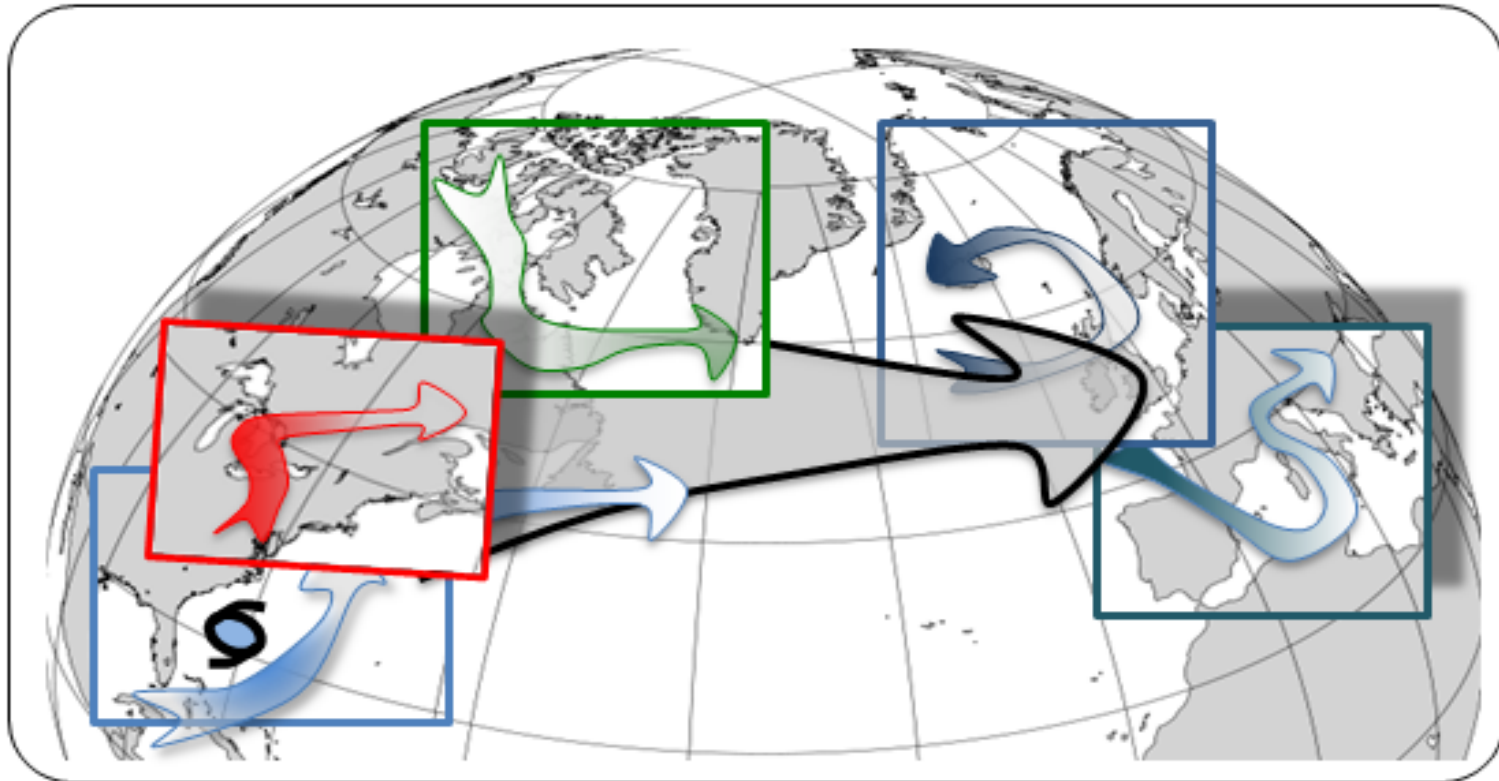


# NAWDEX – Weather Discussion

22 September 2016, Keflavik 16 UTC



# NAWDEX – Weather Discussion

22 September 2016, Keflavik 16 UTC

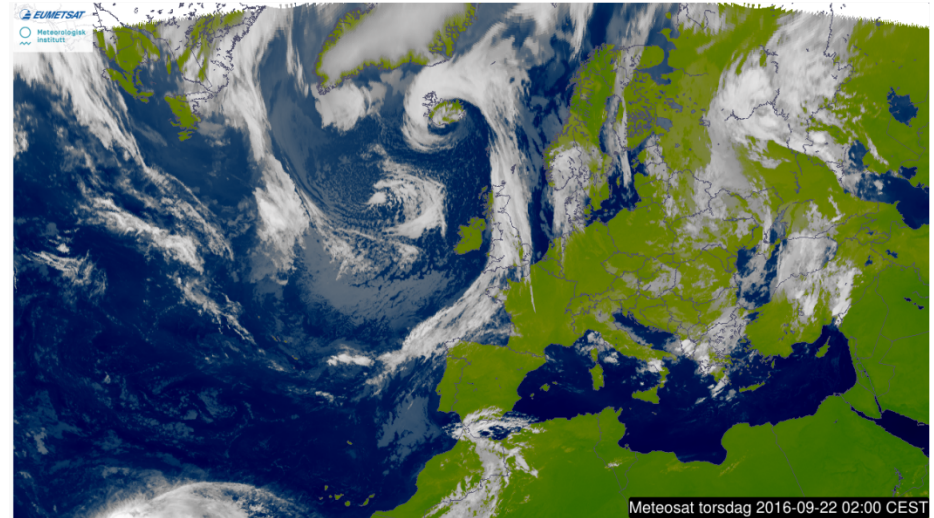
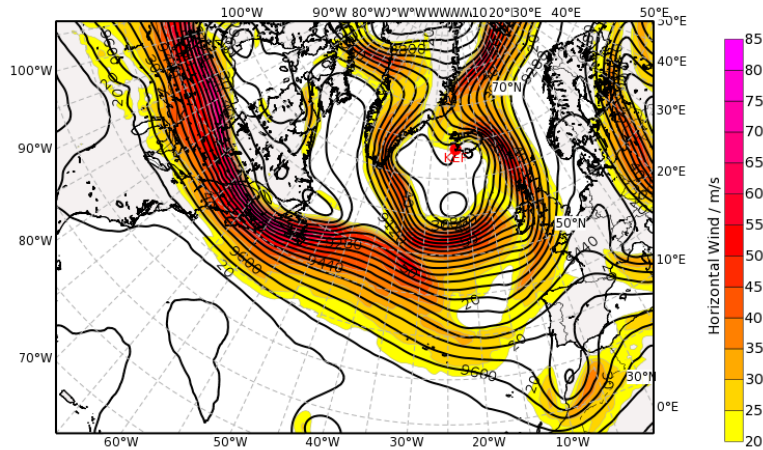
- Current situation & evolution until Wednesday 28 September
- **Mission Friday 23 September**
  - WCB forecasts and timing
  - Flight plans
- Outlook possible Missions **Mon-Wed 26-28 September:**  
**scenarios for ET Karl and downstream cyclone**

