



## **Predicting temperature over East Asia: a role of the North Atlantic Ocean?**

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We used the DePreSys3 prediction system to predict the temperature fluctuation over North East Asia. Hindcasts reproduce the interdecadal evolution of the surface air temperature (i.e. the cooling of the 60s and the warming of the 90s). DePreSys3 has skill in predicting temperature for the 1 year and 2-5 year lead-time over East Asia. We found that the warming over North East Asia is associated with a positive anomaly of geopotential height at the upper-level. The subtropical jet allows a Rossby wave to propagate from the Atlantic Ocean to eastern Asia. The wave modulates the temperature over Eurasia and leads to a maximum of warming over Europe and Eastern China-Mongolia. We propose the wave to be originated from the warming over the North Atlantic Ocean and the associated northward shift of the intertropical convergence zone to be responsible for the wave train. In this study we propose the North Atlantic Ocean to be a source of predictability for the temperature over East Asia. This hypothesis has lots of implications and will be assessed in further works by computing sensitivity experiments.