

Comments on the answers of the authors of the publication

“The density-salinity relation of standard seawater”

The authors have completely answered to my first question about the effect of using the Anton Paar’s formula for the calculation of the air density, instead of the BIPM one’s. They have evaluated its impact and the impact of a zero-drift on the accuracy of seawater measurements. These points are not details, and even if they lead small uncertainties, according to me, they might be mentioned in the paper and included in the uncertainty budget to take off any doubt on the validity of their measurements.

About the substitution method, the authors have completed the paragraph 2.1.

Concerning the uncertainties at high pressure, the given explanations correspond to contain of the Metrologia’s publication and they are clear, but the explanations on the relative density budget are less clear, so that the explanations of the paragraph 2.4. The calculation of seawater density relative to water $\rho_{mes}^{SW} - \rho_{mes}^{H2O}$ allows the subtraction of the linearity errors at ρ_{mes}^{H2O} and ρ_{mes}^{SW} , and the reduction of the errors, but if the adjustment is made with an uncertainty of 19 g/m³, this uncertainty stays the same.

Concerning the figure 12 it is OK for the uncertainties of 8, 26 and 33 g/m³ given in the legend and my remark was unfounded.

About the apparatus: thank you for the details given on the in/output assembly, on the effects of inclination, and on how the diffusion of oil in the U-tube is avoided.

About the linear dependence on salinity, I understand the arguments given and I appreciate the figures joined to the explanations.