



**Icelandic
Met Office**



WORLD
METEOROLOGICAL
ORGANIZATION



Seasonal Forecast User presentation

An Icelandic perspective of use /useless
Seasonal Forecasts



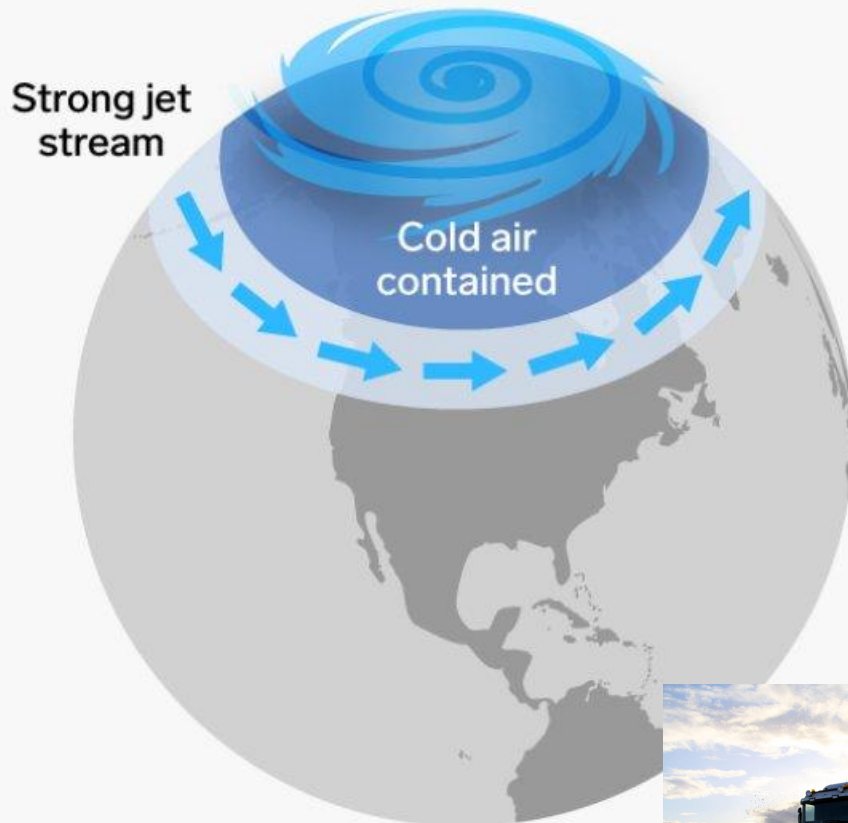
**Einar Sveinbjörnsson,
Meteorologist, MSc.
Veðurvaktin Consulting**



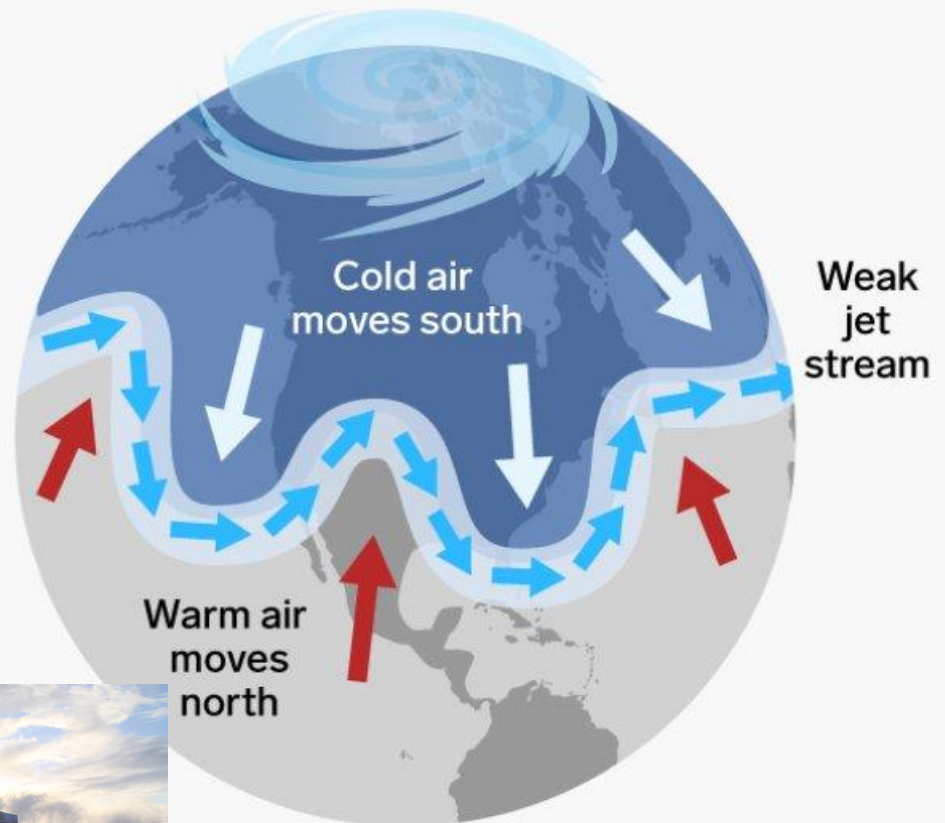
Winter: 2019-2020

Winter: 2020-2021

Stable polar vortex



Wavy polar vortex



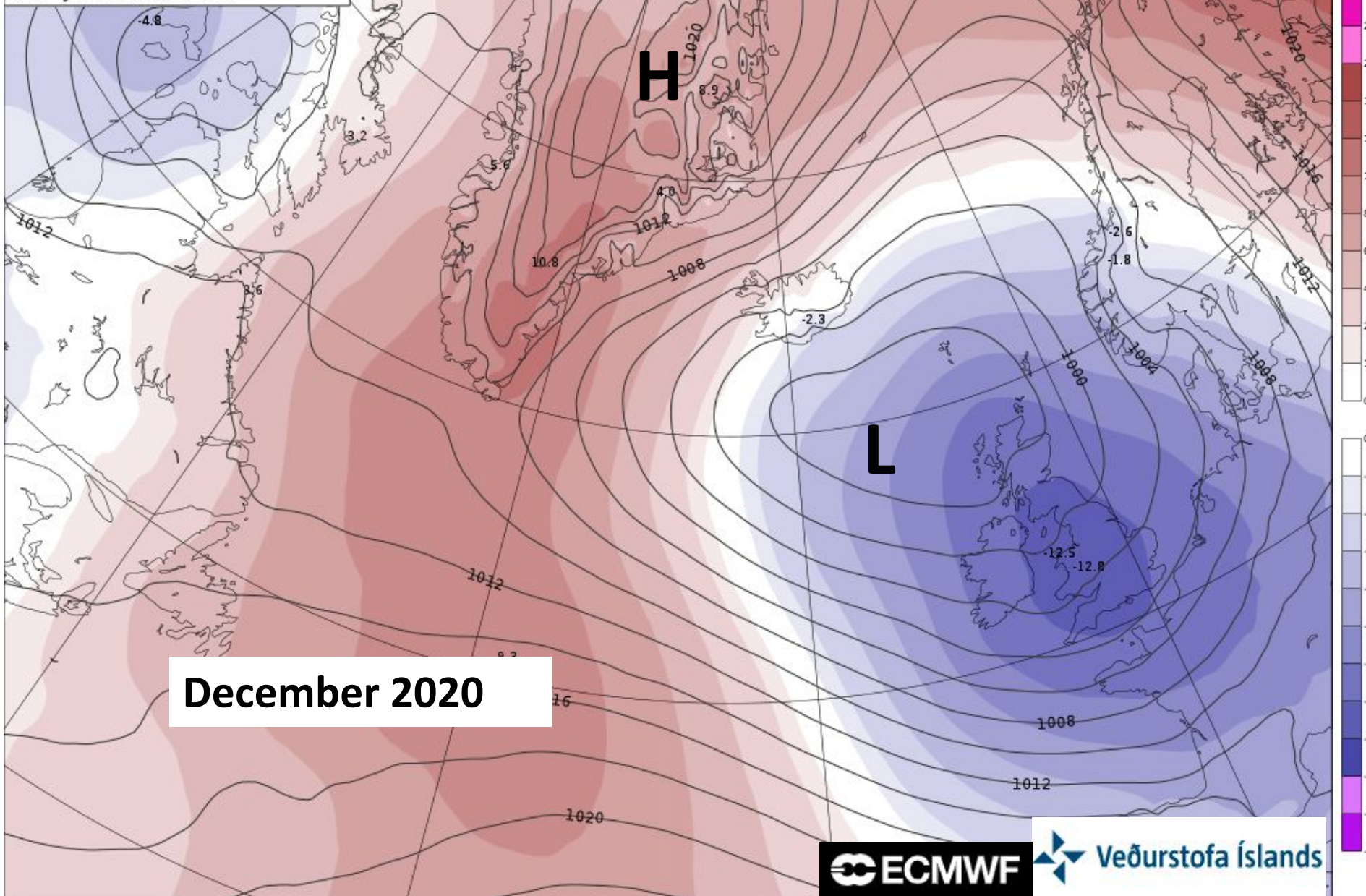
Heavily winter maintainance in Iceland. Large costs.

