

UERRA WP2

COSMO reanalyses as Hans-Ertel-Centre (HErZ) contribution to UERRA activities

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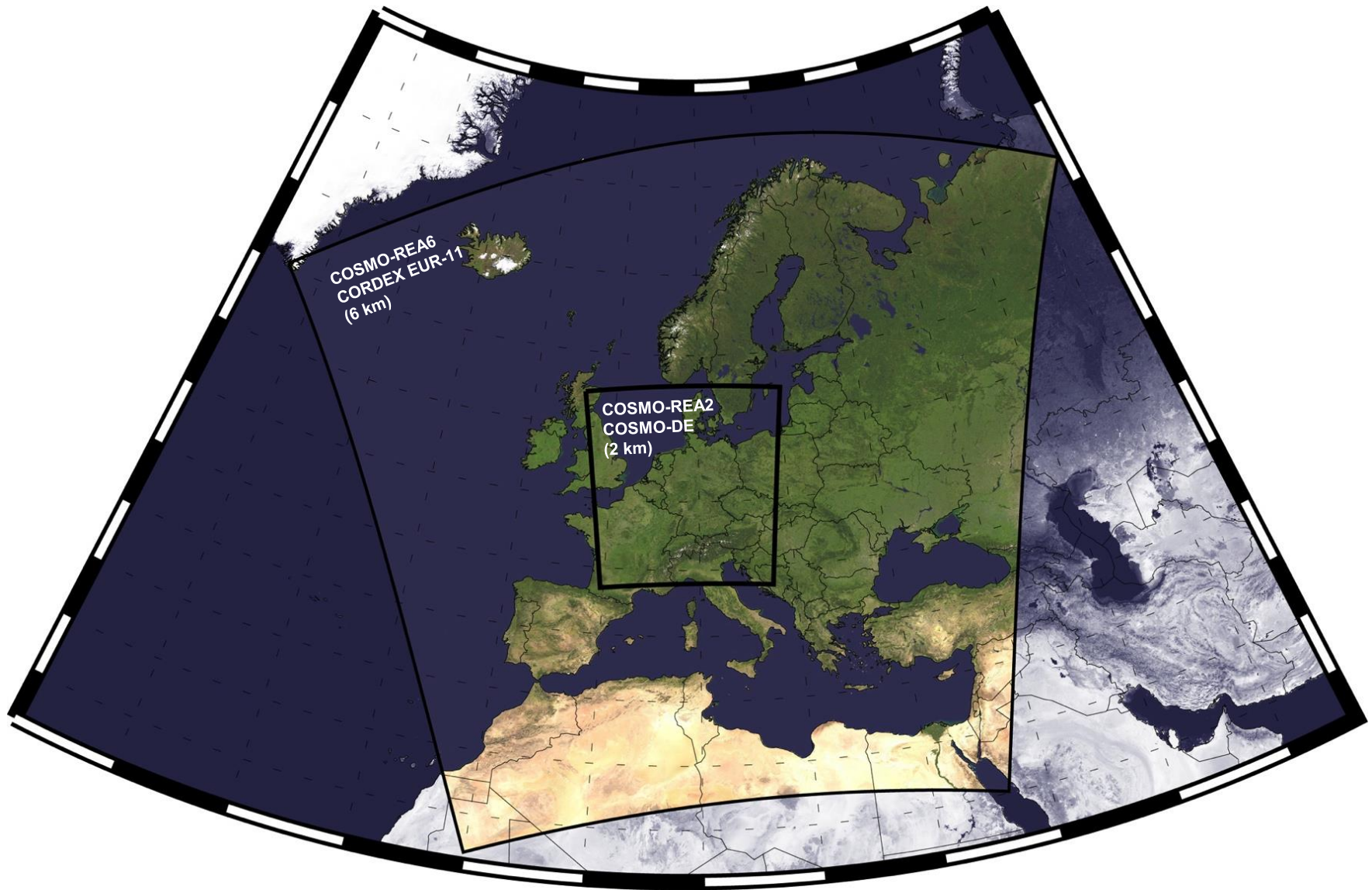
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² Deutscher Wetterdienst, Offenbach, Germany

