Reply on RC2

Robert R. King and Matthew J. Martin

Author comment on "Assimilating realistically simulated wide-swath altimeter observations in a high-resolution shelf-seas forecasting system" by Robert R. King and Matthew J. Martin, Ocean Sci. Discuss., https://doi.org/10.5194/os-2021-64-AC2, 2021

We thank the referee for their time and their helpful and constructive comments.

The referee's report is shown below (in bold) with our responses below each of their comments

Two others comments/questions

- **The authors don't provide information on the observation errors used in the case of superobs (5km and/or 20km filtering). It could be useful to provide this information in table 2.**

The observation errors used in the assimilation scheme were not changed in the experiments where SWOT observations were median-averaged. Although it may be beneficial to change the observation errors depending on the chosen level of averaging, the main aim of the averaging was to reduce the effect of the largest correlated errors rather than reducing the random component of the errors. We plan to make a more detailed examination of the impact of the observation errors in the future experiments. Section 5.1.1 has been updated to clarify this.

- **The authors don't provide information regarding significant wave hight used to compute the KaRin error. Is it the standard 2m swh that is used in this study?**

Yes, we used the default setting of 2m. We have updated Section 4.2 to highlight the limitations of SWOT observations in regions with larger SWHs.