

# ECMWF

The strength  
of a common goal







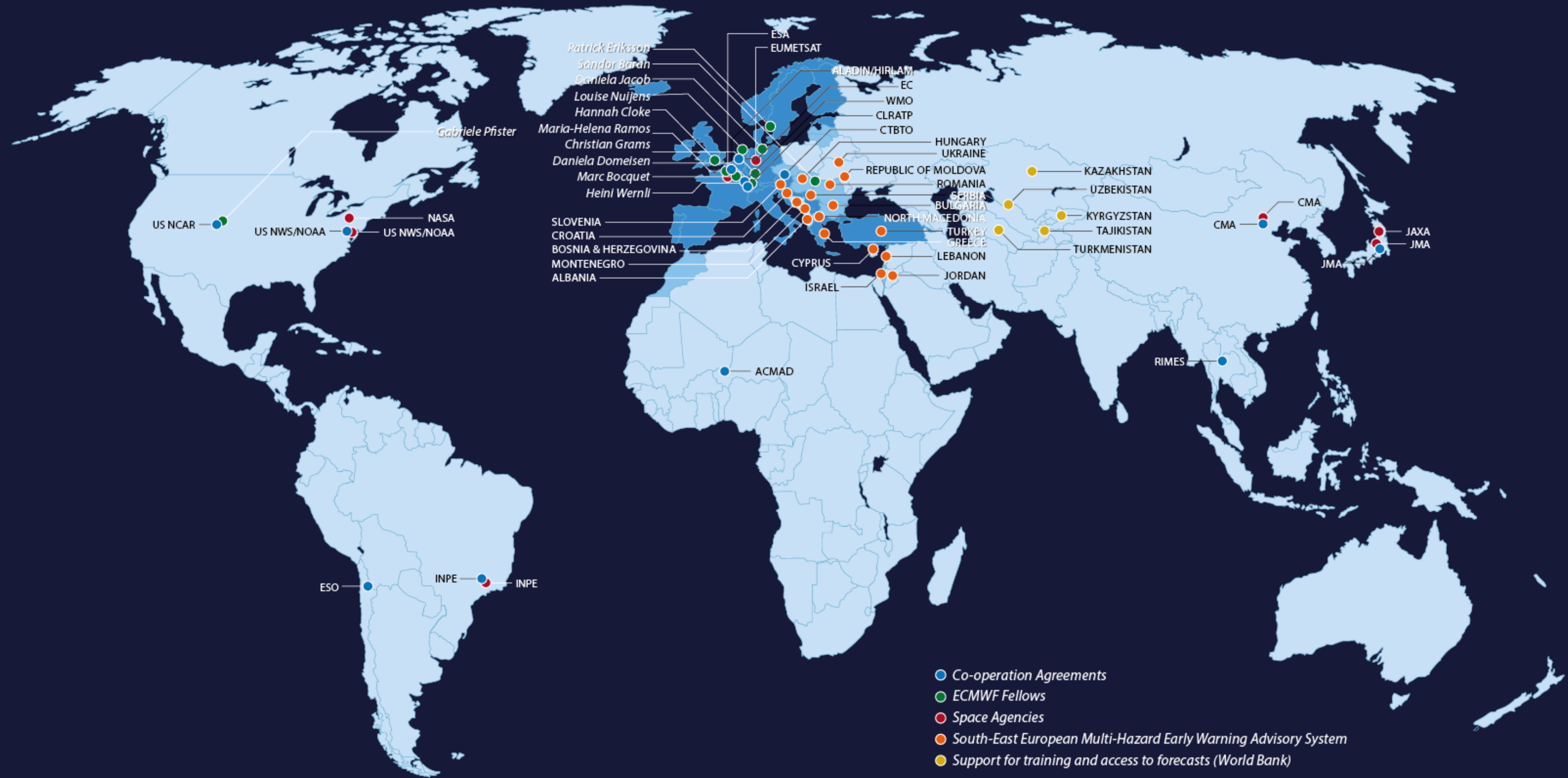


# Becoming a European multi-site organisation

# Playing a unique role

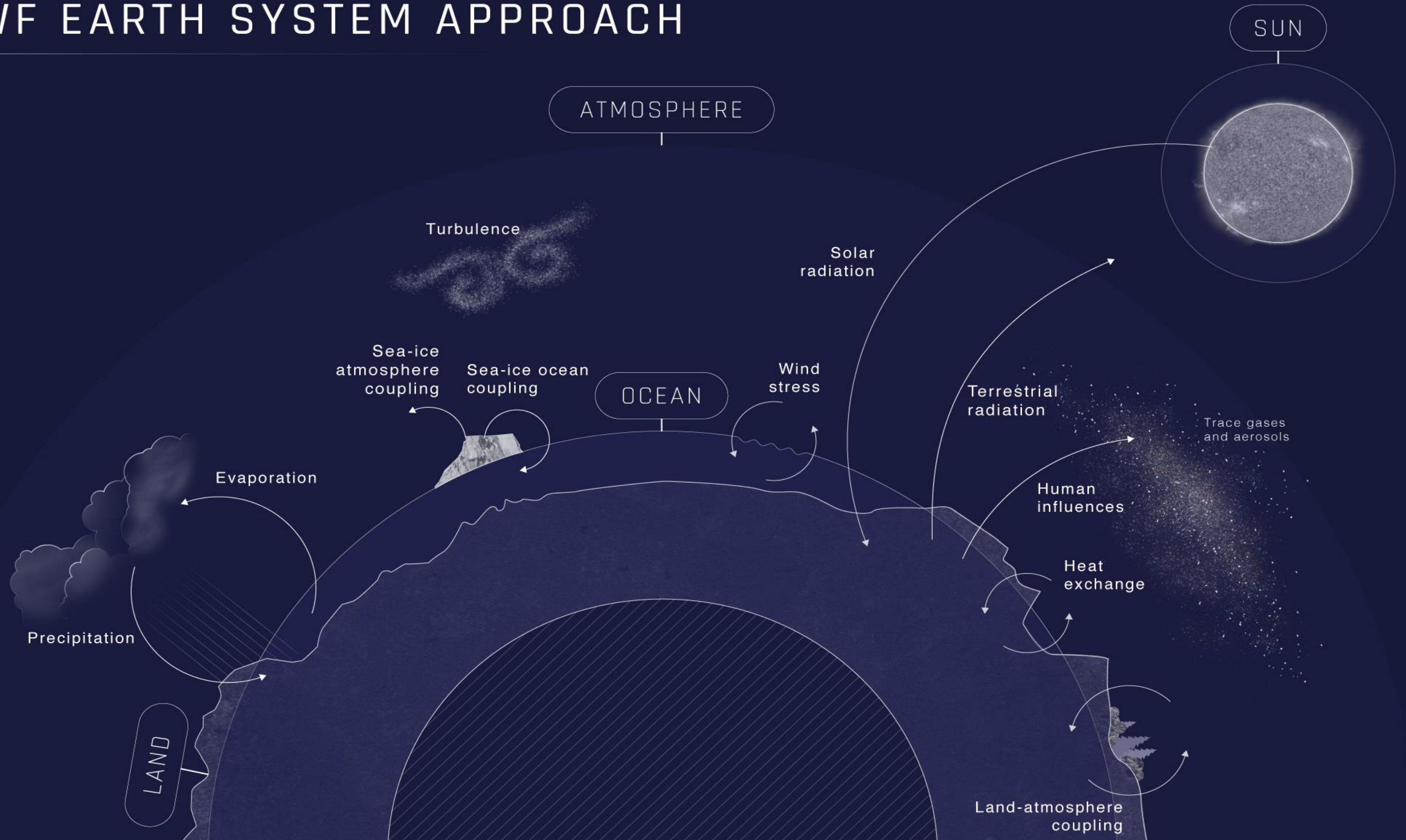
ECMWF's role is to address the critical and most difficult research problems in medium-range NWP that no one country could tackle on its own

