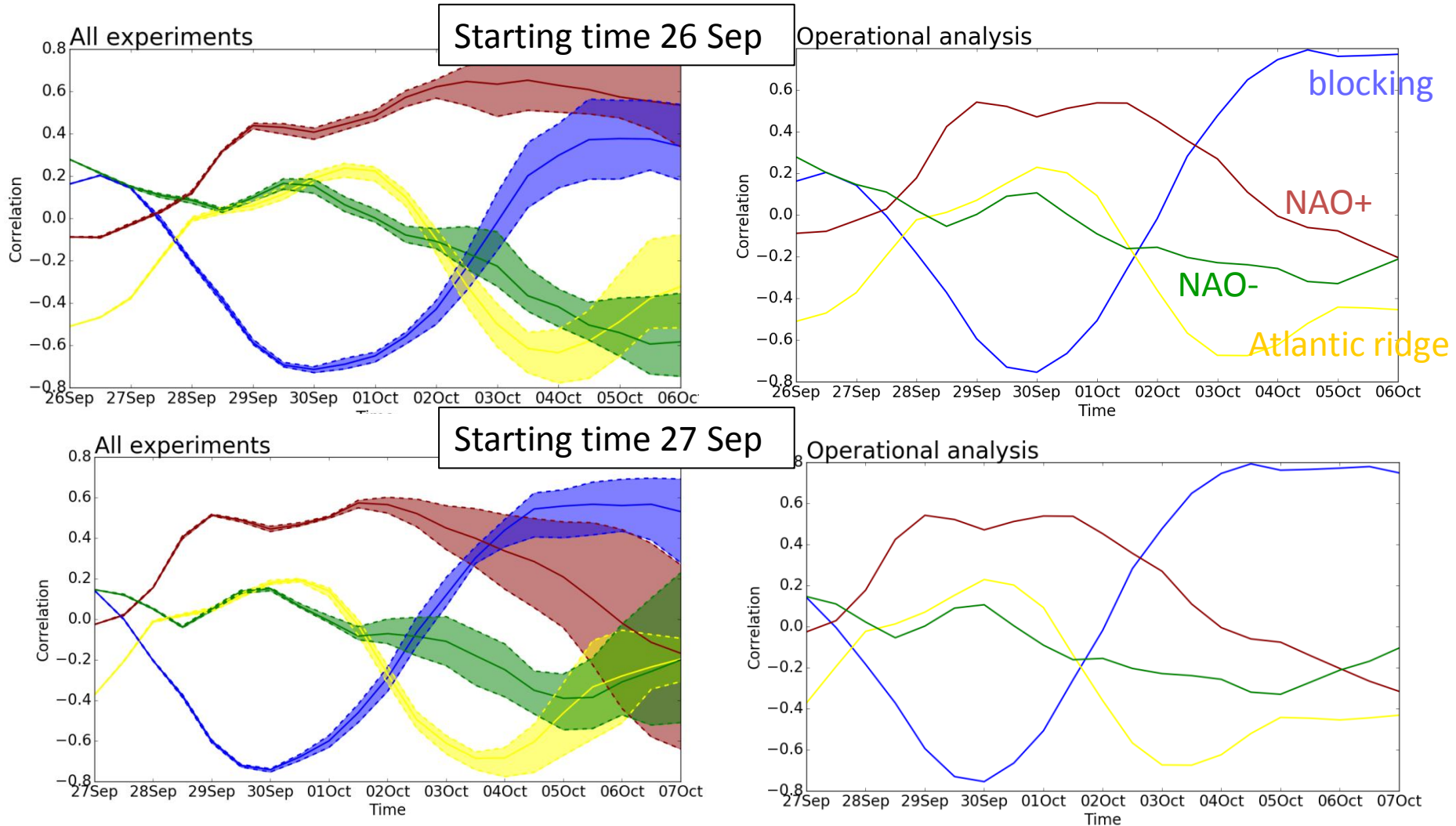
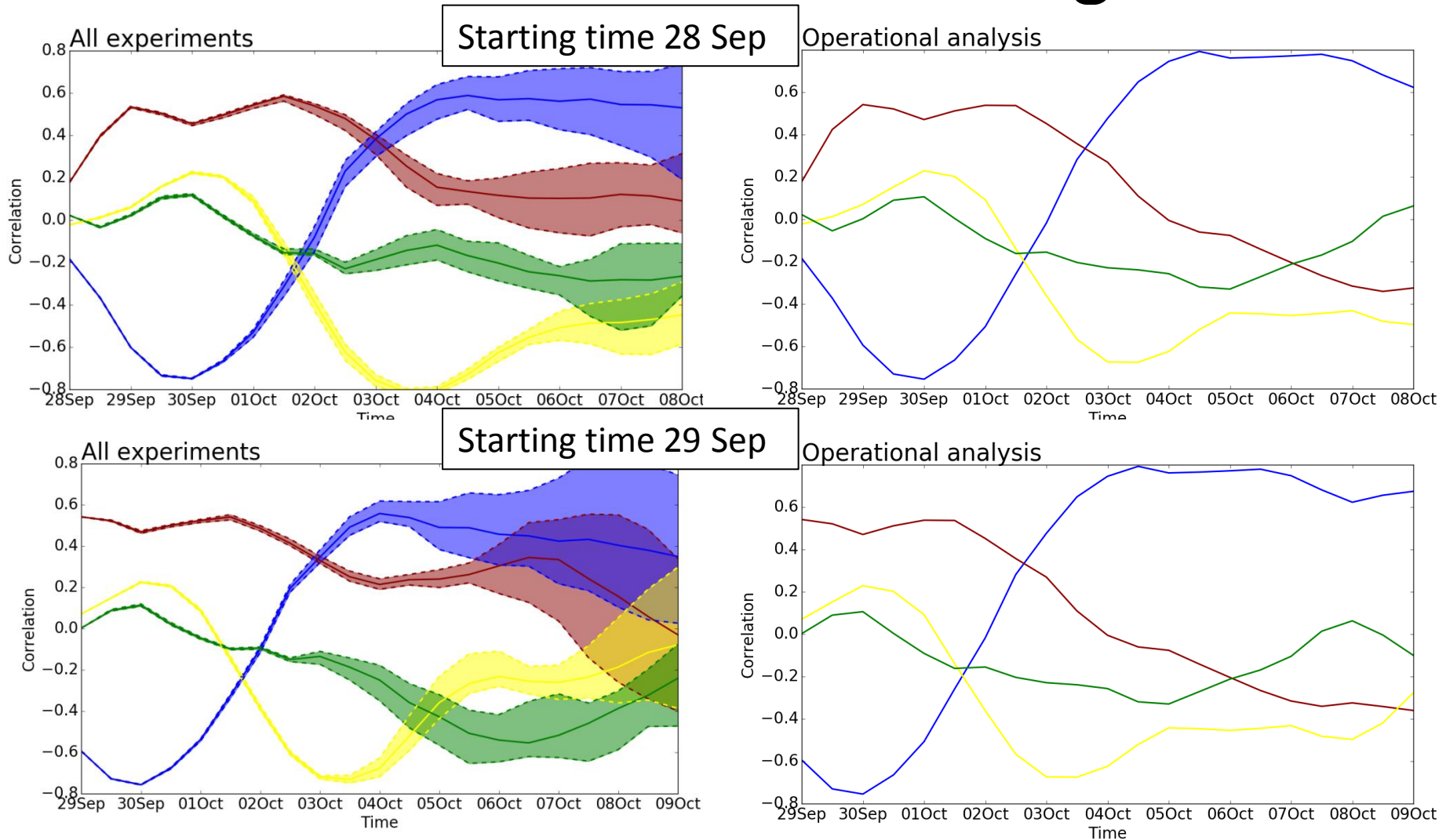


Representation of the stalactite cyclone (IOP6) and the Scandinavian blocking in Arpege ensemble forecasts and comparison with RALI observations

