Geophysical Research Abstracts
Vol. 14, EGU2012-3806-3, 2012
EGU General Assembly 2012

Changes in East Asian Winter Monsoon associated with the combined effect of ENSO and PDO

J. W. Kim
APEC Climate Center, Busan, Republic Of Korea (subdus@apcc21.net)

The changes in East Asian winter monsoon (EAWM) associated with the combined effect of El Niño and Southern Oscillation (ENSO) and Pacific Decadal Oscillation (PDO) are investigated using various observational datasets. Author argues that when the ENSO and PDO are in in-phase combination (i.e., El Niño/high PDO phase or La Niña/low PDO phase), the EAWM tends to be significantly stronger or weaker. However, when the ENSO and PDO are in out-of-phase combination (i.e., El Niño/low PDO phase or La Niña/high PDO phase), the EAWM does not exhibit distinct features. Hence, the relationship between EAWM and ENSO on the interannual timescale is clearly modulated by interdecadal variations of the PDO, showing a synergistic or dissipative force in accordance with the phase interferences of ENSO and PDO. The plausible dynamical processes through which the EAWM is weakened or strengthened is closely linked to the sea surface temperature response over the confined Western North Pacific region (15-40N, 120-160E) and northeasterly wind anomalies over the central eastern North Pacific induced by the intensity of Aleutian low and Western North Pacific subtropical high.