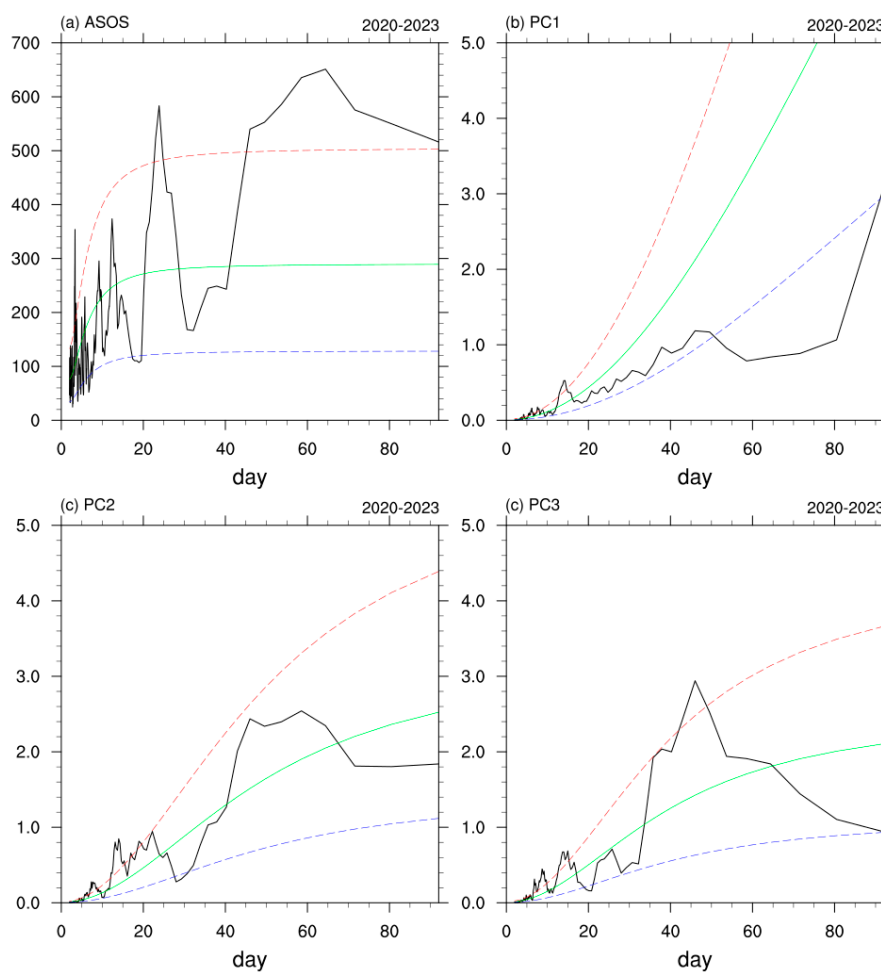
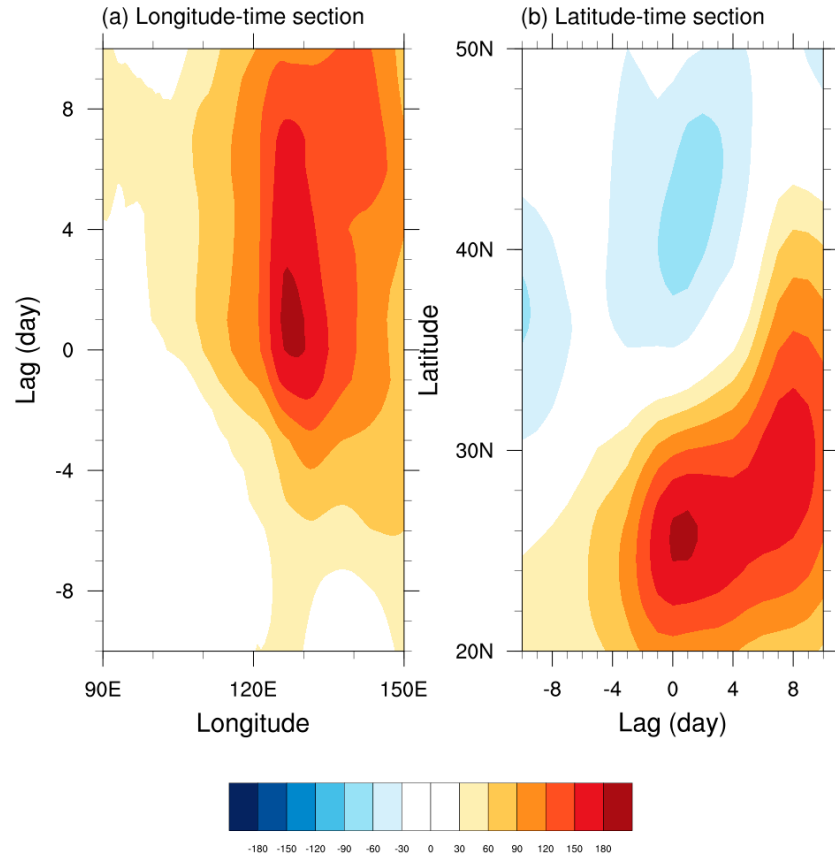


