

Backscattering measurements on profiling floats

Currently we typically measure:

$\beta_b(\theta, \lambda)$ with a 20nm bandwidth sometimes at two wavelengths [$\text{m}^{-1} \text{sr}^{-1}$].

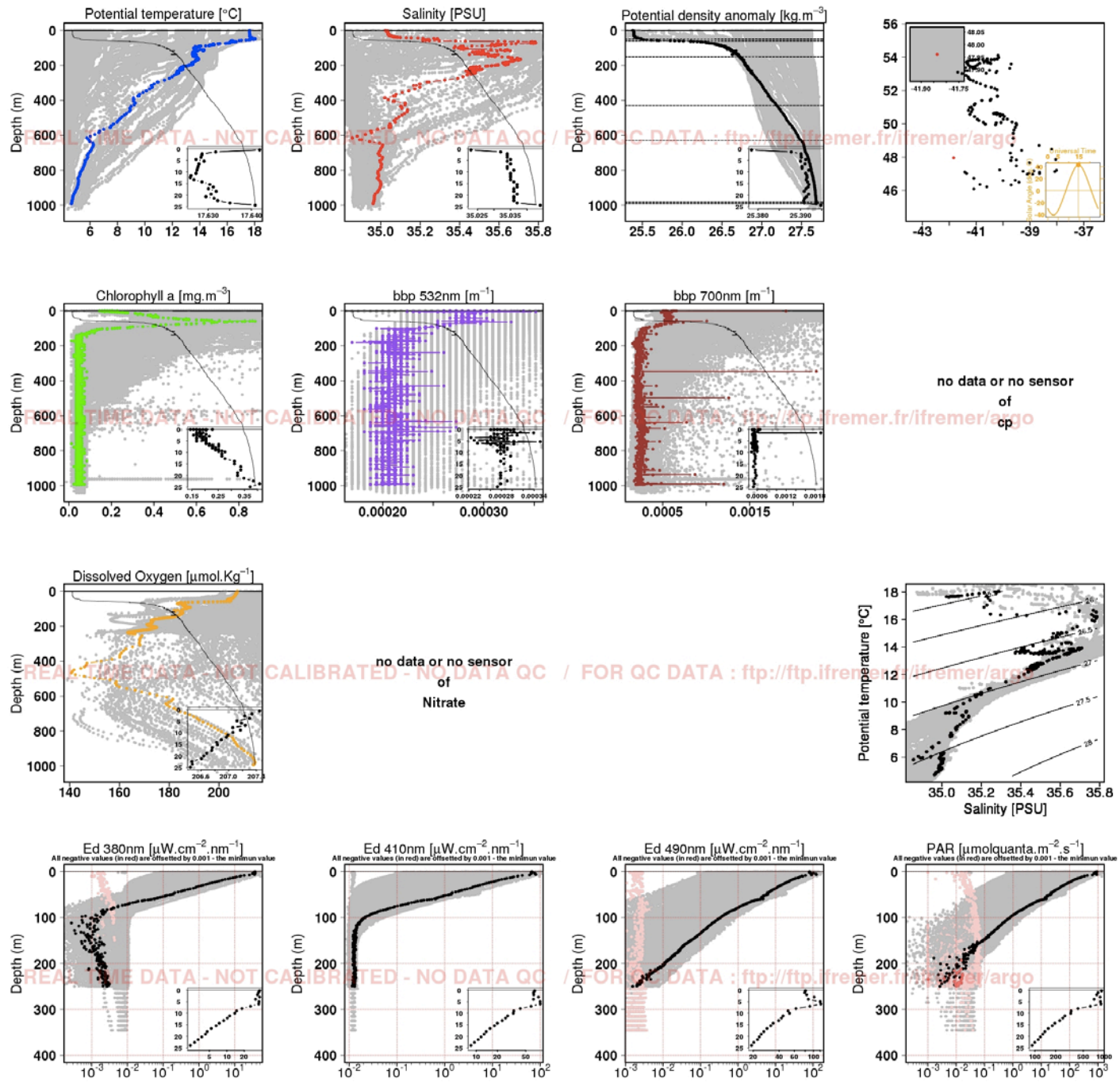
We convert to particulate backscattering using a series of linear equations with calibration factors (slope, dark) and published constants (backscattering due to salts, and $\chi(\theta)$ a conversion factor between scattering at one angle and the whole backward hemisphere.

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Typical applications of particulate backscattering:

1. Particulate organic carbon
2. Phytoplankton carbon
3. Chl/phytoplankton carbon
4. Validation of OCR

Example data:



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Basic QC:

1. Do we have a dark measured on the float?
2. Are the values we measure reasonable? Range test (near positive, generally decreasing with depth, values at 1000m are well constrained).
3. Positive spike test.

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Advanced QC:

Removal of rare spikes (median filter). Spikes ARE good data but often confuse users and may cause instabilities in models.

If available, comparison with other bb channel.

Comparison to Chl (range of bb/chl is constrained in the upper ocean).

Drift at depth and when compared to OCR backscattering at the surface.