# Emboldening global collaboration





# ECMWF EARTH SYSTEM APPROACH





# CAPTURING THE WEATHER

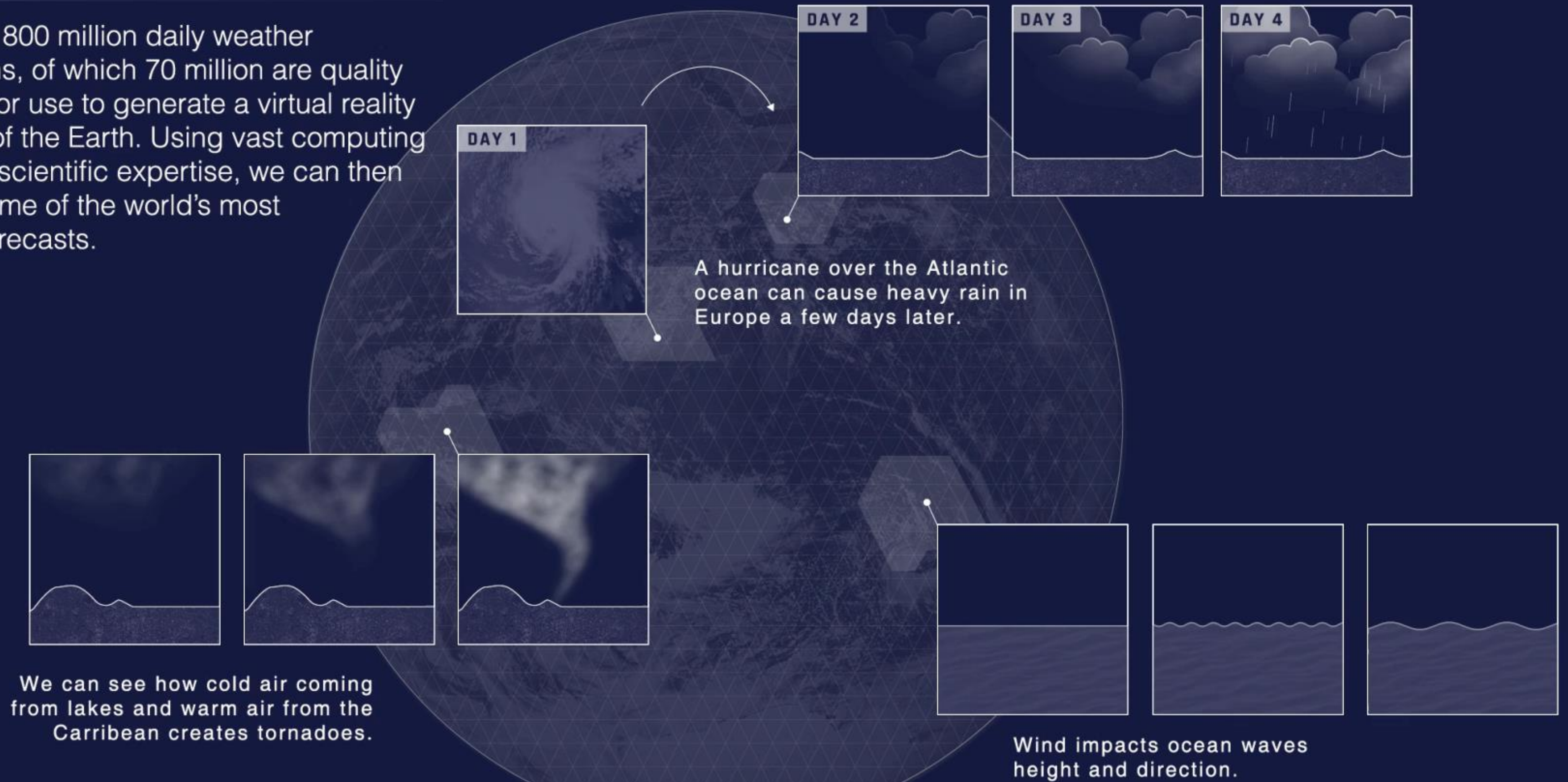
To predict the future, we observe the present. Every day, we absorb 800 million observations to create a detailed snapshot of Earth's weather.





