



WMO RAI



WMO RA VI
RCC-Network



MEDITERRANEAN CLIMATE OUTLOOK FORUM MEDCOF-5 MEETING

MONITORING SUMMARY FOR MEDCOF-5

Draft version

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The following MedCOF monitoring summary is based on

- climate monitoring working reports from RA I NA RCC-CM, RA VI RCC-CM and RA VI RCC-LRF
- contributions of MedCOF-5 participants

Monitoring results refer to October 2015.

1. Oceanic Analysis

A strong El Niño event is well installed now. This can be seen by a strong warm anomaly along the equator in the Pacific Ocean from the date line to the South American coasts (Fig. 1). The SST anomaly has reinforced in October 2015 in the central part of the basin. Monthly mean index values of Niño3.4 and Niño1+2 have reached +2.5. Over the northern Pacific, there is a clear positive PDO structure with particularly strong anomalies. In the subsurface analysis, a clear east-west dipole anomaly pattern (warmer in the east, colder in the west) can be identified in the equatorial Pacific. Kelvin waves were visible in the course of recent months, most recently between mid-September and mid-October.

The equatorial Atlantic has close-to-normal SST, followed by a warm anomaly in the northern tropics and along the U.S. coasts. Further north, a very persistent cold anomaly extends from 30°N to Iceland, slightly moving southward.

The eastern Mediterranean is warmer than normal, whereas the western Mediterranean has SST around normal. Some northern parts of the Mediterranean are even colder than normal. SST of the Black Sea is around normal.

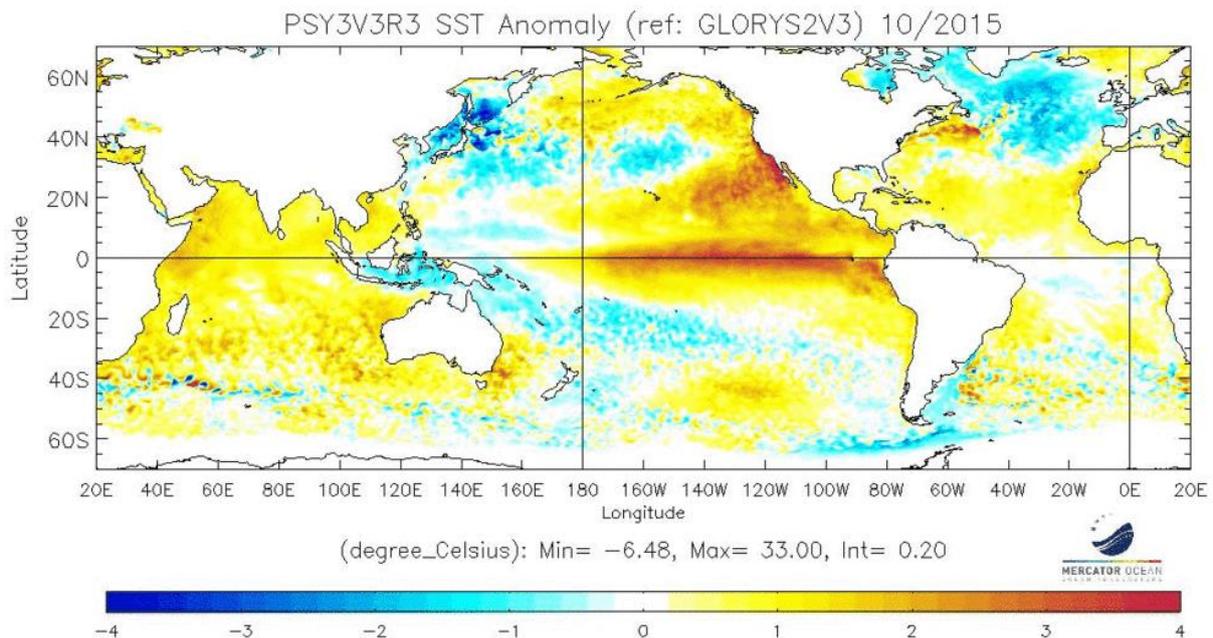


Figure 1: SST anomalies (°C). <http://bcg.mercator-ocean.fr/>

2. Atmospheric Analysis

An intense dipole of vertical motion persists over the equatorial Pacific with a large area of upward motion anomaly over the central and eastern Pacific and downward motion anomaly over Southeast Asia and Australia, linked with a strong ocean-atmosphere coupling related to El Niño. SOI index for October 2015 is -1.7. There is a strong teleconnection to the northern Pacific, but less in the northern Atlantic. A positive NAO pattern (index +1.0) has been

established. A teleconnection to eastern parts of the Mediterranean looks probable. AMO and PDO are in a positive phase, modulating circulation via Rossby waves. A strong polar vortex exists in the stratosphere, QBO is in a westerly phase, supporting a zonal circulation over the Atlantic. In contrast, a strong ENSO, a positive NAT SST index and an increased snow cover extent in Eurasia support blocking situations. Global warming is still ongoing, 2015 will be likely the warmest year on global average.

