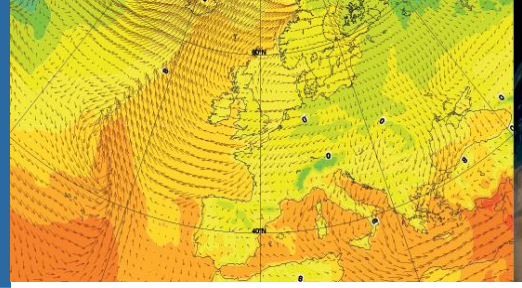



Monitoring the ECMWF forecast system

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ECMWF

The Weather Room

ECMWF operational forecasts

- High-resolution forecast (9 km grid, 137 levels) runs twice every day to 10 days

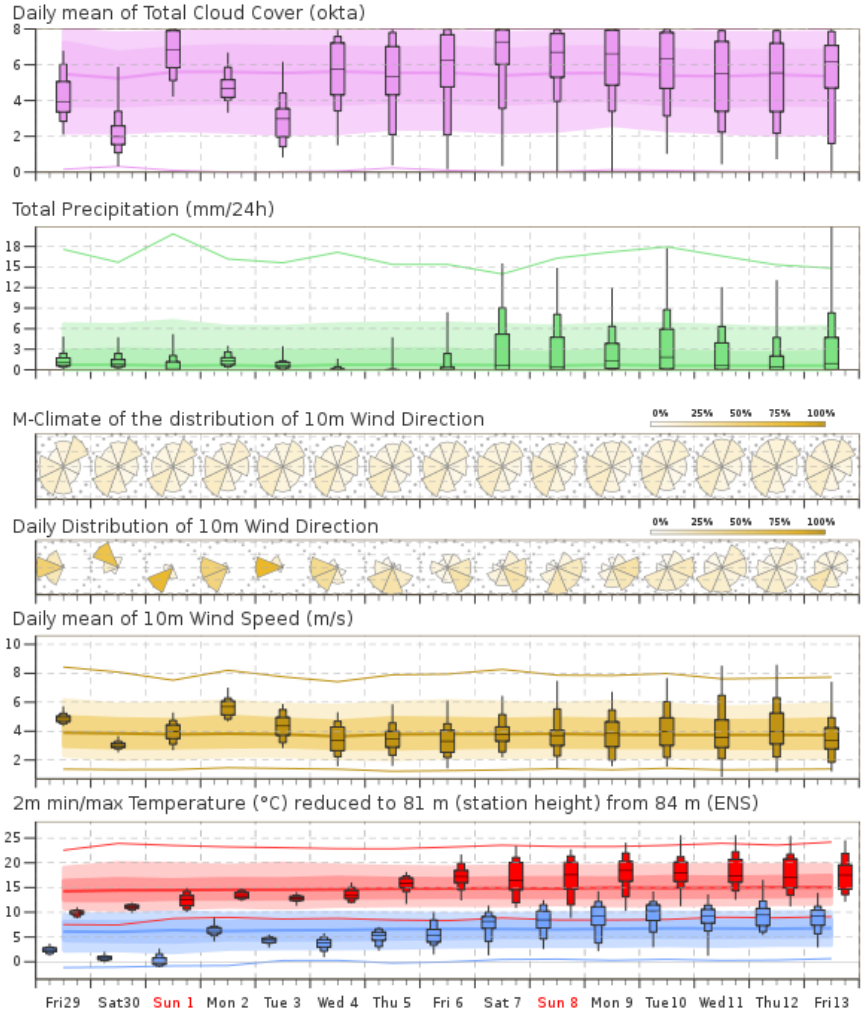
- Ensemble: same model but run at lower resolution (18 km, 91 levels; 36 km after day 15)
  - ensemble control (run from high-resolution analysis, no perturbation)
  - 50 perturbed members (account for initial and model uncertainties)
  - Ensemble coupled to ocean model from start of forecast

- Ensemble extended to 46 days twice per week for monthly forecast (00UTC Thursday, Monday)

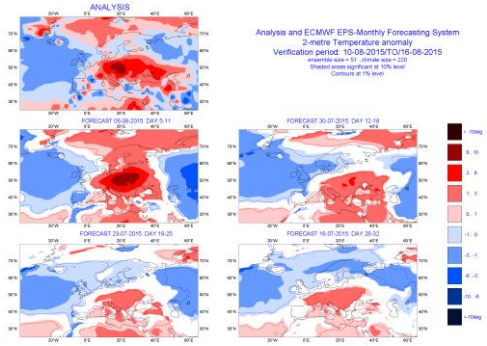
- Seasonal forecast: once a month (coupled to ocean model) 51 members, ~36 km, 91 levels, to 7 months ahead

Products: a few examples

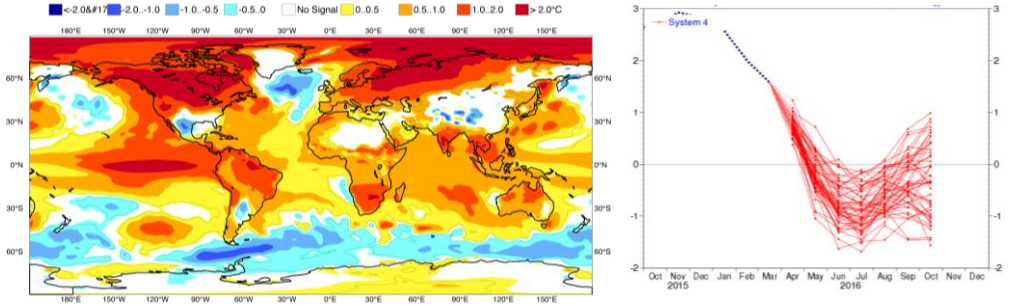
Medium-range



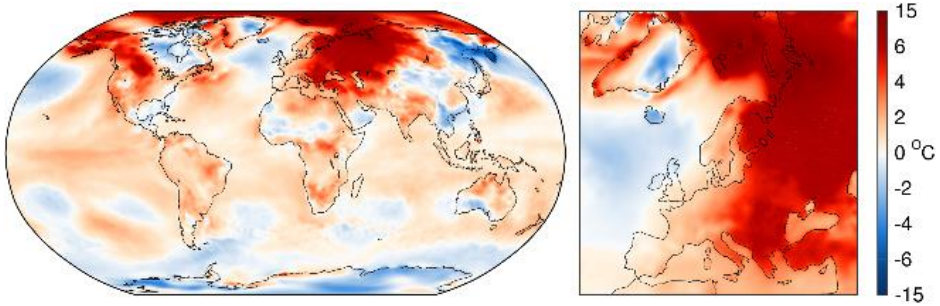
ENS-Monthly Forecasting System 2mt anomaly



