

The Aleutian-Icelandic seesaw in ensemble GCM simulations

Y. Orsolini (1), N. Kvamstø (2,3), I. Kindem (3), S. Ma (3), A. Sorteberg (3)

(1) Norwegian Institute for Air Research (NILU), Norway, (2) Geophysical Institute, University of Bergen, Norway, (3) Bjerknes Centre for Climate Research, Bergen, Norway

There is recent evidence that climate variations over the North Pacific and Atlantic sectors are coupled in late winter, through an Aleutian-Icelandic Seesaw (AIS). This seesaw involves the horizontal propagation of planetary and synoptic-scale eddies, and links dynamically a PNA-like (Pacific-North America) pattern and the NAO. This seesaw has potential impact on the predictability over the North Atlantic region, as anomalies develop first over the North Pacific and then propagate downstream over a time scale of 2-3 months. These anomalies also influence the propagation of gravest planetary waves into the stratosphere, and the occurrences of stratospheric sudden warmings. We have investigated the signature of this seesaw in a series of seasonal hindcast simulations using an ensemble approach, using the AGCM Arpege. The simulations cover the ERA-15 period.

Preliminary results are also shown on the seesaw signature in ensemble decadal simulations, with realistic SST and snow cover.