

4th workshop on assimilating satellite cloud and precipitation observations for NWP



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Type: **Poster presentation**

Updates on the all-sky assimilation at ECMWF

We present some highlights from recent updates to the all-sky assimilation at ECMWF.

- Changes to consider interchannel correlation in the error model of microwave imagers. For the all-sky assimilation it has been found that a fully-specified covariance matrix that adapts with the cloud amount was needed for this purpose. We find that the tuning of the eigenvectors and the interplay with variational quality control is key to a successful assimilation considering correlated observation errors.
- In the latest ECMWF IFS model cycle SSMIS-F17 150h GHz and GMI 166 v/h GHz channels have been added. This improves medium-range humidity forecasts and decreases the additional drying through the assimilation of microwave imagers by 50%.
- RTTOV-SCATT has been updated to version 12.2 in the latest ECMWF IFS model cycle along with the rest of RTTOV. This update adds the ARTS scattering database with 16 shapes including aggregates, hail and graupel and covering frequencies from 1 to 886 GHz to support all microwave/sub-mm bands: SMOS to ICI. Furthermore, a new liquid water permittivity model (Rosenkranz, 2015) is now a part of RTTOV-SCATT.

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