# VIRTUAL WORLD

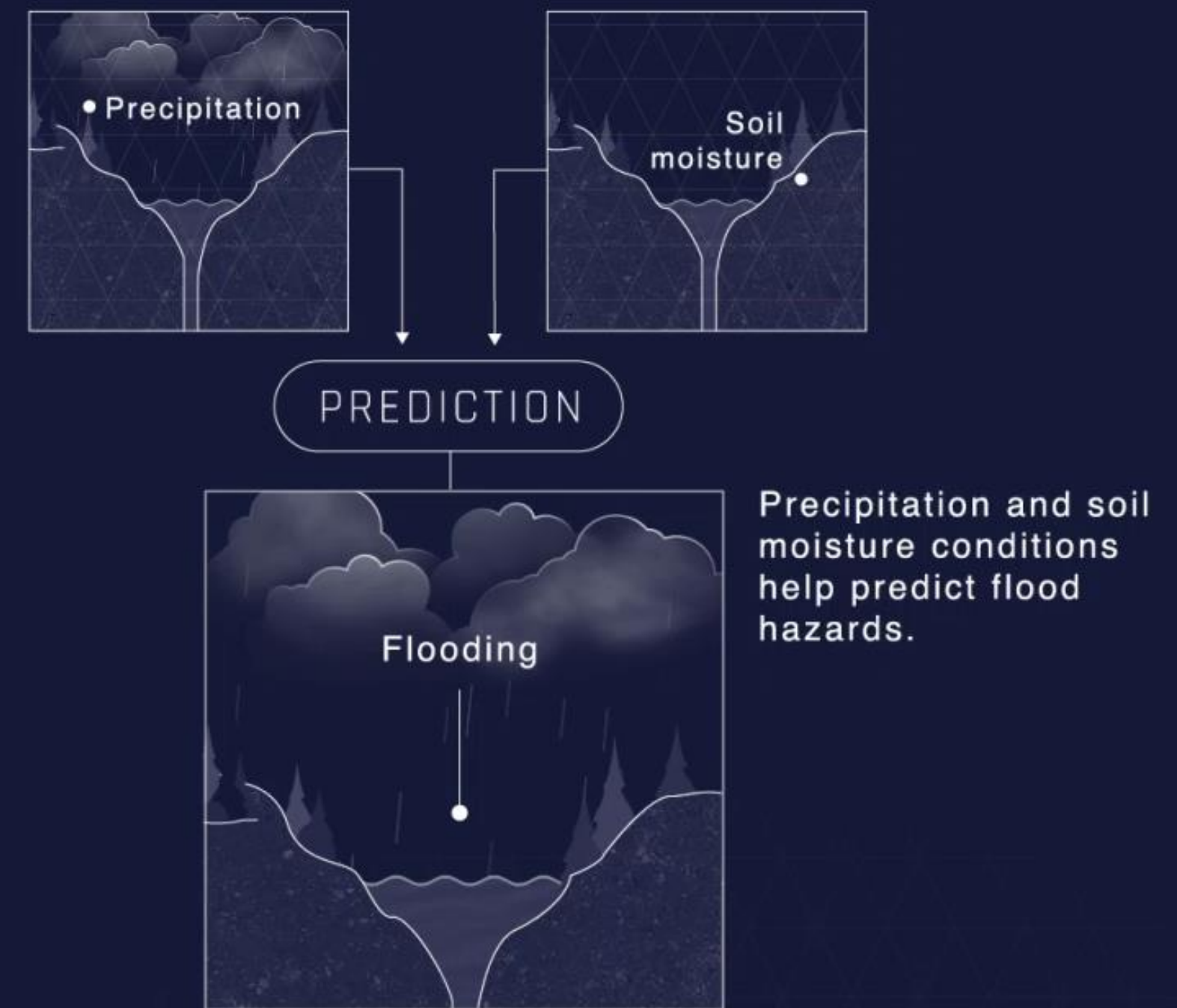
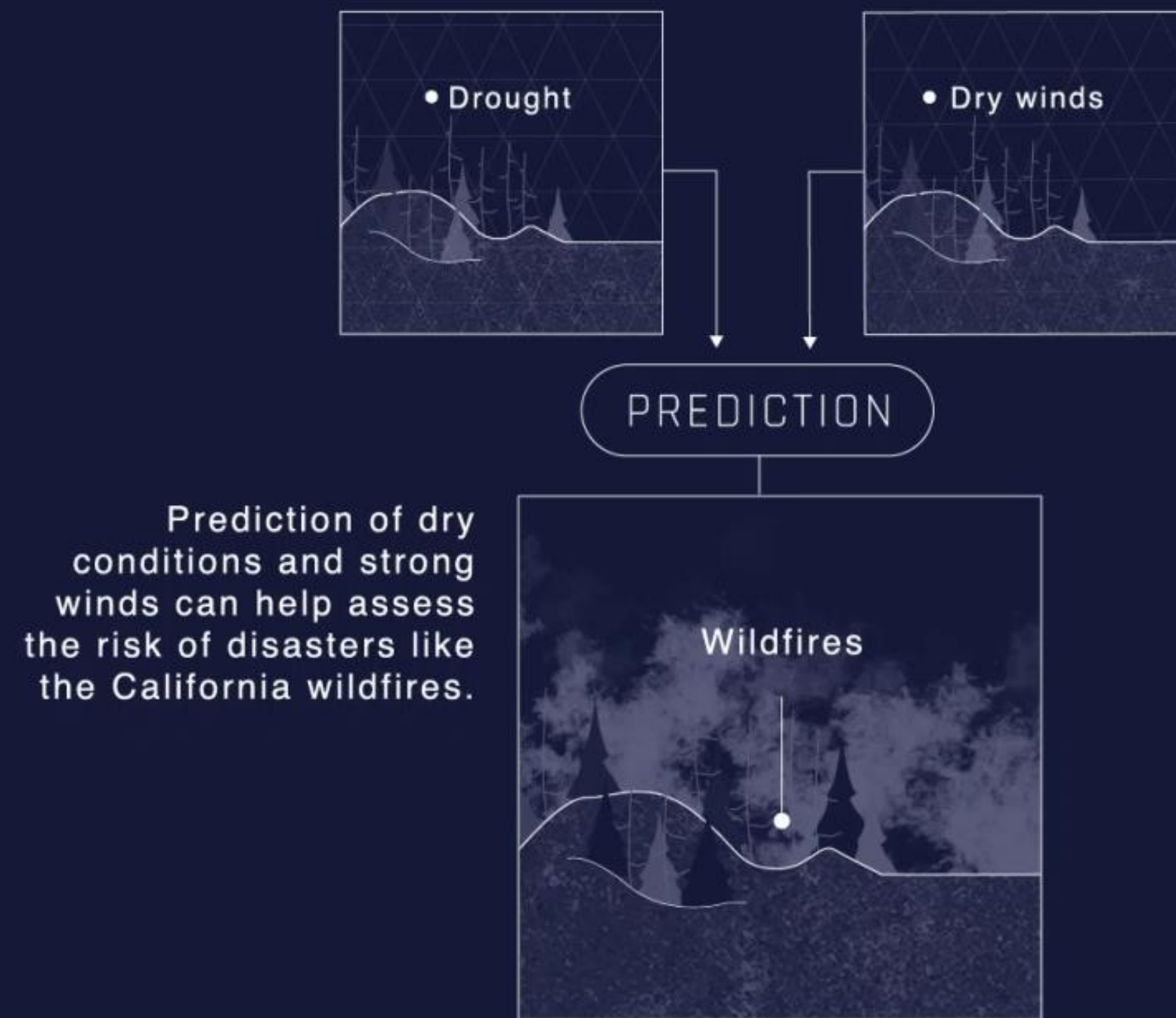
We receive 800 million daily weather observations, of which 70 million are quality controlled for use to generate a virtual reality simulation of the Earth. Using vast computing power and scientific expertise, we can then produce some of the world's most accurate forecasts.





# BEYOND THE WEATHER FORECAST

ECMWF's forecasting system is now giving us even more vital predictions about Earth's environmental developments. These forecasts can protect infrastructure, promote economic development and save lives.



