Météo-France Seasonal Forecast Bulletin

NOVEMBER - DECEMBER 2026 - JANUARY 2027

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General synthesis : ND 2026 - J 2027

Météo France Forecast system has been upgraded to MF-S9, with a 1993-2024 climatology.

A) Oceanic forecast :

- ENSO : strong positive phase currently. El Nino conditions most likely next quarter

- IOD : slightly positive phase becoming neutral with uncertainties.

- Atlantic : in the Northern Atlantic the warm anomaly from the East American coasts to central Atlantic is surrounded by a weak negative anomaly south and a negative anomaly north.

B) Low frequency and drivers :

- Low frequency : - analysis of atmospheric circulation over the last six months : Updraft motions over the Pacific and the west of Atlantic, downdraft over from the west of Atlantic to the Indian Ocean.

- circulation proposed by models last month for the next quarter: Negative Geopotential anomaly over north Atlantic.

- polar vortex : strengthening of 10 hPa wind is expected in the early part of December with a weakening starting towards the end of the month.

- Drivers : - Pacific : El Nino

- North Atlantic : Negative SST anomaly.

- Indian : positive IOD

C) Atmospheric circulation :

- Convergence between most models on atmospheric circulation in the intertropical zone (downdrafts over maritime continent and Indian Ocean as welle as central America, and updrafts over the Pacific and America, dipoles of stream function anomalies with strong teleconnection towards the middle latitudes of the northern hemisphere).
In MSLP, models agrees in a negative anomaly west of the British Isles and positive anomaly over Greenland

- MSLP modes : NAO- for both models. ATLR+ for MF9, CEUR+ for SEAS5

D) Most likely conditions :

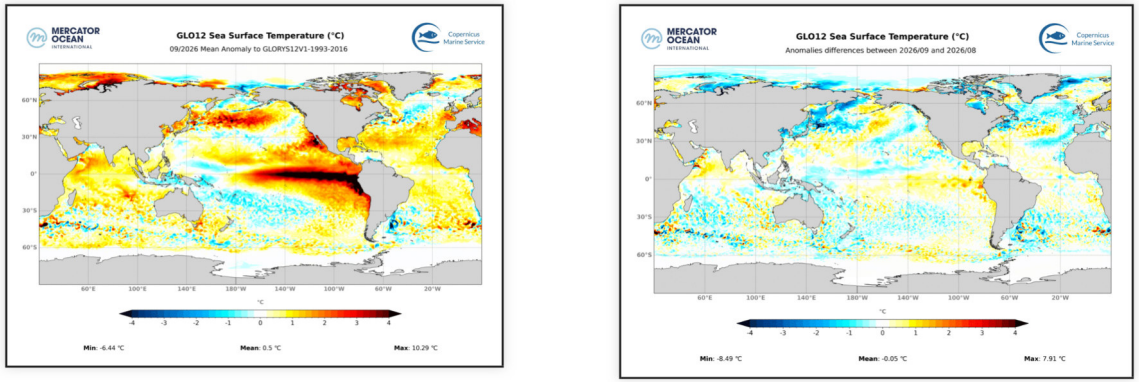
Temperatures : Warmer-than-normal scenario across Europe

Precipitations : Wetter conditions are expected on Atlantic coastal regions and around Baltic sea.

NEXT BULLETIN : SCHEDULED ON NOVEMBER 20TH

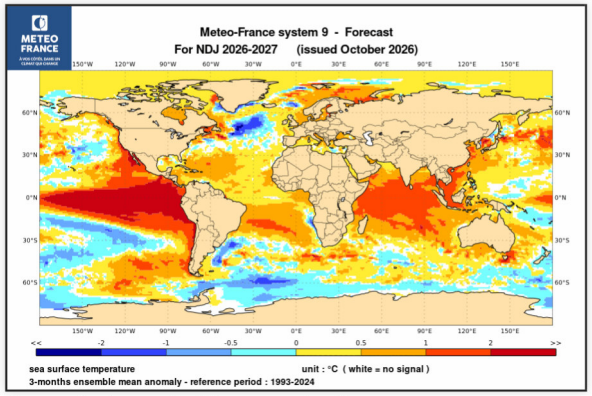
Oceanic analysis and evolution : October 2026 - ND 2026- J 2027

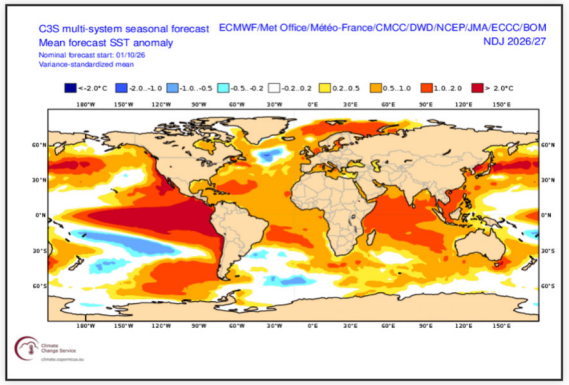
Current situation : PDO- pattern persists on the north Pacific. Positive anomaly on central Pacific is still warming, as well as warm anomalies off the South American coast. IOD is in a positive phase. In the Northern Atlantic the warm anomaly from the East American coasts to the Bay of Biscay is surrounded by neutral to negative anomalies.



SST Anomalies (left figures) and trend with the previous month (right figure) (c) Mercator-Ocean

Forecast : Very strong warming of equatorial Pacific. Neutral IOD. Little change on the northern Atlantic Ocean.

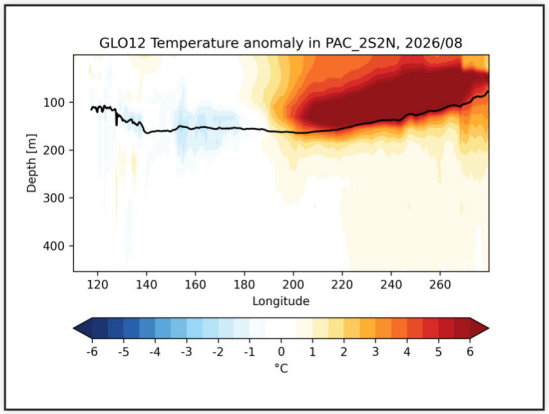


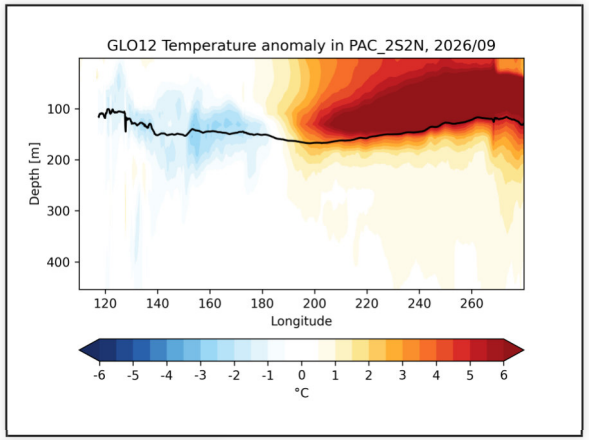


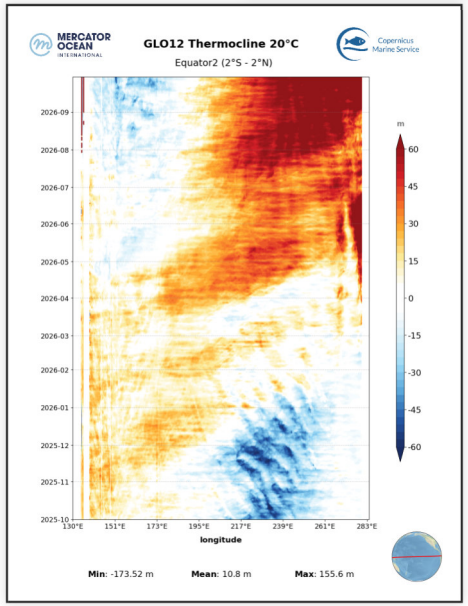
SST anomalies forecasts for MF9 system and multi-system

Oceanic analysis and evolution : Pacific

Strong warming in the eastern part of Pacific Ocean. Cooling appearing on the western side of the Pacific Ocean.





