Response to Anonymous Referee #1

General comments

The manuscript provides an overview of new dataset that was deployed specifically as part of the SWOT Cal/Val, but has endured beyond this period. The datasets and instruments are well explained, as are the quality control parameters.

Response: We thank the reviewer for the constructive feedback. Our responses to Referee #1 are provided below using italic blue text.

One thing that is unclear is whether any data available in real time to the user? Or is all data only available after instrument recovery (i.e., post-processed from the memory card).

Response: Most sensors were not equipped with telemetry and, consequently, the data are not available in real-time. Data stored on memory cards are retrieved during sensor maintenance, which is performed at least annually. The data then undergo post-processing and quality control before being made available through updates of the database.

Specific questions/issues

- Line 13: It would be good to define when this dataset will be 'periodically' available. *Response: We have clarified in the manuscript that updates are planned on an approximately annual basis. However, because the timing of updates depends on instrument maintenance schedules and the time required for data processing and quality control, the exact timing cannot be guaranteed. In the abstract, we added: "[…] will be updated approximately annually, as new observations are retrieved, processed, and quality controlled […]". In the code and data availability section, we added "Updates are targeted approximately annually, depending on data retrieval, processing, and quality-control activities". We have also modified Figure 5 to add 'X' markers at the end of the timelines for stations that have been dismantled and will no longer be updated.*
- Line 92: Consider replacing 'right shore' with a cardinal direction – i.e., 'eastern shoreline'. *Response: We agree that "right shore (in the direction of upstream tidal propagation)" may be ambiguous to readers unfamiliar with the local tidal dynamics and terminology. In English, the conventional geographical terminology used for the St. Lawrence River is "North Shore" and "South Shore", despite the predominantly diagonal orientation of the river. We have therefore replaced "right shore" with "North Shore" to avoid ambiguity.*
- Figure 1: It might be helpful in Figure 1 to include a rough outline of which section is seasonally covered in ice. *Response: According to the sea ice-duration climatology presented by Galbraith et al. (2024, their Figure 2; https://doi.org/10.1029/2023JC020784), the St. Lawrence Estuary has a climatological ice duration ranging from 7 to 15 weeks over the area presented in Figure 1. Thus, delineating the "seasonally ice-covered" section in Figure 1 would essentially involve identifying the entire estuary. Moreover, ice conditions may vary substantially from year to year. We therefore chose not to add a fixed ice-cover boundary to Figure 1.*

- Line 150-165: It would be helpful to be a bit more consistent in your reporting of error. At lines 150-165 you begin by reporting 'expected' errors less than Xcm (Xsigma); but then you mention +/- X cm at line 164. Are the errors from the latter sensors not able to be characterised in the same way? *Response: In line 164, the ±0.3 cm and ±0.5 cm values reported for the Solinst Levelogger and Seametrics CT2X sensors, respectively, were manufacturer specifications rather than estimates of the total propagated uncertainty. To ensure consistency in the revised manuscript, we have removed this sentence and, instead, we now report an estimated upper bound of the uncertainty of 7 cm (1 sigma) for these observations. This value corresponds to the largest uncertainty among the five sensors and is therefore used as a common, conservative uncertainty estimate for this group of observations. The individual vertical accuracies reported by the RTK-GNSS solution are provided in Table A1. We also refer readers to Sect. 3.1.3 for a detailed description of the datum corrections and their associated uncertainties.*
- Line 250: This idea about truncation is a bit confusing – does this simply refer to areas that were not surveyed (i.e., did not have observations)? If so, then perhaps just clarify that other (comparable) sites outside of the study area may experience water level truncation as well? *Response: The truncation does not refer to areas that were not surveyed or to missing observations. Rather, it occurs when low water levels expose extensive intertidal flats in the vicinity of a sensor. Under these conditions, the sensor can measure the elevation of the exposed bed surface rather than the water level. Because the bed elevation remains essentially constant while the area is exposed, the resulting water level time series can appear truncated or flat for a period of time, until the rising tide inundates the area again. We have revised the manuscript to clarify this point.*
- Line 260-264: Define all depths for wave observations in text. *Response: We have added the water depth at each wave buoy location to the main text. These depths are also provided in Table A3, together with the buoy locations, operating dates, and GPS coordinates.*
- Line 275: Is this the standard sampling plan for AZMP wave buoys? Or customised to this site? Regardless, it should be explained why this sampling plan is used (i.e., to target specific wave frequencies that dominate this region?). *Response: Thank you for highlighting this point; the AZMP sampling protocol is uncommon for wave measurements and warrants explicit clarification. This sampling strategy is used across all sites to manage shared computing resources among onboard sensors, thereby limiting the data volume allocated for wave monitoring. Due to these constraints, a customized sampling scheme to reduce intermittency could not be requested. We have clarified this in the revised manuscript.*
- Line 305: It's unclear how wave calculations are conducted over 30min when they appear to be collected in 10min bursts (with 5 min gaps). Please expand on this. *Response: We agree that this was not sufficiently clear in the original text. We have revised the manuscript to explicitly describe the sampling and processing scheme: 'Bulk wave parameters were calculated from the average cross-spectral density of paired, consecutive 10-minute bursts recorded every 15 minutes, yielding an effective temporal resolution of 30 minutes.'*

- Line 311: is 'provenance' wave direction? *Response: Wave "provenance" refers to the direction from which the waves originate, whereas wave "direction" refers to the*

direction toward which they travel (relative to the buoy). In the revised manuscript, we specified that the wave's provenance is the angle taken relative to its sources.

Technical corrections

- Line 267: small typo – should be AZMP not AMZP. *Response: Corrected.*
- Line 274: perhaps add the specific wave buoys you're referring to here with these dimensions. *Response: To facilitate a more direct comparison between AZMP directional wave buoys and commercial standards, we categorized some recognizable brands (Sofar Spotter, Datawell Waverider series, NextSens CB series and Triaxys products) into compact (40-70 cm, 7-30 kg) and medium-duty (70-150 cm, 50-250 kg) size classes. The manuscript has been modified accordingly.*
- Line 276: small typo – 'a245 ' ? *Response: Corrected.*