# Synoptic overview

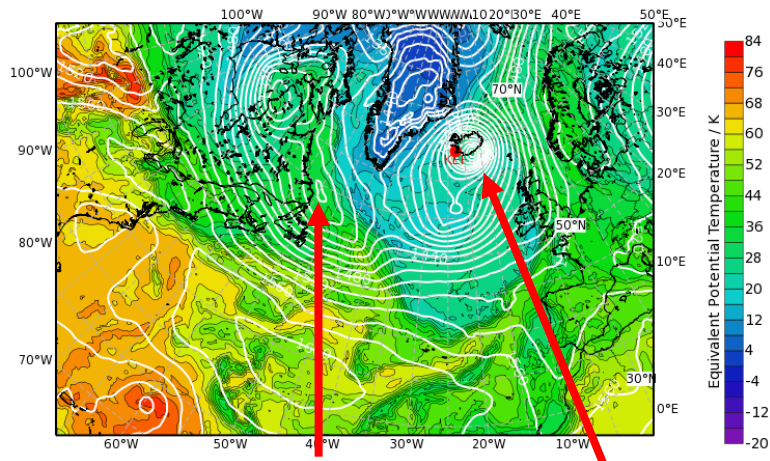
# Analysis – 22 Sep 2016, 00 UTC

Z300, SAT  
THE850, RH700

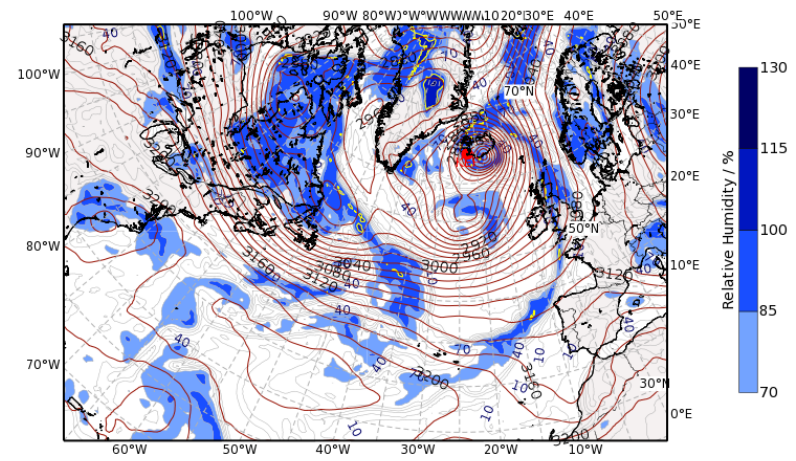
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Thu, 22 Sep 2016, 00 UTC (step 000 h from Thu, 22 Sep 2016, 00 UTC)



Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Thu, 22 Sep 2016, 00 UTC (step 000 h from Thu, 22 Sep 2016, 00 UTC)



Relative Humidity (%) and Z (m) at 700 hPa  
Valid: Thu, 22 Sep 2016, 00 UTC (step 000 h from Thu, 22 Sep 2016, 00 UTC)