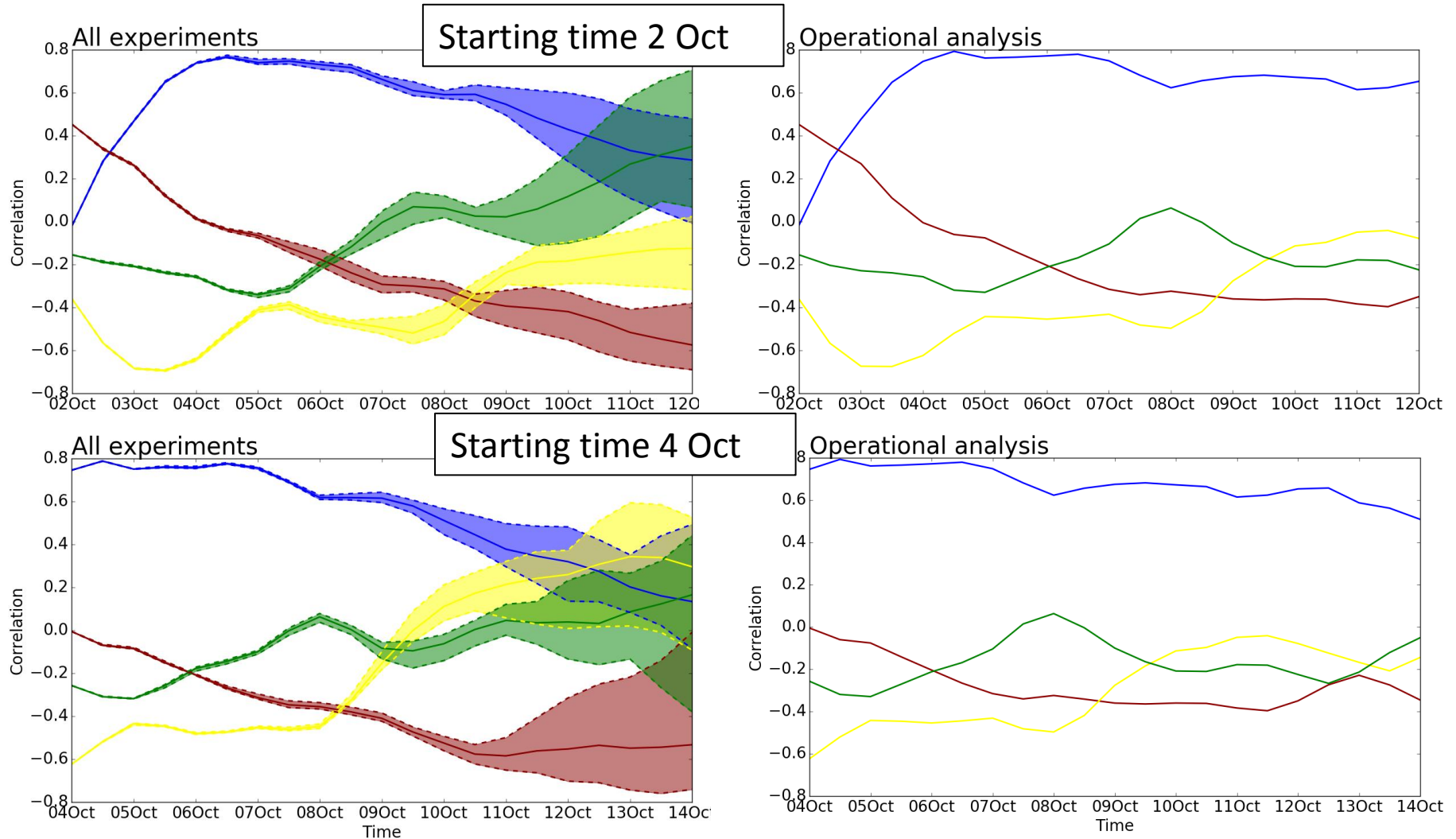
Medium-range predictability of the Scandinavian blocking



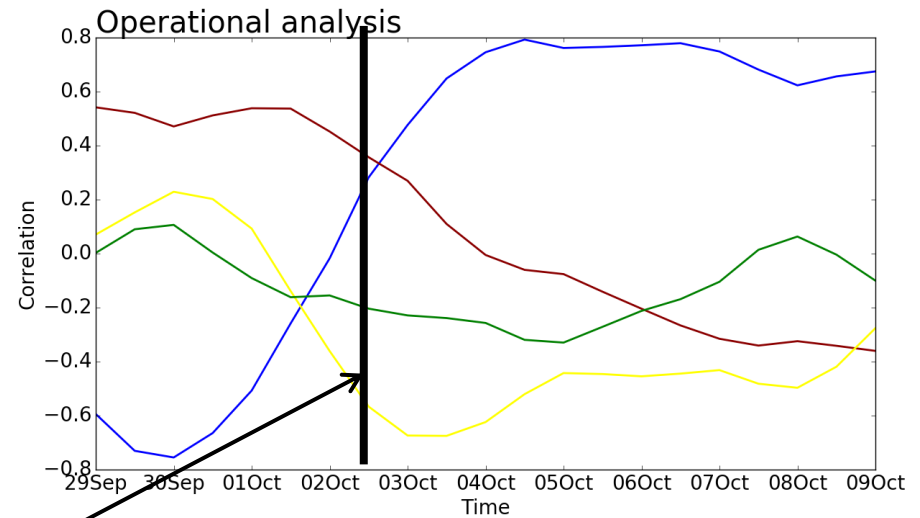
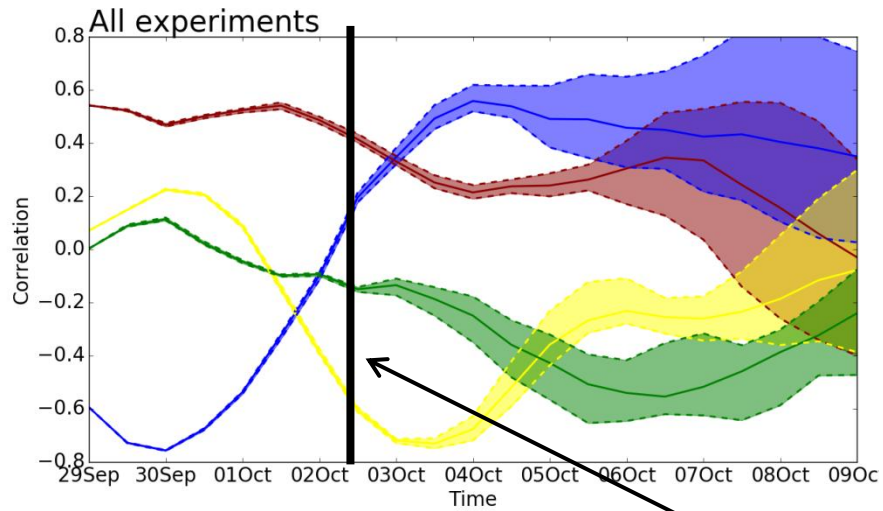
Medium-range predictability of the Scandinavian blocking



