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EDITORIAL

Meteorological Products of Geo-KOMPSAT 2A (GK2A) Satellite

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This special issue of APJAS contains nine papers of retrieval algorithms for Geo-KOMPSAT 2A (GK2A) meteorological products. K. Park et al. and J. Jee et al. present the development of the sea surface temperature and current vectors, and the aerosol detection retrieval algorithms for geostationary satellite data, respectively. M. Ahn et al. and K. Han et al. present the evaluation of atmospheric profile retrieval algorithm and NDVI estimation for GK2A satellite, respectively. K. Han et al. documents the improvement of 6S look-up-table based surface reflectance employing minimum curvature surface method. S. Hong and K. Lee et al. present the infrared soil moisture and upward longwave radiation retrieval algorithms for GK2A satellite, respectively. K. Min et al. present the improvement of the rapid-development thunderstorm algorithm for GK2A satellite.

National Meteorological Satellite Center (NMSC) of Korea Meteorological Administration (KMA) has been operating the first Korean geostationary meteorological Satellite, named of Communication, Ocean, and Meteorological Satellite (COMS) since 27 June 2010 and retired it in March 2020. During its almost 10 years of successful career, COMS has operationally provided the 16 derived products which have used for the monitoring of severe weather phenomena including tropical storms, deep convective clouds, fronts, fog, aerosols such as Asian dust and utilizations in the numerical weather predictions models. In order to continue satellite observations for the follow on mission of COMS, NMSC started the second geostationary meteorological satellite project in 2011, so-called GK2A and its ground segment projects in collaboration with Korea Aerospace Research Institute (KARI) and Korea Electronics and Telecommunications Research Institute (ETRI). After successful launch on 5 December 2018 and in orbit test lasted about 8 months, the GK2A is commissioned since 25 July 2019 with the Advanced Meteorological Imager (AMI) of 16-channel imager like the Japanese Himawari-8 and the United States GOES-16 satellites launched in 2014 and 2016, respectively.

GK2A AMI can produce high spatio-temporal measurements with 0.5 ~ 2 km resolutions every 2 min around Korean Peninsula and 10 min for full disk area. To maximize the application of these rapid observational data for weather and climate monitoring, NMSC has led to develop retrieval algorithms of the value added products in cooperation with universities in Korea as well as the support from the internationally distinguished experts of satellite meteorology. From experiences learned in COMS operations, we focused the applications as well as the accuracy in the algorithm development to help satellite data interpreters, weather forecasters, typhoon forecasters and the users of satellite data in many other areas. NMSC continues to share and improve the GK2A algorithms in collaboration with other research groups and satellite centers for uses widely and the preparation of the follow-on meteorological satellite.

We hope that the papers in this issue will encourage further improvement of the GK2A meteorological retrieval algorithms and promote the scientific knowledges and capability in meteorological satellite studies.

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