



ESA CCI and C3S Soil Moisture

Latest product updates and climate assessments

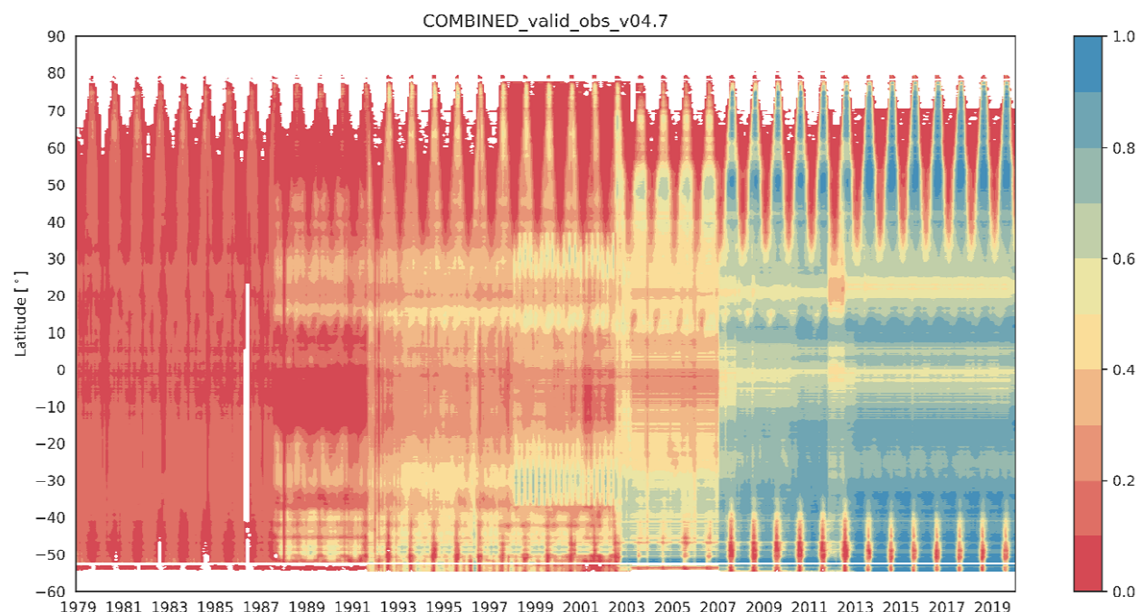
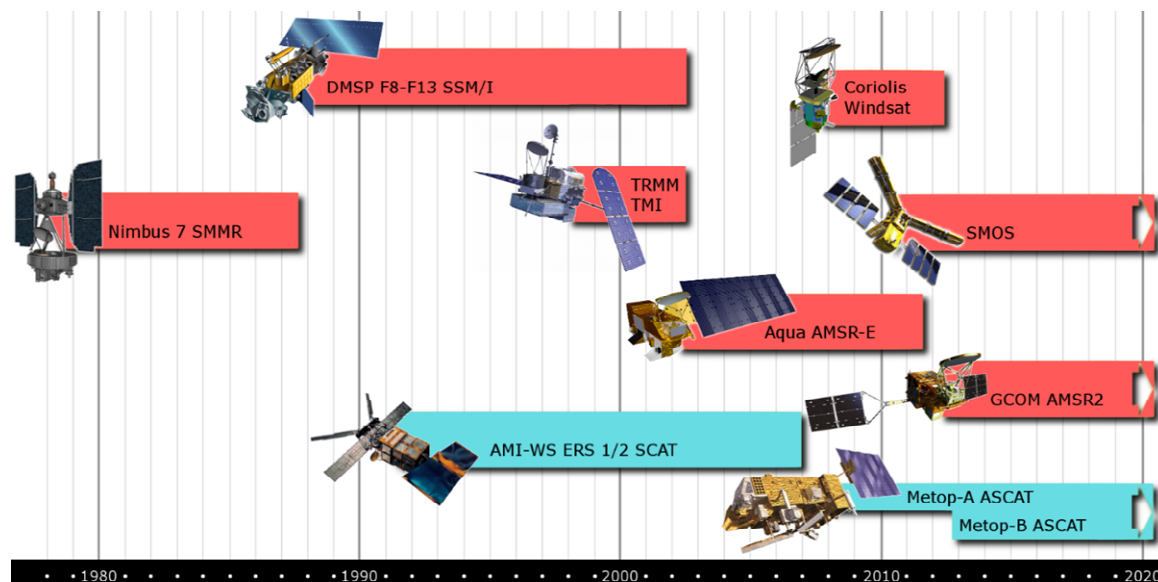
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EGU Online 2020-05-06
Session: HS6.3

