We want to thank Reviewer #2 for their convenient comments and suggestions, which helped to improve our manuscript. Discussion point by point and explanation of main changes can be found here.

Reviewer 2

*I would also suggest alterations to some of the figures. It makes more sense to me to group figures by station, instead grouping both stations together for each variable. For example, I kept flipping between all the figures to compare variables at one station. It would be easier to interpret if all variables were plotted next to each other for a station, if that is possible. For me, it is less valuable to have the data from the two stations plotted next to each other. Also, I suggest changing the color scale/greyscale on figures 6 and 7 because similar shades are impossible to distinguish from one another.*

We have kept Fig. 3 as it was (comparing total abundances and % between stations) so it illustrates the discussion, in which differences and similarities between stations are discussed. The rest of the figures have been altered so species distributions are plotted by stations as the Review suggests. Discussion about diversity has been deleted so Figure 6 has been deleted too.

*3.2 Coccolithophore analysis: How many total cells and/or field of view were quantified per sample? The authors refer to the confidence limits based on the number of species-level counts. What were these? What was the confidence level of the total coccolithophore count?*

Samples were counted considering 500 coccoliths per sample, and all the coccospheres encountered during that process were considered as well. The total number of identified coccospheres ranges from 100 to 300 per sample. We refer the reader to Fatela and Taborda (2002), where Fig. 2 can be used to calculate confidence limits. Based on this, we know that a species with just 2% of relative abundance in the sample can be detected at a confidence level of 100% in a counting based on 500 coccoliths. For coccospheres, the confident limit is ranges from 90% to 100% in a count ranging from 100 to 300 coccospheres.

This information relative to confidence levels of both coccosphere and coccolith counts has been added to the new version.

In any case, and in order to infer ecology of coccolithophores, we use and interpret in this new version the coccosphere data set. We still present and interpret the coccolith data set to provide additional information on other matters (i.e. resuspension events).

*Diatom analysis: Zuniga et al 2017 citation does not have year in reference list.* Corrected.

*How many total diatom cells were counted, and what is the uncertainty associated with these counts? This does not appear to be presented in Zuniga 2017.*

At least 500 diatom cells were counted in each sample. Therefore, species with just 1% of relative abundance in the sample can be detected with a confidence limit of 99.5%.

*Statistical analysis- Were these analyses performed only on the coccolith data? If so, the language needs to make this clear. For example, is n the total number of individuals, or total number of coccoliths? What affect might diversity in coccolith production among species have on equating coccoliths with community composition? I would like to see some discussion of this. Is it common to use coccolith composition as a proxy for species composition? Does coccolith composition accurately reflect species composition? Reference to equation 2: is this your equation 2, or are you referring to an equation 2 in Hammer et al. 2001? The equation syntax is unclear. If the calculation is made by adding the squared fractional abundance of each species, shouldn't this be represented by a sigma symbol?*

*We have gotten rid of Diversity analyses since they did not provide too much information and in any case we did not need them to support our interpretations.*

*Results: 4.1 Environmental conditions: Why is phosphate the only nutrient reported?*
*Nitrate and silicic acid have a much larger impact on coastal production, and are likely important in determining coccolithophore growth or their ability to competition with other phytoplankton groups.*
*Coccolithophores utilize phosphate and nitrate, but not silicic acid. We did not plot nitrate for two main reasons:*
*1.-All nutrients were considered in the initial variable selection prior to CCA, as stated in the text, but variable selection only pointed at* $HPO_4^{-2}$ *as being significant to explain coccolith variability, and rejected* $NO_3^-$, (and also $Si(OH)_4$, although this was expected)*. Therefore, we preferred not to show data that was not going to be included in the discussion.*
*2.-Nitrate shows the same temporal and spatial variability as phosphate, although different absolute values.*
*In any case, Nitrate has been presented now for those readers that might wonder about its distribution and concentration.*

*4.3 Coccolith absolute abundance Line 24 "suggesting that their disaggregation takes places right after the cells die"- I would not expect to find many suspended coccolithophores (or any other phytoplankton) in 2-5 L of seawater collected below the euphotic zone/mixed layer. This does not necessarily mean that cells "disaggregate" right after they die, although it is a possibility. By disaggregate do the authors mean lose their coccoliths? The terminology is unclear. Intact coccospheres are probably mostly transported below the euphotic zone in larger particles, which were not sampled in this study. Alternatively, intact coccospheres may sink below the mixed layer at specific times of the bloom cycle that are unlikely to be resolved by monthly observations. Either way, I don't think this study can really resolve the fate of coccospheres due to the sampling methods used (i.e. filtering small volumes of seawater). Line 30 again refers to disaggregation. Is this a common term when referring to coccolithophore cells? Cells are not aggregates. To me, disaggregation involves organic particles like marine snow. What do the authors mean by "mature" when referring to a bloom? Is this the bloom peak, or the decline? More precise language would be helpful.*
By "disaggregate", we mean the coccosphere, which is composed by imbricated coccoliths. We made clear in the text that is the coccosphere the one that disaggregates in coccoliths, not the cell itself, although this is a common term when referring to coccospheres. By mature we mean "in a developed stage", although this term is no longer used in this new version.