Medium-range predictability of the Scandinavian blocking

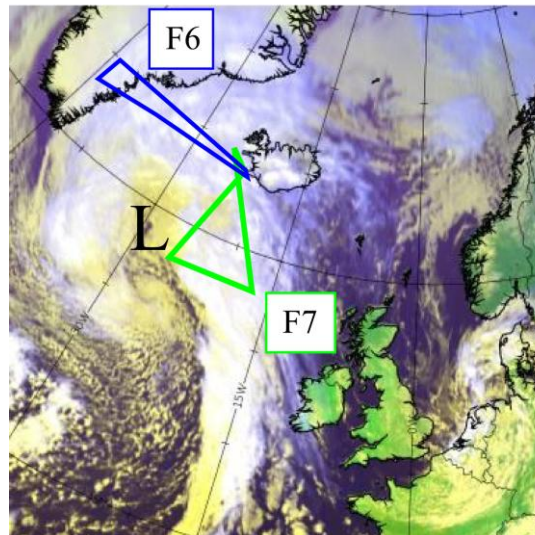


Medium-range predictability of the Scandinavian blocking

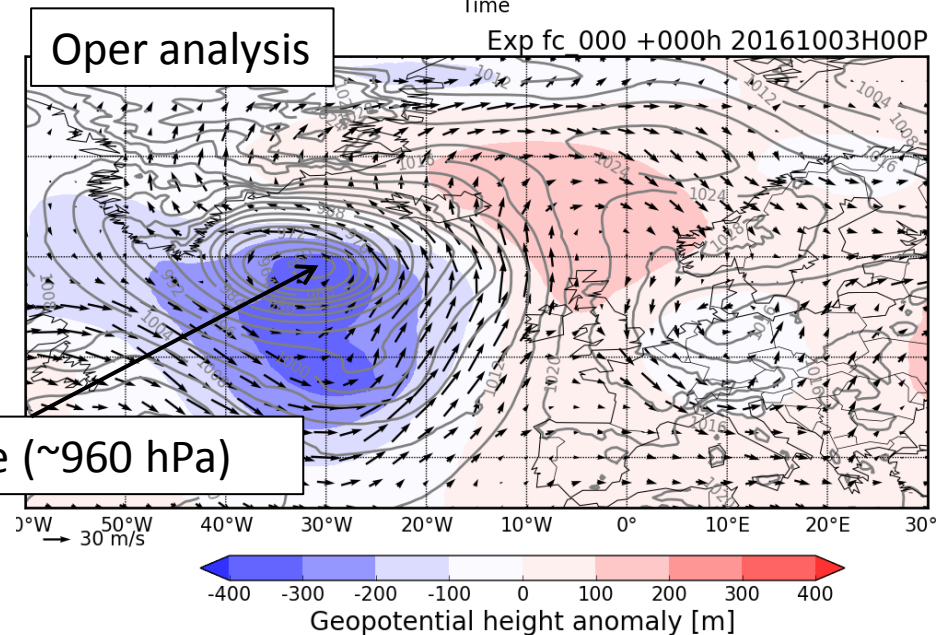
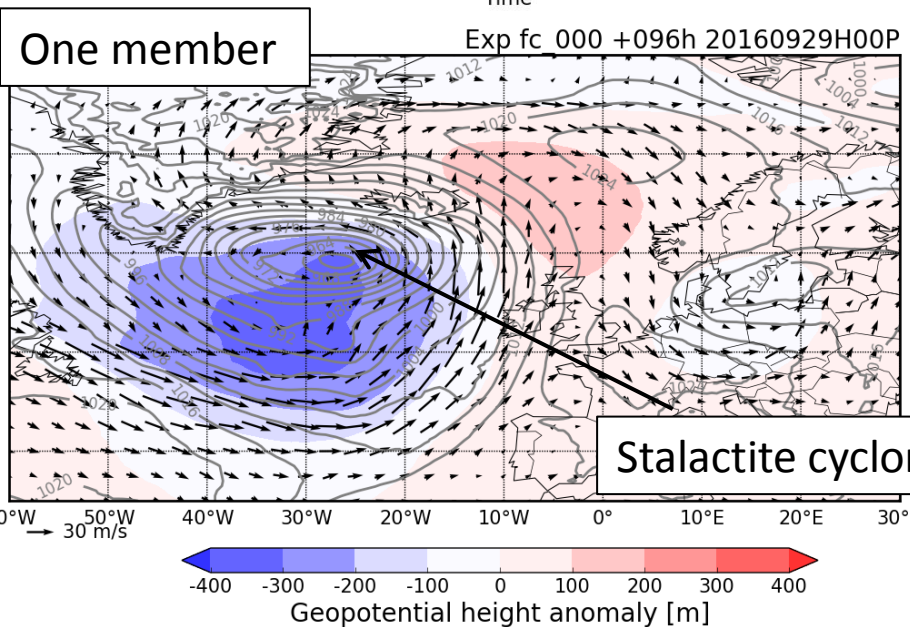
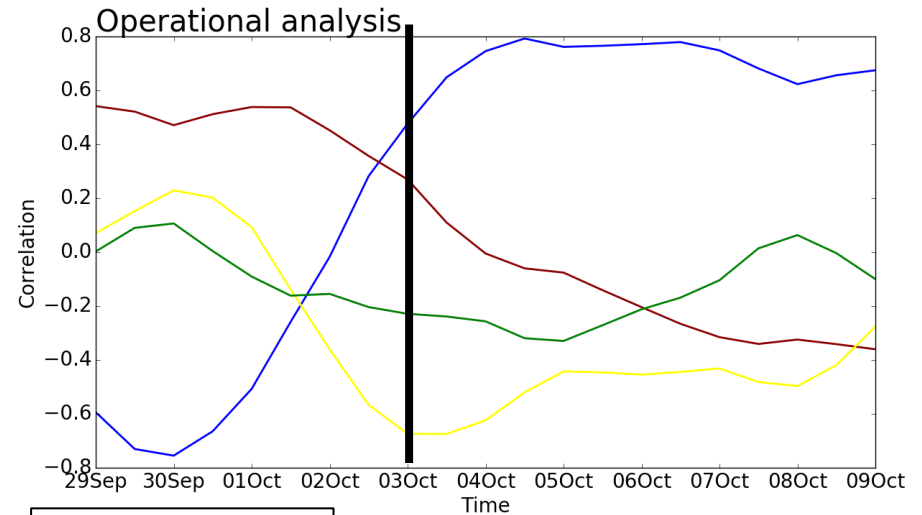
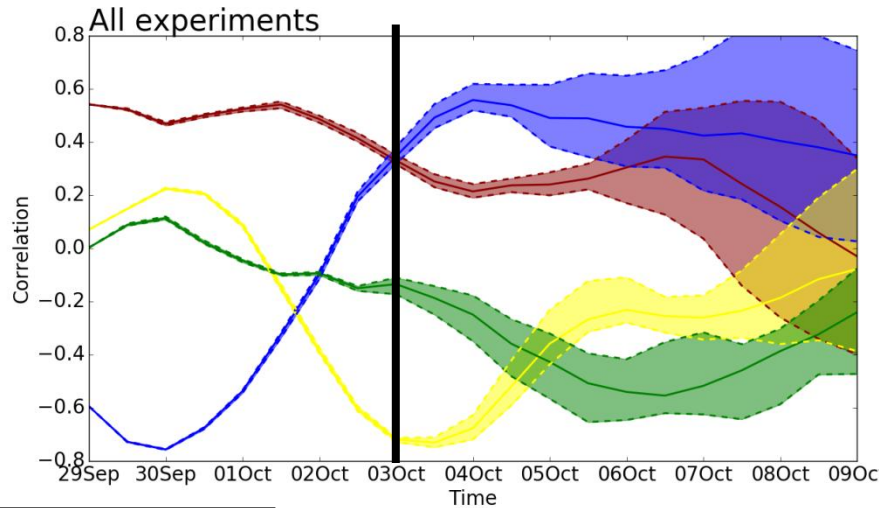


Stalactite cyclone (~960 hPa)

