

# OCEAN OPTICS XXIV

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<https://oceanopticsconference.org>

Monday, October 8

Poster Session 1

16:00–18:00

## **Poster 177**

### **AUTOMATED FLOW THROUGH CALIBRATIONS OF BACKSCATTERING AND FLUORESCENCE SENSORS**

Active optical instrumentation require robust calibrations throughout the lifetime of the instruments to ensure accurate in situ measurements. For remote data gathering onboard fleets of autonomous vehicles accurate and repeatable laboratory calibrations are necessary to guarantee intra-sensor comparability. Advances in backscattering and fluorescence sensor signal processing have widened the range of valid measurements leading to the requirement for a wider range of calibration target concentration and combinations of targets. Thus while single target point calibrations are not sufficient to characterize wide range instruments, increasing the number of target and target combinations to adequately describe instrument performance with current methods is not viable with respect to measurement variance, time and cost to calibrate. We describe a new calibration system that automates the process for backscattering and fluorescence instruments. The new system improves the variance and coherence of the measurements made in the calibration system, improving basic performance in areas such as noise in the presence of a steady state signal.

**David Murphy**, Sea-Bird Scientific, [dmurphy@seabird.com](mailto:dmurphy@seabird.com)

Ian Walsh, Sea-Bird Scientific, [iwalsh@seabird.com](mailto:iwalsh@seabird.com)

Dan Whiteman, Sea-Bird Scientific, [dwhiteman@seabird.com](mailto:dwhiteman@seabird.com)

John Koegler, Sea-Bird Scientific, [jkoegler@seabird.com](mailto:jkoegler@seabird.com)