The paper was improved in course of the revision. I partially satisfied with the response of the authors. Nevertheless, some comments remain unanswered.

For instance, both bulk schemes turned out to be insensitive to droplet concentration. Can the author comment this insensitivity? Do they consider this insensitivity as a natural property of cloud systems simulated in the study, or they attribute this insensitivity to the specific features of the bulk schemes tested in the study? Corresponding discussion should be included into the Conclusion Section.
We highlight to the reviewer that the bulk schemes are not insensitive to droplet concentration. Yes, the magnitude of the responses are small when averaged over the cloud systems and lifecycles, but there is a response and indeed the major point of our paper is that this response is highly variable under different conditions.

Moreover, we have shown that the magnitude of the response to (proxies for) aerosol in the idealised supercell case is the same as when we use the SBM bin scheme in WRF as for the two bulk schemes used in our main study. This is shown in Figure S4 in our supplement, provided with revision 1 of our paper, and was already discussed in our previous revised manuscript on page 16, line 1.

We cannot make any comment on the comparison of the pathways leading to this response in the two bulk schemes and the bin scheme. Although we agree with the reviewer that this would provide interesting insight to the bulk schemes used and the cloud systems simulated in this study, this would be far beyond the scope of the current paper, which aims to highlight the variable and uncertain response in the bulk schemes tested.

In the revised paper the authors presented more detailed discussion of the bulk schemes used. Note that the fact that many scientists use for deep convection simulations the autoconversion scheme developed for slightly drizzling stratiform clouds does not indicate yet the ability of the scheme to simulate deep convection well. Which scheme (Berry and Reinhard , 1974 or of Khairoutdinov and Kogan (2000)) show better results? Which scheme is recommended by the authors?
We agree with the Reviewer that we cannot directly advocate the use of the autoconversion schemes implemented in the two bulk schemes for studies of deep convection. This was already noted and discussed in revision 2 of our paper, both in page 19 paragraph 1, and also in our conclusions (page 26 lines 27 – 29).

However, the point of the paper is not to test autoconversion schemes and it is beyond the scope of the paper to test and recommend one autoconversion scheme (BR74 or KK2000) over the other. This would be a complete study in itself. Indeed, we would not be justified to claim one scheme as better than the other from the sets of still limited cases used in our study.

Moreover, because there are so many competing processes besides autoconversion, including a number of microphysical and dynamical processes, it could be misleading to claim that one scheme is better than the other just based on bulk comparison with observations from a few cases. It would make more sense to do off-line testing of

autoconversion schemes based on detailed in-situ observations and calculations, as was done by e.g. Wood (2005), who tested KK2000. However, we note again that this is far beyond the scope of our paper and would be a complete study in itself.

We have added the following paragraph to the conclusions in our revised paper on page 26, line 35 through page 27 line 6:

"Based on the limited set of cases in our study, we would not be justified in recommending one of the autoconversion schemes over the other. Moreover, because there are so many competing processes besides autoconversion, including a number of microphysical and dynamical processes, it could be misleading to claim that one scheme is better than the other just based on bulk comparison with observations from a few cases. For those interested in testing and evaluating the autoconversion schemes, we suggest that the best approach would be to perform off-line testing based on detailed in-situ observations and calculations, as was done by e.g. Wood (2005), who tested the Khairoutdinov and Kogan (2000) autoconversion scheme in such a manner."

References:

Wood, R., 2005: Drizzle in stratiform boundary layer clouds, Part II: Microphysical aspects. J. Atmos. Sci., 62, 3034.