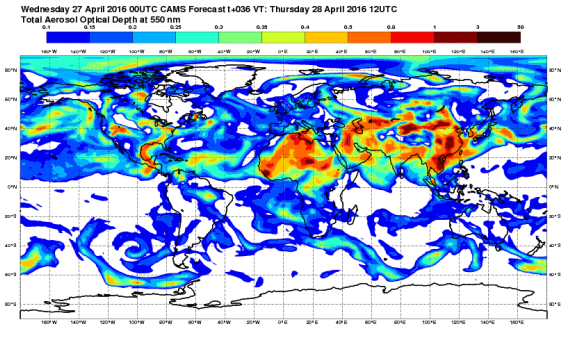
Seasonal Forecast



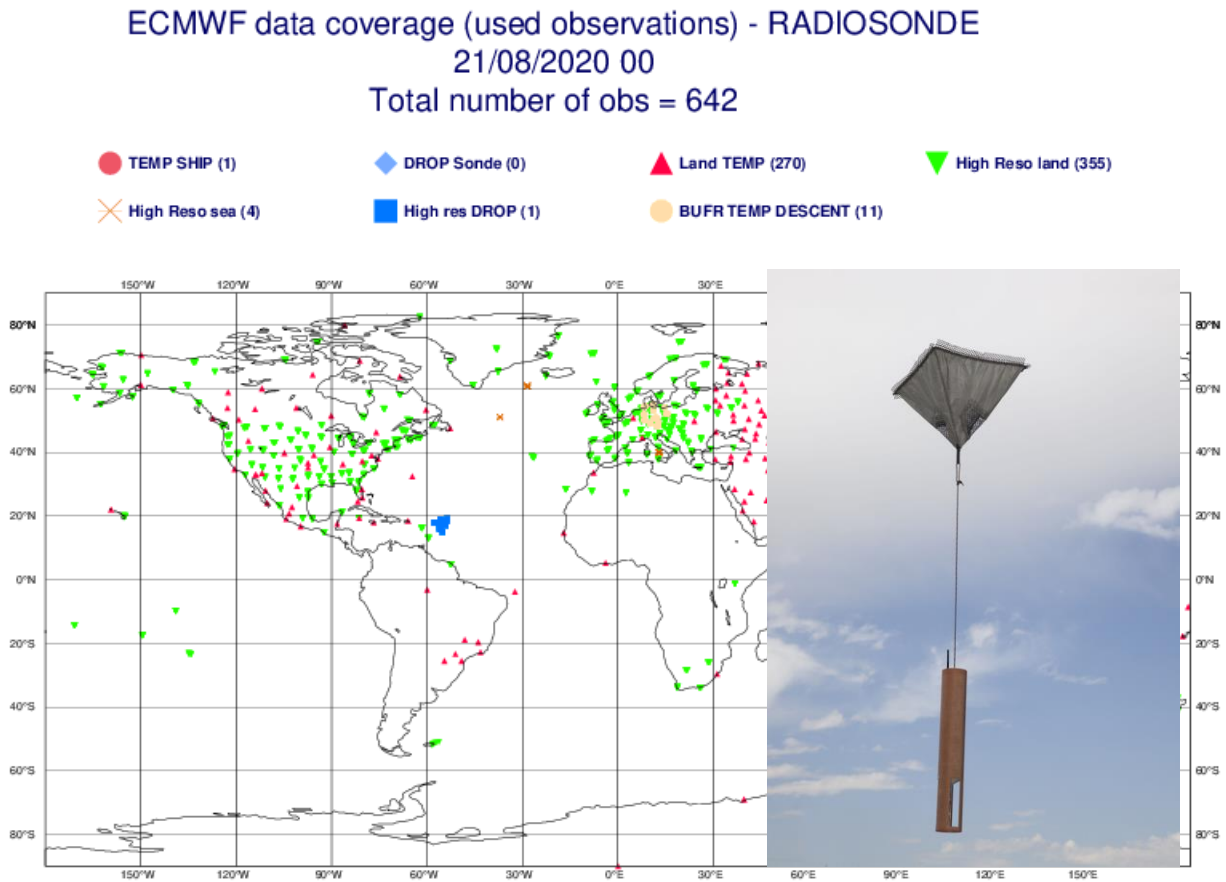
Global average temperatures

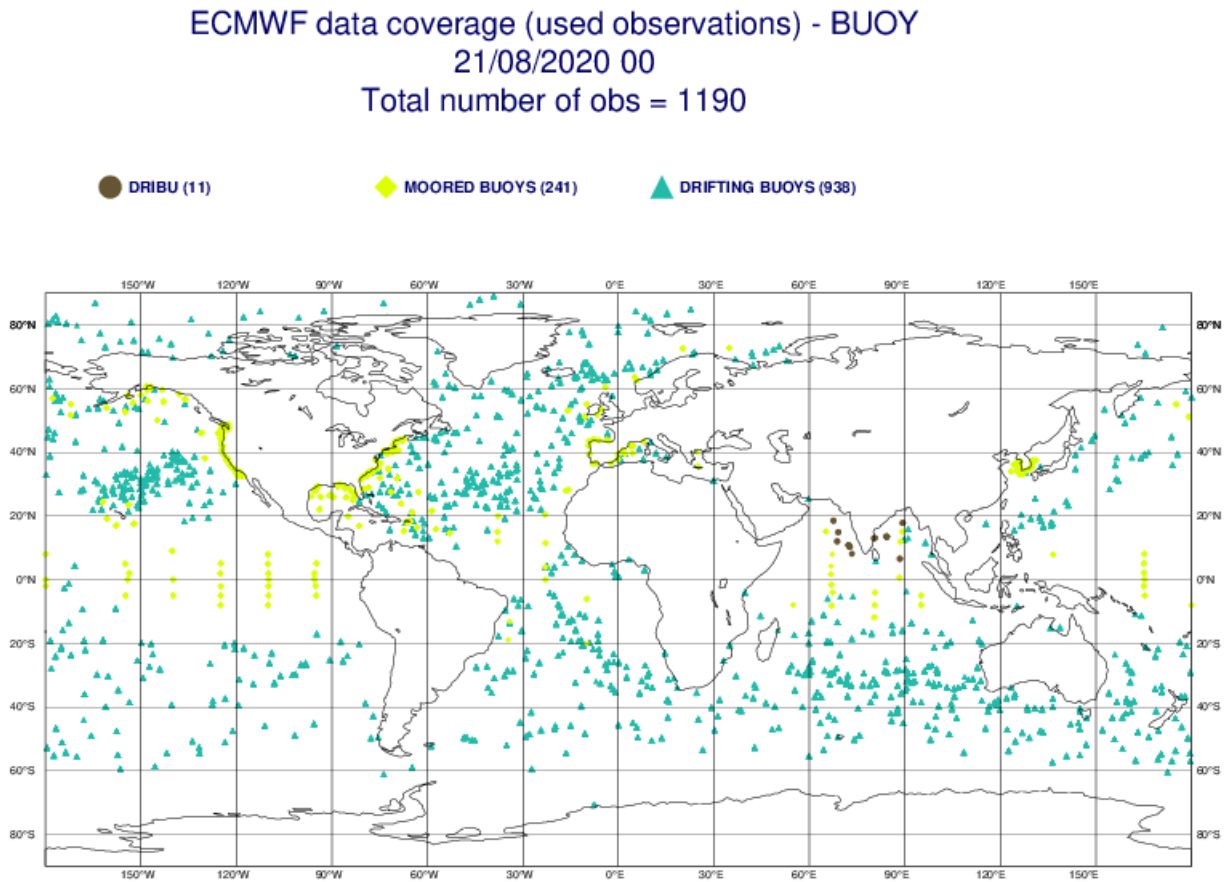


Forecast of Aerosols Optical Depth

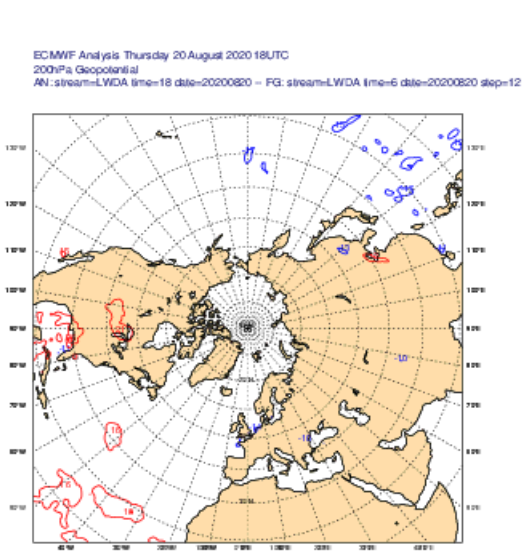


