

Improving an index for surface water detection

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Abstract

Identifying waterbody from remote sensing images, namely water detection, helps understand continuous redistribution of terrestrial water storage and accompanying hydrological processes. It also allows us to estimate available surface water resources and help effective water management. For this problem, NDWI (Normalized Difference Water Index) and MNDWI (Modified Normalized Difference Water Index) are widely used. Although remote sensing indexes can highlight remote sensing image in the water, the noise and the spatial information of the remote sensing image are difficult to be considered, so the accuracy is difficult to be compared with the visual interpretation (the most accurate method, but it requires a lot of labor, which makes it difficult to apply). In this study, we attempt to improve existing NDWI and MNDWI to better water detection. We establish waterbody database of South Korea first and then used it for assessing waterbody indices.

Keywords: Remote sensing hydrology, Water body map

Acknowledgment

This work was supported by a Korea University Grant and the National Research Foundation of Korea (NRF) grant funded by the Korea government (MSIP) (No. 2018R1A2B2005772).

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