

Slideshow of the latest bulletin



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Météo-France Seasonal Forecast Bulletin

NOVEMBER - DECEMBRE - JANUARY 2020/2021

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General synthesis : NDJ 2020/2021

A) Oceanic forecast :

- ENSO : A La Niña is underway with both oceanic and atmospheric signature . Most models suggest the La Niña will strengthen, peaking in December.
- IOD : negative situation becoming neutral during next quarter.

B) Drivers :

- The central Pacific La Niña conditions associated with negative PDO promotes the Atlantic Ridge regime and the positive phase of the NAO.

C) Atmospheric circulation :

- classical response to "La Niña" in the tropics (upward motion anomaly over the Eastern Indian Ocean and Maritime Continent, downward motion anomaly over Central Pacific).
- over the North Atlantic and Europe : all the models predict high field values over the Atlantic with more or less extension towards Europe. They are less in agreement with the positioning of low relative values further north, generally towards Scandinavia.

D) Most likely conditions :

- Wet conditions from India in Southeast Asia to the Maritime Continent and Australia, as well as over northern South America.
- over Europe : weak warm signal on the east. Drier than normal in the southwestern part of Europe. Wet probabilities over Scandinavia



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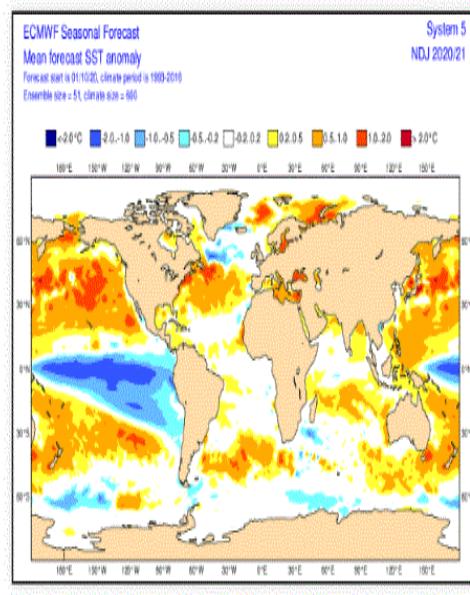
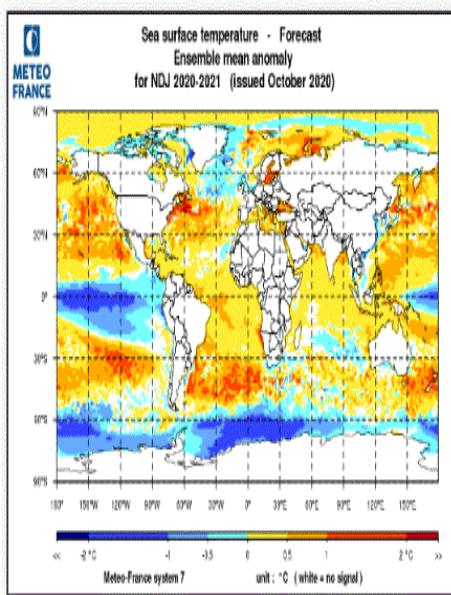
Oceanic forecast : SST anomaly

Good agreement between MF-S7 and ECMWF-SEAS5. Same anomaly patterns, little differences in intensity.

In the Pacific Ocean : La Niña is underway as well as the strong anomalies in the north hemisphere.

In the Indian Ocean : No west/east contrast. IOD returns to neutral values. Little difference between models in the southern basin

In the Atlantic Ocean : MF-S7 is a little warmer along the equator and in the southern hemisphere. Marked dipole (cold south of Greenland and warm area off Newfoundland)