v04.7 is the latest publicly available ESA CCI SM dataset spanning the period 1978-2019



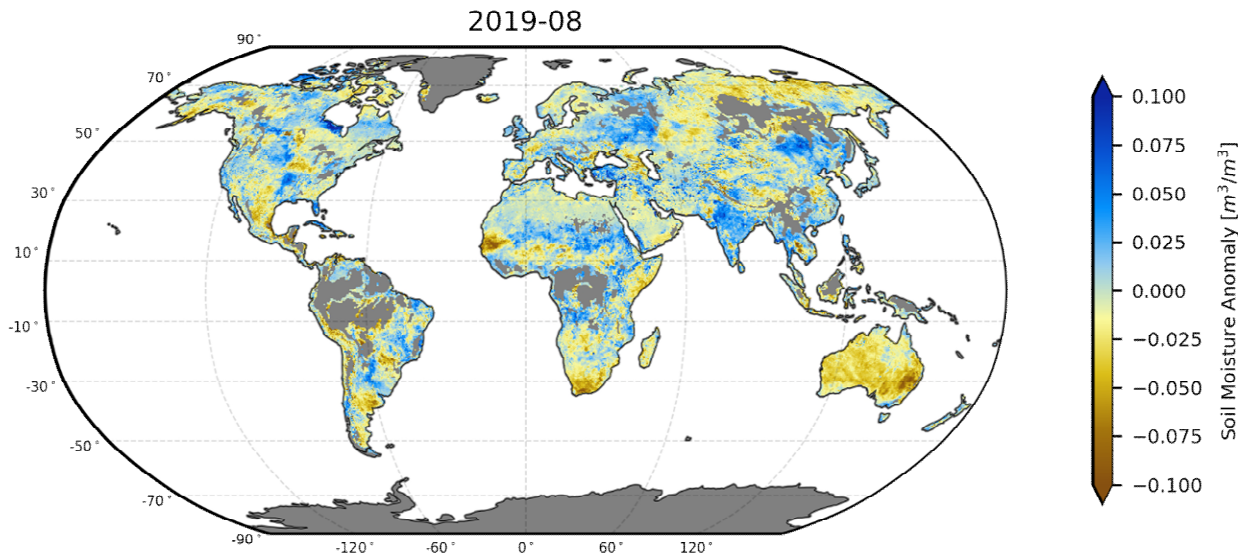
Input data products

- 11 active and passive microwave L2 products
- L-, C-, X-, Ku-band
- Resolution: ~25-100 km
- Revisit time: 1-7 days