# Characteristics of the East Asian summer monsoon using GK2A satellite data

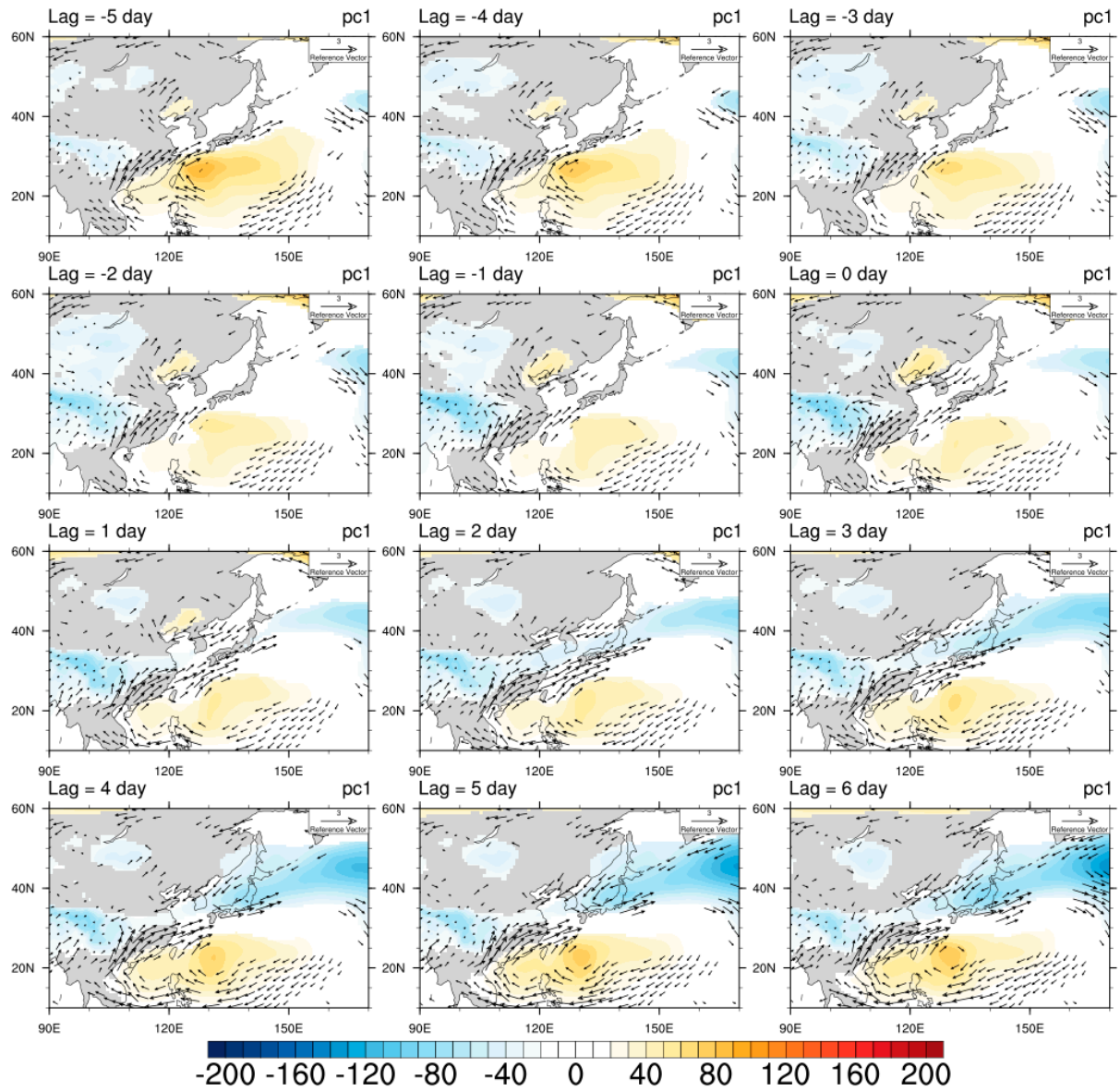
Jieun Wie, Jae-Young Byon, and Byung-Kwon Moon