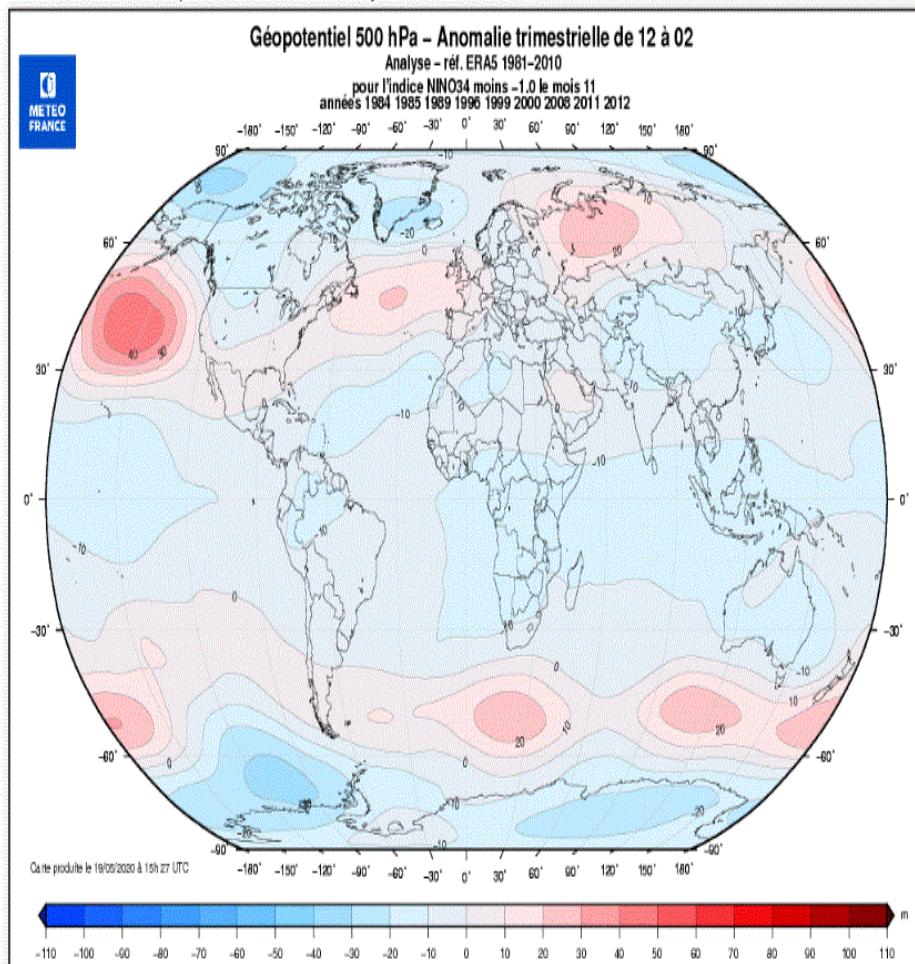


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Drivers : Pacific SST : Statistical effect of La Niña

In winter La Niña is often associated with the Atlantic Ridge regime.

To illustrate this effect a composite field of the La Niña years is shown below





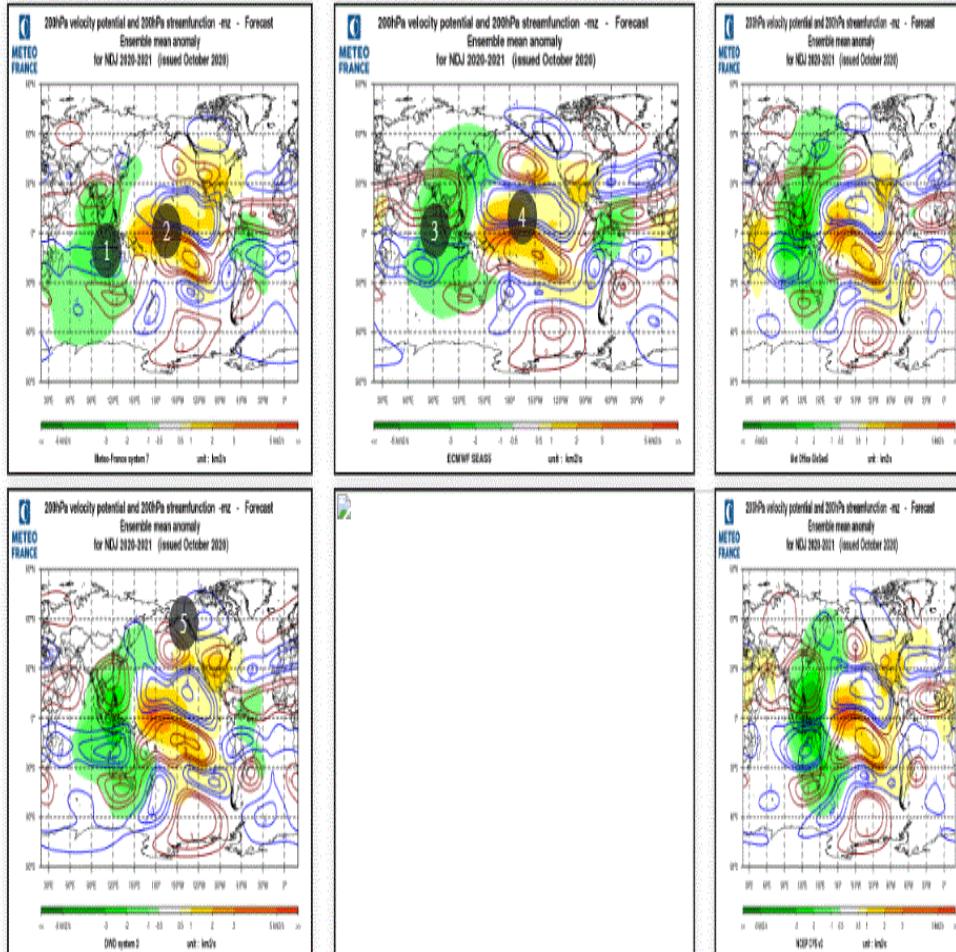
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Atmospheric circulation forecasts : velocity potentiel and stream function at 200hPa

