Deterministic (HRES) and ensemble (ENS) verification scores, other centres, SEEPS categories, YOPP

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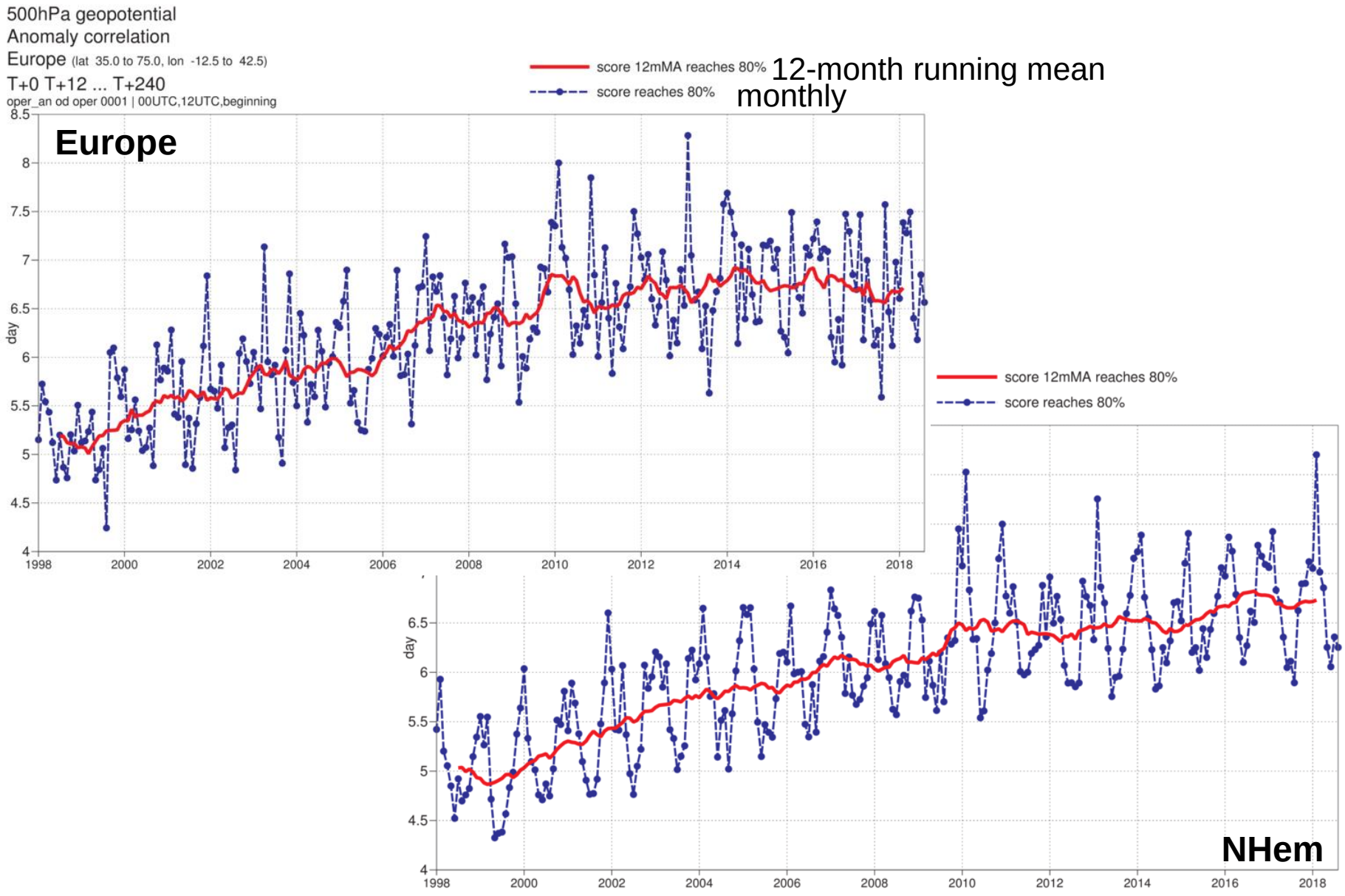
European Centre for Medium Range Weather Forecasts

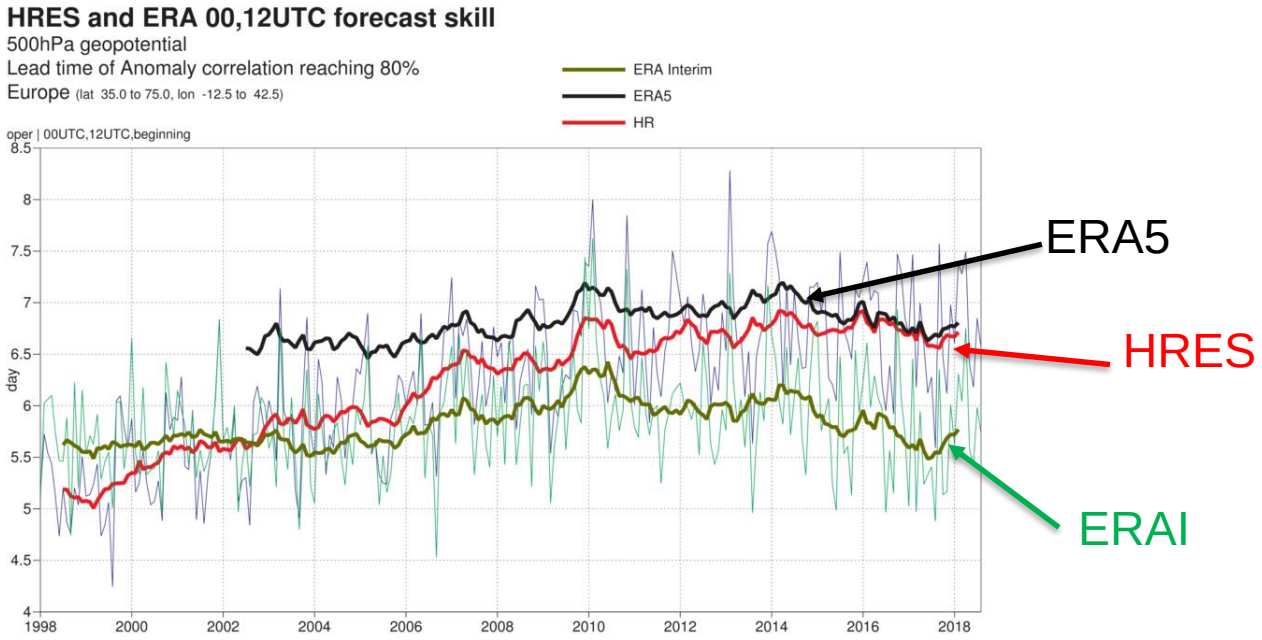
Outline

- Global HRES(deterministic) and ENS (ensemble) scores evolution between 1998 – 2018
- WMO comparison to other centres, added DWD (sfc not avail), some periods missing data from CMC (global), NCEP (arctic sfc)
- SEEP categories
- YOPP 2018 – Arctic and Antarctic

HRES - Headline score Z500, time series of acc=0.8

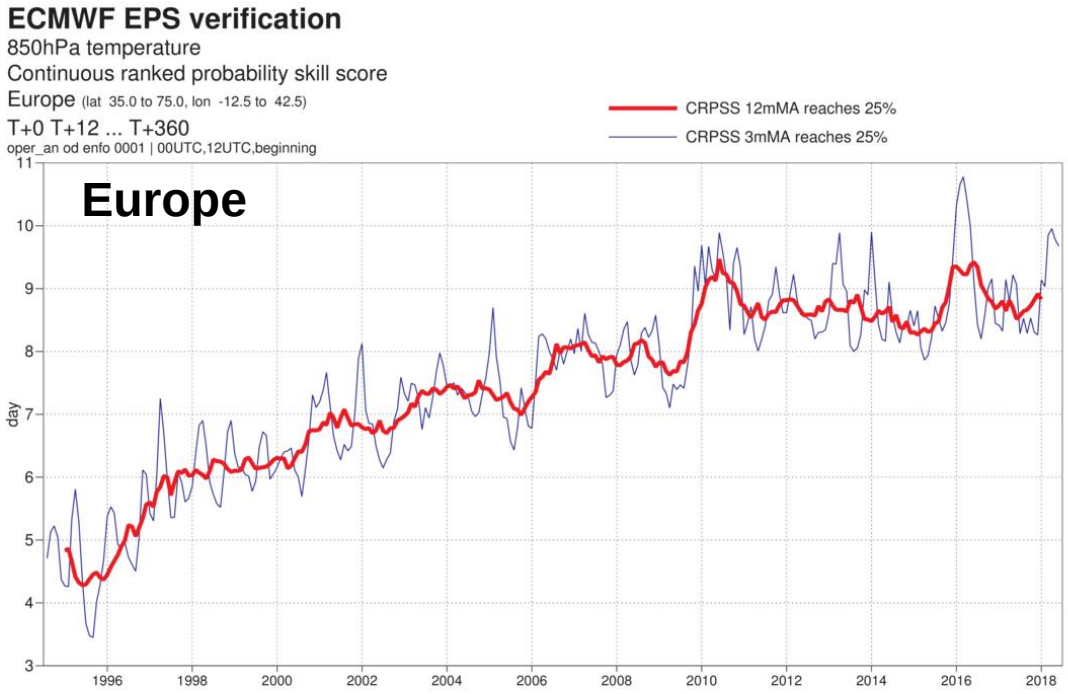


HRES verification against ERA Z500 time series of acc=0.8

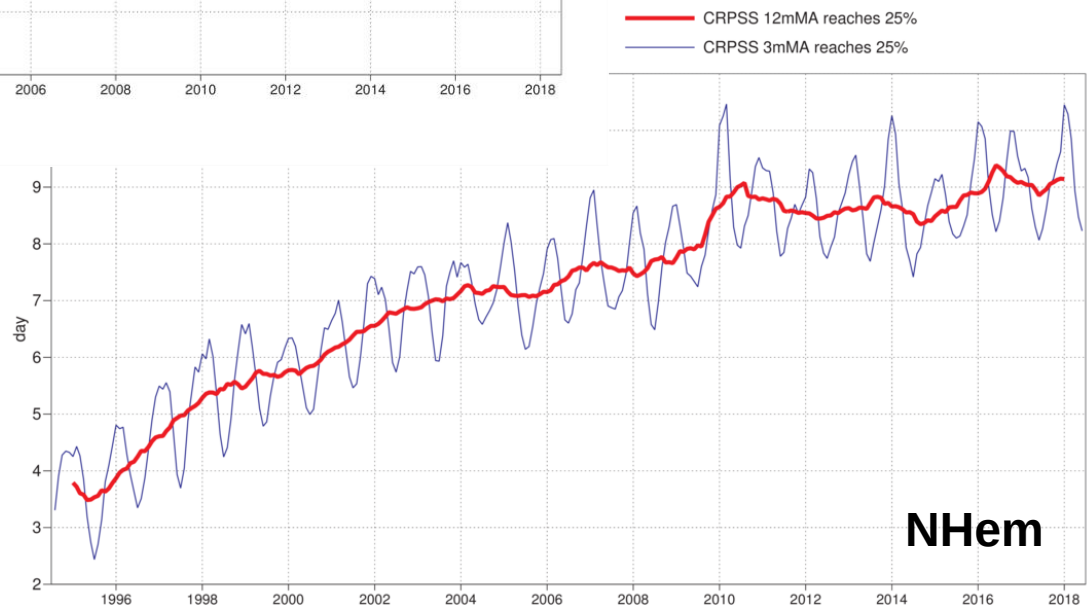


ERA5 uses data an extra 6 hours into the future!

