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GOCI Yonsei aerosol retrievals during 2012 DRAGON-NE Asia and 2015 MAPS-Seoul campaigns

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The Geostationary Ocean Color Imager (GOCI) onboard Communication, Ocean, and Meteorological Satellite (COMS) started to operate in March 2011, and data have been archived more than 5 years. GOCI Yonsei aerosol retrieval (YAER) algorithm was developed and has been improved continuously so that it can provide hourly aerosol optical properties (AOPs), mainly aerosol optical depth (AOD) over East Asia. During that period, meanwhile, there were two field campaigns to obtain characteristics of AOPs over East Asia. One is DRAGON-NE Asia 2012 campaign (March-May), and another is 2015 MAPS-Seoul campaign (May-June), which is a pre-campaign for KORUS-AQ in 2016. Those field campaigns are very effective to evaluate algorithm performance. Especially, one of main purposes of those campaigns is to understand AOPs over megacities such as Seoul and Osaka. In this study, retrieved GOCI YAER AOPs are analyzed with those retrieved from ground-based AERONET sunphotometer measurements and other satellite data during two field campaigns. Several analyses such as cases study of dust and haze long-range transport, diurnal variation detection, algorithm evaluation, and application to air quality simulations are carried out. Collaboration between ground-based and geostationary satellite measurements and air-quality modeling can provide more intensive understandings about aerosol monitoring.