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**Integration of Himawari 9 and GK2A Satellite Derived Products for  
Monitoring and Nowcasting the Severe Weather Condition in Indonesia**

Bony Septian Pandjaitan, Endarwin, Sugeng Indarto

Agency for Meteorology Climatology and Geophysics of Republic of Indonesia (BMKG)

There is a high demand for satellite-derived products for monitoring and nowcasting the severe weather events in tropical regions such as Indonesia. In BMKG, we are developing a derivative integration product from the Himawari 9 and GK2A satellites in the form of rain estimation and detection of Overshooting top (OT) of convective clouds in the region of Indonesia. We use similar algorithms for both Himawari and GK2A data to estimate moderate to heavy rain and detect the presence of OT of convective clouds every 10 minutes. All of these products have been parallax corrected to reduce shifts in significant rain locations and OT of convective cloud. For the integrated rain estimation product, the output results are grids of significant rain areas detected from only 1 satellite, and same grids of significant rain areas detected from all satellites. It can be used to monitor areas of significant rain that have high confidence detected from satellites. The convective cloud OT detection integration product from Himawari 9 and GK2A is used to guide weather forecasters for nowcasting areas where severe weather conditions will occur. OT products from Himawari 9 and GK2A were produced using high resolution NWP data, namely AROME with a spatial resolution of 2 km. The output of this OT product is a combination of the accumulated number of OT detected from both Himawari 9 and GK2A during the last 30 minutes. This OT product is always updated every 10 minutes. We also include the sample of case study in utilizing these Himawari 9 and GK2A derived products.