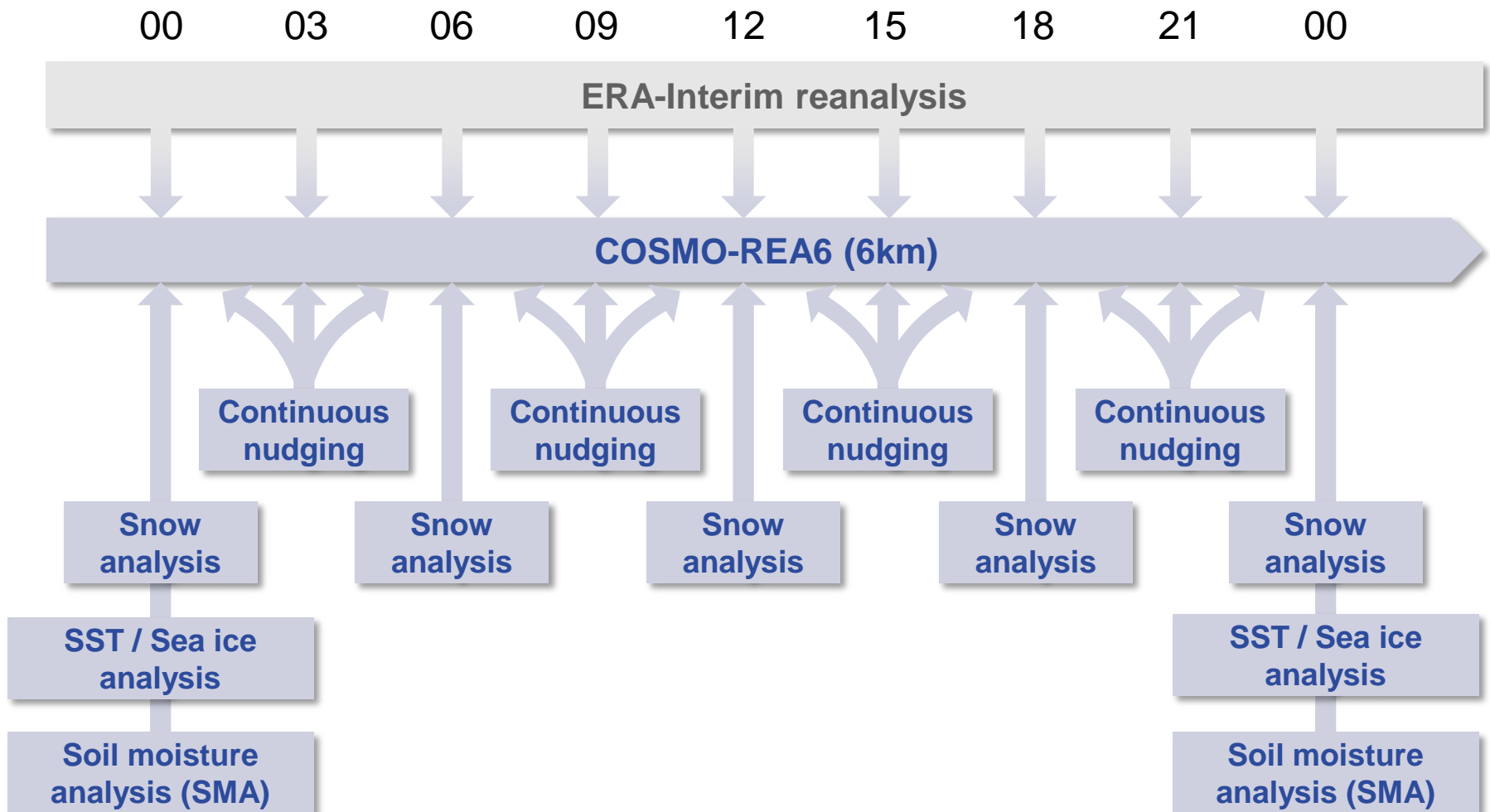
³ Meteorological Institute, University of Bonn, Germany

