

Comment on essd-2023-198 by Anonymous Referee

General Comments

The authors present a long-term dataset of hydrological and dynamical observations in four atolls in the Tuamotu Archipelago (French Polynesia). These data are particularly precious and relevant as their combination represents the largest volume of oceanographic data collected for any atoll archipelago worldwide. Moreover, these observations are useful to address local pearl farming questions but potentially beneficial for other ecological, geomorphological, sedimentological and management applications. Hence, this study certainly meets the ESSD criteria for data availability.

The presentation of the study sites, sampling strategy and instruments is very detailed even if some inaccuracies are present (as detailed below).

A figure based on available referenced literature characterising the hydrodynamic characteristics of each atoll in the study area could be functional to the manuscript. This could also be useful to better understand the described observational strategy.

As regards data quality no reference is made to possible intercalibration of instruments also considering concomitant performed oceanographic cruises.

In general, only few data with some basic descriptive interpretations are shown and provided in the Result Section. The authors state that detailed publications will follow, while the present manuscript is more focused on the presentation of the data, in line with ESSD journal. Nevertheless, more results and complete time series could be shown in a dedicated Appendix.

Specific Scientific Comments

Line 79: please add Reference to the GEBCO bathymetry both in the main text and in the Data availability Section.

Line 163: please add Reference to Sentinel-2, European Space Agency (ESA) both in the main text and in the Data availability Section.

Line 187-188: please add Reference to Météo-France weather station and ERA5 reanalysis data.

Line 254: “Acoustic Doppler Current Profilers (ADCPs), current profilers, drag-tilt current meters, temperature and depth loggers and temperature Sensor.” instead of “ADCPs, Aquadopps, Marotte HS, RBRduet T.D and SBE56”.

Line 291 - Figure 4: Please also add in the caption of Figure 4, the meaning of O1, H1, L5 and so on. What about Workhorse installation reported in Table A1 for this site? If ADCP stands for Workhorse please detailed as ADCP Workhorse and ADCP Aquadoppp in legenda. The same applies for Figure 5, 6 and 7.

Line 314 - Figure 5: Please also add in the caption of Figure 4, the meaning of L1, L2 and so on.

Line 340 - Figure 6: Same as above.

Line 356 - Figure 7: Same as above.

Table A1 page 24 Please correct “Teledyne RDI Workhorse Sentinel” instead of “Aquadopp Workhorse”. Furthermore, it is not clear which model you are referring to here (Sentinel V50 or V20 or ???) These instruments are not reported in the main text / “Instrument Depth (m)” instead of “Depth (m)” Please also add information about Water Depth per each station.

Table A1 page 24: Please add information about Data Range, resolution and accuracy for each instrument.

Line 456: “Current meter profilers (Sentinel and Aquadopp)” instead of “Current meter profilers (ADCPs and Aquadopp)”. As the Aquadopp is an ADCP itself.

Line 472: Throughout the manuscript you refer to concomitant oceanographic cruises. Have you also performed an intercalibration of the instruments installed at each station, taking advantage of hydrographical casts? Please show results or comments on this.

Line 485: “Figure 9B shows the temperature differences between Rarioia lagoon and the ocean, for stations O1 and L5 (Figure 4)”. This is not in line with the caption of Figure 9b. Please correct where needed.

Line 519: “Figure 10 shows current intensities ($\text{m}\cdot\text{s}^{-1}$) and directions (degrees)” Please use correct SI units and notation here and in Figure 10 (i.e., $\text{m}\cdot\text{s}^{-1}$ and $^{\circ}\text{N}$).

Technical Comments

In general, along the entire manuscript, please consider that the symbol for the unit shall be placed after the numerical value in the expression for a quantity, with a thin space between them, e.g., 12 m, 10 $^{\circ}\text{C}$.

Line 26: “in the frame of ANR-funded MANA” instead of “in the frame of ANR MANA”.

Line 38: “between July to October 2022” instead of “between July to October”.

Figure 1: Please use lowercase letters (a, b,c...) to label parts of the figure (both in the image and in its caption).

Line 38: “It consists of five archipelagos (Figure 1b)” instead of “It consists of five archipelagos (Figure 1)”.

Line 91: Please cite as “Andréfouët, S., POLYPERL cruise, RV Alis, <https://doi.org/10.17600/13100050>, 2013”.

Line 103 and Line 109: “the MANA project” instead of “the ANR-MANA project”.

Line 106-107: See the above comment.

Line 131: “ENSO influences” instead of “ENSO influence”.

Line 234: “The MANA observational strategy objectives is integrative of all the aforementioned” instead of “To summarize, the MANA observational strategy objectives is integrative of all the aforementioned”.

Line 360: “**4 Oceanographic instruments**” instead of “**2 Oceanographic instruments**”

Line 361: “Each sensor deployed in various atolls was” instead of “Each sensor deployed in various atolls were”.

Line 388: “up to 40m” instead of “until 40m”.

Line 393: Please put the acronym in parentheses after the full term the first time you use the term (i.e., at Line 254 instead of Line 393).

Line 394: “to measure the water column up to the sub-surface” instead of “to measure the water column until the sub surface”.

Line 413: “ADCPs from Nortek (i.e., Aquadopp Profilers)” instead of “Aquadopp Profilers from Nortek”.

Line 434: “the MANA deployments shown in Figure 3” instead of “the MANA deployments shown Figure 3”.

Line 464: “entire time series” instead of “entire time serie”.

Line 520: “The ADCP was moored at 17 m depth” instead of “The ADCP was moored by 17m depth”.

Line 533 - Figure 10: Please use lowercase letters (a, b,c...) to label parts of the figure (both in the image, in its caption and in the main text). Furthermore use “time series” instead of “time serie”.

Line 541: “(mid-July 2022).” instead of “mid-July 2022).”

Line 635: “2012a” instead of “2012b”. And so in the main text and for the following references/main text. In general, for co-author papers consider the ESSD rule: “first alphabetically according to the second author's last name, and then chronologically within each set of co-authors. If there is more than one paper in the same year per set of co-authors, a letter (a, b, c) is added to the year both in the in-text citation as well as in the reference list”. So, the first reference should be letter “a” in the reference list and then followed by “b” and so on.

Line 707: “DRM (Direction des Ressources Marines):” instead of “DRM (Direction des Ressources Marines).:”