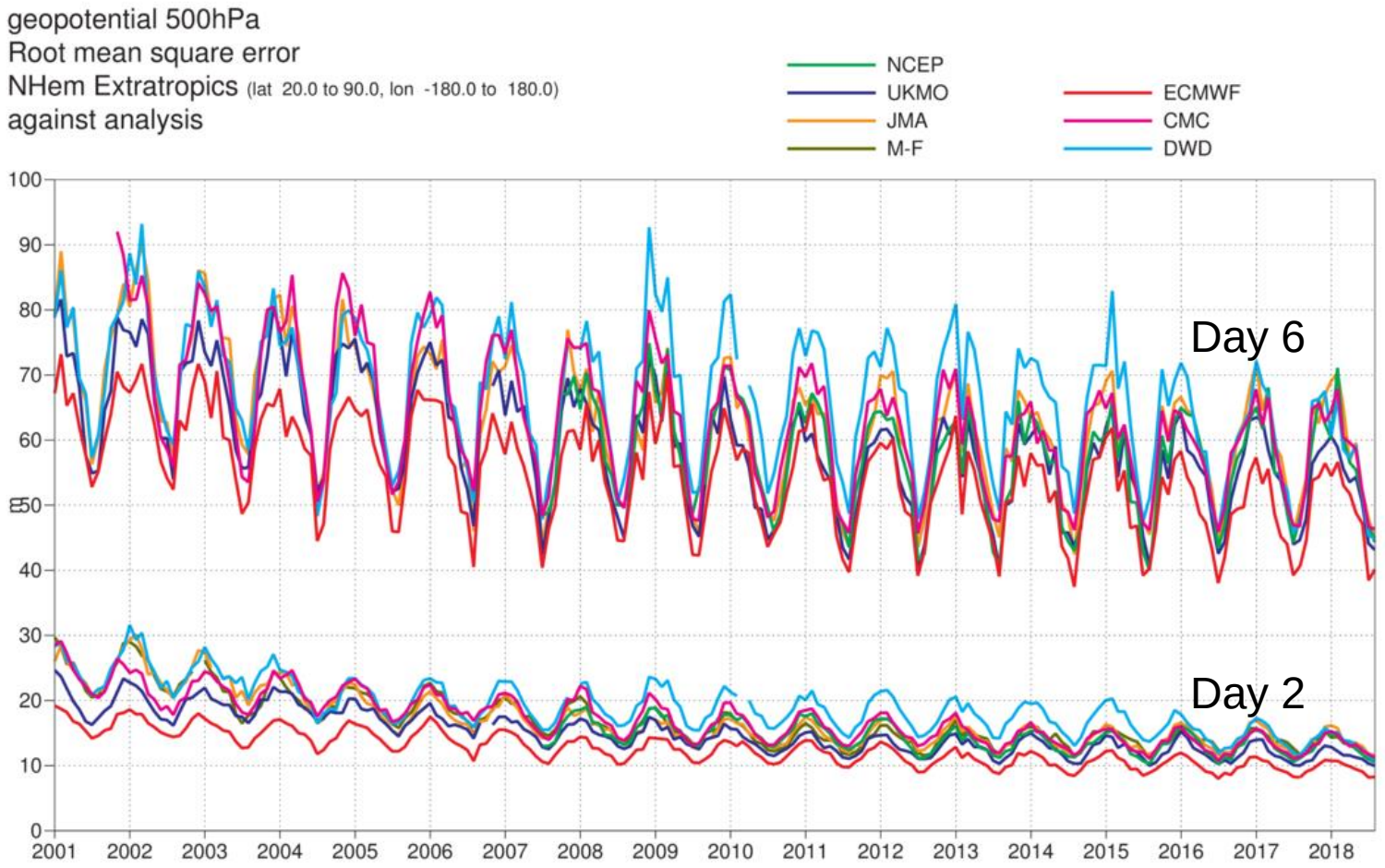
ENS - Headline probabilistic score, CRPSS, T850



