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Convective cloud detection product derived from Himawari-8/9 rapid scan observation

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The Japan Meteorological Agency (JMA) began operation of Himawari-8 in July 2015 as a replacement for MTSAT-2, and Himawari-9 started backup operation in March 2017. Hiwamari-8/9 carry a state-of-the-art visible infrared radiometer, Advanced Himawari Imager (AHI), whose observation performance is significantly improved over that of the predecessor MTSAT-series. In particular AHI has the capable of high temporal observation; every 2.5-minute Japan area observation and 30-second rapid scan observation during the full disk observation at 10-minute intervals. Meteorological Satellite Center (MSC) of JMA has developed Rapidly Developing Cumulus Areas (RDCAs) with high temporal observations of AHI for aviation safety. RDCA is detected by the cloud top features (e.g. the change of cloud top height, surface roughness and cloud phase) using statistical model and is intended to monitor convective clouds early for any length of lead-time. However, RDCA can result in false detections and misses in some situations where the upper-level clouds cover widely or the cloud movement cannot be traced correctly. The presentation will report the utilization of 30-second rapid scan observation for convective cloud detection and the development of new algorithms for improving the detecting accuracy of RDCA.