Light snow and winds. Low costs.

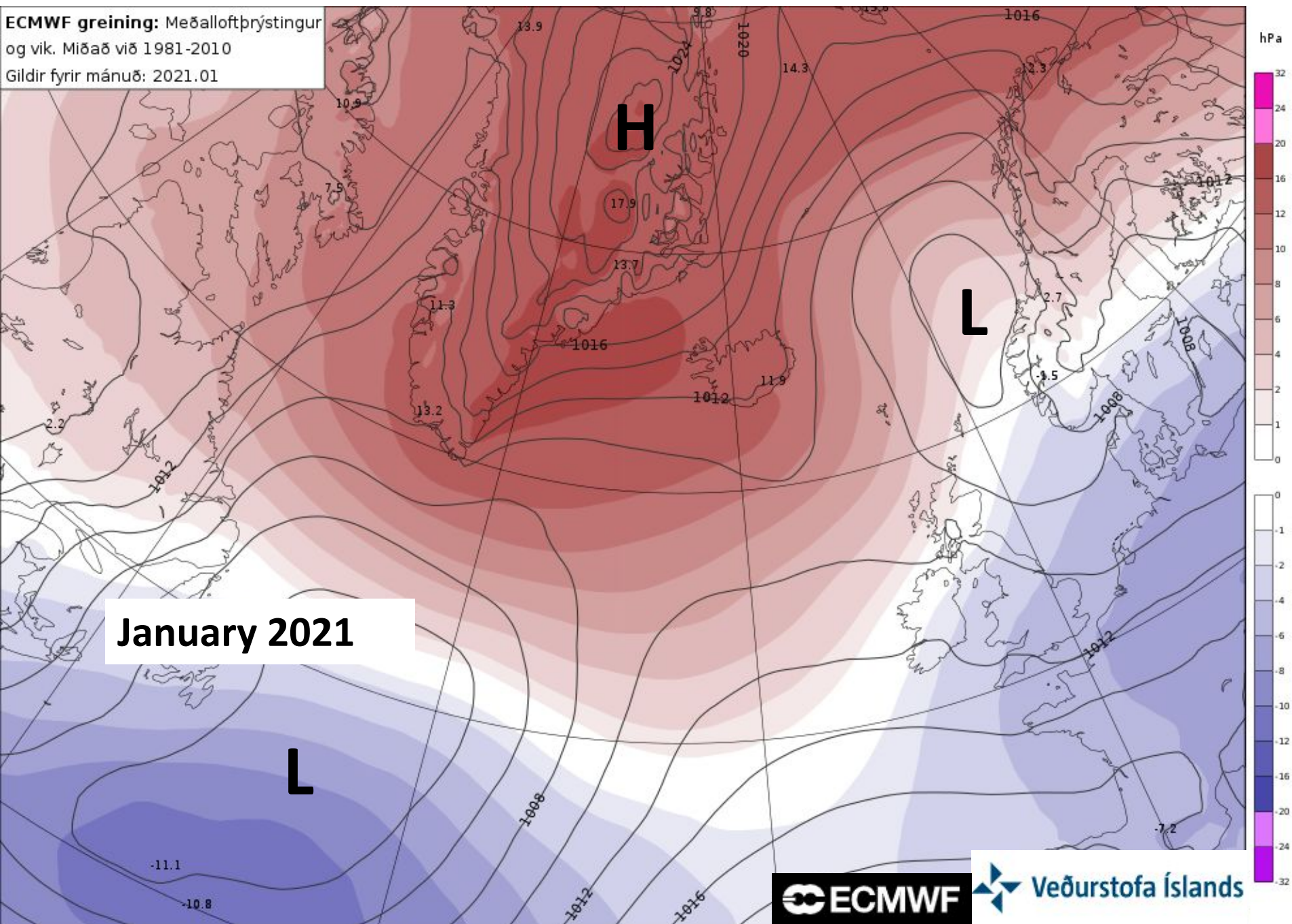


Icelandic Road Authority

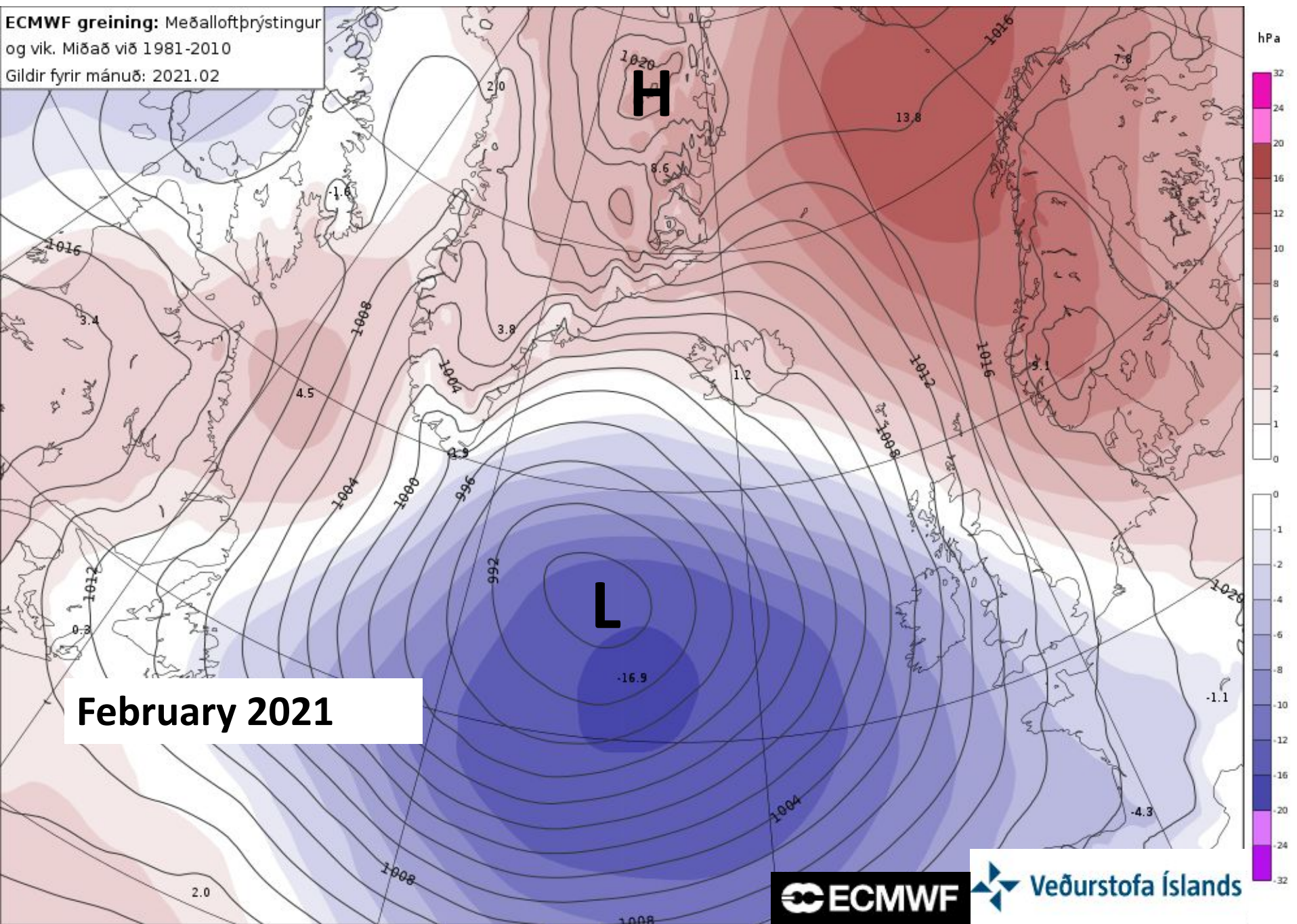
ECMWF greining: Meðalloftþrýstingur
og vik. Miðað við 1981-2010
Gildir fyrir mánuð: 2020.12



