

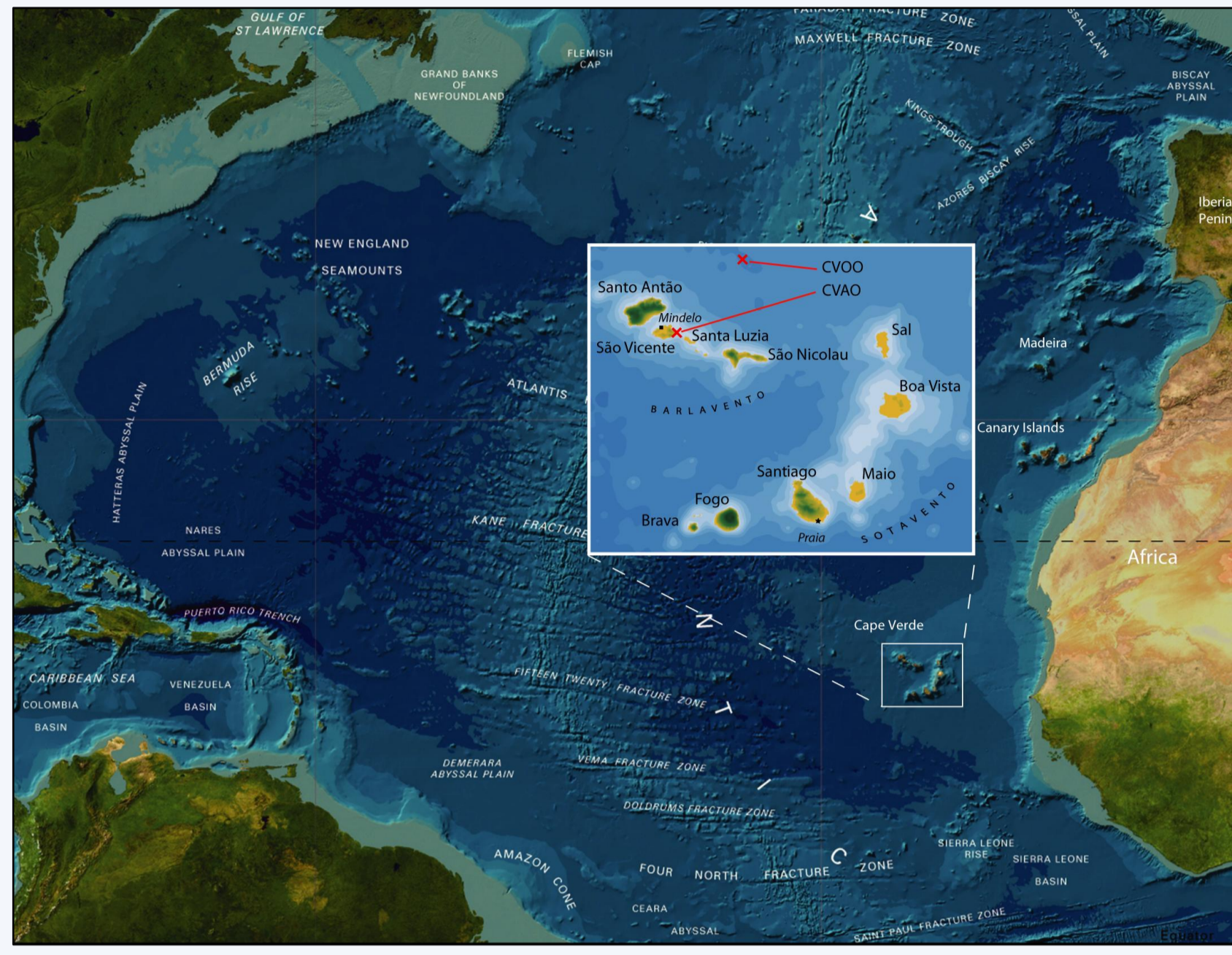
The Cape Verde Ocean Observatory | CVOO



B. Fiedler¹, P. Silva², I. Monteiro², N. Vieira², M. Lohmann¹, J. Karstensen¹, T. Steinhoff¹, C. Zenk¹, C. Santos², A. Körtzinger¹

