

Here are a list of comments from the editor:

1. Page 3, Line 1. “thermodynamic effect”. Please give one or two references for this effect. Line 3. Does “contact nucleation” really belong to secondary ice production? In my opinion, this mechanism belongs to primary ice production.
2. Page 3, Line 19. “aerosol alterations of cloud liquid properties”. I don't think that this statement is precise. Aerosol induced reduction of ice nucleation rate, as one of the main reasons for the changes of IWC claimed in this study, is not actually related to the alterations of cloud liquid properties.
3. Page 6, Line 16. “...in mixed-phase clouds that are saturated with respect to both liquid and ice”. It is unclear whether you are investigating mixed-phase clouds saturated with respect to liquid or ice? In the next sentence, you are using the relative humidity with respect to ice to clarify the mixed-phase clouds.
4. Page 11, Line 19. “an increase in the ice crystal size distribution”. What do you mean for this? Increase in geometric mean size?
5. Page 14, Line 9. “...which is likely due to the seasonal dependence of the cloud sampling (Fig. 7)”. There is no information shown in Figure 7 of the seasonal dependence of the sampling. It is interesting to note that the polluted clouds tend to be a few degrees colder than clean clouds. This will result in more ice production and higher ice number. What is the implication of this for the IWC differences between polluted and clean clouds? Please discuss.
6. Page 15, Line 6. “Given the similarity between RHi levels and the minimum temperatures for clean and polluted clouds within each LWP bin,” However, the minimum temperatures are actually quite different between clean and polluted clouds within each LWP bin.
7. Page 16, Line 8. “between cloud types”. This is first time in the manuscript that “cloud types” is mentioned and it may cause the confusion. Do you mean that polluted and clean clouds belong to different cloud types?
8. Page 17, Line 10. “SO₄⁻ sulfate”. Remove “SO₄⁻ “.
9. Page 20, Line 15. “cloud phase composition”. What do you mean cloud phase composition? Phase partitioning or cloud phases (then remove “composition”)
10. Page 21, Line 7 in Table A1. What is the unit of Si=2, 10? Shall add “%”?