ECMWF greining: Meðalloftþrýstingur
og vik. Miðað við 1981-2010
Gildir fyrir mánuð: 2021.01



ECMWF greining: Meðalloftþrýstingur
og vik. Miðað við 1981-2010
Gildir fyrir mánuð: 2021.02



February 2021

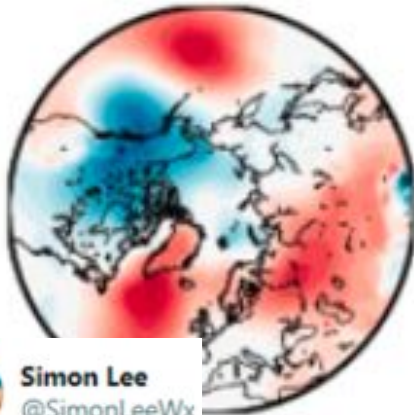
3 months outlook issued November 13th. 2020
Monthly base!

December 2020

January 2021

February 2020

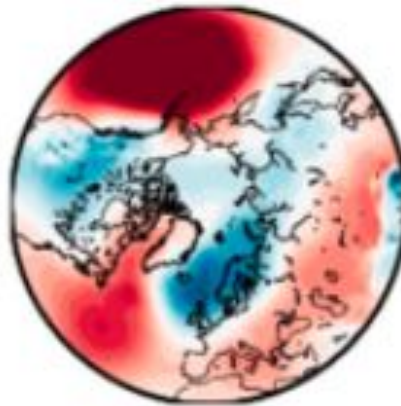
ECMWF



Simon Lee
@SimonLeeWx

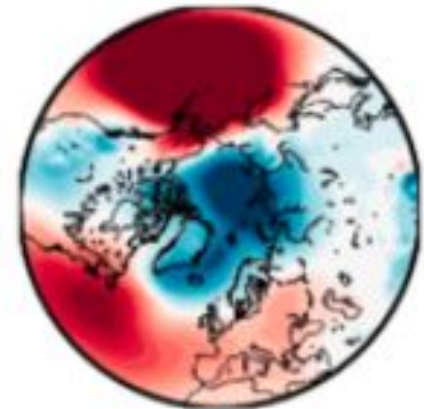
The forecast indicates strongly an high pressure anomaly south of Greenland combined to weaker circulation.

ECMWF



Low pressure anomaly east and southeast of Iceland, and high pressure anomaly near Canadian N-Am.

ECMWF

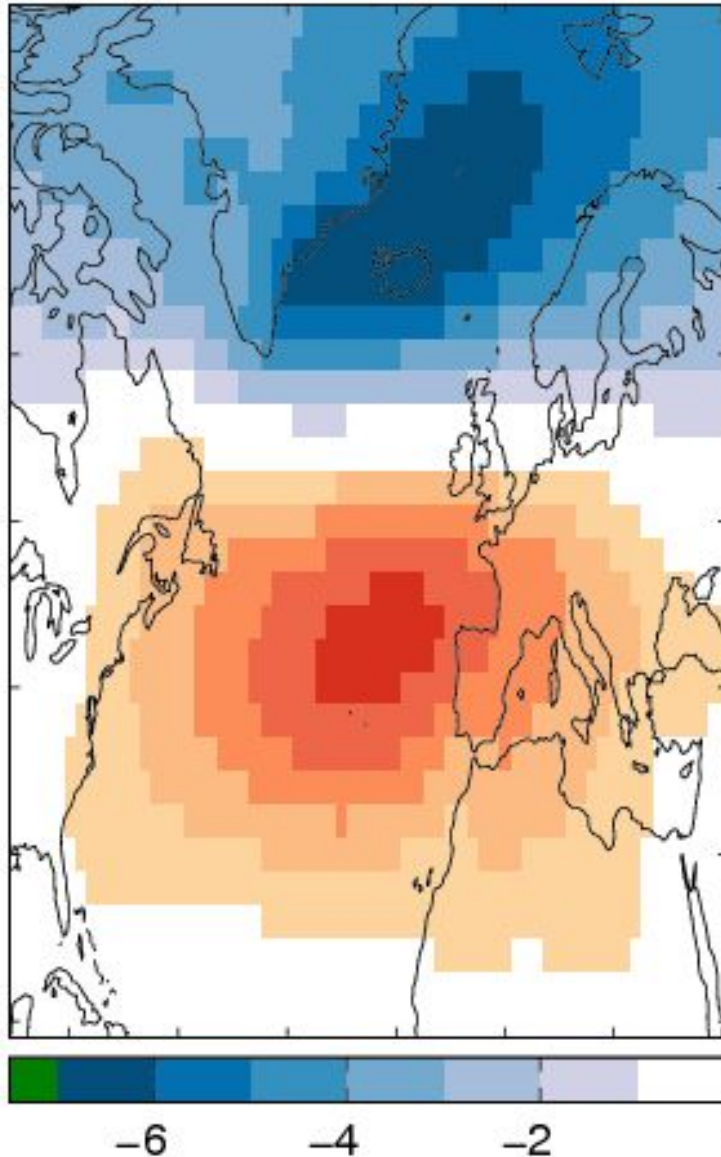


Typical for stronger circulation and low pressure disturbances passing Iceland.

