

# ***NOCS Experience on chlorophyll sensors - calibrations, applications and data - and on bio- fouling of various sensors***

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# NOC – OBE

## chlorophyll sensors related activities

- PAP – SO: Deep Ocean Observatory, equipped with Wetlabs FLNTUSB, Turner Cyclops (integrated on Aanderaa Seaguard)
- Ferry Box: Currently Turner C3; Aquatracka (Chelsea) and Cyclops were used from 2008 – 2010; Chelsea minipack was used from 2002 – 2009 (some overlap)

*This presentation focuses on the PAP-SO experience*

# Calibration procedure

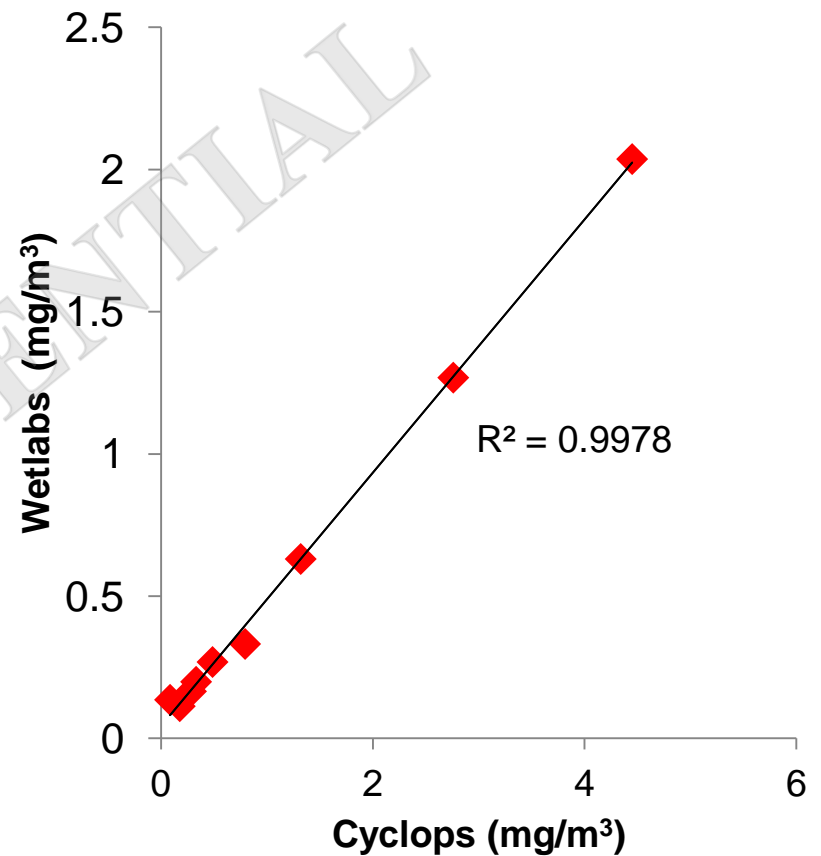
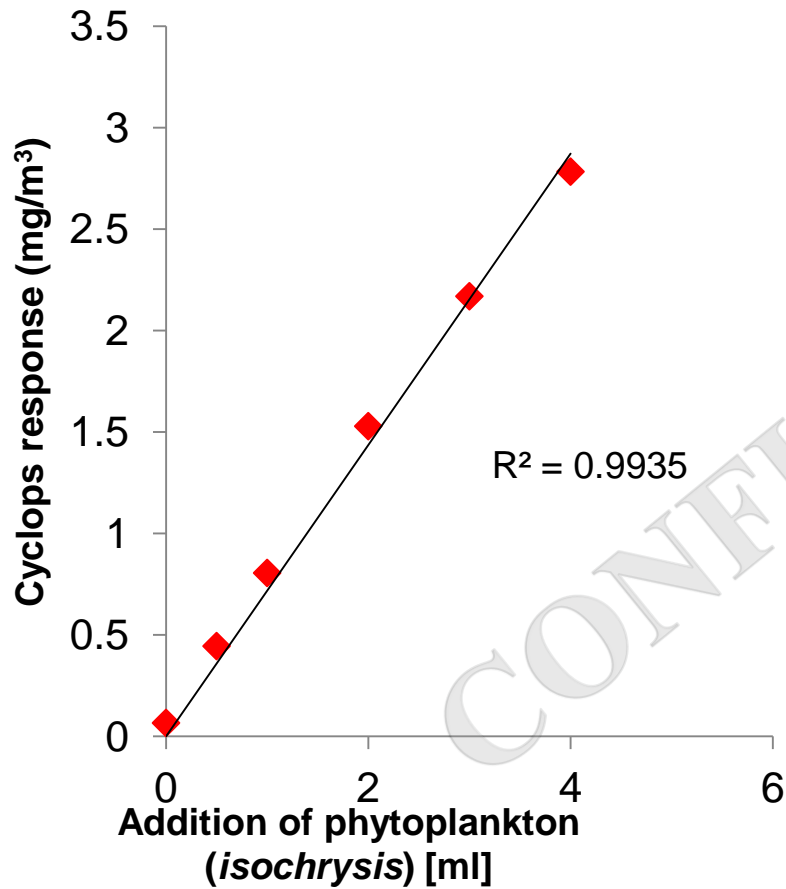
## Lab

