2. Installing the GSW Oceanographic Toolbox in MATLAB

Step 1

Download the GSW Oceanographic Toolbox in MATLAB from www.TEOS-10.org.

Step 2

Unzip the Toolbox to a directory you name "GSW".

ENSURE THAT THE FOUR SUBFOLDERS (html, library, pdf, thermodynamics_from_t) HAVE ALSO BEEN EXTRACTED.

Step 3 (within MATLAB)

Add the "GSW" directory to your MATLAB path using "Add with subfolders …" That is, use the menus as follows "File" → "Set Path…" → "Add with subfolders …". (Alternatively, the "addpath" command could be used).

ENSURE THAT THE FOUR SUBFOLDERS (html, library, pdf, thermodynamics_from_t) HAVE ALSO BEEN ADDED TO THE PATH.

Step 4

Run **gsw_check_functions** to check that the Toolbox is correctly installed and that there are no conflicts. (This function runs three stored vertical profiles through all of the GSW functions, and checks that the outputs are within pre-defined limits of the correct values. These pre-defined limits are a factor of approximately a hundred larger than the errors expected from the numerical precision of different computers, at the standard double precision of MATLAB).

If the MATLAB Desktop is running,

Step 5

Run **gsw_front_page** to gain access to the front page of the GSW Oceanographic Toolbox, which describes all aspects of the Toolbox.

Having installed the GSW Oceanographic Toolbox, the command **gsw_contents** will show the contents list of the software functions. The software descriptions and the help files for the GSW functions can be accessed by clicking on the function names on this list.

In addition, we have included a short demonstration function, **gsw_demo**, to introduce the user to the GSW Oceanographic Toolbox. **gsw_demo** uses two stored (S_P, t, p) profiles from the North Pacific and demonstrates, in a step-by-step manner, how to convert these into (S_A, Θ, p) profiles. **gsw_demo** then demonstrates how to evaluate several water-column properties such as dynamic height, geostrophic streamfunction and geostrophic velocity, as well as forming potential density contours on the $S_A - \Theta$ diagram.

A user may want to run **gsw_check_functions** periodically to confirm that the software remains uncorrupted.