



## **Impacts of Climate Variability on the Spatio-temporal Characteristics of Water Stress in Korea**

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This study intended to evaluate water stress quantitatively targeted at the Korean Peninsula and to analyze the spatial and temporal characteristics of its occurrence. First, the severity and multiyear influence of water stress were analyzed by realizing water balance based on water supply and demand and by calculating the normalized deficit index (NDI) and the normalized deficit cumulated (NDC) for 113 small basins in the Korean Peninsula. Next, a change in the periodic characteristics of water stress was analyzed using wavelet transform of the NDI by small basins and 3 bands of periods of 1 year, 2–4 years, and 4–8 years were separated. Through an analysis of the empirical orthogonal function (EOF) on each band, it was found that water stress occurring in the Korean Peninsula has the characteristics of spatial distribution that it is extended from the south coast to the northern area and inland as its period gets longer. An analysis of the band with a period of 2–8 years for water stress showed that it has a relationship with El Niño–Southern Oscillation (ENSO).

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