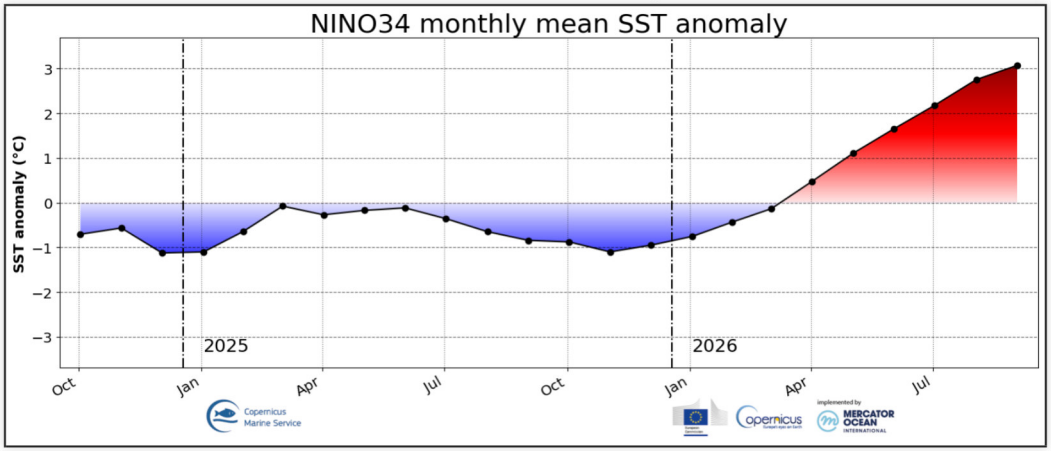


Ocean temperature anomalies in the first 500 meters of the equatorial Pacific basin, monthly average on the top figure -- Evolution of the anomalies of depth of the thermocline (m) (materialized by the 20 ° C isotherm) on the bottom figure -- (c) Mercator-Ocean

Oceanic analysis and evolution : Pacific

---------- ANALYSIS ----------

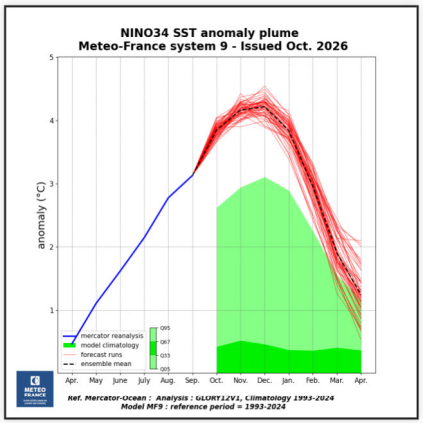
Temperature anomalies are increasing rapidly.

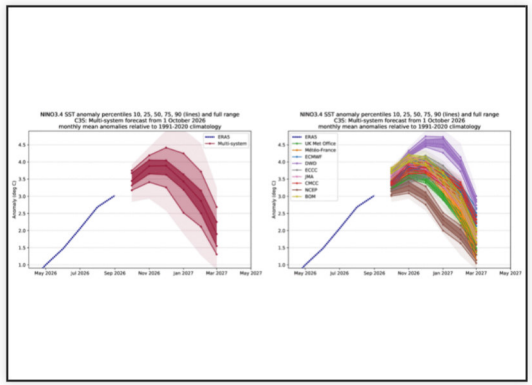


Nino34 observed (c) Mercator Ocean

---------- FORECAST ----------

Positive conditions warming rapidly during the quarter, with a light dispersion. Cooling is forecasted in december.



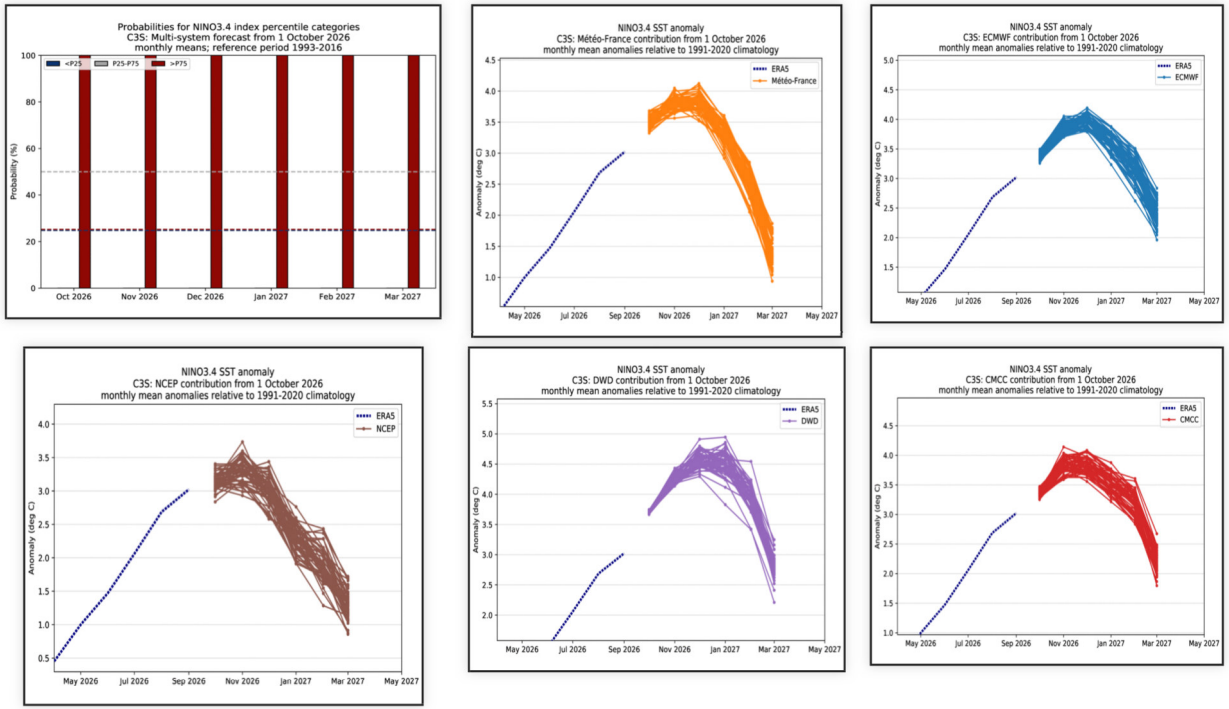


NINO3.4 index : analysis, forecasts and model climatology with MF-S9 on the left - forecasts with C3S multi-model on the right.

Oceanic analysis and evolution : C3S Nino3.4 re-scaled plume diagrams

All models forecast warming still novemmber and cooling in december.

The most likely phase for the next three months : El Niño conditions

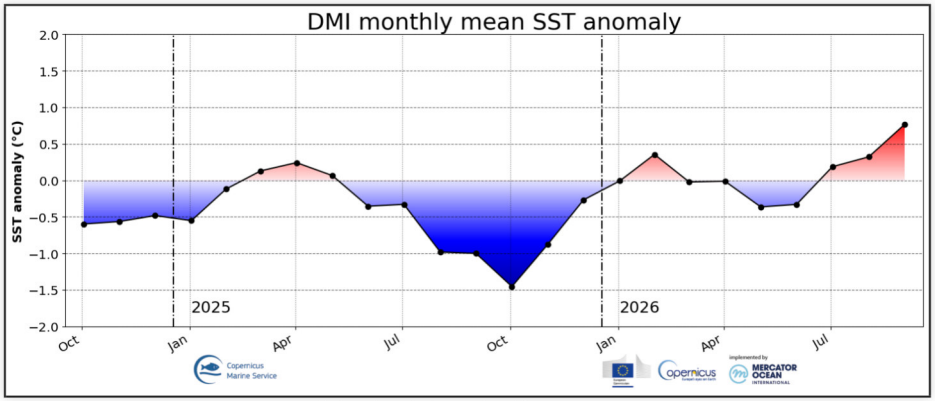


C3S multi-system probabilty forecast (top left figure) and C3S plume diagrams re-scaled from the variance of observations for the period 1981-2010.

