Response to referees: These are duplicates of the responses posted online.

Reviewer 1:

Thank you for reviewing the paper. Please find our response to your comments.

(1)This manuscript is too long. It is hard to find the key points in the whole MS.

This paper is an admittedly long paper, and thus we made an attempt to break it up into a number of sections. This length is a result of two aspects: 1) We wanted to fully describe the cruise; and 2) our desire to discuss the temporal nature of aerosol events in the South China Sea region. As for 1) there was not enough there for a mission this small to let it stand on its own. It is hoped by adding length here on how the cruise period fit into the SW Monsoon system (Section 3), we would save time and space in space in subsequent papers. Section 4, on the time series, is really a separate part of the paper. We had to decide at what timescale we stoped, and defied the squall lines/cold pools made a good breaking point. And even here we looked at only one case in detail. Finally in the discussion section, we were faced with the issue of why did these events really happen, and how did it covary with convection. In the end, for completeness, we were stuck with the paper the size that it was.

To help with the keeping track of key points, when this is in revision we will have the benefit of several months of time to revisit the paper. We will do our upmost to bring key points to the forefront. Likely, we will add two to three sentence Précis to sections and subsections to keep the reader on track.

(2) The key areas of sampling are close to the islands. Do the human activities and biomass burning on those islands strongly influence on the measurements? If it is true, the observations may not be reasonable for interpreting the large-scale aerosol

For the research cruise we were in the vicinity of islands to provide a safe anchorage for the sometimes high waves. However, as described in the paper, we selected our anchorages carefully to ensure that we did not have any local contamination. We always had a clear breeze from the southwest monsoon without any land immediately upstream. The ship naturally weathervanes into the wind, thus we ensure sampling over the bow. Given further that all aerosol chemistry was sampled on the bow mast, there was no chance of self-sampling from the ship. For the CN and PCASP, which did have a center mast inlet, we had the advantage of measuring from the top mast. When we self-sampling due it was obvious-with particle counts in the 10,000+ range. The one period where we know to have local sampling was when we were in Limenanko harbor. We debated if we should include this data in Figure 7, and finally thought it provides a good maximum local contamination case and we left it in. But from a time series analysis point of view, we do not discuss this data period.

(3)Lack of detail description on how to rule out the data contaminated by ship emissions.

As mentioned above, this was pretty straightforward for this mission to exclude cases of self-sampling. One area of "ship emissions" that did appear from time to time was that of ships passing upwind of us. These signals were very short in length (~1 minute long) and easy to remove from the time series analysis presented here. For chemistry contamination sampling was such a short duration we don't believe it impacted our analysis. But, we are interested in these stochastic aerosol sources scientifically, and are a subject of a forthcoming paper.

(4)Most of data displayed in Fig. 7, such as "NAAPS total fine mode particle mass segregated into Anthropogenic (+Biogenic) fine mode and biomass burning"and non-sea salt PM2.5, are estimated or modelled. How accurate are these data?

When you say "Most" the only thing that is "estimated or modeled" is the NAAPS model. As for accurate it is, Figure 7 speaks for itself, that NAAPS successfully modeled the time series, although with a high bias. This high bias in mass we expect is an artifact of a low bias in hygroscopicity effecting data assimilation. On the chemistry side, the data is quite accurate, nominally uncertainties are less than 25% for the worst cases as we report in section 2. Non-sea salt PM2.5 is a gravimetric PM2.5 number with a simple subtraction of sea salt based on sodium content. This is quite quantitatively accurate. As mentioned in section 2, and is a subject of a forthcoming paper on chemistry, reproducibility between individual chemistry measurements was quite good.

Reviewer 2:

Response to Referee #2.

Thank you for taking the time to review this lengthy paper. We have tried to add discussion as suggested where possible. In regard to chemistry and direct aerosol impact comments, we have ongoing efforts that will result in forthcoming publications.

Comment 1 “If possible, authors could provide the detail interpretation to address the effect of aerosol in this issue for clarity.” I interpret this comment as asking can we assess the role of aerosol particles in these periods of drier weather. At this stage, can only hazard hypotheses- although we have a modeling study underway to ascertain if aerosol particles have any role in modulating precipitation amount or type. The point here, which we now emphasize, is that the aerosol effect clearly has a covaying metrological component that hinders apples to apples comparisons.

Comment 2: “During the ambient sampling periods, the significant biomass burning events were observed in the research area. In addition to the MODIS+MISR data presented in this study, are there any results regarding the chemical or components analysis of sampling aerosol can be discussed in the study?” There is. As we pointed in discussion associated with Figure 7 there are indeed chemical markers for biomass burning. Originally there was a longer discussion, but this was pushing an already long paper. Nofel Lagrosas will be submitting a paper by the end of the year on the detailed chemistry of the mission, including elemental particle and gas can VOCs.

Comment 3:” 3.In this study, the implications for aerosol, cloud, and precipitation interaction were further evaluated. The potential for confounding studies is also significant. Aerosol injections into the SCS/ES regions were clearly modulated by this research. However, regarding the effect of the climate change and extreme weather event related to this study. Could authors provide more interpretation and information to address this issue?” We have added further to the discussion section to link these findings to other aspect of regional climate change. Indeed, the aerosol component of climate change is one part of an interrelated process.