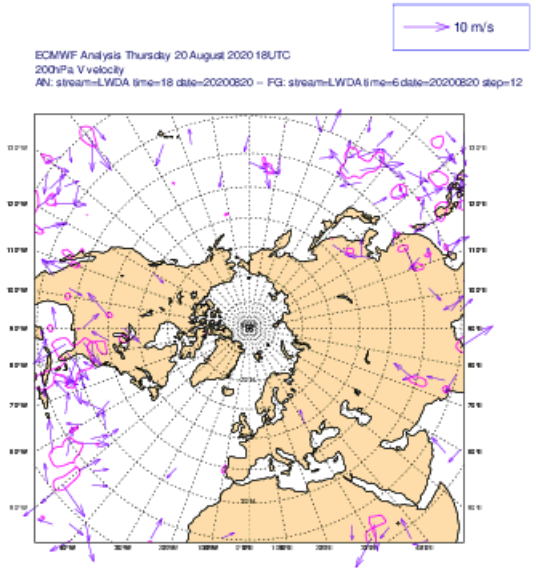
Observation Coverage

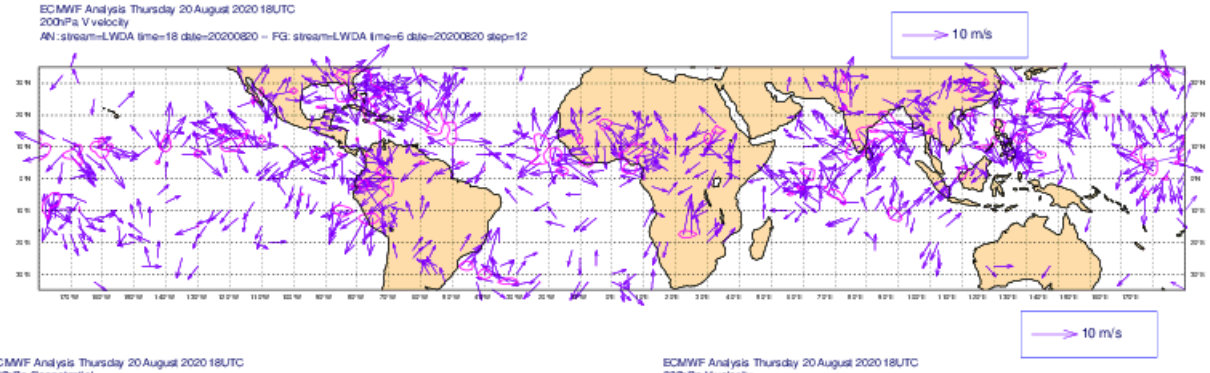


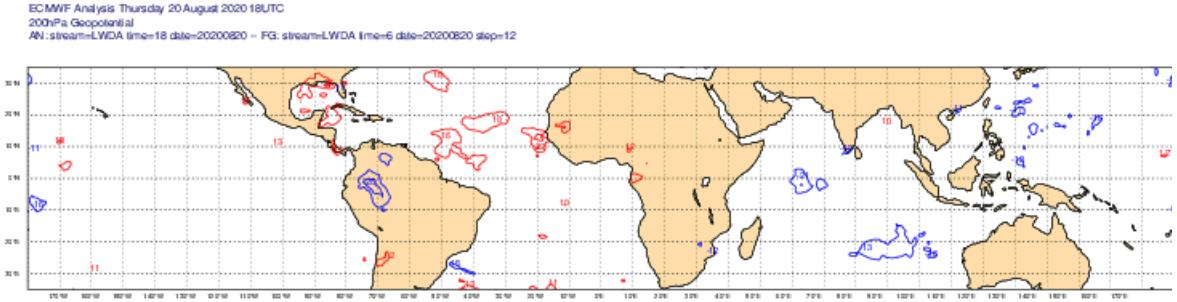


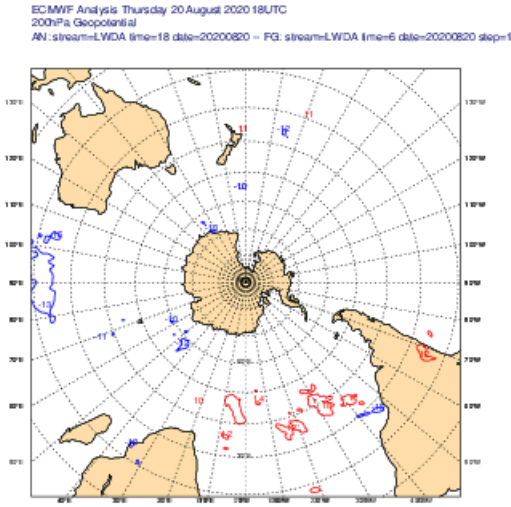
Producing the new analysis