Oceanic analysis and evolution : Indian Ocean - DMI index

----------ANALYSIS----------

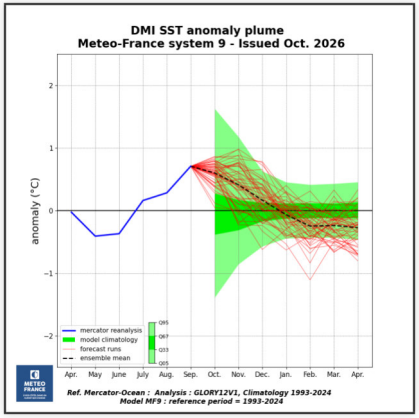
DMI in positive phase

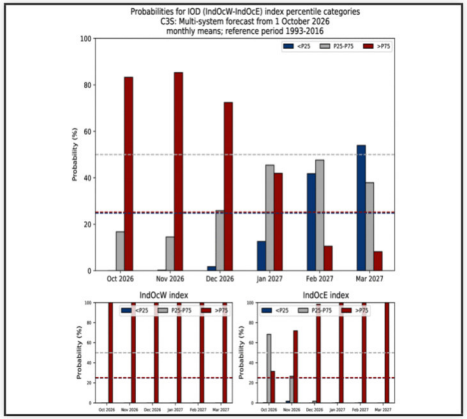


Evolution of SST in the DMI box (c) Mercator-Ocean

Cooling on average with uncertainty. **Neutral phase is the most likely**

----------FORECAST----------



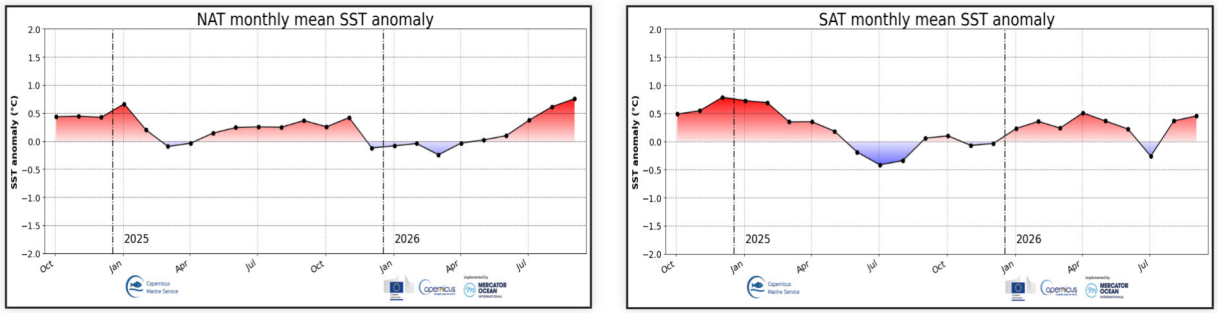


DMI index : analysis, forecasts and model climatology with MF-S9 on the left - probability for category of IOD with C3S multi-model on the right.

Oceanic analysis and evolution : Atlantic

----------ANALYSIS----------

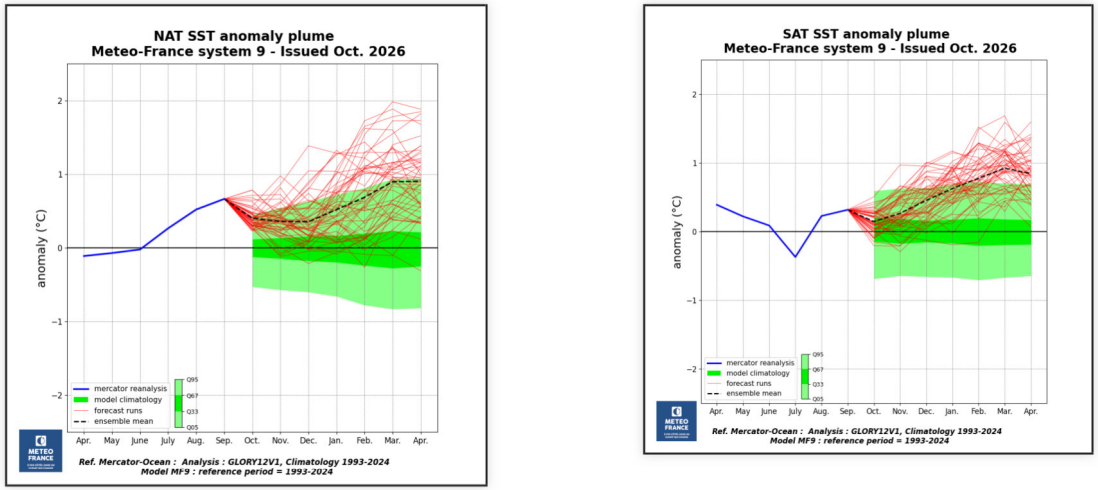
Neutral to slightly positive conditions.



Evolution of SST in the SAT and NAT box (c) Mercator-Ocean

----------FORECAST----------

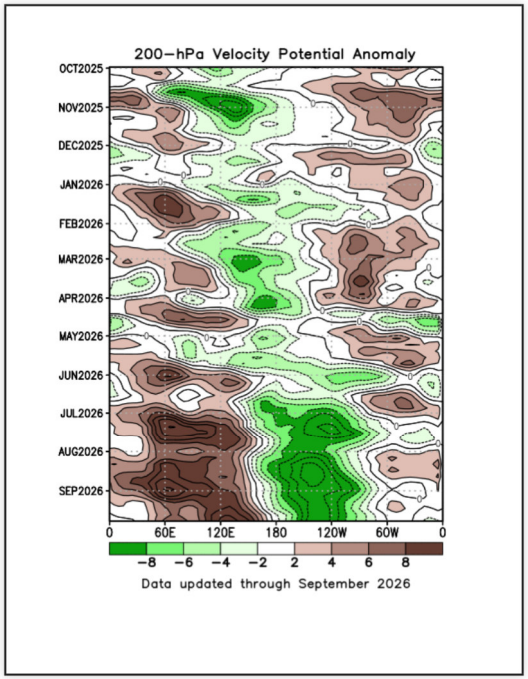
Large dispersion. Positive anomaly for SAT.

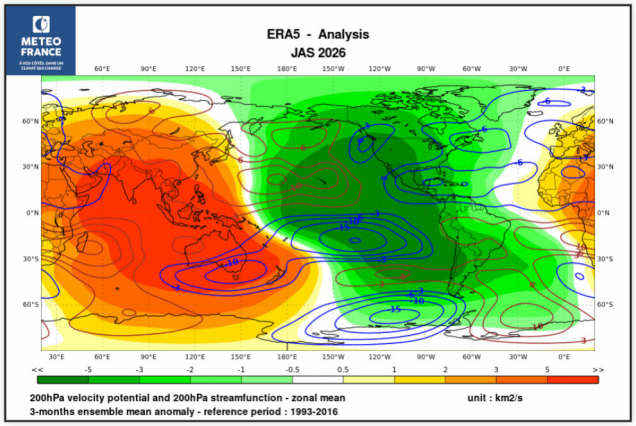


Anomaly on the SAT and NAT box : analysis, forecasts and model climatology with MF-S9

Low frequency and drivers : Global signal observed

Low frequency : Updraft motions from central pacific ocean to central atlantic ocean over America. Downdraft over the maritime continent to Africa over Indian ocean.



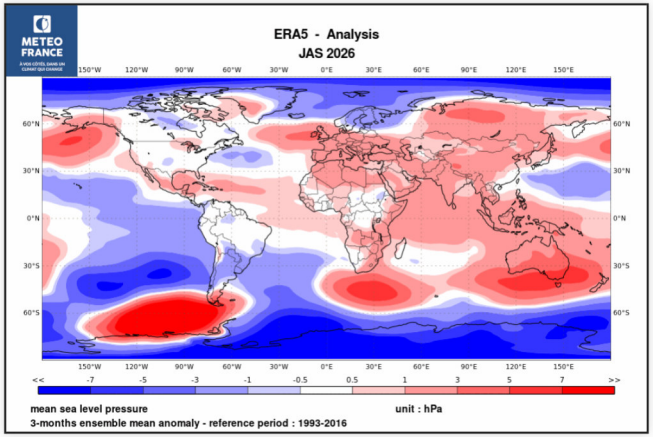


time-longitude section of anomalous 200Hpa velocity potential between 5N-5S (left) link --- 200Hpa anomalous of velocity potentiel and streamfunction last quarter (right)

Low frequency and drivers : MSLP Modes observed

Low frequency : CEUR ans SCAN modes haven't change for several months, positive CEUR particularly strong. ATLR, NAO became negative, PNA neutral.



