

OCEAN OPTICS XXIV

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Monday, October 8

Poster Session 1

16:00–18:00

Poster 212

DOES LEVEL-2 SATELLITE OCEAN COLOR VALIDATION HOLD FOR GRIDDED LEVEL-3 SATELLITE OCEAN COLOR PRODUCTS?

Satellite ocean color retrievals are typically validated against in situ measurements for Level-2 (L2) satellite data, defined as geophysical satellite retrievals stored at the native spatiotemporal swath resolution. However, many ocean color satellite data users employ Level-3 data in their research, which are geophysical satellite variables that have been resampled to a georeferenced grid over a defined period of time (e.g. – day, month, or year at 4- or 9-km). This study evaluates whether L2 satellite chlorophyll-a validation results are representative for 4-km L3-binned chlorophyll-a data. Both MODIS-Aqua and VIIRS-SNPP L2 and L3 chlorophyll-a retrievals from the OCI algorithm are validated against in situ chlorophyll-a data from a 2014 Atlantic Meridional Transect cruise using the recently developed stand-alone satellite validation matchup tools by the Ocean Biology Processing Group. Two key results will be discussed. 1) Reasonable agreement exists between validation statistics at both data levels, with the L3 data slightly outperforming L2 relative to the in situ data. 2) The number of L3 matchups is more than three times greater than the number of L2 matchups due to the L3 gridding methodology, validation matchup exclusion criteria applied to the L2 data, and differing temporal matchup windows between daily L3 data and the plus-minus 3-hour time window used in locating L2 satellite data.

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