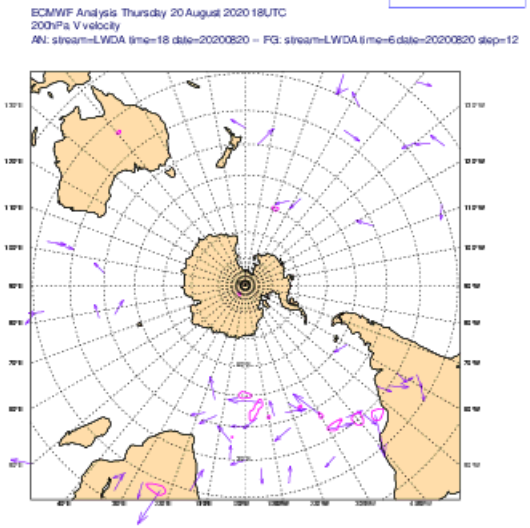




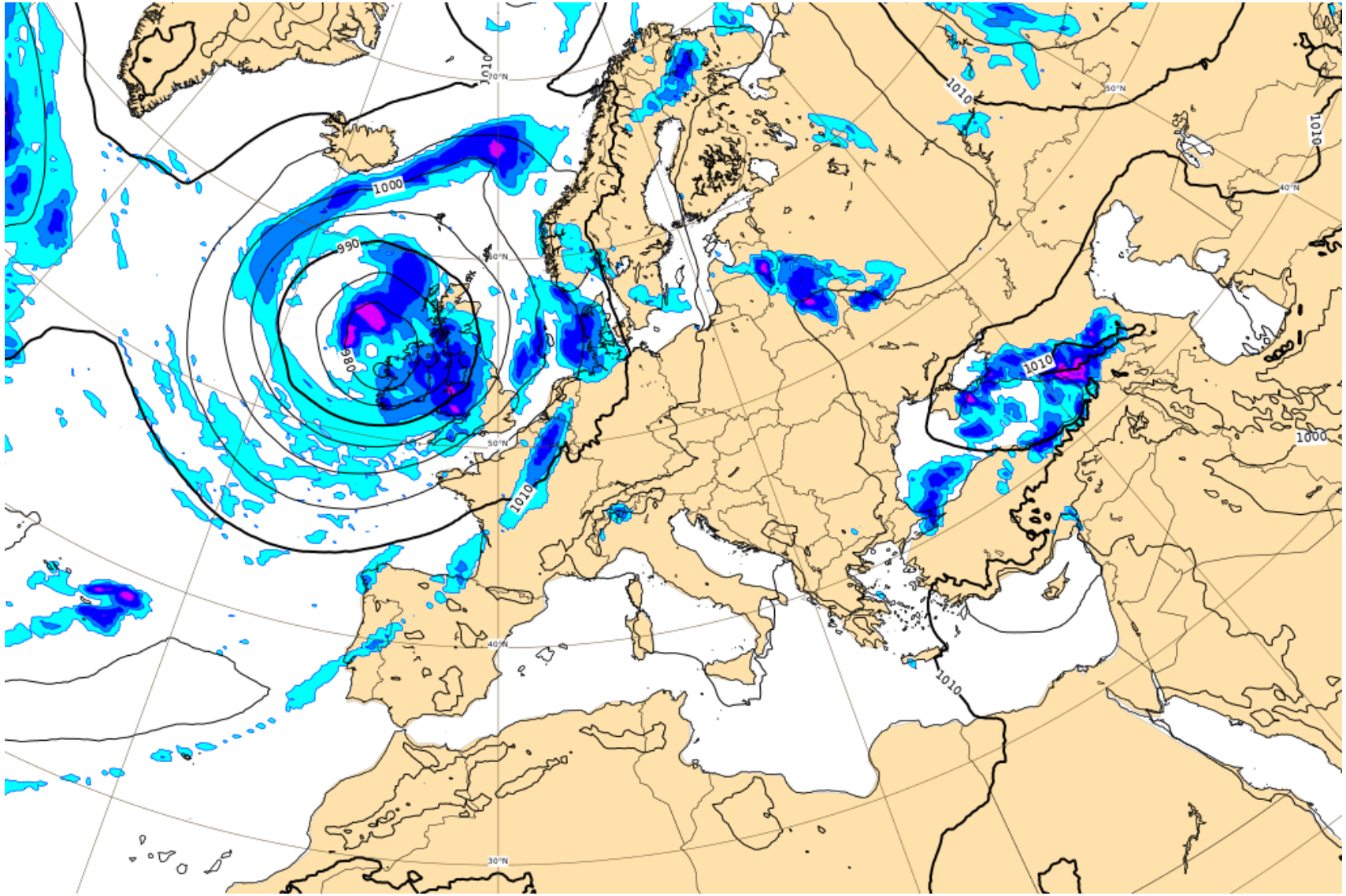




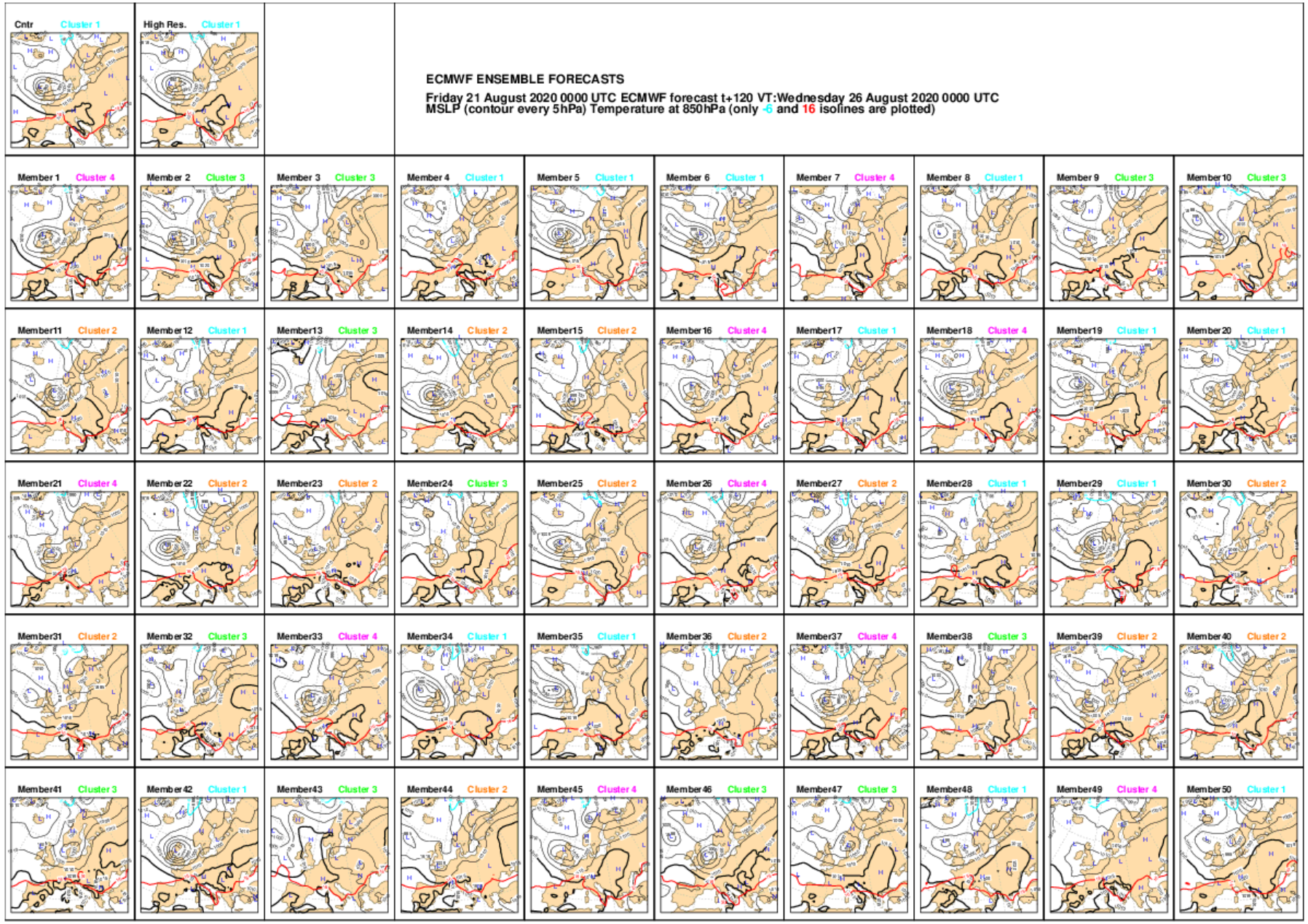




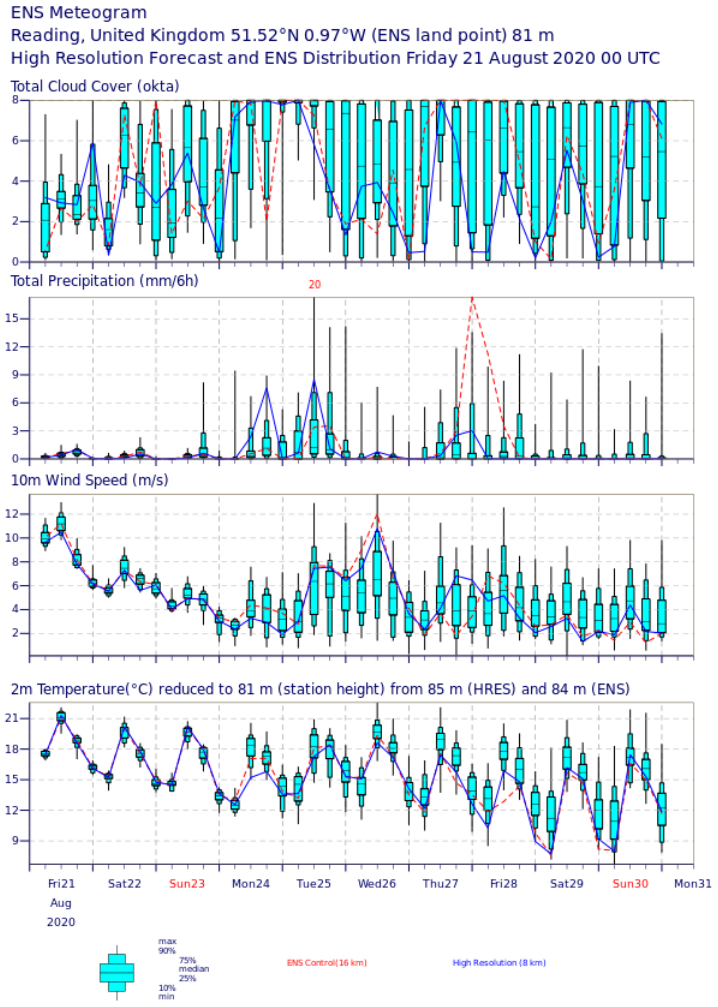
HRES Forecast

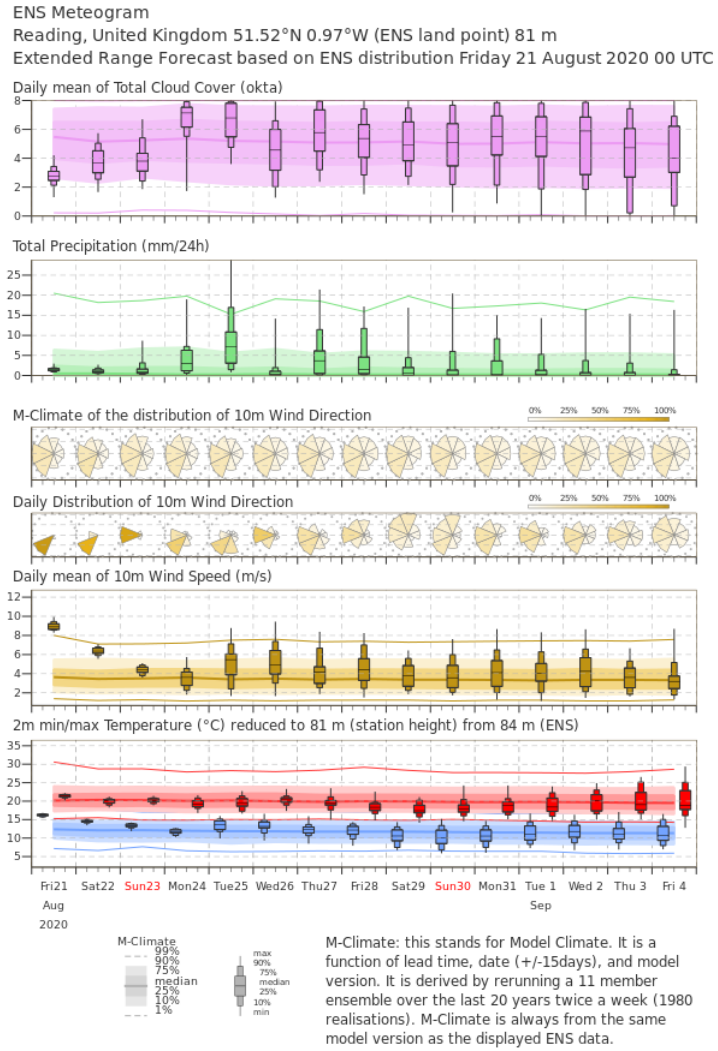


