



OCN 623 How to use ODV

Ocean Data View



http://odv.awi.de

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ver. 4.7.4 http://odv.awi.de/

Currently **46,300** users, ~20 new users every day!!

Feb 4, 2016



Ocean Data View

What is ODV?

 "Ocean Data View (ODV) is a software package for the interactive exploration, analysis and visualization of oceanographic and other geo-referenced profile, time-series, trajectory or sequence data. ODV runs on Windows (8, 7, Vista, XP), Mac OS X, Linux, and UNIX (Solaris, Irix, AIX) systems."

Free, Easy-to-use, visual, practical...etc..



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His Research Interests: Modeling; Nutrient and Carbon Cycles; Information Systems; Productivity and Particle Fluxes; Radionuclides



Ocean Data View



What can you do with ODV?

- property/property plots of selected stations
- scatter plots for sets of stations
- color sections along arbitrary cruise tracks
- color distributions on general isosurfaces
- geostrophic velocity sections
- temporal evolution plots of tracer fields
- <u>differences of tracer fields between repeats</u>
- Animations
- interrupted maps.

Example. property/property plots of selected stations



Example.

scatter plots for sets of stations



Example. color sections along arbitrary cruise tracks



4000

6000 |

05









Salinity [pss-78]

36

35

75

6

Phosphate [jmol/kg]

Example. color distributions on general isosurfaces







interrupted maps



Example.

temporal evolution plots of tracer fields - Time-series data at BATS station

BATS Time Series

Temperature ITS-90 [° C]



Example.

animations





Example.

animation 2





Data: Maxime Grand, Christopher Measures, Mariko Hatta, William Landing, Peter Morton, Clifton Buck, William Hiscock, Joseph Resing Graphics: Reiner Schlitzer





Let's get started

Installation http://odv.awi.de/en/software/download/

- 1. Download data and open it
- 2. Modify views
- 3. Create your own data file
- 4. Open new ODV & import your data file
- 5. Make T-S diagram and derived variable
- 6. How to save figures and views

Find where you have put ODV data files on your computer.





In scatter mode, all data within the map are shown. Clicking on a particular station, will highlight that station's data in red. If the station has multiple occupations, like HOT, then you can scroll between different occupations with the left and right arrows on your keyboard, ______ ALOHA



You can move up and down the red highlighted profile with up and down keys. And the data corresponding to the point will be shown in the variables window.



Quality Flag (QF)

Quality flag document: http://odv.awi.de/en/documentation/

ODV flag: QF

Flag Description	ODV
good quality	0
unknown quality	1
questionable quality	4
bad quality	8

-Every parameter and each sample can have its own quality flag, good, unknown, questionable, or bad.

-You use the flag to identify data quality, you can then isolate bad data from your figure!

ODV always assign quality flag =1 i.e. unknown if you do not.

"Metadata" show the information of the selected station on the map (e.g. Cruise name, Station #, Position (Long/Lat), sampling date etc.)



"Isosurface values" show the calculated/selected values at at the selected station. (see detail in the ODV manual)

Let's change the layout of the canvas

Move your cursor in the white part (it should not be on the map or on any scatter window)



Right click ("control" + click if you are Mac user), and select "Window Layout".

"6 Scatter Windows" layout mode

Metadata



"6 Scatter Windows" layout mode

This is "layout mode" of 6 scatter windows, and you can modify the layout of your windows (e.g. add new window, change the size, select different parameter etc.)



"6 Scatter Windows" layout mode

Move your cursor on the scatter window that you want to modify, and then **Right click** ("control" + click if you are Mac user).



After you change the layout, select "Accept".



Let's change the temperature plot to pH.

To make changes in any window, put your cursor and right click ("control" + click if you are Mac user) click in the window, then select "Properties".



Let's change the temperature plot to pH.

Select "Data" tab, then select "X-axis" (now selected "2:CTD Temperature [ITS-90]".





26

Now you will see the modified scatter window showing pH as a vertical profile.



Now, we are going to modify the sample selection criteria used for the plot.

