Comment on os-2022-2

Carlos Gil Martins and Jaimie Cross

Author comment on "Technical note: TEOS-10 Excel – implementation of the Thermodynamic Equation Of Seawater – 2010 in Excel" by Carlos Gil Martins and Jaimie Cross, Ocean Sci. Discuss., https://doi.org/10.5194/os-2022-2-AC3, 2022

We are extremely pleased with the positive response this manuscript has received so far, and comments like "this is a great thing to have around, and something that has been on a 'wish-list' by the Joint Committee on the Properties of Seawater (JCS) for a long time" from Richard Pawlowicz, are always good to hear. A few suggestions for improvement of the software have been made, some of which were already in our plans (and others still are), and since the initial submission of the manuscript we were able to update and upgrade the software twice, having now published TEOS-10 EXCEL v2.0. The new functionalities added (which will be addressed in the revised version of the manuscript) are listed below.

A table listing all VBA modules will be included in the final version of the manuscript (**attached**).

V2.0 (22/02/2022) https://doi.org/10.5281/zenodo.4748829

- The calculation of Practical Salinity from the Conductivity Ratio (output from laboratory Salinometers) is now supported. This led to a substantial upgrade of the input template with the addition of a group of radio buttons for selecting the input salinity (Practical Salinity, Conductivity or Conductivity Ratio) and another group of radio buttons for temperature selection between ITS-90 or IPTS-68.

V1.1 (18/02/2022)

- New Info tab listing all released versions of TEOS-10 EXCEL and providing detailed information on the updates included in each version.
- Leaving the Longitude or Latitude cells empty sets Absolute Salinity Anomaly to zero. This is useful for inland and coastal waters where it is recommended to ignore salinity anomalies.
- For inland locations, Absolute Salinity Anomaly is zero and S_A is set equal to S_R. Thermodynamic properties are calculated accordingly, considering in this way valid inland measures (e.g., rivers, lakes); previous versions displayed 'NOT in OCEAN' for Absolute Salinity Anomaly and no further calculations were performed.
- Function Hill_ratio_at_SP2(t) was added (translated from GSW). This function corrects the value of S_P for $S_P < 2$ based on the Hill et al. (1986) algorithm. This algorithm is

adjusted so that it is exactly equal to the PSS-78 algorithm at $S^{\mathrm{p}} = 2$.

Please also note the supplement to this comment:
https://os.copernicus.org/preprints/os-2022-2/os-2022-2-AC3-supplement.pdf