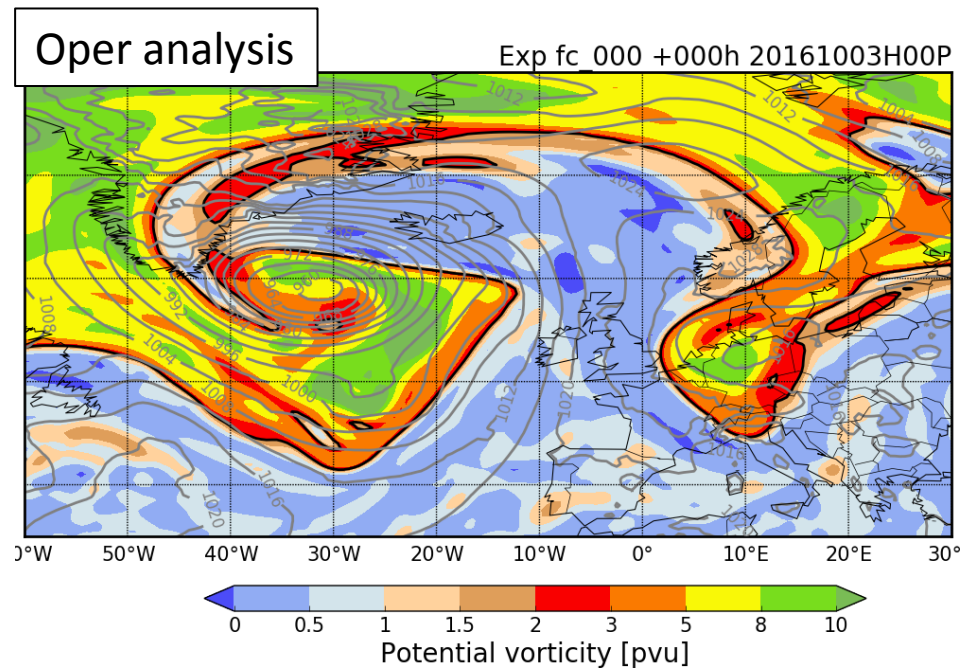
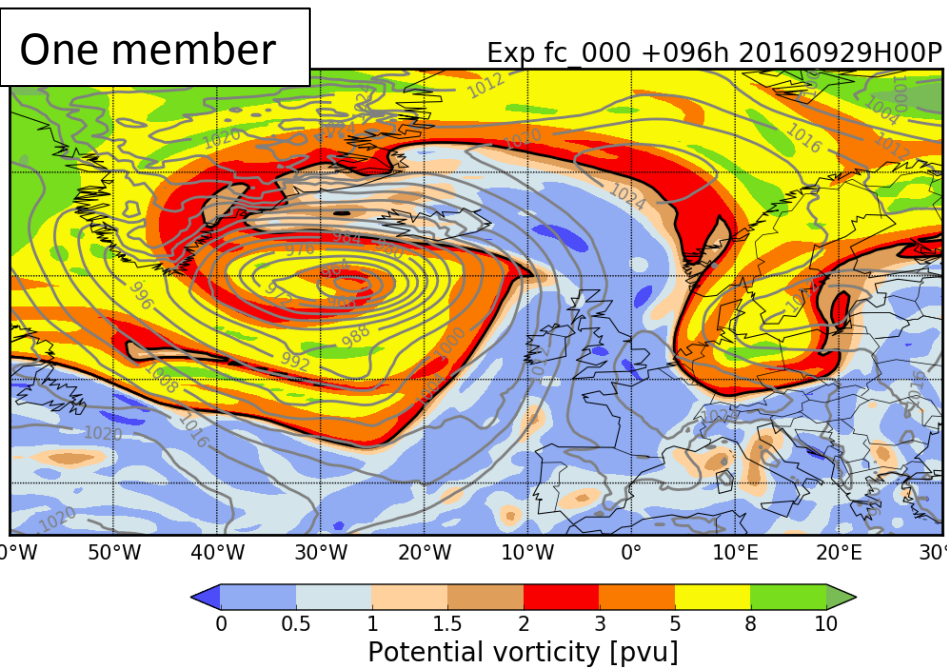
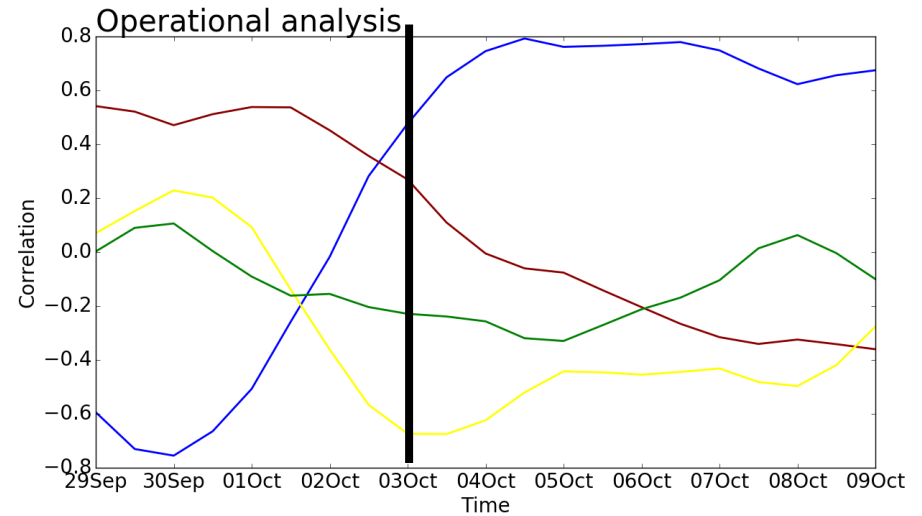
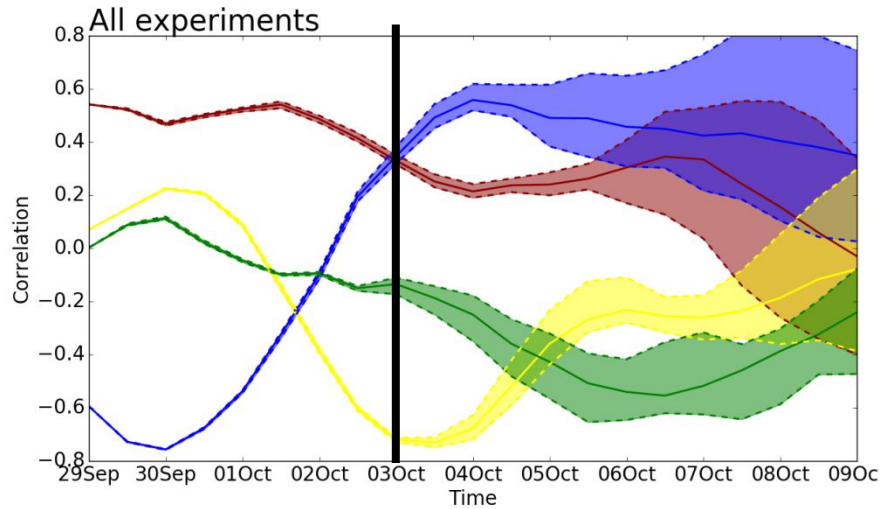
2 Oct 2016 (13h UTC)



