Biogeosciences Discuss.,
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Biogeosciences
Discussions

Interactive comment on "Chemical characterization of Punta de Fuencaliente CO_2 seeps system (La Palma Island, NE Atlantic Ocean): a new natural laboratory for ocean acidification studies" *by* Sara González-Delgado et al.

Anonymous Referee #1

Received and published: 24 August 2020

1. GENERAL COMMENTS (overall quality)

This study provides a novel and comprehensive description of a location resembling future water chemistry conditions, as expected under ocean acidification scenarios. The authors provide a valuable dataset of measured and estimated parameters in seven sites, along the south of La Palma island, located in the North Atlantic Ocean. It is very interesting the explanation the authors provided about the origin/source of these acid-

ified waters, also the discussion of the community assemblages inside the lagoons, where conditions behave different from coastal waters.

2. SPECIFIC COMMENTS (individual scientific questions/issues)

Abstract: in the same way the authors presented the CO2 emission flux range in this section, it is advised to include the general range of measured and calculated parameters. This provides the reader with a general overview of the chemistry conditions in this location. - Please specify whether omega aragonite and calcite were measured or calculated.

Keywords: consider removing the word "area". Also, including the word "groundwater" to the list.

Material and methods:

- Was the VINDTA a 3C? If yes, please specify. - Authors are advice to include further details regarding water sampling and handling: sampling procedure (Niskin, SCUBA, etc), sampling containers for AT, CT and salinity (type of bottles), total number of samples (N per site, period, etc, consider present a summary of this information in a table as Supplementary material), samples fixed with HgCl2?, storing conditions. - There is no mentioned in this section of how they obtained the atmospheric CO2 values. This should be clarified.

Results:

- The authors indicated they found important differences between tides. This is an important finding, in agreement with results previously reported by Manzello (2010) in a shallow tropical coral reef, therefore, the authors could include an additional graphic representation of it as supplementary material (box plot, scatter plot or other). - The authors indicated that "Los Potreros, is a continuation of Playa del Faro", however, according to Fig.1 Los Barqueros is located between these locations.

Figures:

- It's unclear, what it is the purpose of the dashed-line square in the figures? In Figs.2, 4, 5 is used as division for different sites but in Fig. 3 represents a tide difference. The authors should try to standardize the use of this element among all figures and also be clearly indicated in the caption. - Fig.1: caption must include a description of the figures in each panel. - Fig.1: in order to facilitate reader's interpretation, ID letters from panel b and c should coincide. Currently, there is no clear whether the authors tried to make these panels complement of each other. For example, when interpreting the left map from panel c based in color/letter code (using yellow mark as reference to Playa Echentive), it seems there is a mixed up (the stars should be Lagoon1 and Lagoon 2, but currently are marked as Playa del Faro + Lagoon 2). Authors should carefully review the ID letters/colors from panels b and c. Another suggestion it's to merge both legends, by including the color code next to the letter in the legend from panel b. - Fig.1, Fig.5: it's unclear to which sampling period corresponds the panel "High tide". The authors should consider including tide initials (LT, HT) in all the panels/figures, maybe next to the sampling period title, and indicate it in the caption description. - Fig4: low and high tide labels are missing in the figure panels. - I would rather to see the order of the figures arranged by parameters. For example, move up Fig.5 after Fig.2, so all pH figures are shown together. This would facilitate following the figures, specially considering that arrangement per site does not follow the same order in all figures (Fig. 2 = Playa del Faro + Los Potreros but Fig. 3 = Los Potreros + Echentive Laggon 1, etc). - Fig. 8: caption requires minor modifications. "Selected" instead of "Select" and "Purpose" or "proposal" instead of "purpose".

3. TECHNICAL CORRECTIONS (typing errors, etc.)

- General: values <10 must be written in letters. - Line 20: start new sentence with "This". - Line 30: move "Since the last decade" to the beginning of the paragraph. Otherwise, it seems that you are referring to the effects exclusively taking place during the last decade. - Paragraph 50: replace "are" by a "," and move "are" in front of "an oceanic". - Paragraph 55: add "," before "which". - Paragraph 70: last sentence, add

"," before "what", and close the sentence with "?". - Paragraph 80: "were" instead of "where". - Study area: figures within the text are not mentioned in sequential order (1c comes prior 1b). Authors must either a) modify the order of the sentences in the text or b) exchange the panels order in the figure (swap 1b by 1c). - Line 100: "culometric" is missing an "o" after the "c" (typo). Tittle of Dickson's manual is incorrect. - Paragraph 105: remove "with" after "data using". - Paragraph 115: "during the last eruption" instead of "of the last eruption". - Paragraph 130, 240: use the same amount of decimal positions when reporting values (pH 8.0, omega calcite 5.0). - Paragraph 160: add "up" before "to". - Paragraph 165: "data only from" instead of "data from only". - Paragraph 190: add "," after "therefore". Remove "was" after "water"? - Paragraph 230: replace "a" by "an" before "unique". - Paragraph 240: remove "the" before "shore". - Paragraph 285: remove "s" in "predicts".

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