Let's modify the sample selection criteria!

Move your cursor in the scatter window that you want to change the selection criteria, right click ("control" + click if you are Mac user), then select "Sample Selection Criteria".







30

Different window types (shown in color) have different pop-up menus!

Depending on what you want to modify, you have to select "Map" or "Scatter Window" or "background".



Мар

Scatter Windows

Background

Different window types (shown in color) have different pop-up menus!



Background



Scatter Windows

	Redraw	F5
-2008	Save Plot As	ЖS
	Zoom	00
	Z–Zoom	
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	Auto-Zoom Out	ж-
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	Extras	•
0 240	Sample Selection Criteria	۵S
ieq/kg]	Properties	٦СΡ
	RW-I 896 896: AllSamples_Overview	

Change the scale of Map

Properties

Change the properties of the window

How to save figures and views

All of the parameters in a canvas, window types, parameters shown, scaling, etc. are known as a view which can be saved. Click "View" in the Menu Bar to select "Save View as" or "Save View".

View	Import	Export	Tools		
Undo / Redo					
Station Selection Criteria					
Derived Variables CD Isosurface Variables					
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Wind Layo	dow Layo out Templa	ut ates	עז וויע		
Save Save Load	e View As e View d View	-	۵L		
Brov	vse Sessi	on Log Fi	le		

How to save figures:

Click "File" in the Menu Bar to select "Save Canvas as".

File	Collection	View	Import	
New			ЖN	
Ор	en		жo	
Ор	en Remote			
Close			жw	
Execute Batch File				
Sav	ve Canvas As	3	жs	
Pri	nt Canvas	_	ЖP	
Pri	nt Preview Of	Canvas	s 企P	
Re	cent Files		►	

Tip: The highest resolution of the canvas you can save is 499, which would be important for a publication. Also when you print the Canvas, it would take a long time to print. Save as the canvas, and then print it (faster!).

Let's change the view from the vertical profiles to "Phosphate Time Series" mode!



Phosphate Time Series



Ocean Data View - /Users/marikohatta/Desktop/HOT/bottle/HOT_bottle_data_1988-2008

Station ID: 896 Cruise KahePt Station 197 (B) Position 158.27°W / 21.34°N Date 20 November 2008 Sample: 25 / 25 1: Pressure ... 1019 1 2: CTD Tem... 4.10 1 3: CTD Salin... 34.498 1 4: CTD Oxy... 45 1 5: Bottle Sal... 34.498 1 6: Bottle Dis... 45 1 7: Dissolved... 1 8: pH 1 9: Alkalinity ... 1 10: Phospha... 1 11: Nitrate ... 1 12: Silicate [... 1 13: Dissolve... 1 14: Dissolve... 1 15: Dissolve... 1 16: Total Dis... 1 17: Total Dis... 1 18: Particula... 1 19: Particula... 1 20: Particula... 1 Isosurface Values Longitude 201.730 Latitude 21.340 Time [yr] 2008.913 Day of Year 335 CTD Temperature [ITS... 25.59 CTD Salinity [PSS-78] ... 35.095

.

Exercise 1.

Now to create your own ODV readable text file
1. Create your own data file

ODV will only recognize files in tab delimited format (.txt) with the following headers (the order of "Meta data" is not important!):



Tip: Fill out the info of the metadata (cruise, station, Type, Long/Lat, Date/time*, Bot. Depth*). *if you do not have these data, you can leave it blank.*

13							
14							

Tip:

- 1. Have to use the following headers for the metadata (the order is not important!)
- 2. If you want to use the bottom depth from the data file, you have to use the header of "Bot.Depth" instead of bottom depth or any other name.
- 3. If you want to show only "Bottle file" or "CTD file", "Type" column would be useful. This data file is the bottle file, so you should use "B" in the column of "Type".



ODV recognize the name of the column as the parameter name automatically . So, if you do not use the specific header names, individual column data data would recognize as "a parameter".