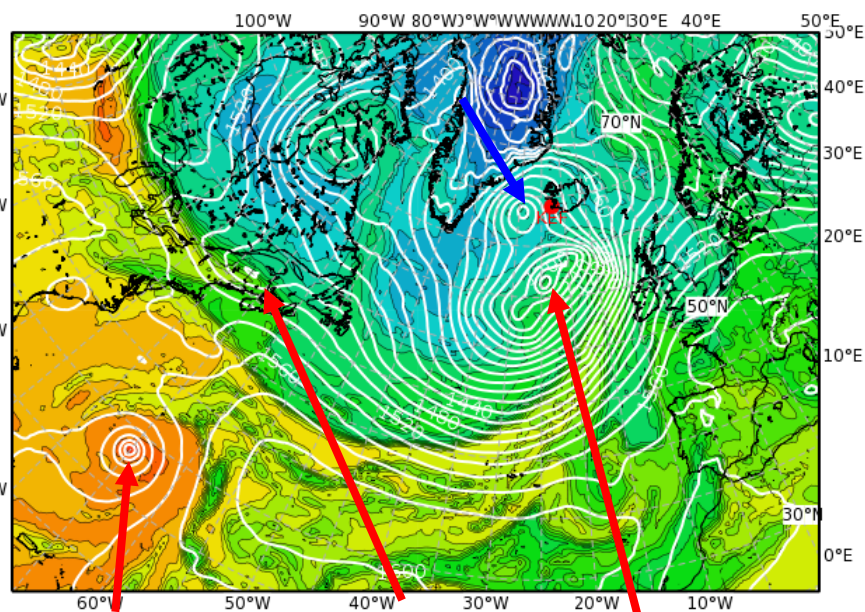
**“Friday” cyclone Ursula**



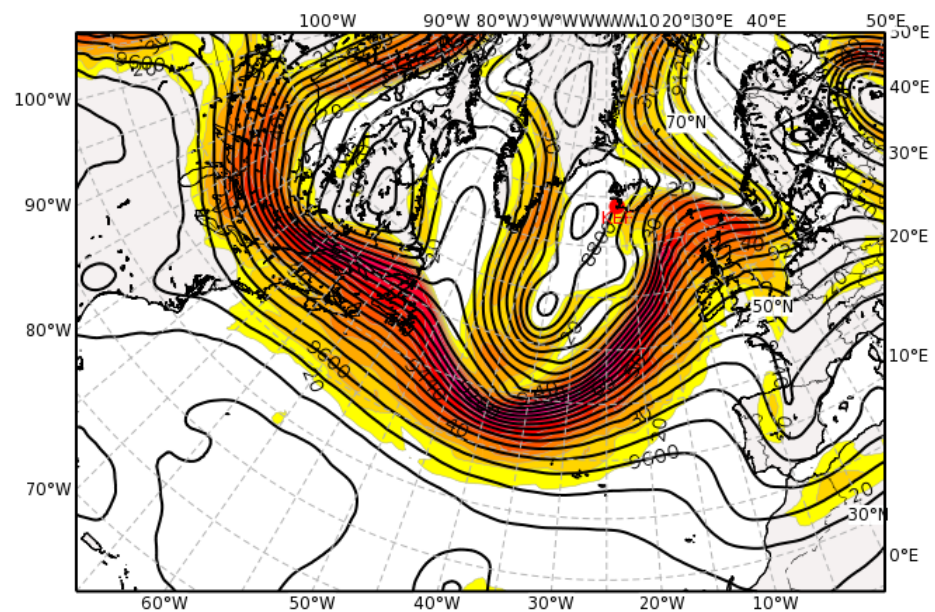
# Forecast for Fri, 23 Sep 2016 12 UTC

THE850, Z300 BT22/00Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Fri, 23 Sep 2016, 12 UTC (step 036 h from Thu, 22 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Fri, 23 Sep 2016, 12 UTC (step 036 h from Thu, 22 Sep 2016, 00 UTC)



