**SeaBASS Submission Checklist: Above-water Radiometry**

**Submissions require reporting methods of the acquisition procedure and data processing. Every processing step should be detailed with methods and equations.**

**Instructions**: Please fill in section I. and the applicable bulleted points in section II. to the extent possible. Rename this file to be specific to your data, for example by adding the cruise and investigator name, and include it among your submission’s documents. Field logs, processing logs, and other relevant documents

**I. Submission Info**

Experiment name:

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Cruise name:

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Instrument model & manufacturer:

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Data type **(**e.g., autonomous, simultaneous, handheld, etc.):

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**II. Radiometry Documentation Requirements**

1. Describe instrument characteristics, including manufacturer, deployment method (e.g., manual vs. autonomous, Lagrangian vs. Eulerian) and physical characteristics.
2. Report instrument optical and radiometric characteristics including

a) Spectral range:

b) Spectral resolution:

c) Spectral sampling:

d) Spectral accuracy:

e) Field of view:

f) Frame rate and integration time methods:

g) Radiometer calibration files used in processing must accompany data submissions. If full instrument characterizations have also been performed and applied, please report any available additional parameters, otherwise report “None”. These can be provided as characterization files submitted with supplemental materials or linked from the [Ocean Colour Database (OCDB) Fiducial Radiometry Database (FidRadDB):](https://ocdb.readthedocs.io/en/latest/fidrad-database.html)

 i) Absolute radiometric calibration uncertainty:

 ii) Straylight sensitivity:

 iii) Thermal response:

 iv) Polarization sensitivity:

 v) Angular response (irradiance):

1. Describe sampling procedure (e.g., instrument deployment details, position on ship or tower, color of ship/tower, height off the water, location of sensors on ship/tower), method of measuring Es (plaque vs. cosine collector; location of cosine collector, if different), platform shade properties and perturbation avoidance strategies.
2. Describe self-shading corrections and avoidance strategies (SBA).
3. Describe how wind speed, cloud cover, wave height, solar disk, and other ancillary data (e.g., AOD, SST, salinity) were measured and recorded.
4. Describe how sensor geometries were maintained and recorded to meet protocols. This should include sensor zenith angles, relative azimuth angle, tilt (pitch and roll), and reflectance plaque level, if applicable.
5. How was lens fouling managed in the field and in data quality control? (Particularly important for SBA acquisitions.)
6. For SBA, how was Lw radiometry filtered for the cone leaving the water surface?
7. Were digital photos acquired regularly (e.g., on station) to record sea- and sky state?
8. Were all datasets and associated documentation collected/stamped and/or converted to a common time zone?
9. Data processing

a) If data were processed through a commercial radiometric software package (e.g., ProSoft, uProfile) please specify (NOT REQUIRED FOR HyperCP SUBMISSIONS):

 1. Software and version:

 2. Processing level output:

 3. Parameters selected and processing settings:

 b) Alternately/additionally, if data were processed or post-processed (after what was described above) with custom in-house software, please describe each of the following that applies (NOT REQUIRED FOR HyperCP SUBMISSIONS):

1. Conversion data counts to engineering units. i.e., describe conversions from raw binary optical data into counts (calibration equation).

2. Smoothing or “deglitching” of light (e.g., shutter open) and dark (shutter closed) time series data. If applicable, describe deglitching method.

3. Describe if/how shutter darks were interpolated as a function of measurement time (if necessary) to match the number of dark and light data measurements.

4. Dark correction. Describe how light values were corrected for dark values.

5. Temperature correction of light data. Report temperature correction equation.

6. Describe time interpolation method applied (e.g., across multiple near-simultaneous instruments of a HyperSAS or TriOS triplet).

7. Describe waveband interpolation method applied (if any).

8. If Es was estimated using a reflectance plaque, describe the reflectance plaque characteristics and the method used.

9. Describe corrections made for sea surface reflection correction (“glint”), NIR residual glint, and capillary glitter.

10. Describe whether and how negative reflectance spectra were handled.

11: Describe any temporal, spatial, or spectral binning of data.

12. Describe any additional quality controls applied to (ir)radiances and/or reflectances.

13. Describe BRDF correction to Rrs and/or nLw (if any).

14. Describe how uncertainties were estimated and propagated.

15. Describe which wavebands were eliminated from reporting (e.g., UV and/or NIR where calibration confidence was low or not available due to lamp limitations).

 c) If data were processed in HyperCP, the most relevant processing information is already provided in the SeaBASS metadata headers submitted. To establish the exact version of HyperCP used to process you used, please submit:

1. Repository commit ID/hash used in processing. This can be obtained by navigating to your HyperCP repository and typing:

 git log --pretty=tformat:"%h" -n1

2. If a bundled executable was used, provide the link to the build downloaded (e.g., <https://github.com/nasa/HyperCP/actions/runs/6962299502>)

3. HyperCP customization for deployment conditions, optical water-type, etc. Was L1AQC deglitching and/or L1BQC spectral filtering parameterized on a file-by-file basis using the Anomaly Analysis supervised tool or were default configurations adopted? Were glint correction and NIR residual correction performed uniformly across all data submitted, or changed according to conditions?

**III. SeaBASS Data File Information**

Refer to [AboveWaterRadiometry\_guidelines](https://seabass.gsfc.nasa.gov/wiki/data_submission_special_requirements#Radiometry%20(above-water)) for information regarding recommended header and field data for SeaBASS files.