



Retrieving background surface reflectance of Himawari-8/AHI using BRDF modeling

Sungwon Choi, Minji Seo, Kyeong-sang Lee, and Kyung-soo Han

Division of Earth Environmental System Science, Pukyong National Univ, Korea, Republic of (choi.sungwon94@gmail.com)

In these days, remote sensing is more important than past. And retrieving surface reflectance in remote sensing is also important. So there are many ways to retrieve surface reflectance by my countries with polar orbit and geostationary satellite. We studied Bidirectional Reflectance Distribution Function (BRDF) which is used to retrieve surface reflectance. In BRDF equation, we calculate surface reflectance using BRD components and angular data. BRD components are to calculate 3 of scatterings, isotropic geometric and volumetric scattering. To make Background Surface Reflectance (BSR) of Himawari-8/AHI. We used 5 bands (band1, band2, band3, band4, band5) with BRDF. And we made 5 BSR for 5 channels. For validation, we compare BSR with Top of canopy (TOC) reflectance of AHI. As a result, bias are from -0.00223 to 0.008328 and Root Mean Square Error (RMSE) are from 0.045 to 0.049. We think BSR can be used to replace TOC reflectance in remote sensing to improve weakness of TOC reflectance.