

**Asian Monsoon Years (2007-2012): Blocking modes and East Asian winter monsoon**Wen Zhou<sup>†</sup>; Ho Nam Cheung<sup>†</sup> City University of Hong Kong, Hong KongLeading author: [wenzhou@cityu.edu.hk](mailto:wenzhou@cityu.edu.hk)

This study attempts to assess the possible linkage between Eurasian blocking and East Asia Winter Monsoon (EAWM). During boreal winter, dominance of a blocking system thermally enhances the northerly cold advection in its downstream. An active blocking season at the upstream of Siberia potentially promotes a cold winter in East Asia and vice versa. The seasonal blocking frequency can be regarded as a response to a compounded signal of Arctic Oscillation (AO) and El Niño/Southern Oscillation (ENSO). Weakened (Strengthened) meridional flow in the positive (negative) phase of AO is unfavorable (favorable) for blocking high formation. As AO shows a close relationship with North Atlantic Oscillation (NAO), the teleconnection between AO and blocking may exist in the form of an eastward propagating wave-train signal generated over the North Atlantic Ocean. Be that as it may, the signal transmission across East Asia may be disturbed by the external effect of ENSO, which probably suppresses (enhances) the sinking motion near Siberia in its positive (negative) phase. In general, the upstream blocking-EAWM linkage tends to stronger (weaker) when AO and ENSO are in-phase (out-of-phase). If both AO and ENSO attain their positive (negative) phase, uniform warming (cooling) would occur in East Asia with more (fewer) Ural blocking. Rather, if they are out-of-phase, the monsoonal flow in the northern (southern) part of East Asia would be stronger in negative AO (negative ENSO) with more blocking over Europe (Pacific).