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SOP development process

1) Initial SOP was drafted by Patricia López-García, Tom Hull, Sören Thomsen and Johannes Hahn.
2) Two expert sessions during OceanGliders Best Practice Workshop, May 11 - 25 2021. Additional authors joined: Bastien Y. Queste, Gerd Krahmann, Charlotte Williams, Mun Woo, Charitha Pattiaratchi, Laurent Coppola, Tania Morales, Virginie Racape, Claire Gourcuff, John Allen, Eva Alou, Nikolas D. Zarokanellos First community and user feedback was provided during the workshop by attendees.
3) SOP moved to this repository by: Patricia López-García, Tom Hull, Sören Thomsen in September 2021.
4) Next step: Several months of community review on GitHub starting in October 2021.

Introduction

Aanderaa Optodes

Aanderaa optodes are the most widely used oxygen sensor on gliders and a large body of work has now been dedicated to their characterisation (e.g. (Bittig et al. 2018)). These sensors are based on the oxygen luminescence quenching of a platinum porphyrin complex (fluorescent indicator) that is immobilized in a sensing foil. These offer low power consumption, good long-term stability, low fouling sensitivity while not being sensitive to H2S or freezing. Aanderaa optodes have seen several important developments since they were introduced in 2002, with various hardware and firmware revisions which we outline below.

Hardware design: blue or black

While mostly cosmetic, the colour of the optode is a useful short-hand for the two main optode designs. The 3835 and 4835 optodes both feature a black housing with the temperature sensor integrated into the base of the sensor near the connector. This results in a large thermal mass and increases the response time of the temperature sensor significantly. The blue 4330 and 4831 sensors move the thermistor next to the sensing foil which results in much improved performance of the temperature sensor. All optodes other than the 4831 use a 10 pin Lemo connector, these connectors can't be connected when wet and are prone to crevice corrosion. The 4831 is therefore recommended with it's Subconn wet-pluggable connector. Older optode versions (3830) have a titanium housing in the same form factor as the 3835. Some early Slocum gliders were delivered with optodes of type 5013, these are identical to the 3830.

RBR coda T.ODO

JFE Advantech RINKO

Pre-deployment operations

Storage and cleaning

Sensor integration

Pre-deployment calibration

Missions execution

Real time data processing & Quality Control

Post-recovery operations and calibrations

Delayed Mode Quality Control (DMQC)

Data delivery to public open access archives

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