

Discussion on the revision in-water and above-water protocols

The discussions on the revision of in-water and above water radiometry methods/protocols were held jointly because of the many common elements and participants.

Team Members and Tasks

Considering the wide range of topics to be addressed, the following strategy was envisaged:

- All the attendees will be invited to provide specific recommendations or requests for revision of current protocols;
- A smaller team will collect contributions and produce an extended and comprehensive outline identifying existing sections and the requested revisions, and will also provide suggestions for new sections.
- The outline will become the basis for the future revised protocols and also the motivation for soliciting funding.
- Ken Voss and Giuseppe Zibordi will lead the process and identify other willing participants in the near future.
- There was a suggestion that a student, or other person new to the field, participate in this smaller team to help identify areas where the document is too dense or unapproachable
- The Goal is a coherent and accessible document, useful for a variety of applications and users.

Approach

The following major needs were identified:

- Revise the current radiometry protocols starting from the existing NASA-SIMBIOS Rev.4 version of the Ocean Optics Protocols through: rationalization of its content; implementation of minor or even major revisions to existing parts; addition of a number of new elements not currently in the present protocols, as identified through peer-review literature, with input from the larger group of interested workers, but strictly relying on advances already vetted and accepted by the scientific community.
- The review process could be incremental. For instance we foresee the addition of successive new sections after completing the rationalization and revision of existing parts.
- Once revised the protocols should be considered frozen for a reasonable amount of time. Any future suggested revision should be evaluated by a committee meeting at regular intervals. It is considered essential that any relevant change is traceable in the successive versions of the protocols.
- The publication the revised Marine Optical Radiometry Protocols should rely on digital solutions. However, an efficient model need to be identified and pros and cons evaluated.

- A specific need for the new Marine Optical Radiometry Protocols is that of supporting a wide range of potential users having different target applications (i.e., water quality, bio-optical modelling, validation of satellite data products, system vicarious calibration) and thus different target uncertainties. This could be achieved by providing a quantification of the impact on uncertainties for each action indicated as required, recommended or suggested in the protocols. This will require streamlining the overall uncertainty budget of radiometric measurements.
- Along with the above, the new protocols must have more emphasis on the uncertainties involved in the various steps. There were suggestions that when statements are made on a required step, that a reference be made to another section that informs the reader of why that step is required and the impact on the uncertainties if the protocol is not adhered to. (Not just a list of “thou shall or thou shall not...”)
- Elements specific to the common commercial instruments have been declared of utmost importance for the future protocols. This is however, something to mostly consider for dedicated appendices.

Funding

The comprehensive revision of the Marine Optical Radiometry Protocols cannot rely on sole voluntary contributions. It is thus expected that at least, relevant space agencies provide adequate funding to establishing and maintaining an office (one person, ideally with science-editorial skills) responsible to lead the actual revision process (or alternatively, more likely, assist the leading scientist in such an effort), interact with contributors in charge of writing specific sessions, and additionally coordinate the whole review process involving a number of scientists from the international community in view of reaching wide consensus.

Timeline

The extended outline for the revised Marine Optical Radiometry Protocols should be presented at the IOCS Meeting in 2015. The possibilities for funding sources should be finalized by this time.