

We would like to thank Reviewers 1 and 2 for the useful insights provided through their evaluation. Their comments have greatly helped us to improve the quality of both the manuscript (MS) and dataset.

## **Reply to Reviewer #2**

Following the reviewer's comments, the figures have been largely improved and the time-series are now discussed. In particular, there is a new section (and a new table 3) that describes the data variability and associated processes at seasonal and tidal time-scales.

### Replies to specific comments:

Valid probe data seem to be only available over a few months, especially during the first part of the time series. This should be quantified in the text. Table 1 could also include information related to the dates of good data availability, so that the user knows the periods to consider (there is more than one major data gap).

The new section 3.3 addresses the extent of useful probe and ADP data. This section is supported by numbers provided in the new figure 3 and Table 5. In addition, the new Table 3 gives the usual range of variation of the measured parameters according to various seasons (summer –winter) and river discharge conditions. The dates of good data availability are now easily found from the new figure 2 (we found it more adequate to represent good data availability with this figure than with a table, given the various distinct number of data gaps for each parameter).

If you zoom in on the time series plot, are there some drifts or bias in the salinity? Figure 3 from Garel and Ferreira (2011a) provides a temporal zoom. I am not sure about the nature of the increase in maximum salinity of October 2008 and May 2009. Salinity data validity is thus not obvious, and I recommend to have a more detailed look at the data. As mentioned by the author, biofouling and other factors could be responsible for bad data. I recommend to flag those salinity data as dubious or bad.

The salinity increasing in Oct. 2008 and May 2009 are induced by calibration inaccuracies. This is now better explained in the manuscript. Following the reviewer's comment, we have amended the validation procedure of probe data. For small pre-/post-calibration shift (mainly occurring with salinity and pH), the data are considered as valid. For relatively large increase (e.g., >1 PSU) or unusual variations, the data subsets are now flagged as ambiguous. In Section 4.2, we show that these ambiguous data can however be useful for analyses.

Probe outliers were discarded through comparison of each values with its 3 pt moving average, considering threshold values of 5°C for temperature, 5 PSU for

salinity, 10 for pH,  $0.2 \mu\text{g l}^{-1}$  for chlorophyll, 40 NTU for turbidity and  $100 \text{ mg l}^{-1}$  for dissolved oxygen.

Data quality is expressed as 1 or 0 flag in the ADP files and as "/" in the probe files. More international data quality codes should be used, with more values (good and bad is not enough, you may need to indicate if data are probably good or dubious, corrected,...). This way you could also put a dedicated flag for missing values.

The flags have been modified as follow. For probe: 0-invalid; 1-valid; 3-ambiguous. For ADP: 0-invalid; 1-valid; 2- affected by surface boundary/out of water; 3-accepted. Missing data are indicated with -999. A line with -999 is added when the time interval is not regular (time gap).

### **Technical corrections**

Figure 2 is too small to be read. Also, the time series should be synchronized and share the same time axis to be considered together.

Figure 2 (now Figure 4) has been largely modified; all the graphs have now the same time axis.

### **Author's changes in manuscript**

The English expression has been revised and polished; some trivial details were discarded while other important information was added. The organisation of the MS has been largely revised, with the addition of new sections. Given the large amount of modification through the text, we provide a .pdf version (without table and figure) where all changes are indicated in red (see "MS\*\_ChangesRed").

#### The main changes along the text are:

Section 3 (Data records and validation process) has been largely reworked. It now includes a description of the ADP, probe and river discharge records. Also, the validation process has been updated to include the new methods used for quality control. At last, sub-section 3.3 addresses the availability of useful probe and ADP data.

A new section 4 intends to make clear the variability of the measured parameters at both the seasonal and tidal time scales. We believe that such a description was lacking from the original MS. Note that for tidal variability, we have selected a period with ambiguous salinity data to show that these data can have coherent variations despite some high maximum values due to calibration inaccuracy.

The new section 5 gives information about data access, datafiles organisation, flags and missing values.

#### Tables:

All tables were revised, and 3 new tables were added:

Table 2 indicates the dates of probe maintenance. This information was previously included in the dataset. We prefer to discard it, since none of the reviewers mentioned its utility.

Table 3 indicates the range of variation of the measured parameters according to various seasons (summer –winter) and river discharge conditions.

Table 5 reports statistics of useful ADP and probe data.

#### Figures:

All figures except Figure 1 were modified. 2 figures were added.

- The new Figure 2 displays the availability of good ADP and probe data. Accepted and ambiguous data are also reported.
- The new Figure 3 reports the duration of valid combined ADP and probe parameters.
- The new Figure 4 shows the whole probe time series data (with dates of maintenance). ADP and river discharge data are also reported. Seasonal variability of the data is addressed based on this figure.
- The new Figure 5 presents a subset of the recorded parameters in order to discuss their variability at the tidal time-scale.