

Comment on “Assessing temporal trends in ocean transparency using GlobColour products from the Copernicus Marine Service and accounting for associated uncertainties”

Anonymous Referee

General Comments

This manuscript explores the variability and long-term evolution of water transparency across diverse marine and coastal environments using satellite-derived Secchi disk depth (ZSD) products from the Copernicus Marine Service over 1998–2022. It investigates seasonal and interannual patterns in relation to environmental drivers, assesses the robustness of observed trends and associated uncertainties, and evaluates the impact of spatial resolution on trend characterization.

During the first round of review, several aspects required clarification or stronger justification. The authors have addressed all reviewer comments thoroughly and constructively. The manuscript has been substantially revised, with all major points clarified and appropriately documented. The responses to the reviewer's comments were comprehensive and satisfactory, resulting in a study that is now more complete, rigorous, and detailed.

One issue requires clarification before publication. Figure 2 has changed substantially compared with the previous version of the manuscript. In particular, the monthly climatology of ZSD for the Atlantic region and the standard deviation. The seasonal cycle for the Atlantic differs substantially from the one shown in the original submission. It appears to be nearly in opposite phase, which is a significant change. In addition, the standard deviation for all curves has decreased significantly. The authors should clarify the reason for these modifications and indicate whether it results from a correction in the analysis, or a revision of the methodology.

In addition, the text would benefit from more frequent references to Figures 2 and 3 at appropriate points throughout the manuscript. This would improve readability and help guide the reader through the results and their interpretation.

The manuscript is otherwise ready for publication. However, the substantial change in Figure 2 should be explained explicitly in response to reviewers.