

Influence of combined effect of AO and WP pattern on East Asian Winter Monsoon

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Changes in East Asia Winter Monsoon due to the combined effect of Arctic Oscillation (AO) and Western Pacific (WP) pattern over the last 56 Years (1958/1959-2013/2014) were investigated (Park and Ahn, 2015). The study results revealed that the effect of AO on winter temperature in East Asia could be changed depending on the phase of the WP pattern in the North Pacific. The negative relationship between the temperature of East Asia (25°-45°N, 110°-145°E) and the AO increased when the AO and WP were in-phase with each other. Hence, when winter negative (positive) AO was accompanied by negative (positive) WP, negative (positive) temperature anomalies were dominant across the entire East Asia region. Conversely, when the AO and WP were out-of-phase, the winter temperature anomaly in East Asia did not show distinct changes. Furthermore, from the perspective of stationary planetary waves, the zonal wavenumber-2 patterns of sea level pressure and geopotential height at 500hPa circulation strengthened when the AO and WP were in-phase but were not significant for the out-of-phase condition.

Key words: East Asian winter monsoon, Arctic Oscillation, Western Pacific pattern

References

Park, H.-J., and J.-B. Ahn, 2015: *Clim. Dyn.*, DOI 10.1007/s00382-015-2763-2.

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