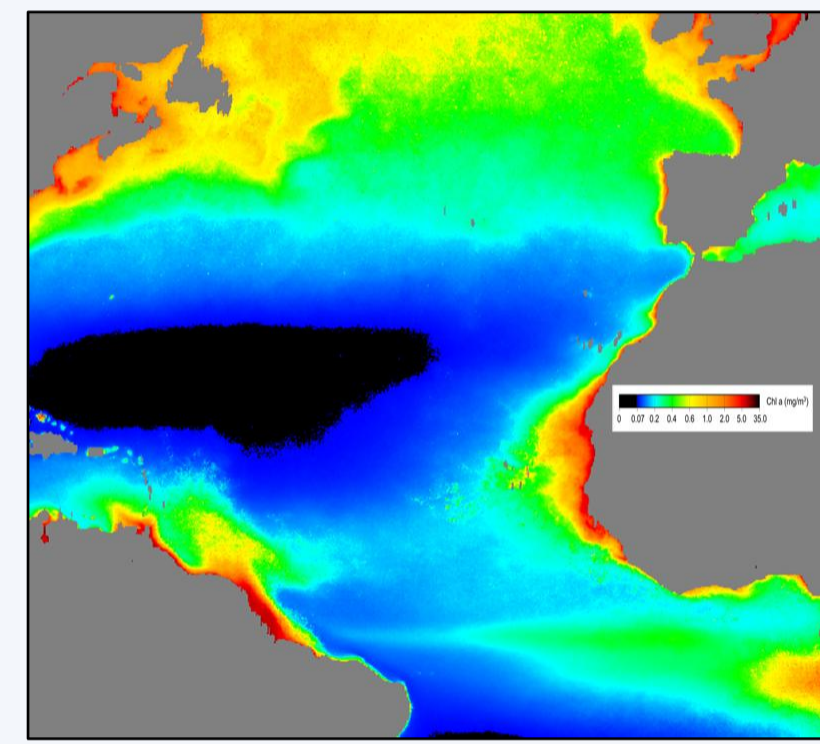
cvo0.geomar.de

Location



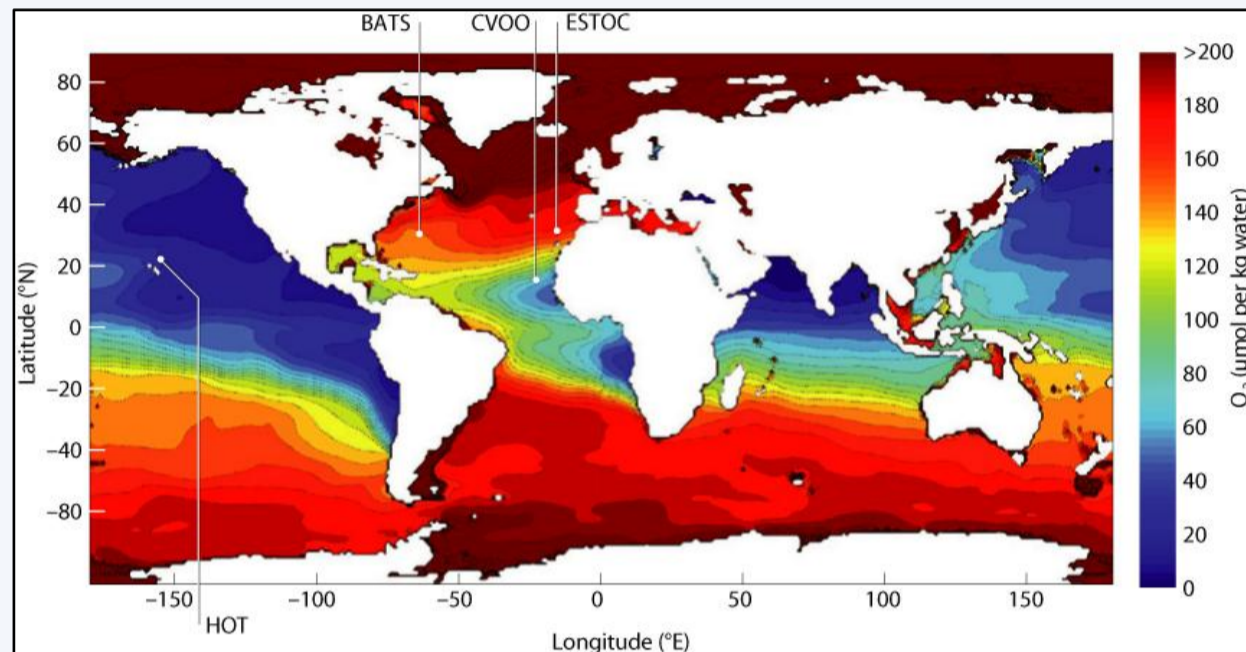
The Cape Verde Archipelago in the Eastern Tropical North Atlantic

Eastern Boundary Upwelling System – Productivity Changes in Future?



