***Anonymous Referee #2***

*The revised manuscript is much more focused on the improvement in agreement between simulations and observations, which has a more solid foundation than the previous discussion of climate estimates. In particular, the discussion of delta-H clarifies a lot and helps. The one revision that I would insist on is that, somewhere in the paper - be it in section 2.2 or at the end of section 3 - it should be stated explicitly whether the modified Riccobono et al. parameterization is the ONLY mechanism included in the model set-up. If so, it should be clarified that the model may respond unrealistically strongly to changes in the nucleation rate as a result of atmospheric saturation when all mechanisms are present. If non-organic nucleation is also present, it may compensate for changes in the organic nucleation rate, particularly when it comes to slow-growing CCN particles.*

We thank the reviewer for further comments on the revised manuscript. We took the referee's advice and have included the following clarification at the end of section 3:

"It is noteworthy that the present model simulation only considers the Nucl-Org parameterization. While this enables us to show more unambiguously the effect of T-dependent correction, it may overestimate the sensitivity of CCN to changes in the nucleation rate as a result of atmospheric saturation when all nucleation mechanisms (including non-organic nucleation) are present. Further simulation including all individually verified nucleation mechanisms is needed to evaluate the sensitivity of global CCN to uncertainties associated with various nucleation parameterizations."