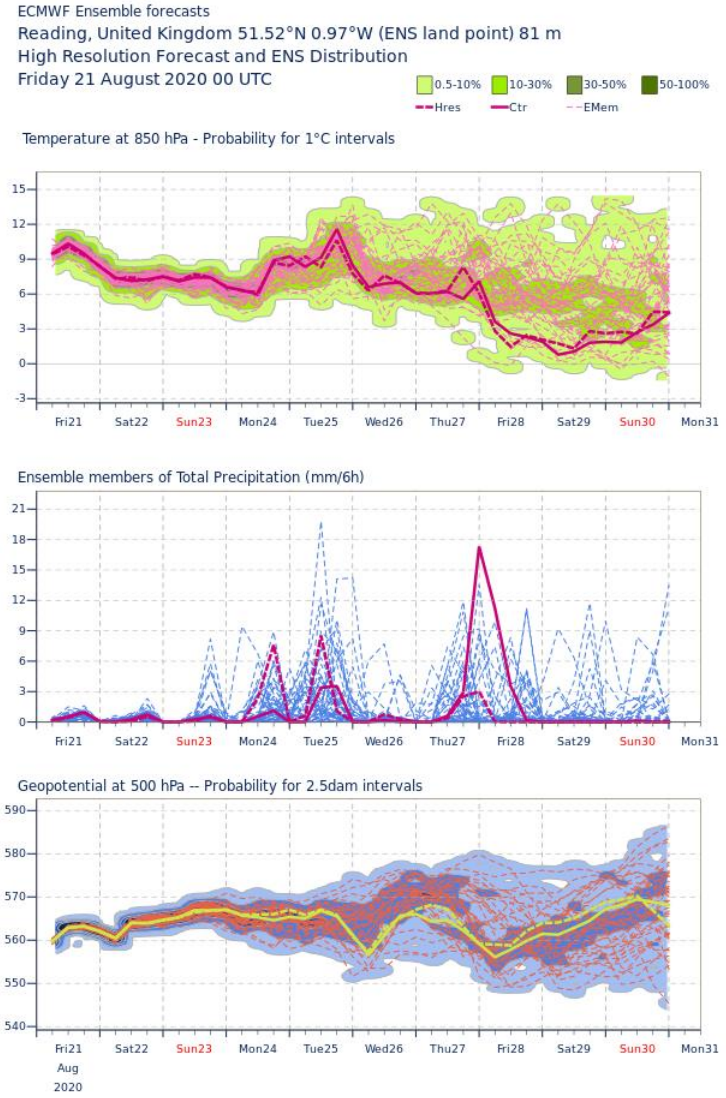
Ensemble forecast



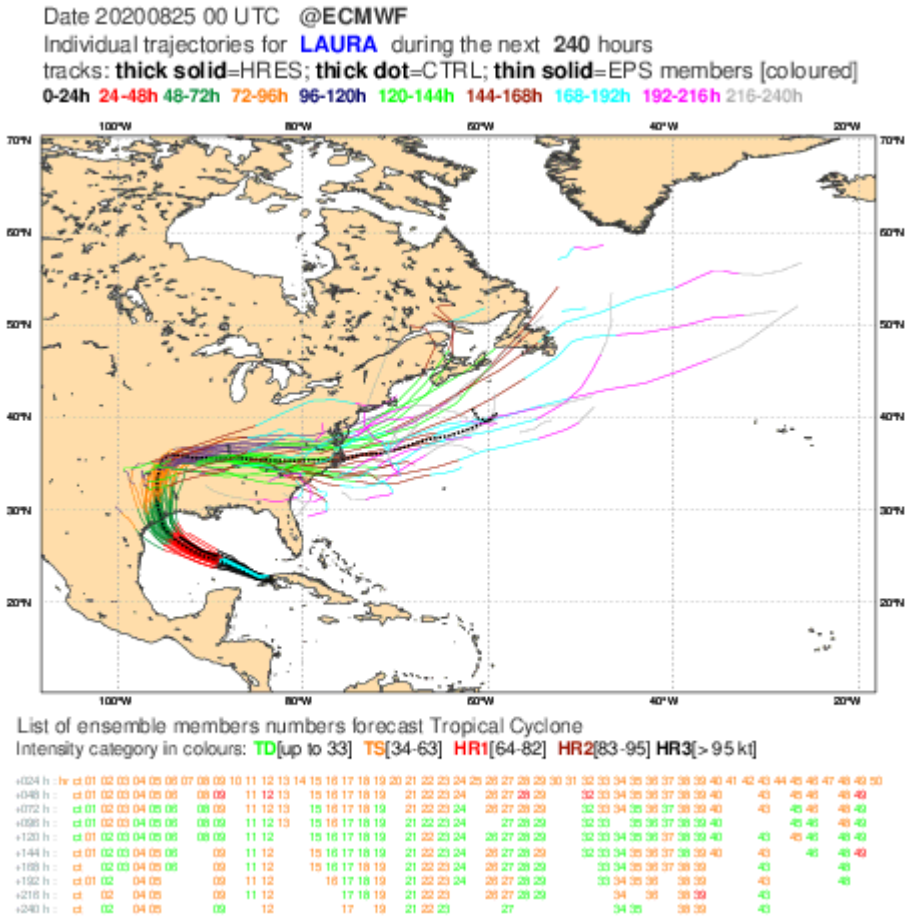
Ensemble forecast

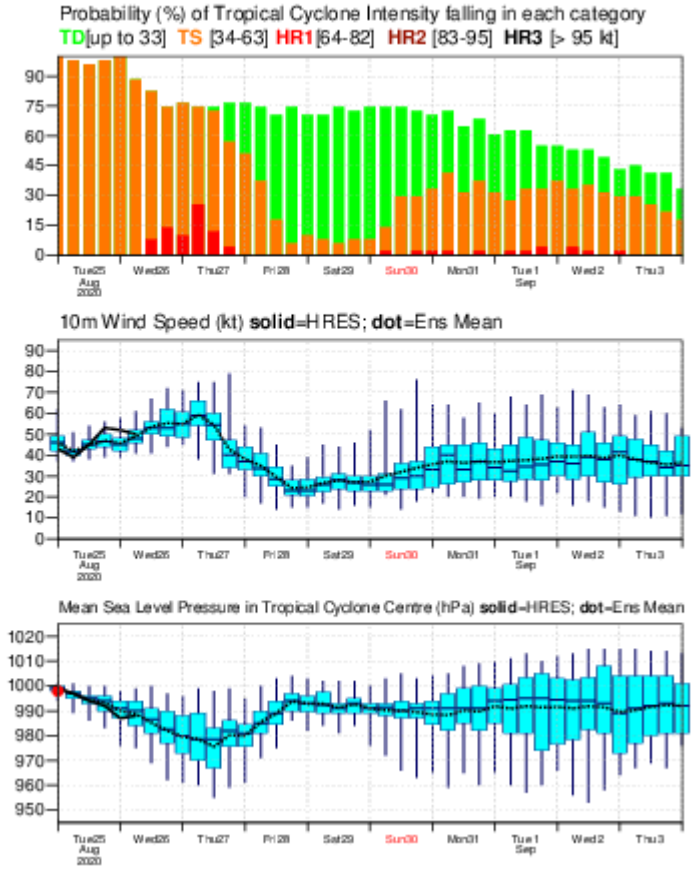




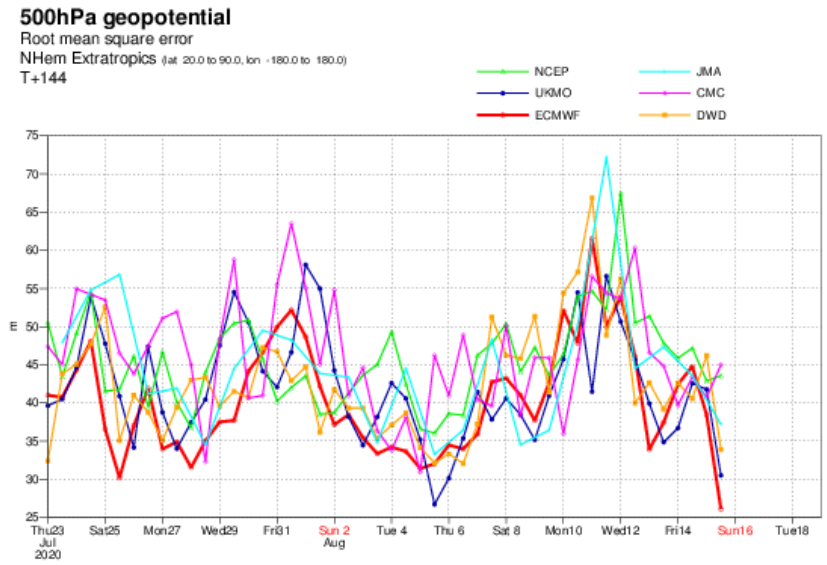


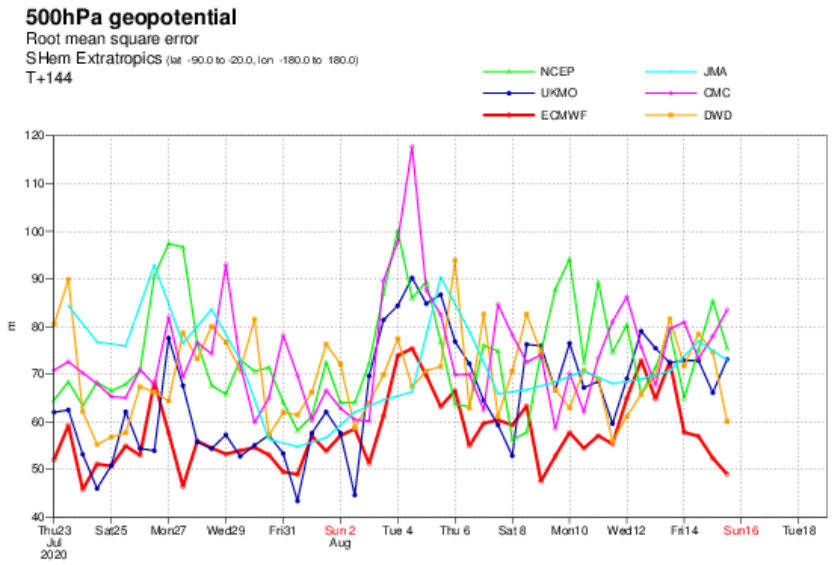