Velocity Potential: the models are in good agreement, both with regard to the principle dipole in the Pacific-Indian zone, and for a secondary dipole in the America-Atlantic-Africa zone.

Streamfunction: the models agree remarkably well on the structure of the field, with similarities in teleconnections especially around the Pacific.

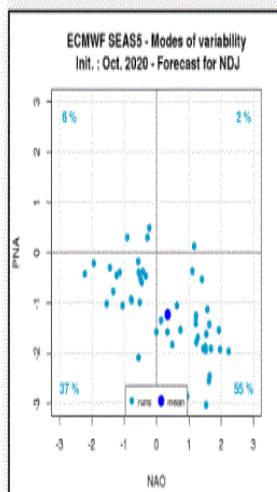
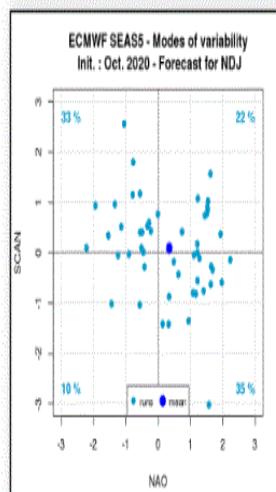
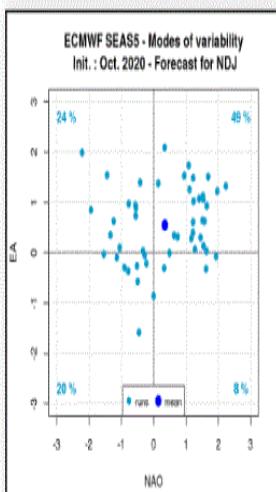
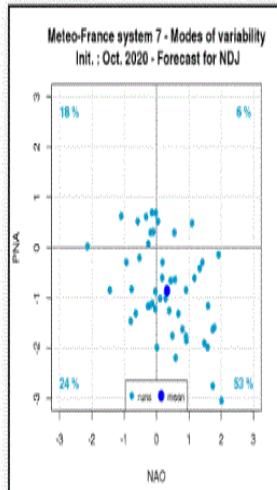
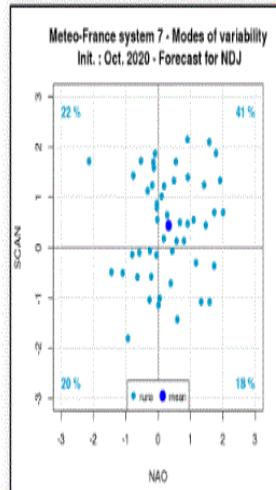
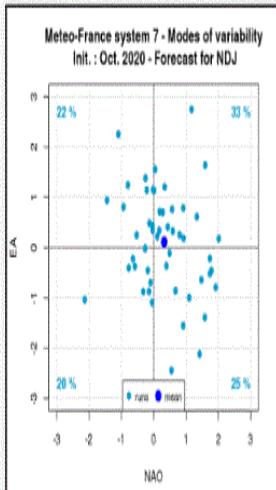


MF7,SEAS5,UKMO,DWD,CMCC and NCEP 200hPa velocity potential anomalies (color range, green: ascending, orange: subsidence) and stream function anomalies (isolines, red: anticyclonic in the northern hemisphere, blue: cyclonic in the northern hemisphere).