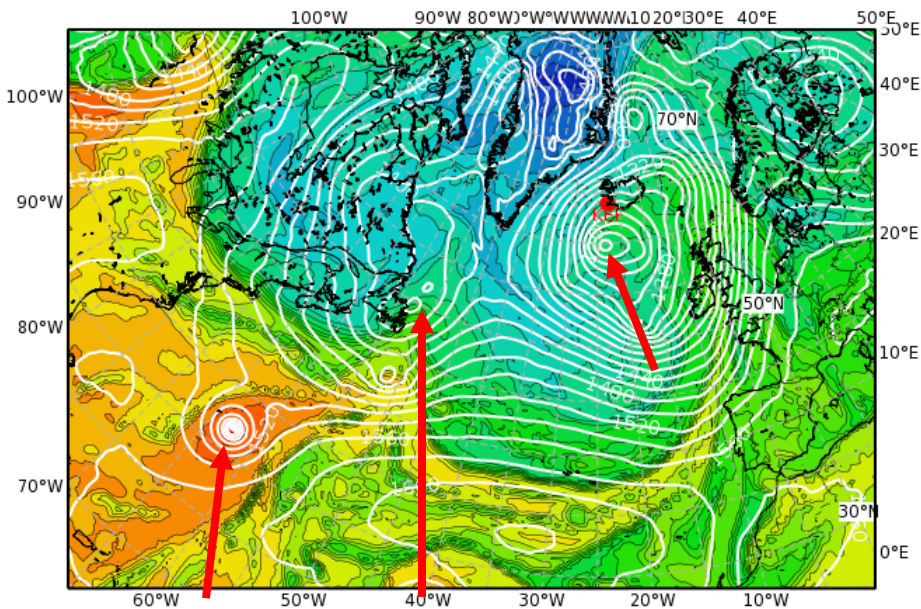
TC Karl DS cyclone

“Friday” cyclone

# Forecast for Sat, 24 Sep 2016 12 UTC

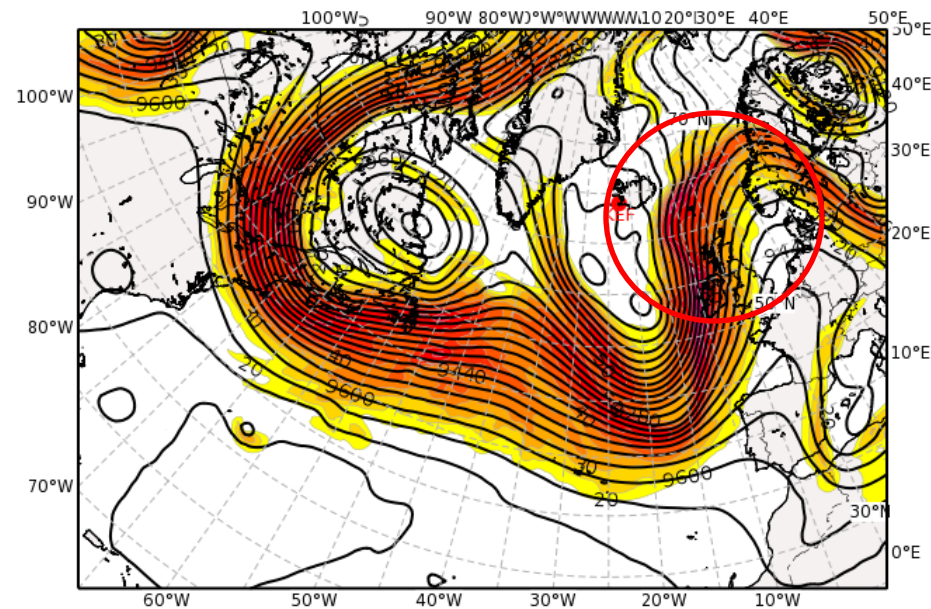
THE850, Z300 BT22/00Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Sat, 24 Sep 2016, 12 UTC (step 060 h from Thu, 22 Sep 2016, 00 UTC)



**TC Karl DS cyclone**

Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Sat, 24 Sep 2016, 12 UTC (step 060 h from Thu, 22 Sep 2016, 00 UTC)



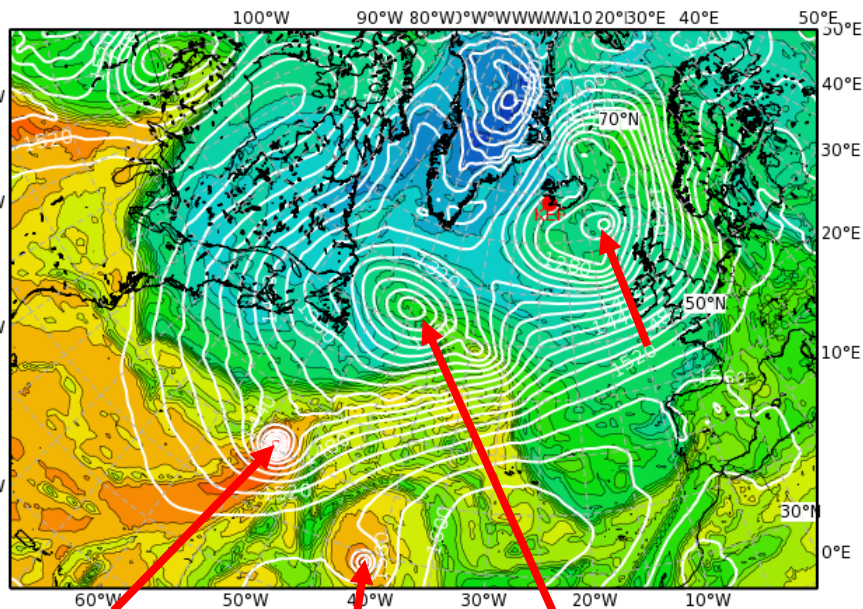
- Heavy precipitation & windy conditions in UK and Ireland



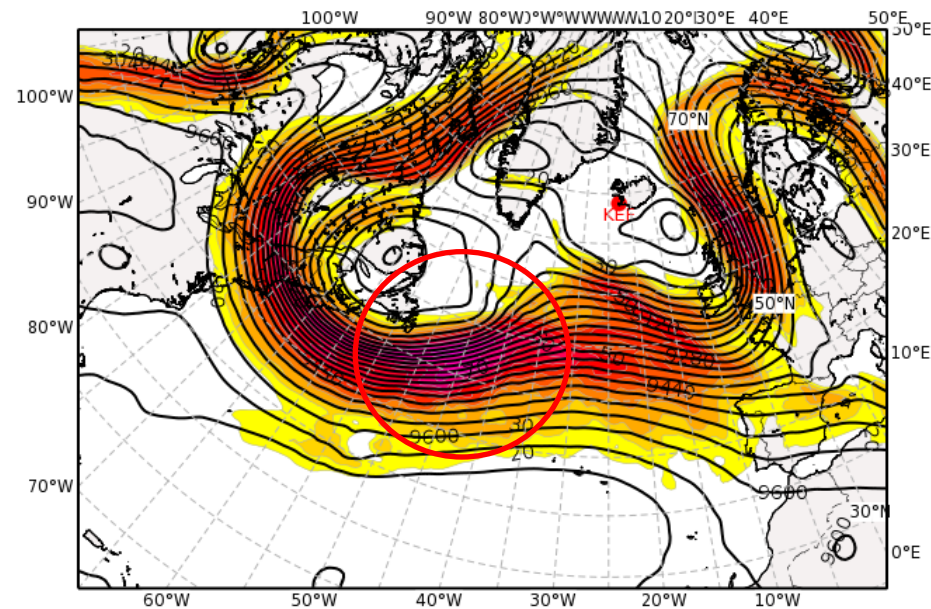
# Forecast for Sun, 25 Sep 2016 12 UTC

THE850, Z300 BT22/00Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Sun, 25 Sep 2016, 12 UTC (step 084 h from Thu, 22 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Sun, 25 Sep 2016, 12 UTC (step 084 h from Thu, 22 Sep 2016, 00 UTC)