Tropical cyclone Laura

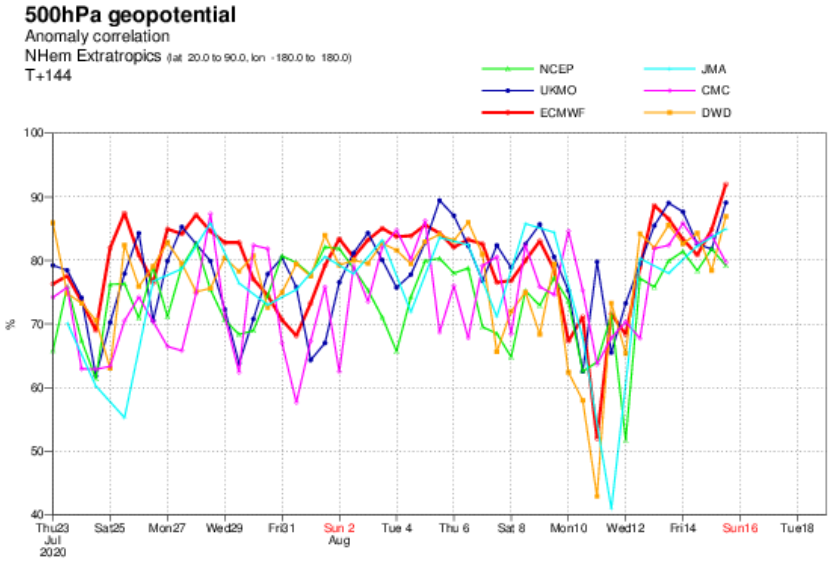


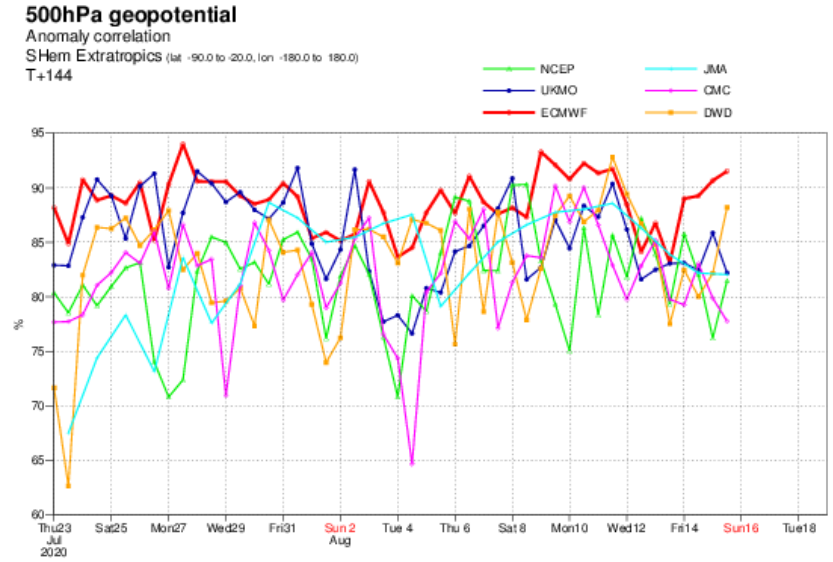


Forecast evaluation

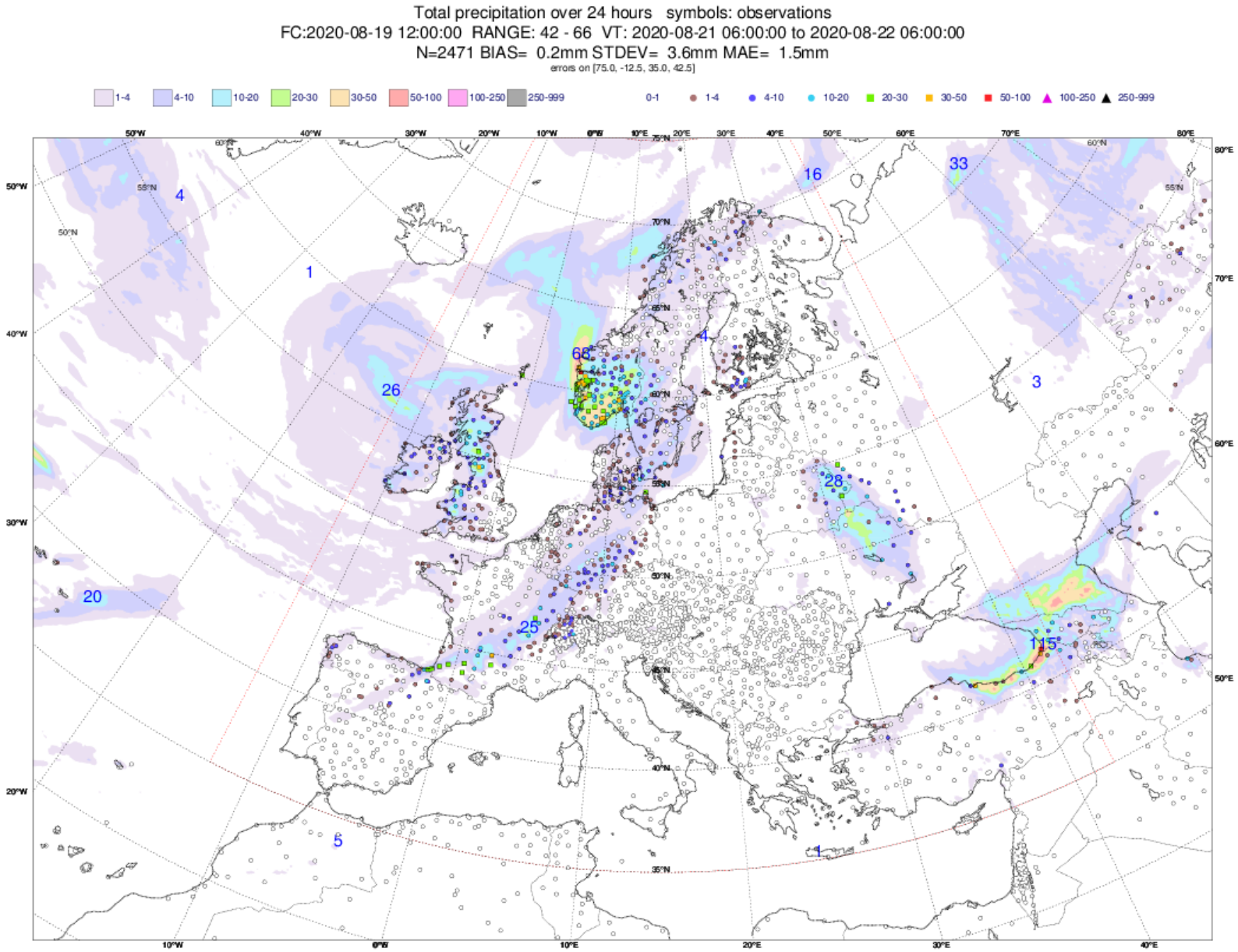








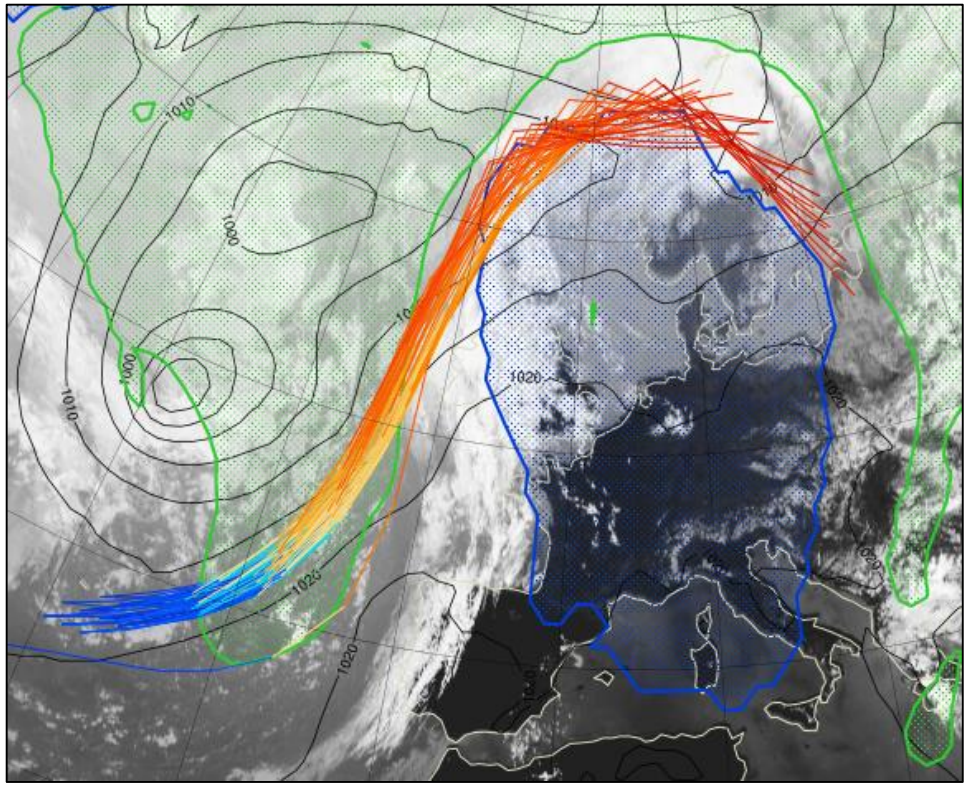