Contribution to UERRA

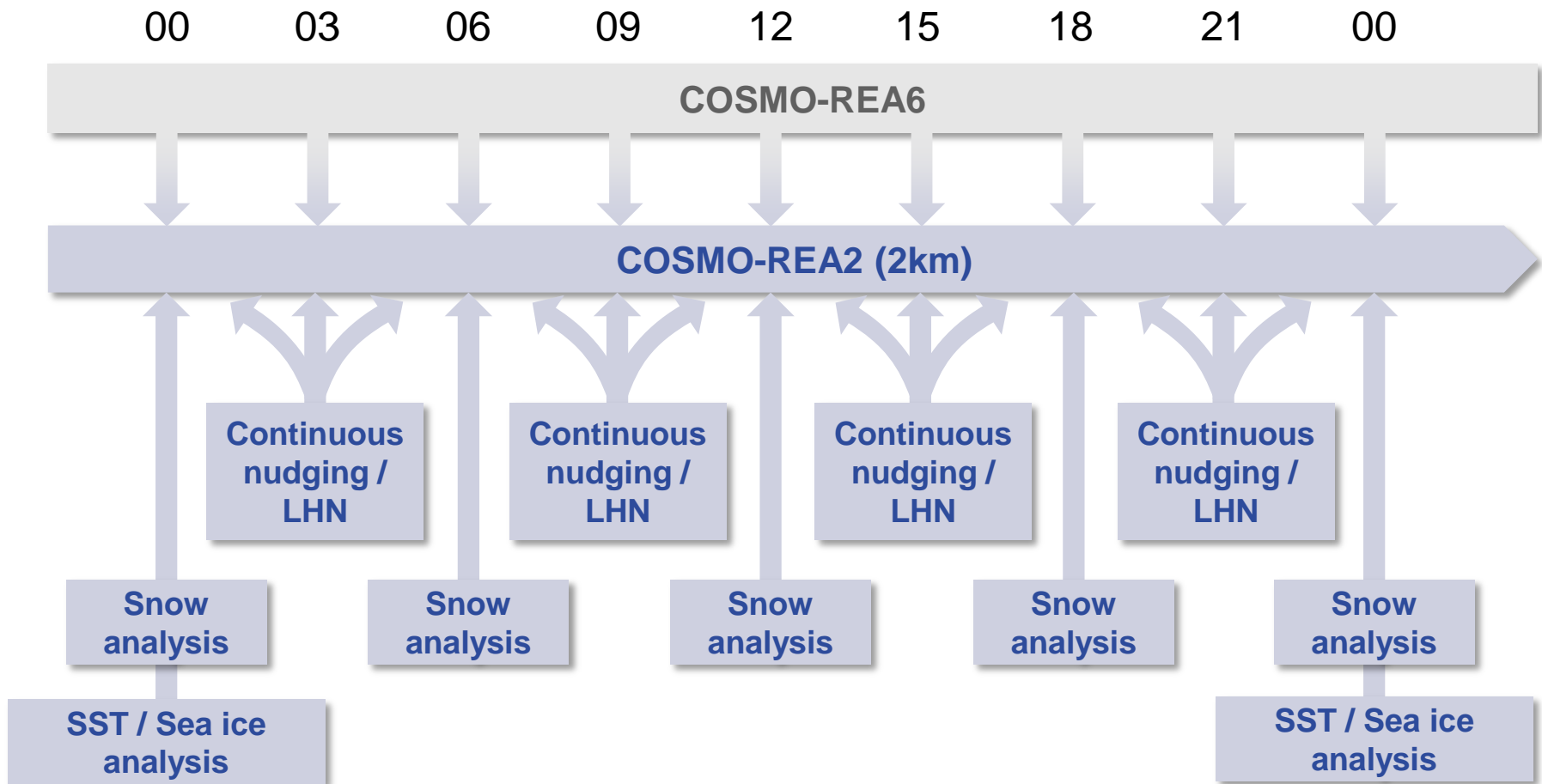
→ High-resolution reanalysis data sets for Europe