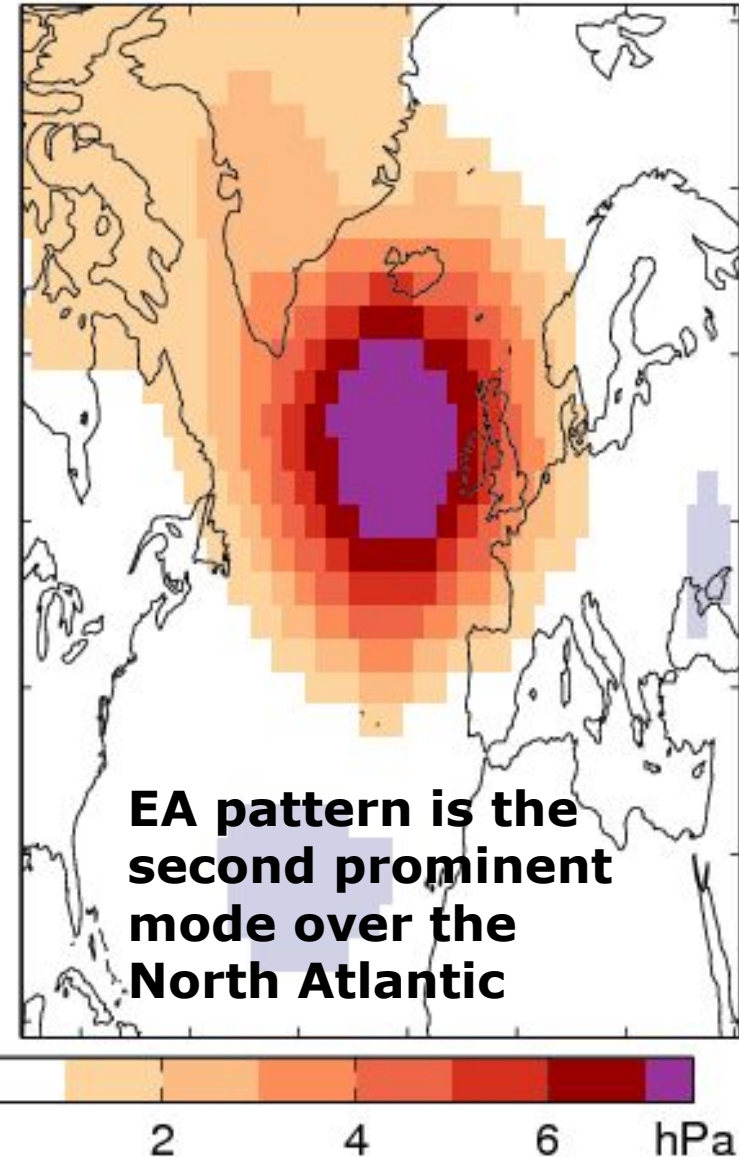
NH Teleconnection indices are useful

+ PNA
(not shown)

