



Météo-France report on the use of sounder data

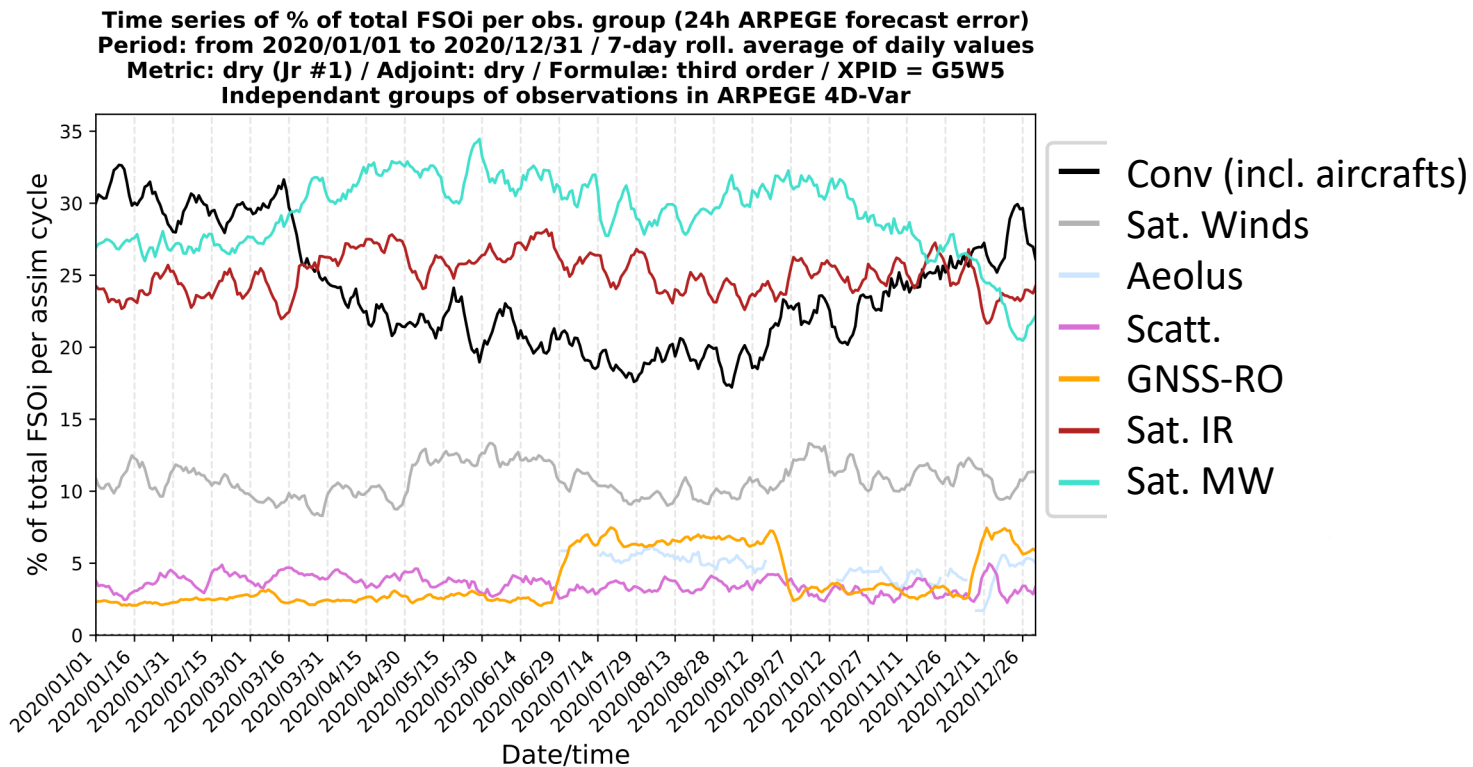
Philippe Chambon*, Olivier Audouin, Marylis Barreyat, Mary Borderies, Olivier Coopmann, Nadia Fourrié, Jean-François Mahfouf, Rohit Mangla, Dominique Raspaud

CNRM, Université de Toulouse, Météo-France and CNRS

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FSOi are now computed routinely for the ARPEGE model and available both in histograms and time series since January 2020

