Assimilation of GOCI AOD retrievals to improve air-quality forecasting during the KORUS-AQ period

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During the Korea-United States Air Quality (KORUS-AQ) field program conducted over Korea for May-June 2016, various types of observations including the Geostationary Ocean Color Imager (GOCI) satellite were collected to improve our understanding on air-quality forecasting and for the cross-comparison between different measurements. Using the coupled meteorology-aerosol analysis and forecasting system (WRF-Chem/GSI), those measurements are assimilated simultaneously in various configurations. In this talk, we discuss how to process the GOCI aerosol optical depth (AOD) retrievals for data assimilation and how to characterize their uncertainties in the analysis system, followed by their impact on the following air-quality forecasting compared to other observations. The coupled system is carefully configured to consider the interaction between the weather and chemical modeling systems.