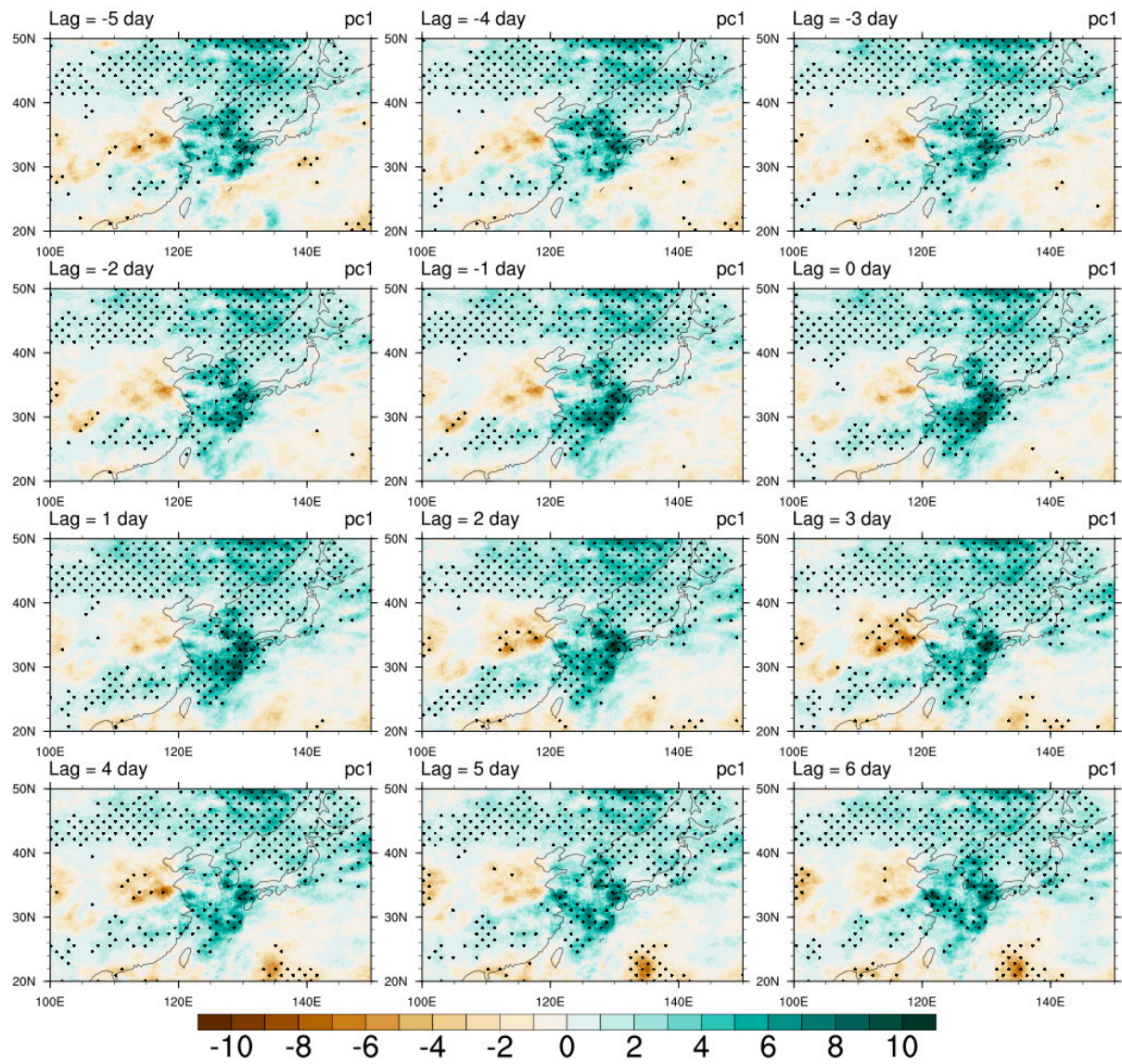
**Figure S1.** Power spectrum density of (a) ASOS precipitation, (b) PC1, (c) PC2, and (d) PC3 during the period of 2020–2023. Red, blue, and green lines indicate 95% and 5% confidence levels and Mar-kov red noise spectrum, respectively.