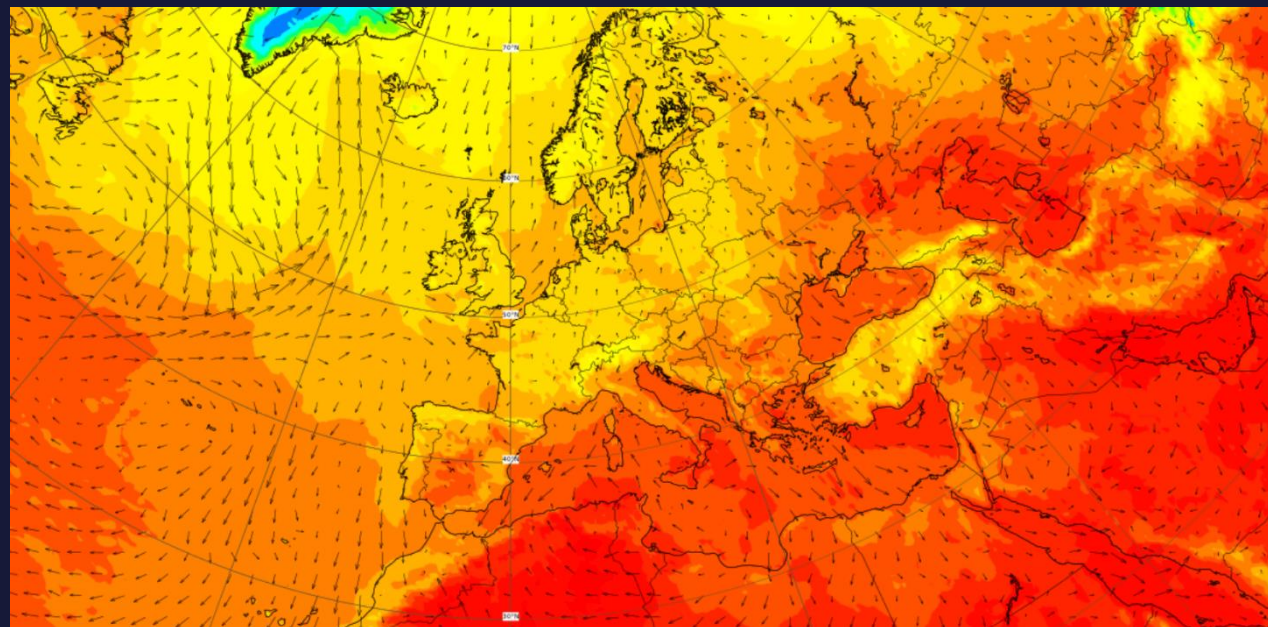




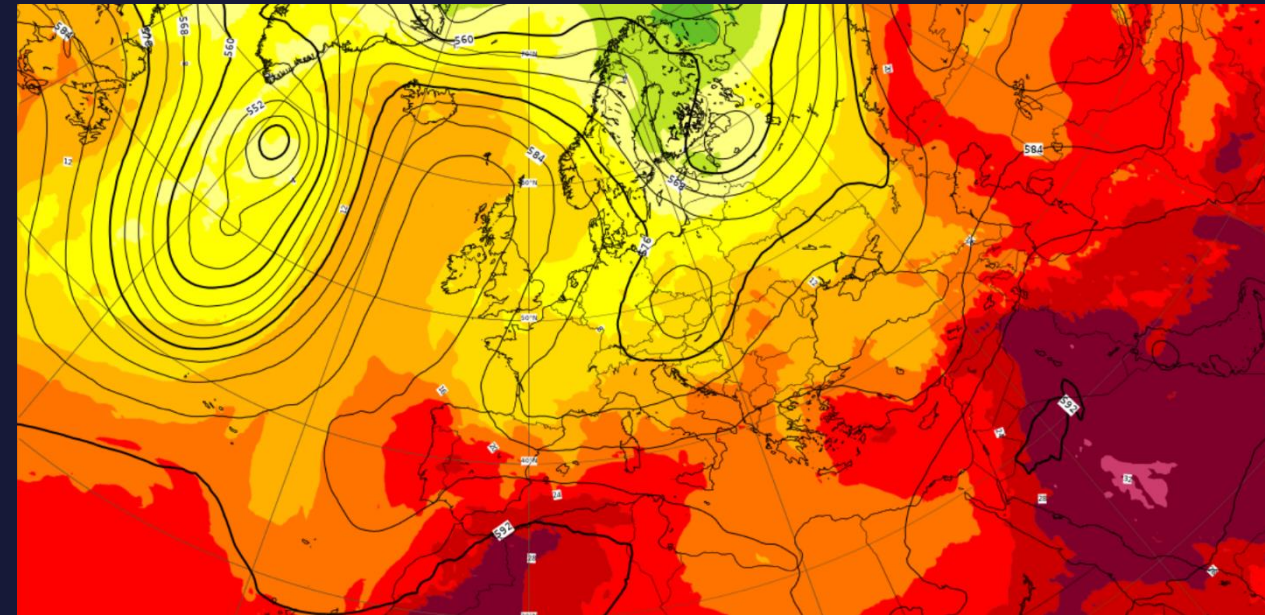


## Deliverables: numerical weather prediction

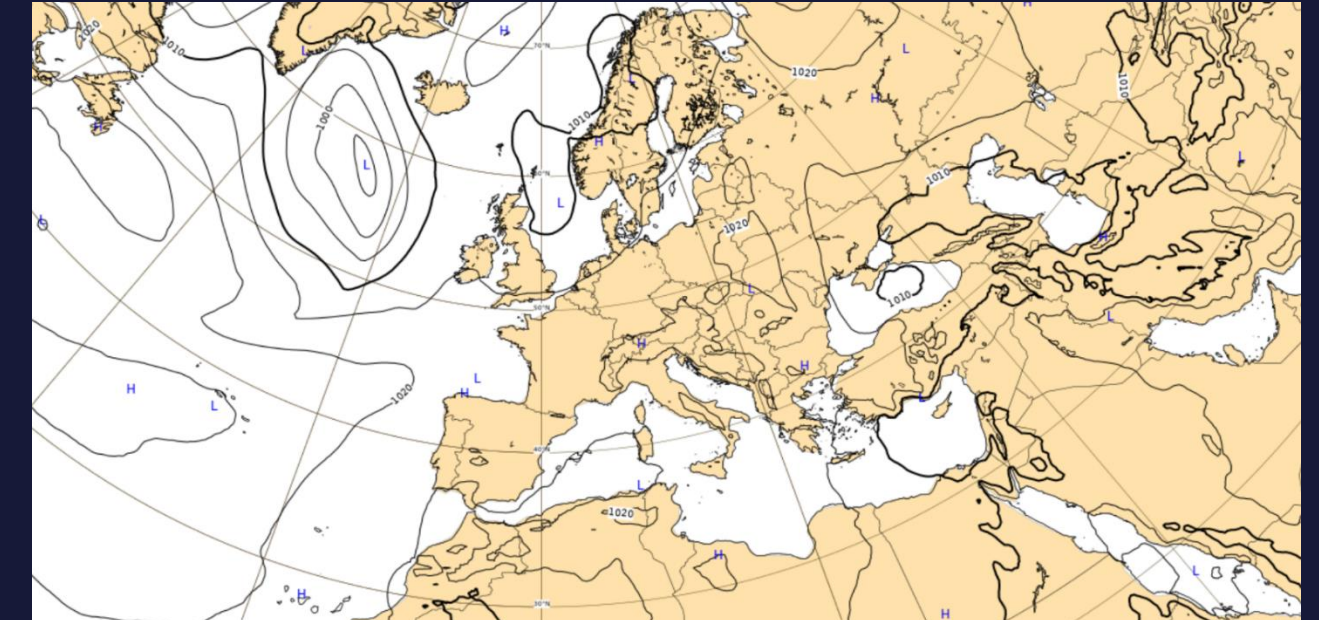
## 2m temperature and 10m wind



## 500 hPa geopotential height and 850 hPa temperature



## Ensemble mean and spread for mean sea level pressure

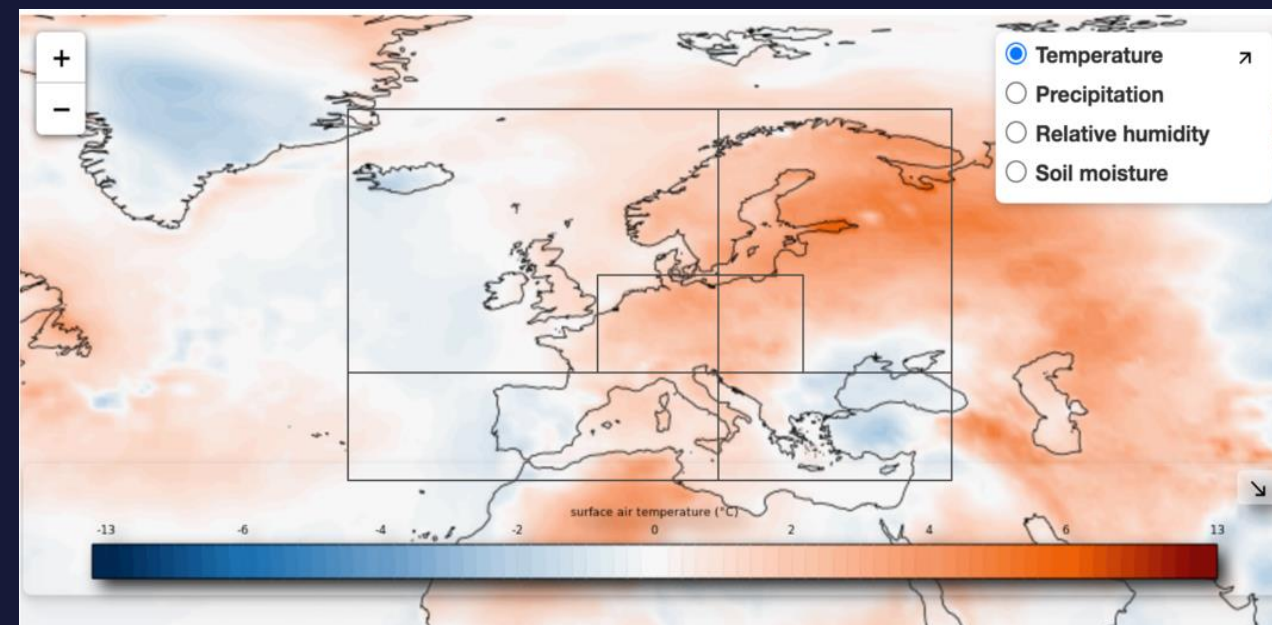


Many freely available charts at  
[apps.ecmwf.int/webapps/opencharts](https://apps.ecmwf.int/webapps/opencharts)

