The manuscript by Pitarch and Brando proposes a comprehensive data set of IOP and AOP values from radiative transfer simulations and related parameterisations relying on previous scientific investigations and high quality in situ data.The newly proposed data set definitively shows advances with respect to various predecessors and because of this it deserves to be supported by the proposed manuscript.

We really appreciate Giuseppe Zibordi's comments on the paper. We believe to have generated a dataset that redefines the state of the art of bio-optical modelling. Also, this dataset is provided across a much-extended range of water types respect to past attempts. In addition, the AOPs are angularly resolved, a feature that makes the dataset unique respect to its predecessors, and makes it attractive for bidirectional studies, that are not only needed for current sensors, but that will be facilitated by new satellites that incorporate multiangular sensors, such as PACE.

I only have three comments I would like to convey to the authors.

The first is quite minor and refers to the terminology. The term ' synthetic ' should be replaced by the more appropriate ' simulated '.

We understand this comment. There is no total agreement in the community on which term to use and both have been used. We have seen both terms being used. Here, we follow the terminology started by the publication of the related IOCCG report, which mentioned a *synthetic* dataset.

The second on the statement qualifying simulated data not affected by errors. This is quite questionable: simulated data can only provide an 'interpretation' of the 'truth' based on a number of input parameters and modelling solutions. Regardless of the RT solution, the input parameters may not capture the actual 'truth'.

This comment has the point, and we are willing to upload a revised version of the manuscript where there are enhanced verifications on the representativeness of the generated RT simulations, based on the comparison between R_{rs} and absorption, chlorophyll and TSM. It will be shown that our dataset represents all water types, in terms of the covariability of the related variables for the in situ datasets available.

The last comment is the most relevant one. It is commendable that the data set is proposed with 1-nm spectral resolution. However, it is questionable that the simulated data can actually capture 1-nm spectral variations. This appears confirmed by the aggressive smoothing applied to the experimental aph values. This limitation should be acknowledged.

Raw a_{ph} measurements are noisy. Sometimes, the smoothing is made by whoever provides the data but, in most cases, we found evident noise. Such noise would influence the simulated AOPs if not filtered out, hence the aggressive smoothing. This does not imply *per se* that the 1 nm spectral resolution is lost after this process, as it is well accepted that an a_{ph} results from the combination of pigments that have smooth features. However, we are willing to provide some lines of discussion on the difficulties of the in situ determination of an a_{ph} spectrum, and on the potential limitations for the spectral resolution.

Giuseppe Zibordi