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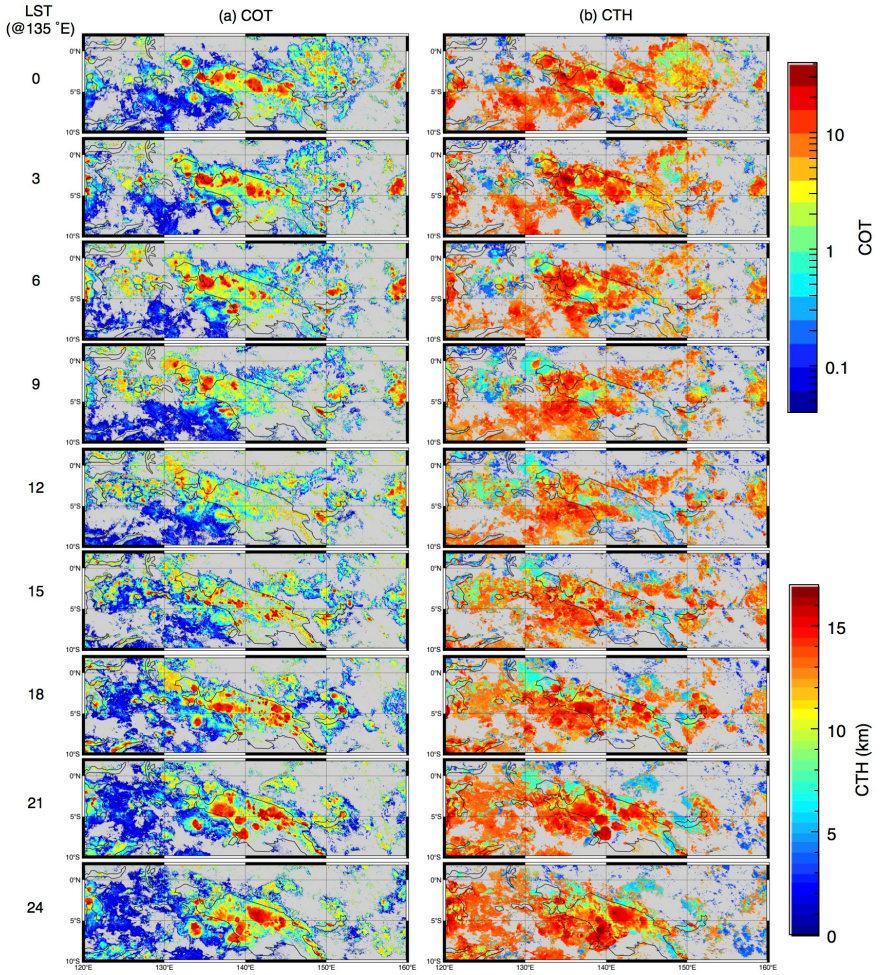

← Figure 1. Time series of cloud optical thickness (COT) and cloud top height (CTH) estimated by integrated cloud analysis system (ICAS) for the New Guinea region. Results are shown every 3 hours from 1500 UTC on January 14, 2016. The local time is calculated at 135˚E longitude.

- An algorithm for retrieving the macroscopic, physical, and optical properties of clouds from thermal infrared measurements is applied to the Himawari-8 multiband observations.
- A comparison of retrieved cloud properties with collocated active remote sensing counterparts with small time lags shows reasonable agreements for single-layer clouds. Multilayer cloud systems with optically thin upper clouds overlying lower clouds are the major source of error in the present algorithm.
- The present cloud analysis investigates cloud evolution through separation of different cloud types and reveals typical features of diurnal cycles related to the topography in the vicinity of the New Guinea (Fig. 1). Over land, middle clouds increase from 0900 to 1200 local solar time (LST), deep convective clouds develop rapidly during 1200–1700 LST with a subsequent increase in cirrus and cirrostratus cloud amounts.