## Inter-decadal variation of intraseasonal predictability of the East Asian winter monsoon

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The current skill of the seasonal prediction of the Asian monsoon is higher in winter than in summer. However, the skill falls rapidly north of 40°N, where the Siberian High (SH) is a prominent manifestation of the East Asian winter monsoon (EAWM). Variation of the SH is closely related to winter weather over a large latitudinal span from equator to 60°N. Its strength signifies the severity of winter in North Asia, and its southeastward movement triggers cold surges that is one of the main agents for high impact weather in southern China and Southeast Asia. Here we show that in the three recent decades the SH possessed an intraseasonal variation that tended to be seasonallysynchronized, producing an out-of-phase relationship between November and December-January. This implies a special predictability that did not exist in the two previous decades. If this relationship continues the EAWM will be the only known major circulation system whose intensity can be predicted to reverse from the previous month. This relationship calls into question the practice of making threemonth forecasts of the EAWM for November-December-January, while at the same time raises the possibility that a forecast of November may be extended into December and January. We hypothesize that this predictability is the result of the seasonal cycle and a reduced frequency of Pacific blocking events during the positive phase of the multi-decadal variation of the Arctic Oscillation (AO). While this predictability may diminish if the phase of AO is reversed, it may become more prevalent in the future if the prediction of more frequent positive AO-like patterns in a warming world by climate models forced by greenhouse gas is borne out.