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Modes of variability : forecast

As usual, EA + modes are favored (weakly). The geopotential fields at 500 hPa doesn't clearly show this trend, which is probably linked to climate change. NAO + modes is also weakly favored which is in agreement with geopotential anomalies

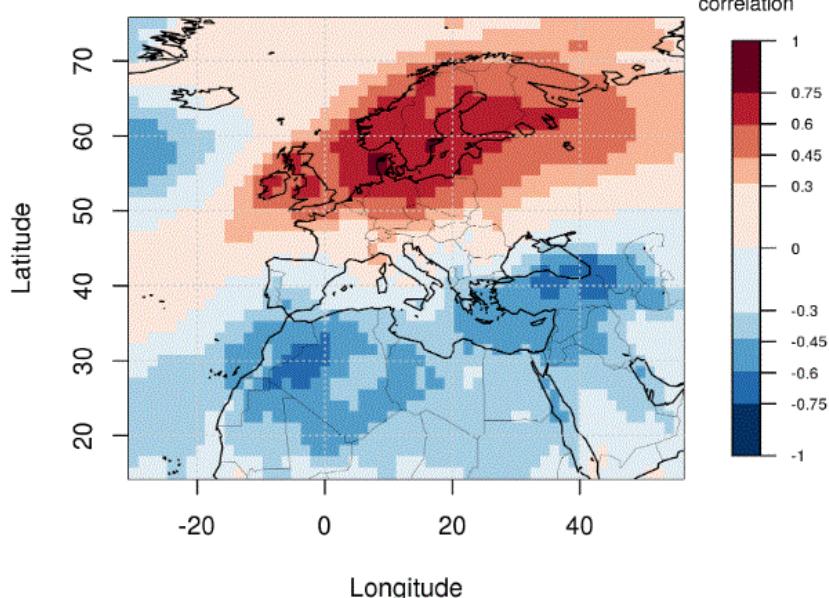


[see the modes of variability patterns](#)

Impacts des modes de variabilité

Extension	Parameter	Modes	- Initialization	+
3-month	2m temperature	NAO	NDJ	

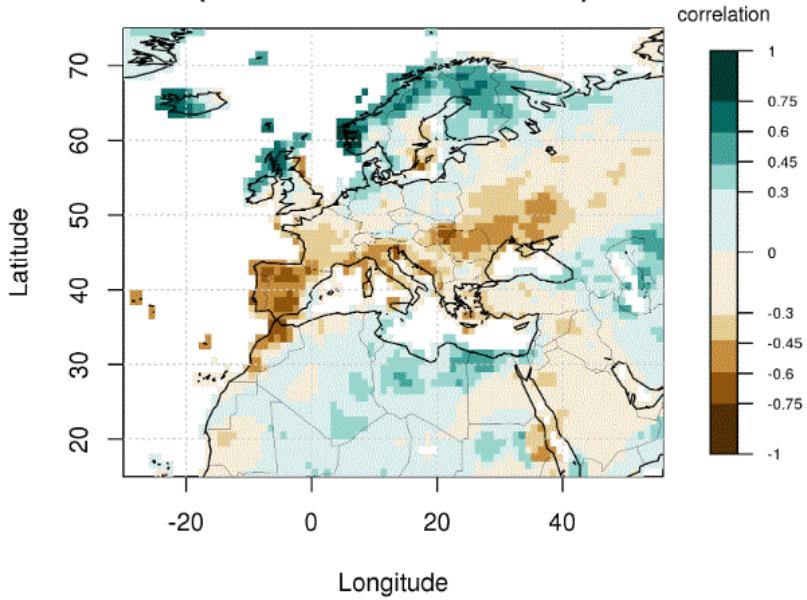
**Correlation NAO - 2m temperature
(T2M ERA-Interim NDJ 1979-2016)**



