**2nd Reviewer Comments to 'Modeling Collision-Coalescence in Particle Microphysics:.."
by Zmijewski et al.**

The authors included the analyses of the results from multi-box simulation results and simulations with SGS motions of SDs, which made the paper more valuable. On the other hand, analyses and interpretations of the newly added simulations appear to be insufficient to contribute to a better understanding of the overall results.

It is not clear how the multi-box simulation results can explain the CC results from the perspective of intercell mixing. Intercell mixing helps multi-box simulations to reach the convergence of mean DSD for smaller $N_{\mathrm{SD}}^{(\mathrm{bin})}$ than in box simulations (L250, L475), but it prevents the mean precipitation in the CC simulation from reaching convergence, especially in the case of weak precipitation.

The inclusion of SGS motions of SDs enhances the mean precipitation greatly. The authors attributed this to enhanced intercell mixing. It is difficult to imagine that the enhancement of intercell mixing is generated greatly by including SGS motions of SDs since intercell mixing occurs mainly by resolved eddies and sedimentation. The strong sensitivity of SGS motions of SDs to precipitation requires a more in-depth analysis, because it has important implications in cloud models. Probably the authors need to investigate the modification of DSD and intercell mixing by SGS motions of SDs.

I think the authors should make clear in conclusions that the CC simulation results in the dynamical simulation with the SGS motion on SDs (Fig. 15) are less affected by the non-convergence (Fig. 11).

I consider that the present paper will provide important information on cloud modelers, once the above ambiguities are clarified.

Minor:

1. The term 'mixing' is confusing to me; that is, mixing within a cell, which helps to produce uniform DSD within a cell, and intercell mixing.

2. I hope the authors select the line color more systematically in Fig. 8, 9, and 12; i.e., from blue to red with increasing $N_{\mathrm{SD}}^{(\mathrm{bin})}$.

3. L395; I do not think they are consistent. P increases monotonically in the box simulations (Fig. 3). I also cannot understand how the consistency can be explained by the convergence of $N_{\mathrm{SD}}^{(\mathrm{bin})}$.