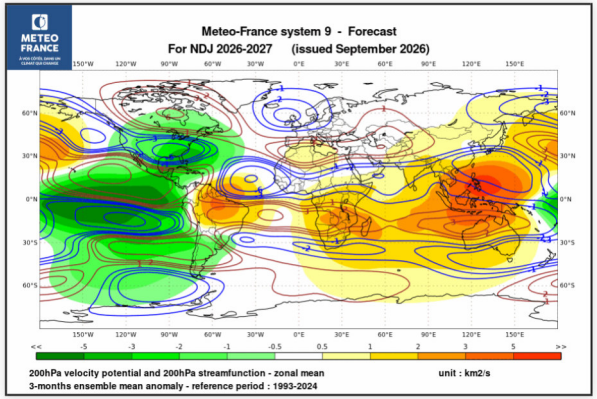


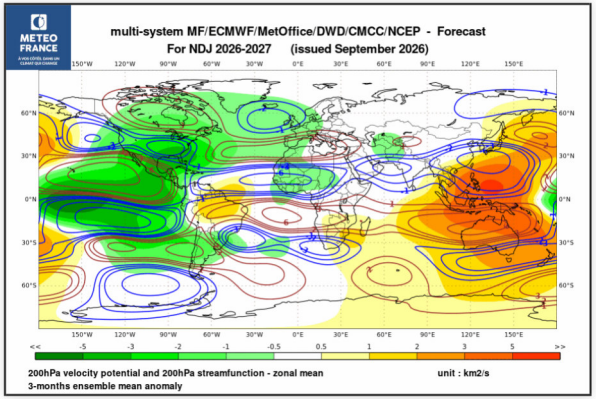
legende : legende : MSLP Modes last 12 months all_pattern_view (left) and mean mslp anomalies last quarter (right)

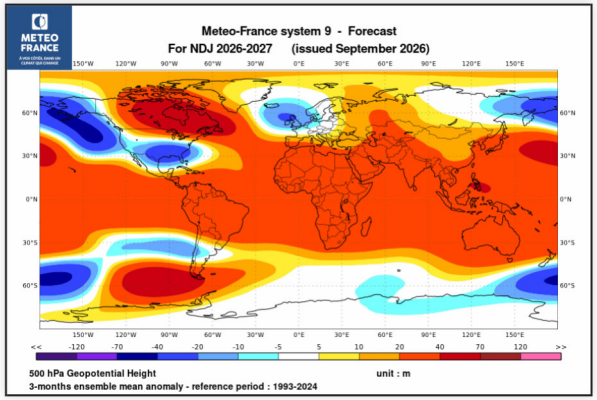
Low frequency and drivers : Signal forecasted last month

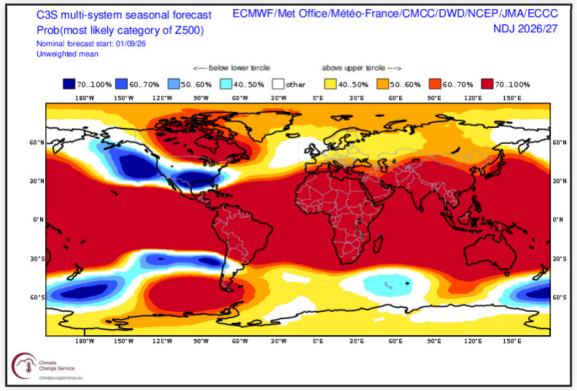
VP / SF : Velocity Potential looks like the signature of El Niño. Lots of differences between MF9 and multi-system, over Africa. All models shows a strong teleconnexion toward north America

Geopotential anomalies : The multi-model ensemble shows a uniform positive anomaly at the tropics, a positive anomaly on western Canada. Negative anomalies over the north pacfic, northern Atlantic, and south USA.





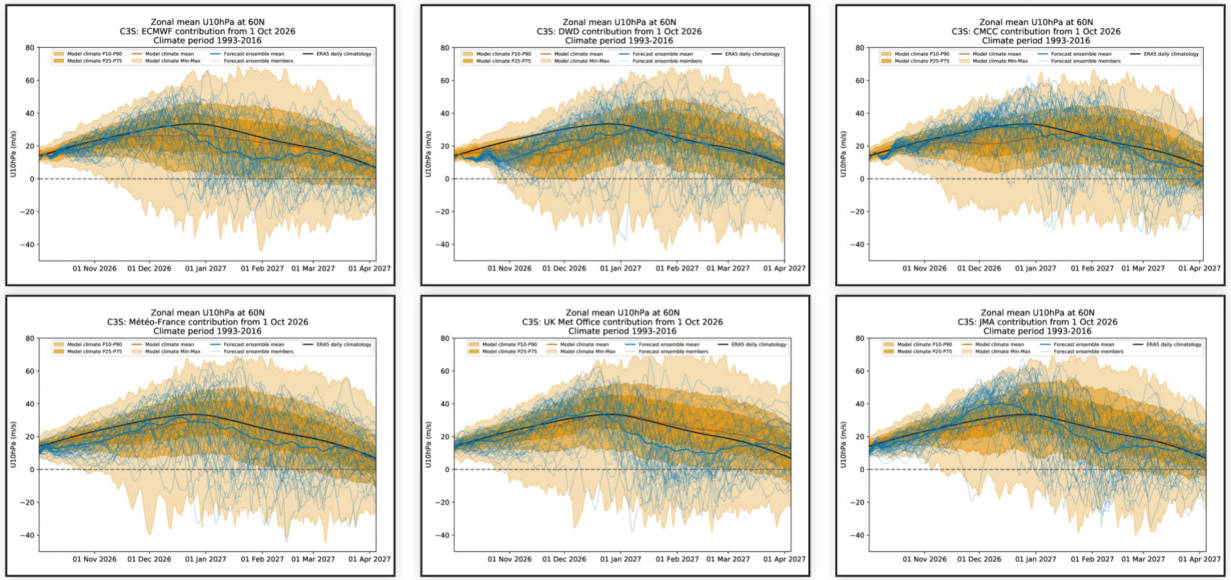




MF9 and multi-system 200hPa velocity potential and stream function anomalies (above) --- MF9 and multi-system 500hpa geopotential height (below)

Low frequency and drivers : polar vortex (U010 plumes)

A strengthening of 10 hPa wind is expected in the early part of December from ECMWF, UKMO and MF9, with a weakening starting towards the end of the month.

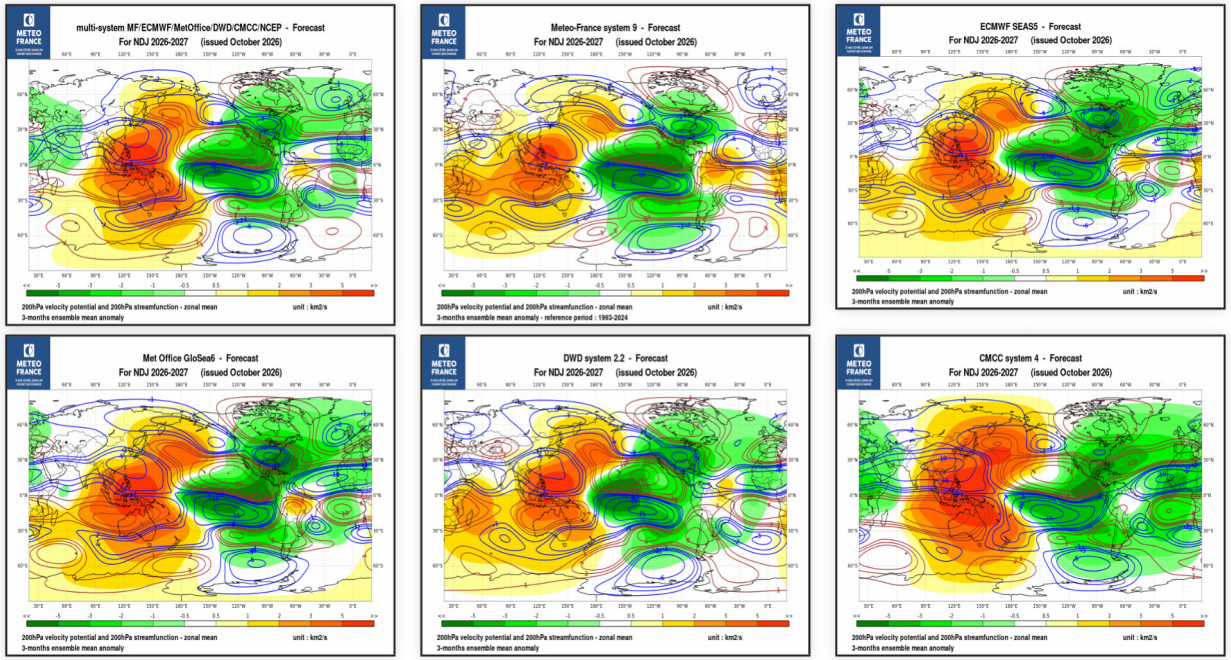


ECMWF-SEAS5, DWD, CMCC, MF-S9, UKMO, and JMA 010hPa zonal mean of u componant of wind at 60°N.

