Transmission estimation by the atmospheric aerosols and trace gases for the geostatioanry remote sensing

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Atmospheric constituents including ozone (O_3), nitrogen dioxide(NO_2), water vapor(H_2O) and aerosols were investigated for the application to the geostationary satellite observation. As confirmed from the previous studies, these parameters with high concentrations in the East Asian region Asia (110^oE - 150^oE and 20^oN - 56N) were observed by the environmental observation sensors. The atmospheric transmittances computed with the light absorbing gases and scatters are important to derive earth's surface reflection and atmospheric transmission from the satellite observation. Therefore, simultaneous atmospheric transmission and correction methods are employed for determining aerosol loading and clear sky pixel. Satellite derived products have been compared with ground based measurements. The regression analysis with the number of samples for the comparison showed that the regression line displayed $Y=0.952X+0.083$ (n=1720, r=0.766). It is also shown that temporal variability of the atmospheric transmission and surface reflection contribute to the combined uncertainty in the satellite observations. Further work will be focused on the fully implementation of the algorithm development environment.