Deterministic COSMO Regional Reanalysis-System



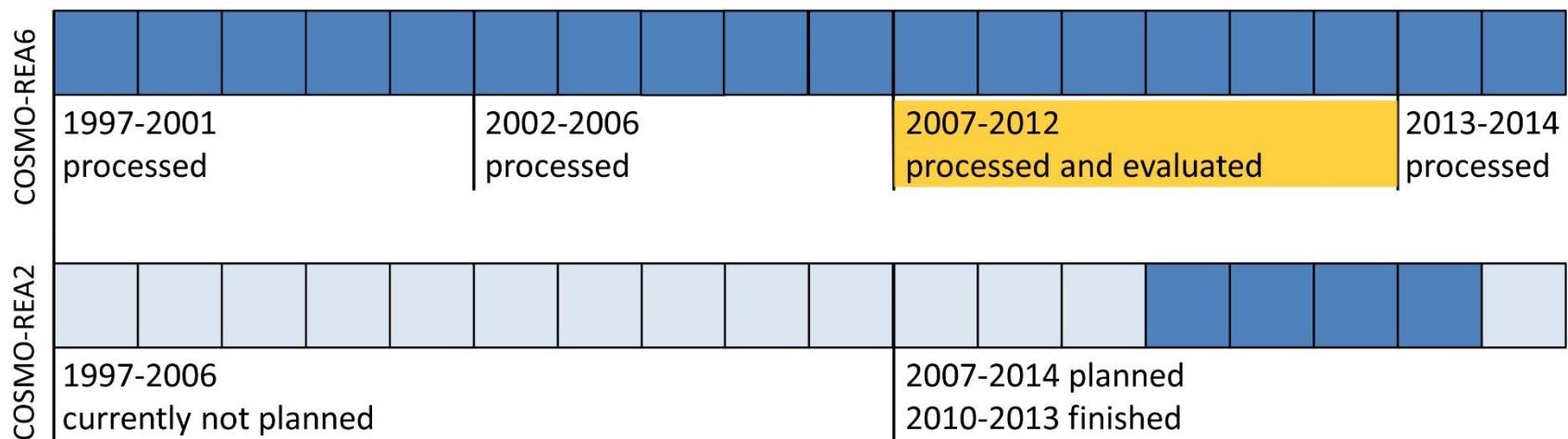
Deterministic COSMO Regional Reanalysis-System



Available datasets

→ Deterministic COSMO-Reanalysis for comparison

- 1997 – 2014 available in 6km resolution
- 2010 – 2013 available in 2km resolution

