Séminaire
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An overview of satellite data assimilation at ECMWF

Résumé:

The assimilation of satellite data into NWP models has progressed rapidly in recent years, in large part due to better forecast models and improved data assimilation algorithms. ECMWF now assimilates satellite data from over 60 sensors, including polar microwave sounders and imagers, hyperspectral sounders, geostationary radiances, GPS radio occultation, atmospheric motion vectors and scatterometers. We are using more observations over land and in cloudy areas than ever before.

However it remains true that the major impact on forecast accuracy remains observations over the sea, and in predominantly cloud-free conditions. Whilst excellent progress has been made in characterising emissivity, to make more use of observations over land, this needs to be complemented by complex error models and sophisticated quality control.

Benefit had already been found from retuning observation errors and improved bias correction. In this presentation the current state of ECMWF satellite data assimilation will be described, covering briefly the main observation types, and improvements made in the last year. As well as operational weather prediction ECWMF is analysing atmospheric composition under the MACC programme, and contributing to climate science through re-analysis. These projects will be briefly summarised.