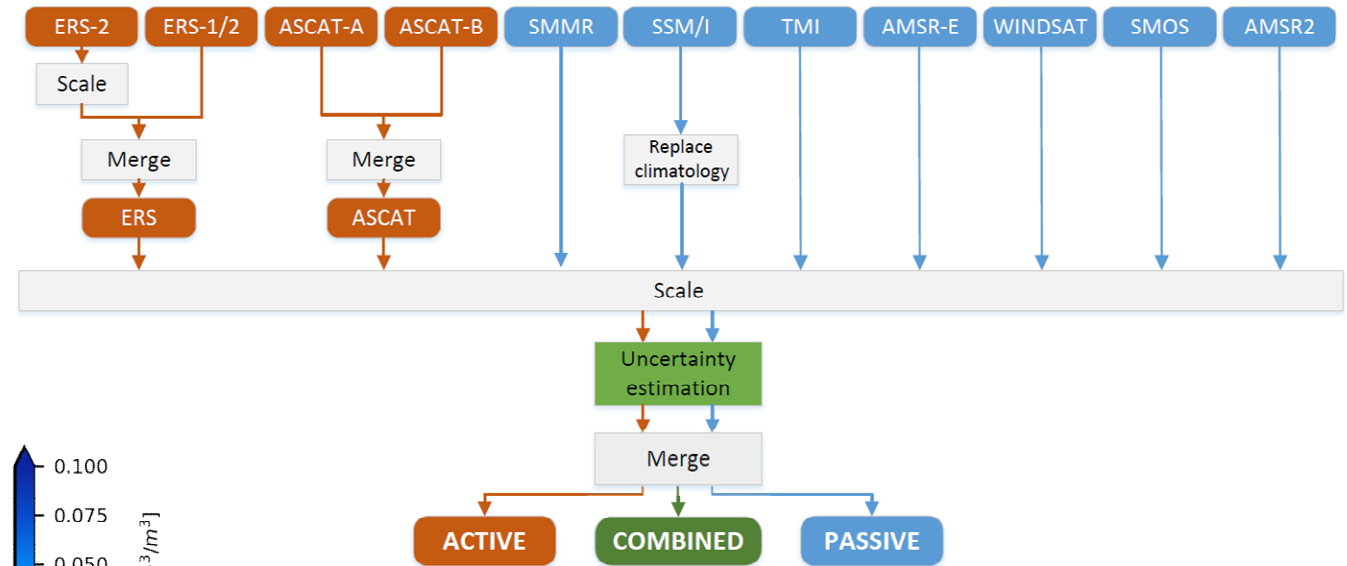
Merged ESA CCI Soil Moisture

- 0.25° resolution
- Daily product
- Period 1978-2019 (PASSIVE and COMBINED), 1991-2019 (ACTIVE)

Direct merging of Level 2 observations into the COMBINED product as opposed combining pre-merged ACTIVE and PASSIVE products in v2 and v3.