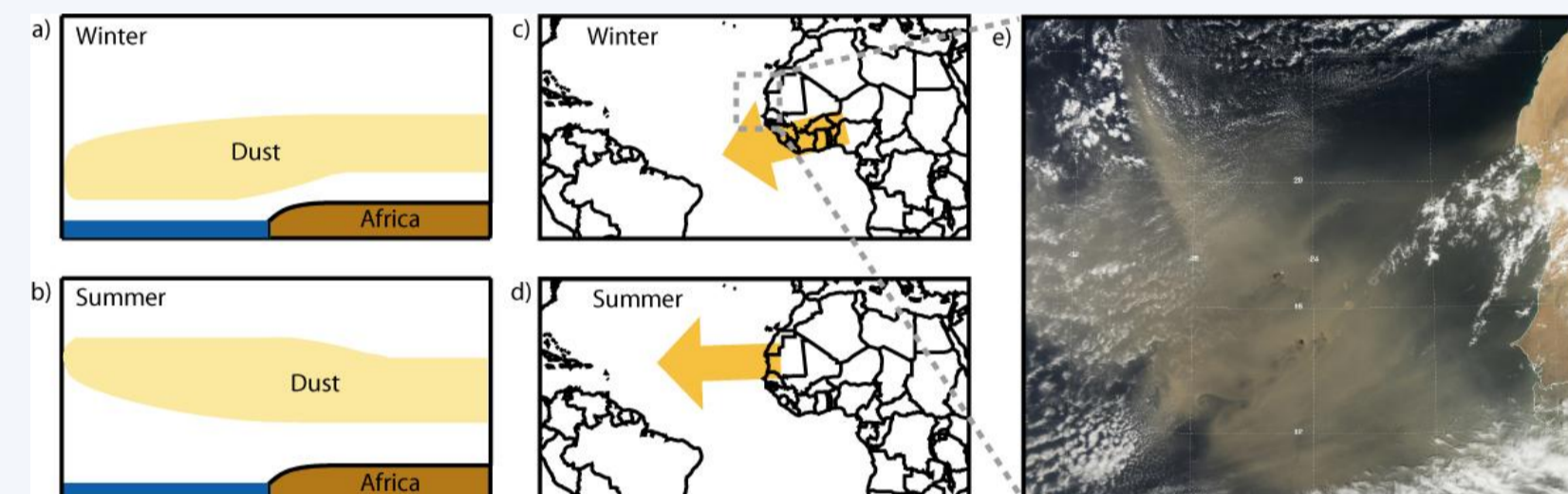
MODIS-Terra (Chlorophyll)

Oxygen Minimum Zone – Expanding?



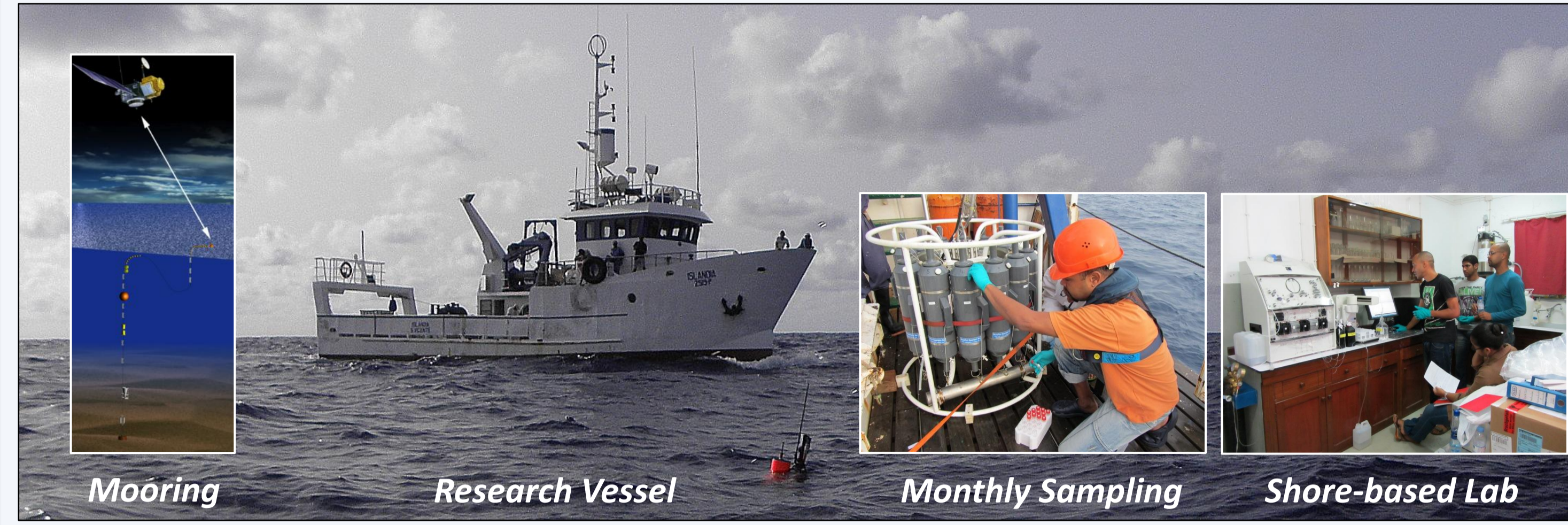
Adapted from Wright et al. (2012)

Saharan Dust Deposition – Ecosystem Response in Future?



