**Comparison study on spectral distribution of solar radiance models for COMS MI in the visible spectral range**

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**Abstract:** Although there are many research to estimate insolation over Korean Peninsula, most of them employed foreign satellite imagery. In this study, we estimated insolation of the Korean Peninsula using Communication, Ocean and Meteorological Satellite – Meteorological Imager (COMS MI), Korea’s first geostationary satellite. The Heliosat-2 model considered in this study calculates global horizontal irradiance from images taken in the visible range by the European meteorological satellite Meteosat. Spectral distribution of solar radiance especially visible range plays an important role in the process of heliosat-2. In the process of converting radiance to reflectance, spectral distribution of solar radiance should be defined. Although there were many models about spectral distribution of solar radiance, most suitable model to the COMS MI sensor response functions did not confirmed. Reflectance values estimated from various spectral distribution of solar radiance models were compared with ground truth and the results were analyzed for the accurate estimates.

Key word: COMS MI, Heliosat-2, Spectral distribution of solar radiance