

Dear Editors and Reviewer,

We thank you for your valuable feedback.

Response to Reviewer – Comment on p.7 l.159

We thank the reviewer for this insightful comment. As suggested, we have expanded the discussion following the equation to clarify how errors associated with synthetic velocities are estimated. It is not straightforward to assign an individual error to each physical term. Instead, we estimate the error from two complementary sources:

(1) the geostrophic velocity error of the drifter (which depends on the drifter type), combined with the altimetric velocity anomaly error, and

(2) a proxy based on the variance within each $1/8^\circ$ bin, which reflects the quality of the removal of residual ageostrophic signals and temporal variability.

The final uncertainty is defined as the maximum of these two contributions divided by the number of observations, following Rio et al. (2011, 2014).

Response to Reviewer – Comment on p.10 l.232–237

We agree that the section was repetitive. We have rewritten it to be more concise while preserving the main message: uncertainties increase where sampling density is low, and the final error depends strongly on local observation availability.

We believe these revisions improve the manuscript.

Sincerely,

On behalf of all co-authors