Schepanski et al. (2009, panel a-d); MODIS-Aqua, 7. Feb 2012 (Truecolor, panel e)

Facilities

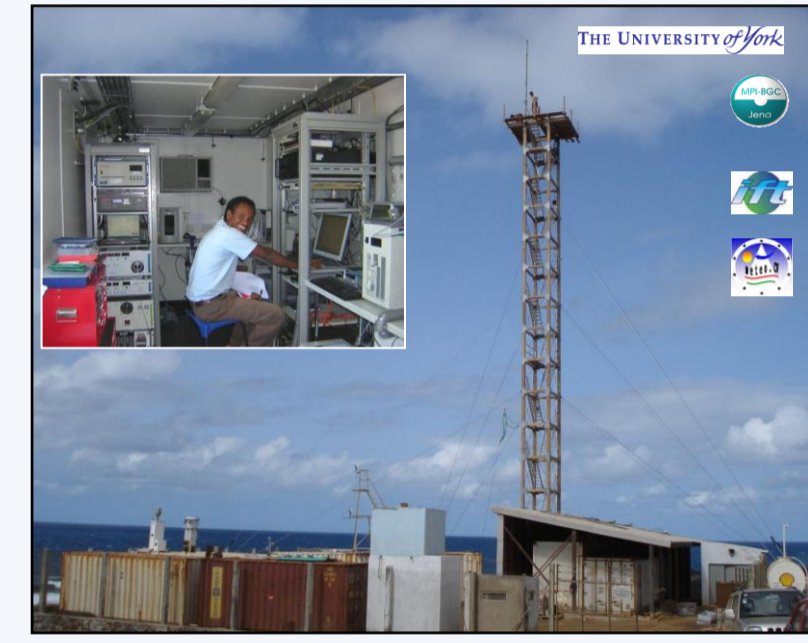


Mooring

Research Vessel

Monthly Sampling

Shore-based Lab

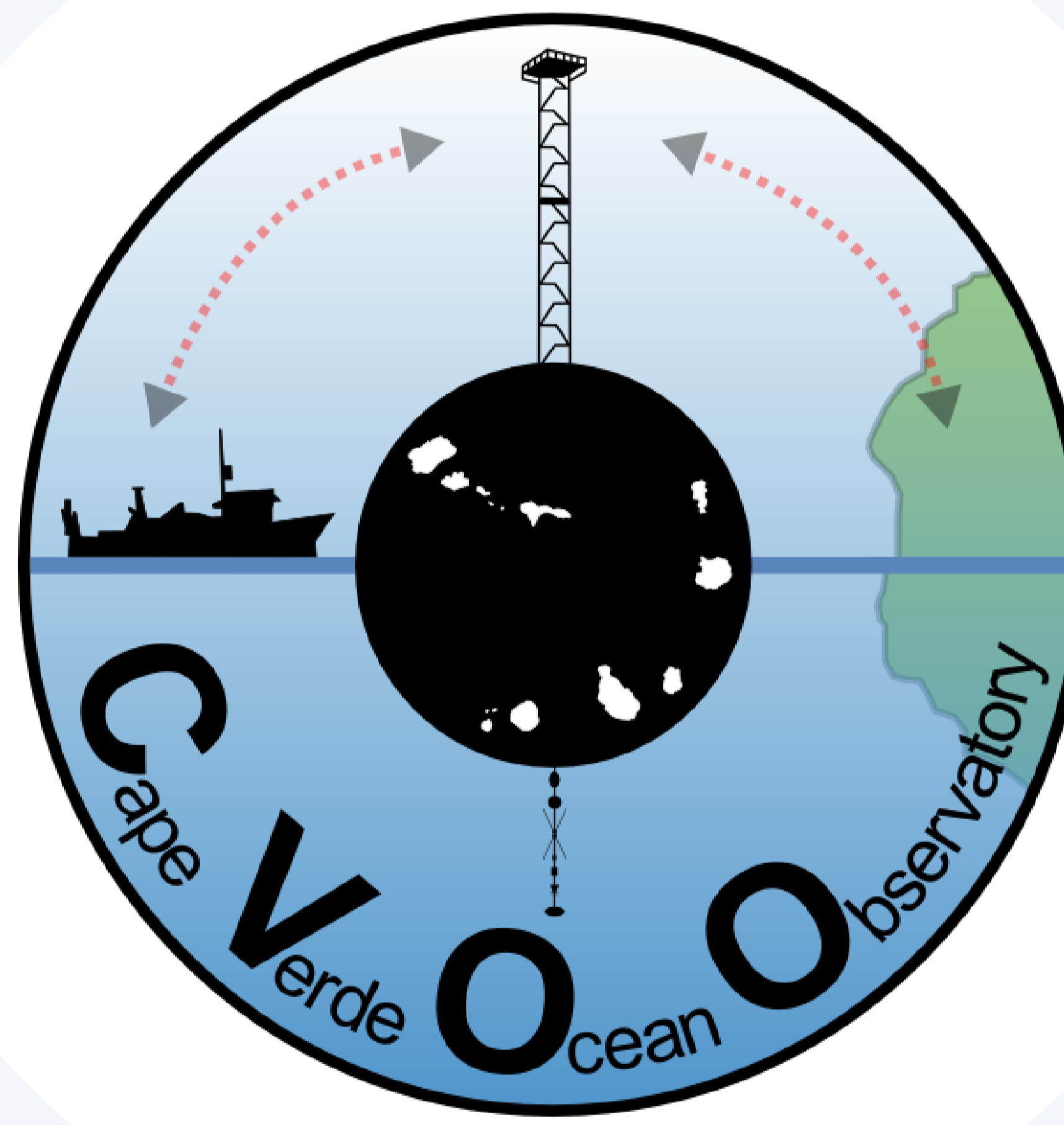


Atmospheric Station

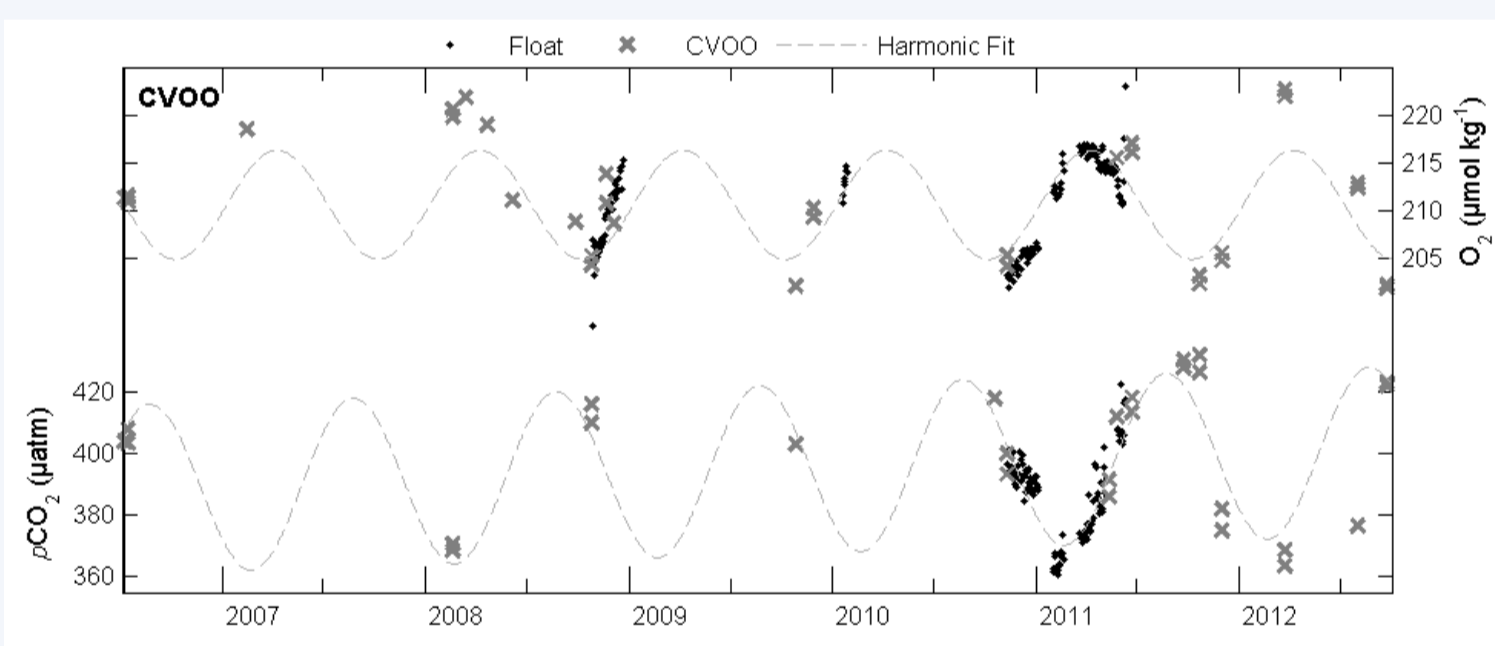
Platform	Parameter	Depth	Date
Research Vessel	DIC, TA, O ₂ , nutrients, TOC/TON, POC/PON, Chl a, Zooplankton, N ₂ O; CTD, O ₂ , Fluorescence, Turbidity, PAR	0 – 500 m	2008 - present
Mooring	pCO ₂ , O ₂ , Fluorescence, CTD, Currents, Sediment Traps; Real-Time Data*	0 – 3600 m	2006 - present
Atmospheric Station	CO ₂ , CO, N ₂ O, CH ₄ , O ₂ , O ₃ , APO, NO, NO ₂ , NO _y and VOCs, Halocarbons, Dust Deposition, Particle Size Distribution, Chemical Dust Composition, etc.	on top of a 30 m tall tower	2006 - present
Testbed Mooring	Moored Profiler: pCO ₂ , O ₂ , Fluorescence, Turbidity, CTD	5 – 120 m	2013 - ...
Wave Glider	pCO ₂ , O ₂ , Fluorescence, Turbidity, Gas Tension, CTD	surface	2013 - ...