**Figure S2.** Lead-lag regression patterns against the PC2 time series for 850 hPa geopotential height anomalies (m) over the East Asian region: **(a)** meridionally averaged over 30°N–40°N and **(b)** zonally averaged over 120°E–140°E.

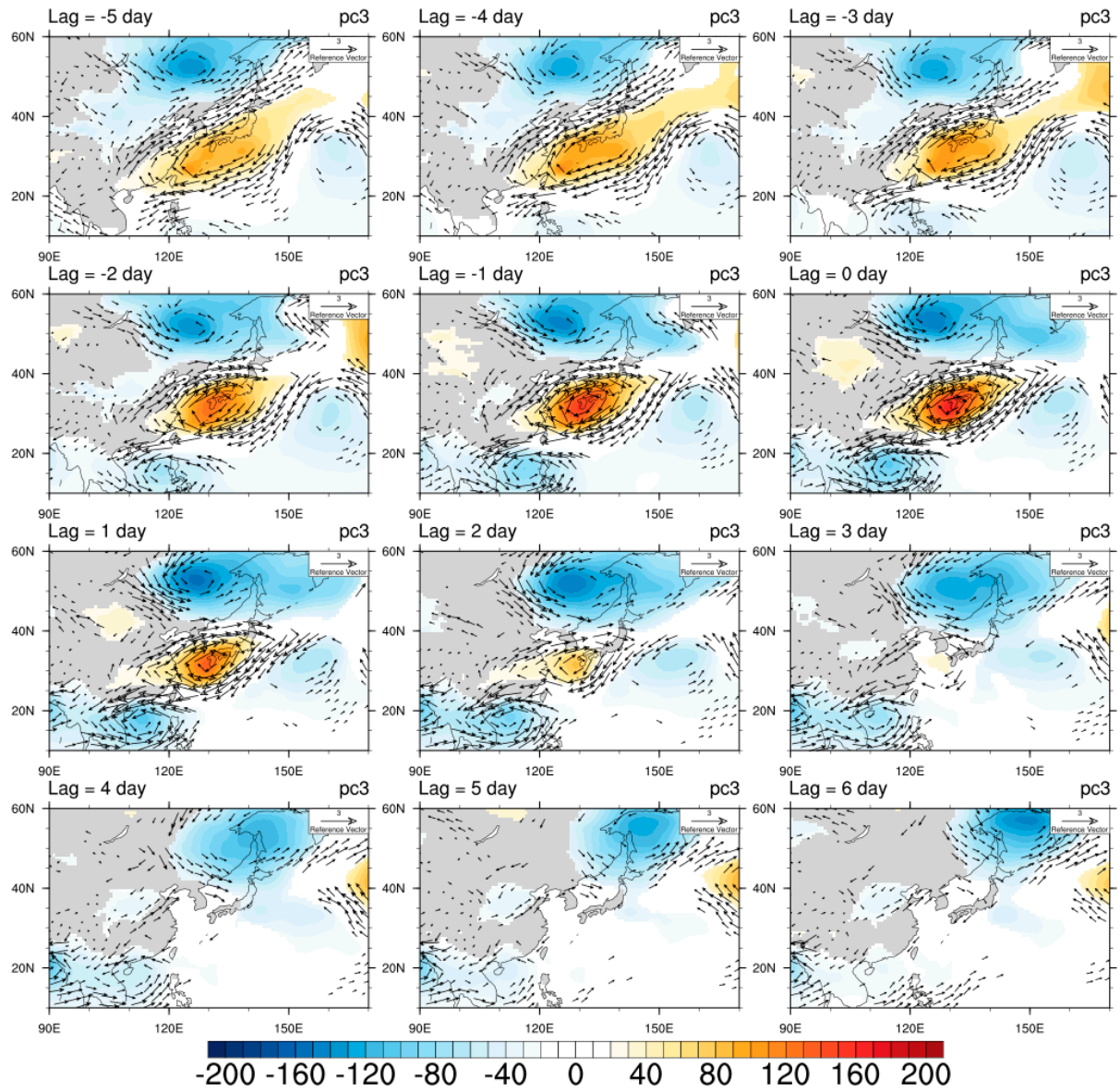


**Figure S3.** Lead-lag regression patterns of 850 hPa geopotential height (shaded, m) and wind (vector,  $\text{m s}^{-1}$ ) anomalies against the PC1 time series. Only significant anomalies above the 90% confidence level based on the Student's  $t$ -test are plotted.

