Predictability researches using medium-range to subseasonal ensemble forecasts at University of Tsukuba

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Abstract:

In our talks, we will introduce our recent researches about predictability of atmospheric phenomena using medium-range ensemble forecasts (TIGGE forecasts, GEFS reforecasts and OpenIFS experiments with NCEP initial conditions).

Matsueda and Palmer (2018) assessed the flow-dependent forecast skill of Euro-Atlantic weather regimes: NAO+ and NAO−, Atlantic ridge, and Euro-Atlantic blocking, for extended winters. The TIGGE forecasts show the highest probabilistic skill for forecasts initialised on NAO− and the NAO− forecasts during 2006/07-2013/2014. However, the GEFS reforecast during 1985/1986–2013/2014 revealed that these recent high skills reflect the occurrence of four long-lasting (>30 days) NAO− events in 2009/2010–2013/2014 and that the skill for forecasts initialised on NAO− before 2009/2010 was the lowest. The longer the NAO− events persist, the higher the skill of forecasts initialised on NAO−. The skill dependency on regime duration is less clearly observed for the other regimes.

Dr. Yamagami will introduce his research about predictability of Arctic cyclone (Yamagami et al., 2018a,b, 2019). Mr. Matsunobu will give a short talk about predictability of heavy rainfall events in Japan in July 2018.