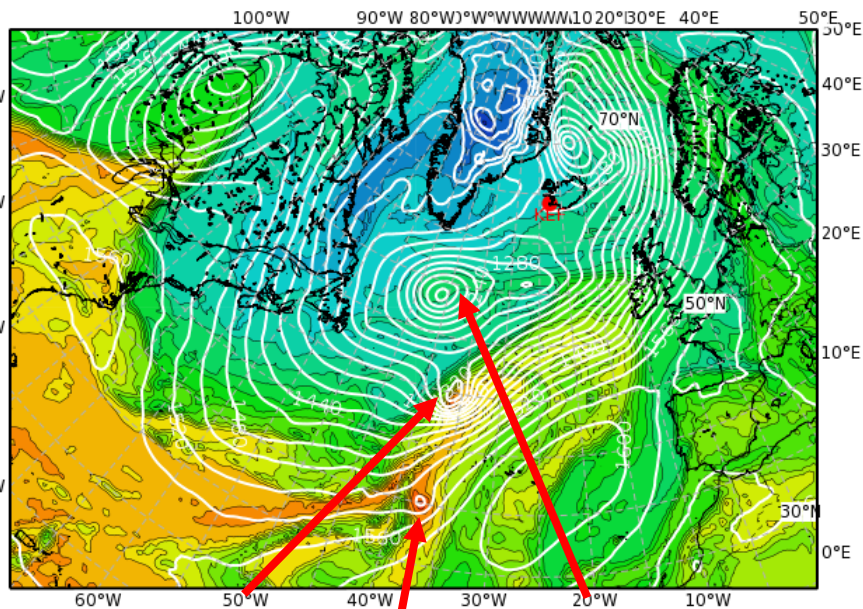
**TC Karl**  
**TC Lisa**  
**DS cyclone**

- Heavy precipitation & windy conditions in UK and Ireland

# Forecast for Mon, 26 Sep 2016 12 UTC

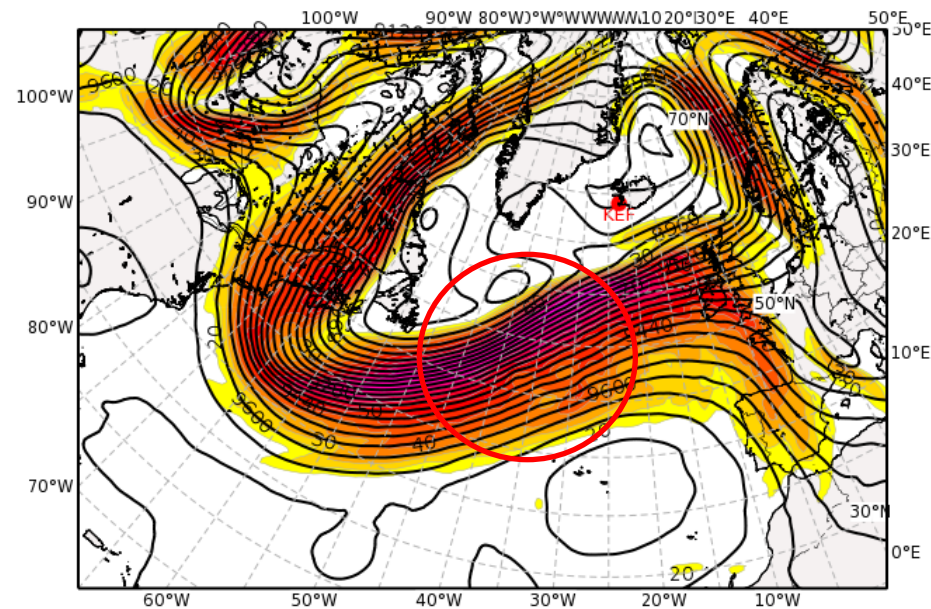
THE850, Z300 BT22/00Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Mon, 26 Sep 2016, 12 UTC (step 108 h from Thu, 22 Sep 2016, 00 UTC)



**TC Karl**  
**TC Lisa**  
**DS cyclone**

Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Mon, 26 Sep 2016, 12 UTC (step 108 h from Thu, 22 Sep 2016, 00 UTC)