Over Europe, there is a blocking high with highest anomalies over Scandinavia since August 2015 (positive phase of SCAND pattern). A negative geopotential anomaly can be found over Russia, due a positive phase of an East Atlantic / West Russia pattern. Cold polar air moving to eastern Europe flowed south of the blocking high also to central and western parts of Europe, influencing also northern parts of the MedCOF region, whereas parts around the Mediterranean Sea were still influenced by negative geopotential anomalies.

Over North Africa, sea level pressure anomalies were mainly positive in the west (except near Gibraltar) and negative in the west.

3. Temperature anomalies

Over Europe, temperature anomalies were negative especially in northern parts of the MedCOF region, down to below -2°C in eastern France and eastern Ukraine. In some southern parts of Europe (southern Italy, southern Balkan Peninsula), and at the eastern Mediterranean (Turkey, Cyprus, Middle East) anomalies were positive and above $+0.5^{\circ}\text{C}$. Elsewhere, anomalies were around normal (1981-2010 reference).

There were positive anomalies over whole North Africa. Mean anomaly was $+1.2^{\circ}\text{C}$, locally above $+3^{\circ}\text{C}$.

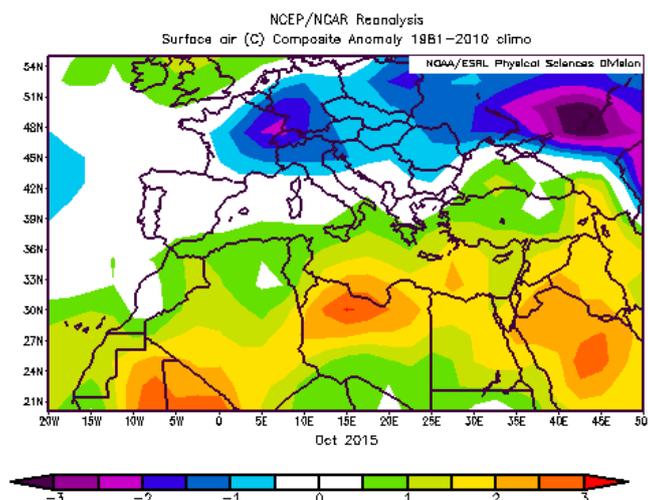


Figure 1: Anomaly (1981-2010 reference) of temperature in the MedCOF region (data from NCEP/NCAR reanalysis, <http://www.esrl.noaa.gov>)

4. Precipitation anomalies

Over Europe, anomalies were negative in northernmost parts of the MedCOF region, especially in most of France, northeastern Spain and parts of the Ukraine. Monthly precipitation totals in the eastern Ukraine had the lowest percentage of less than 20% of the normal. In all other parts of the RA VI Region, precipitation was mostly above normal, locally more than 200% of the normal.

Anomalies were mainly negative over much of North Africa; percentages were mostly less than 50% of the 1981-2010 normal. Also drought indices support the negative anomalies. Exceptions were some parts in the west and at northern coasts of North Africa, where locally high positive anomalies can be found with percentages up to more than 200% of the normal.

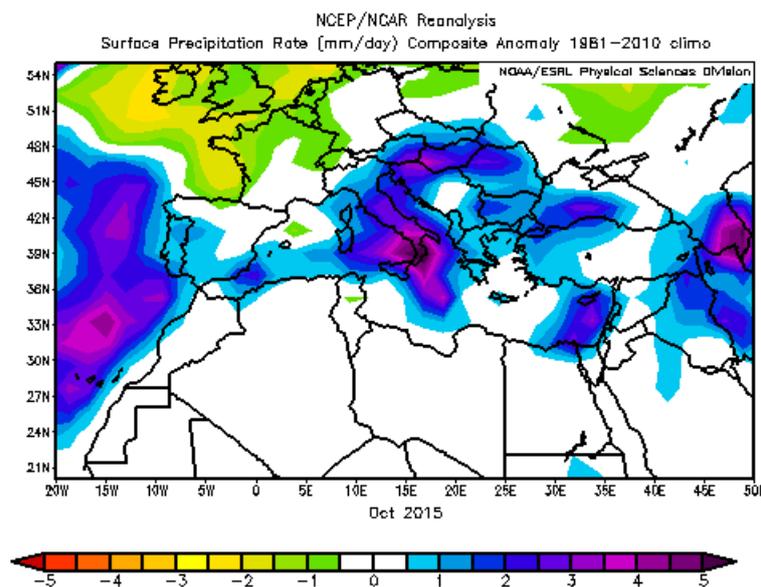


Figure 2: Anomaly (1981-2010 reference) of precipitation rate (mm/day) in the MedCOF region (data from NCEP/NCAR reanalysis, <http://www.esrl.noaa.gov>)

References:

WMO RA I RCC Node on Climate Monitoring Website with monitoring results:

<http://www.meteo.tn/htmlen/donnees/climatemonitoring.php>

RA VI RCC-CM Website with monitoring results: <http://www.dwd.de/rcc-cm>

NOAA ESRL composite maps: <http://www.esrl.noaa.gov/psd/data/composites/day/>

NOAA NCEI percentile maps: <http://www.ncdc.noaa.gov/temp-and-precip/global-maps/>

IRI climate library: <http://iridl.ldeo.columbia.edu/docfind/>

ECA&D, E-OBS: <http://www.ecad.eu>

GPCC: <http://gpcc.dwd.de>