Medium-range predictability of the Scandinavian blocking

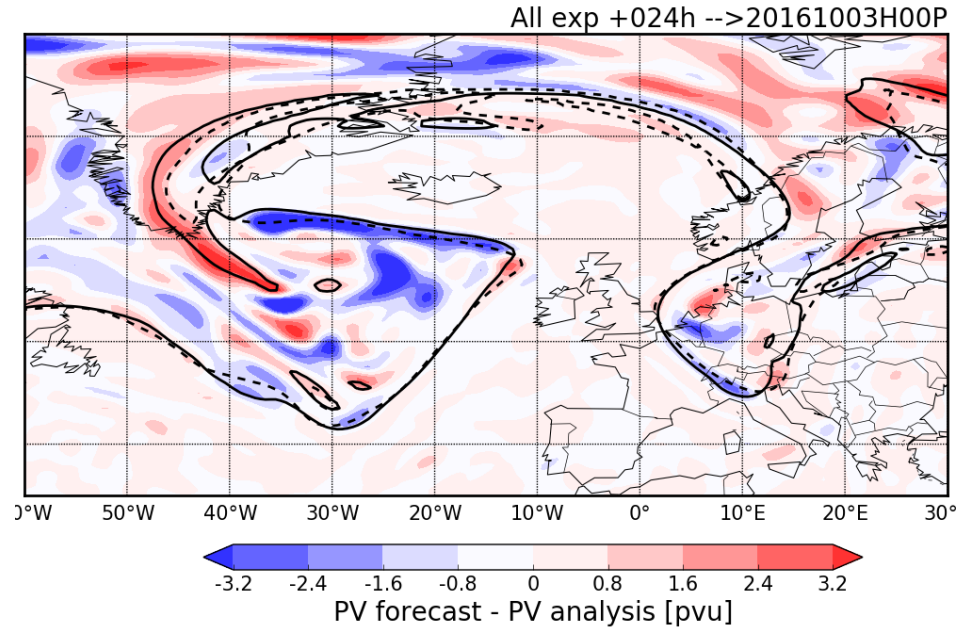


Medium-range predictability of the Scandinavian blocking



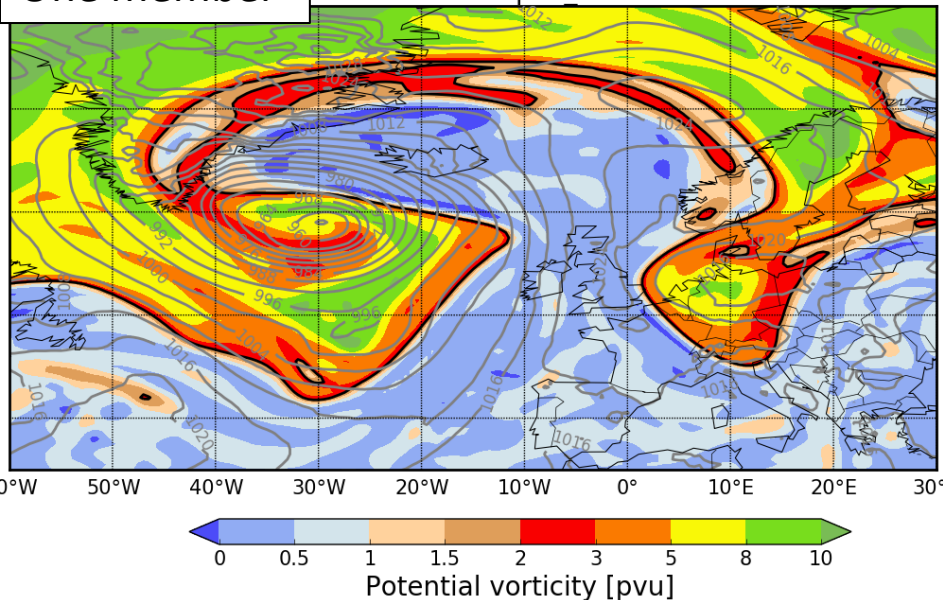
Short-term predictability of the stalactite cyclone.

24h-forecast (mean over all members)-analysis



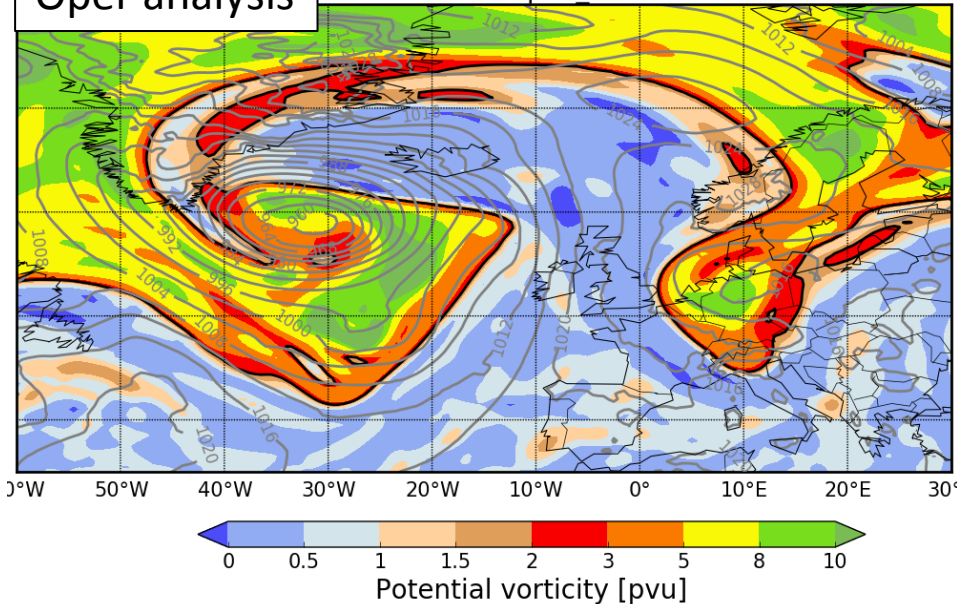
One member

Exp fc 000 +024h 20161002H00P



Oper analysis

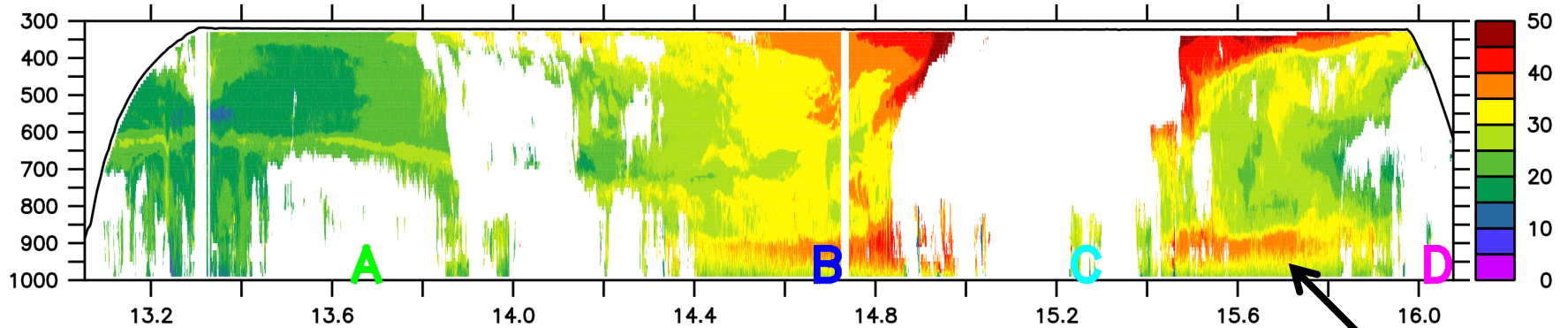
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Observations of the stalactite cyclone

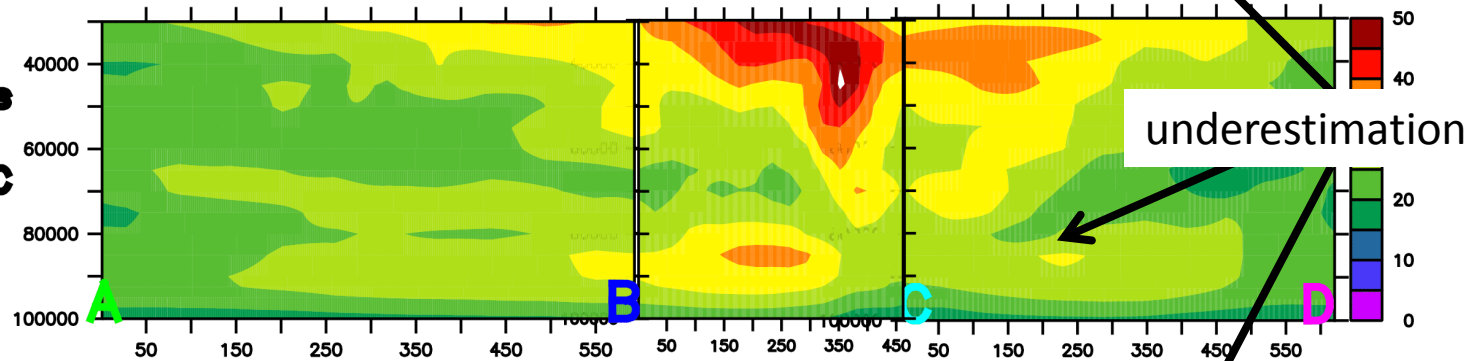
Wind speed (m/s)