Quality Flag

-You use the flag to identify data quality, you can then isolate bad data from your figure!
- If you do not add QF column, ODV will automatically assign a flag "unknown (QF=1)".

irregular digital chromatographic peak

sample not drawn for this measurement from

integration

this bottle

WOCEBOTTLE

8

9

Quality flag document: http://odv.awi.de/en/documentation/

<i>ODV flag:</i> QF		<i>WOCE flag:</i> QV:WOCEBOTTLE QV:WOCECTD
Flag Description	ODV	Flag Description sample for this measurement was drawn from water bottle but analysis not received
good quality	0	acceptable measurement
unknown quality	1	questionable measurement
questionable quality	4	bad measurement
questionable quality	-	not reported
bad quality	8	mean of replicate measurements
		manual chromatographic peak measurement

4. Save the created excel document in Tab delimited format (.txt).

ODV will only recognize files in the tab delimited format (.txt).

File	Edit	View	Insert	Form
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Options Comp		· mended ·

Exercise 2.

Let's create your own ODV file & figures



Ocean Data View

Open ODV and import the data

- 1. Create New Collection. Find the place you want to save the new ODV collection.
- Choose "Definition of collection variables". Select "Use .txt,.odv,.var or other file as template" and select your file that you made.

This step defines how ODV will read your data (i.e. metadata, variable name, QF etc.)

3. Click "Import", and select your file that you made.

This step actually imports your data into ODV. Now you can see your data on the screen!

Tip: If you want to import additional data into an existing file, you need to associate the new variables with the existing file "Target collection variables".



Siteman

Imprint



Choose "Definition of collection variables". Select "Use .txt,.odv,.var or other file as template" and select your file that you made (tab delimited text file).

Jse .txt, .odv, .var or other file as template	Desktop	Name	A	Size Kind	Date Modified	
User specifies variables manually standard templates ARGO Profile ARGO Profile (including intermediate parameters) ARGO Trajectory	Docum ODV	Download_H Example1 vi header.txt header.xisx Mawji_etal_M	IOT Sy MarChem_2015.pdf	Fold 76 KB xlsx 20 KB txt 27 KB xlsx 1.4 MB pdf	der 2/2/15 11:46 AM v Eile 1/27/16 4:54 PM File 1/31/16 11:04 AN K File 1/27/16 4:56 PM File 1/27/16 1:43 PM	
Add Trajectory GTSPP (Global Temperature-Salinity Profile Program) Aedatlas Bottle Aedatlas CTD Aedatlas Sediment Trap Medatlas Time Series NODC SD2 NOCE ADCP NOCE ADCP NOCE Current Meter NOCE Sea Level NOCE Subsurface Float NOCE Subsurface Float NOCE Surface Velocity NOCE WHP Bottle	File name: h	Sch2001h.pd	df Spreadsheet Column Labels Cruise Station Type yyyy-mm-ddThh:mm:ss.sss Longitude [degrees_east] Latitude [degrees_north] Bot.depth [m] Descense [deat]	2.4 MB pdf Metadata a Metadata Va	File 1/27/16 1:41 PM Ind Data Variables riables Cruise Station Type Longitude [degrees_east] Latitude [degrees_north] Year Moonth	Ne
VOCE WHP CTD Vorld Ocean Database	Files of type:	Supported File	CTD Temperature [ITS-90] CTD Salinity [PSS-78] CTD Oxygen [umol/kg]	Data Variable	Day Hour es Pressure [dbar] CTD Temperature [ITS-90] CTD Salinity [PSS-78]	Nev
Customized collection creation OK Cancel				<<	CTD Oxygen [umol/kg]	To



Now you made a new ODV file with your parameters in the header. Next, you have to import



3. Click "Import", and select "ODV spreadsheet" and select the txt file that you made.



Now you can see your data on the screen!

Use a magnifying glass!



