

## Satellite inspired hydrology in an uncertain future: a H SAF and HEPEX workshop



Contribution ID: 22

Type: **Poster presentation**

### ASCAT soil moisture trends: Eliminating long-term land cover changes

Satellites are key observing systems to provide information on essential climate variables over large spatial scales. Soil water content is an important essential climate variables that regulates the exchange of energy, water, and carbon between the land surface and the atmosphere.

As part of the Satellite Application Facility on Support to Operational Hydrology and Water Management (H SAF) project, a surface soil moisture data record is processed by merging Metop-A and Metop-B ASCAT backscatter measurements and by applying the TU Wien soil moisture retrieval algorithm. The TU Wien change detection algorithm uses the multi-incidence angle measurement capabilities of the ASCAT instrument to compute surface soil moisture expressed in degree of saturation. The latest surface soil moisture data record covers 11 years (2007-2017).

In this study we analyze a new calibration strategy in the TU Wien change detection algorithm to account for long-term land cover changes in C-band backscatter. Land cover changes contribute to backscatter variations and hence might cause inconsistencies in the retrieved soil moisture data record. In addition, we test how the new calibration scheme of the soil moisture retrieval algorithm effects the consistency of soil moisture trends.

#### Which session would you like to present in?

1. Remote sensing, hydrological modelling and data assimilation

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**Track Classification:** H SAF and HEPEX joint workshop on "Satellite inspired hydrology for an uncertain future"