Estimation of Evapotranspiration in Jeju Island Using Landsat 8

최준혁
Remote Sensing Lab.
Dept. of Earth System Sciences, Yonsei University

Evapotranspiration is a major factor of research in global energy and water circulation. Accurate measurement of actual evapotranspiration provides scientific basis for these cyclical studies and is also essential for water resource management and planning. However, the measurement of actual evapotranspiration is very limited, and the ground observation method has limitations in time and space. To overcome these limitations, satellite images are being used. As a method of calculating evapotranspiration using satellite images, METRIC (Mapping Evaporation at High Resolution with Internalized Calibration) model is used worldwide. In particular, one of the main missions of LANDSAT 8 is to provide the results of evapotranspiration observations for all possible regions by providing worldwide evapotranspiration observation information. However, this may lead to errors when applying a simple model without considering the characteristics of the Korean Peninsula without fully considering the characteristics of each region. In this study, satellite images of Landsat 8 were applied to METRIC model as input data to calculate the amount of evapotranspiration in Jeju Island and compared with existing results and field observations. The calculated evapotranspiration was compared to the flux tower in Nandae-rim, Jeju Island, and this confirmed the possibility of calculating the amount of evapotranspiration using satellite images. Based on the findings of this study, problems of the results of METRIC model in estimating evapotranspiration in LANDSAT 8 are discussed.