*4.6 Diversity: Dominance figures: I cannot distinguish the difference between 50, 100, and 150 grey tones. Also, 250 and 300 m both appear to be black to me. Cannot see a clear or consistent relationship between dominance and depth, although it may be obscured by the similar grey tones. In many cases, the deeper depths have higher dominance than the shallower samples, opposite of statement page 7, line 29.*
This figure is not needed anymore and has been deleted.

*4.7 CCA: How was upwelling index incorporated into this dataset? Was the index number from the day of sampling used, the week-long cumulative value, or a monthly average? A randomly selected value on any day of the month wouldn't necessarily reflect the time scale or ecologically relevant physical processes. These probably occur on a weekly time-scale (I think, though I am not familiar with that specific system). Similarly, how were wave-height and river discharge data incorporated? These influences leading to the community sampled that day.*

Initial upwelling data consisted on 4 measurements per day (each one every 6 hours). The final data incorporated in the CCA was the mean value for the 4 measurements of each corresponding sampling day. For river discharge, only one measurement per day was available, so the corresponding value for the specific sampling day was the one included in the CCA. Initial wave-height data consisted in 24 measurements per day, one measurement per hour. Similarly to the upwelling index, the average for the sampling day was calculated and incorporated in the CCA.

In a previous exploratory analysis, we calculated the mean values of each of the studied variables for 3 days (two days before the sampling day), and also for 5 days (4 days before the sampling day). CCA for both 3-day and 5-day data set explained much less variance in the coccolith data set. Considering this, along with the evidence in literature that supports that coccolithophores respond rapidly to the environmental changes in this region and elsewhere, we decided to use the 1-day data set (sampling day).

*Why is March characterized as "upwelling"? According the figure 1, the water column appears similarly mixed/mixing as February. I am confused by what could cause the CCA second axis, where upwelling index forcing is on the negative axis and water temperature on the positive, even though water temperature is highest during the months classified as "upwelling". The major separation of samples along this second axis seems to be primarily defined by the February-March period when the water column was well-mixed and surface waters were cold.*
This is because during the sampling day corresponding to March there was upwelling, while this did not occur during February. Despite similar conditions in the water column can be observed for both months, they were caused by winter mixing in February and by upwelling in March. What it is plotted in figure 2c is –Qx (- Upwelling index), this is now indicated in this new version.

*Regarding the placement of Syracosphaera on the ordination, its variation does not appear to be explained by these axes, so there is little you can say about it. The ordination does a good job explain variation between the others though.*
Indeed, we could not say too much about *Syracosphaera* based on the ordination. However, the new CCA performed using the coccosphere data set relates this species with higher salinity and temperature, something that might be indicating its preference for the subtropical ENACW carried by the ICP in autumn, (and not necessarily for higher temperature and salinity *per se*.) This is now discussed in the new version.

*Discussion 5.1 The title of this section should be changed to reflect the abundance measurement that this study is based on, since productivity was not measured. 5.1.1*
Changed
*Line 4: Is there a citation for this statement ("no vertical flux of coccoliths nor coccospheres is observed at those times")*
There is not, because this is based on what we observe on Figures 3d. (i.e. no coccoliths nor coccospheres presence above 75 m that could explain this maxima at 70 m by in-situ production).

*Line 16: I think the wording in this sentence should be changed, since productivity was not measured.*
*5.1.2 Line 19: Again, should refer to abundance, not productivity.* Changed.
*Line 20: "donwelling" typo.* Corrected.
*Page 10, line 15: "Yet, our outcomes highlight that both species are unambiguously linked to the upwelling regime and high primary production." Again, since production was not measured, there is no direct link to production in the dataset presented.*
This statement is based upon the assumption (which in turn is a well-known fact for this region) that upwelling periods in the study area are linked to higher primary productivity. Still, we are aware that we did not measured primary productivity and that is not entirely correct to establish such a direct link between these two species and higher PP at the daily time scale. Nevertheless, this statement is made in the context of the use of fossil coccoliths of these species preserved in marine sediments as paleoenvironmental indicators. At the temporal resolution that marine sediments offer, increases in these two species would indicate persistent upwelling conditions and therefore it can be expected and assumed that productivity was higher at those times.