

## ***Interactive comment on “Tracer-based investigation of organic aerosols in marine atmospheres from marginal seas of China to the northwest Pacific Ocean” by Tianfeng Guo et al.***

### **Anonymous Referee #3**

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The manuscript of Guo et al. focuses on quantification of primary and secondary organic tracers in total suspended particles over the Yellow and Bohai seas (YBS) and the South China Sea (SCS) collected both in 2014, and the northwest Pacific Ocean (NWPO) collected in 2017. The authors focused on the long-range transport impact to the marine atmosphere in spring during East Asian monsoon season. Thus, the influence of continental BB aerosols in marine atmosphere was studied and the contributions of different precursors to the observed SOA were quantified using specific tracers. Also SOA formation pathways in marine atmosphere have been discussed and related to the literature data. It is high quality work focusing on organic aerosols from remote marine areas which are rare compared with continental ones.

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Major comment: Major comment is related to the fact that this study presents a snapshot situation at particular marine areas and it is hard to distinguish how representative they are for general conclusions. With that in mind, the discussion and conclusions related to the SOA change in recent decades are questionable. This is especially addressed to the continent-derived BB aerosols affected by accidental intensive open-fire events and or specific meteorological conditions. Long-term study is needed to enable conclusions on increase/decrease in contribution of continental-derived BB aerosols to remote marine areas (L17-19; L152-154; L434-443). Despite the authors did great effort to support their discussion with the relevant literature, conclusions arising from there should be done more carefully since the authors compare a snapshot situation. Authors should comment on that and/or all general conclusions related to above should be avoided.

#### Minor comments

Line 153 Add ...as a reference (Table 1),... L161-L163 Remove –samples- from the sentence or rewrite L181 Change –surprised- with to surprise or surprising L205 I suggest to rewrite the first sentence in figure caption, it is unclearly written L212 Replace NWPO with SCS

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