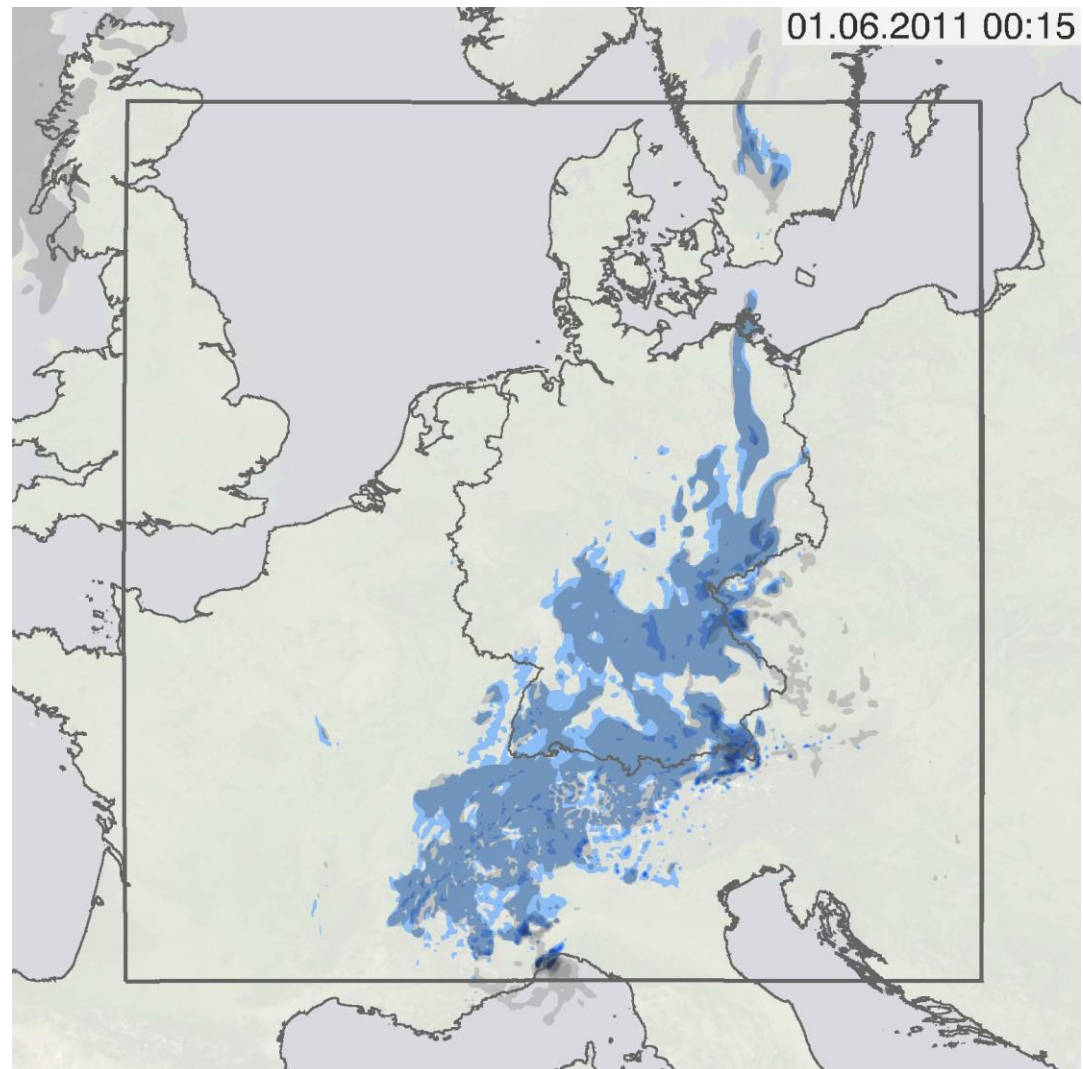


- Hourly output
- Extended parameter set compared to UERRA

Available datasets

→ Precipitation

- grey
COSMO-REA6
without LHN
- blue
COSMO-REA2
with LHN



Contribution to UERRA

- ➔ **Comparison to EURO4M reanalysis data sets**
Observation independence and independent observations

Comparison of deterministic regional reanalyses

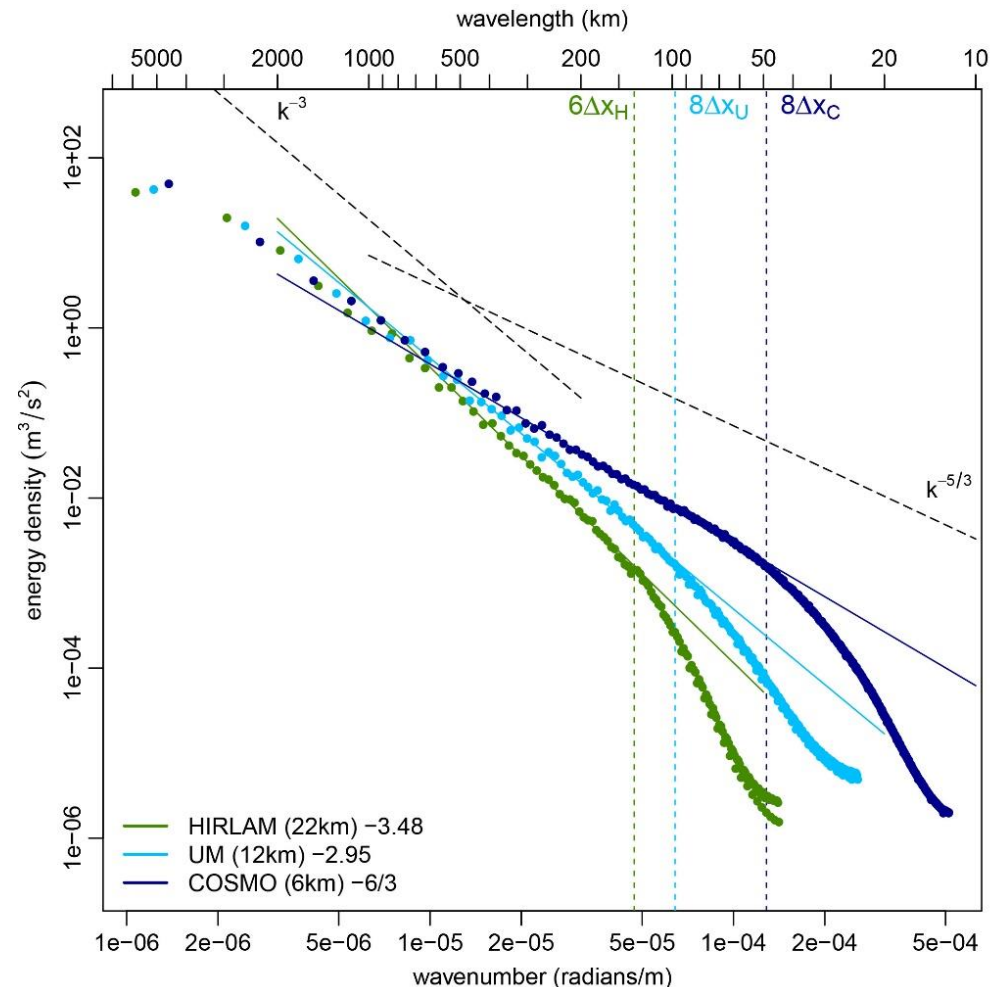
→ Observation independence Kinetic energy spectra

