

Comparisons of Argo Data and Salinity Results Retrieved from Different Model Functions

R. Lang, Y. Zhou, E. Dinnat
and D. Le Vine

"GW" Model Function

□ GW measurement [32 data points] {Lang, et al, Radio Science, Jan 2016}

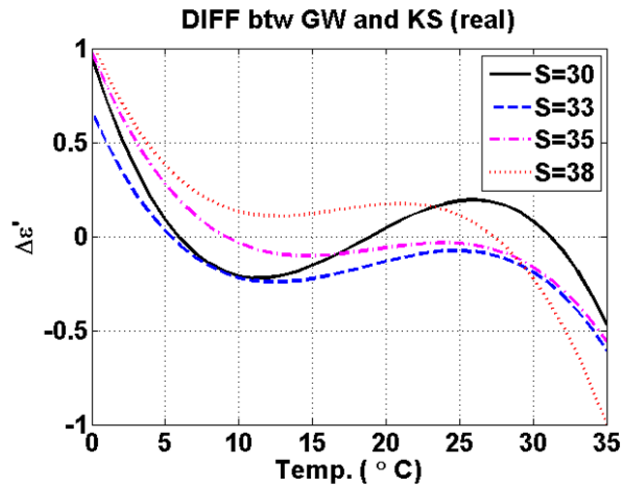
- Measurements are made of seawater samples at the salinities of 30, 33, 35 and 38 psu over the temperature range from 0° C to 35° C in intervals of 5 ° C
- At each temperature and salinity, at least three measurements are made and the averaged data are used to determine the model function

□ GW model function [16 coefficients]

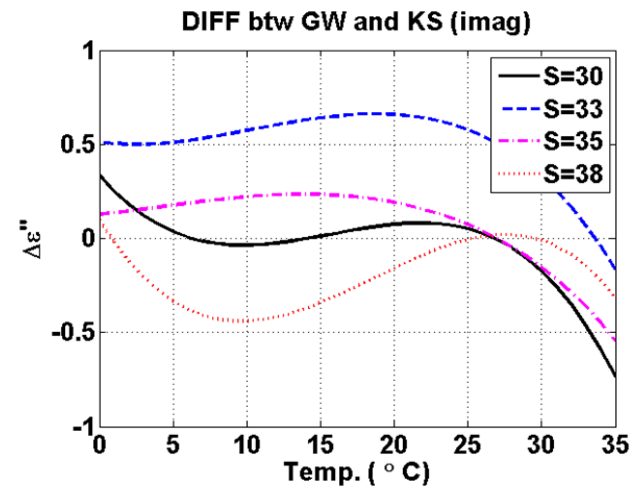
$$\varepsilon_{GW}(S, T) = \sum_{i=0}^3 \sum_{j=0}^3 p_{i,j} S^i T^j$$

- $\varepsilon_{GW}(S, T)$ is the complex dielectric constant as a function of S and T
- $p_{i,j}$ are complex coefficients that can be determined by least-square method- (SVD technique).

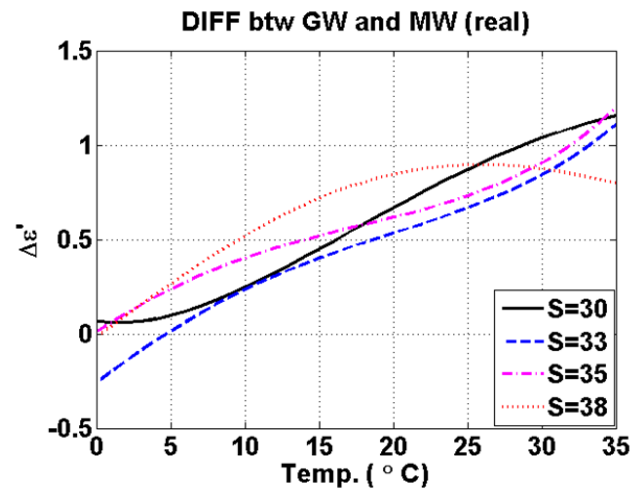
Comparison of GW with Klein-Swift (KS) and Meissner-Wentz (MW) models



