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En route to sustainable aviation: from climate science to mitigation policies



Abstract

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Potential of observations from new weather satellites for improving contrail cirrus cloud characterisation and forecasts of temperature and humidity in the upper troposphere

Increasing society's resilience to high-impact natural events and climate change requires long-term investments in new earth observation and prediction capabilities and targeted research.

The European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), together with its international partners (NOAA, CMA, IMD, etc.), provides the backbone of the global meteorological and marine space based observing system.

With the successful launch of the Meteosat Thirds Generation (MTG) geostationary system on 13 December 2022, EUMETSAT has embarked in a 5-year renewal of its main geostationary and polar systems, also supported by several new Copernicus Sentinel missions (Sentinel-4, Sentinel-5, CO_2M) to be operated by EUMETSAT on behalf of the European Commission. These new observational capabilities will meet the requirements for a vast set of applications, including the potential monitoring of aircraft contrails. The combination of these new EUMETSAT operated systems will bring an unprecedented observational capacity benefiting the full weather/climate value chain.

Here, a brief overview of the current status of the new EUMETSAT missions and key new developments, ranging from temperature and humidity, to winds fields and cloud observations will be presented.