North Atlantic Oscillation



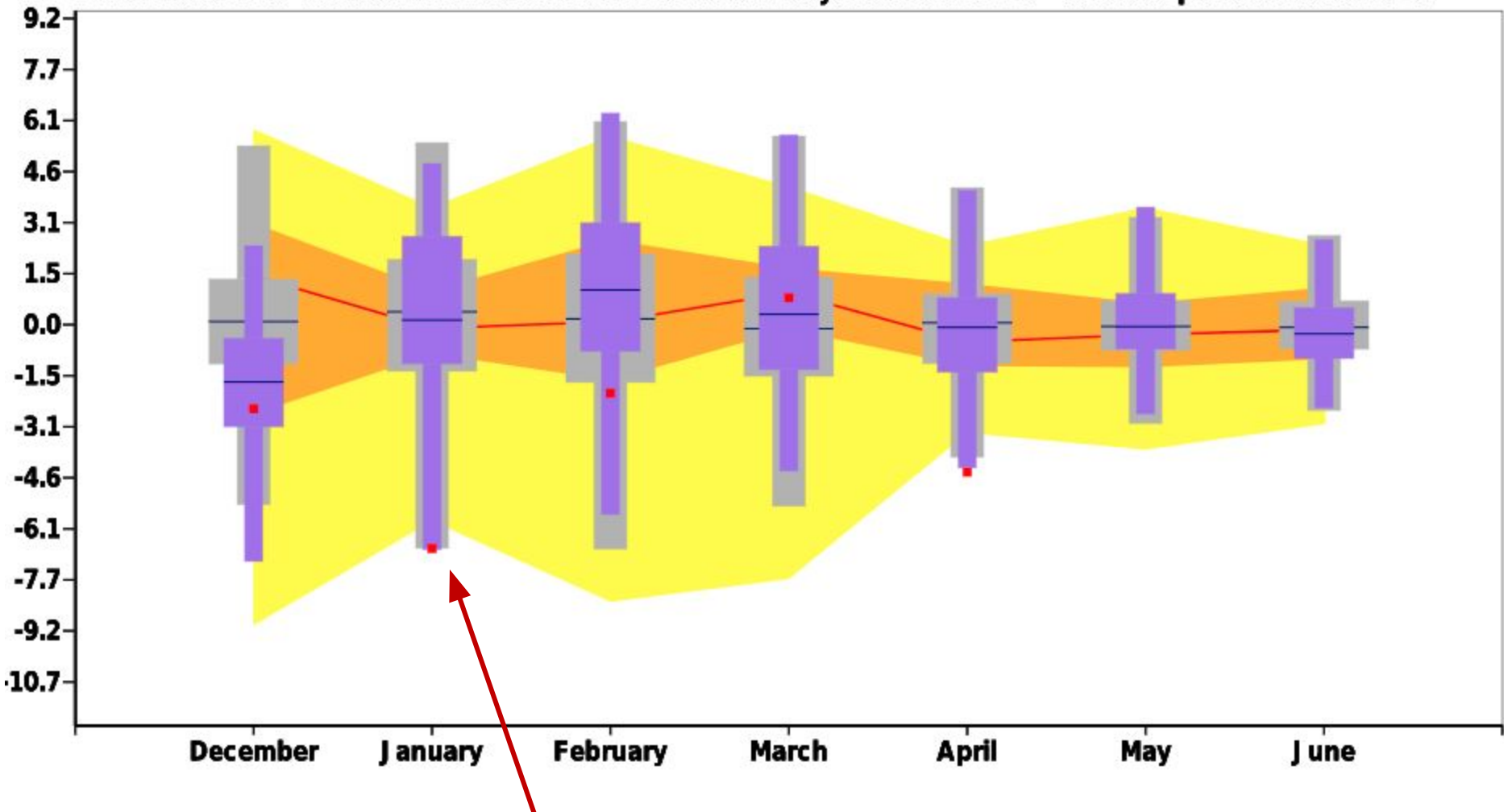
East Atlantic Pattern



North Atlantic Oscillation
Forecast initial date: 20201201



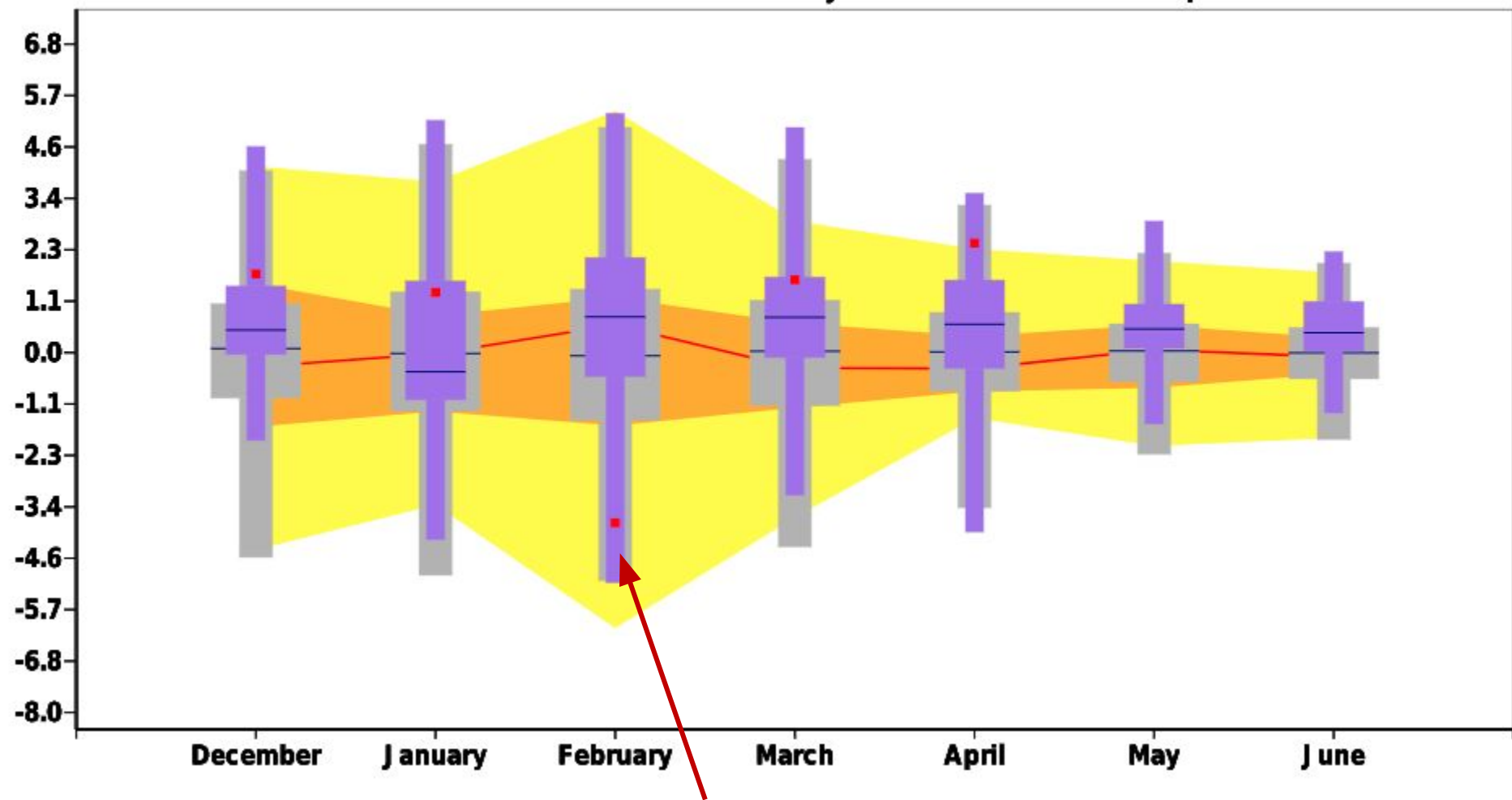
Ensemble size: Forecast=51 Model climate=600 Analysis climate=24 Climate period: 1993-2016



East Atlantic pattern

Forecast initial date: 20201201

Ensemble size: Forecast=51 Model climate=600 Analysis climate=24 Climate period: 1993-2016



