The authors appreciate the reviewers' comments. In response to the comments, we have made relevant revisions in the manuscript. Each comment of the reviewers (black) is listed and followed by our response (blue).

Anonymous Referee #2
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The paper presents an interesting study about the possible effects of aerosol on the spatio-temporal properties of tropical convective clouds: the paper is also very timely in consideration of the possible interplay between aerosol phenomena and climate change impacts.

I have only minor comments, hereafter reported:

a) concerning the model setup, did the authors perform any sensitive study about effect of horizontal resolution on the study results?

To examine the sensitivity of results here to resolution, the high-aerosol run and the control run are repeated with a horizontal grid length of 300 m (reduced from 500 m) and a vertical grid length of 120 m (reduced from 200 m); the aspect ratio is maintained. These repeated runs are referred to as the high-aerosol-high-res run and the control-high-res run, henceforth. Figures 2c, 3e and 6b for updraft mass flux, WP frequency and homogeneity from these repeated runs and comparisons between these figures and Figures 2a, 3c and 6a from the high-aerosol and control runs demonstrate that the qualitative nature of results is relatively insensitive to varying resolution. These repeated runs are described in a newly added section 4.5

b) in the present study the authors refer to a 2D setup, would be possible to assess the implications of moving from a 2D to 3D modeling study of this topic? I think that this aspect should be address in the manuscript in consideration of the intensification of the convective processes when high-aerosol run are considered

One of authors (Lee) examined the issue of the intensification of the convective processes or updrafts and its dependence on the dimensionality of a domain for three cases of deep convective mesoscale system (which is the same type of the system as simulated in this study) over the Southern Great Plains in 1997. Details of these three cases are as follows :

1. ARM sub-case A
   Location: (36.61 N, 97.49 W), Period: 23:30 GMT on June 26th – 23:30 GMT on June 30th in 1997

2. ARM sub-case B
   Location: (36.61 N, 97.49 W), Period:00:00 GMT on July 7th – 00:00 GMT on July 12th in 1997

3. ARM sub-case C
   Location: (36.61 N, 97.49 W), Period:00:00 GMT on July 12th – 00:00 GMT on July 17th in 1997

For these three cases, simulations were performed with both 2D domain and 3D domains. The high-aerosol run had 10 times larger aerosol concentration than the low-aerosol run. For 2D simulations, horizontal and vertical domains are 168 and 20 km and for 3D simulations, horizontal domain is set at 168 x 168 km^2 and vertical domain is set at 20 km. As shown in the Figure below, the aerosol-induced intensification of updrafts is robust to the dimensionality for all of the three cases. Hence we believe that the intensification of convection with increasing aerosol in this study is unlikely to be sensitive to dimensionality. Discussion is added in a newly added section 4.5