Model resolution

- COSMO – 6km
- UM – 12km
- HIRLAM – 22km

Effective resolution

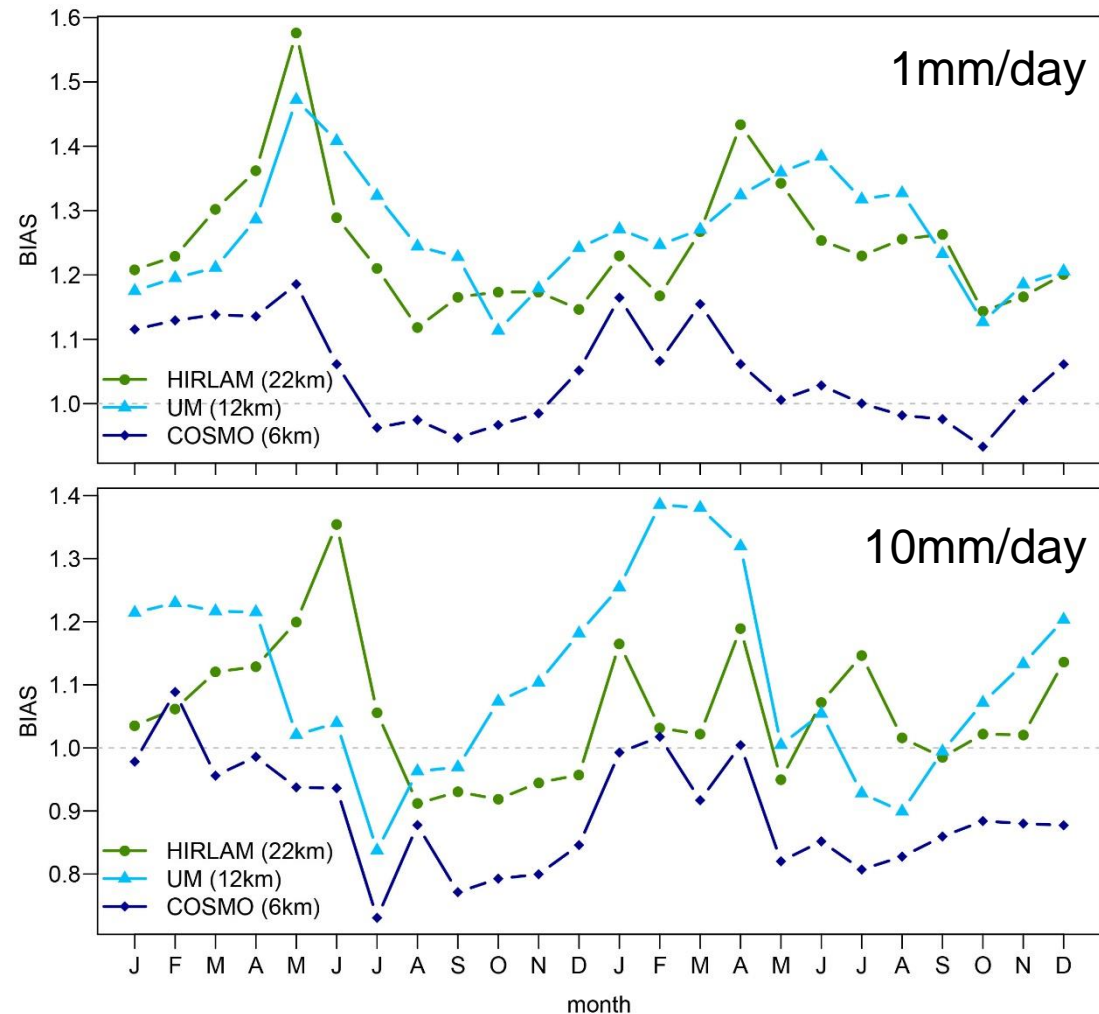
- COSMO ~ 50km
- UM ~ 100km
- HIRLAM ~ 130km