Impacts des modes de variabilité

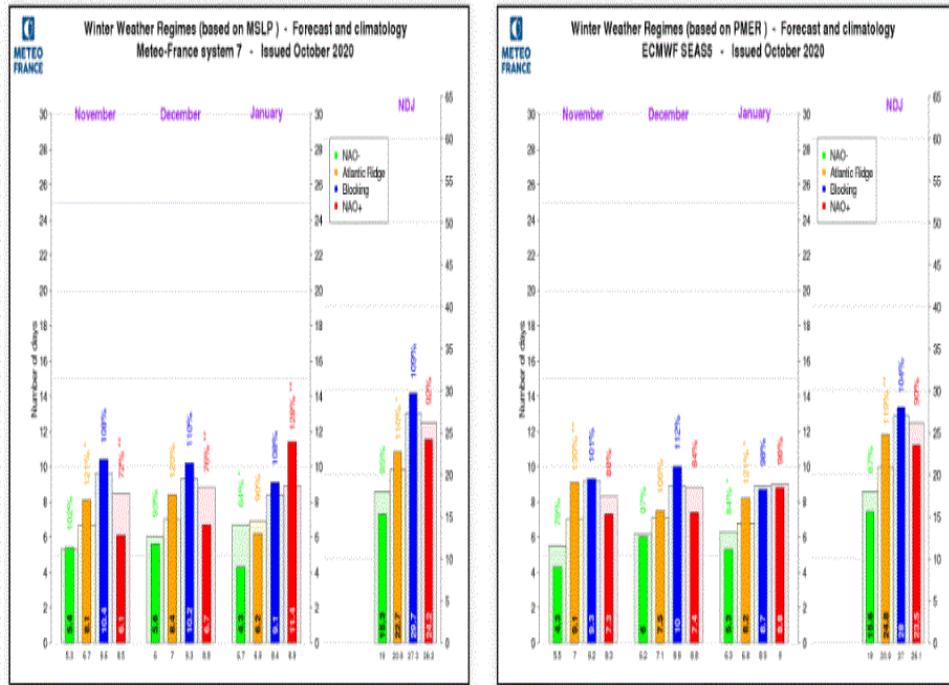
Extension	Parameter	Modes	- Initialization	+
3-month	precipitation	NAO	NDJ	

**Correlation NAO - Precipitation
(RR GPCC NDJ 1979-2013)**



Weather regimes : winter MSLP

The Atlantic Ridge regime is more frequent than climatology. It is the only regime statistically different.



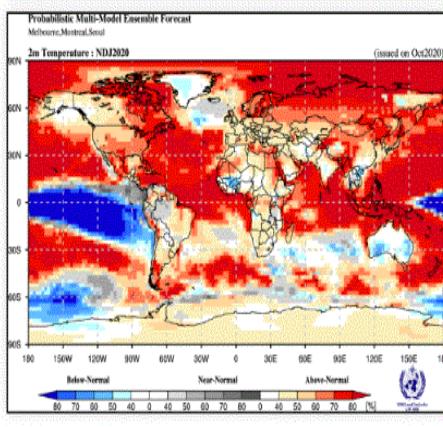
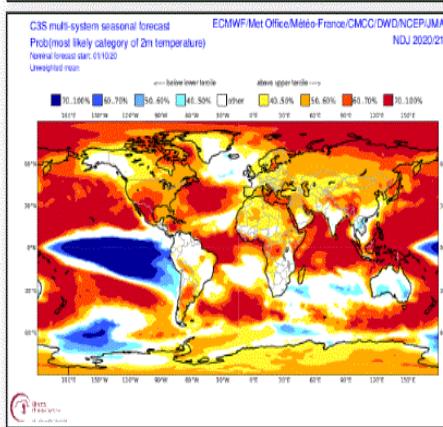
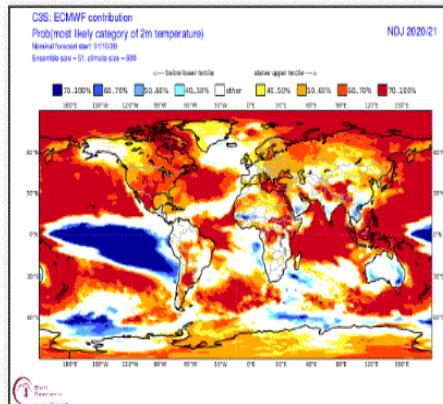
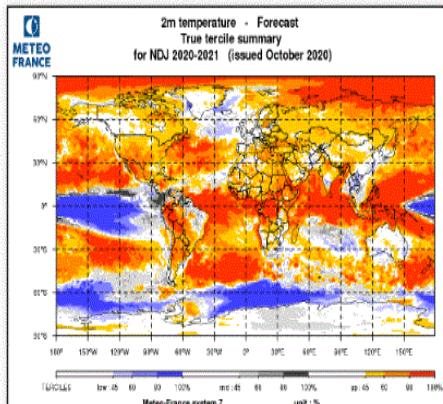
Frequency of SLP weather regimes, compared to model's own climatology, for the next three months and aggregation over the entire quarter, for MF-S7 (left) and SEASS (right).

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Forecast of climatic parameters : Temperature probabilities

The tropics are heavily impacted by the La Niña phenomenon.

