Shibuya, R., M. Nakano, C. Kodama, T. Nasuno, K. Kikuchi, M. Satoh, H. Miura, and T. Miyakawa, 2021: Prediction skill of the boreal summer intra-seasonal oscillation in global non-hydrostatic atmospheric model simulations with explicit cloud microphysics. *J. Meteor. Soc. Japan*, **99**, 973−992. https://doi.org/10.2151/jmsj.2021-046

Plain Language Summary: This study assessed a prediction skill of the Boreal Summer Intra-Seasonal Oscillation (BSISO) mode using one-month simulations by a global non-hydrostatic atmospheric model. It was found that the model showed an BSISO prediction skill of approximately 24 days, while the prediction skill tended to be higher (~2 days) when the BSISO events began in the initial phases where a major convective center was located over the Philippine Sea.

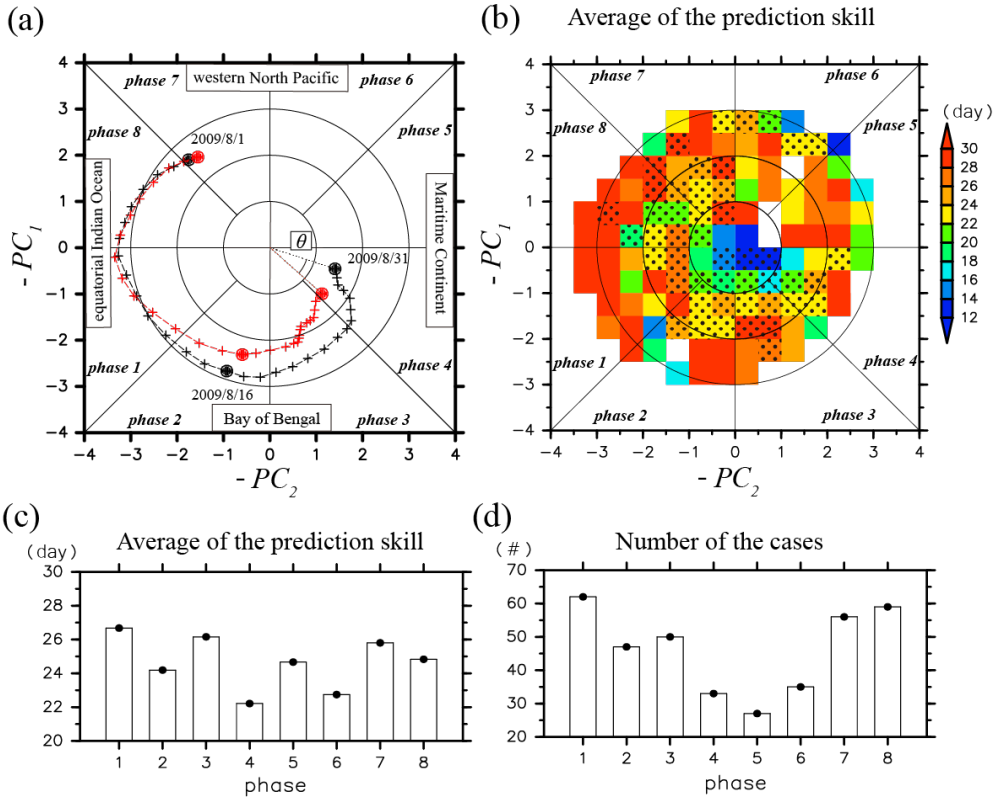

Figure 1. (a) An example of the phase space representation of the state of the BSISO mode for the period of 1-31 August 2009 by CERES (black) and the model (red). A star mark shows a location of a pair of (PC_1, PC_2) at a date. (b) Composites of the prediction skill of the BSISO experiments in August 2000-2014 binned for the initial phase and amplitude of the BSISO. The dotted bin indicates a bin which includes the number of the cases more than four. (c) The averaged prediction skill of the BSISO (day) and (d) the number of the cases averaged by the initial phases of the BSISO.

- The initial phase-dependency of the prediction skill was associated with a stagnant behavior of the convective cells over the Philippines sea in the model.
- Based on a regression coefficient analysis, the stagnation of the propagation over the Philippines could be attributed to biases of the background monsoonal circulation in the model.