RASTA obs



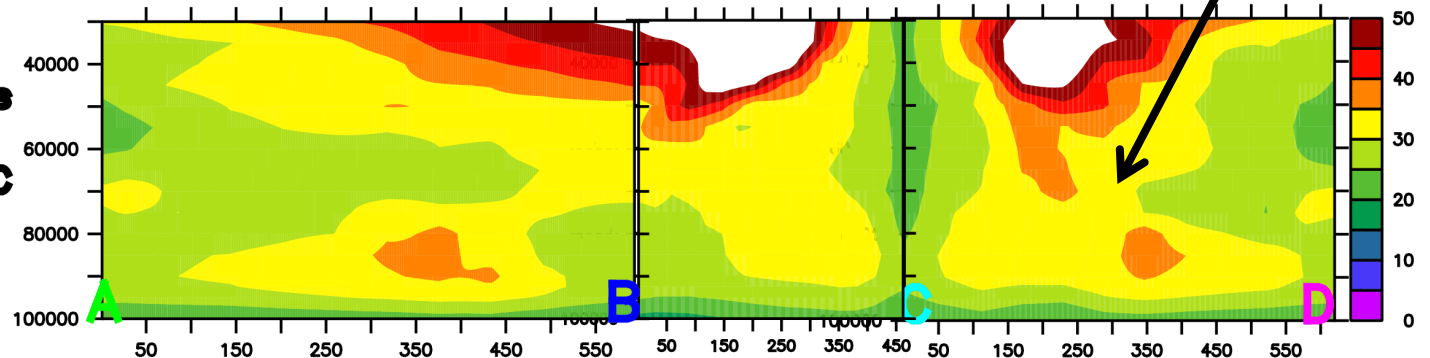
Oper analys

12UTC



Oper analys

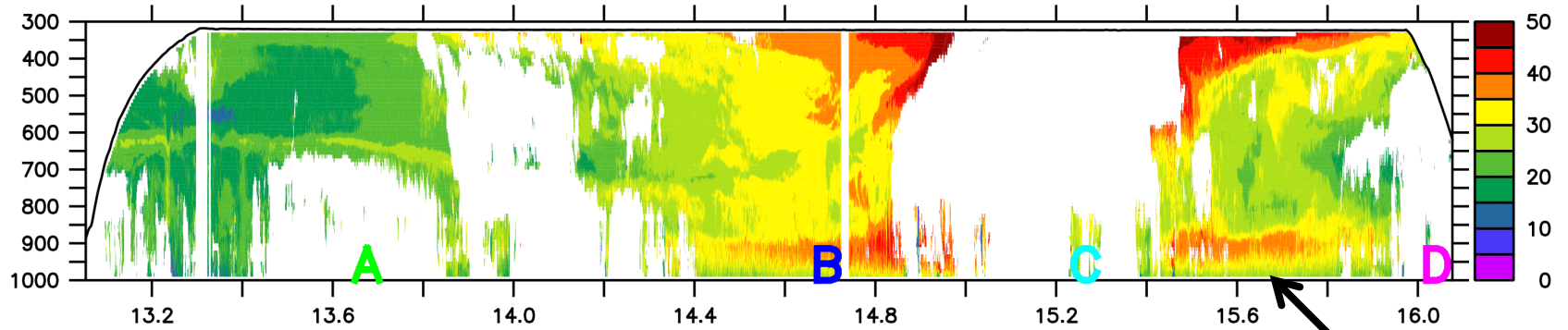
18UTC



Observations of the stalactite cyclone

Wind speed (m/s)

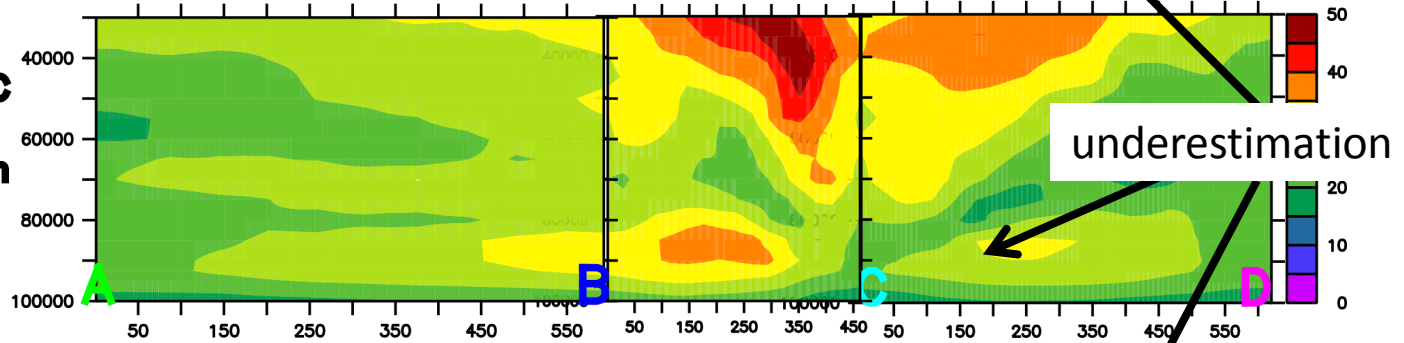
RASTA obs



Forecast start 00UTC

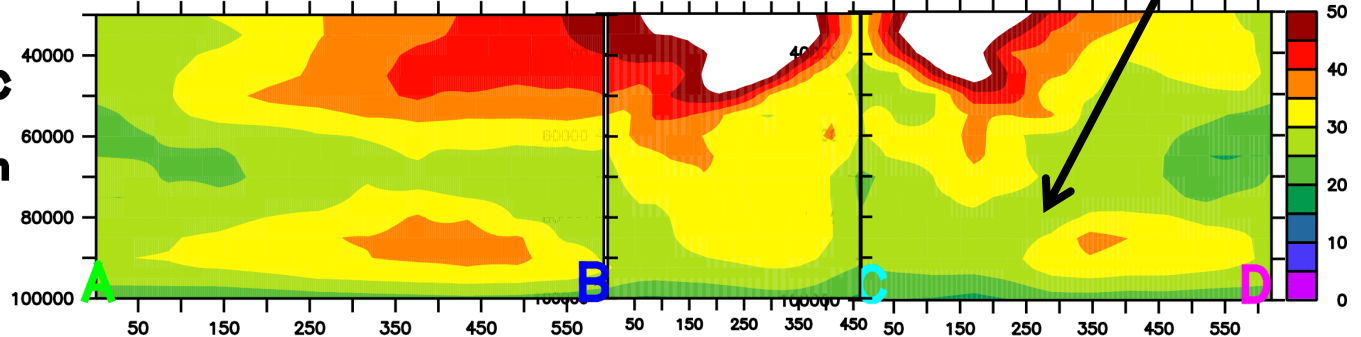
One member

+12h



Forecast start 00UTC

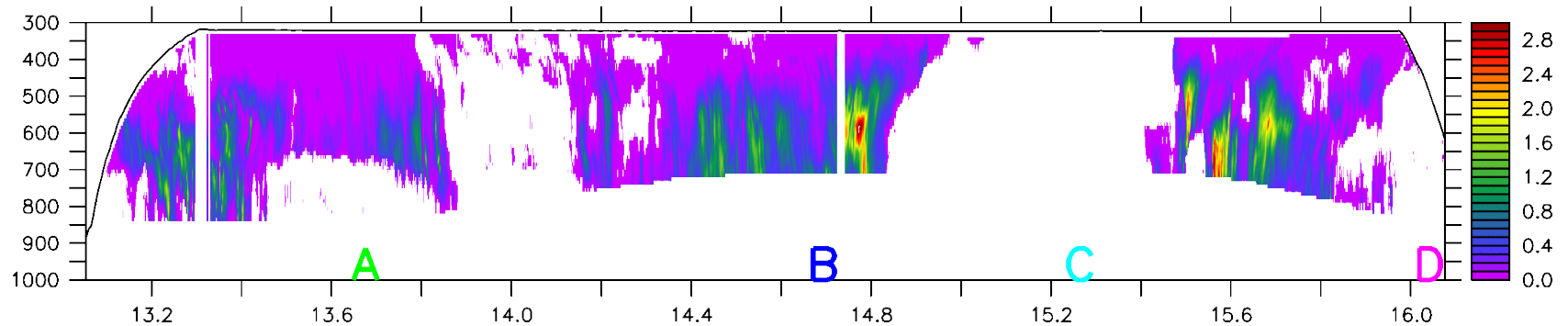
+18h



Observations of the stalactite cyclone

IWC (g/m³)