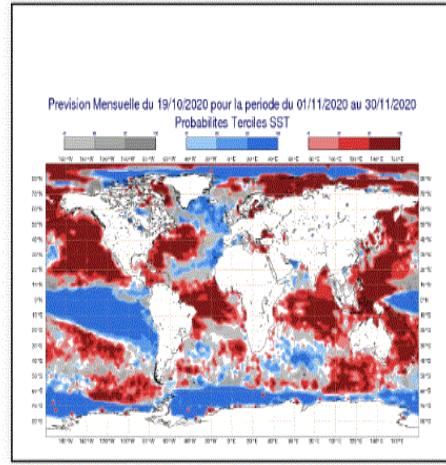
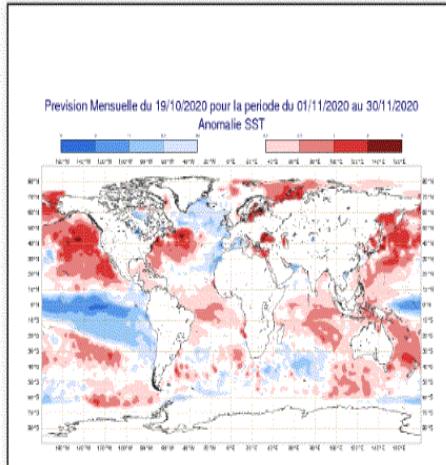
On the northern hemisphere the models are similar on large scales



2m temperature probability map from MF-S7 (top left), ECMWF-SEAS5 (top right), C3S multi-models (bottom left) and others models of WMO multi-models (bottom right)

Monthly forecast of 20201019 : SST

On the tropics and on the northern hemisphere, the monthly forecast is very consistent with the seasonal forecast.

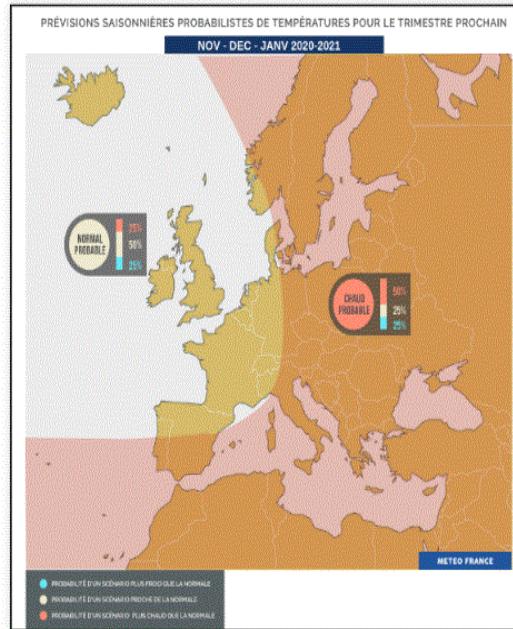


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Synthesis map for Europe : Temperature

The temperature signal is weak. On the north-west of Europe, the influence of a dominant northwest flow is expected to keep temperatures within normal. Elsewhere in Europe, a weak warm signal dominates, probably more related to climate change than to the general circulation which provides few determining elements for temperatures.

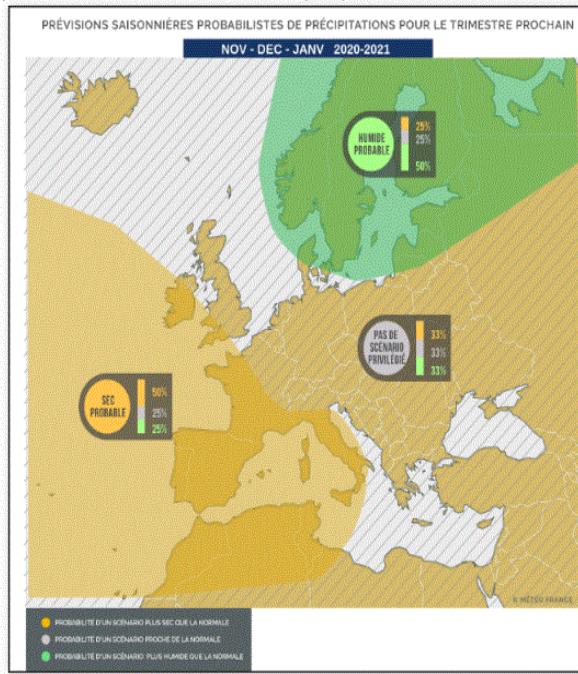


Synthesis map of probabilistic forecast for Europe. (c) Météo-France/DCSC/AVH

Synthesis map for Europe : Precipitation

More frequent high pressure conditions likely over the west of the continent should reduce rainfall.

The weak pressure field expected over Scandinavia should increase precipitation.



Synthesis map of probabilistic forecast for Europe. (c) Météo-France/DCSC/AVH

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