

# The three steps of the Chlorophyll-A calibration in DM on BGC-Argo floats

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## → Step 1 : The Dark Correction

*rationale : Chlorophyll-A at depth is 0*

## → Step 2 : The Non Photochemical Quenching Correction

*rationale : The proportional relationship between chlorophyll-A and fluorescence is influenced by light*

## → Step 3 : The slope Correction

*rationale : The factory calibration is limited to represent the fluorescence variability*



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Median of the minima

## → Step 2 : The Non Photochemical Quenching Correction

*rationale : The proportional relationship between chlorophyll-A and fluorescence is influenced by light*

Terrats et al., 2020, Xing et al., 2018

## → Step 3 : The slope Correction

*rationale : The factory calibration is limited to represent the fluorescence variability*

Xing et al., 2011

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→ Step 1 : The Dark Correction

*rationale : Chlorophyll-A at depth is 0*

→ Step 2 : The Non Photochemical Quenching Correction

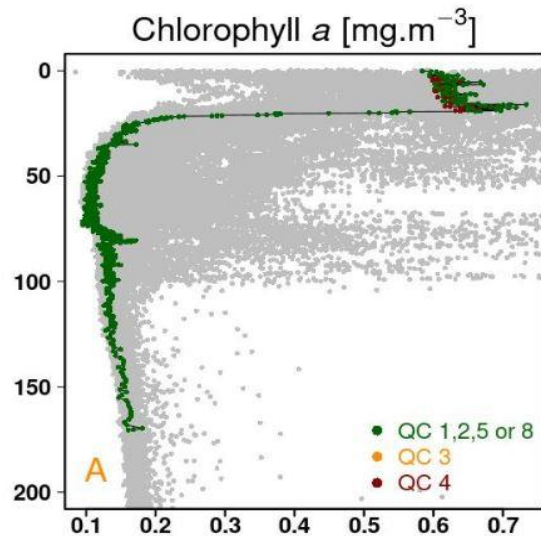
*rationale : The proportional relationship between chlorophyll-A and fluorescence is influenced by*

→ Step 3 : The Temperature Correction

*rationale : The factory calibration is limited to represent the fluorescence variability*

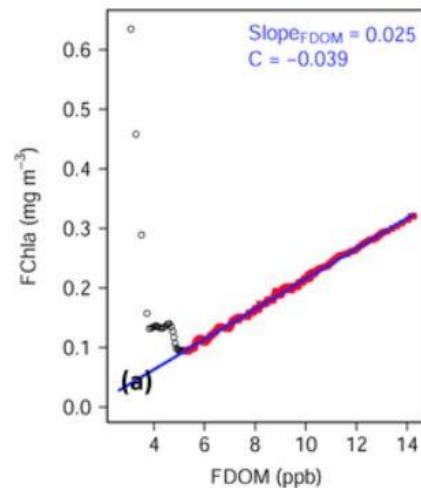
**This should be adapted for the Baltic Sea !!!!**

## → Step 1 : The Dark Correction

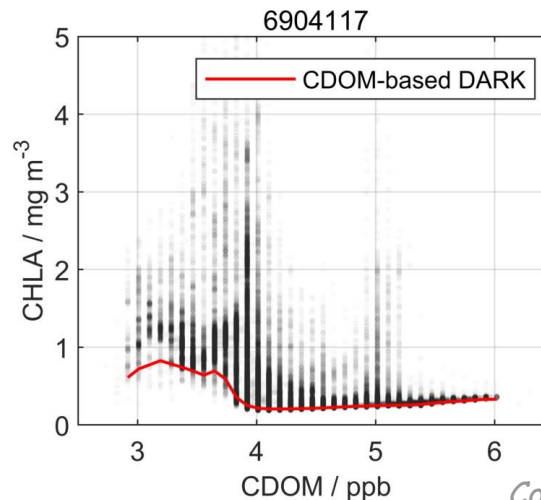


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In specific areas such as **oligotrophic** areas, **oxygen minimum zones** and marginal seas such as **Black sea** and **Baltic Sea**, at depth there is sometimes an increase in Chl that has to be corrected

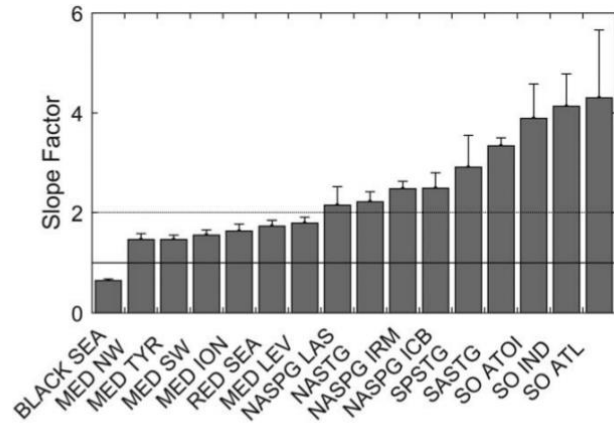


From Xing et al., 2017,  
for the Black Sea



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## → Step 3 : The slope Correction

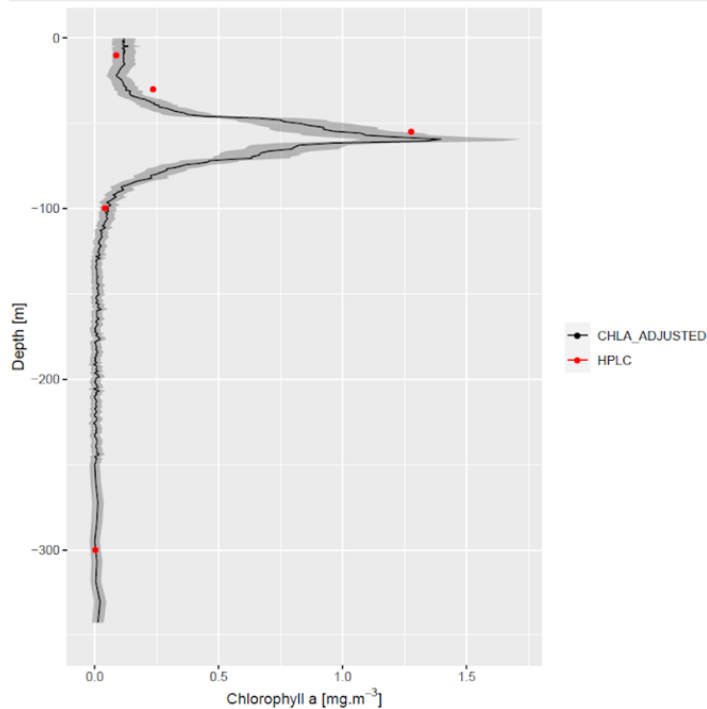


**Fig. 4.** Mean slope factors derived from ratio of factory calibrated Chl fluorescence to radiometrically-derived Chl (see text for details) obtained from profiling biogeochemical Argo floats described in Table 2. Error bars indicate 95% confidence limits on slope derived from regression of all observations within each region. Lines indicate slope factors of 1 (solid) and 2 (dotted).

20 floats in Baltic Sea, 7 with Radiometric information  
=> Check the specificity of the relation between FChla and Ed in the Baltic Sea to adapt Xing et al. 2011

Roesler et al., 2017

# Suggested plan



- Address the Dark correction
- Check if there is any specificity for the quenching correction (relative to mixing ?)
- 20 floats in Baltic Sea, 7 with Radiometric information (Test )
- Gather HPLC profiles (The truth) to check that the assumptions are correct