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Networking in-situ ground measurements for validation of Korean GEMS (Geostationary Environmental Monitoring Satellite/Spectrometer) products

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Considering that geostationary environment satellites (GEO) will be launched simultaneously in Korea (GEMS), the United States (TEMPO) and Europe (Sentinel-4) with the time frame of from 2019 to 2021, it is a very challenging research task to establish the validation strategy of GEO L2 products and to integrate in-situ ground measurements by making the linkage with each other. This work might be one of very important tasks that determines the success or failure of the development project for GEO because maintaining the high accuracy and consistency of its products is critical to achieve the scientific goals of the entire satellite development project. To evaluate the products of Korean GEMS, the GEMS Science Team will utilize the surface air quality monitoring data at more than 500 ground stations, the chemical composition information at 6 Supersites, the remote sensing data from Korean LIDAR network, the intensive aircraft campaign data, i.e. KORUS-AQ 2016 data and MAPS-SEOUL 2015 data within the Korean Peninsula. In addition, several ground measurement and remote sensing data over East Asia including China and Japan, for example, the MAX-DOAS network, NASA's PANDORA network and AERONET network, EANET data and WMO Global Atmospheric ozone monitoring data will also be used. Moreover, current operated LEO environmental satellite data can be also valuable for comparison to GEMS data.