Authors greatly appreciate all the valuable comments and suggestions from the reviewers. Line and figure numbers correspond to the ones in the revised manuscript, and texts that are modified are in red colors in the revised manuscript. A comprehensive read-through is done to correct for English/grammar structure.

Main changes in the revised manuscripts are:
-Figure 7 is removed based on a comment from RC2.
-Table 4 is added.
-Figs. 8 and 9 are modified using different color bars that are colorblind-friendly.
-Fig 10 includes additional run with WSM6 microphysical scheme.
-Section 4.2 is modified using three month of data in 2020.
-Appendix A is added.

RC3

General comments:

Overall, this is an interesting and useful study that has great potential in various applications, because GEO provides much higher spatial and temporal coverages than space-borne and ground-based radars. The proposed method and data product should contribute to convection and precipitation forecasting. For this reason, I'd like to see this paper published.

I only have one major point: the GOE-based LH estimation method described in this study contains two steps: convective cloud detection and LH retrieval for the detected convective cloud. The first step uses a lot more information than the second step. For convective cloud detection, they used multiple channels and their temporal change and spatial structure. In contrast, for LH retrieval, they only used a single piece of information, namely, 11.2-um TB. I wonder if they can consider adding more predictors in their LUT for retrieving LH profiles, given that there are such observations around. Temporal change in TB is an obvious candidate. Meanwhile, environmental parameters will also help. For example, the ambient sounding profile or CAPE has bearings on convective intensity, which should affect the magnitude and vertical structure of LH.

Since the main goal of this study is to use GOES-16 data only to initiate convection, the environmental parameters are not considered. We also decided to bin only with the cloud top brightness temperature for LH estimates in this paper for several reasons.

Since cloud moves over time, calculating change in brightness temperature per pixel can include errors due to cloud advection. In such cases, LH profile had to be assigned per cloud, and we thought that assigning the profiles to individual clouds rather than pixels can make profile inconsistent with the cloud top temperature for each pixel. Another concern related to using time-difference of brightness temperature is in case of mature convective clouds. When clouds reach tropopause, the decrease in temperature is rather small or not observed, and thus, the profiles will look similar. Therefore, it remained as future study.

However, additional lookup table using composite reflectivity is provided in Appendix A. With this lookup table, cloud top information from GOES will determine the vertical profile, and the overall intensity can be adjusted using NEXRAD composite reflectivity through the lookup table in Appendix A. This lookup table can be used with the synthetic radar reflectivity simulator (GREMLIN), but this will be a future study. A paragraph in lines 333-365 is added and lines 700-705 in conclusion section are modified to reflect this comment.

Specific comments:

(Figure 1) The total LH: are they vertical integrals of the LH profile? Can we really integrate LH this way? If LH is 1K/hr at one level and 2K/hr at another level, do we simply add them up? Some clarification is needed.

Vertically integrated LH is used in Figure 1 to show LH in 2-dimensional map. LH at each level is basically a temperature increment at each level, and thus vertically summed value would be temperature increment per hour in one column. In terms of initiating convection, the “total LH” would be the total amounts of LH that will be added to initiate corresponding convective cloud in the forecast model. Definition of “total LH” and the reason for using it is clarified in lines 525-529.