Accession N	1					
Cruise	4					
Station	1 ((B)				
Position	15	7.782°W	21	.43	3°N	
Date						
īme						
Pressure Ra	[1.	00 - 10.00	D]			
Bot.depth [m]						
ample: 1 / 10						T
1: Pressure [d.		1.00		1		
2: CTD Tempe		26.33		1		
3: CTD Salinit.		34.14		1		
4: CTD Oxyge		27.05		1		
osurface Value	s					T
ongitude			-1	57.	782	
atitude			2	1.43	3	
īme [yr]						
Day of Year						
Pressure [dbar]	@ P	ressur	1.	00		
CTD Temperatur	e [l	TS-90]	20	6.33		
CTD Salinity [PS	S-7	78] @ P	34	4.14		
CTD Oxygen [un	nol/	′kg] @ …	2	7.05		

Zoom the map: Right click on "Map" window, and select "Full Domain".



Accession N	1				
Cruise	4				
Station	1 ((B)			
Position	15	7.782°W /	21.43	3°N	
Date					
Time					
Pressure Ra	[1.	00 - 10.00	0]		
Bot.depth [m]					
ample: 1 / 10					
1: Pressure [d.		1.00	1		
2: CTD Tempe		26.33	1		
3: CTD Salinit.		34.14	1		
4: CTD Oxyge		27.05	1		
sosurface Value	s				
Longitude			-157.	782	
Latitude			21.43	33	
Time [yr]					
Day of Year					
Pressure [dbar] (@ P	ressur	1.00		
CTD Temperatur	e [l	TS-90]	26.33	3	
CTD Salinity [PS	S-7	78] @ P	34.14	ł	
CTD Oxygen [un	nol/	′kg] @	27.05	5	

Kaneohe Bay data!



Accession N	1					
Cruise	4					
Station	1 (B)				
Position	15	7.782°W / 3	21.	43	3°N	
Date						
Time						
Pressure Ra	[1.	00 - 10.00]				
Bot.depth [m]						
Sample: 1 / 10						
1: Pressure [d.	••	1.00		1		
2: CTD Tempe		26.33		1		
3: CTD Salinit.		34.14		1		
4: CTD Oxyge		27.05	1	1		
sosurface Value	s					
Longitude			20	2.	218	
Latitude			21	.4	33	
Time [yr]						
Day of Year						
Pressure [dbar]	@ P	ressure	1.	00		
CTD Temperatur	e [l	TS-90]	26	i.3	3	
CTD Salinity [PS	S-7	'8] @ Pr…	34	.1	4	
CTD Oxygen [un	nol/	kg] @ P	27	. 0	5	

Let's make "2 scatter windows" using Layout Templates

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Ocean Data View	Undo / Redo		H_Lab/14_Class/ODV_Teaching/	OCN623_ODV_	_2016/Materia	ul/ODV_C	OLLECTION_	<u>(</u> 2016-01-31T11	-52-41)		
	Station Selection Criteria	27.5						Station ID: 1			
								Accession N	1		
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6°N	Isosurface Variables							Station	1 (B)		
	Window Properties							Position	157.782°W /	21.433°N	
	Window Layout	τw						Date			
	Layout Templates	•	Full Screen Map	F8				Time			
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	Browse Session Log File		1 SCATTER Window					1: Pressure [d	1.00	1	
		•	2 SCATTER Windows	F10				2: CTD Tempe	e 26.33	1	
5°N			6 SCATTER Windows					3: CTD Salinit	34.14	1	
	•		1 SECTION Window					4: CTD Oxyge	27.05	1	
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			1 SURFACE Window	F12				Day of Year			
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			8 SURFACE Windows					CTD Salinity [P	SS-78] @ Pr…	34.14	
4°N			11 SURFACE Windows					CTD Oxygen [u	mol/kg] @ P	27.05	
			1 SURFACE + 1 SCATTER V 5 MIXED Windows	Windows		ata View					
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157.	9°W 1	57.8°W	157.7°	W							

