



ID: Ke04

Type: Keynote

## Recent highlights of Numerical Weather Prediction and atmospheric composition forecasts at ECMWF: the role of observations

*Tuesday 9 September 2025 15:30 (30 minutes)*

The essential role played by observation networks for improving the performance of Numerical Weather Prediction (NWP) and atmospheric composition forecasts systems is illustrated in this presentation by the ECMWF experience. The European Centre on Medium range Weather Forecasts is both a research institute and a 24/7 operational service, producing global numerical weather predictions for its Member and Co-operating states and the broader community. It is also one of the entities entrusted by the European Union to implement the Copernicus services of the EU space programme: the Atmosphere monitoring (CAMS) and Climate Change monitoring (C3S) services. The development and implementation of robust and reliable numerical systems at ECMWF rely on a long experience that built upon worldclass supercomputing facilities and an amazing number of in-situ and Earth Observations datasets. ECMWF now holds one of the largest meteorological data archives. How such an infrastructure has been set-up and expanded to atmospheric composition to deal with the Copernicus challenges, and how we push the limits to make it more accurate and more resilient will be discussed, thanks to several concrete examples of the achievements and the challenges that have been or remain to be overcome.

### E-mail

### In-person or online preference

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**Session Classification:** Keynote on Numerical Weather Prediction and ECMWF