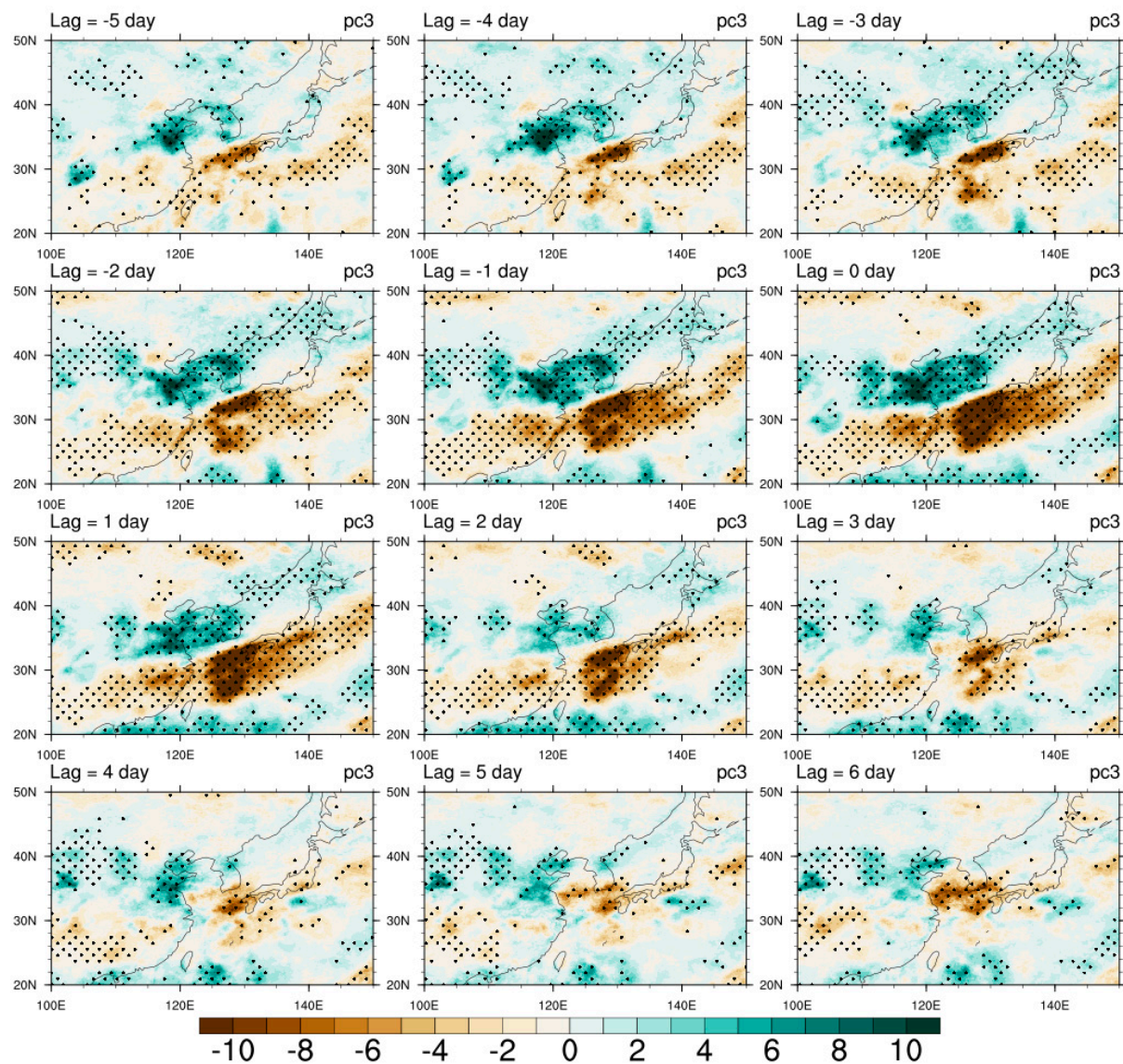


**Figure S4.** Same as Figure S3, except for the precipitation anomalies (mm day<sup>-1</sup>).





**Figure S5.** Lead-lag regression patterns of 850 hPa geopotential height (shaded, m) and wind (vector, m s<sup>-1</sup>) anomalies against the PC3 time series. Only significant anomalies above the 90% confidence level based on the Student's *t*-test are plotted.



**Figure S6.** Same as Figure S5, except for the precipitation anomalies (mm day<sup>-1</sup>).