Gray font: scheduled for 2013

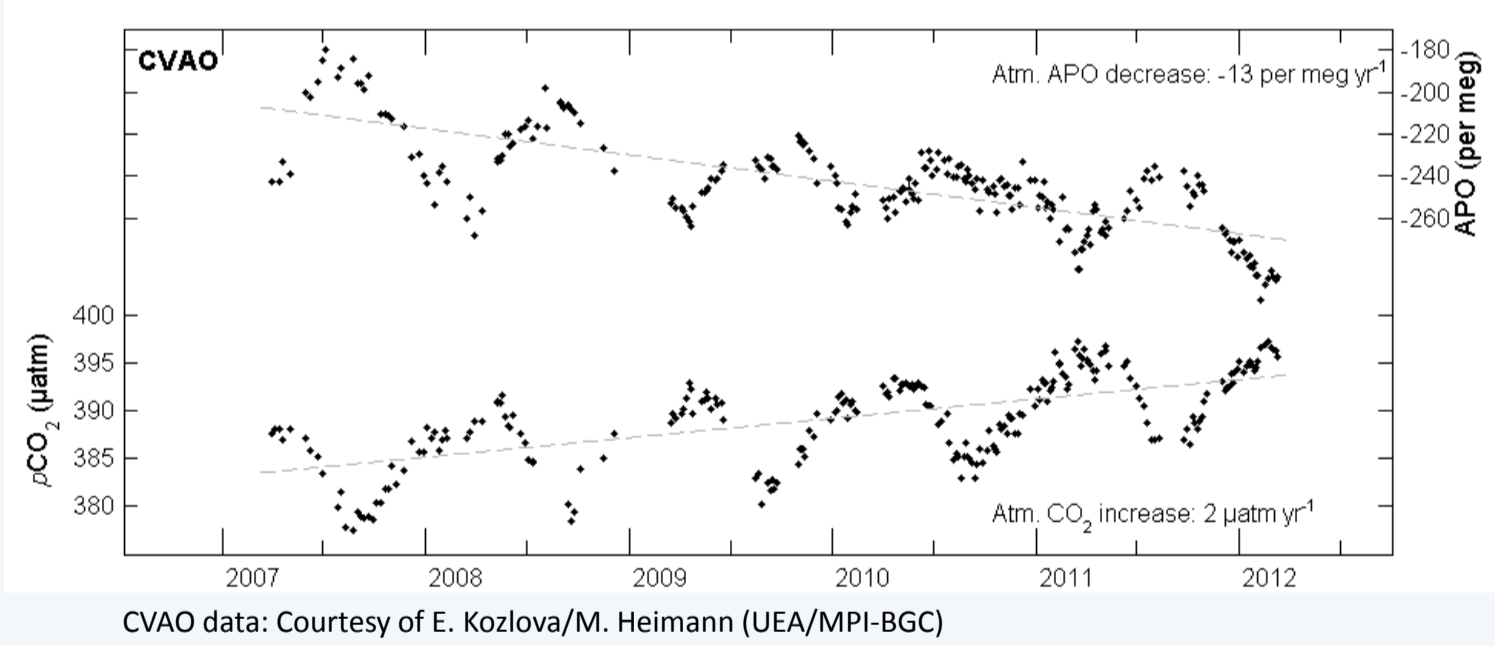
*: Real-time data of O₂ @ 46 m and CTD @ 45, 25, 9 m, accessible at cvo0.geomar.de



