# The effect of topographic factor in atmospheric correction for hyperspectral data

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**Abstract:** Hyperspectral images have been widely used for land use and land cover classification and change detection. However, the radiance received at the sensor is not the same with the radiance leaving from the Earth surface due to the interference by the atmosphere. Therefore, the atmospheric effect has to be corrected. In this study, two MODTRAN-based software packages (FLAASH and ATCOR4) were employed to correct the atmospheric effect on the same hyperspectral images. Furthermore, topographic effects are considered in ATCOR4, and the slope, aspect, sky view factor, and topographic shadow can be obtained from digital elevation model (DEM). The study area is near Tsengwen Reservoir, southern Taiwan. The 72-band hyperspectral data were obtained by an Itres CASI-1500 with a pixel resolution of 1 m. The spectral range of Itres CASI-1500 is between 367 nm and 1047 nm, and the interval is 9.6 nm. We compared the radiance and the results of corrected reflectance spectra estimated from FLAASH and ATCOR4. The comparison results can lead a better understanding of the important input parameters for atmospheric correction.

Keywords：Atmospheric correction, Hyperspectral image, Radiative transfer model