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

Velocity Potential : All models predict updrafts over Pacific and America, and downdrafts over maritime continent, Indian Ocean. Most models suggest downdrafts over central America.

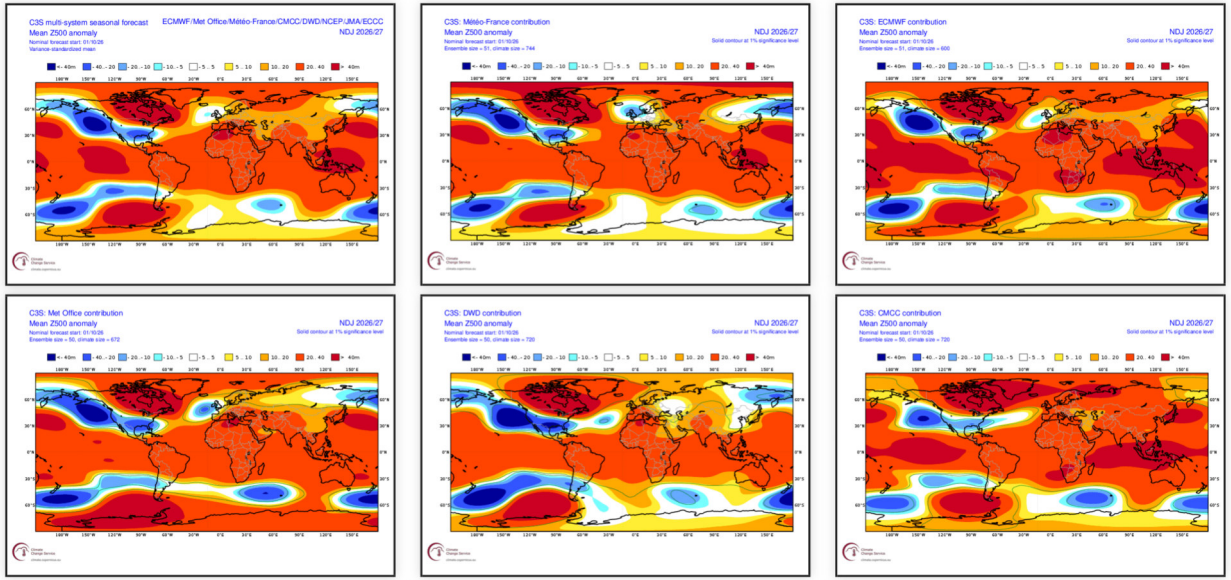
Stream Functions : A first dipole is forecasted on the Indian Ocean, a second dipole is predicted over the Pacific and a last one over the Atlantic. Most models suggests a strong teleconnexion toward North America. The teleconnections are strong over the south Pacific Ocean too.



Multi-system, MF9,SEAS5, UKMO, DWD and CMCC 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).

Atmospheric circulation forecasts : Z500 anomalies in C3S models

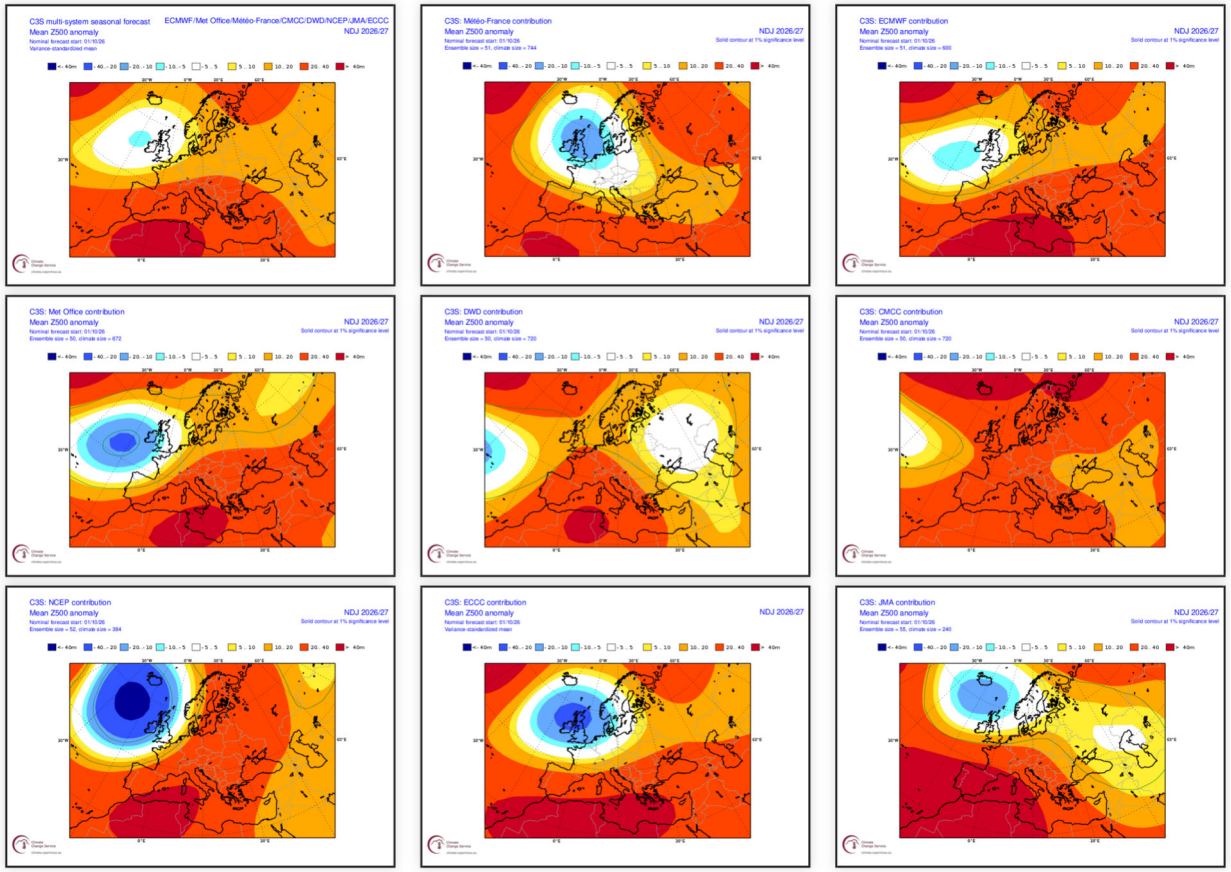
In the Southern Hemisphere, most models agree on the position anomalies, with the exception of the anomaly at the south of Argentina and Chile.
In the Northern Hemisphere positives anomalies are shown over northern Canada and north Africa on most models. Most models also agree on negative anomalies over northern Pacific, USA, and northern Atlantic ocean.



МГ-S9, SEAS5, UKMO, DWD, CMCC and NCEP 500hPa geopotential height anomalies.

