

Interactive comment on “Comparative analysis of the multi-sensor global ocean colour data record” by S. Djavidnia et al.

Anonymous Referee #1

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The paper addresses the scientific issues that are within the scope of OS. The paper presents novel data that are highly consequential in many ways, especially for developing methodologies of different ocean colour data merging and production of long term seamless data time series. The research performed allowed attaining the main goals and convincingly substantiates the formulated conclusions. The methodological approaches are generally (but with a few exceptions, see below) clearly outlined. The results obtained are sufficient to support the conclusions. The abstract provides a complete and concise summary. The overall presentation is well structured and clear. The language is precise. The mathematical symbols, abbreviations and units are correctly defined and used. The number and quality of references are appropriate. Some minor critical comments: * The title could be worded better to reflect more explicitly the overarching goal, namely, assessment of compatibility of data from different ocean

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colour sensors. * On p.1615 it is indicated that the work has been inspired by the MERSEA project with the European Marine Area in focus. However the results of analyses are explicitly indicative of significant discrepancies between SeaWiFS, A-MODIS and MERIS data in case 2 waters, i.e. European coastal waters and semi-closed seas. It appears more appropriate for the authors to give a more concrete corollary concerning these specific areas. * p. 1617. It is known that MERIS data are frequently contaminated with sun-glitter. Nothing is said how the authors have been dealing with this problem when performing the comparative analyses. * p. 1618. a) assuming the log-normal distribution of chl-a, the authors refer to respective reports in the literature. It is evident that the data collected by them provide enough evidence for such a conclusion without resorting to someone's data b) what is the threshold for considering the coincident pairs of data from two different sensors? it is would be good to specify this threshold. Indeed, on page 1634, the authors presume that the varying overpass times might be among the reasons of mismatches. The validity of such a conjecture is certainly dependent on the chosen threshold. * ps. 1619-1620. The threshold of 10 percent needs to be justified. p. 1633. It would be good to explain in a more substantive way why the authors presume that the discrepancies between the SeaWiFS and MODIS data on the one side and MERIS on the other in the case of large subtropical gyres " indicate a sensitivity of the final product to the geometry of illumination".

Generally, I find the results obtained in the paper are a confirmation of many previous reports ((i) a good conformity between SeaWiFS and MODIS-A data and a rather poor one between SeaWiFS(MODIS-A) and MERIS, and (ii) the problems with seaming satellite ocean colour data over case 2 waters). Important, that the numerical results reported in the present paper refer to nearly the entire Global Oceans Area, and this is to my mind is the major asset of the reviewed research.

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