

SUMMARY OF UPDATES TO OW TOOL, May 2008

More work has been done on refining the procedure to select 10 float depths for calibration. As a result several algorithms have undergone modifications.

1. Based on Paul Robbins' suggestion, the "minimum PRES variance on PTMP" level has been removed. It is now replaced by a second "minimum SAL variance on PTMP" level. The method for calculating SAL variance on PTMP has also been refined. As a result, the routine "find_10floatdepths.m" has undergone significant modifications.
2. Again based on Paul Robbins' suggestion, an extra diagnostic plot (*_8.ps) has been added that shows the averaged temperature and salinity variances on pressure and temperature levels, as well as the 10 float depths selected. This will help users fine-tune their selection of a pressure range and/or a temperature range for calibration. The routine "plot_diagnostics_ow.m" has therefore been modified, and a new function "analyze_variance.m" added to the package.
3. While testing the new diagnostic plot to analyze the variances, it was noticed that in the file calseries*.mat, the four variables "theta_lt", "theta_gt", "pres_lt", "pres_gt" were extremely confusing, because users could not know whether "theta_lt" meant "use theta_lt" or "exclude theta_lt", etc. Also, the default was set to 999, which could mean 999-dbar in the case of pressure. So after much painful deliberation, it was decided to change the variables to "use_theta_lt", "use_theta_gt", "use_pres_lt", "use_pres_gt", and to change the default values to 99999. This will be extremely annoying to the users because they now have to change these variable names and default values in all their existing calseries*.mat files. I apologize for such inconvenience. I do believe this change is for the better. The routines "set_calseries.m" and "calculate_pieewise_fit.m" have thus been modified.
4. The routine "fit_cond.m" has been cleaned up. Therefore the outdated routines "xyfit.m", "fdist.m", "betacf.m", "betai.m", and "gammln.m" have been removed from the package.
5. A small section has been added to "update_salinity_mapping.m" that checks the existence of the variable "use_saf" in the mapped data files. If the variable "use_saf" is absent because the file is created from older versions of OW, it will create a vector of zeros for it. This helps to ensure that the older mapped data files are compatible with the latest version of OW.
6. The README file has been updated. A lot more instructions have been included. Please read it carefully. The file should print nicely with Notepad in landscape mode.
7. Please email awong@ocean.washington.edu if you see any more bugs. Thank you.

---- Annie Wong, 6 May 2008