Example of FSOi time series for 1st semester 2020

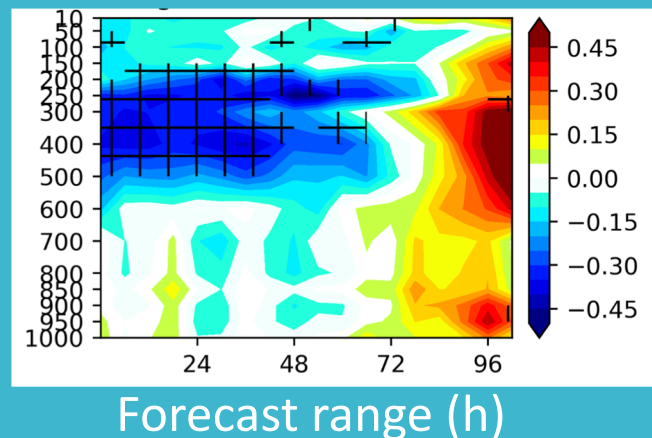


A new parallel suite is currently being set up at Météo-France, it includes modifications in the usage of observations within the ARPEGE global model :

- Activation of the “1-Bay + 4D-Var” scheme to assimilate cloudy and rainy radiances
- Assimilation of MWHS-2/FY3-D (183 GHz channels)
- Monitoring of MWTS-2 and MWRI/FY3-D
- Assimilation of ABI/GOES-16 radiances

Activation of the “1-Bay + 4D-Var” scheme for cloudy and rainy radiances of ATMS (NPP, NOAA-20) and MHS sounders (NOAA-19, MetOp-B, MetOp-C)

*Relative impact
on T forecasts
w.r.t. ECMWF
analysis over the
Globe*



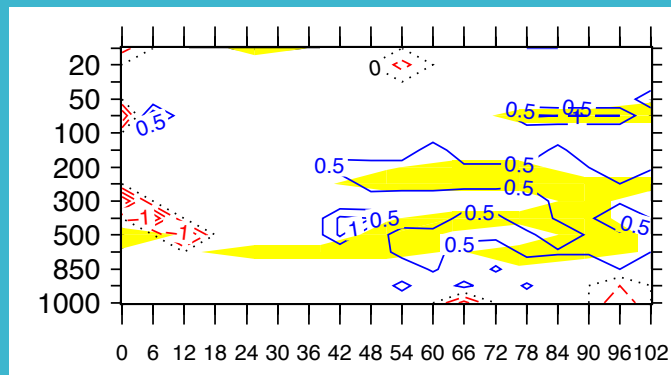
=> Presentation by Mary Borderies
on Wednesday 30 (talk 9.02)

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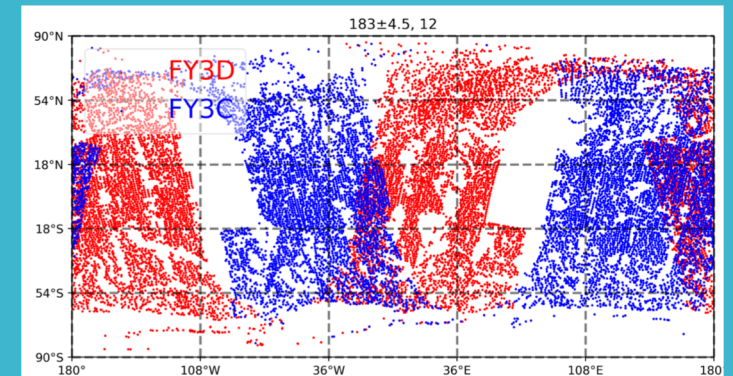
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- **Assimilation of MWHS-2/FY3-D (183 GHz channels)**
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Assimilation of the 5 humidity channels of MWHS-2/FY3-D

*Relative impact
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w.r.t. ECMWF
analysis for
SOUTH20*



Forecast range (h)