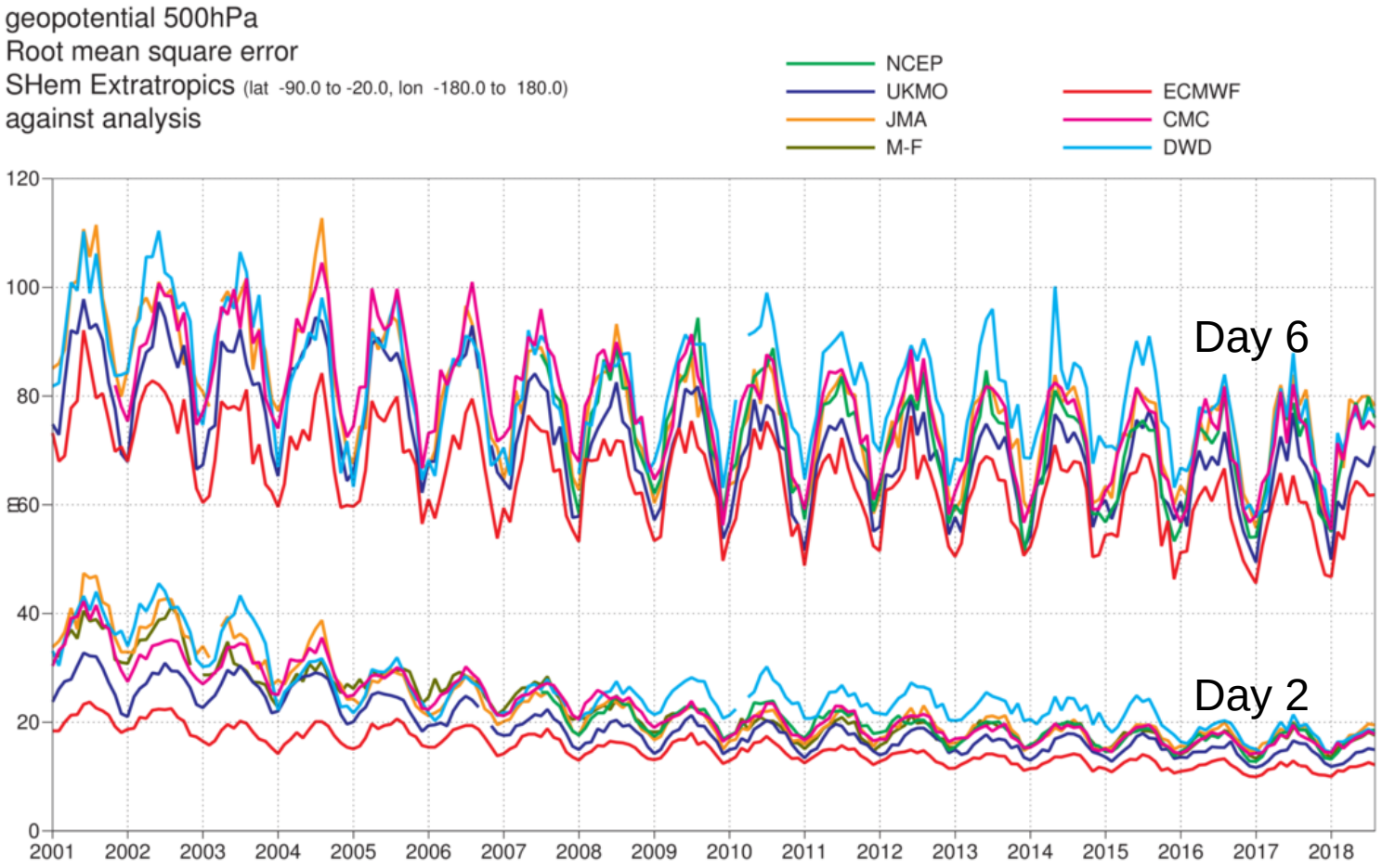
Day at which skill score reaches 25%



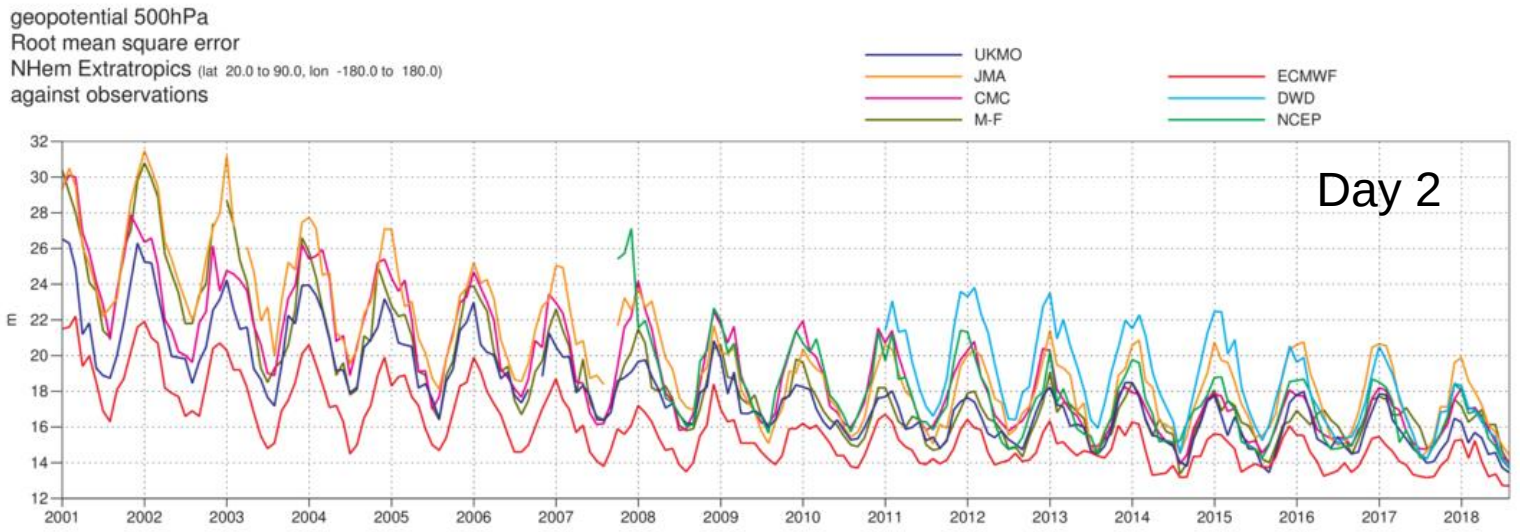
HRES - WMO scores Z500 Nhem, analysis

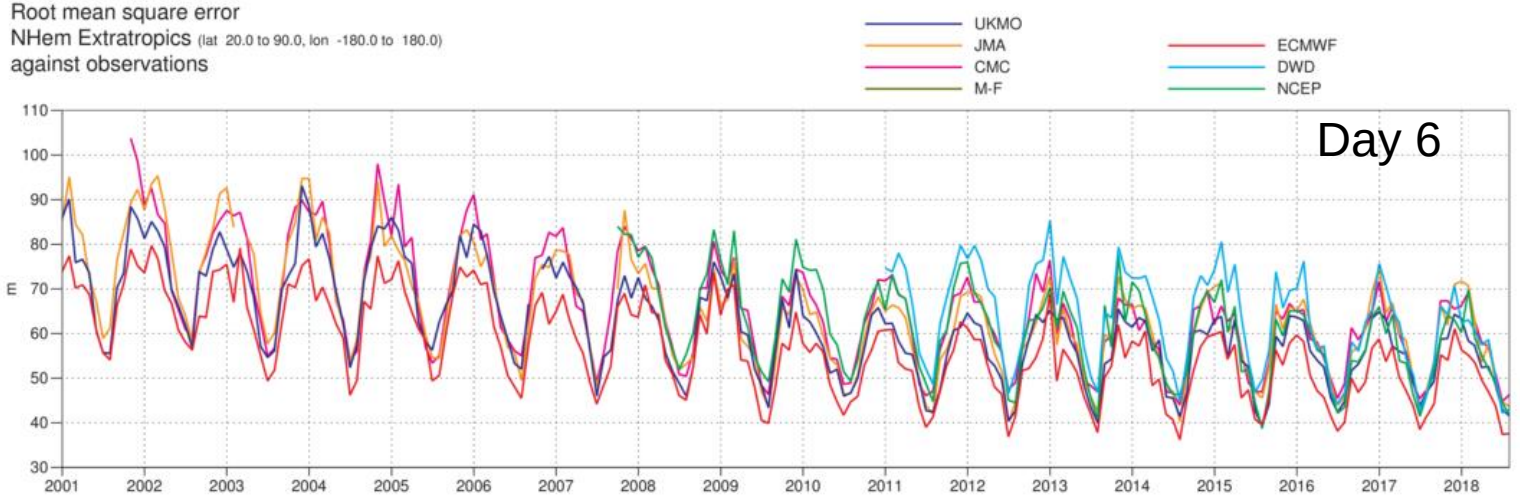


HRES - WMO scores Z500 Shem, analysis

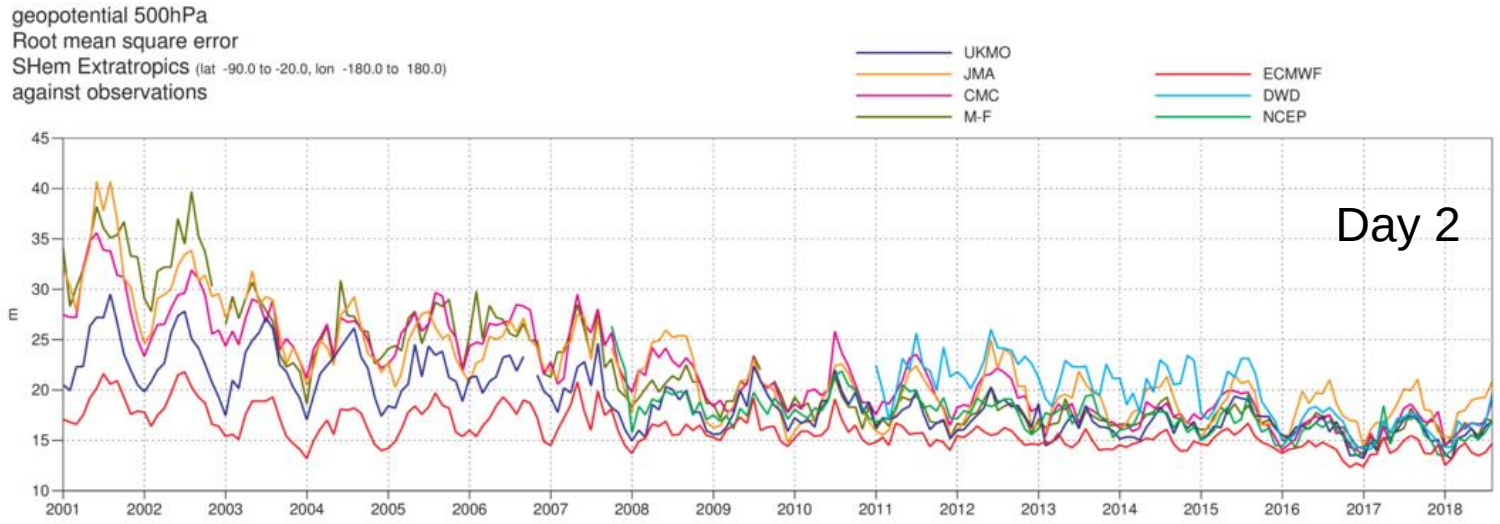


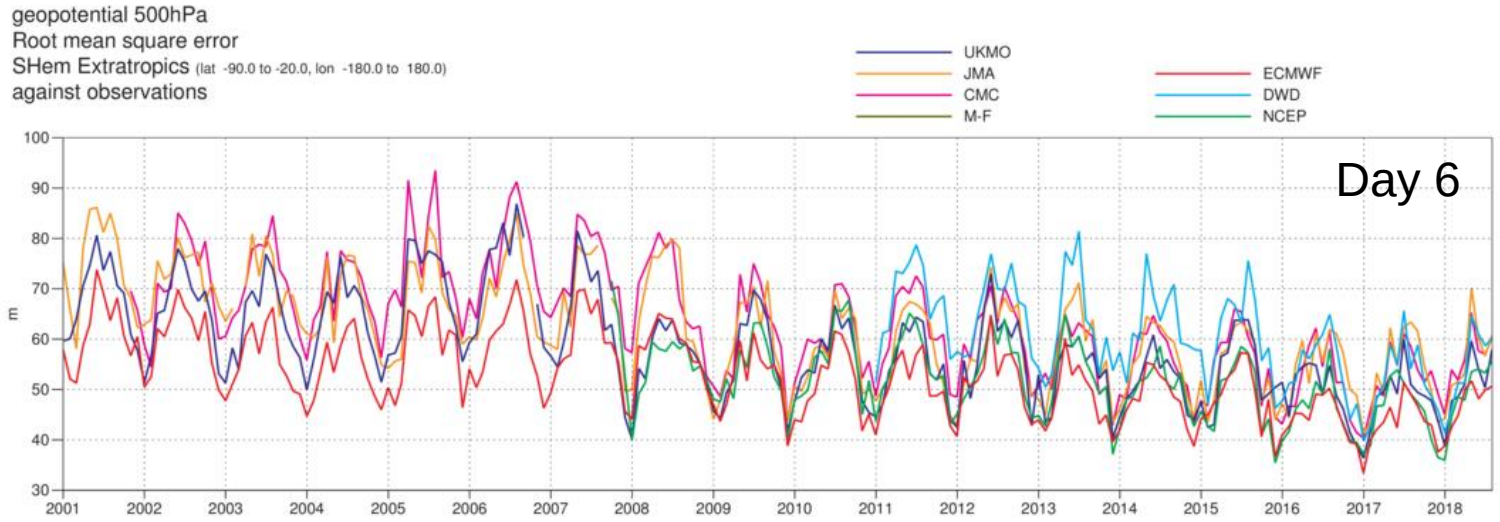
HRES - verification against observations, Z500, Nem



