

## ***Interactive comment on “The CMEMS GlobColour Chlorophyll-a Product Based on Satellite Observation” by Philippe Garnesson et al.***

**Philippe Garnesson et al.**

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Please see the figure and the supplement attached.

Please also note the supplement to this comment:

<https://www.ocean-sci-discuss.net/os-2018-155/os-2018-155-AC1-supplement.pdf>

Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2018-155>, 2019.

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Discussion paper



Dear Referee,

Please find our comments/responses in blue in your text.

We have also attached a new release of the article. This a major revision of the initial article: the form has been changed, the assertion are better argued. Most of the figures have been also reviewed.

Thank you for your useful comments.

Philippe Garnesson on behalf of co-authors.

Anonymous Referee #1

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This article presents the new version of the GlobColour product delivered by ACRIST within the CMEMS. As this GlobColour Chlorophyll-a (Chl-a) product has a global coverage and provides retrievals in coastal waters this manuscript can be of interest for many current and future users of satellite-derived products.

Chl-a in this new GlobColour product is derived from two algorithms: the Color Index of NASA for clear waters ( $\text{Chl-a} < 0.15 \text{ mg m}^{-3}$ ) and the OCS algorithm of Ifremer for water where Chl-a is superior to  $0.2 \text{ mg m}^{-3}$ , including the coastal turbid waters. This is very similar to the strategy chosen by the Plymouth Marine Laboratory for the OC-CCI product, also provided at global scale. However a distinction is clearly made by the authors: the GlobColour processing chain provides a Level 3 Chl-a multi-sensor product obtained from mono-sensor Chl-a whilst the Level-3 Chl-a of OC-CCI is obtained from C1 OSD Interactive comment Printer-friendly version Discussion paper a prior merging of the remote-sensing reflectance of the different sensors on a common reference of spectral bands (SeaWiFS).

The OC-CCI approach is similar to that of the Mediterranean Product Unit of CMEMS described in Volpe et al. (Ocean science, accepted). Targeting directly Chl-a, the GlobColour processing can theoretically and practically be adapted more quickly to the modification of the products of any single sensor (following the reprocessing by the Agencies) whilst this task is more difficult to achieve through the complexity of the band switch and band correction operated in the OC-CCI approach. However as pointed out by Volpe et al., the band merging approach has the advantage of providing a homogeneous dataset of spectral reflectance from which can be derived, in full consistency for the long term, different environmental parameters, amongst them Chl-a but also light attenuation,  $K_d$ , Suspended Particulate Matter, . . .

Yes, we fully agree with Volpe, and "line 16, section 2.1", it was indicated <<the approach is theoretically very attractive>> but the promising consistency supposed the input reflectances are consistent. We add a paragraph to discuss advantages and drawbacks underlined by Volpe in part 3.1 (p 4, lines 19-23).

The authors discuss different issues encountered in the near real-time and long term processing of Ocean Colour data and some interesting illustrations are provided on the effect of the drift of Rrs in flight and the

Fig. 1.