

Reassessment on SEBAL Algorithm and MODIS Products

오랑치맥 솜야*, 권현한**, 김현묵***, 김윤희****

Sumiya Uranchimeg, Hyun-Han Kwon, Hyun-Mook Kim, Yun-Hee Kim

.....
요 지

Hydrological modeling is a very complex task dealing with multi-source of data, but it can be potentially benefited from recent improvements and developments in remote sensing. The estimation of actual land surface evapotranspiration (ET), an important variable in water management, has become possible based entirely on satellite data. This study adopted a Surface Energy Balance Algorithm for Land (SEBAL) with the use of MODerate Resolution Imaging Spectrometer (MODIS) satellite products. The SEBAL model is one of the commonly used approach for the ET estimation. A primary advantage of the SEBAL model is rather its minimum requirement for ground-based weather data. The MODIS provides ET (MOD16) product that is based on the Penman-Monteith equation. This study aims to further develop the SEBAL model by employing a more rigorous parameterization scheme including the estimation of uncertainty associated with parameter and model selection in regression model. Finally, the proposed model is compared with the existing approaches and comprehensive discussion is then provided.

Key words : SEBAL algorithm, MODIS, Evapotranspiration

Acknowledgement

This research was supported by a grant [MPSS-NH-2015-78] through the Natural Hazard Mitigation Research Group funded by Ministry of Public Safety and Security of Korean government.

* Member · Dep. of Civil Engineering, Chonbuk National University, Ph.D. student · E-mail : sumya963@jbnu.ac.kr

** Corresponding author · Member · Dept. of Civil Engineering, Chonbuk National University, Associate Professor · E-mail : hkwon@jbnu.ac.kr

*** Member · Yengsan-Seomjin Watershed Business Dept. K-Water · E-mail : khm@kwater.or.kr

**** Member · Daegu-Geyongbuk Administration K-Water · E-mail : kyhee@kwater.or.kr