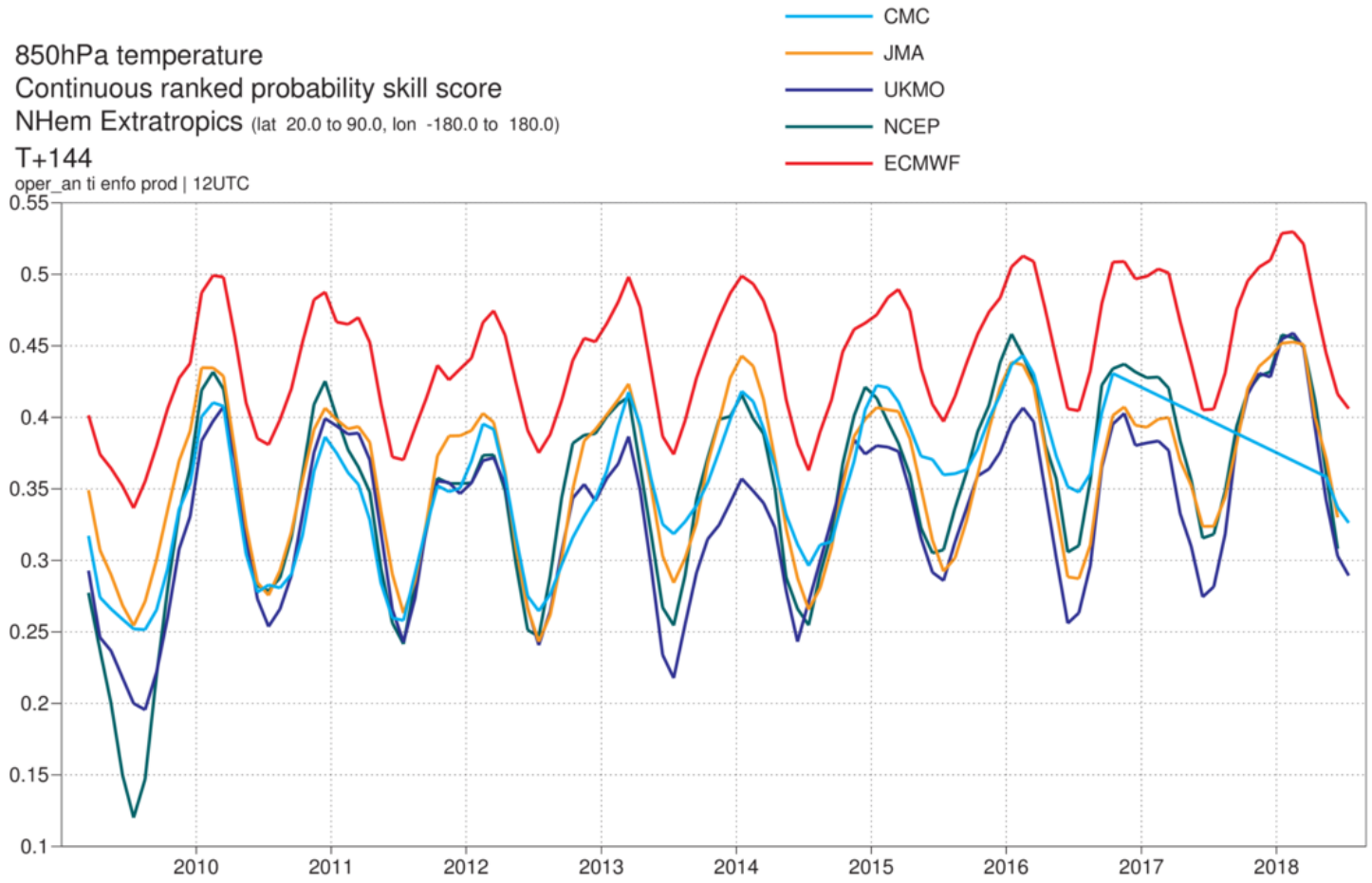


HRES - verification against observations, Z500, Shem

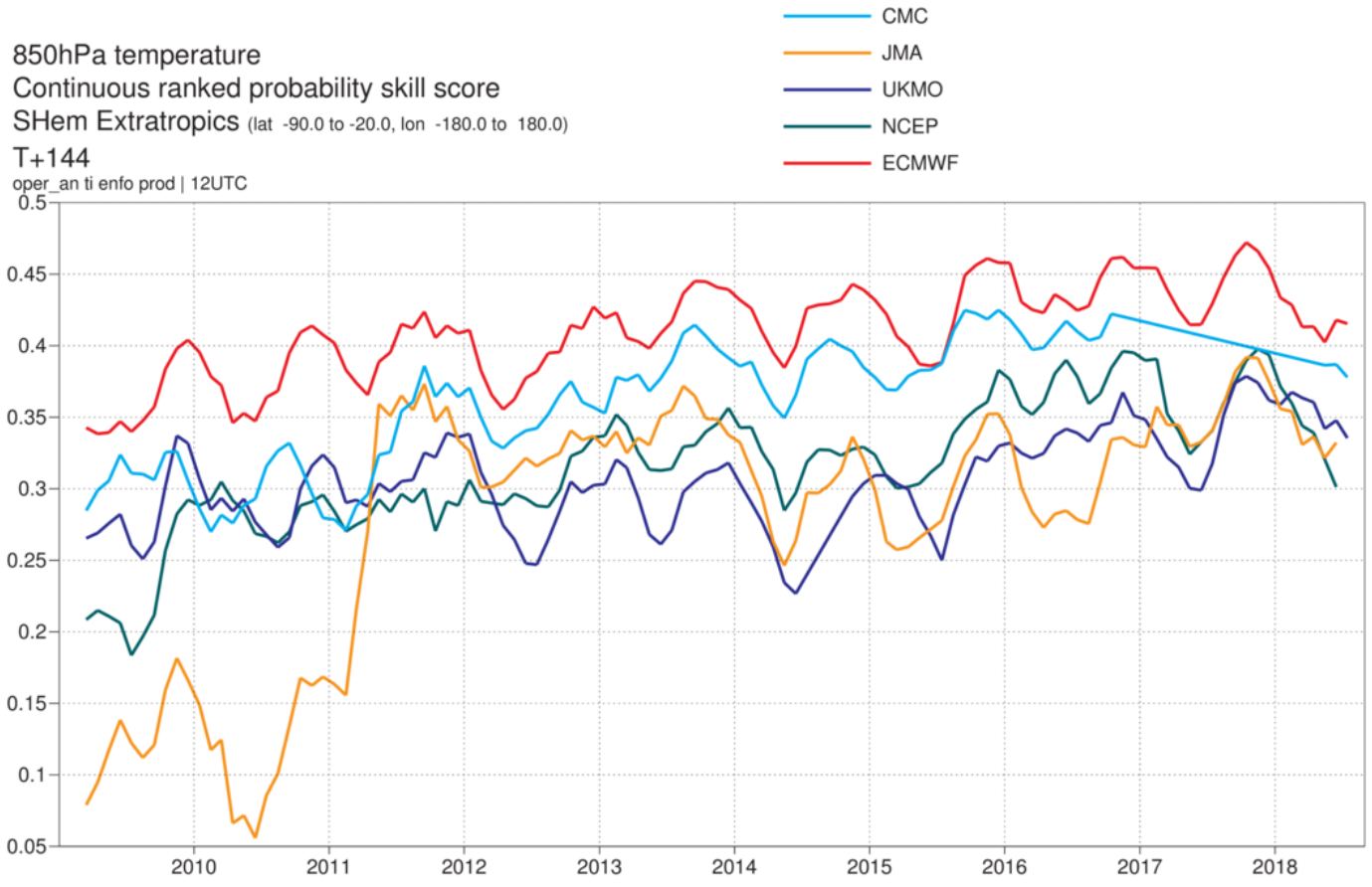




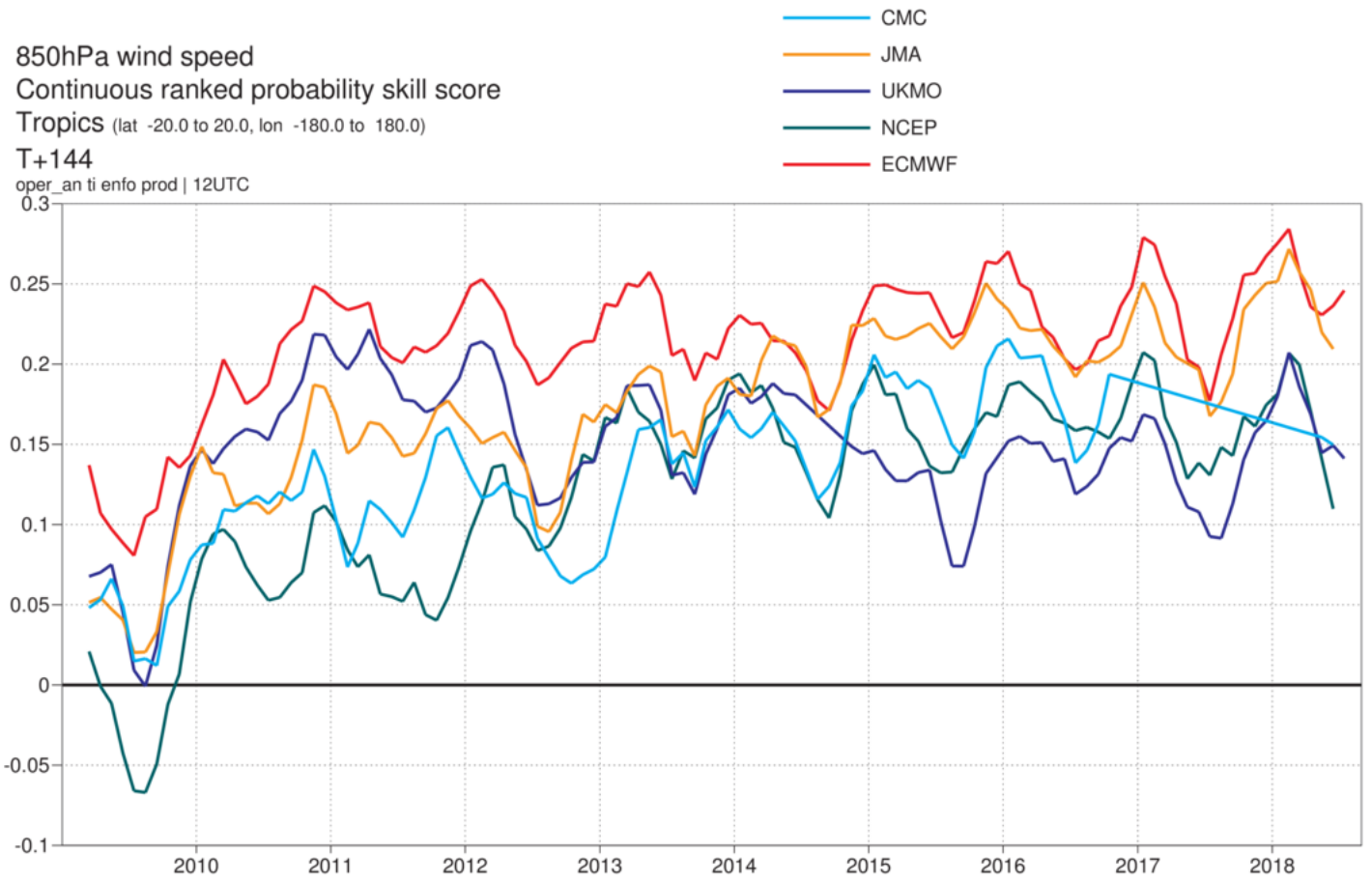
ENS - CRPSS, T850, NHem, day 6



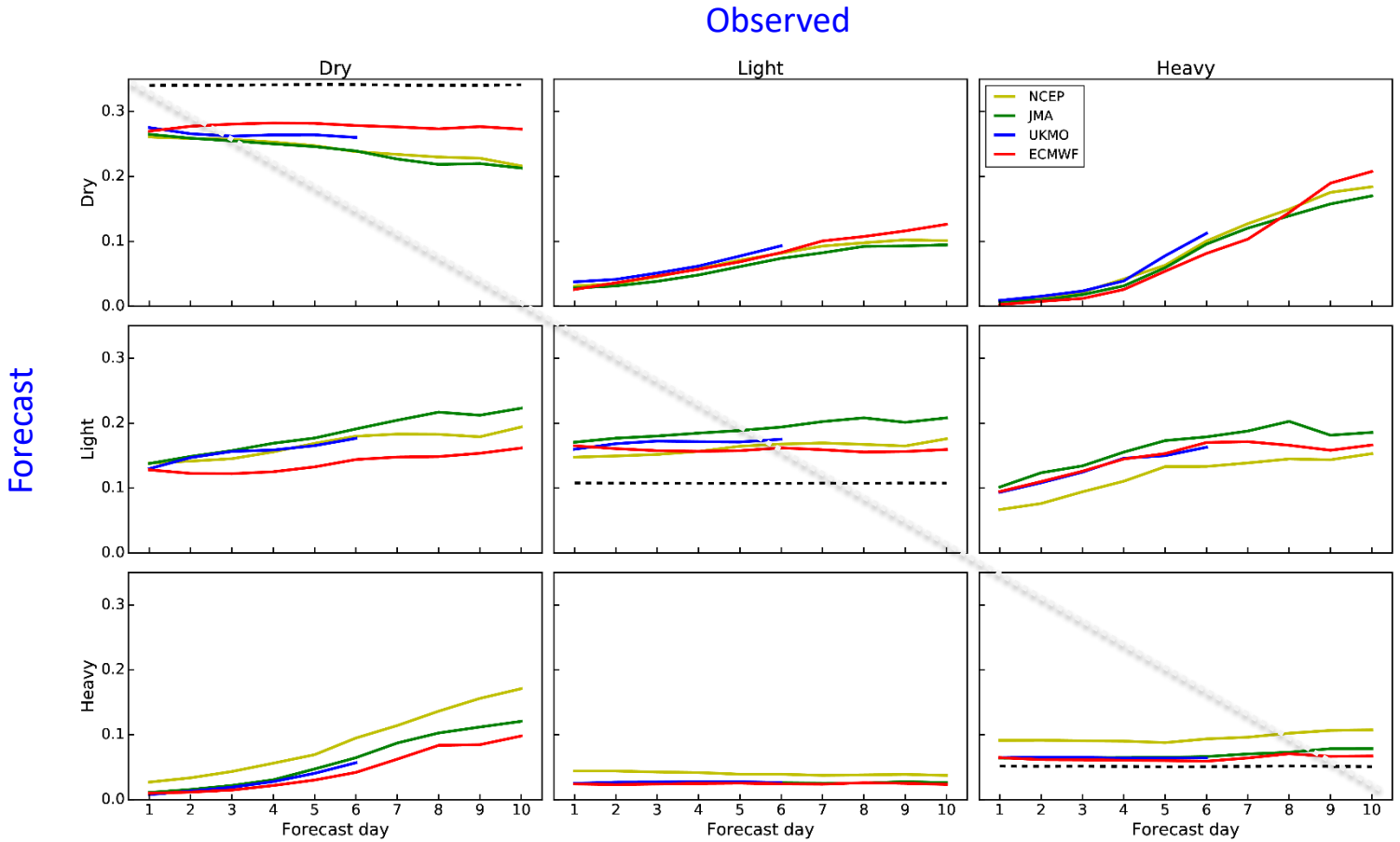
ENS - CRPSS, T850, SHem, day 6



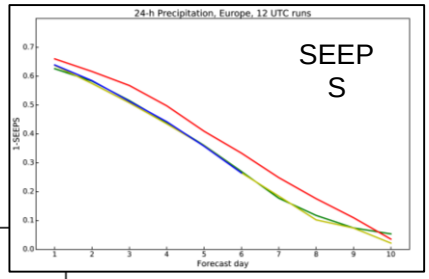
ENS - CRPSS, T850, Tropics, day 6