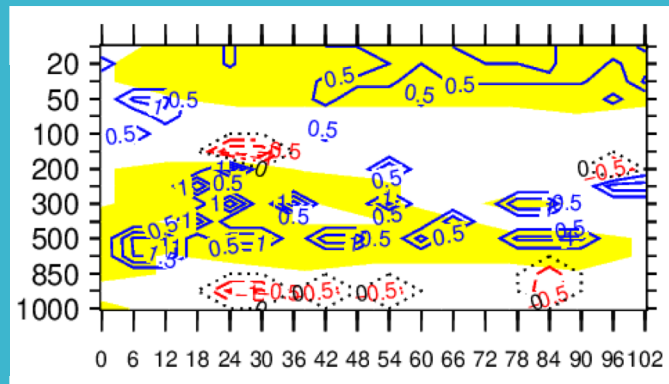
=> Main impacts in the Southern hemisphere on T, Hu and winds

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Assimilation of ABI/GOES-16 radiances.

*Relative impact
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TROPICS*



Forecast range (h)

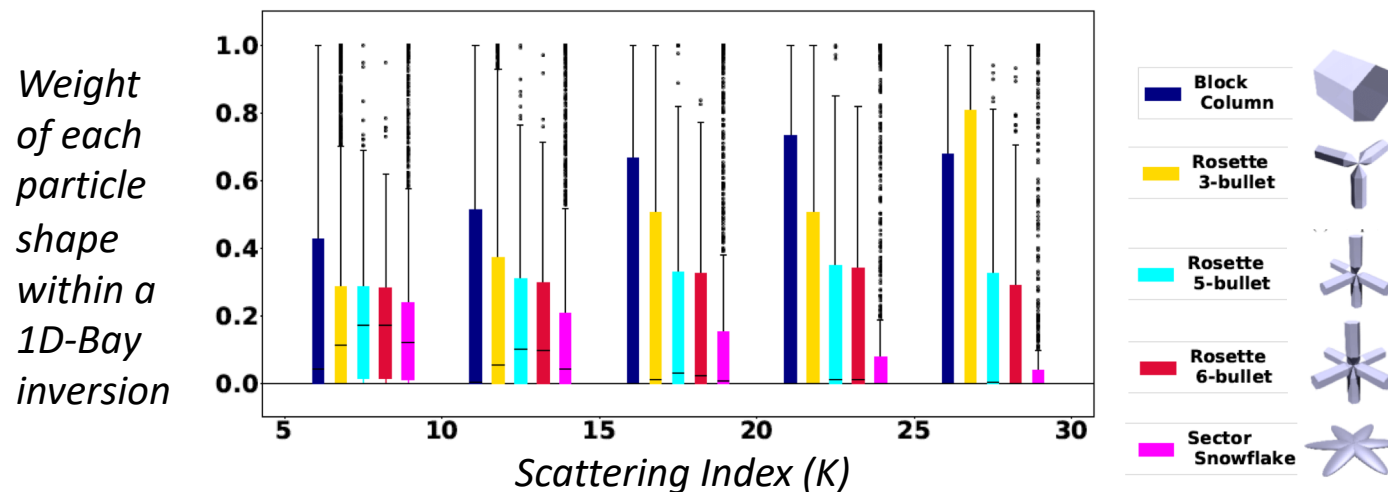
=> Presentation by Olivier Audouin
on Friday 29 (poster 1p.01)

Research is currently ongoing on the following subjects :

- Using ensembles of RT simulations within clouds and precipitation
- Preparation to the assimilation of MWI and ICI / EPS-SG and consistency with FCI/MTG
- Preparation to the assimilation of IRS/MTG and IASI-NG/EPS-SG
- Preparation to the monitoring of DPR/GPM-Core and CPR/Earth-Care
- Preparation to the monitoring/(assimilation?) of TROPICS data

Using ensembles of RT simulations (microphysical assumptions) within clouds and precipitation to better characterize and propagate uncertainties to the analysis.

