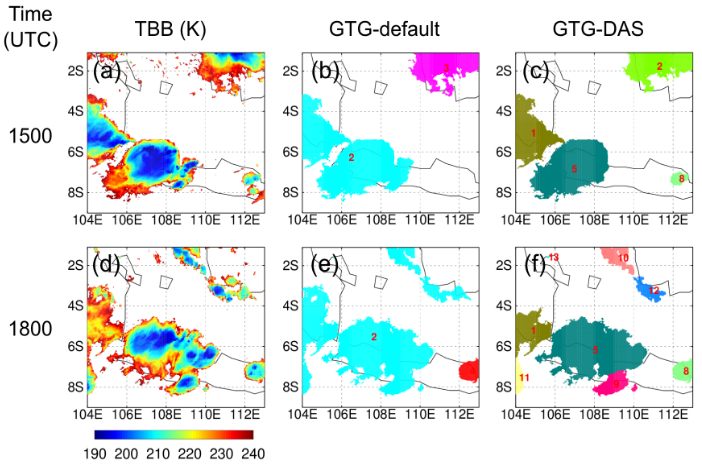
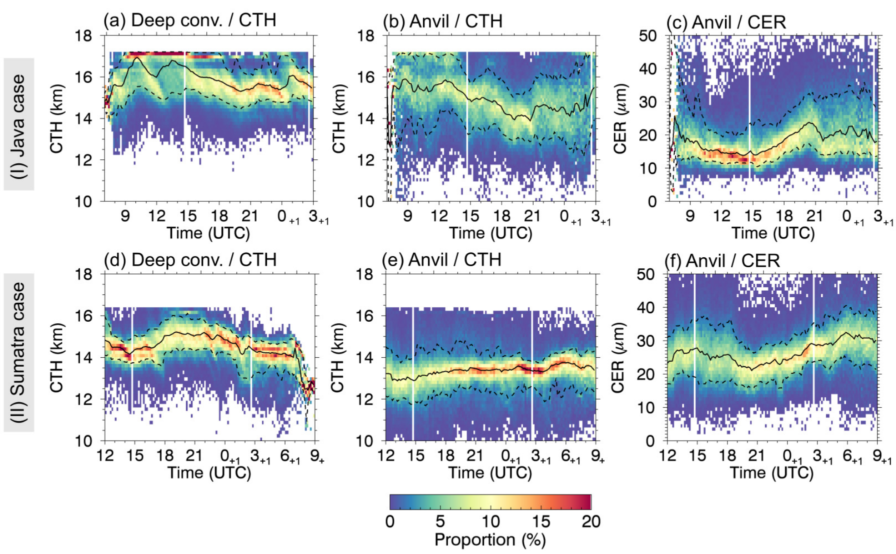
Putri, N. S., H. Iwabuchi, and T. Hayasaka, 2018: Evolution of Mesoscale Convective System properties as derived from Himawari-8 high resolution data analyses. *J. Meteor. Soc. Japan*, **96B**, https://doi.org/10.2151/jmsj.2018-020.



← Figure 1. Comparison of MCS identification on February 6, 2016 by default GTG (GTG-default), which applies a simple threshold method for CE delineation, and by modified GTG, in which DAS method is incorporated (GTG-DAS). The associated brightness temperature (TBB; unit in K) of band 13 is shown in (a,d). Different colors in (b,e) and (c,f) represent different MCSs.



→ Figure 2. The temporal distribution of ICAS cloud properties for MCSs in Java case (a,b,c) and in Sumatra case (d,e,f). The CTH is shown in (a,d) for the deep convective part and in (b,e) for anvil. The anvil CER is shown in (c,f). Shaded color denotes the proportion relative to the total number of samples at each time frame. The solid line denotes the median value, while the dashed lines show the 10^{th} and 90^{th} percentiles.

- Mesoscale convective systems (MCSs) in two subregions of Indonesia were studied by using the infrared (IR) data from Himawari-8 satellite. The MCSs were tracked by using a modified "Grab 'em Tag 'em Graph 'em" (GTG) tracking algorithm. The Detect and Spread (DAS) method was integrated in the process of cloud element (CE) delineation of GTG algorithm (hereafter GTG-DAS) to obtain an improved representation of the MCSs of interest. Although more exploration in GTG-DAS is possible, our current configuration yielded satisfactory results for MCS tracking in the two selected case studies. Figure 1 demonstrates the better segmentation of MCSs by GTG-DAS compared to the default GTG.
- The physical properties of the identified MCSs were evaluated by employing a cloud retrieval algorithm, namely the Integrated Cloud Analysis System (ICAS), which uses multiband IR radiances of Himawari-8 as the input. As suggested by Fig. 2, compared to the Sumatra case, the MCS in Java case generally reached higher cloud top height (CTH) and its anvil exhibited a larger CTH variation and a slightly larger cloud-particle effective radius (CER). The differences of MCS physical properties between the two cases may be partly attributable to the background wind profiles: the Sumatra case showed a strong upper level wind persisting throughout the MCS lifetime, while such wind was not present consistently in Java case.