SEEPS decomposition Europe, DJF 2016-17



SEEPS decomposition Europe, DJF 2017-18



Observed category

Forecast category

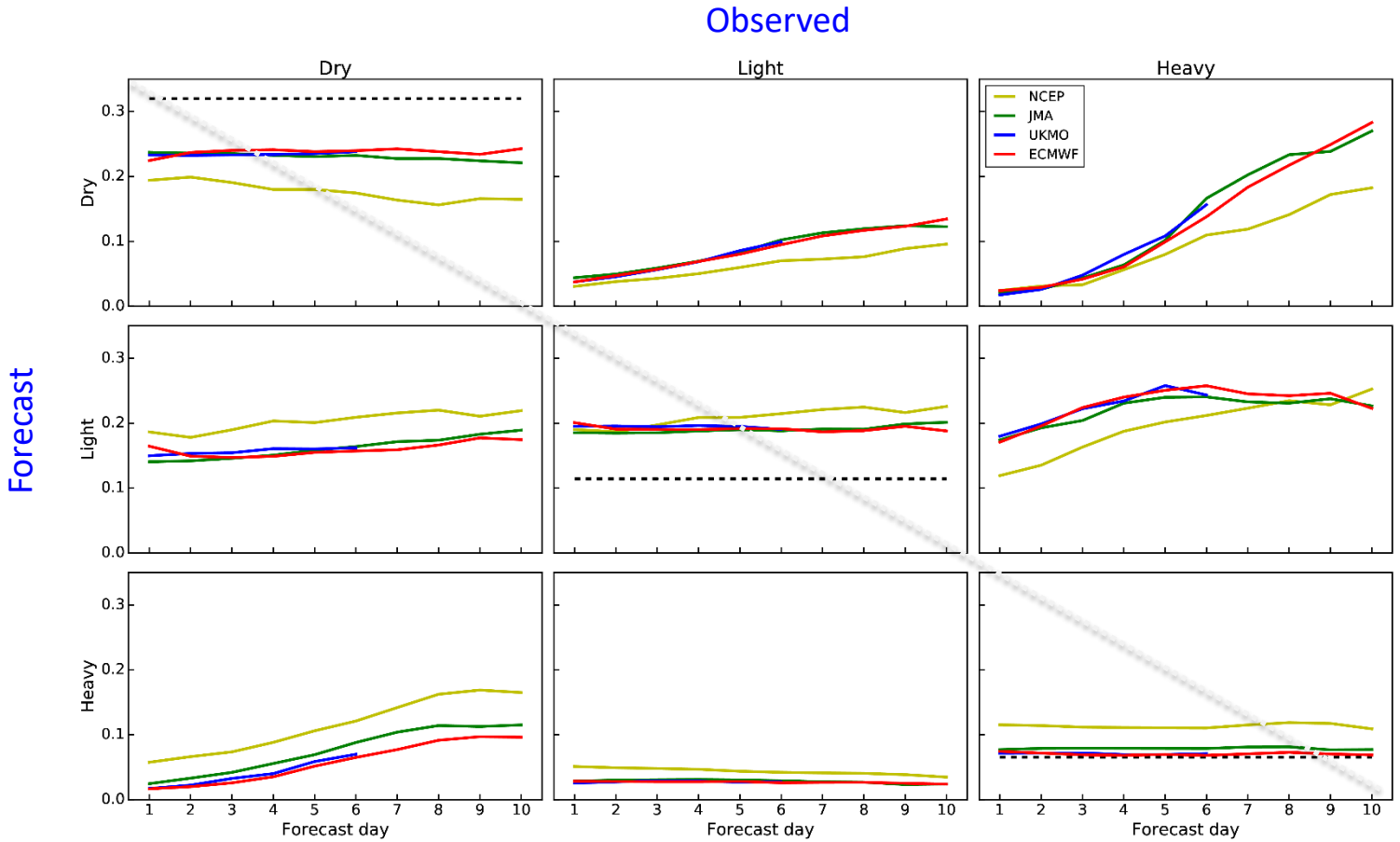
Dry | Light | Heavy

NCEP
JMA
UKMO
ECMWF

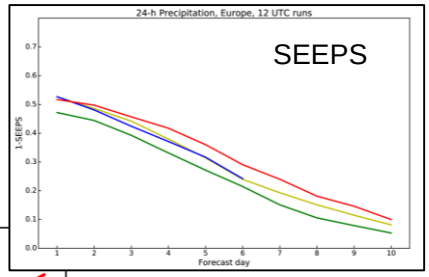
Forecast day

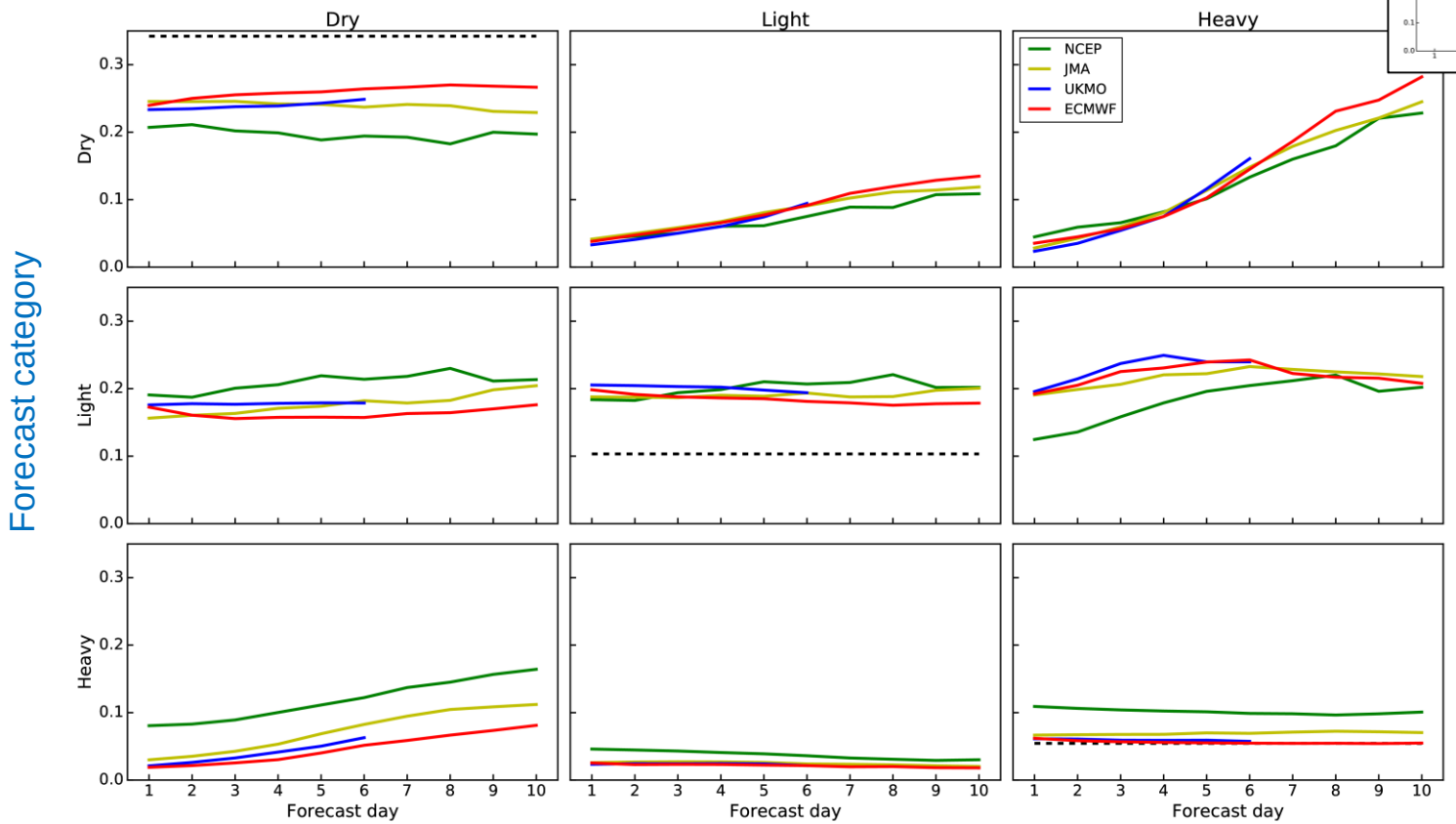
ECMWF

SEEPS decomposition Europe, JJA 2017