Atmospheric circulation forecasts : Z500 anomalies in C3S models

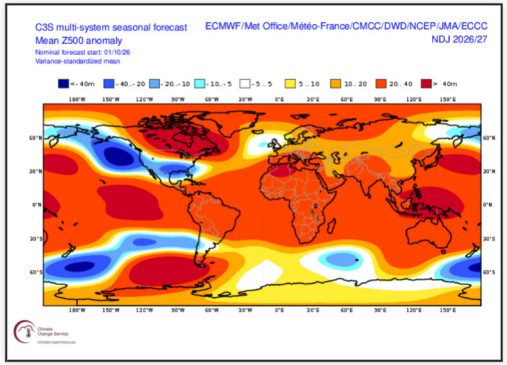
Most models agree on negative anomaly over northern Atlantic, close to Ireland. Positive anomy is probable over north Africa

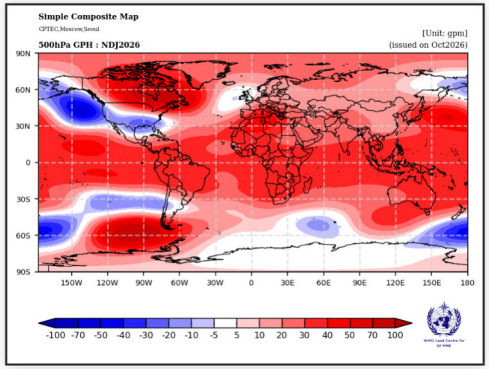


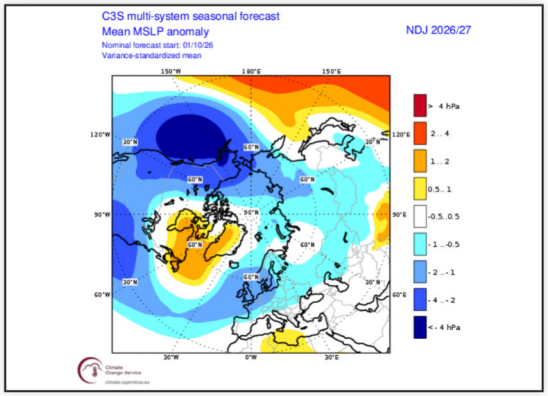
multi-models 500hPa geopotential height anomalies

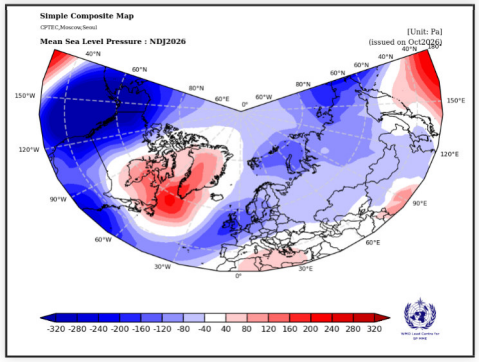
Atmospheric circulation forecasts : Z500 and MSLP anomalies multi-systems

Z500 : Positive anomalies over Greenland and north Africa and negative anomalies over north Atlantic
MSLP : Positive anomaly over Greenland negative anomalies from north atlantic across europe









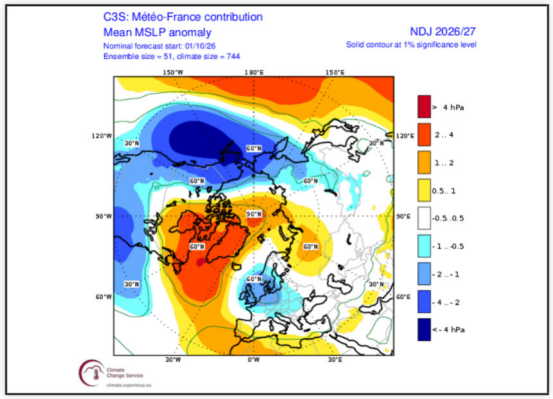
top figure : 500hPa geopotential height anomalies of C3S multi-models (left figure), and other models (right figure)

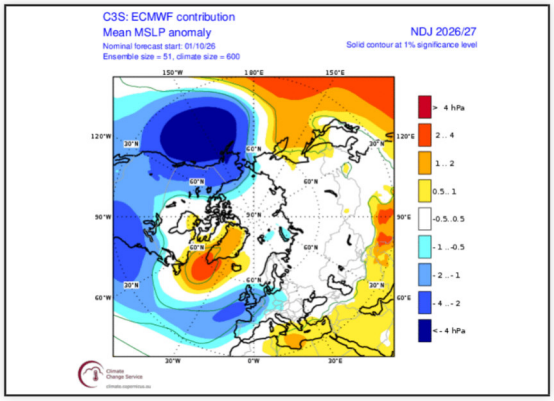
bottom figure : MSLP anomaly of C3S multi-models (left figure), and other models (right figure)

Modes of variability : SLP Modes forecast

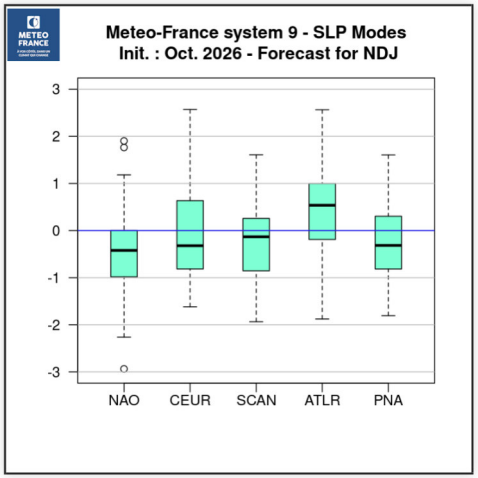
Both models show positive over Greenland. Negative anomaly on east Atlantic. Negative anomaly on North Pacific , as expected in El Niño condition. MF9 show large positive anomaly crossing the Atlantic, from Canada to Marocco. SEAS5 show large negative anomaly crossing the Atlantic from the USA to Europe.

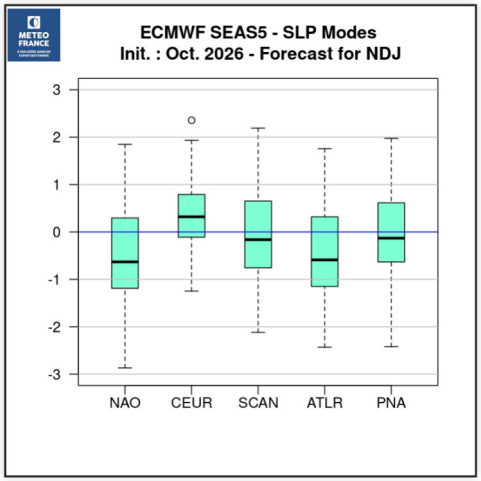
Both models show negative NAO and neutral conditions for SCAN and PNA. MF9 and slightly negative CEUR and positive ATLR, SEAS5 the opposite. .





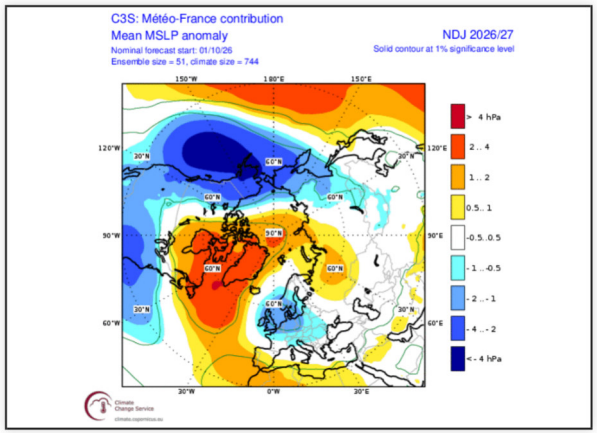
MF-S9 and ECMWF-SEAS5 MSLP anomalies

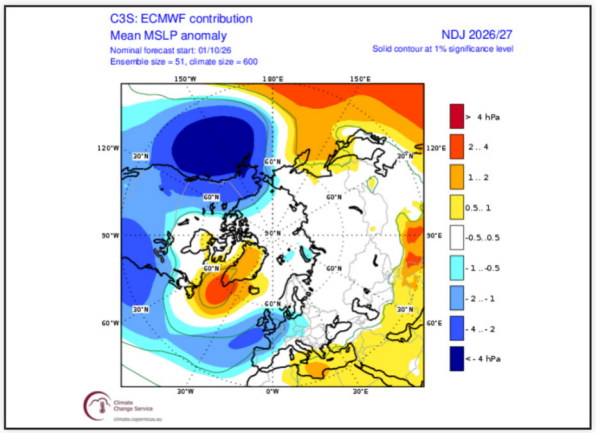




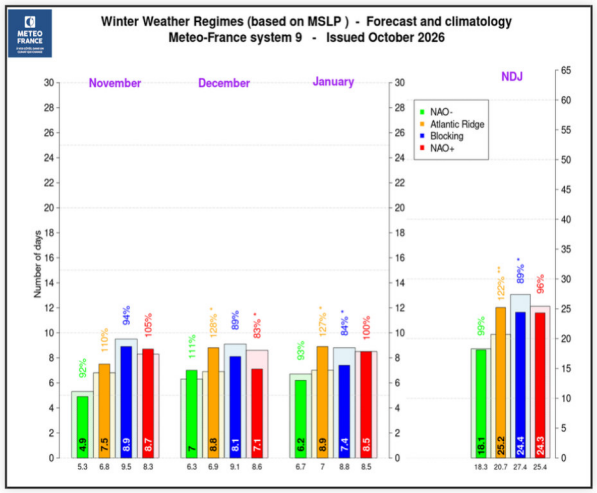
MF-S9 and ECMWF-SEAS5 boxplot of SLP modes of variability. link to pattern and documentation