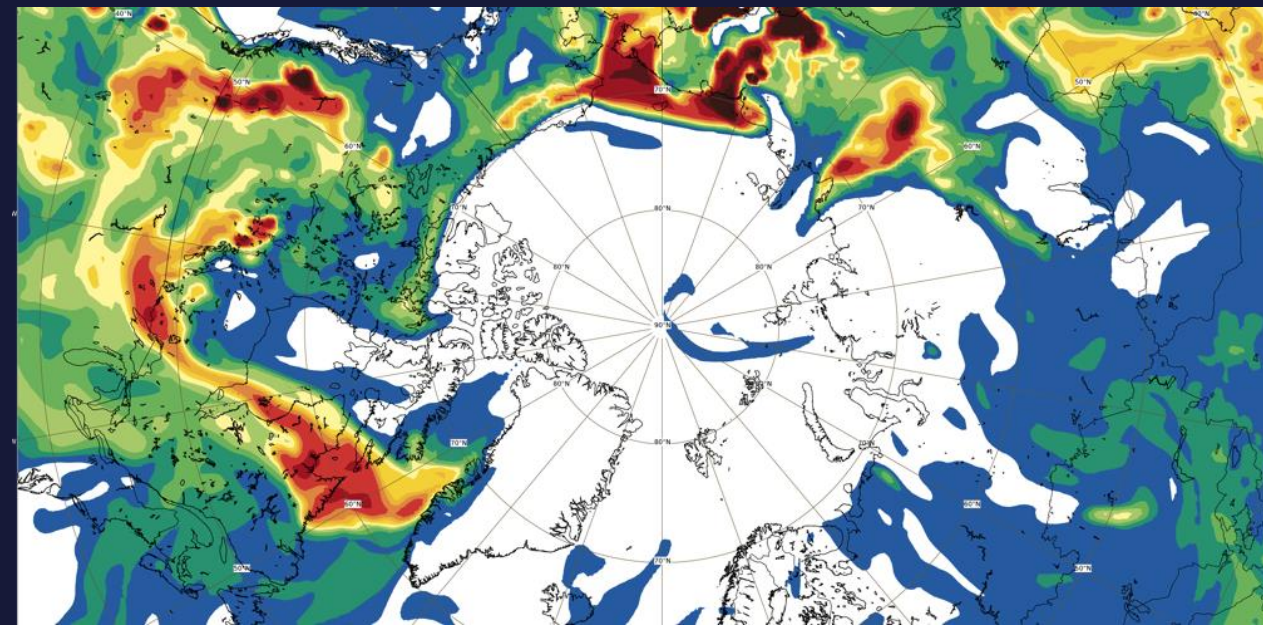


## Deliverables: environmental monitoring (CAMS)

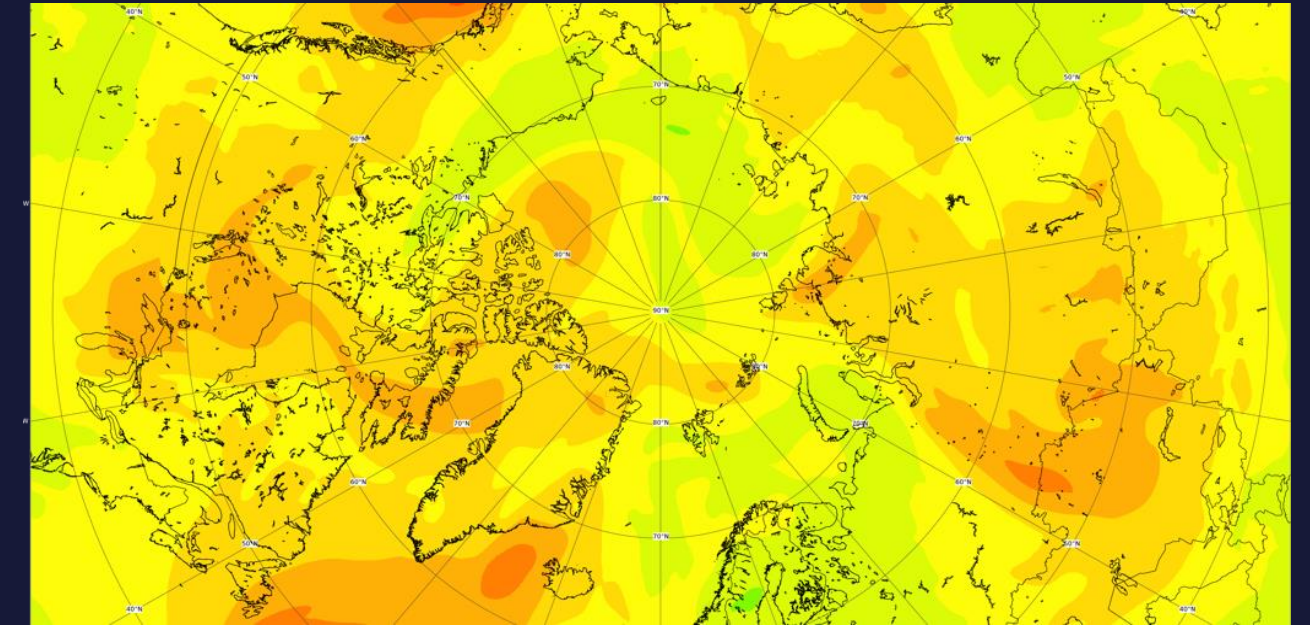
# Monthly Copernicus Climate Bulletin



## Carbon monoxide