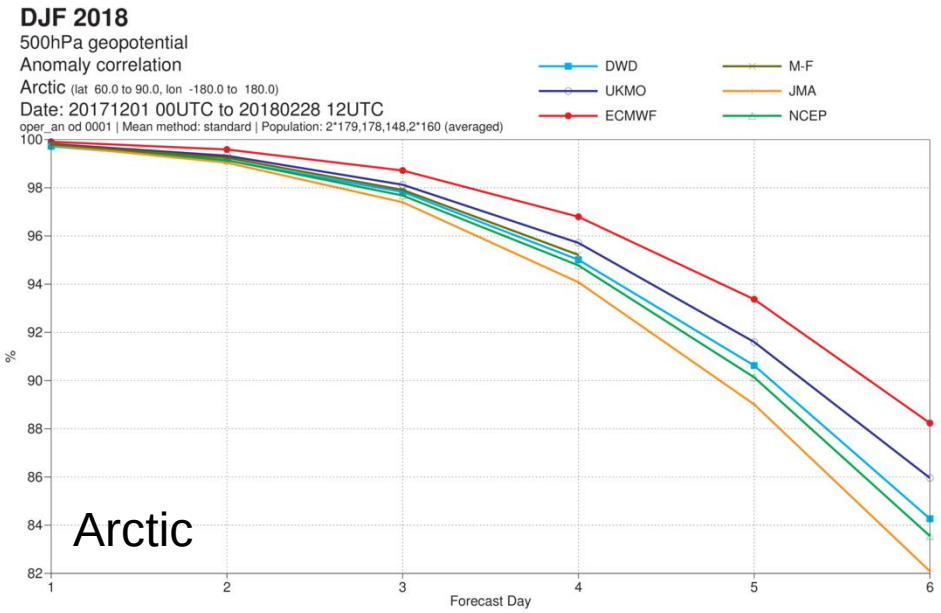
SEEPS decomposition Europe, JJA 2018

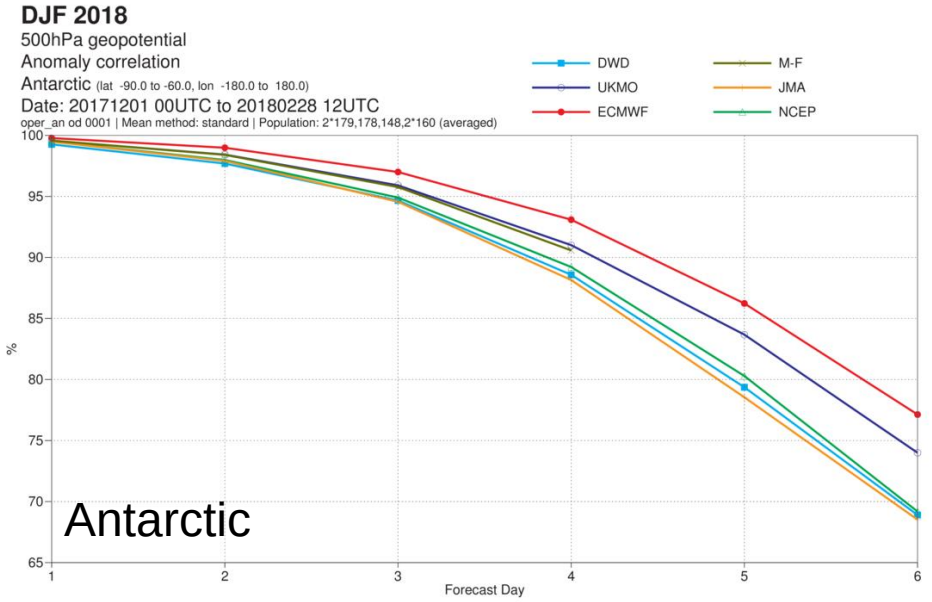




Year Of Polar Prediction

DJF 2018





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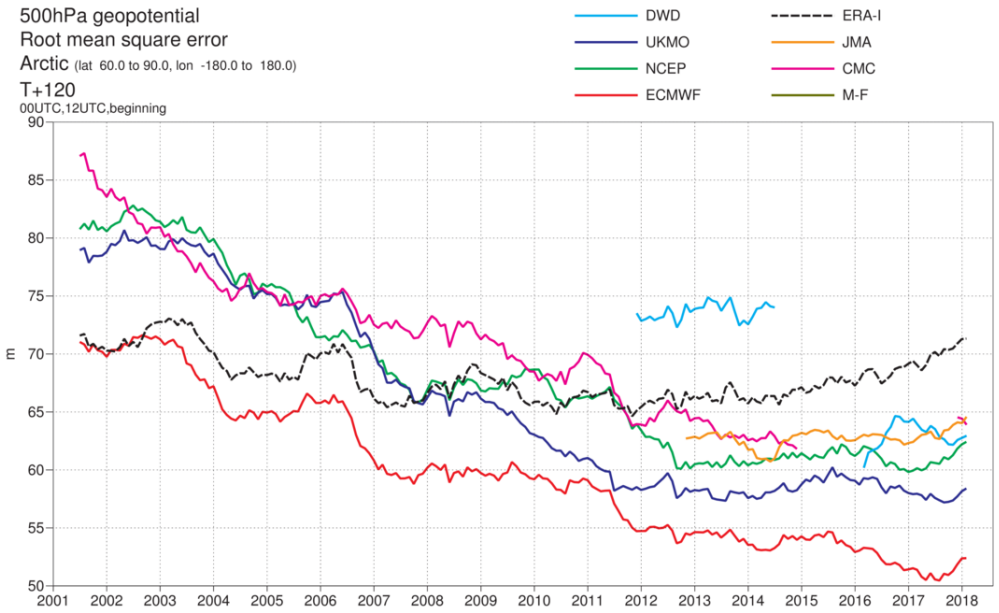
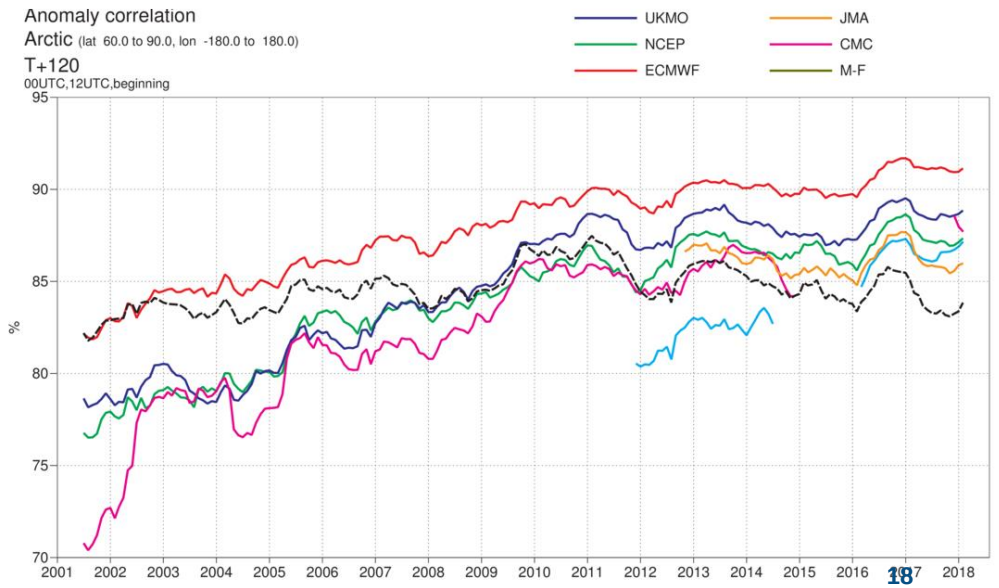
Year Of Polar Prediction
Arctic scores