- Heavy precipitation & windy conditions in UK and Ireland

# Friday mission: Meteorology

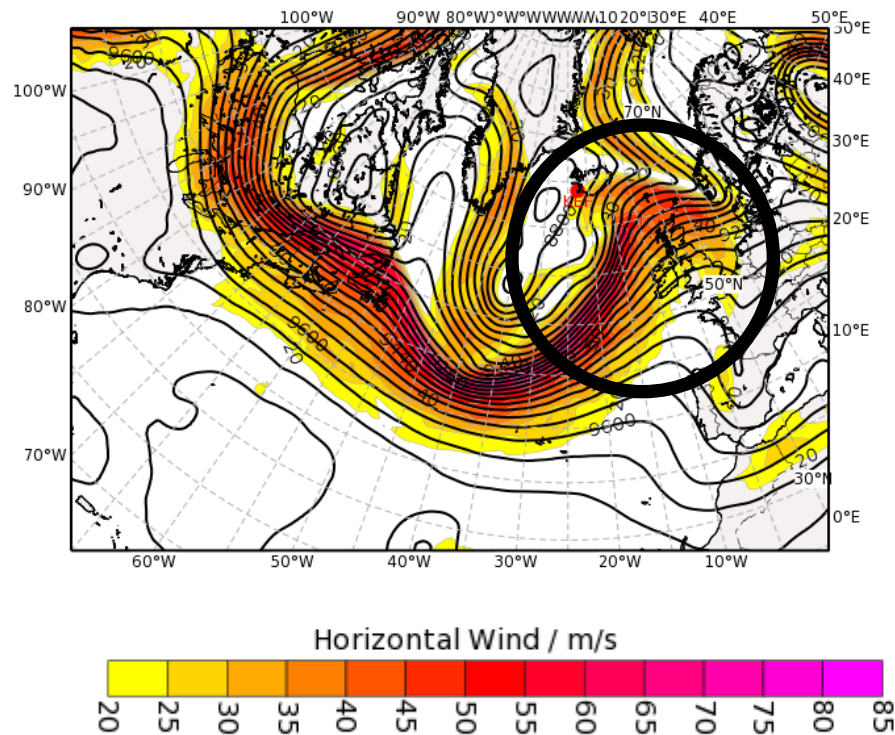


## Mission on Friday, 23 Sep 2016 12 UTC

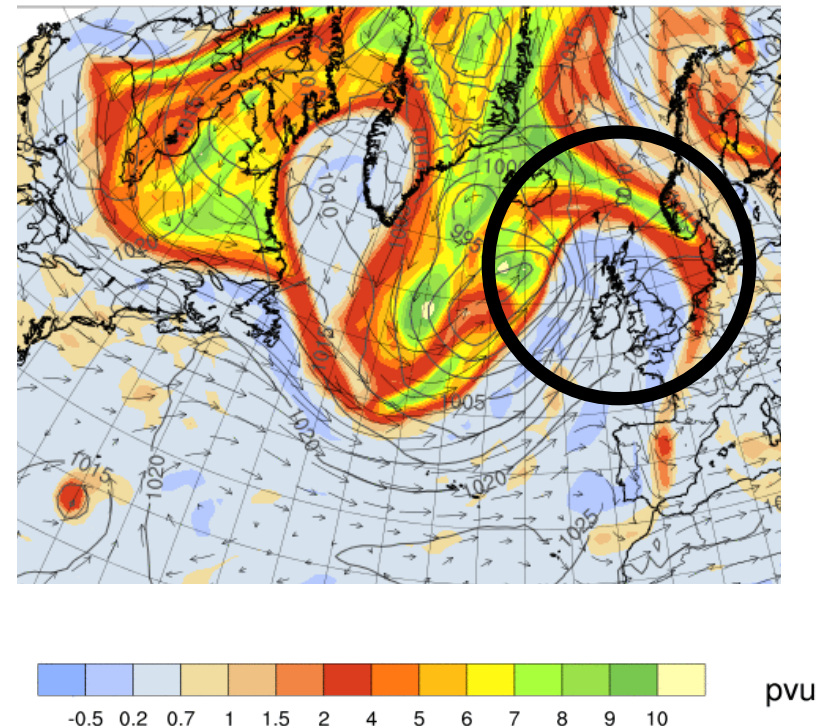
**BT22/00Z**

## Geopotential height 300hPa and wind speed

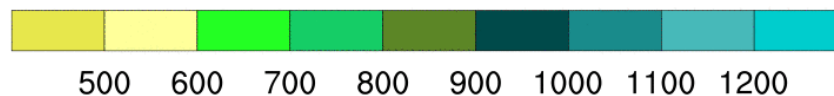
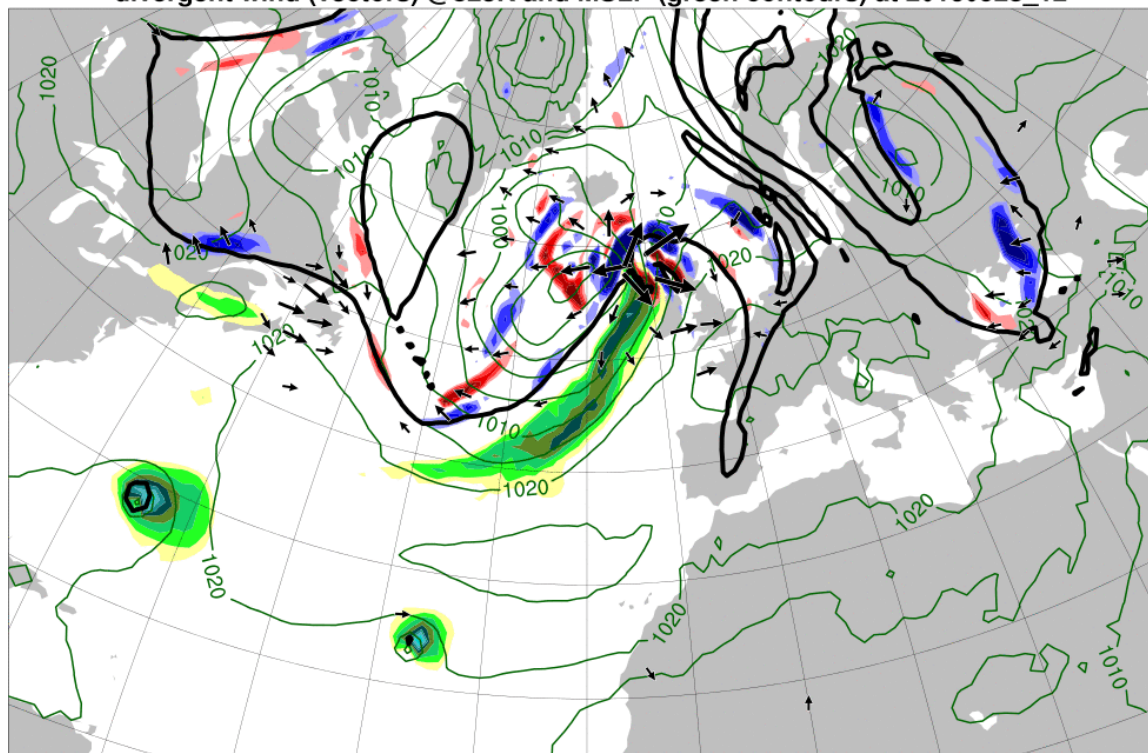
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Fri, 23 Sep 2016, 12 UTC (step 036 h from Thu, 22 Sep 2016, 00 UTC)