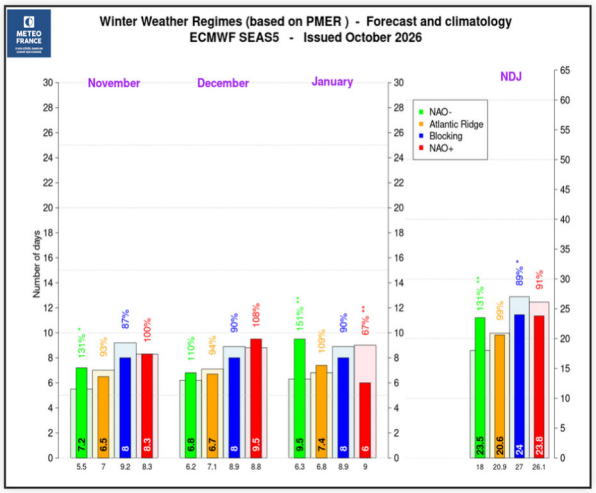
Weather regimes : winter MSLP





MF9 and SEAS5 MSLP anomalies





Frequency of SLP weather regimes, compared to model's own climatology, for the next three months and aggregation over the entire quarter, for MF-S9 (left) and SEAS5 (right).

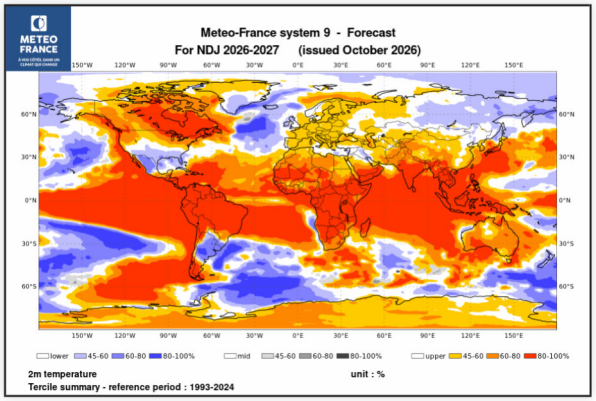
AR slightly positive for MF9, NAO- for SEAS. Both display lower porbability of Blocking.

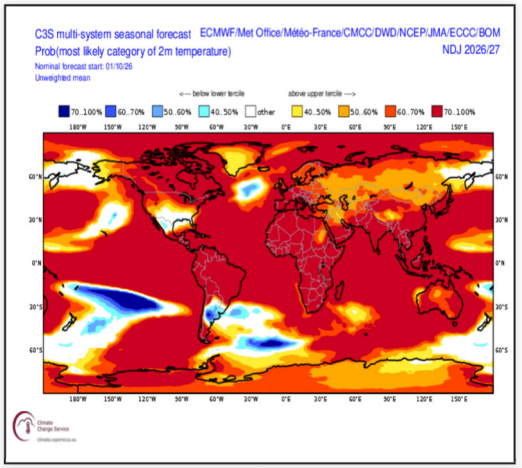
Forecast of climatic parameters : Temperature probabilities

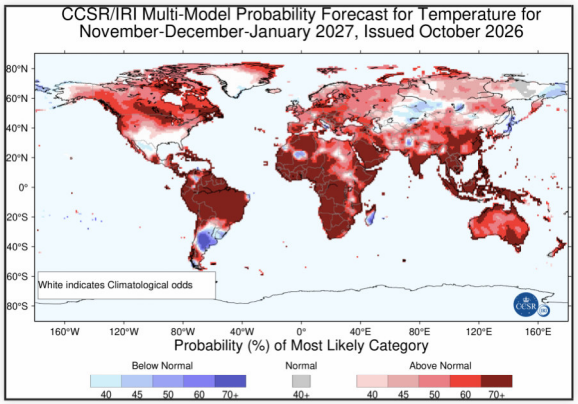
The warmer-than-normal scenario is the most likely over the tropics, west Canada and west Europe.

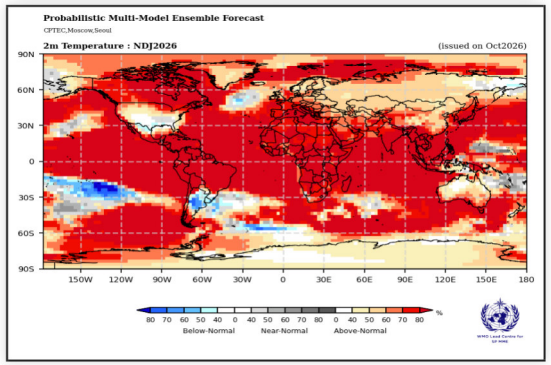
Colder scenarios over Argentina,USA and Eastern Russia.

Note MF9 has a warmer climatology since it extends over a more recent period.





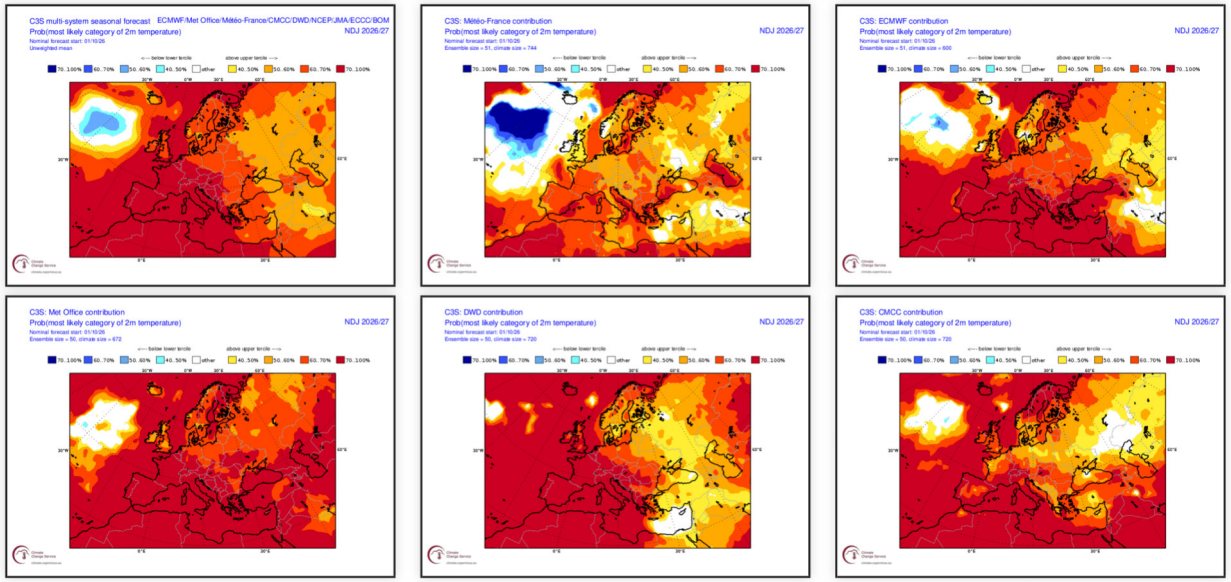




2m temperature probability map from MF-S9 (top left), C3S multi-model(top right), IRI multi-model(bottom left) and others models of WMO multi-models (bottom right)

