

Virtual Event: ECMWF-ESA Workshop on Machine Learning for Earth System Observation and Prediction



Contribution ID: 18

Type: **Oral presentation**

Neural network products in land surface data assimilation

Tuesday, 6 October 2020 10:00 (30 minutes)

Since July 2019, a SMOS neural network soil moisture product has been assimilated into the ECMWF operational soil moisture simplified extended Kalman filter (SEKF) as part of the land data assimilation system. There are two versions of SMOS neural network soil moisture products produced routinely at ECMWF. The first has been trained on the SMOS level 2 soil moisture product and is delivered to ESA. The second is trained on the ECMWF operational model soil moisture values and this is the one that is then assimilated into the SEKF. The neural network products will be compared, with differences due to the different training datasets used and despite the same SMOS observation inputs. Also, assimilation results for the product trained on the ECMWF model soil moisture will be presented.

In the context of the EUMETSAT HSAF project, recent work to develop neural network methods linking ASCAT backscatter measurements to soil moisture from ERA5, both in a retrieval and as part of a forward model, will also be introduced.

Thematic area

1. Machine Learning for Earth System Observations - Including Retrieval Algorithms, Fast/Improved/New Forward Models, Advanced Quality Control, De-biasing Techniques

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Session Classification: Session 2 (cont.): ML for Earth System Observations

Track Classification: ECMWF-ESA Workshop on Machine Learning for Earth System Observation and Prediction