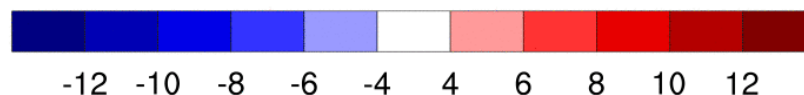
**PV@320K at 20160923\_12**



2 PVU (black contour), PV advection through divergent wind (shading),  
divergent wind (vectors) @325K and MSLP (green contours) at 20160923\_12



kg/(m s)

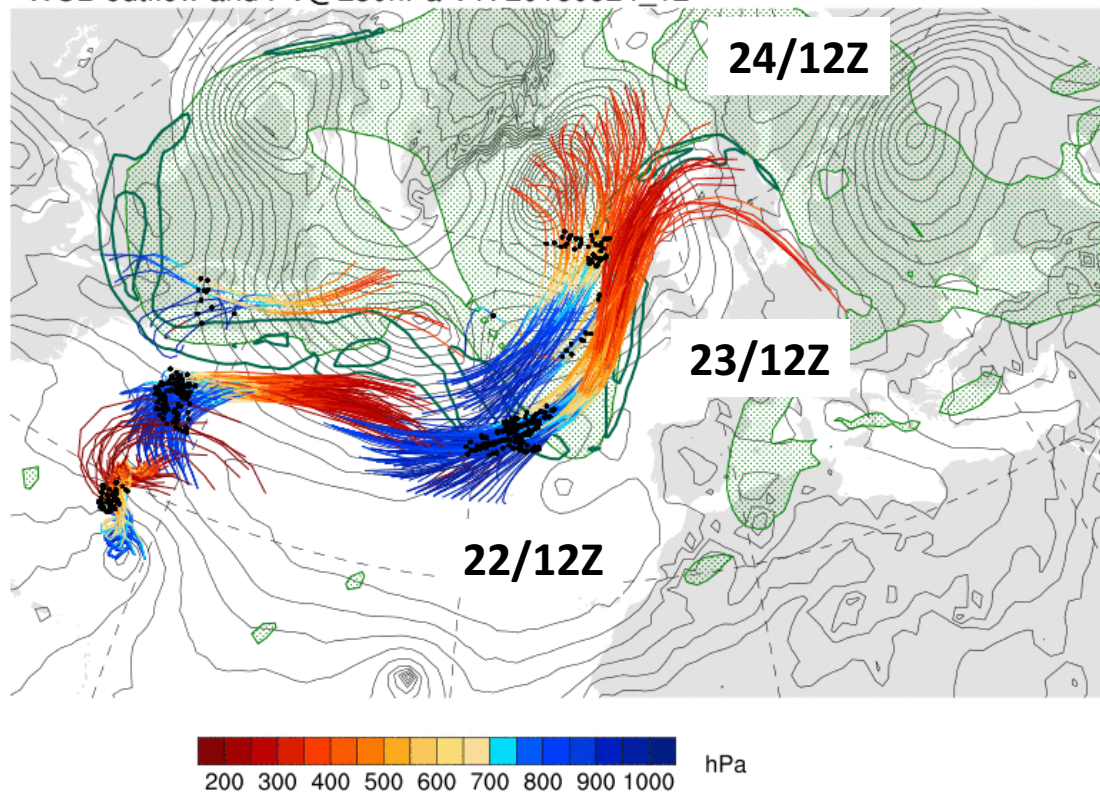


PVU/d

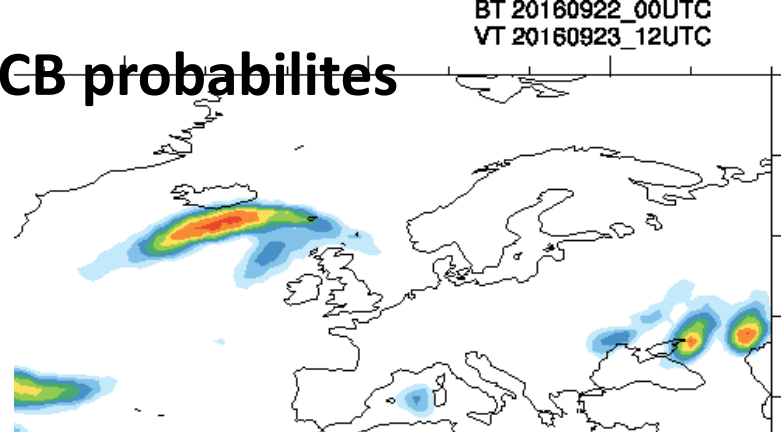
# Mission on Friday, 23 Sep 2016

BT22/00Z

Trajectory start and SLP VT: 20160922\_12  
WCB outflow and PV@250hPa VT: 20160924\_12



