

## 6. Which types of salinity and temperature should be archived?

Since 1978 we have gone to sea and collected and then archived Practical Salinity  $S_p$  (PSS-78), *in situ* temperature  $t$  (now ITS-90) and pressure  $p$  at known values of longitude, latitude and time. Under TEOS-10, nothing about this data collection and storage changes. Our instruments still need to measure properly calibrated data of  $(S_p, t, p)$  at known longitude, latitude and time. These are also exactly the same data that should continue to be archived in national oceanographic archives.

In particular, it cannot be over-emphasized that NONE of Reference Salinity  $S_R$ , Absolute Salinity  $S_A$  or Preformed Salinity  $S_*$  should EVER be submitted to or stored in national oceanographic databases. This resonates with present practice regarding temperature; we archive the measured quantity, *in situ* temperature  $t$ , not the calculated quantity, potential temperature  $\theta$ . Similarly, just as potential temperature is not stored in national databases, so too Conservative Temperature should NEVER be submitted to or stored in such national databases. In short, such databases should store measured (not calculated) quantities, and for this purpose, Practical Salinity is regarded as a measured quantity.