

## Notes on the GSW function `gsw_t_from_CT` for calculating in situ temperature $t$ from Conservative Temperature $\Theta$

This function essentially amounts to the following calls to two other GSW functions,

```
pr0 = zeros(size(SA));  
pt0 = gsw_pt_from_CT(SA,CT);  
t = gsw_pt_from_t(SA,pt0,pr0,p);
```

That is, from the inputs  $S_A$  and  $\Theta$  potential temperature (referenced to zero dbar) is first formed. Then the function `gsw_pt_from_t` is called with the “bottle” being  $(S_A, \theta, 0)$  and the reference pressure being  $p$ , so delivering the in situ temperature at  $p$ .