THE IAPSO WORKGROUP - CTDO$_2$ DATA PROCESSING

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THE IAPSO CTDO$_2$ WORKGROUP

Acronyms

- IAPSO - International Association for the Physical Sciences of the Oceans
- CTDO$_2$ – Instrument package that continuously measures conductivity, temperature, depth, and oxygen

What this project is

- International workgroup of GO-SHIP level scientists and technicians
  - Led by Bernadette Sloyan at CSIRO
- 2-year goal of assembling a forum capable of assessing global CTDO$_2$ data processing status and routines
- Intercomparing CTDO$_2$ data processing

MOTIVATION

1. $CTDO_2$ data is important
2. GO-SHIP Hydro Manual turns 14
    - How has technology changed?
    - Algorithms
    - Group divergence
3. Unknown differences in how data is processed around the world
    - Numerous “wrangler” international programs
4. Is there a “better” or “best” procedure for data processing for producing high-quality (GO-SHIP) data?

ANTICIPATED PROJECT OUTCOMES

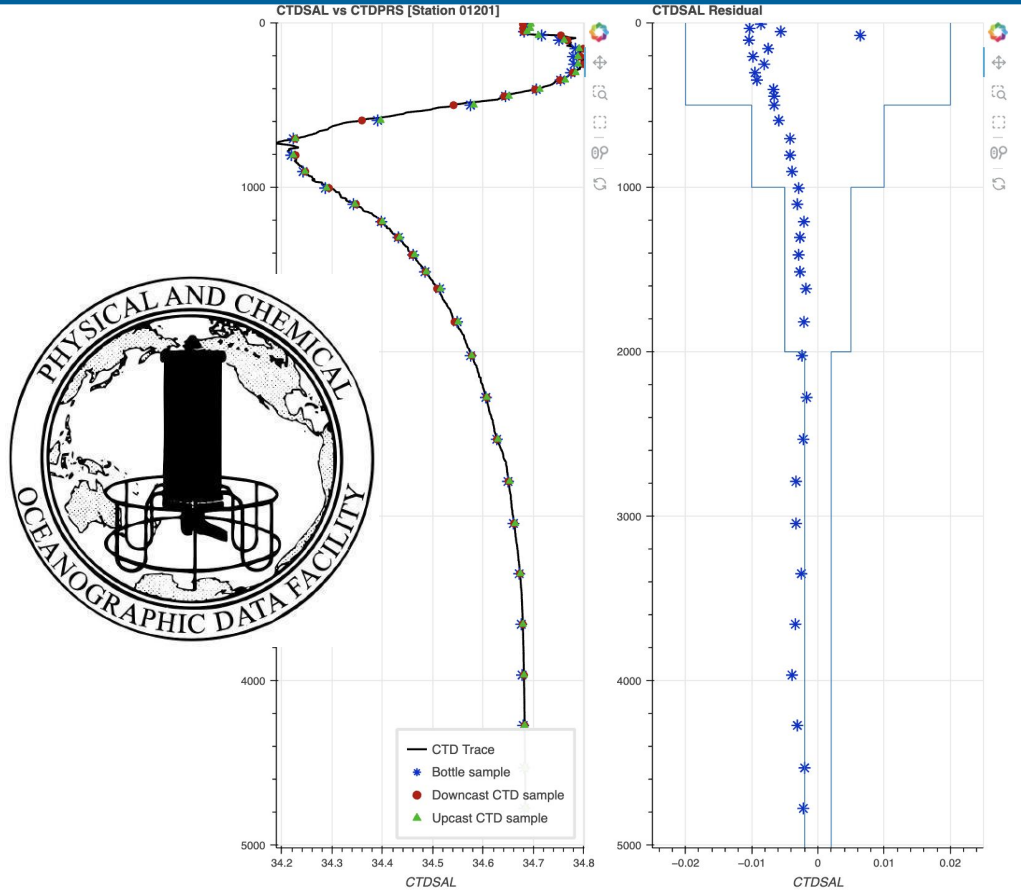
YES

- International $CTDO_2$ Best Practice Forum
  - Well-defined group of individuals able to continue assessing $CTDO_2$
  - Provide documentation and guidance
- Come to an agreement on data best practice guidelines
  - Intercompare current global $CTDO_2$ processing routines and algorithms
  - Update $CTDO_2$ sections of the GO-SHIP hydro manual (2025-2026)
  - Publish a public code repository
- Planned workshops in 2025

NO

- Examine Niskin bottle/discrete sampling routines
- Evaluate operation of instrumentation referred to as “standards”
- Assess data storage or metadata requirements
- Suggest sensor make/model preferences

SCRIPPS' ODF INVOLVEMENT



- Observe and contribute to the IAPSO working group
- Developing open-source, public $CTDO_2$ calibration software **CTDCAL**
  - Python
  - Built on existing in-house codebase
  - Modular plug-and-play procedures: SeaBird's procedure, ODF, and more!
  - Post-cast adjustments: Load bottle data for cast-by-cast sensor calibration
  - Promote transparent algorithms through documentation
  - Software in Beta, feedback welcome Q2 2025

THANK YOU

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ODF's CTDCAL Documentation