

The authors would like to thank the reviewer for the helpful comments. Our replies to the comments are given below, with the original comments in black, and our response in blue.

F. Yu and co-workers have developed lookup tables for quickly and efficiently obtaining new-particle formation (“nucleation”) rates based on Yu’s 2018 model, which includes H₂SO₄, NH₃, H₂O and ions. This is a very useful tool for researchers in the atmospheric aerosol field. Since this manuscript doesn’t deal with the nucleation model as such (it’s taken as a given), I won’t comment on any of the potential issues with the model itself, but only on the application described here. However I will note that I fully agree with the executive editor’s request of providing version numbers - while Yu 2018 is an impressive model, it is unlikely to be *perfect* in the sense that no further improvement would ever be possible.

Thanks for confirming that the lookup tables are very useful for researchers. Agree with regard to the version number. We have added a version number in the title.

Some minor issues to take in to account when preparing the final manuscript:

-The authors say that their rates can be compared with typical laboratory measurements. How should wall losses be accounted for in the comparison - is the idea that users should just scale the “S” parameter in the model to roughly fit the losses in the experiment? How well does this actually capture the effect of wall losses (especially in e.g. flow-tube experiments?).

Yes, users can just scale the “S” parameter in the model to roughly fit the losses in the experiment. As long as the air mass in the chamber or flow tube is well mixed, it shall reasonably capture the effect of wall losses on cluster formation and nucleation.

-The authors say that Q ranges from 2 to 23 ion pairs / cm³; for the benefit of casual readers just skimming the text they might mention here that the Q=0 case is also covered (as they actually have separate look-up tables for this case).

Good point. We have pointed this out by adding to the sentence “(noting that Q=0 is covered under BHN or THN)”.

-“extrapolation is allowed”: this sweeping statement sounds potentially a bit dangerous; have the authors actually tested how well extrapolations work? Perhaps give the readers some guidelines on what kind of extrapolations are recommended, and/or some caveats as to when they can be expected to work (and when not)?

Actually, for the code provided in the Zenodo, extrapolation is allowed only for surface area for which the tables only give values at two surface area points ($S = 20$ and $200 \mu\text{m}^2\text{cm}^{-3}$). The dependence of nucleation rates on the surface area, which serves as coagulation sink (not condensation sink because [H₂SO₄] is fixed), is relatively linear and thus extrapolation will not cause unphysical values. We have clarified this in the text.

-There seems to be an extra bracket in TIMN) on line page 3, 24

Corrected.