"2 scatter windows" mode



Accession N	1					
Cruise	4					
Station	1 (B)				
Position	15	7.782°W /	21	.43	3°N	
Date						
Time						
Pressure Ra	[1.	00 - 10.00]				
Bot.depth [m]						
Sample: 1 / 10						
1: Pressure [d.		1.00		1		
2: CTD Tempe.		26.33		1		
3: CTD Salinit.		34.14		1		
4: CTD Oxyge.		27.05		1		
sosurface Value	s					
Longitude			2	202.	218	
Latitude			2	1.4	33	
Time [yr]						
Day of Year						
Pressure [dbar] @	@ P	ressure	1	.00		
CTD Temperatur	e [l'	TS-90]	2	6.3	3	
CTD Salinity [PS	S-7	'8] @ Pr…	3	4.1	4	
CTD Oxygen [um	nol/	kg] @ P	2	27.0	5	

Exercise 3. Make a T-S diagram



1. Change the y-axis from Pressure to CTD Temperature



Right click, then select "Properties", then select "Data" tab. Select "y-axis" (now selected "2:CTD Temperature [ITS-90]".

2. Let's make a potential temperature-salinity diagram. In order to calculate "potential Temperature" using ODV "Derived Variables" function!



⁵³

3. Identify each parameter from the list. At first, you have to identify "Depth in Water Column (m)", here is "1. Pressure". Next, identify "Temperature", so select "CTD Temperature", and finally identify "Practical Salinity", and select "CTD salinity". Then enter "reference pressure", so type "0".



.)	e O Potential	Temperat
	Enter reference pr	essure [db]:
	0	
	Cancel	ОК
		54

4. You calculated "Potential Temperature"!

Already Defined Ch	noices
Potential Temperature θ [degC]	Physical Properties (TEOS-10) Absolute Salinity SA Absolute Salinity at Freezing Point Adiabatic Lapse Rate Γ Brunt-Vaisala Frequency Cabbeling Coefficient CØb Conductivity from Practical Salinity Conservative Temperature Ø Depth from Pressure Dynamic Enthalpy Dynamic Height Freezing Temperature Øf In situ Density Anomaly In situ Temperature from Conservative Temper Isentropic Compressibility κ Latent Heat of Evaporation
	Latent Heat of Evaporation Latent Heat of Melting Neutral Density γn Potential Density Anomaly σ Potential Temperature θ
Delete Edit	Load from View File Add

Now, "drvd: Potential Temperature" are appeared in the variables window!



Properties Window 1						
General Data Display Style Contours Coll Scope: SCATTER: Data of all stations shown in the map	or Mapping DIVA Settings	5. 	Right click Propertie Select X-a as "drvd:	k over the s. Then Se ixis as "3: (Potential ⁻	Window, lect "Data CTD salini Femperat	then select a" tab. And ity" and Y-axis ture.
X-Axis 3: CTD Salinity [PSS-78] X-Axis Settings Rever Y-Axis drvd: Potential Temperature θ [degC] Y-Axis Settings Rever	se range					
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						Station ID: 13
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	21.55°N		-		ا تمي	CTD Temperature [ITS-90] 26.77
						CTD Salinity [PSS-78] @ Pr 34.83
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6. Draw the Isopycnals.

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Auto-Zoom In Auto-Zoom Out	¥+ ж-	Statistics Clipboard Copy	F4 ⊮C
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Sample Selection Criteria Properties	ΩS ΩP	Export as Graphics Object	Þ
		Animation	•

Right click over the Window, then select "Extras". Then Select "Isopycnals". Select "Switch On".



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►





Draw Map & stations



Hatta et al., 2014 & Measures et al., 2014

Same section with different depths



Vertical Profiles + T-S diagram



Hatta et al., 2014

Concentrations with color as well as flow direction (ADCP data)



Measures et al., 2014

Temperature overlaid with Salinity



Grand et al., 2015 ⁶⁴

Reference

ODV User's Guide:

http://odv.awi.de/en/documentation/

HOT ADCP data:

http://currents.soest.hawaii.edu/hot/

Kaneohe data:

http://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.nodc:0099831

ADCP data during HOT cruise http://currents.soest.hawaii.edu/hot/

Back to currents

Station Aloha Shipboard ADCP data

The Hawaii Ocean Timeseries project involves cruises to ALOHA Station nearly every month, starting in October 1988. Most of these cruises have been on ships equipped with
acoustic Doppler current profilers, the observations from which are presented here. Continuous time series of currents at ALOHA are available elsewhere from the WHOTS
mooring.