- Check response of the instrument at various phytoplankton cultures
- Collect samples and analyse on bench fluorometer
- Correlate the two data sets

## Field

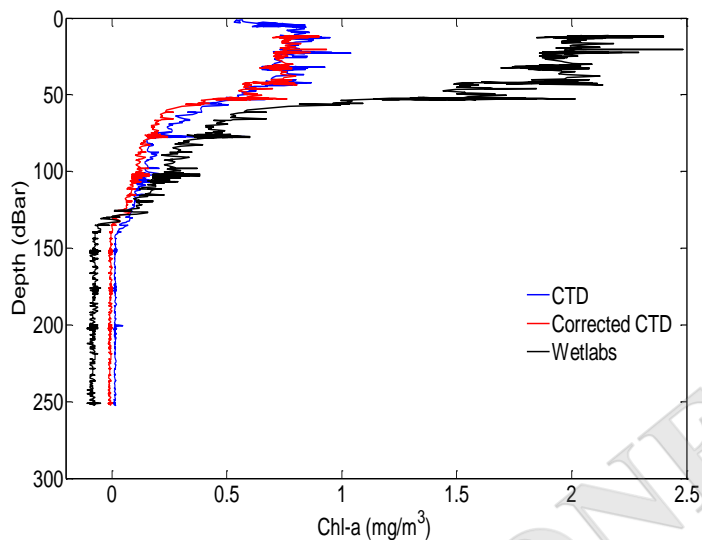
- Deploy sensors on CTD
- Collect samples from CTD for Chl-a analysis
- Correct CTD data (simple correlation)
- Correlate CTD<sub>cor</sub> with sensor data