Comparison of deterministic regional reanalyses

→ Independent observations Precipitation

- Frequency bias
- 3900 stations over Europe

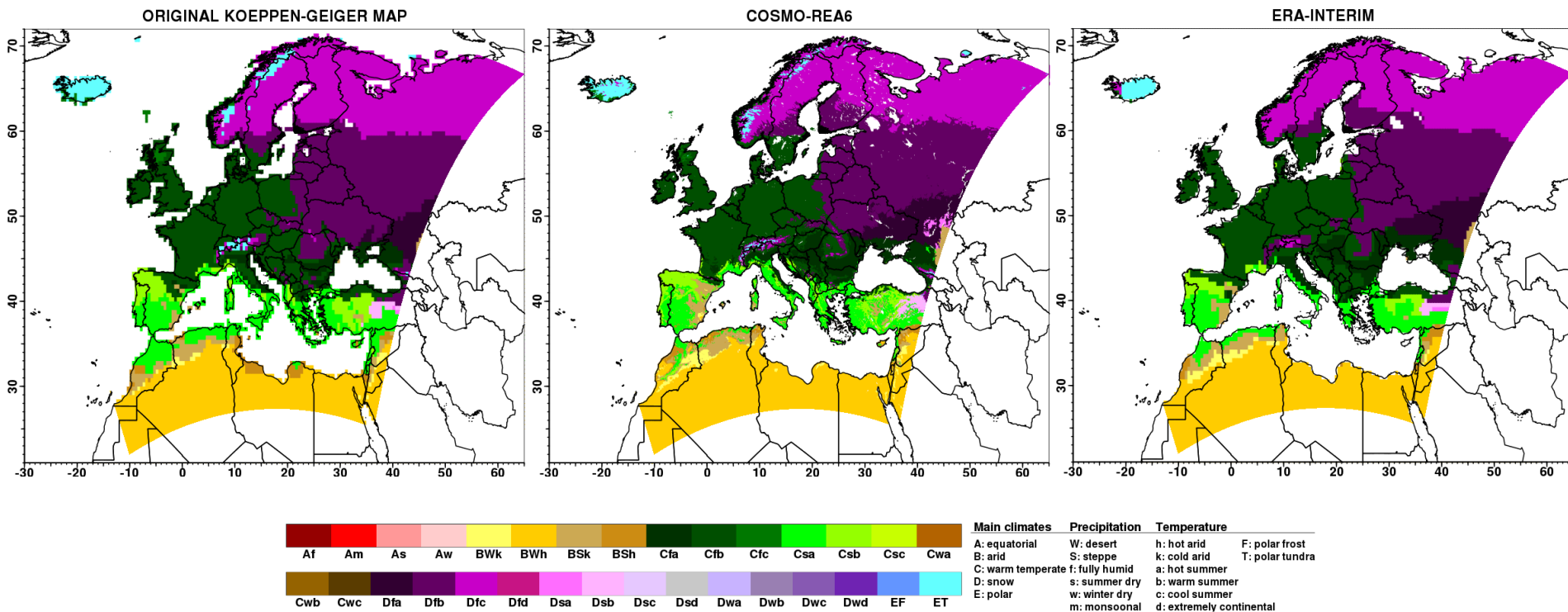


Contribution to UERRA

➔ **Climate monitoring application**

Regional reanalysis – Climate monitoring applications

→ Example: Köppen-Geiger maps



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