forecast



## Ozone forecast

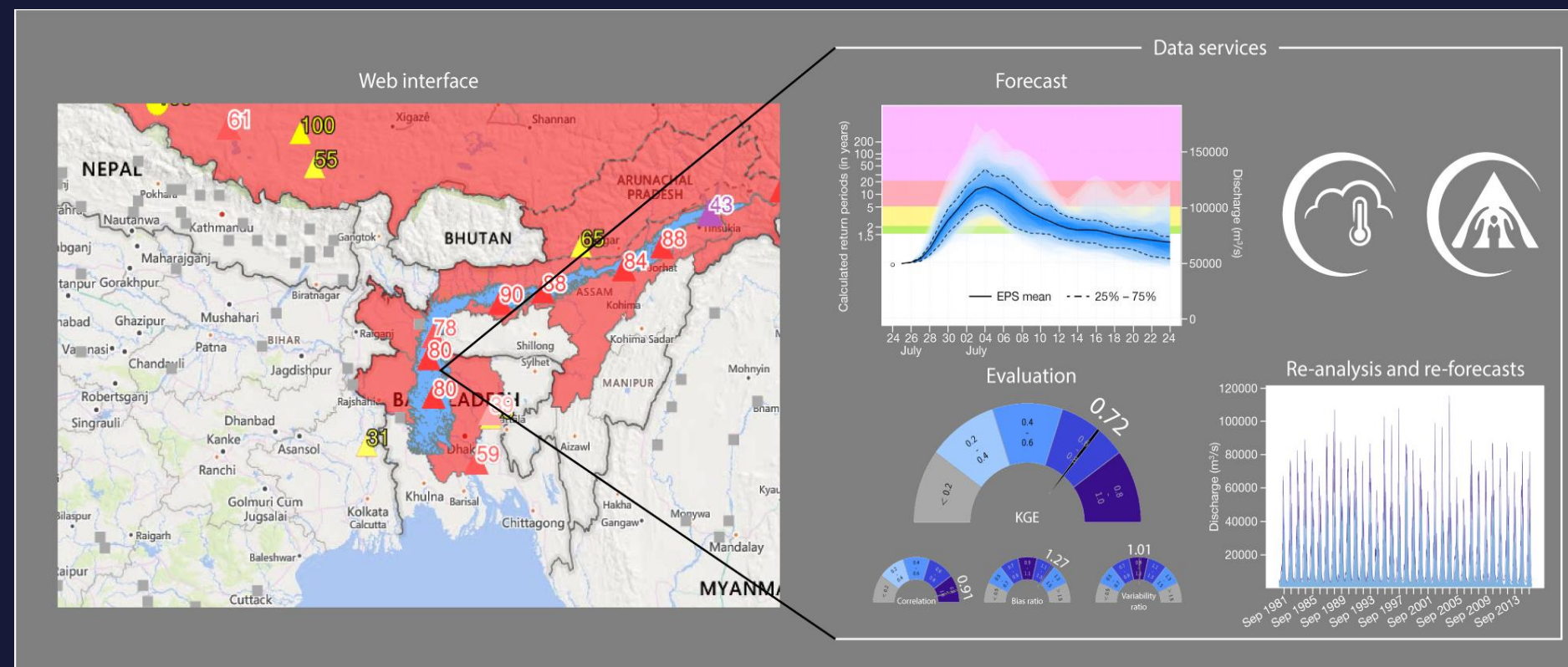


Many freely available charts at  
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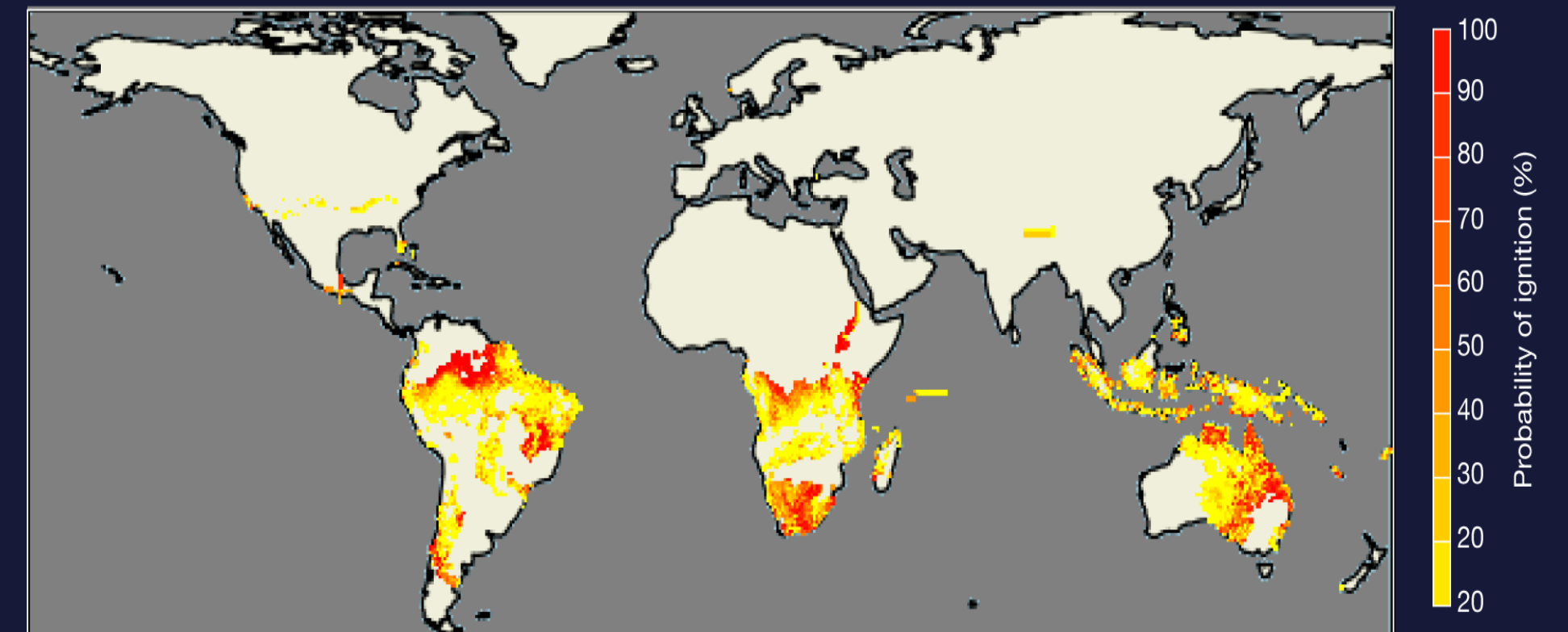


