

**Reply to comment on [essd-2023-230](https://doi.org/10.5194/essd-2023-230) (https://doi.org/10.5194/essd-2023-230-RC2) by an Anonymous Reviewer.**

We extend our appreciation to the referee for the constructive feedback and insights pertaining to our research. We provide a point-by-point response (R) to the reviewers' questions (Q). :

**Comment 1:**

Q: In the description section of the monitoring stations, can you report if the support for the phone is anti-vibration (in case of wind)? If not, are the images acquired with wind then eliminated from the dataset?

R: The cradles for the bases have been constructed using 6mm grade 316 stainless steel, known for its exceptional durability. These cradles have been securely anchored to pre-existing infrastructures (Cies, Agrelo, and Cadiz), ensuring their fixed maintenance. For the remaining two bases in the Balearic Islands (Arenaldentem and Samarador), wooden posts measuring 1.10-1.20 meters in height were installed. These posts are firmly attached to metal anchors, which in turn are secured to the rocky substrate using galvanized bolts. This robust setup guarantees the stability of the bases, even under conditions of strong winds. Nonetheless, all locations undergo periodic reviews to execute essential maintenance tasks and preserve the installations' initial condition.

Additionally, during the registration process of the images to a fixed target image, any minor deviations are corrected. As a result, the removal of images has not been necessary due to wind-induced vibrations. Instead, removals have been attributed to the utilization of zoom, filters, or incorrect positioning during photo acquisition by users.

To enhance clarity on the cradle designs, we have introduced several clarifications within Section 2.1 titled "Study sites and CoastSnap station settings." The text revisions have been inserted between lines 93 and 95 of the document, as outlined below:

*"A thickness of 6mm was selected for the grade 316 stainless steel used in crafting the CoastSnap bases. These bases have been securely affixed to existing infrastructures or dedicated wooden posts bolted to rocky substrates, ensuring their stability and preventing any movement."*

**Comment 2:**

Q: In the section of the image processing, could you indicate whether these GCPs are located in "fixed" positions/locations(e.g. rocky outcrops, man-made structures, etc.)

R: Thank you for your input. We have included a brief explanation in the main text at the conclusion of the "2.1 Study Sites and CoastSnap Stations Settings" section, following the description of the number of points measured at each station. Now in lines 140 to 144 as follows:

*"All GCPs selected for this study correspond to fixed points that are easily distinguishable within the target image. These GCPs encompass various types of features, including natural elements such as rocks and outcrops, as well as man-made structures like houses and maritime or beach infrastructures. This careful selection of identifiable and well distributed GCPs contributes to the accuracy and reliability of image analysis processes."*

**Comment 3:**

Q: Please, could you better describe the procedure for calculating the tidal offsets. In my opinion it is not clear how the correction takes place.

R: Thank you for your input. We have included additional sentences in the main text to clarify the offset calculation process. We have revised the text in the main document's 2.2.1 Data Collection section as follows, in lines 166 to 175:

Previous text:

*Due to the absence of local tide gauge at the beach, local tidal offsets were calculated for each beach by computing the difference between the in-situ measurements obtained using GPS RTK-GNSS and the corresponding tide gauge records for the same time. The validity of the obtained offsets was subsequently established by cross-checking these in-situ tidal elevation measurements against the corresponding tidal elevation value of the timely-closest available CoastSnap image (Fig. 3).*

New text:

*"Due to the absence of a local tide gauge at the beach, we determined local tidal offsets for each beach. This was accomplished by comparing the in-situ measurements acquired using GPS RTK-GNSS with the corresponding records from the tide gauge for the same time period. Tidal height measurements on the beach were obtained simultaneously while measuring the waterline using GPS RTK-GNSS, aiming to cover various meteorological scenarios, including both high and low-pressure systems, as well as varying wave conditions. The differences between the two datasets were calculated and averaged by site. The accuracy of the determined local offsets was later confirmed by comparing for the same dates, these shoreline elevation measurements ( $Z_{GNSS}$ ) with their corresponding estimated tidal values ( $Z_{Tide} + \text{tidal offset}$ ) used as the CoastSnap shoreline elevation (Fig. 3)"*

**Comment 4:**

Q: In the section of potential application, can the presented tool be also useful for measuring and characterize in morphology the banquette accumulations (*Posidonia* berms) along Mediterranean beaches? If the authors suppose that the presented tool are suitable for that, a brief description may be provided.

R: We appreciate your input. While the proposed application is certainly thought-provoking, it does not constitute the primary focus of this study. Our main objective is to present a comprehensive dataset of the coastline, accompanied by a thorough explanation of the procedural methodology employed in its creation and its potential uses or applications. Addressing the concern raised by the Reviewer would require not only the coastline dataset as provided, but also the related oblique images used to derive the shorelines. However, including these images in the dataset is not feasible due to privacy concerns involving beachgoers. While we will take the Reviewer's suggestions into account for potential future research, it's important to emphasize that the current dataset's state does not allow for such an implementation. This possibility extends beyond the scope of the current data paper