ECMWF's Dec-Feb SLP anomaly forecast

C3S: ECMWF contribution

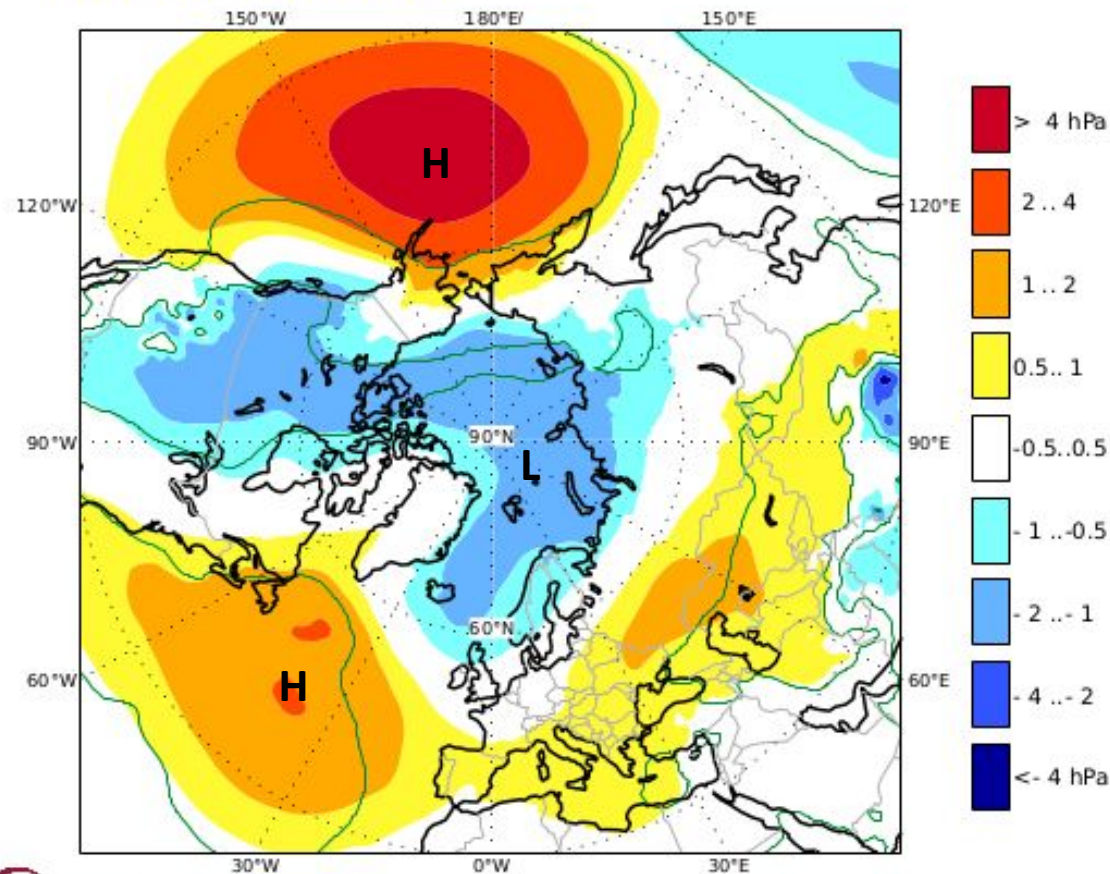
Mean MSLP anomaly

Nominal forecast start: 01/11/20

Ensemble size = 51, climate size = 600

DJF 2020/21

Solid contour at 1% significance level



JMA Dec-Feb SLP anomaly forecast

C3S: JMA contribution

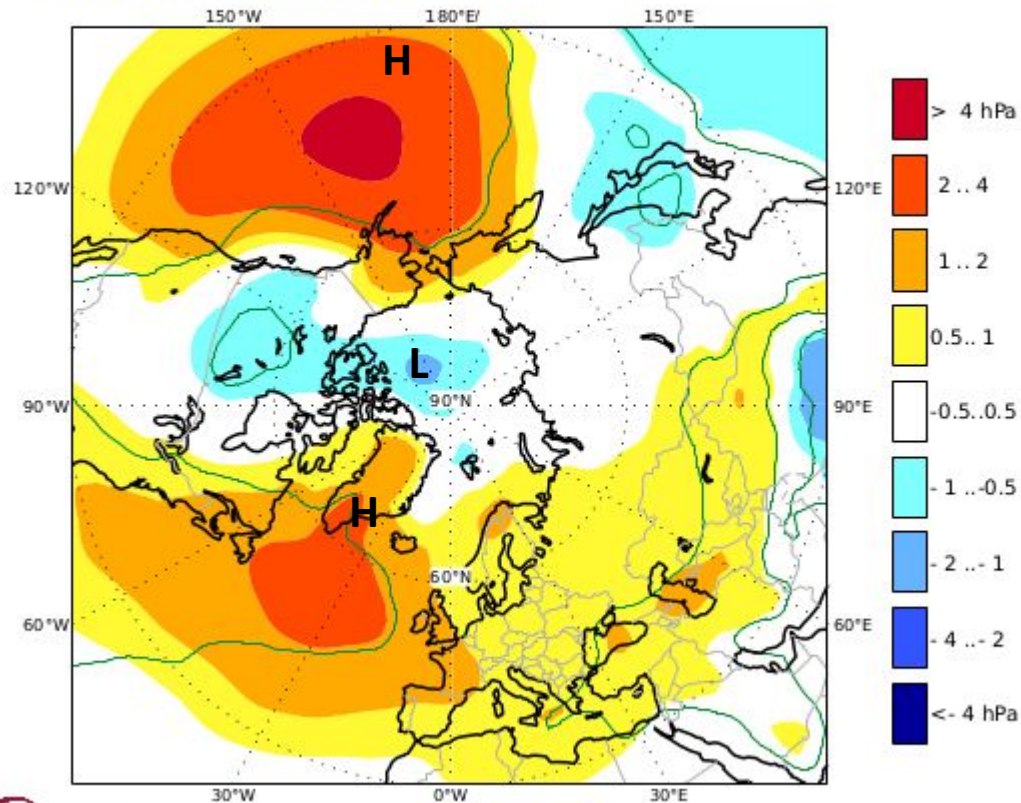
Mean MSLP anomaly

Nominal forecast start: 01/11/20

Ensemble size = 52, climate size = 240

DJF 2020/21

Solid contour at 1% significance level



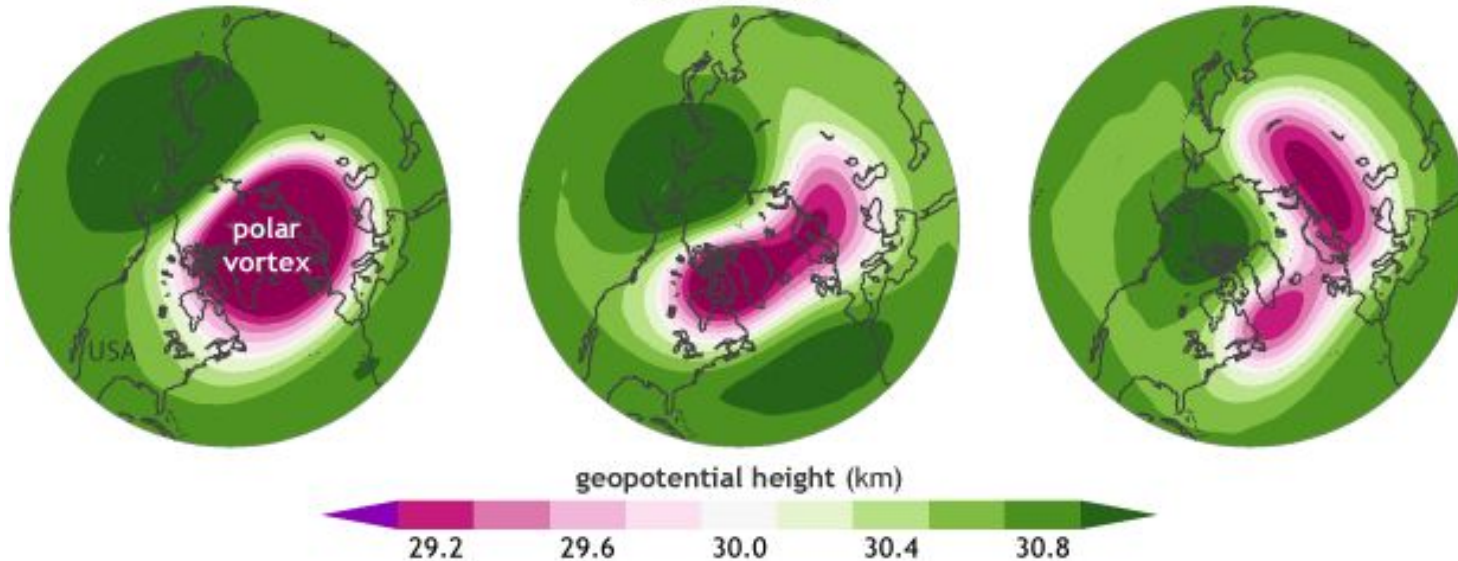
SSW – in early Jan. 2021

Disruption of stratospheric polar vortex in early January 2021

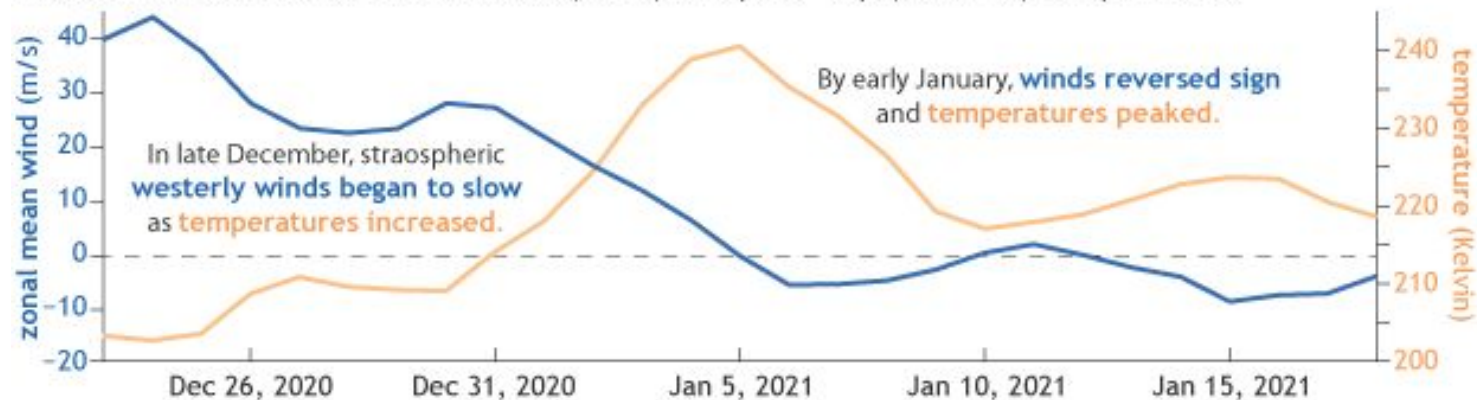
December 26, 2020

January 5, 2021
first day of SSW

January 15, 2021



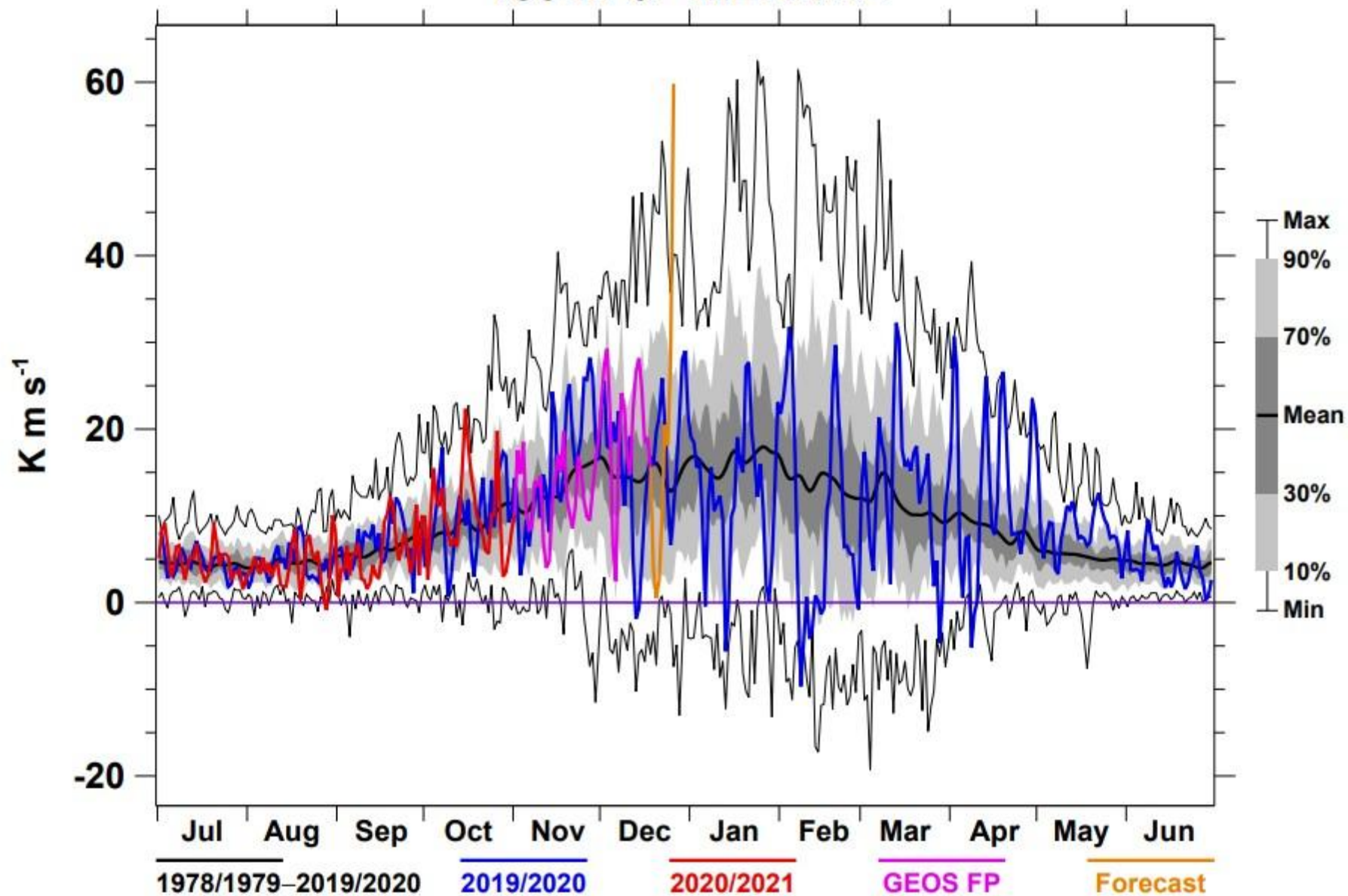
Evolution of 10mb zonal mean winds (60°N) and polar cap ($60\text{--}90^{\circ}\text{N}$) temperatures



