

Suggestions for revision or reasons for rejection (will be published if the paper is accepted for final publication)

Dear Authors,

I appreciate the effort you have made in revising your manuscript. I think it is almost ready for publication, pending only minor updates.

Dear Reviewer,

We appreciate the thorough and constructive review of our manuscript. We believe the suggestions contribute to improving the scientific robustness and readability of the text, and we have carefully addressed each of the points raised.

I am not fully comfortable with the use of the term “deterministic” for the current OMI-NRT/OMI-INT configurations, since the approach is purely statistical, being based on annual 99th percentiles and climatological percentile anomalies. Similarly, the use of “probabilistic” for MULTI-OMI should be treated with caution, as the ensemble spread mainly reflects inter-product variability rather than a formal probabilistic uncertainty estimate.

We have carefully revised the manuscript and replaced the terms “deterministic” and “probabilistic” in all instances where they appeared. Specifically, OMI-NRT and OMI-INT are now consistently referred to as “single-product” or “single-estimate” configurations, while MULTI-OMI is described as a “multi-source ensemble” or “ensemble-based” approach. Furthermore, the ensemble spread is now explicitly characterized as a “practical first-order measure of inter-product spread”, reflecting the sensitivity of the indicator to the choice of upstream data source, rather than a formally derived probabilistic uncertainty estimate. These changes affect the Abstract, Section 2 (Data and Methods), Section 4, Section 5, and Section 6 (Conclusions).

In addition, the manuscript still contains many repetitions and would benefit from a substantial synthesis and streamlining.

We have carefully revised the manuscript to reduce redundancies and improve its overall conciseness. The main changes include the removal of a paragraph in the Introduction that restated the study objectives already described in the preceding paragraphs, the elimination of repeated

content in Section 2, and the streamlining of the methodological description in Section 6, where two paragraphs were condensed into more concise formulations.

We hope that these revisions adequately address the reviewer's concerns and that the manuscript is now suitable for publication.