Merging scheme of the ESA CCI SM v4 algorithm

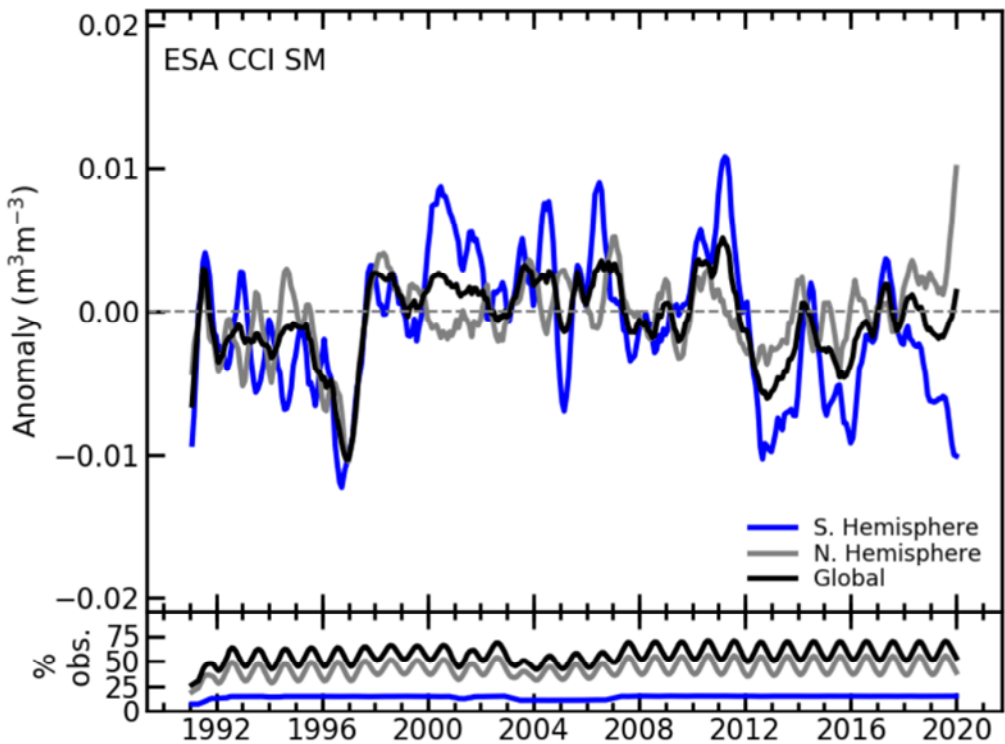
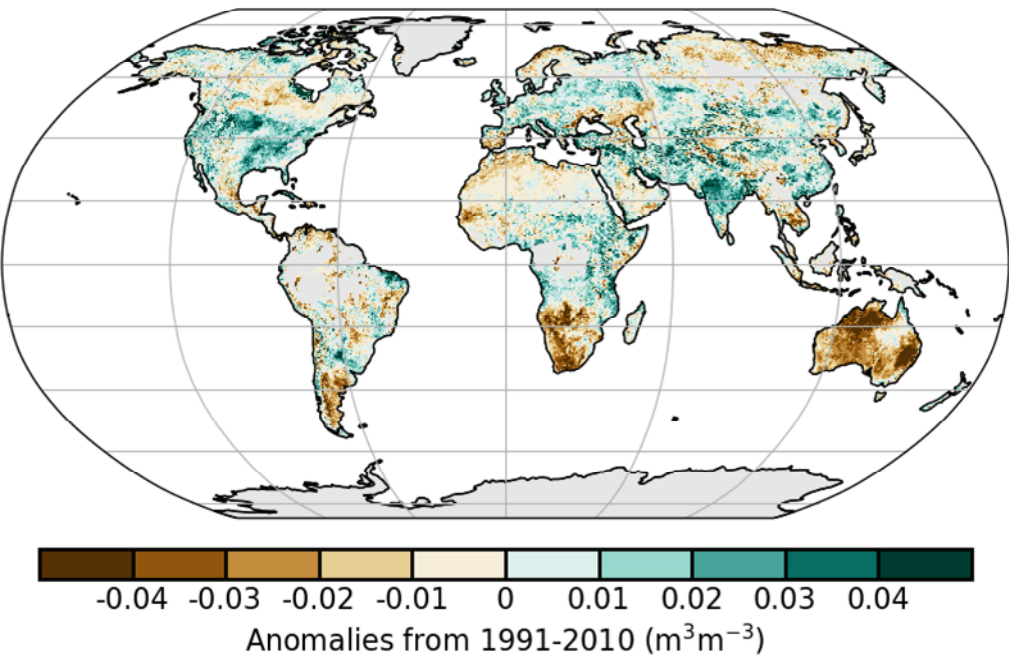


Download the data!

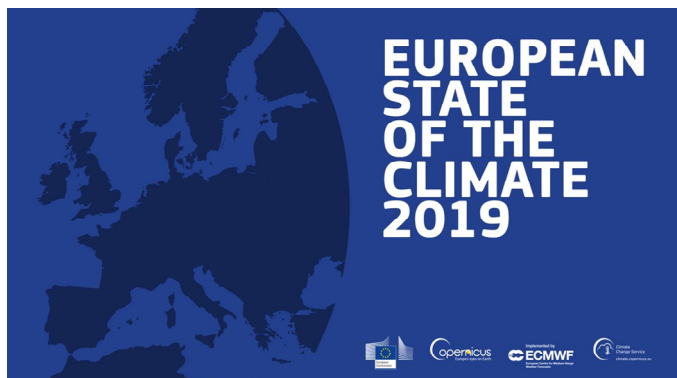
<http://www.esa-soilmoisture-cci.org>

Global SM anomalies for 2019 show a large discrepancy between the northern and southern hemisphere. Droughts in Australia and Southern Africa are in contrast to heavy precipitation observed in India and parts of North America.

