



Developing a MOBY-NET instrument, suitable for a federation network for Vicarious Calibration of Ocean Color Satellites

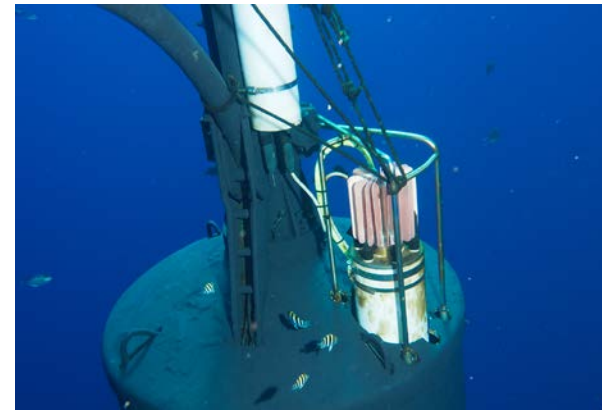
PI: Kenneth Voss, University of Miami

Objective

Develop a vicarious calibration instrument which can return MOBY level Lw data from alternate sites and meets the IOCCG goals of developing multiple vic/cal sites with:

- A) identical instrumentation
- B) centrally, and consistently characterized
- C) centrally, and consistently calibrated
- D) consistent and uniform data processing

This system would take advantage of the current work (being performed with NOAA support) to update and enhance the current MOBY instrument



Picture of prototype MOBY-Net BSG, installed on the MOBY heritage instrument, for crossover comparison experimental deployment.

Approach:

Build two prototype MOBY-NET buoys that satisfy the objectives by:

- A) a modular, stable, optical system allowing installation and removal from buoy hull as an intact piece
- B) a buoy hull with the major structure similar to MOBY (to maintain same shadowing characteristics), but able to accept modular optical system.
- C) A stable source and radiometer, transported with the MOBY-NET optical system to verify system performance pre/post deployment at remote site.

CoIs: Carol Johnson, NIST; Mark Yarbrough, MLML; Arthur Gleason, UM; Resonon; Mooring Systems Inc.

Accomplishments.

- 1) Control system has been field tested since October 2015
- 2_ Modifications of the stability source and stability monitor have been done to allow operation with MOBY-Net
- 3) Long term stability and transportation tests of the source and monitor are being performed. Results indicate that they should meet the 1% goal in stability.
- 4) A blue prototype spectrometer has been deployed along with the heritage instrument since August 2016.
- 5) The spectral stability of this instrument has been very good, with less than 0.1 nm shift during most deployments.
- 6) Radiometric stability, while in the field, is on the order of 1-2%.

Minimum $TRL_{in} = 2$