Course goals and expectations

OOI Bio-Optics Summer School Goals & Expectations

Objective: Learn how to access, analyze and interpret OOI measurements of optical attenuation and absorption using the in-situ spectrophotometer instrument (Sea-Bird Scientific AC-S; aka the OPTAA data)

Reminders:

- Broad spectrum of skill/knowledge expertise across the participants, instructors, OOI staff
- Expectation is that no one will know everything from end-to-end for all that is discussed.
- WORK together, ask questions, seek help when you need it. Lets Collaborate!
- Tues-Thurs: Morning ”pulse” checks - bring questions and raise them. You can also submit these to anyone of the instructors/staff at anytime (post-it notes, emails, etc).

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Expectations:

- Gain knowledge of Inherent Optical Properties (IOPS) and connection to biogeochemical parameters.

- Understand the theory, operation, data processing, and data quality of the AC-S instrument.

- Learn and understand the OOI infrastructure and measurements – specifically the AC-S

- Understand how to use the OOI data portal, Juypter Hub, data explorer, and data formats for obtaining/retrieving AC-S and other bio-optical /physical data.

- Work together on building and retaining knowledge you've gained from the course (in practice, homework assignments, and final presentations)

Class content Roadmap: Days 1 - 5

Mon: - Biogeochemical parameters and connections to optical properties. - IOPs: theory and definitions. - AC-S: instrument, data, processing, and uncertainties

Mon: Introduction to OOI curated data set #1

Mon pm: Homework #1 using curated data set #1.

Tues: - Homework review. Guest lecture Maria Kavanaugh (CEOAS/OSU). – AC-S hands on. Examples of AC-S data quality.

Tues: -OOI observatory overview. – OOI data portal, Juypter Hub, and demo of obtaining data

Tues: Homework #2 exploring data

Wed: working sessions: teamwork on developing questions/investigating OOI data for Fridays report out

Wed: - Curated data set #2 exploration. -Guest presenter (I. Rankin). -Guest lecture Alison Chase (UW/APL).

Thur: -Trip to OSU Ocean Observing Center. – Review of IOP connections to BGC parameters.

Thurs pm: working session: processing data and work on final presentations

Fri: -Participant final presentations. -Wrap-up.

Agenda for July 17, 2023

Monday, July 17, 2023 - Wilkinson Hall, Room 207

Time	Topic / Activity	Presenter
8:00 AM	Check-in and coffee. Meet at Wilkinson Hall, 261 NW Orchard Ave., Room # 207	
8:30 AM	Welcoming Remarks and Introductions - OSU leadership, OOIFB, OOI, NSF,	Dean Tuba Özkan-Haller, OSU/CEOAS
	Logsitics (e.g. bathrooms, work rooms, help center, maps, food options, etc)	Dr. Kendra Daly, OOIFB Chair
		Dr. Ed Dever, OOI
		Dr. George Voulgaris, NSF
9:00 AM	Participant introductions	Dr. Andrew Barnard, OSU
9:30 AM	Workshop goals, Agenda Review and expectations.	Andrew Barnard, OSU
9:45 AM	Lecture 1: Why measure IOP? Why OOI is measuring these?	Andrew Barnard, OSU
10:15 AM	*Break*	Andrew Barnard, OSU
10:30 AM	Lecture 2: Basic definitions of light, IOP, measurement theory and application	Andrew Barnard, OSU
11:30 AM	Question period	Andrew Barnard, OSU
11:45 AM	*Lunch Break*	Andrew Barnard, OSU
1:15 PM	Leture 3: How an AC-S works: Overview of the theory to application, limitations, and uncertainties	Andrew Barnard, OSU
2:00 PM	Lecture 4: Data output from an AC-S; processing steps and corrections, best practices	Andrew Barnard, OSU
2:30 PM	Lecture 5: End-to-end AC-S data processing based on best practices	Andrew Barnard, OSU
3:00 PM	*Break*	
3:15 PM	Overview of curated Data Set 1	Chris Wingard, OSU
3:45 PM	Charge: Homework Assignment #1 - Using curated Data Set #1; Expectation for July 18 report out on homework	Andrew Barnard, OSU
4:00 PM	Team formulation networking period; Question & Answer period	
5:00 PM	*Adjourn Day 1*	

6:00 PM **Evening Reception at Hilton Garden Inn, 2500 SW Western Blvd, Corvallis (cash bar, appetizers). Participants are on their own for dinner.**