2019 SM anomalies (ESA CCI SM v04.7 COMBINED)

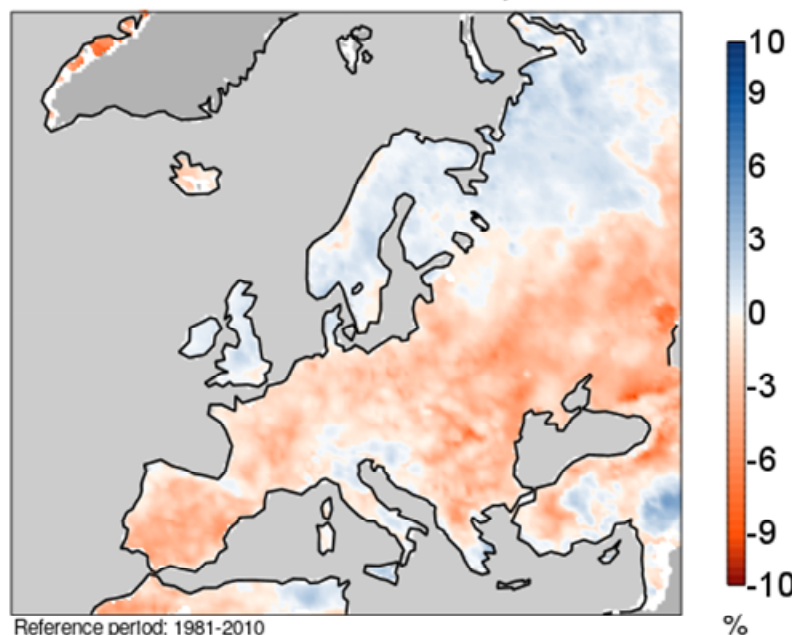


C3S SM (PASSIVE) anomalies were used in the **European State of the Climate in 2019** report. 2019 was one of the driest years on record in Europe, confirming the negative trend observed for the last decades. RFI caused positive trends in radar backscatter distort SM retrieval in some regions.

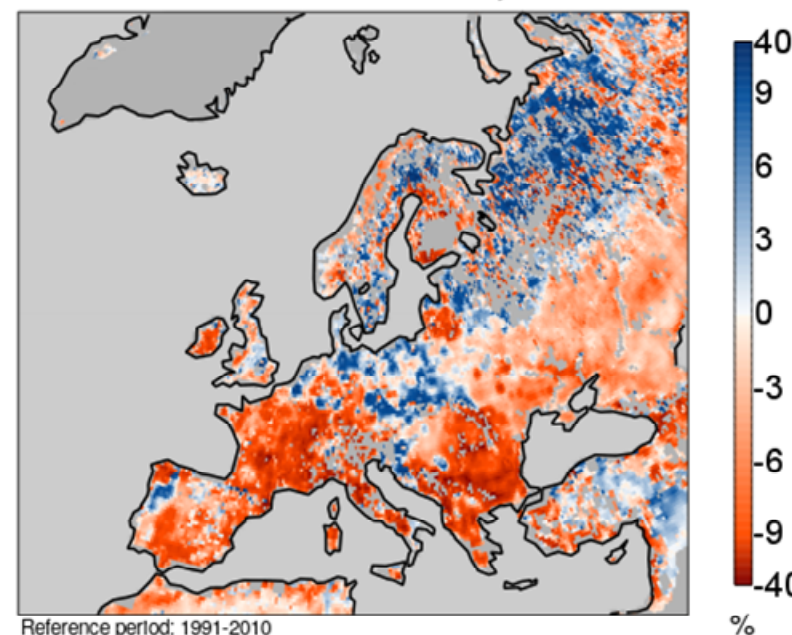


C3S contribution can be found in the *Wet and Dry Conditions* section of the report climate.copernicus.eu/ESOTC/2019/european-wet-and-dry-conditions