Funding from the National Science Foundation via grants OCE-0752606 and OCE-0926766 is gratefully acknowledged.

For each cruise we provide a set of links to data plots (left column), to the data location in the NODC JASADCP (center, if present), and to netcdf files with the ADCP data and
predicted barotropic tides (right column).

LIST VIEW

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
2008	2009	2010	2011						

2011

hot228	km1101	2011/01/08 to 2011/01/10	Honolulu, HI to Honolulu, HI
hot229	km1102a	2011/01/27 to 2011/01/31	Honolulu, HI to Honolulu, HI
hot230	km1108	2011/02/27 to 2011/03/03	Honolulu, HI to Honolulu, HI
hot231	km1113	2011/04/10 to 2011/04/14	Honolulu, HI to Honolulu, HI
hot232	kok1107	2011/05/08 to 2011/05/12	Honolulu, HI to Honolulu, HI



hot228_km1101 2011/01/08 to 2011/01/10 Honolulu, HI to Honolulu, HI									
os38bb	JASADCP	netCDF							
os38nb	JASADCP	netCDF							
wh300	JASADCP	netCDF							
top									

Hot Cruise Data

Download this!

Online Data

	CRUISE	SONAR	AD	CP	PREDICTE	D TIDE		
	hot225_km1017	os38bb	short	long	tpxo7.2	hawaii		
		os38nb	Short	long	tpxo7.2	hawaii		
		wh300	short	long	tpxo7.2	hawaii		
Type of	f the sensor		ADCP: ra	hawaii				
iype oj	the sensor							
201-1-	(12		Short or I	hawaii				
083800	(12m bin/1000m)		Short var	J and V etc.)	hawaii			
os38nb	(24m bin/1200m)				hawaii			
wh200	(20m)		Long vari	hawaii				
wn300	(80m)		short	long	tpxo7.2	hawaii		
os75bb) (8m bin/600m)		short					
os75nh	(16m hin / 700m)		short	short The "Barotrophic Tie				
0375110			short the mo		dels			
nb150 ((8m bin/200m)							
ate Ack Jules Hummon more detail			short					
etc As	sk Jules Hummon mo	ore detail.	short short	long	tpxo7.2	hawaii		
etc As	sk Jules Hummon mo	ore detail.	short short short	long	tpxo7.2 tpxo7.2	hawaii hawaii		
etc As	sk Jules Hummon mo	wh300	short short short short	long long long	tpxo7.2 tpxo7.2 tpxo7.2	hawaii hawaii hawaii		
etc As	k Jules Hummon mo	wh300 os38bb	short short short short short	long long long long long	tpxo7.2 tpxo7.2 tpxo7.2 tpxo7.2	hawaii hawaii hawaii hawaii		
etc As	hot231_km1113	wh300 os38bb os38nb	short short short short short short	long long long long long long	tpxo7.2 tpxo7.2 tpxo7.2 tpxo7.2 tpxo7.2 tpxo7.2	hawaii hawaii hawaii hawaii hawaii		
etc As	hot231_km1113	wh300 os38bb os38nb wh300	short short short short short short short short	long long long long long long long	tpxo7.2 tpxo7.2 tpxo7.2 tpxo7.2 tpxo7.2 tpxo7.2 tpxo7.2	hawaii hawaii hawaii hawaii hawaii hawaii		

How to open ADCP data (netCDF)

 After download netCDF file, open XXX.nc file with "Other". In menu "Choose Application", enable "All Application" and go to ODV, bin_macx, odv4.app, then open odv4.app



2. Should get "NetCDF Setup Wizard". Select (highlight) both dimensions shown (at least, "Time" and "depth_cell"). A bunch of corresponding variables should appear to the right, then click "Next". Should get "Associate Meta Variables" screen; likely you will do nothing but select "Next".