Forecast evaluation



Diagnostics

Diagnostic tools are continuously reviewed and developed:

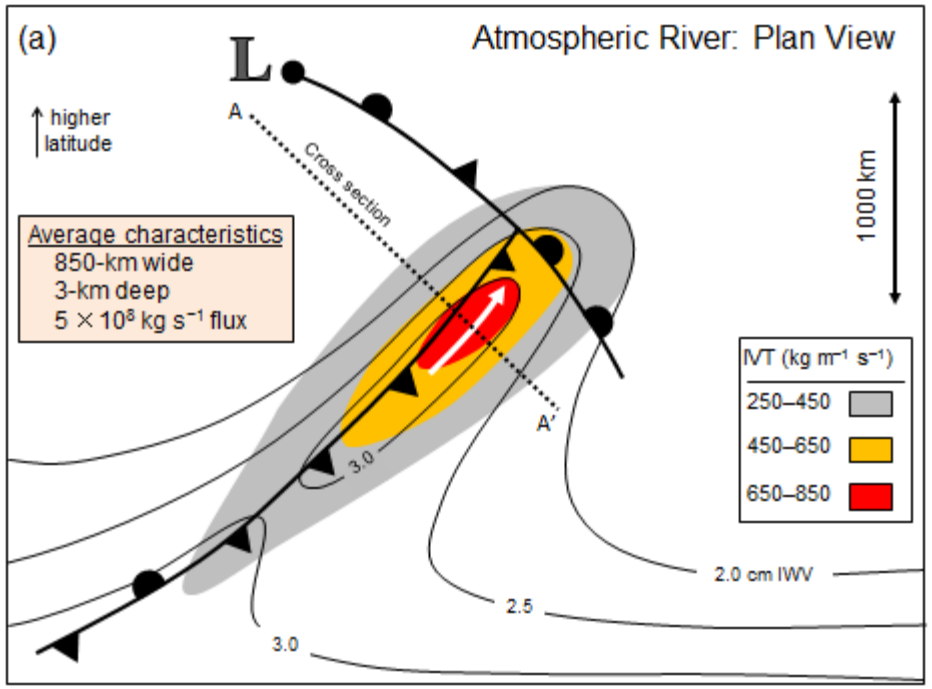
- EDA variance budgets
- EFI for water vapour transport
- Regime transitions
- Error tracking

