nc and "Save" as desired



Resources

- IDV Users Guide
 - 7.5.1 and others
- NetCDF Users Guide