Michelle L'Heureux

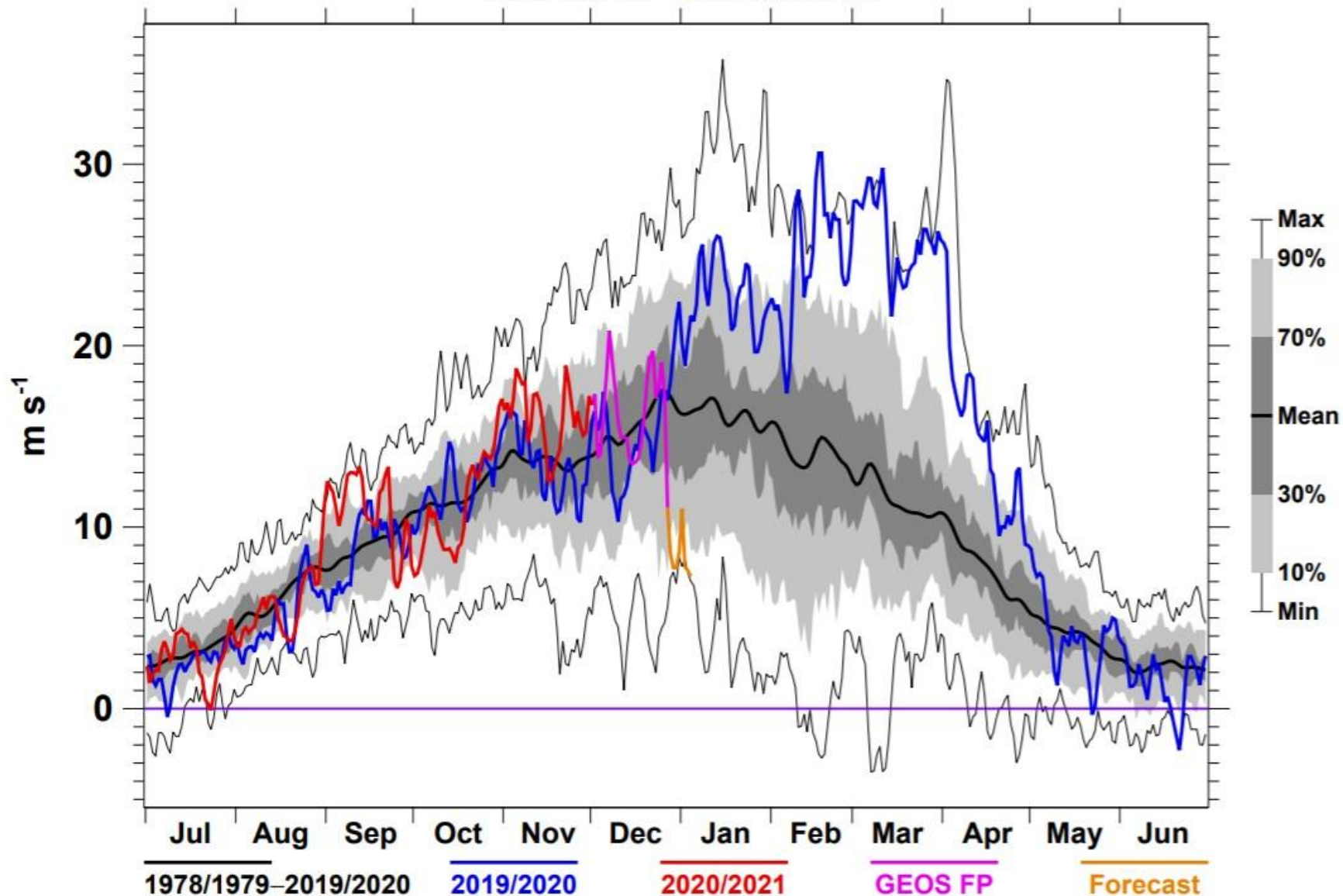
18th. Dec. fcst.