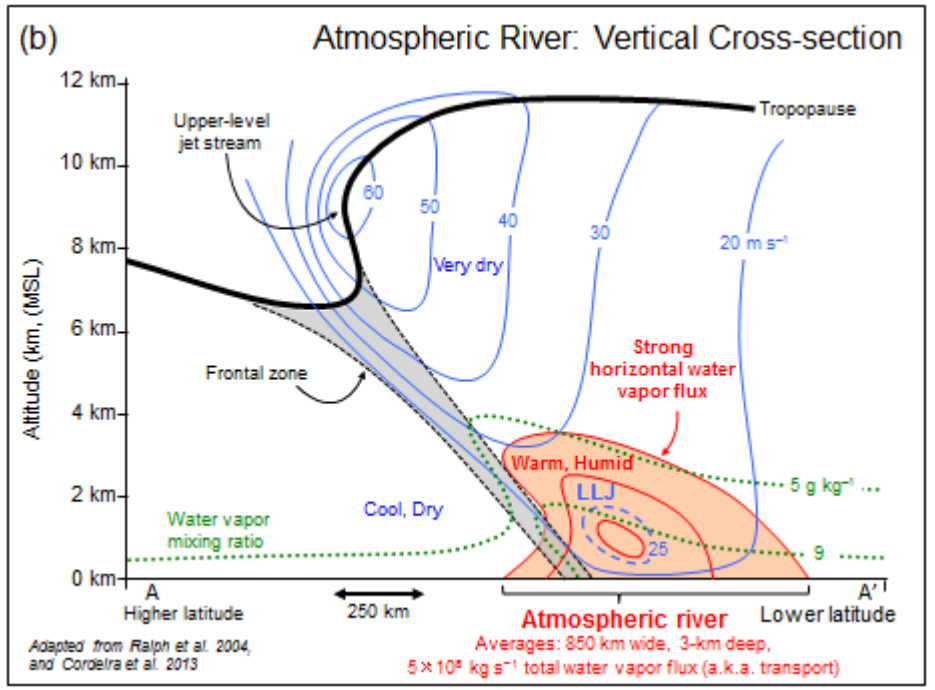


The aim is to improve ECMWF's abilities to access process-level information for diagnostic studies

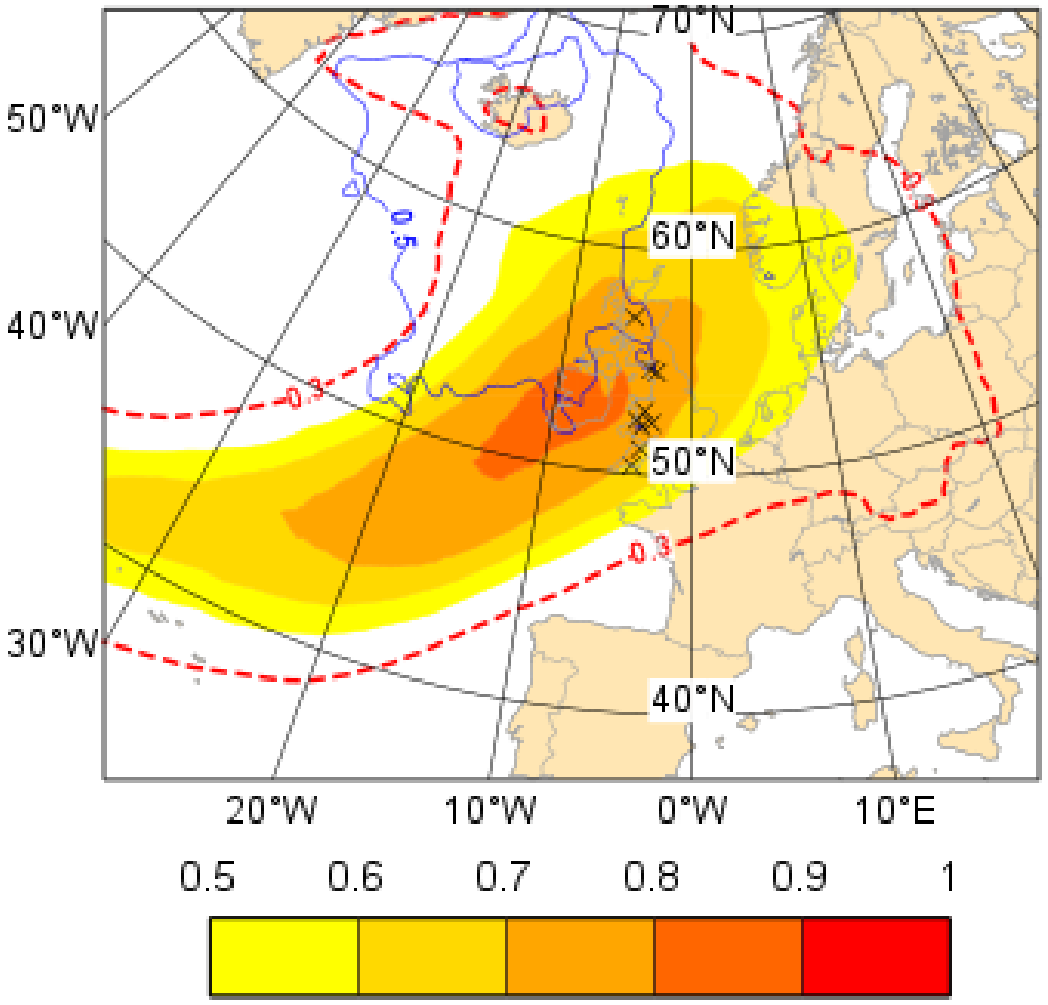
Diagnostics – atmospheric rivers and extreme rainfall

AMS Glossary

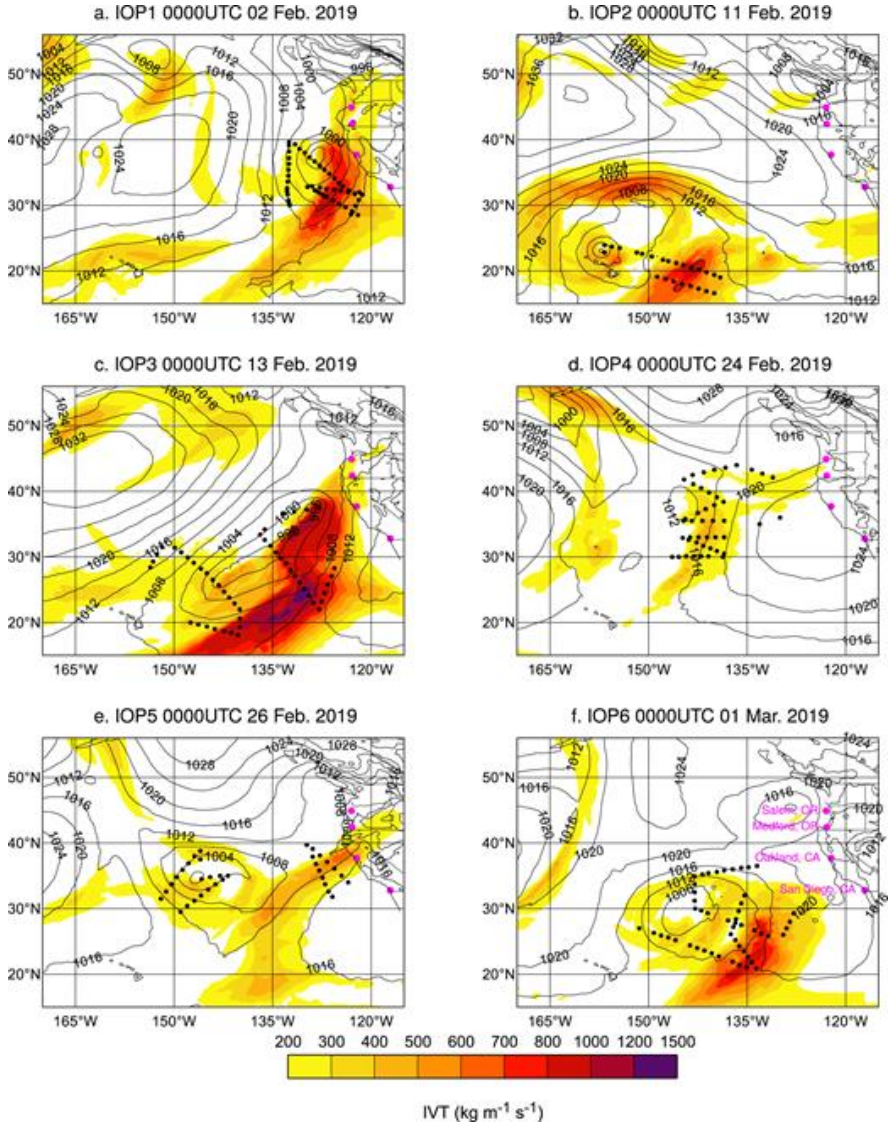




Atmospheric rivers (EFI for Storm Dennis)



AR Reconnaissance



Questions and thank you for listening