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Ocean Science Discussions

Interactive comment on "In situ determination of the remote sensing reflectance: an inter-comparison" *by* G. Zibordi et al.

Anonymous Referee #4

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This paper presents the results from an intercomparison of different above-water and in-water methods for measuring remote sensing reflectance. I think the paper topic, methods, and discussion all have merit and the paper is definitely worthy of publication.

My primary technical concern is with using wavelength-aggregated statistics in Fig. 2. As shown it looks like the data fit quite well with very high r2 values. However, if you take blue or red wavelengths, however, the fits do not look as good and sometimes even look like a random "bullseye." It might be important to show these separately and do the regression on each wavelength individually and determine the errors by waveband. This is also particularly true of the above-water TRIOSB and E data in blue wavelengths which appear to still be glint contaminated.

Also, I might have missed this, but how was the SeaPRISM corrected for sun glint?

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Also, only one correction is attempted for skylight "turbid water near infrared." Is the water turbid? It doesn't really appear so from the spectra. Did the authors try several models, including(.)(.).....(Gould et al. 2001) approach? Fig. 4 shows lots of error in the blue for the TRIOS sensors with the values from TRIOS being higher in blue (indicating glint contamination).

Only Rrs spectra from the WISPER system are shown. If you showed the spectra from above-water TRIOS in comparison, it would show blue enhancement more pronounced than the Fig. 2 values indicating sky glint contamination. It would also make your analysis stronger to show the spectra from all of the approaches for comparison rather than the aggregated values.

Regarding the buoy data. Leathers et al. (.)(.).....(Leathers et al. 2001) have down a nice self-shading correction based on the geometry of the Saltantic buoys. You might want to make sure your values coincide with their more thorough analysis.

Gould, R. W., R. A. Arnone, and M. Sydor. 2001. Absorption, scattering, and remote sensing reflectance relationships in coastal waters: Testing a new inversion algorithm. J. Coastal Res. **17**: 328–341.

Leathers, R. A., T. V. Downes, and C. D. Mobley. 2001. Self-shading correction for upwelling sea-surface radiance measurements made with buoyed instruments. Optics Express **8**: 561–570.

Interactive comment on Ocean Sci. Discuss., 9, 787, 2012.