ANSWER TO REVIEWER

We are grateful to the reviewer for the detailed review and the suggested improvements. The reviewer's comments are given in red, while our replies follow in black

A few minor points could be clarified. First, the paper by Phillips et al. (2017b) was not about a simulation of only one convective cloud, but rather involved a mesoscale model with a domain of 80 km x 80 km. There were many cloud-types present in the mesoscale convective system (MCS)
Thank you for this clarification, which is now inserted in the discussion section:

Lines 554-554: *" ...in previous studies of mesoscale convective systems (Phillips et al. 2017b)..."*

In section 4.3, the authors should comment about whether removal of the correction factor results in better agreement with observations.
We now clarify in the text that the removal of the correction factor results in poorer performance of the parameterization:

Lines 482-483: *"Overall, the removal of the correction factor results in poorer agreement with observations (Table 2). This indicates that while the determination of the correction factor is highly uncertain, its inclusion in the break-up parameterization is essential..."*

In the concluding section, the phrase "cloud glaciation" is vague and possibly mis-used. The term "glaciation" does not necessarily mean complete depletion of liquid. A "glaciated" cloud could have almost any amount of ice or liquid. Need to make the conclusions more quantitative.
We have replaced the term 'cloud glaciation' with 'cloud dissipation' in both abstract and 'conclusions' section to accurately describe what actually happens in our simulations.

In the concluding section, need to comment on how the "multiplication efficiency" , c, estimated in various simulations relates to the degree of explosive growth of ice concentrations. When c is only 2, does the model predict weak ice enhancement ? Vice versa?
In discussion section we know clarify that while $\hat{C}>1$ implies that explosive multiplication can happen, the required time is very long, longer than the mixing timescale of a stratocumulus cloud. For this reason a low multiplication efficiency is associated with weak ice enhancements. This is also clarified now in the 'conclusions' section:

Lines 555-558 (Discussion): *"While $\hat{C}>1$ implies that explosive multiplication is possible (Yano and Phillips 2011), the required time for this to happen is much longer than the time mixing-scale of the studied cloud. For this reason, such low $\hat{C}$ are associated with generally weak ICNC enhancement. "*

Lines 629-630 (Conclusions): *"Finally, we acknowledge that the weak influence of the rimed fraction is likely limited for conditions characterized by weak multiplication efficiency ($\hat{C}\approx2$) and thus weak ICNC enhancement, as those examined here. "*