Preparing of MTG era: developing of imager and sounder nowcasting tools

First scientifically realistic synthetic MTG-/IFS and MTG-S/IRS data generated with RTTOV-13.0

NWC SAF vMTG version with support MTG-/IFS projection migrated to RTTOV-13.0

Synthetic MTG-/IFS and MTG-S/IRS data generation for case study 2019-05-01

NWC SAF CT, CTH, LWP and IWP generated using as inputs the synthetic MTG-/IFS data

Synthetic datasets generated using operational ECMWF hybrid GRIB files between t+0 to t+24 hours range forecast (every 1 hour) with 0.1° x 0.1° from 2019-05-01 00Z run.

NWC SAF CT, CTH, LWP and IWP generated using as inputs the synthetic MTG-/IFS data

First version that allows simultaneous generation of synthetic MTG-/IFS, MTG-S/IRS and IASI radiance on MTG-/IFS grid.

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Key point: NWC SAF as integration and reprojection tool:
MTG-/IFS will have the half of spatial resolution of MTG-/IFS.
MTG-IRS will explore in “dwell” of 160x160 pixels at 4x4 km resolution with no reprojection on a common GEO grid.

MTG-S/IRS channels nearest to IASI channels at 695, 706, 734 and 919.5 nm. The wavenumbers has been selected in CO2 branch to provide top to down view in the atmosphere.

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Next developments

- ISHAI(Imager Satellite Humidity And Instability) is the clear air product of the NWC SAF GEO software package.
- ISHAI provides the TPW, LWP, 6 hour, 12 hour and 24 hour forecast.
- ISHAI is a complementary AEMET tool. Together with synthetic data generation, it can get the same fields that from ISHAI for all pixels.
- ISHAI from MTG-/IFS will be improved with combination of MTG-/IFS L1 or MTG-S/IRS L1 inputs.
- The availability of synthetic dataset will be used to develop and validate before launch of MTG-S/IRS.

References

In the NWC SAF web, there is an ISHAI dedicated web information page with all the documentation (ATBD, User Manual and Validation Reports). It is also included a web page with ISHAI and PGE00 developments for MTG. The loops correspond to the cases studies included in this poster are available as AVI files.

There is also an ISHAI Reference web page where publications and latest presentations on pptx format are available with the cases studies shown in this poster.