# Deliverables: environmental monitoring

Using NWP to drive hydrological global forecasts

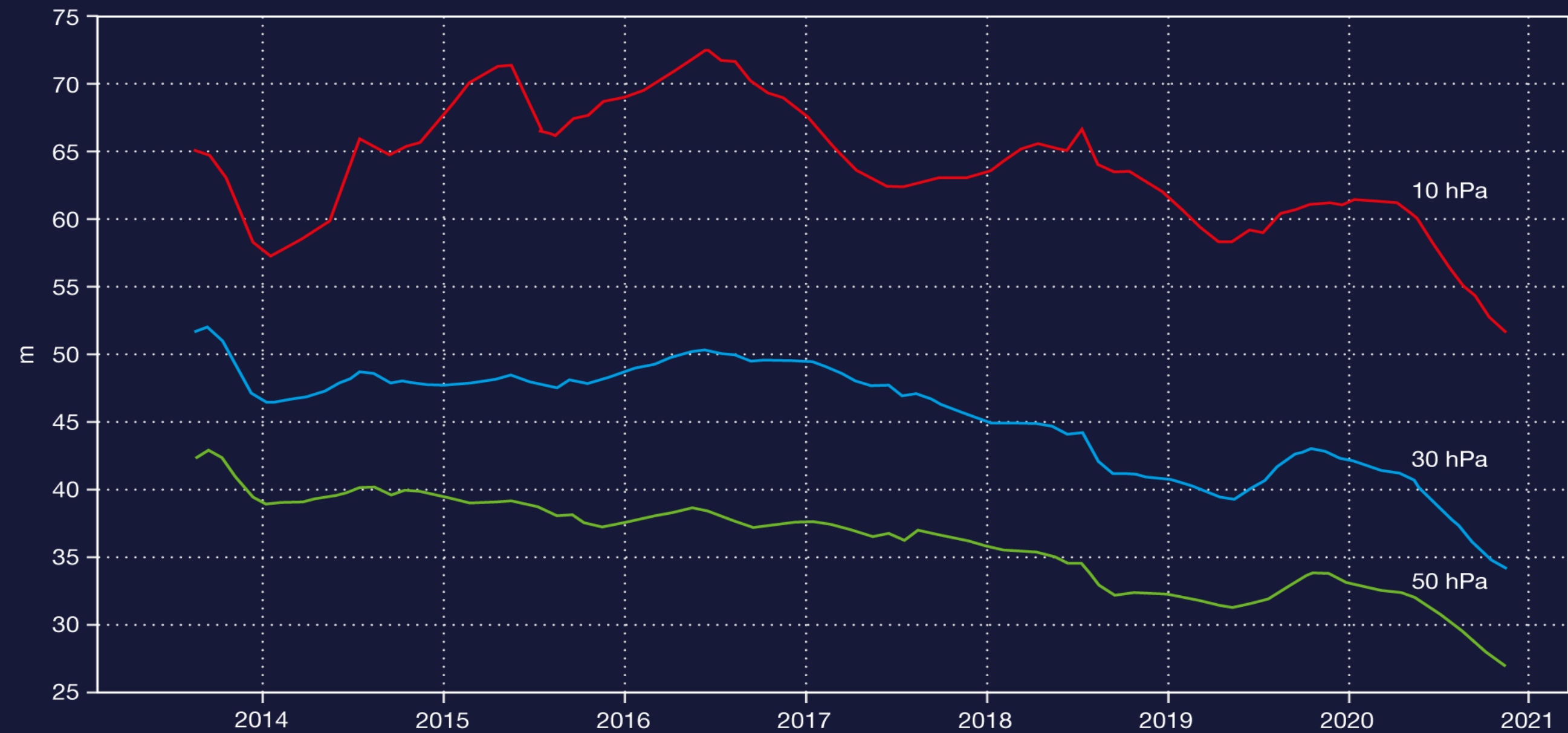


Probability of ignition by lightning 2016-02-01





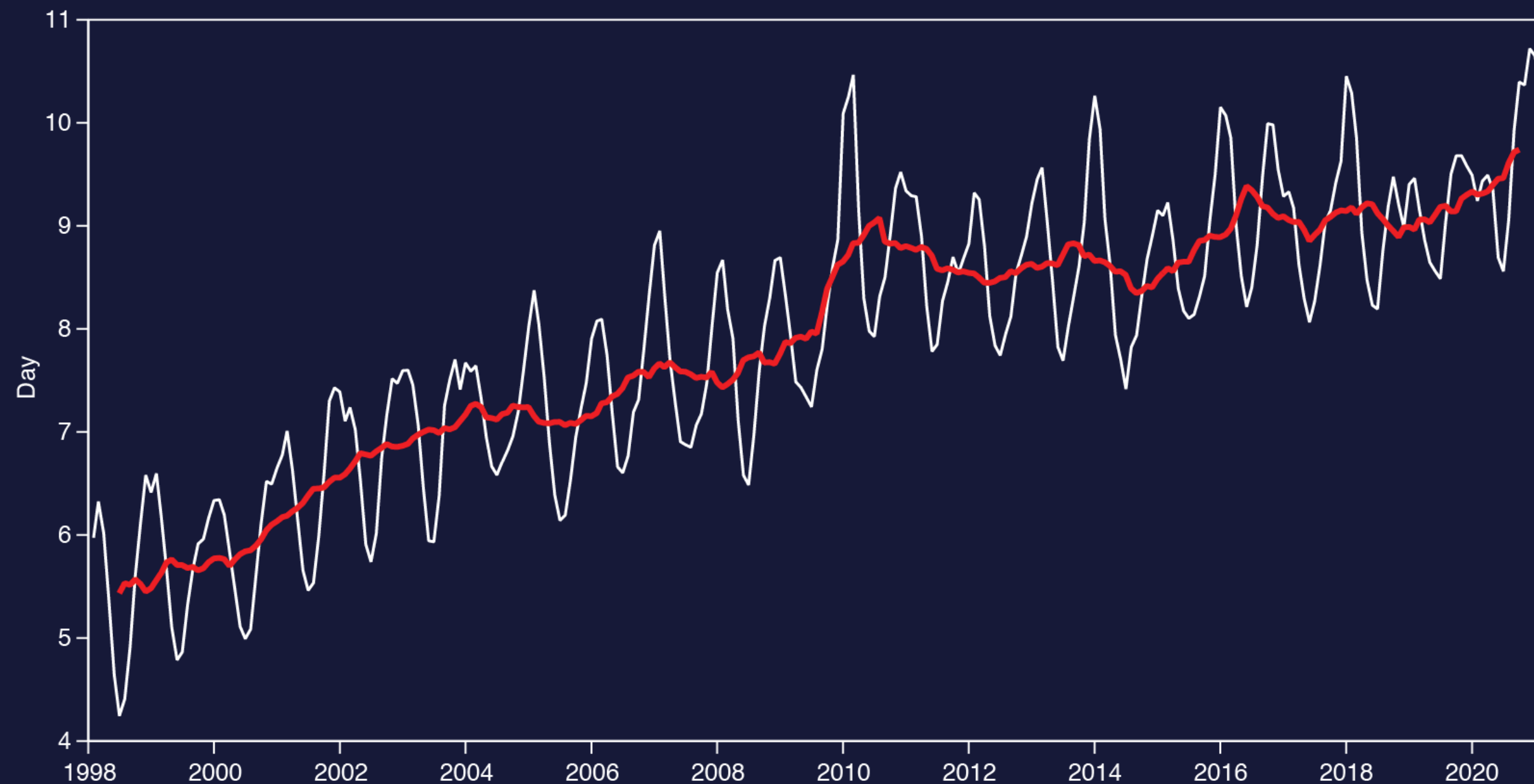
# Evolution of HRES stratospheric performance:



Decrease in stratospheric RMS geopotential height error



