

***Interactive comment on “A model for predicting changes in the electrical conductivity, practical salinity, and absolute salinity of seawater due to variations in relative chemical composition” by R. Pawlowicz***

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**General comments:**

This work provides a model for estimation of the salinity of the seawater with correction due to chemical composition variations. This model takes into account practically measuring physical and chemical parameters of the standard deep-water hydrographic observations. This clear and comprehensive manuscript will be valuable in the oceanographic community as a part of discussion about improvements in the seawater salinity

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definition and very suitable for publication, especially in the light of the TEOS-10 implementation.

**Specific comments:**

It needs to emphasize that the PSS-78 is defined in terms of conductivity ratio  $K_{15}$ , which is the ratio of the conductivity of seawater sample to that of potassium chloride standard solution at temperature 15°C and standard atmospheric pressure. Relative form of the conductivity in the PSS-78 makes algorithm for deriving of the practical salinity independent from the conductivity of the standard solution  $C(KCl, 15, 0)$ , which is equal to the SSW conductivity  $C(35, 15, 0)$ . Numerical redefining of the standard seawater salinity and improvements in determination of the conductivity of standard solution will automatically correct conductivity ratio and the practical salinity determination. There is no need in implementation of the physically-chemically unclear defined scaling coefficient  $\gamma$  (equations 3-4) for correction of the practical salinity to “SSW absolute salinity”, instead of better standardizing of the conductivity for chosen value of the “SSW absolute salinity”. This way of conductivity ratio correction will keep the practical salinity correction in accordance with the algorithm of existed PSS-78.

It would be good to see in references the full collection of papers on the PSS-78 : UNESCO Technical papers in Marine Science #37 “Background papers and supporting data on the Practical Salinity Scale 1978”, UNESCO, 1981

**Technical corrections:**

p.2862 line3, p.2863 line 4: PSS-78 stands for the Practical Salinity Scale 1978 (not 1978 Practical Salinity Standard)

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