



## **Evaluation of optimal vegetation descriptors for soil moisture retrieval using water cloud model**

Soo-Jin Lee and Yang-Won Lee

Department of Spatial Information Engineering, Pukyong National University, Korea, Republic Of

Soil moisture affects climate, environment, and hydrological mechanisms. Therefore, accurate soil moisture calculation is important to understand various earth mechanisms. In recent research, water cloud model(WCM) has been used to model backscattering in vegetation surface. This model is a backscattering model depicting a canopy in the form of a cloud, which has the advantage of not requiring detailed geometry information on the vegetation. Since WCM has soil moisture content as an internal factor, WCM reverse modeling is used to calculate soil moisture in the vegetation area. Various internal factors are required to operate the water cloud model. Among them, V1 and V2 are vegetation descriptors, and vegetation indices such as NDVI(normalized difference vegetation index), LAI(leaf area index) and VWC(vegetation water content) are used as input data of V1 and V2 in the previous studies. The purpose of this study is to find optimal V1, V2 input variables. For this purpose, we used various vegetation indexes as input data for VI and V2, and evaluated the soil moisture calculation accuracy.