Forecast of climatic parameters : T2M probabilities over Europe in C3S models

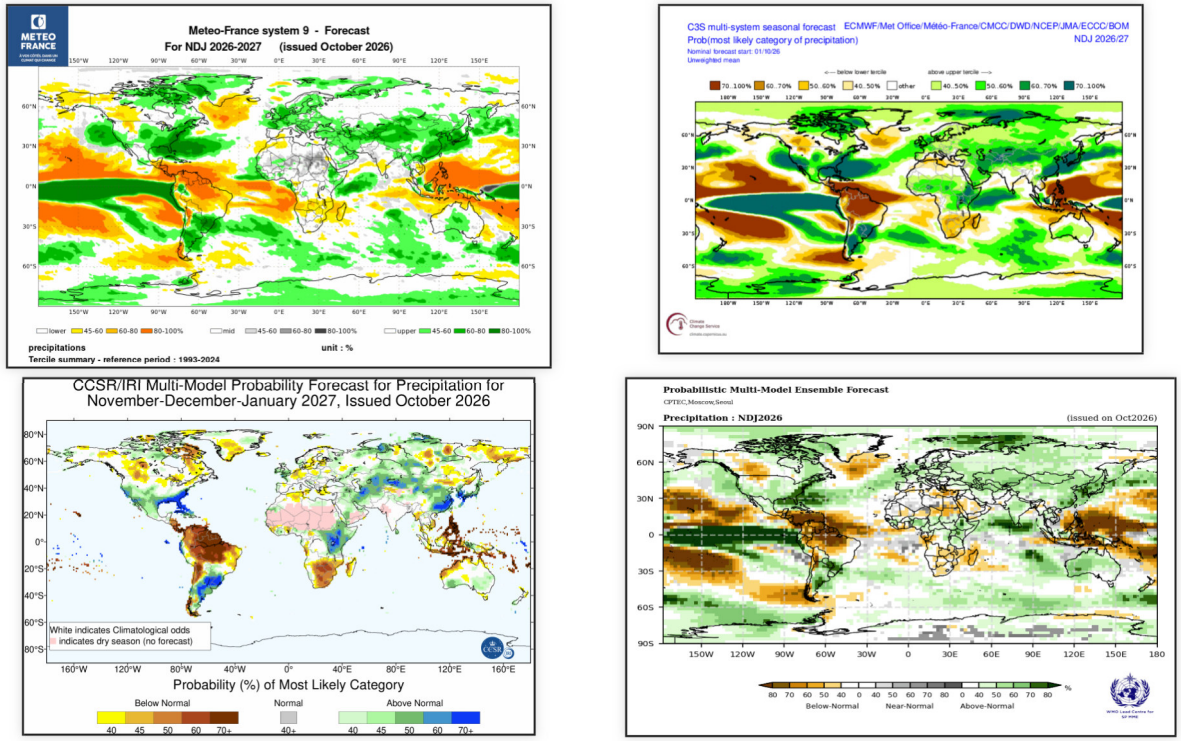
A warmer-than-normal scenario is likely



C3S multi-models probability map (top left) and MF-S9, ECMWF-SEAS5, UKMO , DWD, CMCC models.

Forecast of climatic parameters : Precipitation

In the tropical zone, dry anomalies dominates on most models, from the maritime continent to Hawaias well as from the west coast of Africa to the Caribbean and central America. A wet signal is present from Africa to the Middle East.
In the Northern Hemisphere, wet conditions are most likely over the southern USA, western Europe and Eastern Asia.

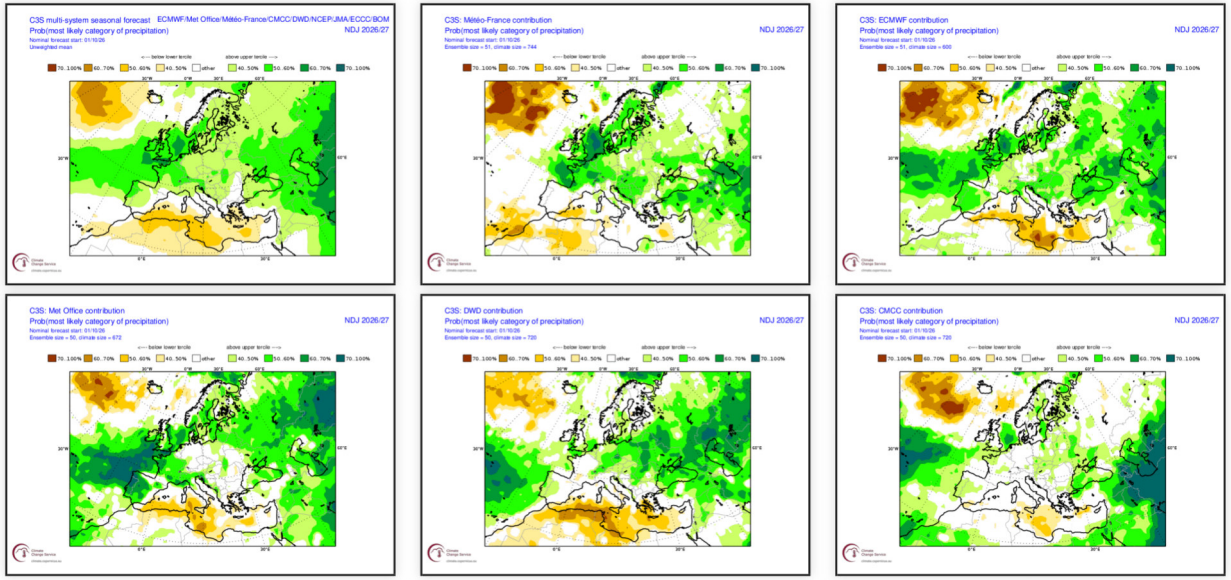


precipitation probability map from MF-S9 (top left), C3S multi-model (top right), IRI multi-model (bottom left) and others models of WMO multi-models (bottom right)

Forecast of climatic parameters : Precipitation probabilities over Europe in C3S models

A wet scenario seems to emerges for the Atlantic coasts of western Europe, wet scenarios are lmost likely over middle east regions.

Dry scenario south Mediteranean Sea

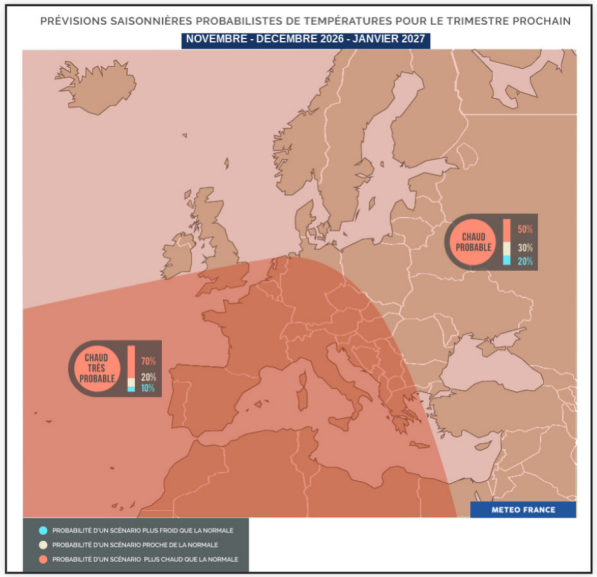


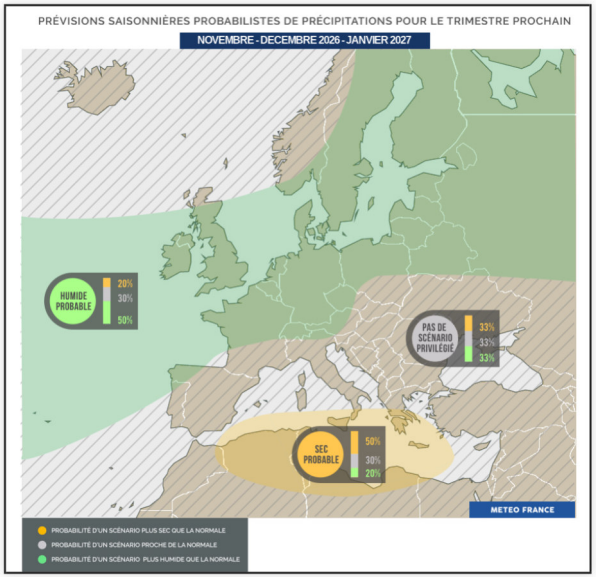
C3S multi-models probability map (top left) and MF-S9, SEAS5, UKMO, DWD, CMCC models.

Synthesis map for Europe : Temperature & precipitations

Temperature : Warmer-than-normal conditions are likely across Europe, with a lower probability over northern and eastern Europe

Precipitation : Wet signal close to the Atlantic coast and Baltic sea. Dry signal south of Meditarenan sea.





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