45-75°N Heat Flux 150 hPa MERRA2



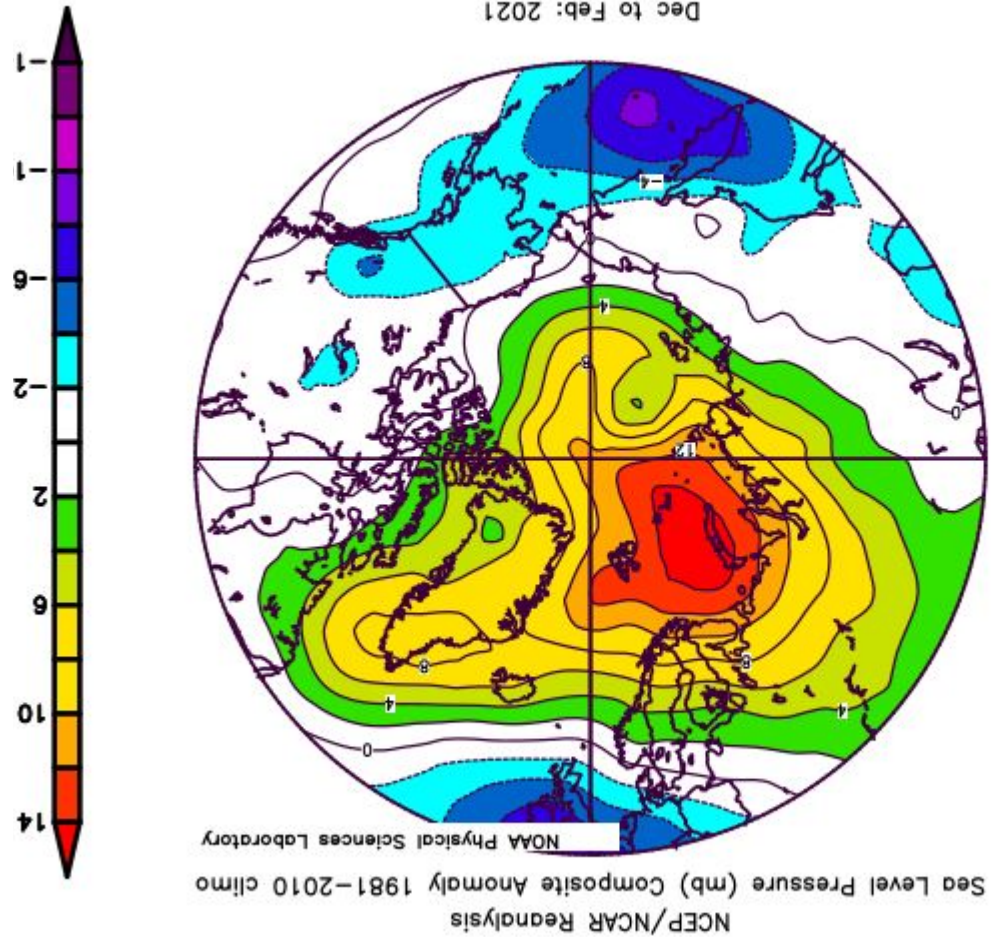
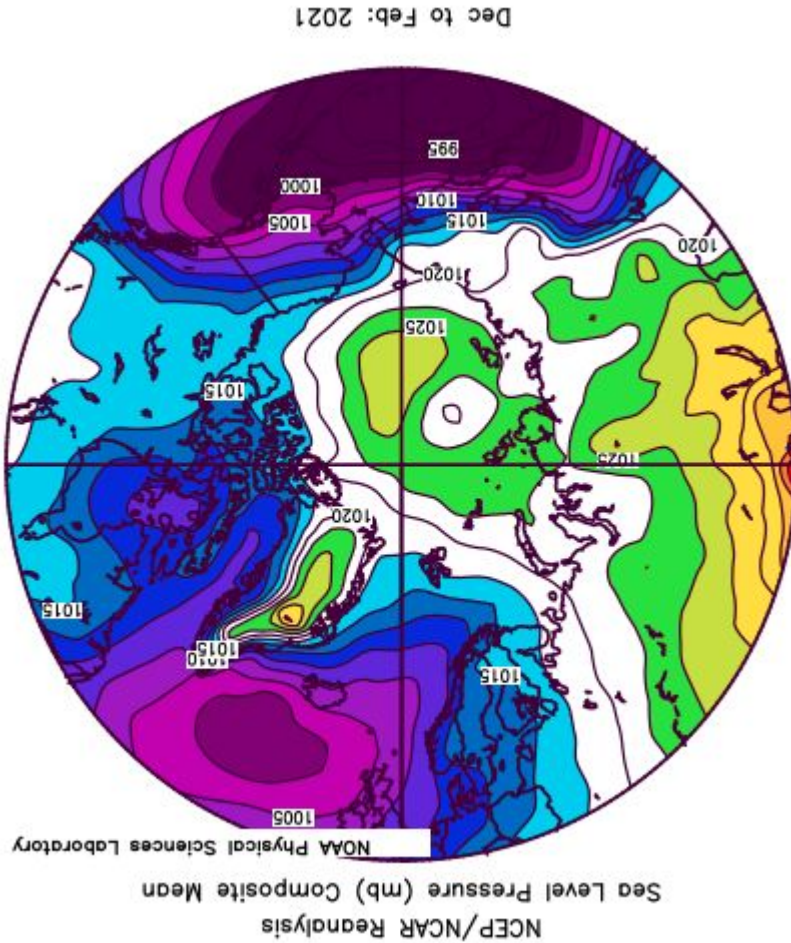
27th. Dec. fcst.

60°N Zonal Mean Zonal Wind 100 hPa MERRA2



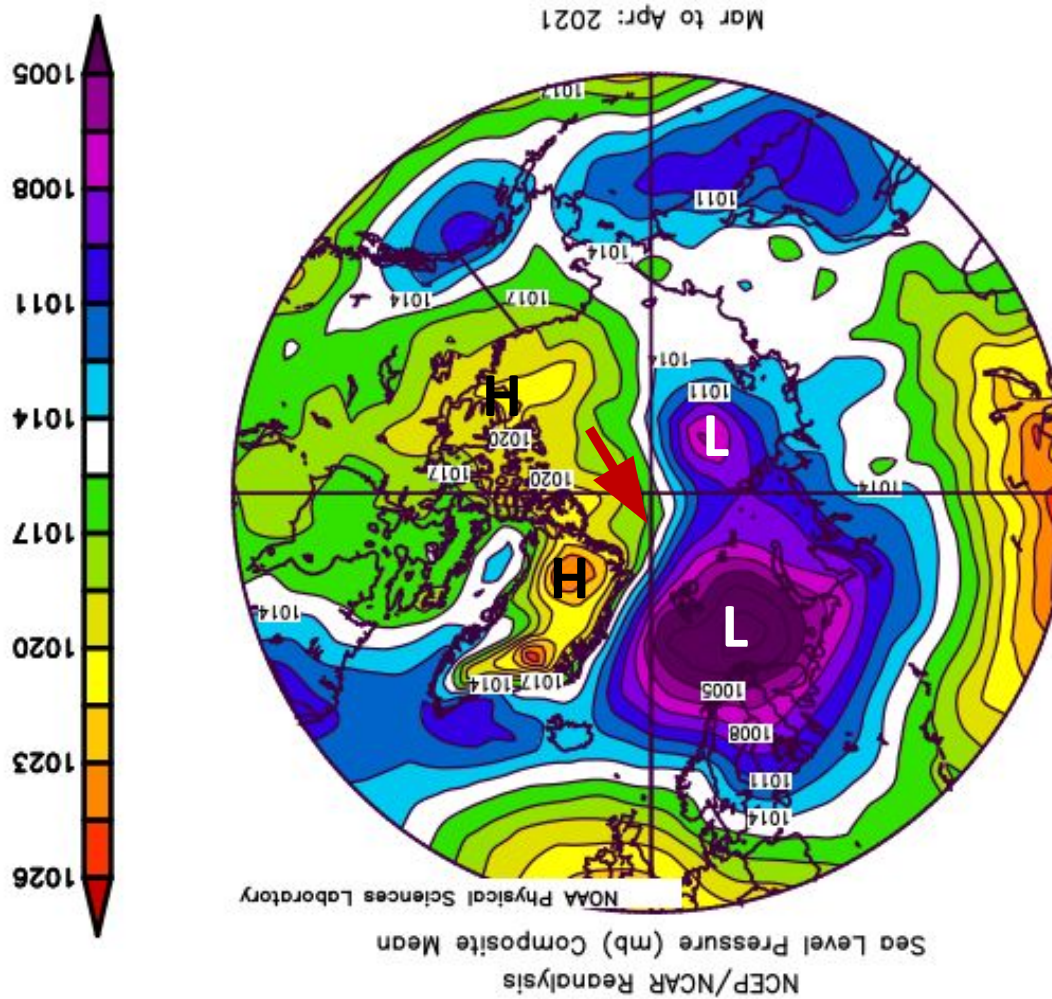
Des 2020 –feb 2020:

Huge Positive pressure anomalie in the Arctic
but relatively weak pressure gradients.



March & April 2021:

Ongoing Positive pressure anomaly over Greenland, but low pressure in the Barents Sea and Kara Sea



Creates Ice-drift towards Fram Strait.

- The main weather pattern during a whole season is normally quite variable – rarely Homogeneous !!

- Important to split the 3 months outlook to separate forecasts for each month.

- Look closer to outlook of main teleconnections indices and how they affect winds, temperature and precipitation in the Arctic and surroundings.

- A future goal is to imply possibilities in the winter outlook for SSW (early or late) - an era of progressing Research.

