Response to reviewer 1

Thanks for the review. We agree with all comments from the reviewer. The paper is indeed "light" as this is the format specification.

- L28. "These dependencies depend on ocean dynamics and the scales of motion" replaced by "These dependencies vary according to ocean dynamics"
- Figure 1 : updated figure included
- L104: More recent removed.
- L105. Reference Roemmich et al. added
- L122. Reference Morrow et al. added. We kept Benkiran et al as the study dealt with a simulation study on operational swath altimetry

Response to reviewer 2

Thanks for your comments. We agree with most of them and have updated the ms accordingly. See below:

- I agree with the first reviewer, this work distills current knowledge without entering in depth in each topic discussed => see answer to reviewer 1. We followed the framework asked for this very concise paper
- In Section 2 on satellite observations, please add in brackets a few examples of satellites with infrared, ocean color, and microwave sensors widely used in oceanographic research. Also, some geostationary and polar-orbiting satellites are extensively used in oceanography, and their data have been assimilated or used for validation in forecasting modeling studies => we added references to instrument and satellite missions (GEOS, MTG, VIIRS, S3/SLSTR).
- Line 96: A statement on data quality control and QA/QC procedures before data assimilation in models should be added here => the point on data quality control was already mentioned but this is better emphasized now.
- The role of low-cost sensors in in-situ ocean observation systems, especially at coastal seas, is not discussed => a sentence was added incl. the role of citizen science
- Novel sensors, like microplastic, oil spills, dissolved gases, etc., are not presented. => the ms is focused on ocean prediction core systems and not downstream applications.
- The role of Citizen Science in marine data collection is also not discussed. => see remark above
- In future challenges the need for data standardization for interoperability purposes should also be discussed => done

Response to additional / final comments of the editor

All additional comments have been taken into account. Statements on data quality issues were also moved into the introduction as they apply to both satellite and in situ observations. Figure 1 was updated. See also detailed answer to comments in the ms in the trackchange mode.