Statistics based on 2-month of inversions with GMI data

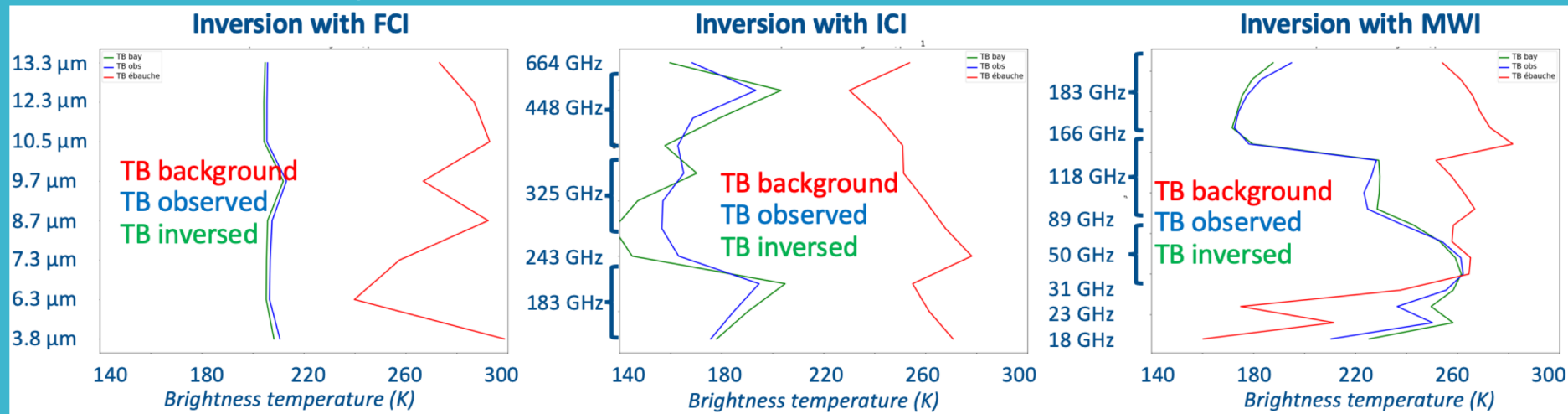


PhD of Marylis Barreyat
(2019-2022)

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Simulations of MWI, ICI and FCI, ingested within the 1D-Bay for independent or combined inversions => gaining in understanding of how problematic for DA are the different assumptions within IR and MW RT simulations.