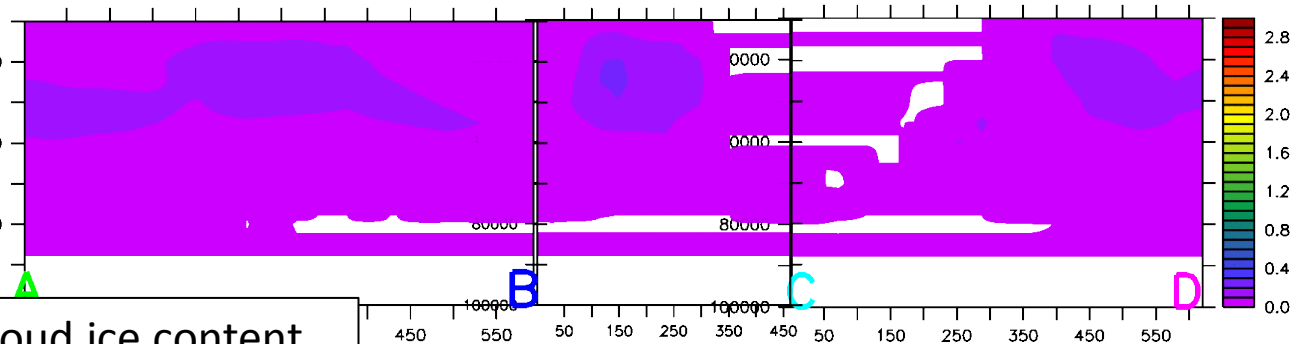
RASTA obs



Forecast start 00UTC

+12h

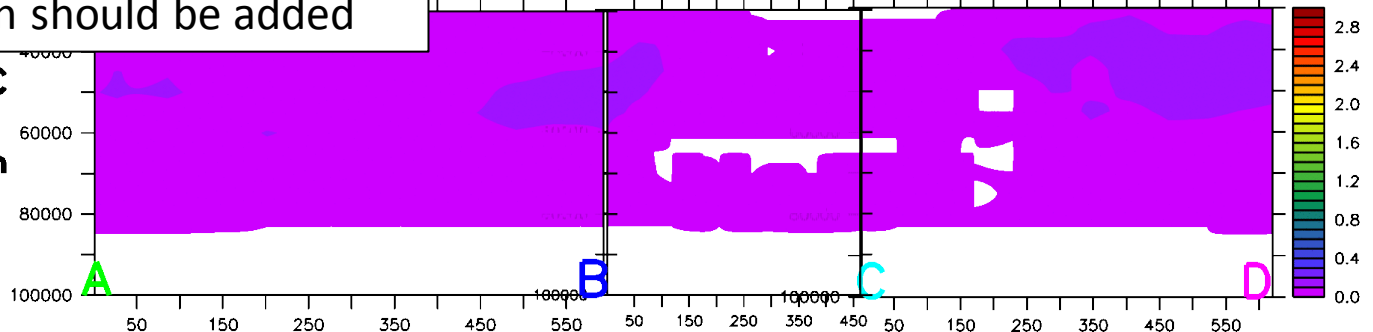
One member



Is only represented cloud ice content
Snow precipitation should be added

Forecast start 00UTC

+18h



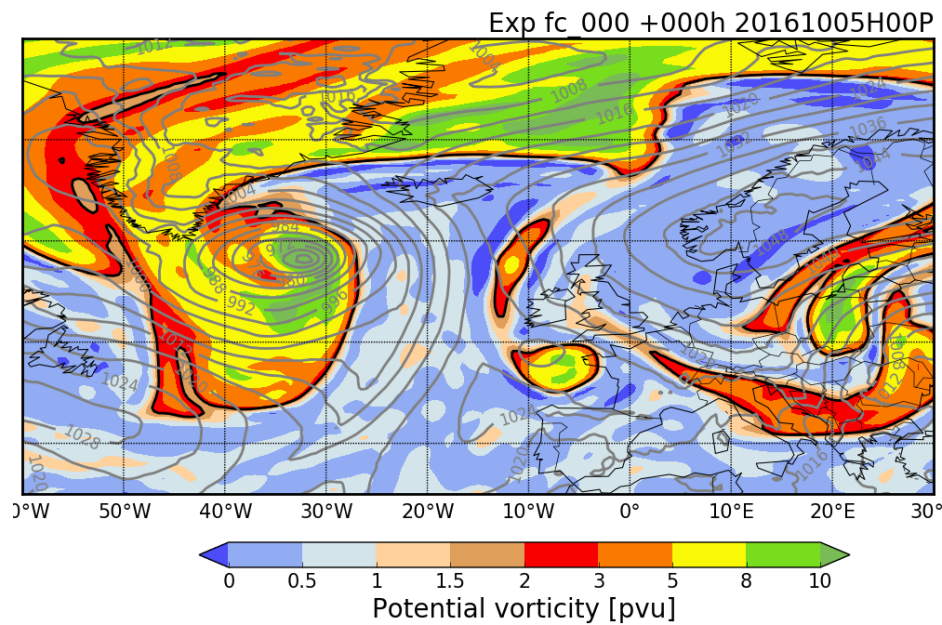
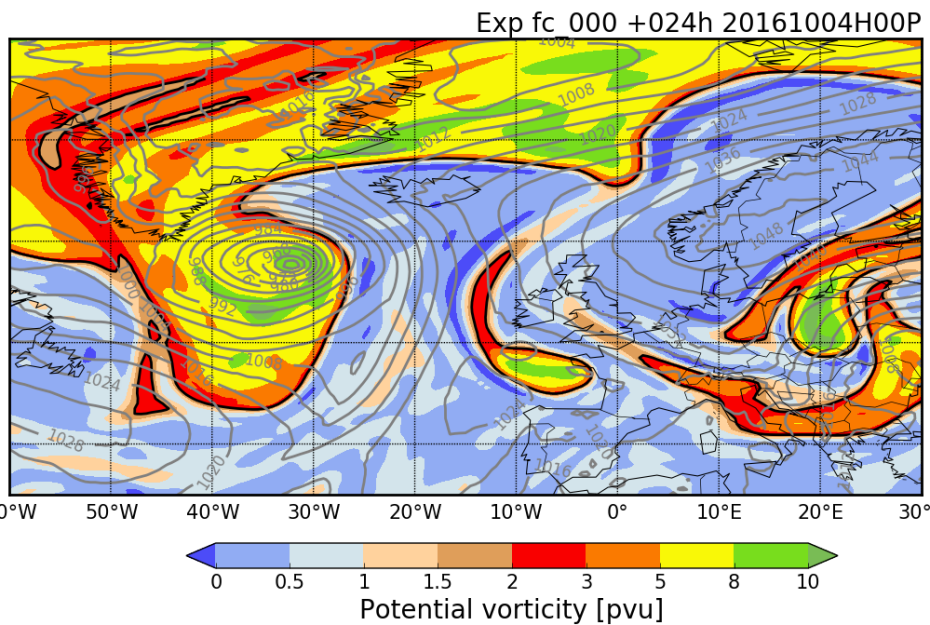
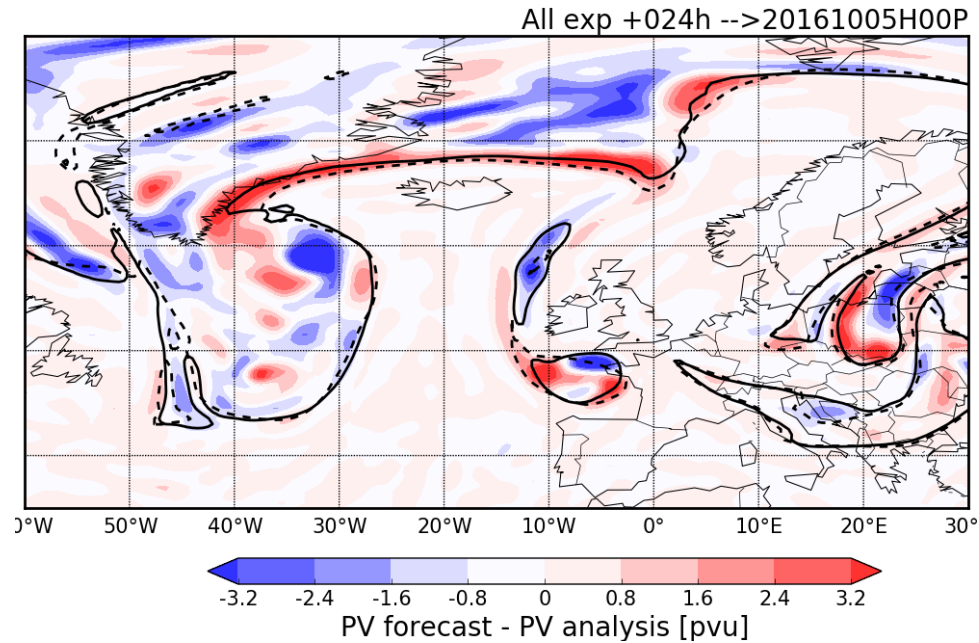
Preliminary conclusions