# Regular model upgrades

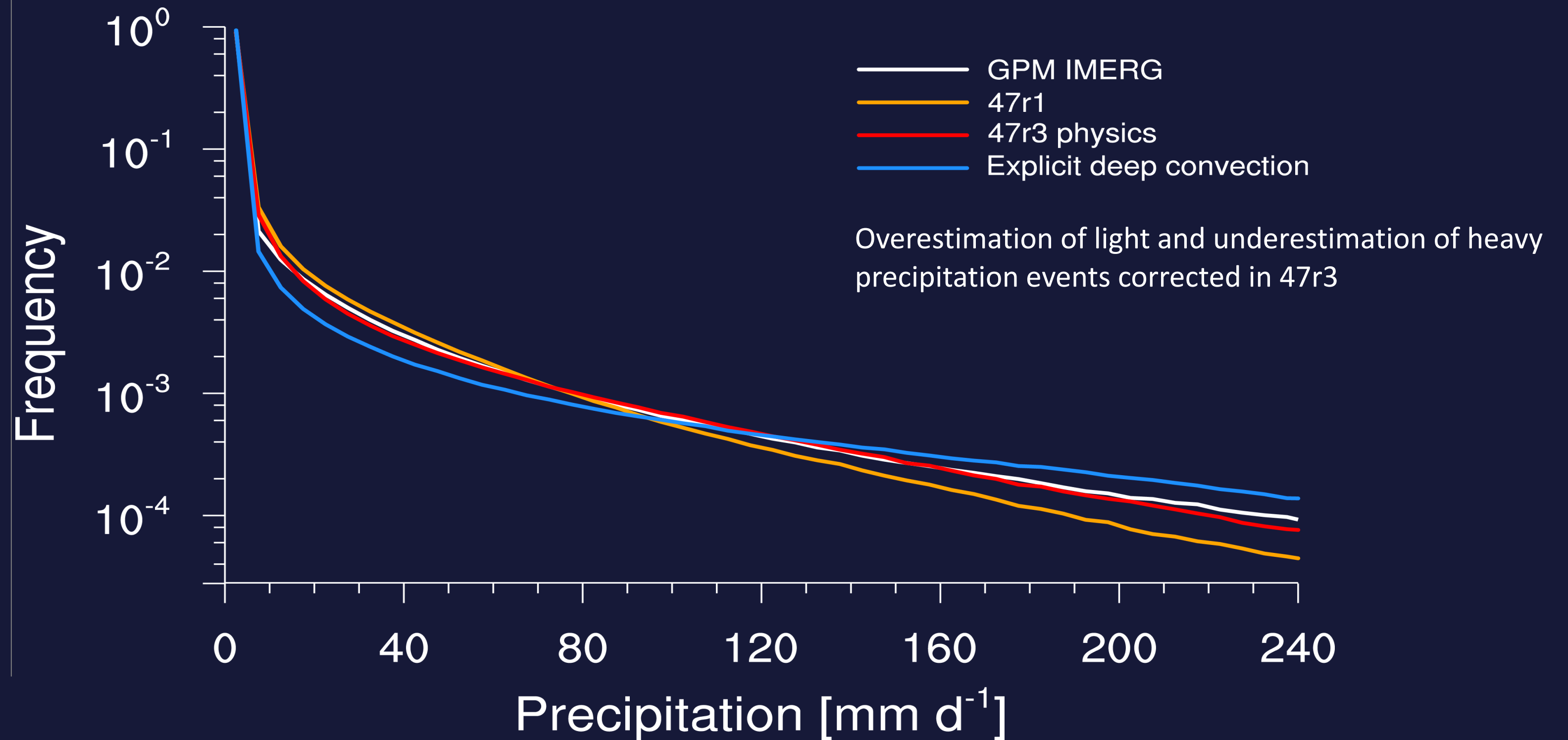


Lead time at which continuous ranked probability skill score (CRPSS) drops below 25 for 850 hPa temperature, 12-month (red) and 3-month (white) running averages



# 47r3: October 2021

## Moist physics processes upgrade





# New Data Centre in Bologna





# New offices in Bonn

2021 - 2026



from 2026

