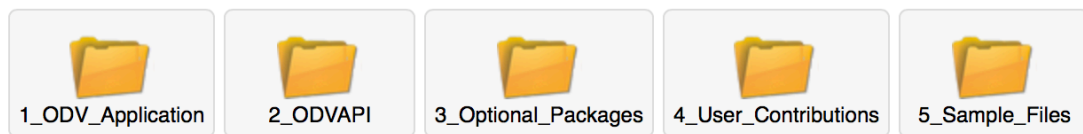


ODV download instructions:

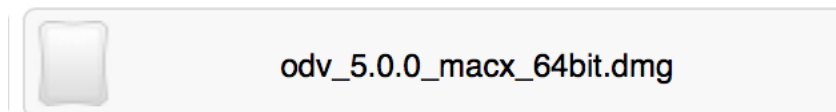
1. Go to <http://odv.awi.de>
2. Click on 'Software' tab
3. Click on the 'register now' link
4. Fill in all the required details for usage (this is for non-commercial use) and click on 'yes' when it asks you whether you agree with the license terms
5. The website will then send you a username and password to the e-mail address you submitted
6. Go back to the website and log in
<http://odv.awi.de>
7. Should now get a screen that looks like this:

[Home](#) > [Software](#) > [Download](#)

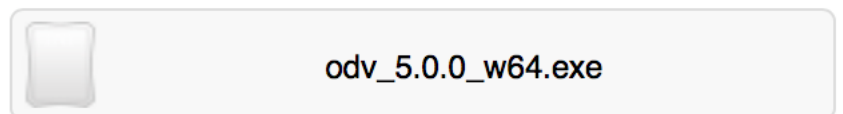
ODV Application



8. Click on "1_ODV_Application" n
9. In the next screen click on "Latest_Version"
10. In the next screen click on the icon that corresponds to your operating system.
10. For Mac click on the icon below (for Windows go to step#12)



11. Mount the disk image and install, note that this software version requires a 64bit version Mac
12. For Windows click on "64_bit" then the icon below



Install the software. On pre-Windows 10 systems also download and install [vc_redist.x64.exe](#).

GloDap Data download instructions:

1. Go back to ODV Home page and click on the 'Data' tab and then on "Ocean" on the left
2. Click on "GLODAP v2 Bottle Data", then on "GLODAP-v2_bottle.zip", this should start the data download
4. Unzip the files and put in the ODV folder that the software installation created in "my Documents"- you should have a gazillion files that can be opened in the program.
5. Open up the GLODAP data set in ODV (the one you want has the same icon as the program). A data visualization appears, but probably not the one you want. Proceed to the next section.

ODV Lab Instructions and Prep for ODV Problem Set.

1. Download the the two Configuration files (.xview) from the class website and place them in the path ODV\GLODAP-v2\ GLODAPv2_bottle.Data\views
2. Under the 'View' menu use the 'Load View' command Open 'P16S_ChemOce'. (For the problem set, you will use the other view file.) You should see a data section for the south central Pacific and 6 property-property plots. NOTE the 'canvas' I prepared may not fit horizontally on you screen. Please check by scrolling right and left. 3. Change the z-variable for the section plot to visualize the distribution of the different nutrient species, nTDIC, nTALK, 14C age, etc. Return to a section plot of salinity and create a overlay plot of sigma- theta (NEUTRAL DENSITY; see ODV guide).
4. Click on different parts of the section in regions of distinct water mass type, identify on the T-S plot, and examine the effect on the distributions of points in the other property-property plots.
5. To examine specific density layers, right click on the salinity plot window. Under the 'Sample Selection' tab, choose sigma-theta with a range from 27.7 to 29. Make sure to check the box "Apply these sample globally ". Which water masses is the visualization restricted to? What are the remineralization ratios of $nTDIC:O_2:NO_3^-:PO_4^{-3}$ (nTDIC the same as TCO2 normalized for salinity variations) and how do they compare to the Redfield ratios. Is there evidence for 'preformed nutrients' and what does this term mean? Does $CaCO_3$ dissolution contribute to the changes in nTDIC and why? If so, attempt to make a quick estimate of its contribution to the apparent $nTDIC:PO_4^{-3}$ relationship. What is the apparent PO_4^{-3} remineralization rate using radiocarbon age? Note: linear regression of property- property plots can be made by right- clicking on the plot, selecting the 'Extras' menu, and then the 'Statistics' command.
6. Do the same for the sigma-theta ranges of 27 to 27.5 and 25 to 26.5