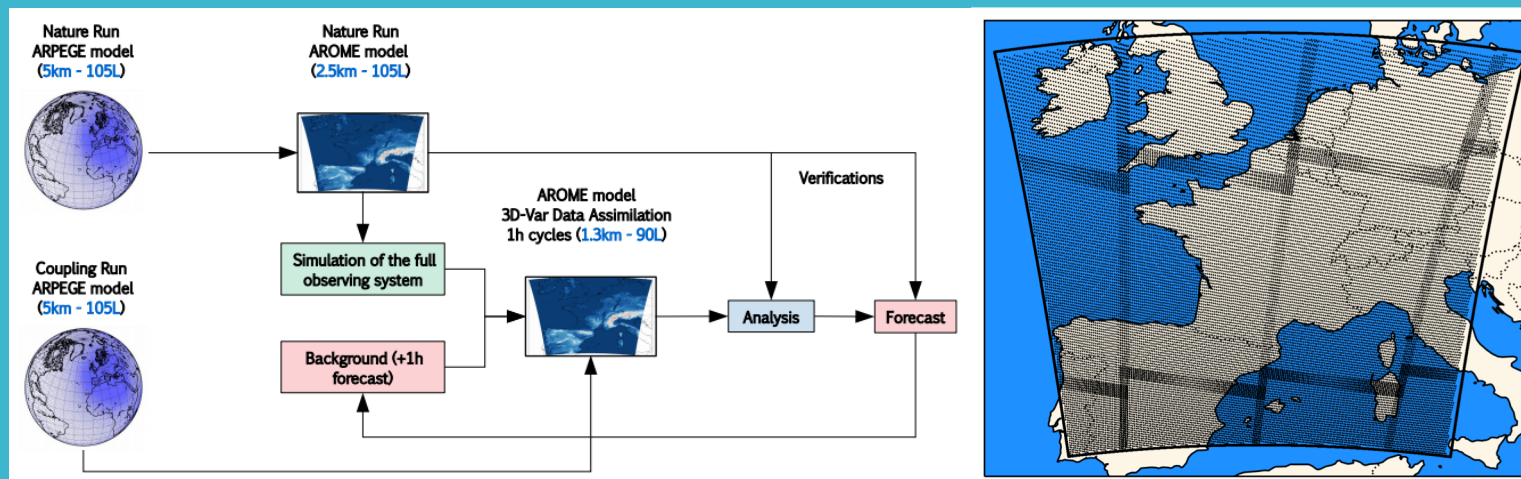


PhD of Ethel
Villeneuve
(2020-2023)

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Conducting OSSEs within the AROME convective scale model, to be prepared from day-1 for the assimilation of MTG-IRS (channel selection, data flow within the DA system, TB reconstruction from PC scores, first estimate of impact).



EUMETSAT fellowship of
Olivier Coopmann
(poster 2p.04 on
Monday 28)

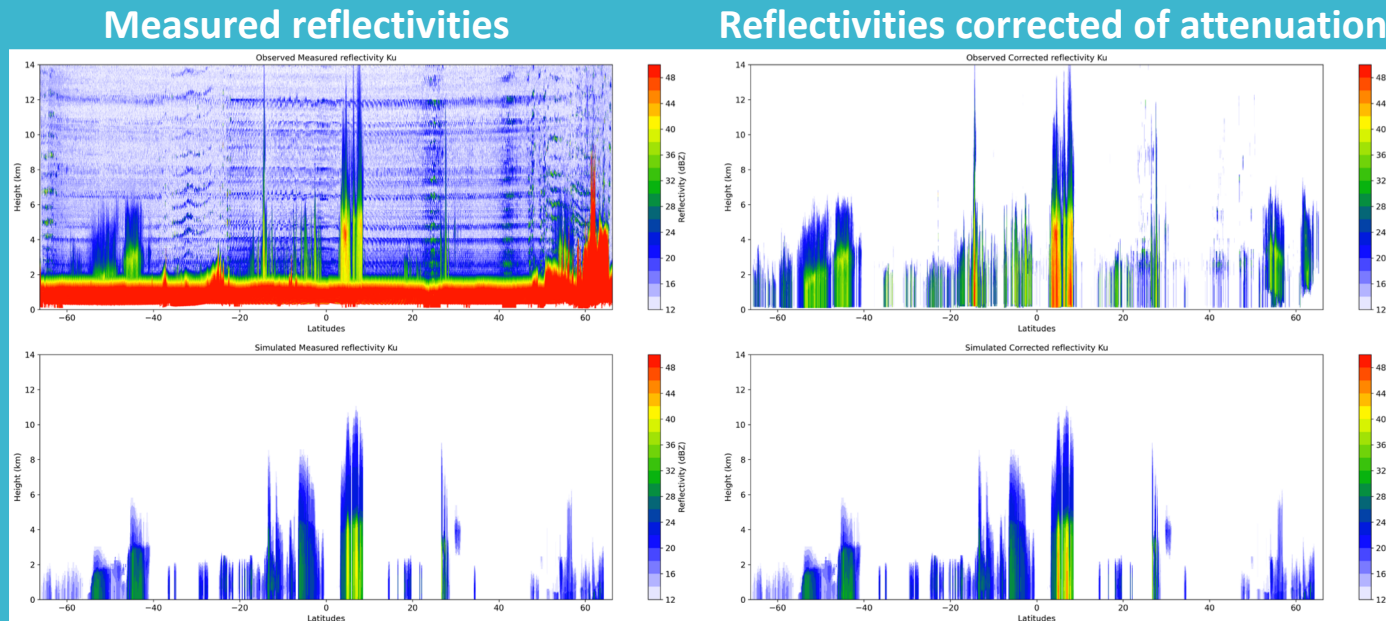
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Preparation to the monitoring of DPR/GPM-Core and CPR/Earth-Care.

GPM/DPR
observations :

ARPEGE model
+ RTTOV V13 :



EUMETSAT NWP-SAF
Rohit Mangla

**Thank you for
your attention !**