

A central graphic for 'ATMOS 2021' featuring a globe with a satellite in orbit. The globe is surrounded by several circular inset images showing various atmospheric data visualizations, such as temperature maps and cloud patterns. The background is a dark blue space with stars.

# ATMOS 2021

# Evaluating the Impact of NDSA-based WV Measurements from MW Satellite Signals on Meteorological Forecasts

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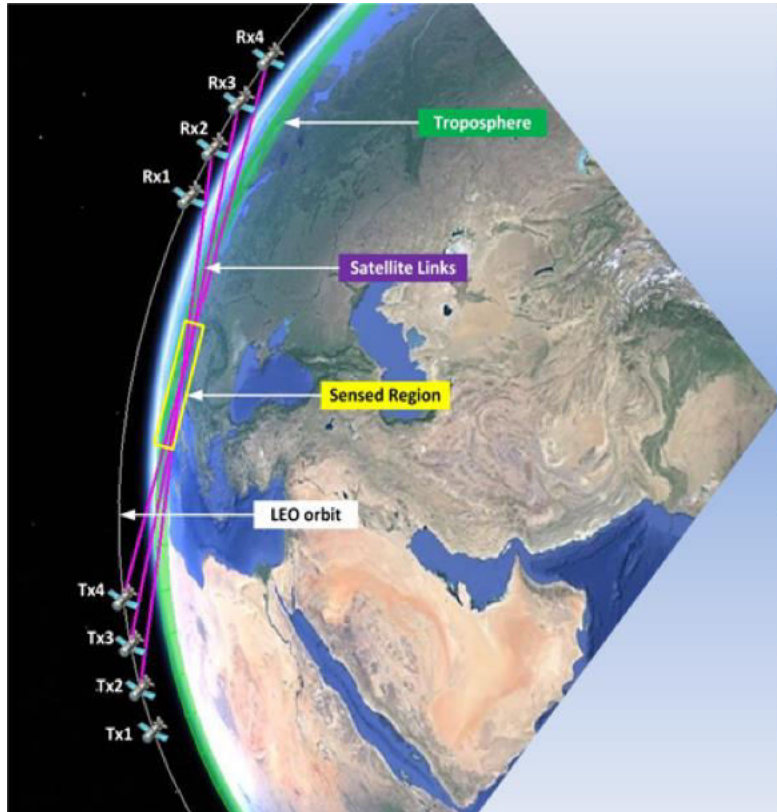
Sesto Fiorentino (Florence)-ITALY

25/11/2021

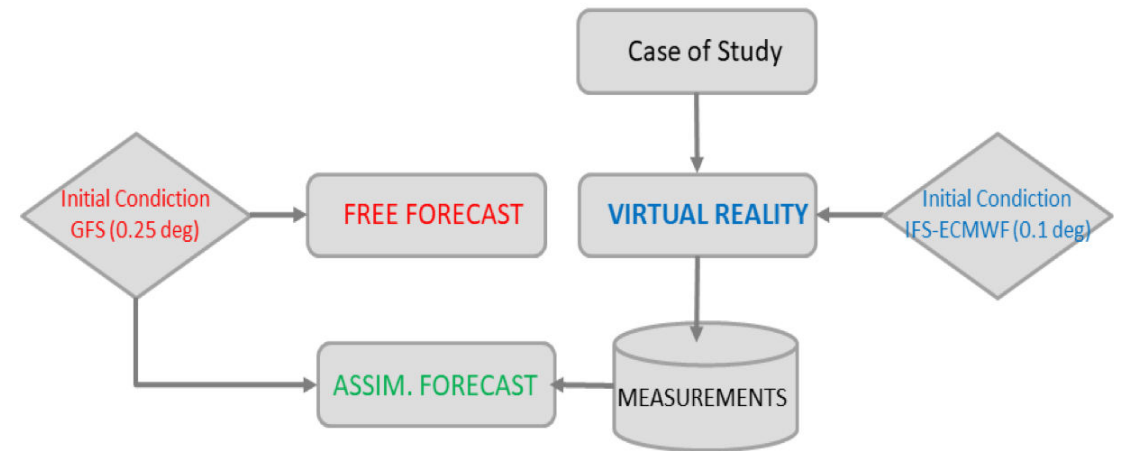


# Observing System Simulation Experiment (OSSE)

Observing architecture: co-rotating CubeSats



OSSE used for generating synthetic measurements and test their assimilation into a LAM



comparison between virtual reality and forecasts



# Info on the synthetic experiments

- Analysis on 3 representative case studies for no-rain, medium-rain, heavy-rain
- Measurements errors estimated fixed at 20% (but current WV retrieval procedure does not manage the effects of atmospheric liquid water)
- Assimilation of Integrated Water Vapor (IWV) (WV profiles are planned)
- Verification: qualitative on precipitation (on-going quantitative one and also on temperature and wind)
- Assimilation of one single longitudinal transect
- Meteorological model: WRF-ARW 4.2
- Assimilation method: 3D-VAR (4D-VAR is planned)

