

The Estimation of Error of Retrieved Plowed Field Reflectance by Atmospheric Correction Model based on Lambertian Surface Assumption

C. H. Liu¹

Abstract

There exist some errors of the retrieved surface reflectance by using an atmospheric correction model based on Lambertian surface assumption, since the natural targets are not Lambertian. In this study, 6S is used to estimate the errors. Plowed field is select and a linear BRDF model is used. Wavelength at $0.63\mu\text{m}$ is considered. Errors varied with solar zenith angle and aerosol optical depth are studied. The results show that the errors are larger at back-scattering region than fore-scattering region. These errors cannot be neglected, even in clear sky. The error can be up to 0.13 at view angle -60° , when solar zenith angle is 60° and the sky is hazy. When the solar zenith angle and/or sky changes from clear to hazy, the errors generally increase.

Keywords: Lambertain, BRDF, reflectance

¹Assistant Professor, Department of Information Management, Transworld Institute of Technology