

The manuscript studied the distributions of dicarboxylic acids, oxocarboxylic acids and α -dicarbonyls in marine aerosols during a cruise from 10 March to 26 April 2015. The cruise area is over South China Sea to East Indian Ocean. There were many samples collected, and the analysis were based on four regions, SCS, EIO-WI, EIO-SL, and SLDP. Through the different concentrations and ratios of dicarboxylic acids, oxoacids and α -dicarbonyls, their sources and possible formation pathways in each studied region were discussed. The work in this manuscript is very important. However, the article still needs to be major revised and then can be published on Atmos. Chem. Phys.

Major Comments:

1. The main meaningful was not very clear during the part of Introduction. The author should give more discussion about this cruise especially the important of this studied area in the Introduction.
2. There are many analyses and data in the manuscript. It is very difficult for readers to understand the information present in the article because of the illogical.

Part 3.1.1 Dicarboxylic acids:

There are many discussions about C9 in paragraph 4, 5, 6, 7, and discussions about Ph in paragraph 5 and 8. The whole part of 3.1.1 is very illogical, and I can't catch the important point and main results. The author should analysis the main connection between these dicarboxylic acids and different areas, give more clearly analysis. For example, form the analysis in the manuscript, the most important dicarboxylic acid is the C9 which have relation with C2-C4, C6, and Ph. The author can put these results together and give the discussion, then give the main point of these results.

Part 3.1.2 Oxocarboxylic acids:

The meaning of oxocarboxylic acids in the secondary paragraph should be discussed firstly in this part.

Part 3.3.1 Diagnostic mass ratios:

The data of C3/C4, C2/C4, C2/ Σ (C2-12), and M/F can give the information of organic aerosols aging. And they can be put together to give the discussion which can be more clearly.

Part 3.3.2 Linear correlations:

This part can be put in the supporting information, the authors just give the result when other parts need to be supported. For example, line 443-446.

3. The authors just compare their data with references, but the discussions are not enough.
Line 158-159, Line 161-164, Line 220 "Oxoacids showed a predominance of ω C2 or ω C3 in five sampling areas (Fig. 3)." Line 221-224,
4. There are many repetitions in the article not only the example below.
The sources of C9 and the relation of C9 with other carboxylic acids were discussed repeatedly in part 3.1.1.
Part 3.3.1, the meaning of C6, Ph, MeGly, Gly, Pyr, Isoprene has been given in the former part, delete the repetitions.

Minor commets:

Line 254 "C10" to "C12".

Line 386 delete "isoprene and/or aromatic hydrocarbon oxidation products".

Line 287, "It is worth noting that both C3 and C4 acids show a net loss..."

Line 202, delete one "that".