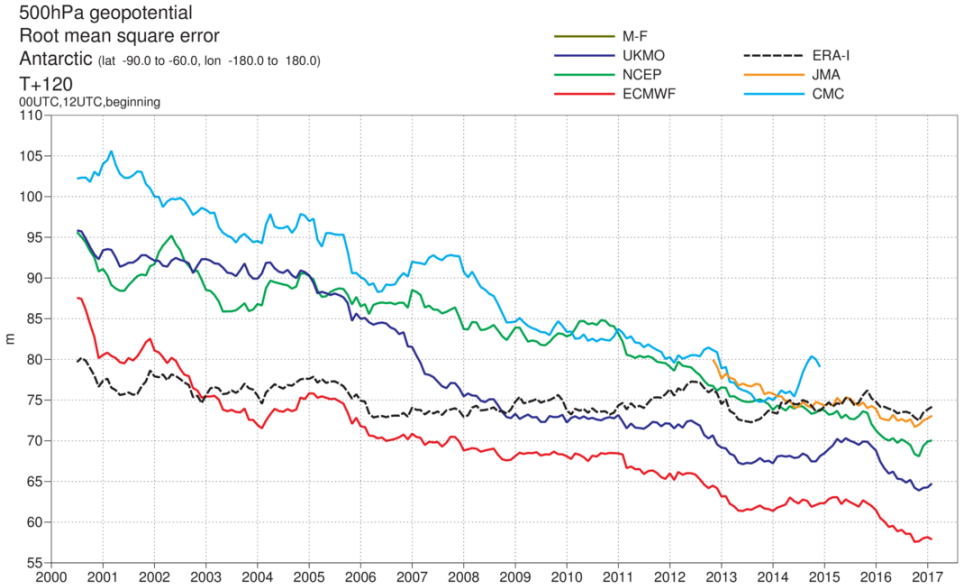
Day 5

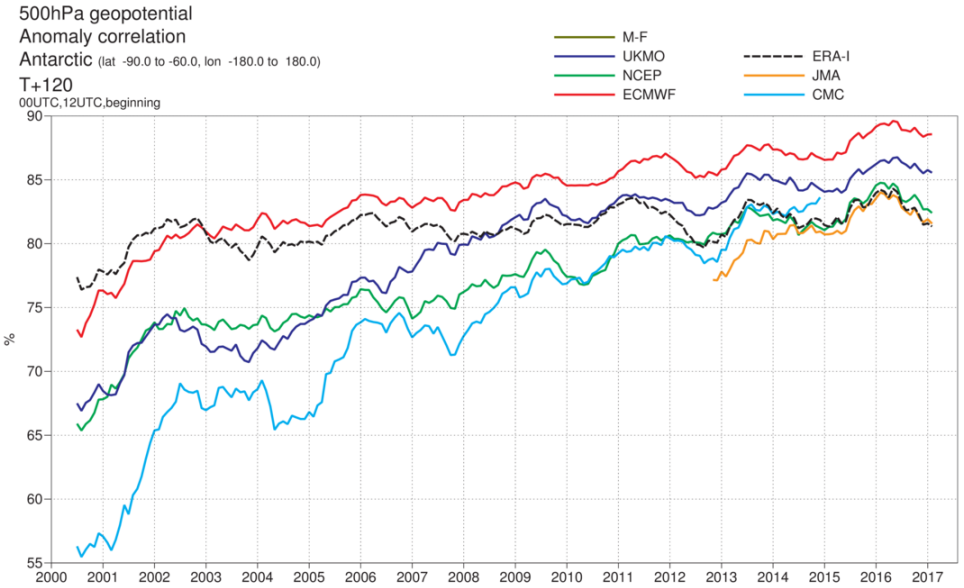




Year Of Polar Prediction
Antarctic scores

Day 5





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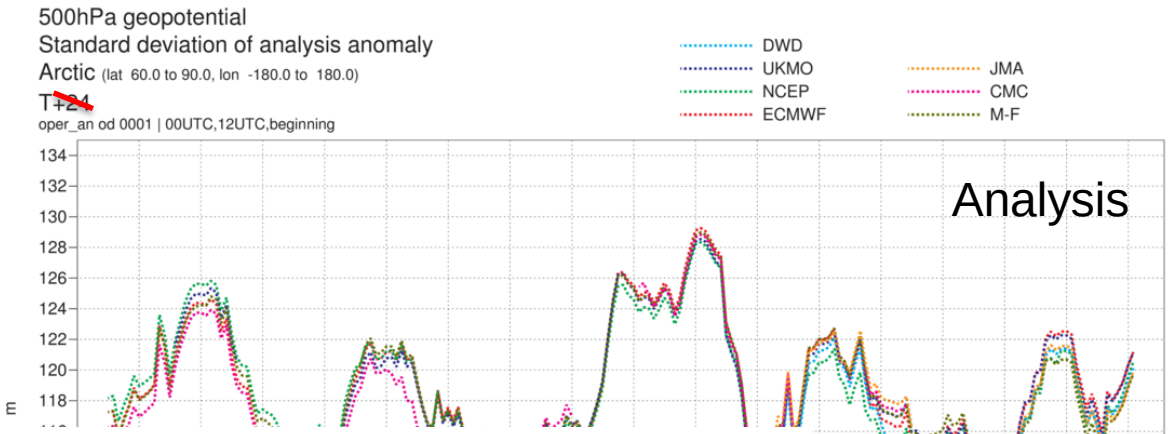
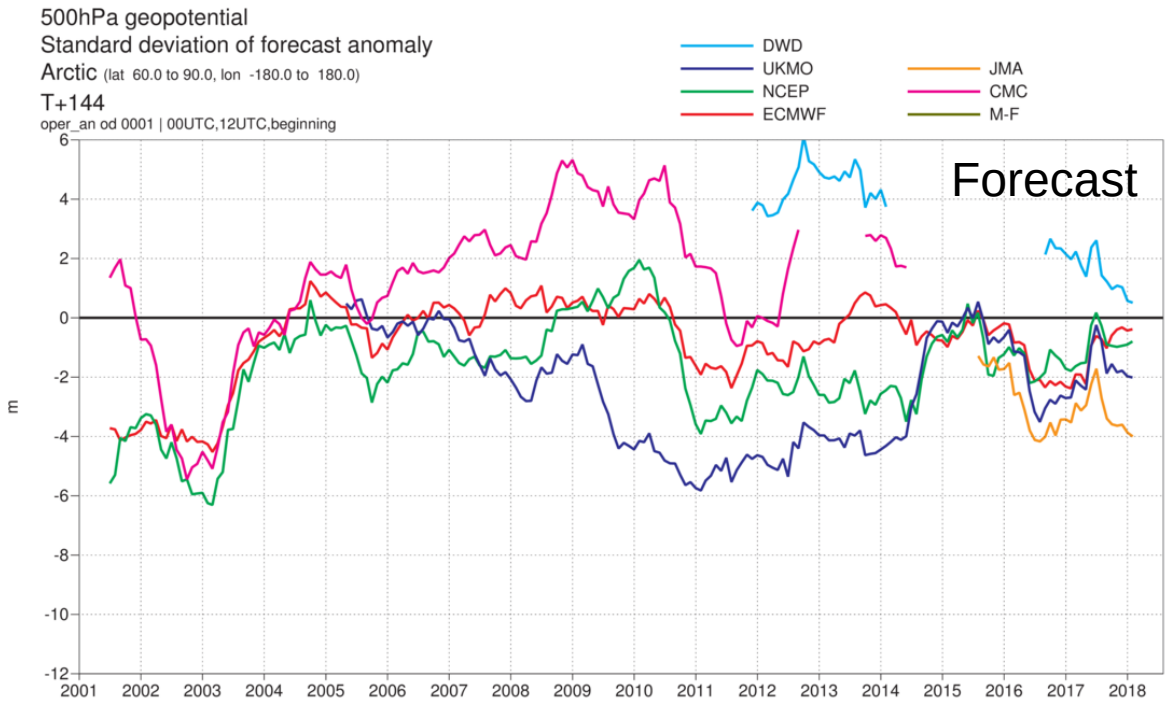
Arctic, analysis and model activity