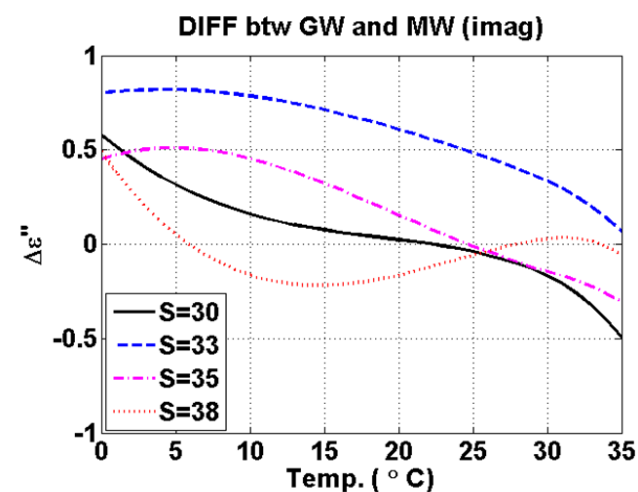
(a)



(b)

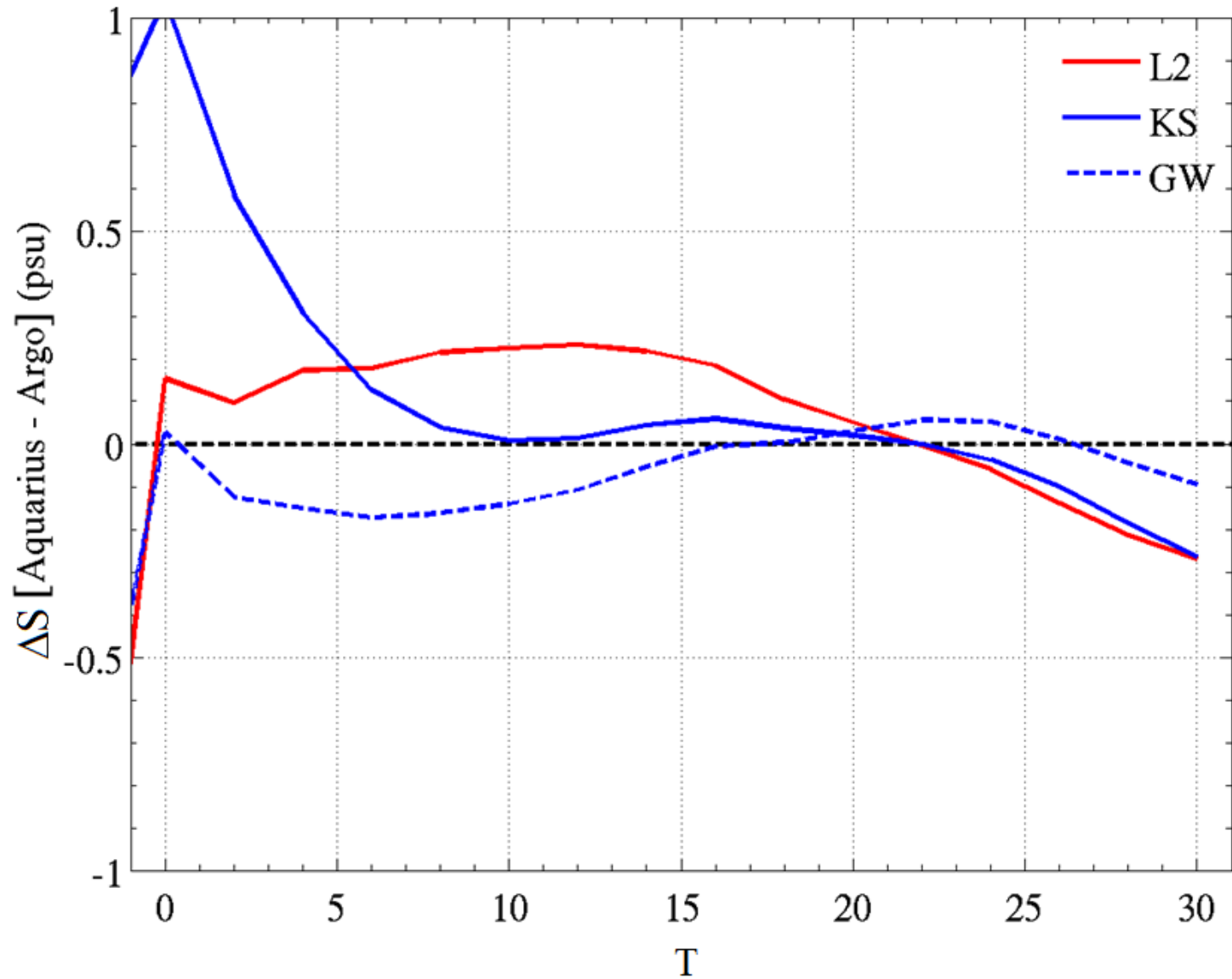


(a)