# Examples of calibrations (lab)

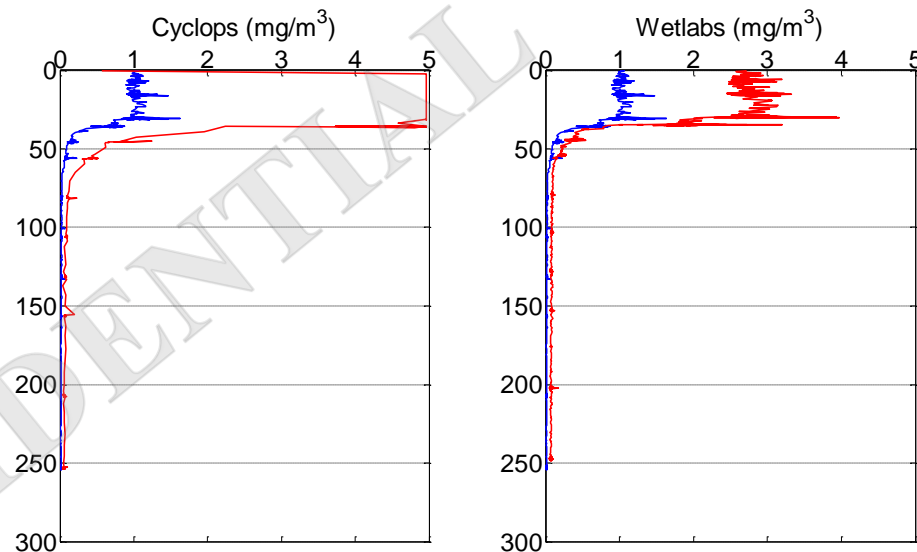


# Examples of calibrations (Field)

May 2009



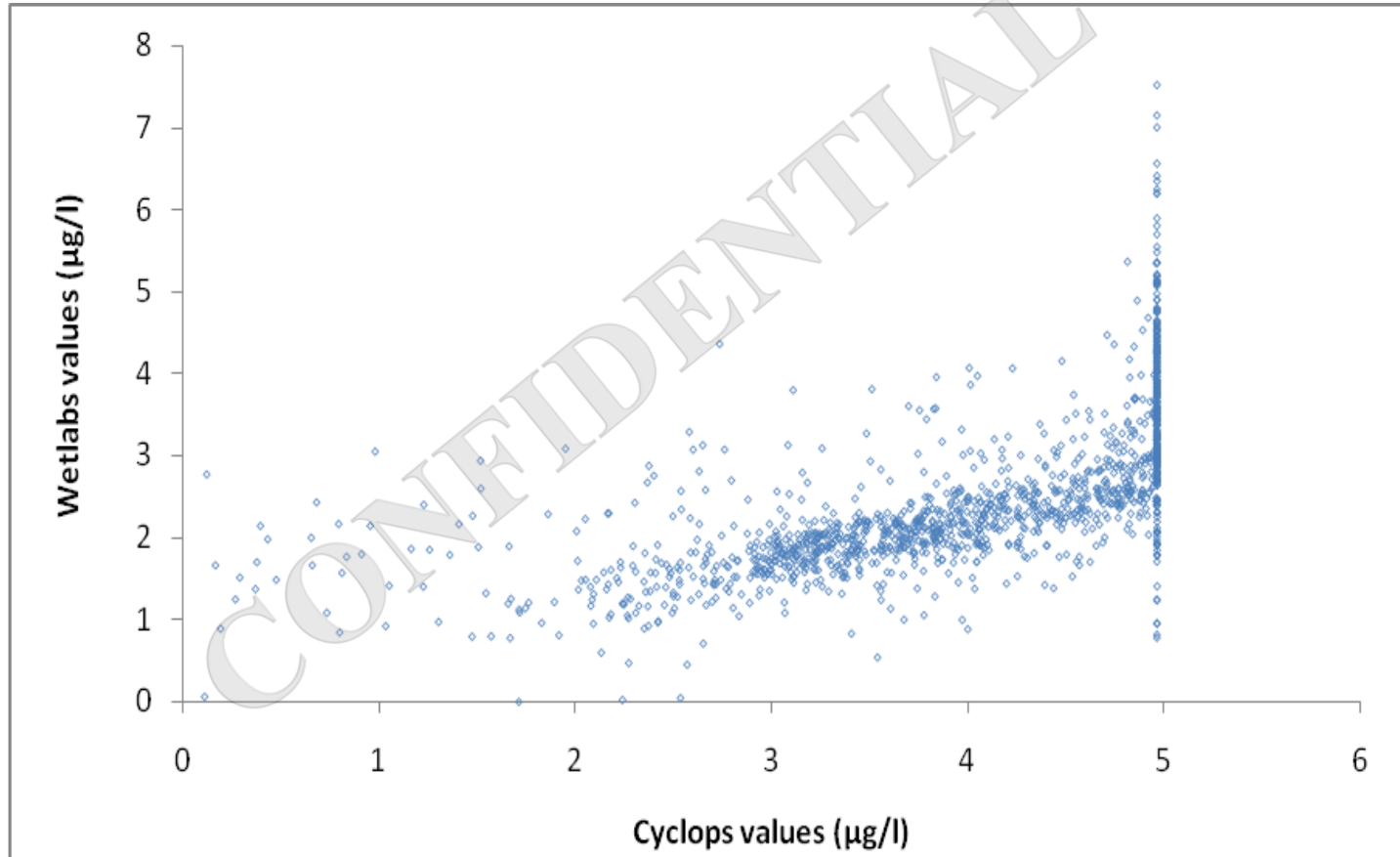
May 2010



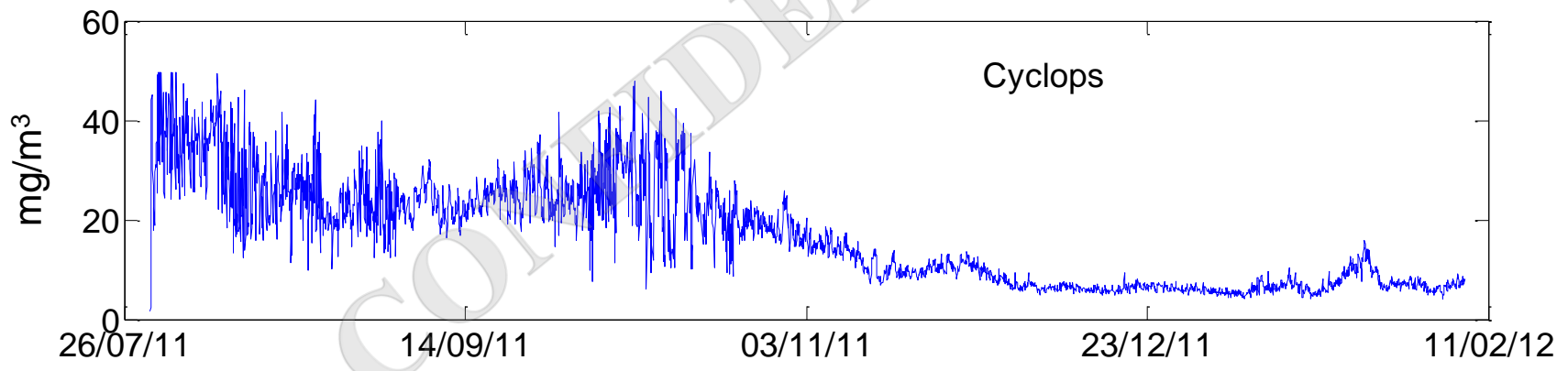
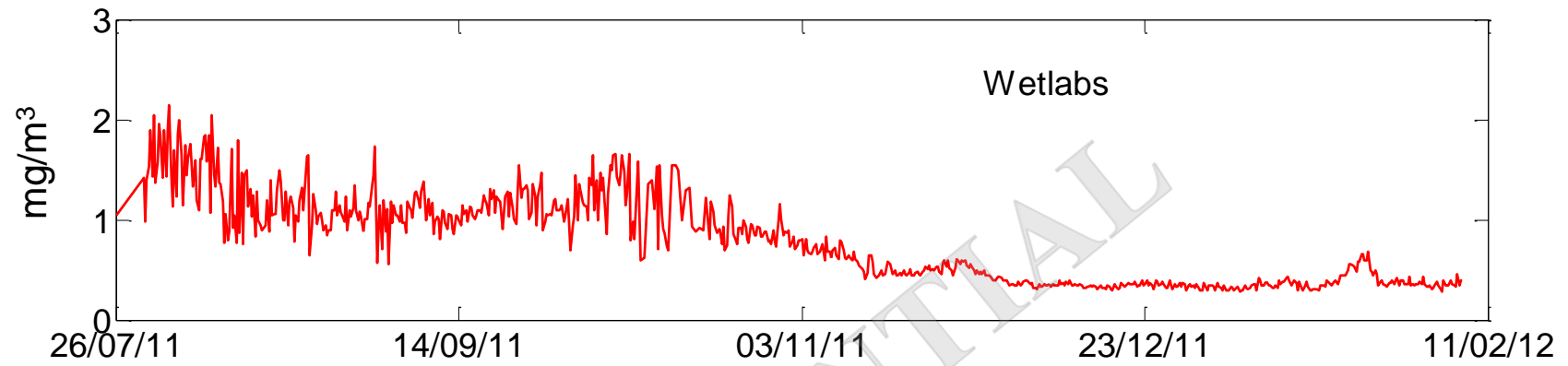
— Sensor  
— CTD

# Deployment data

Try to correlate date sets between Cyclops and Wetlabs after data were corrected



# Deployment data



# Bio-fouling

- No treatment on sensors or other equipment
- Techniques used so far:
  - ❑ Copper shields
  - ❑ Wipers





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# PAP-SO story

## ➤ Fluorometers - Chlorophyll

- Sensors are reliable, but... lack of calibration standards
- Chlorophyll analysis is standardised (?), but... different extraction media can yield different results, depending on the abundant species
- Solid state standards

## ➤ Bio-fouling

- Yes it is present, but...
- Conventional (copper shields, wipers) techniques work
- Equipment and performance of moving parts can be compromised, but ... we cannot evaluate whether it affects data quality