000	NetCDF Setup Wizard	\bigcirc (NetCDF Set	up Wizard	
Select Dimensions (Step 1 of 4)		Ass	ociate Meta Variables (Step 2 of 4)		
NetCDF dimensions	Corresponding netCDF variables	Net	CDF variables	-	Meta variables
time[1046]	trajectory_id; var=trajectory	* 2	: Decimal day [days since 2010-01-01 00:00:00]; var	Associate	Cruise
depth_cell[115]	Decimal day [days since 2010-01-01 00:00:00]; var=time	* 3	: Longitude [degrees_east]; var=lon		Station
trajectory[1]	Longitude [degrees_east]; var=lon	* 4	: Latitude [degrees_north]; var=lat	Convert	Туре
	Latitude [degrees_north]; var=lat	5	: Depth [meter]; var=depth	Set Default	* Longitude [degrees_east]
	Depth [meter]; var=depth	6	Zonal velocity component [meter second-1]; var=u	Set Delault	* Latitude [degrees_north]
	Zonal velocity component [meter second-1]; var=u	<u> </u>	Meridional velocity component [meter second-1]; vai	Undo	* Year
	Meridional velocity component [meter second-1]; var=v	- 8	Received signal strength [none]; var=amp		* Month
	Received signal strength [none]; var=amp	9	Percent good pings [none]; var=pg		* Day
	Percent good pings [none]; var=pg	1	0: Editing flags [none]; var=pflag		* Hour
	Editing flags [none]; var=pflag	1	1: Ship heading [degrees]; var=heading		* Minute
All 3 dimensions selected	Ship heading [degrees]; var=heading	1	2: ADCP transducer temperature [Celsius]; var=tr_tem		* Second
	ADCP transducer temperature [Celsius]; var=tr_temp			>>	
View NetCDF Header	Chin sonal valacity component (mater second 1), usr-uchin	3 0	14 variables used		8 of 11 variables associated
Help	< Back Next > Finish Cancel		Help	< Back Next	> Finish Cancel

3. Should get "Select Primary Dimension" screen: select "depth_cell" by clicking on it, then click "Next". Then you should get "Subset Dimensions" screen. Then

"Finish". NetCDF Se Select Primary Variable (Step 3 of 4)	tup Wizard		NetCDF Setup Wizard Subset Dimensions (Step 4 of 4)				
Available netCDF dimensions Decimal day (days since 2010-01-01 00:00:00)]		1046 stations. You can reduce the numbe one or more dimensions or by zooming in	r of stations by subsetting ito the map.			
Longitude (degrees_east) Latitude [degrees_north] Ship heading [degrees] ADCP transducer temperature [Celsius] Ship zonal velocity component [meter second-1] Ship meridional velocity component [meter second-1] depth_cell	 Use selected variable Use decimal date/time (header) Use dummy variable 	→	NetCDF dimensions time[1046] use[0:1:1045] depth_cell[115] use[0:1:114]	teres and the second seco			
			Subset Dimension	Zoom into Map Full Domain 70			
Help	< Back Next > Finish Cancel		Help	< Back Next > Finish Cancel			

4. You should get the ODV file.



5. You should export the ODV collection. Since the ADCP data is huge, it is easy to crash ODV, so it is the safe thing to do!

🗯 odv4	File	Collection	View	Import	Export	Tools	Help			-	
•••	Dcean Ocean		Ocean I Station Data Station Meta Data Station History				ODV ODV NetC	ile ^{2_1}			
1			V	Vindow 1 STATION	X, Y, Z X, Y, Z	2 Windov 2 Windov	v Data v Data as	Reference	WHP	Exchange File	
depth_c	Pre th	ess ENTER to ad e current station	d the data to the ple	a of ot.	Isosur	face Dat	a				71

6. You can make the section data of ADCP components with "Section Window" mode.



7. Save "View", then you do not have to make this again! Also you can save the canvas as your favorite format (.jpg/.png/etc..).