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Current Status of Convective Clouds Discrimination from GK-2A

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The Korea Meteorological Administration (KMA) successfully launched the GEO- KOMPSAT-2A (GK-2A) in December 2018 and plans to service its data in July 2019. The GK-2A/AMI will provide high-resolution data in time and space through 16 channels. Since 2015, the NMSC/KMA has introduced "Convective cloud detection and tracking" algorithm as known as Rapid Development Thunderstorms (RDT) PGE11 module (v2013) developed by NWCSAF/EUMETSAT using COMS and Himawari-8 data. The RDT algorithm consists of three parts: detection, tracking, and discrimination which provide information on clouds related to significant convective systems using geostationary satellite data. In order to optimize the use of rapid scan data, we plan to apply GK-2A/AMI data to RDT module and to produce RDT product every 2 minutes. Also, we will perform the tuning of discrimination model by an ensemble of logistic regression using Himawari-8/AHI as proxy data over the Korean Peninsula. It will help to detect convective cell with lightning and to identify cloud which has a high chance to develop into the convective cell within an hour. After collecting GK-2A data for more than a year, we plan to optimize the discrimination models using rapid scan data of GK-2A. Also, we want to apply various machine learning methods using radar reflectivity data and visible channel data.