- Blocking formation and maintenance is not well forecasted
- Underestimation of northward intrusion of low PV air at medium range
- At short term, the forecasted PV gradient is weaker than in the analysis (but not because of underestimation of low PV air)
- Operational analysis and short-term forecasts underestimate intensity of the low-level winds in the stalactite cyclone.

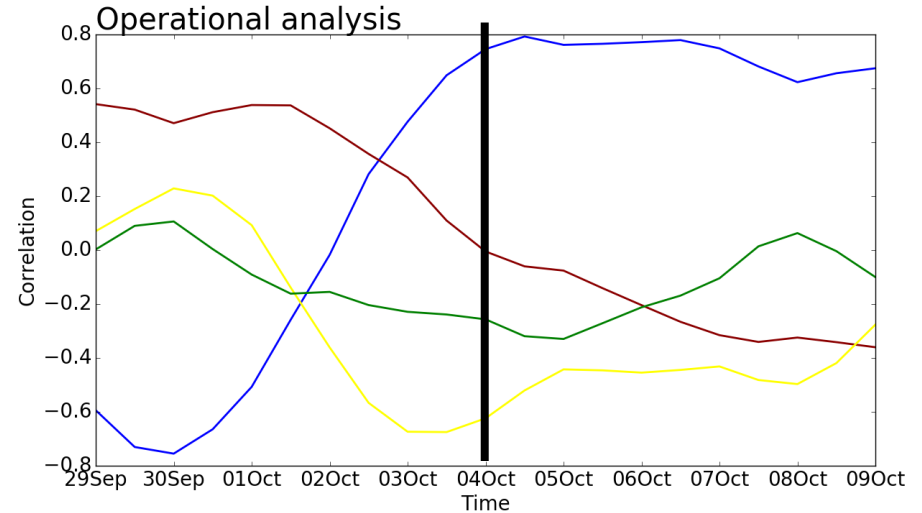
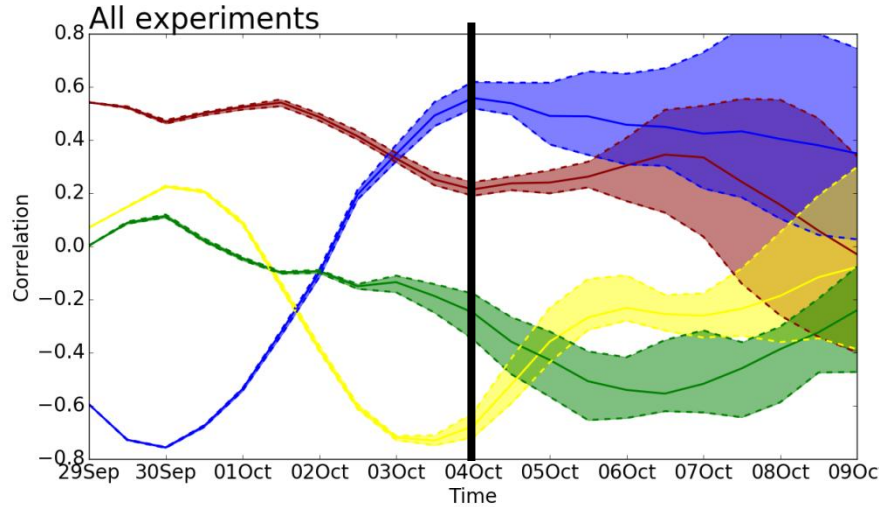
Next steps / difficulties to overcome

- Improving the diagnostics (hours closer to the flight, adding precipitation in CIWC, simulated radar, Lagrangian trajectories)
- Do the same analysis with new set of physics
- Weak differences among members. No pert° in large-scale microphysics.
- Model tends to mix/ diffuse PV too rapidly.

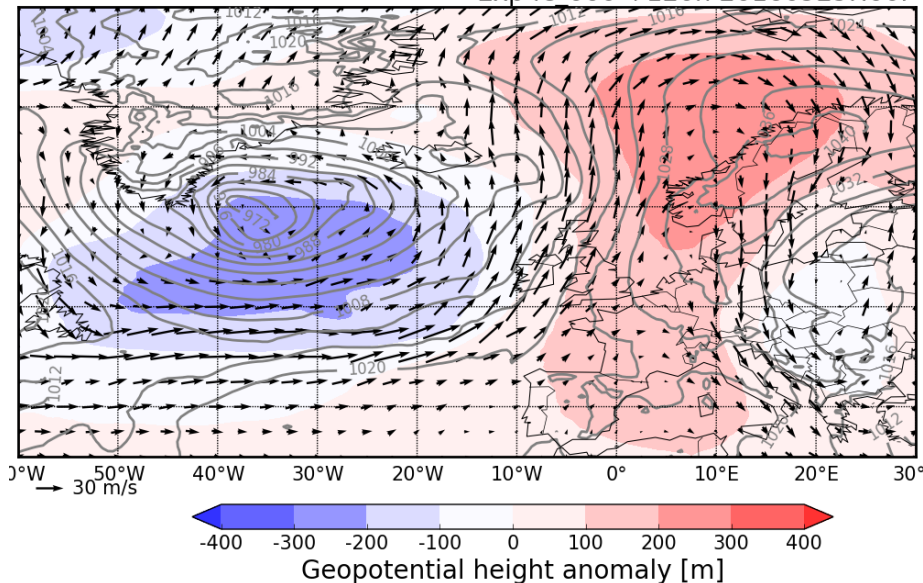
Short-term predictability of the frontal-wave cyclone.



Medium-range predictability of the Scandinavian blocking



Exp fc 000 +120h 20160929H00P



Exp fc 000 +000h 20161004H00P