2019 mean soil moisture anomaly - ERA5



2019 mean soil moisture anomaly - satellite



Copernicus Climate Change Service
European State of the Climate | 2019



Copernicus

AFILIATO DA
ECMWF



Release version

V05.2

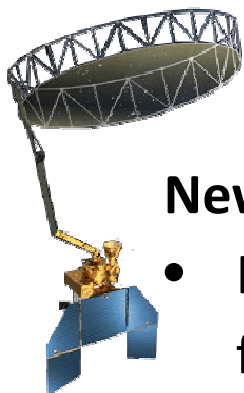
Period covered

1978

2019

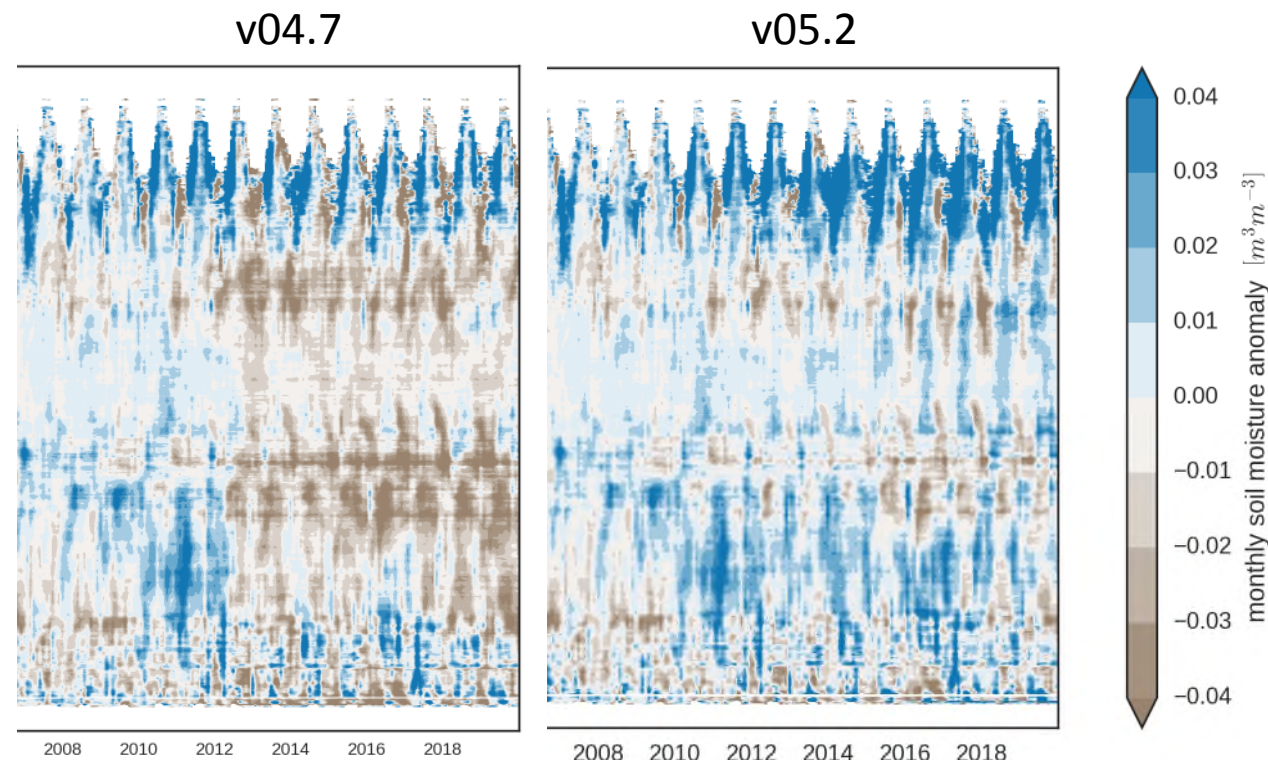
Release date

Q3/2020



New in v05.2:

- Inclusion of radiometer observations from SMAP from April 2015 onwards.
- Implementation of improved CDF matching and scaling of AMSR2 (previously not scaled) to correct negative break



Fractional coverage of CCI with LPRM v6 and SMAP included

