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## ESA CCI and C3S Soil Moisture: latest product updates and climate assessments

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As part of the European Space Agency (ESA) Climate Change Initiative (CCI) a more than 40 year long climate data record (CDR) is produced by systematically combining Level-2 datasets from separate missions. Combining multiple level 2 datasets into a single consistent long-term product combines the advantages of individual missions and allows deriving a harmonised long-term record with optimal spatial and temporal coverage. The current version of ESA CCI Soil Moisture includes a PASSIVE (radiometer-based) dataset covering the period 1978 to 2019, an ACTIVE (scatterometer-based) product covering the period 1991-2019 and a COMBINED product (1978-2019).

The European Commission's Copernicus Climate Changes Service (C3S) uses the ESA CCI soil moisture algorithm to produce similar climate data records from near-real-time Level-2 data streams. These products are continuously extended within 10 days after data acquisition and instantaneously made available through the C3S Climate Data Store. In addition to a daily product, monthly aggregates as well as a dekadal (10-days) products are produced.

In this presentation we give an overview of the latest developments of the ESA CCI and C3S Soil Moisture datasets, which include the integration of SMAP and various algorithmic updates, and use the datasets to assess the hydrological conditions of 2019 with respect to a 30-year historical baseline.

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