Difference of stdev of forecast and analysis anomalies

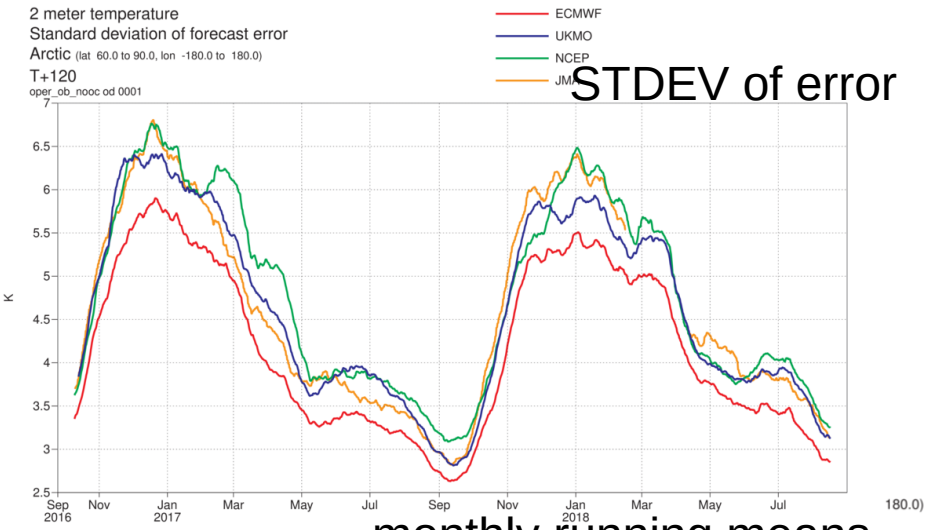




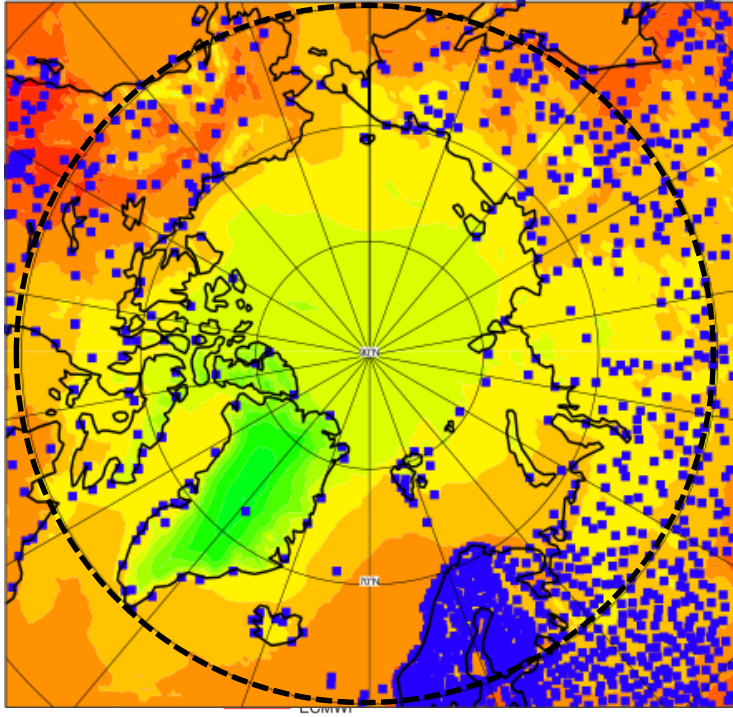
gain

loss

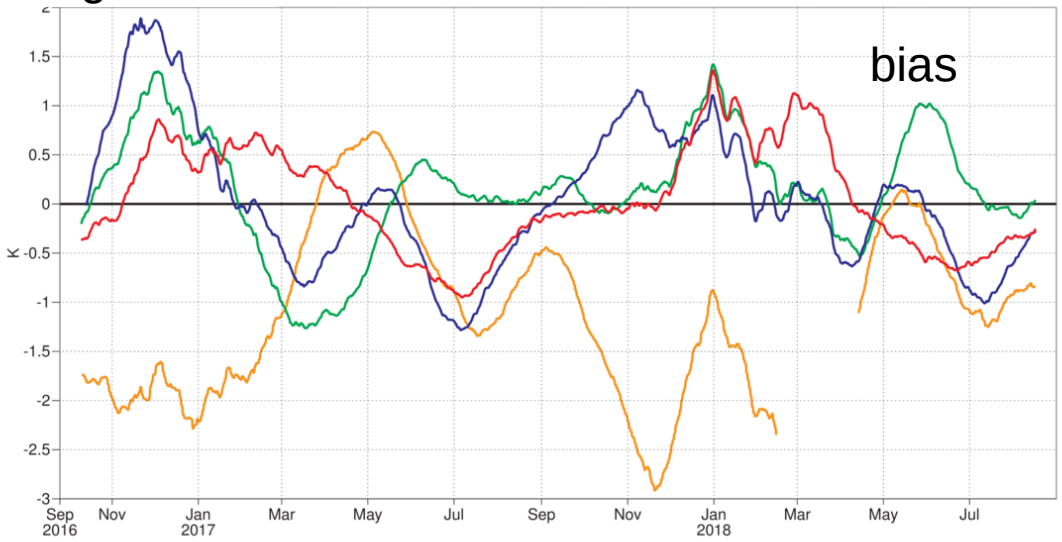
2m temperature, against SYNOP Arctic



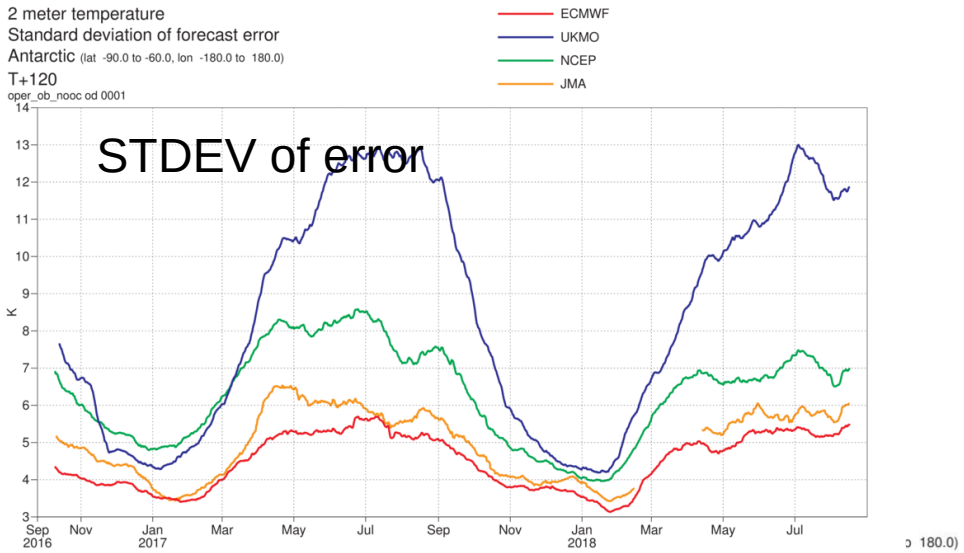
STDEV of error

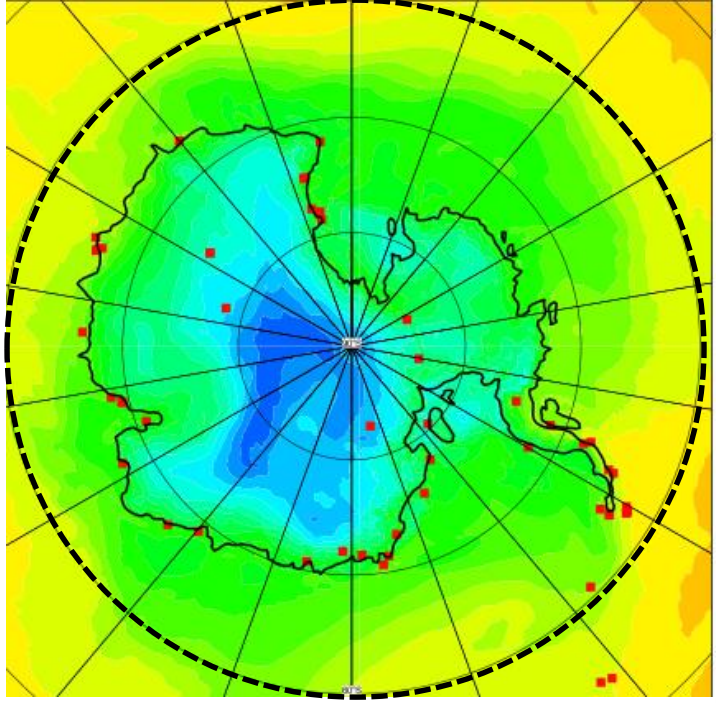


monthly running means



2m temperature, against SYNOP Antarctic





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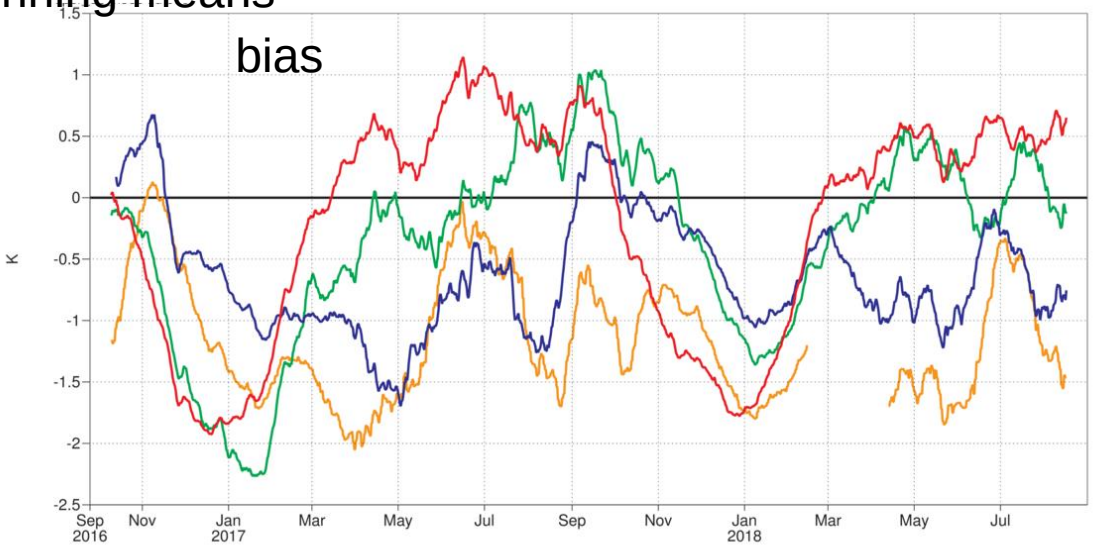
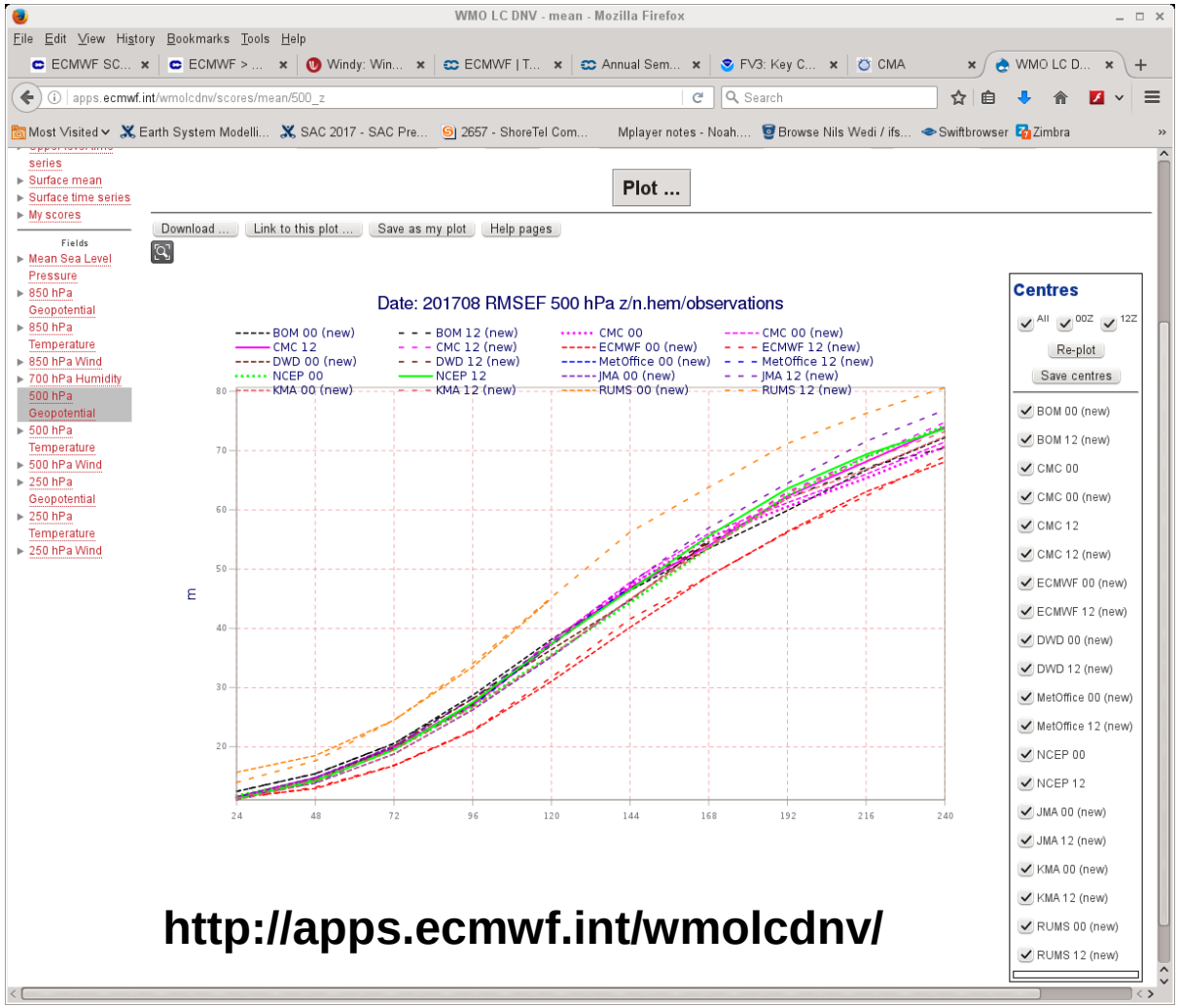


WMO Lead Centre for Deterministic Forecast NWP Verification (WMO-LCDNV)

- Collecting upper-air verification reports from global centres continues, most of centres have migrated to new definition of scores and the exchange format



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