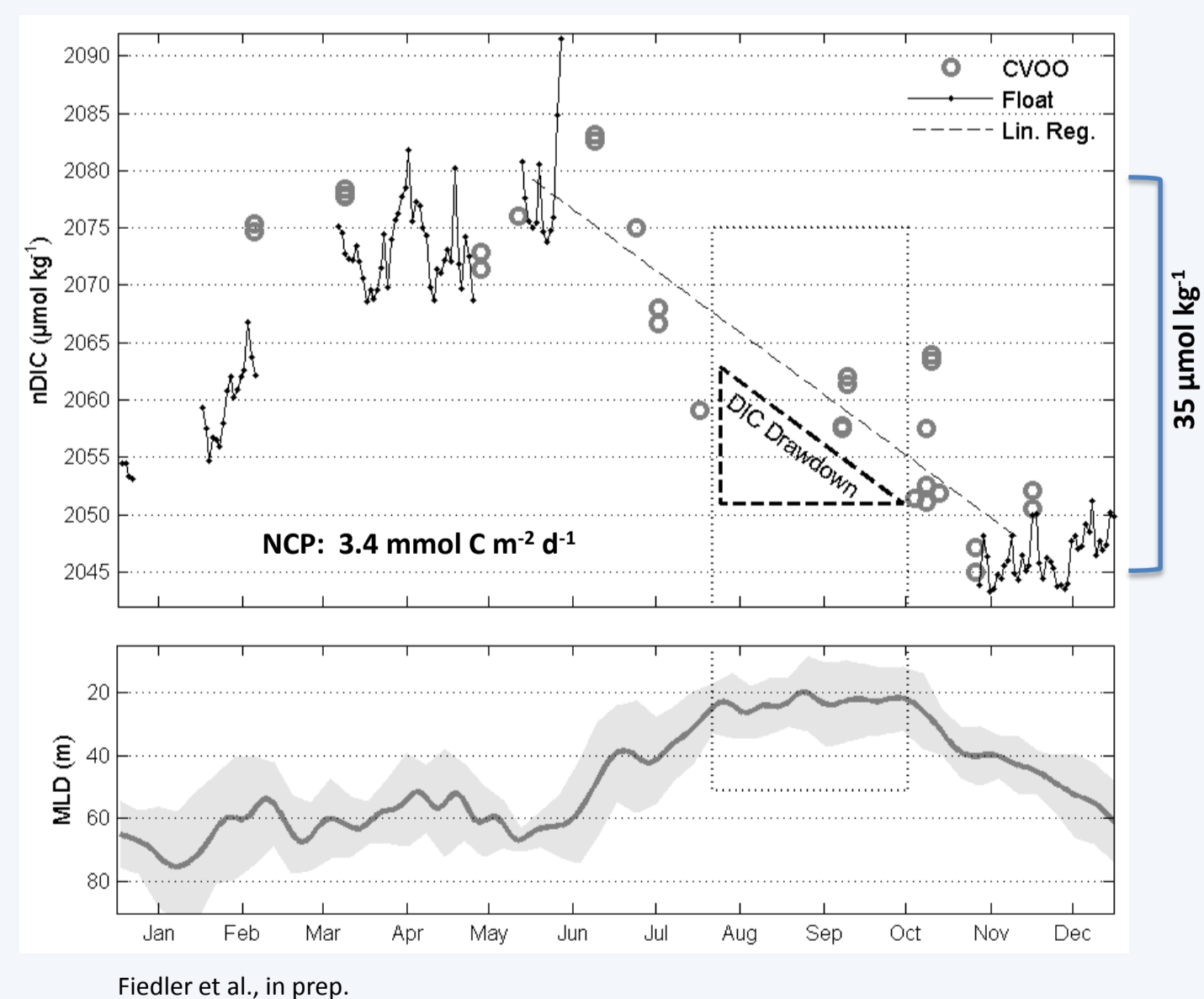
Observations



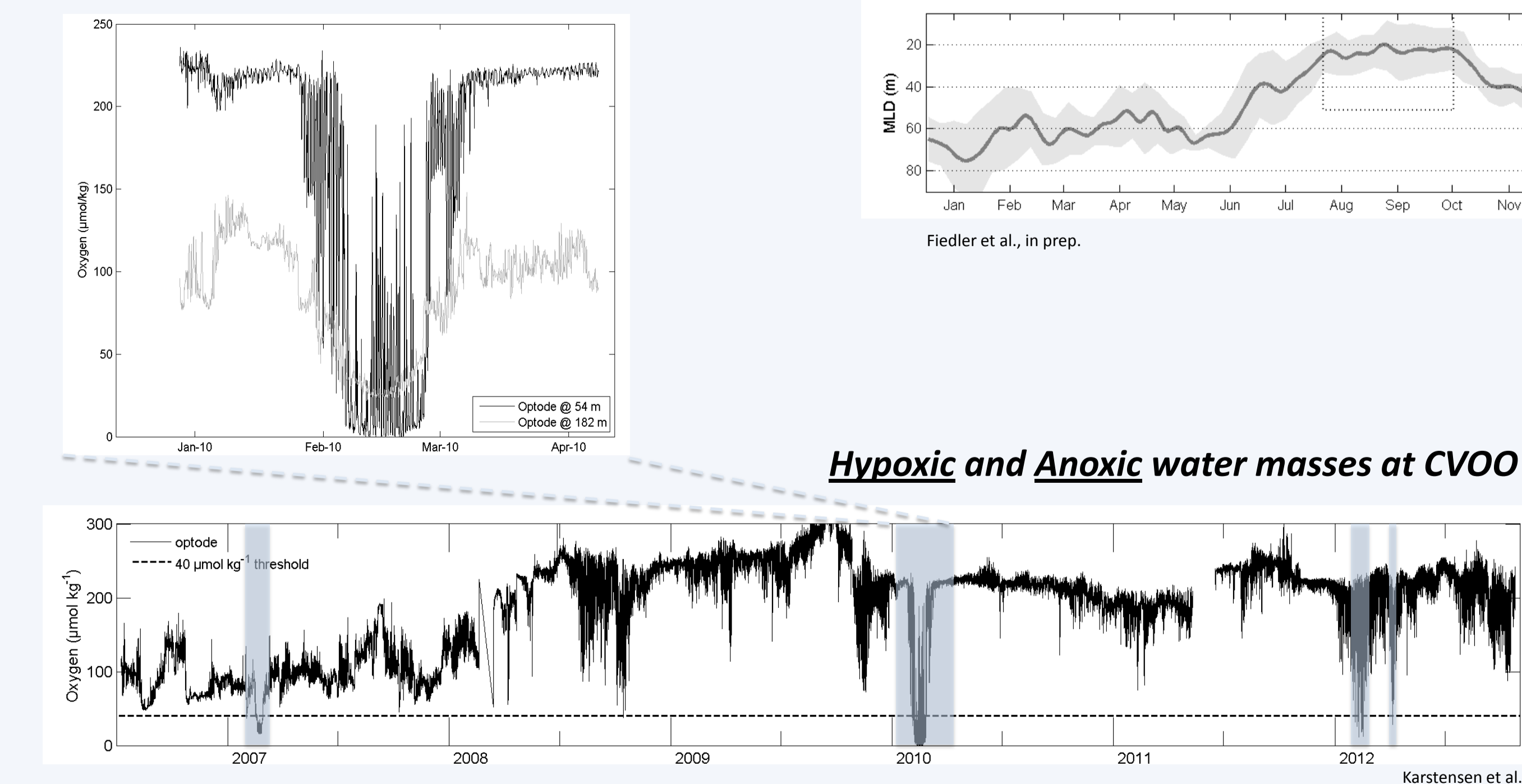
CO₂ & O₂ Time Series at CVOO & CVAO



Annual DIC Cycle



Hypoxic and Anoxic water masses at CVOO



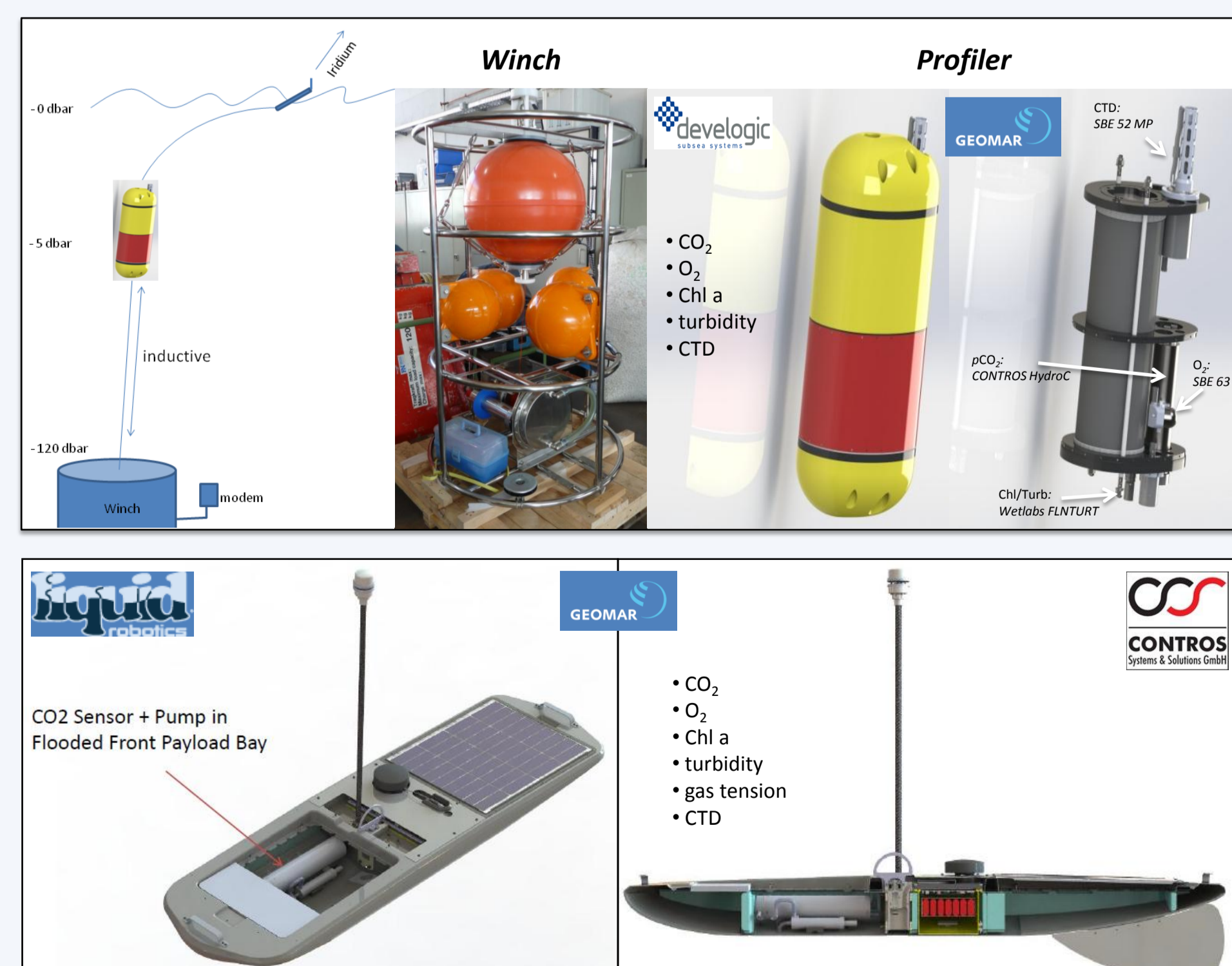
Future

Ocean Science Center Mindelo | OSCM

- Biological and chemical laboratories
- Workshop for construction and maintenance
- Large hall with crane for installation of laboratory containers and maintenance of large seagoing equipment
- Storage facilities (incl. cool & freeze storage)
- Conference room
- Guest offices & laboratories



Implementation of Autonomous Platforms into CVOO:
Enhanced vertical, horizontal and temporal resolution!



1) GEOMAR, Kiel, Germany [bfiedler@geomar.de]

2) INDP, Mindelo, Cape Verde [pericles.silva@tenatso.com]