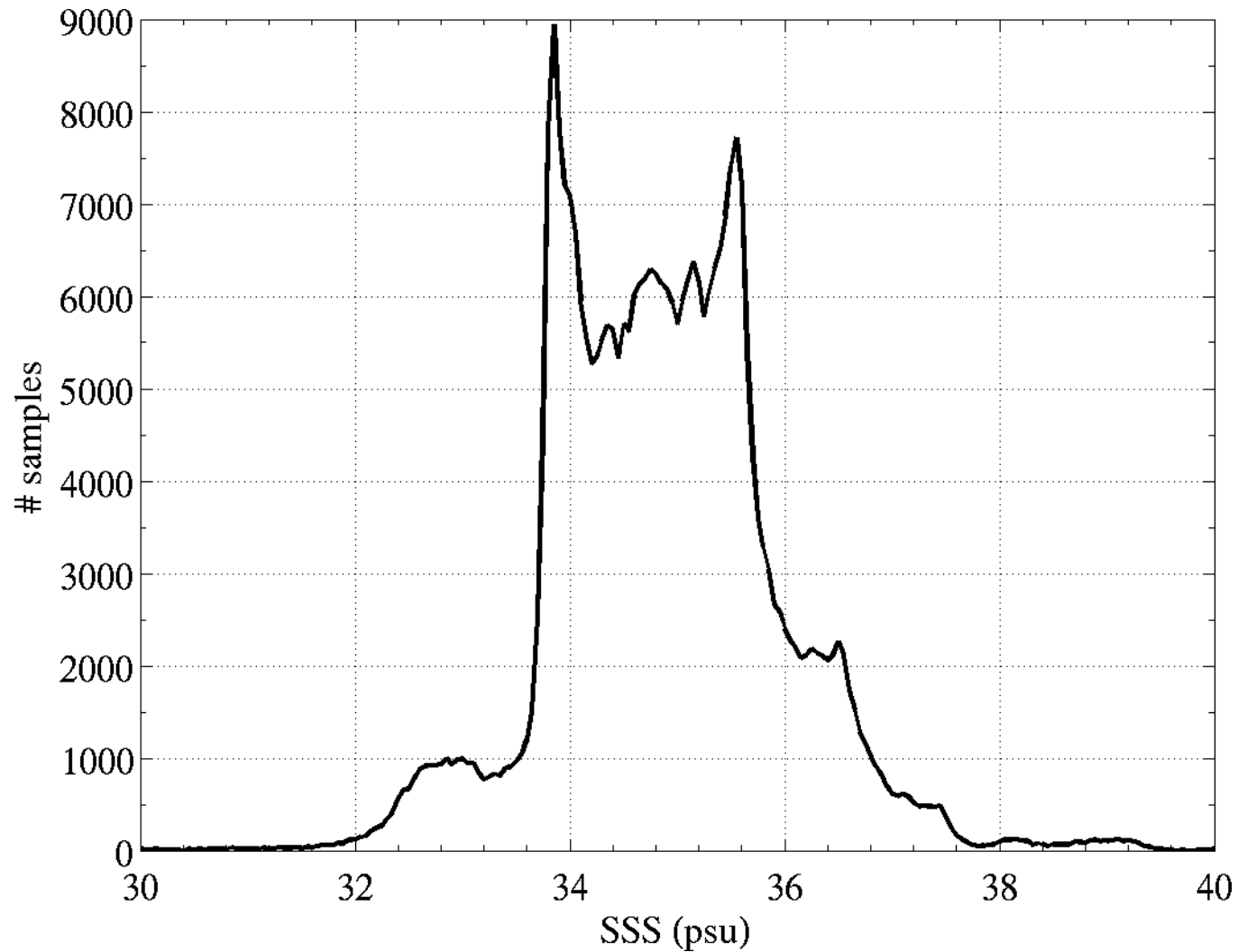


(b)

Comparisons of Model Functions with Argo Data



Number of Seawater Samples vs. Salinity (Collected by Argo Buoys)



(GW-KS) SSS vs SST for Different Salinities

