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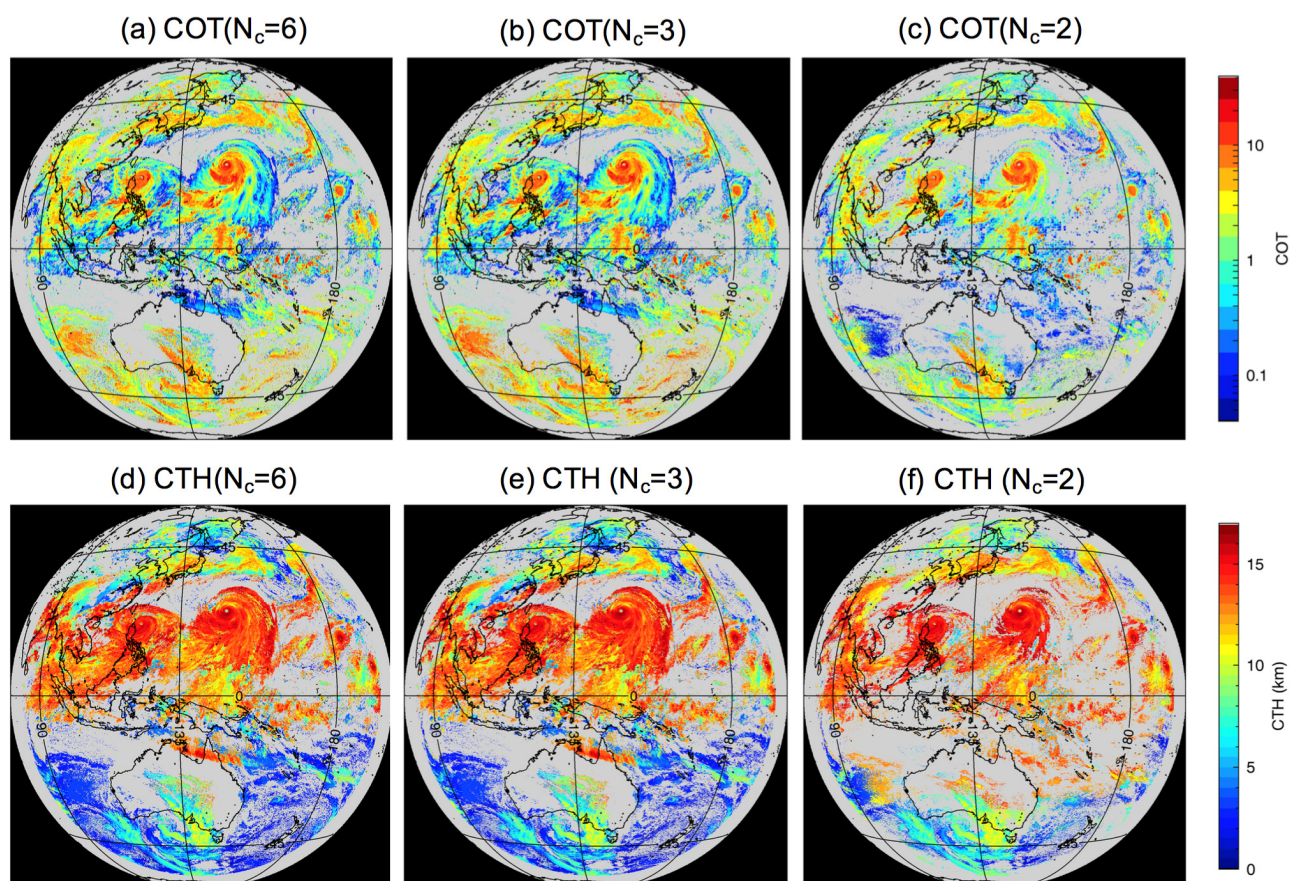


Figure 1. Cloud optical thickness (COT) (a,b,c) and cloud top height (CTH) (d,e,f) retrieved by using CKD sets with different numbers of quadrature points (N_c) for full disk data at 12 UTC on 20 August 2015. Results are shown only for pixels with optimal solutions. (a,d) $N_c = 6$, (b,e) $N_c = 3$, and (c,f) $N_c = 2$.

- We developed an atmospheric gas absorption table for the Advanced Himawari Imager (AHI) based on the correlated k -distribution (CKD) method with the optimization method, which was used to determine quadrature weights and abscissas.
- We incorporated the table and band information of the AHI into a multi-purpose atmospheric radiative transfer package, Rstar. We updated the package so that users could easily specify the satellite and band number. Use of this update made it possible for the optimized CKD method to carry out calculations rapidly and accurately.
- Cloud retrieval tests using different numbers of quadrature points showed that cloud retrievals could be significantly affected by the accuracy of the CKD model. (Fig. 1).