

**Possible effects of the North Atlantic Oscillation on the strengthening relationship between the East Asian summer monsoon and ENSO**

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In contrast to the weakened relationship between the Indian summer monsoon and El Niño-Southern Oscillation (ENSO) since 1970s, the East Asian summer monsoon (EASM) has exhibited a strengthened relationship with ENSO. In this study, observational and numerical evidences manifest that spring NAO may exert notable impacts on the enhancement of the EASM-ENSO relationship. Anomalous spring NAO induces a tripole sea surface temperature anomaly (SSTA) pattern in North Atlantic which persists into ensuing summer. The tripole SSTA excites downstream tele-connections of a distinct Rossby wave train prevailing over the northern Eurasia and a simple Gill-Matsuno-type quadrupole response over western Pacific. The former modulates the blocking highs over the Ural Mountain and the Okhotsk Sea. The latter enhances the linkage between the western Pacific subtropical high and ENSO. The co-effects of the two tele-connection patterns help to strengthen (or weaken) the subtropical Meiyu-Baiu-Changma front, the primary rain-bearing system of the EASM. As such, spring NAO is tied to the strengthened connection between ENSO and the EASM.