

## Improving Satellite Derived Soil Moisture Data Using Data Assimilation Methods

자료동화 기법을 이용한 위성영상 추출 토양수분 자료 개선

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**Abstract**

Soil moisture is a important factor in hydrologic analysis. So, if we have spatially distributed soil moisture data, it can help to study much research in a various field. Recently, there are a lot of satellite derived soil moisture data, and it can be served through web freely. Especially, NASA (National Aeronautics and Space Administration) launched the Soil Moisture Aperture Passive (SMAP) satellite for mapping global soil moisture on 31 January 2015. SMAP data have many advantages for study, for example, SMAP data has higher spatial resolution than other satellited derived data. However, because many satellited derived soil moisture data have a limitation to data accuracy, if we have ancillary materials for improving data accuracy, it can be used. So, in this study, after applying the alogorithm, which is data assimilation methods, applicability of satellite derived soil moisture data was analyzed. Among the various data assimilation methods, in this study, Model Output Statistics (MOS) technique was used for improving satellite derived soil moisture data. Model Output Statistics (MOS) is a type of statistical post-processing, a class of techniques used to improve numerical weather models' ability to forecast by relating model outputs to observational or additional model data.

**Keywords : Soil Moisture, Soil Moisture Active Passive (SMAP), Data Assimilation**

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