Plain Language Summary: This study examines the theoretically estimated predictability and practical prediction skill of the he East Asia and western North Pacific boreal summer intra-seasonal oscillation (BSISO) in the Beijing Climate Center Climate System Model (BCC_CSM2.0). Results show that the prediction skill and predictability of BSISO in BCC_CSM2.0 are 14 and 24-28 days respectively. The model shows a strong dependence on initial/target BSISO phase and amplitude.
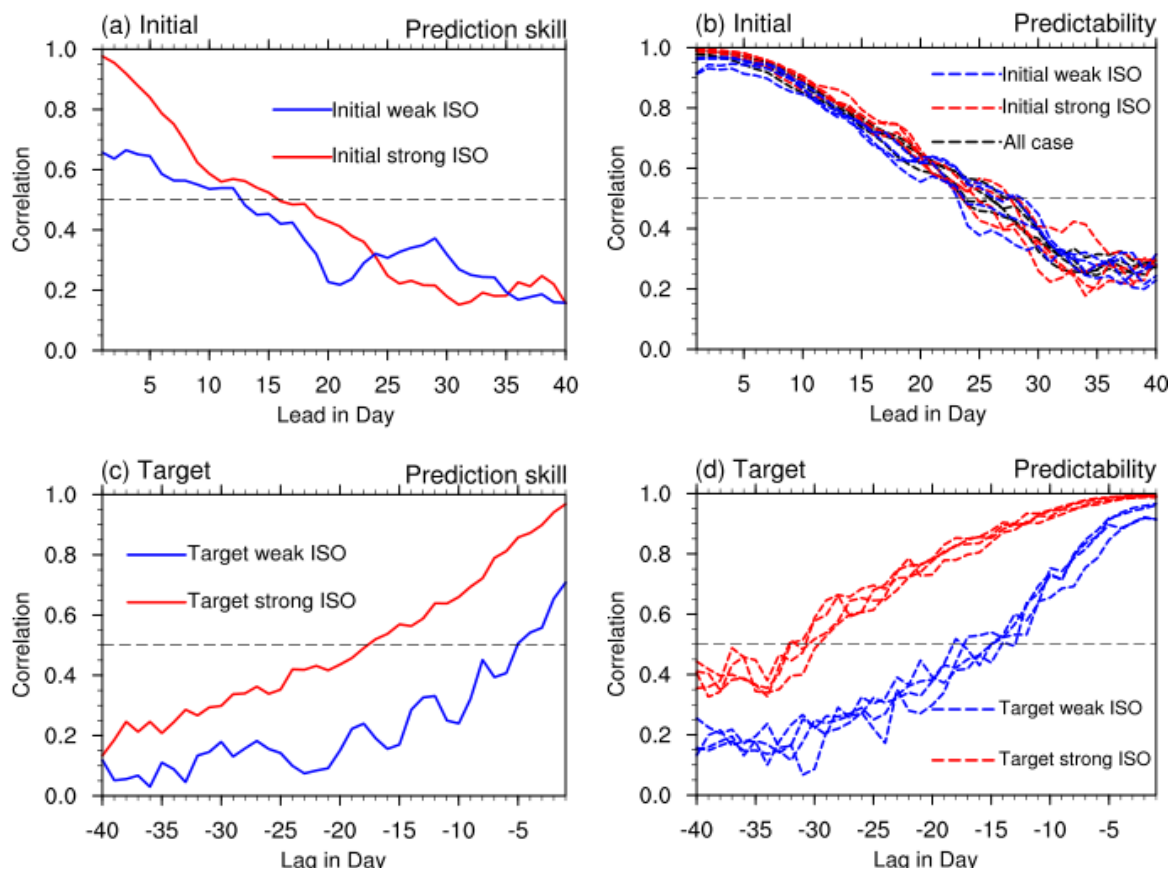
Figure 1. The (a) prediction skill and (b) predictability in boreal summer for all cases (black), initial strong (red) and weak (blue) cases as a function of forecast lead days. (c), (d) as in (a), (b), but for the forecasts targeting BSISOs as a function of forecast lag days. Results of four individual ensemble members are plotted in (b) and (d).

- 14-year hindcast experiments initialized with 5-day interval and 4–member ensemble indicate that prediction skill and predictability of BSISO are about 14 and 24-28 days respectively.
- Relatively higher prediction skill is found for the initially/target strong BSISO cases, while lower skill occurs when the BSISO-related rain-band propagates northward from the western North Pacific to the East Asia.
- Systematic errors are found such as underestimation of BSISO amplitude and faster phase speed.