## WCB probabilities



WCB outflow 23/12Z

BT 20160922\_00UTC  
VT 20160923\_12UTC

WCB ascent 23/12Z

VT 20160923\_12UTC

WCB inflow 23/12Z



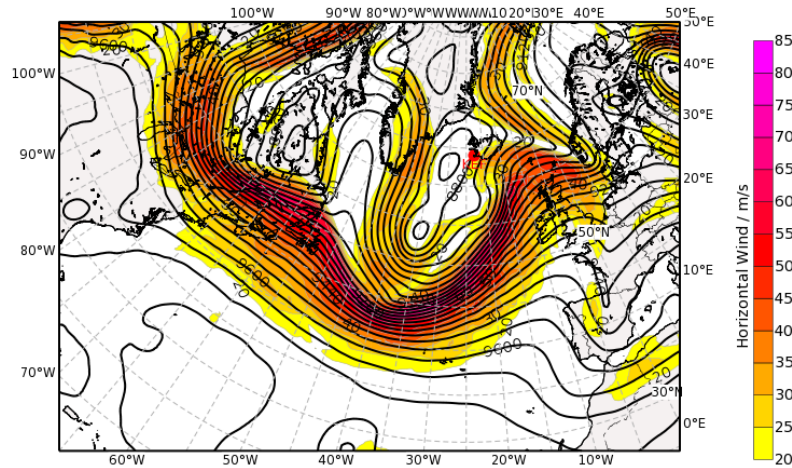
# Forecast for Fri, 23 Sep 2016 12 UTC

Z300, high  
mid, low clouds

**BT22/00Z**

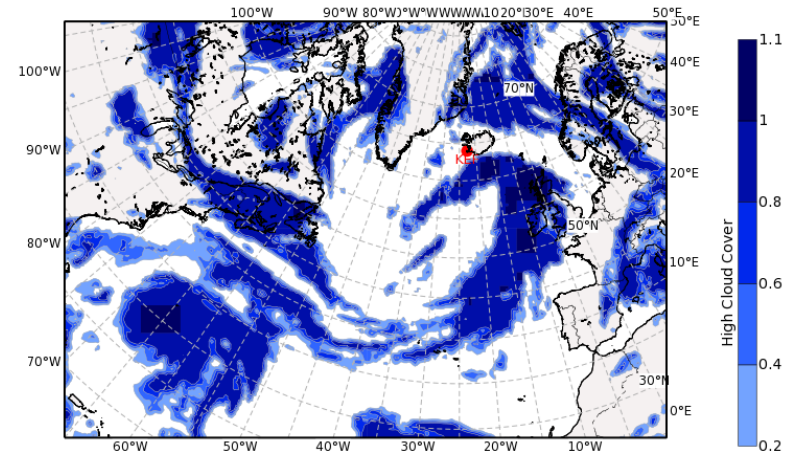
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa

Valid: Fri, 23 Sep 2016, 12 UTC (step 036 h from Thu, 22 Sep 2016, 00 UTC)



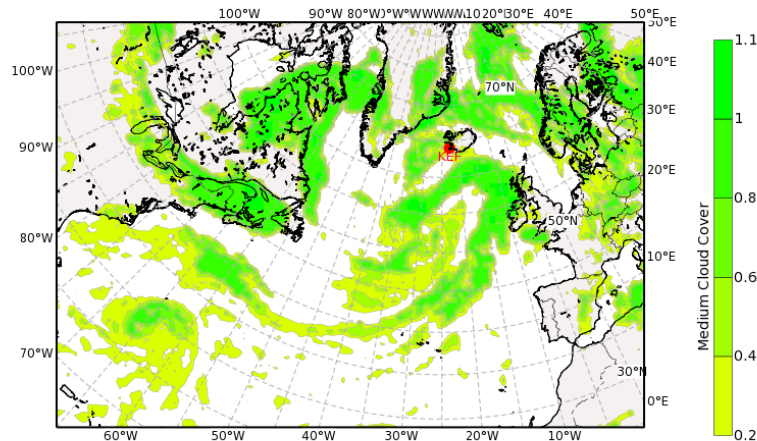
High Cloud Cover

Valid: Fri, 23 Sep 2016, 12 UTC (step 036 h from Thu, 22 Sep 2016, 00 UTC)



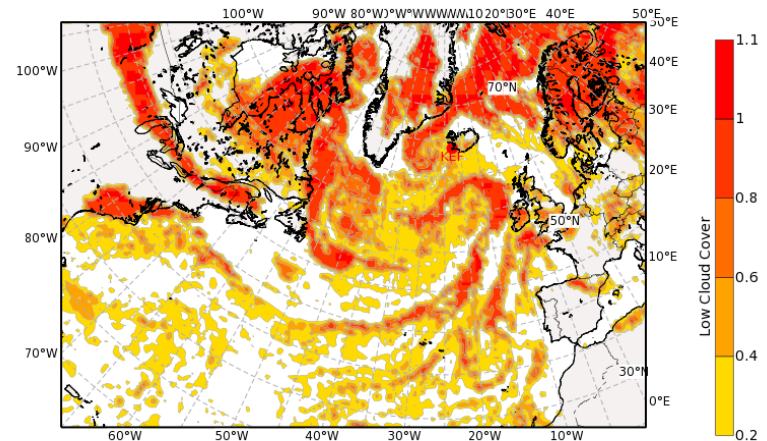
Medium Cloud Cover

Valid: Fri, 23 Sep 2016, 12 UTC (step 036 h from Thu, 22 Sep 2016, 00 UTC)

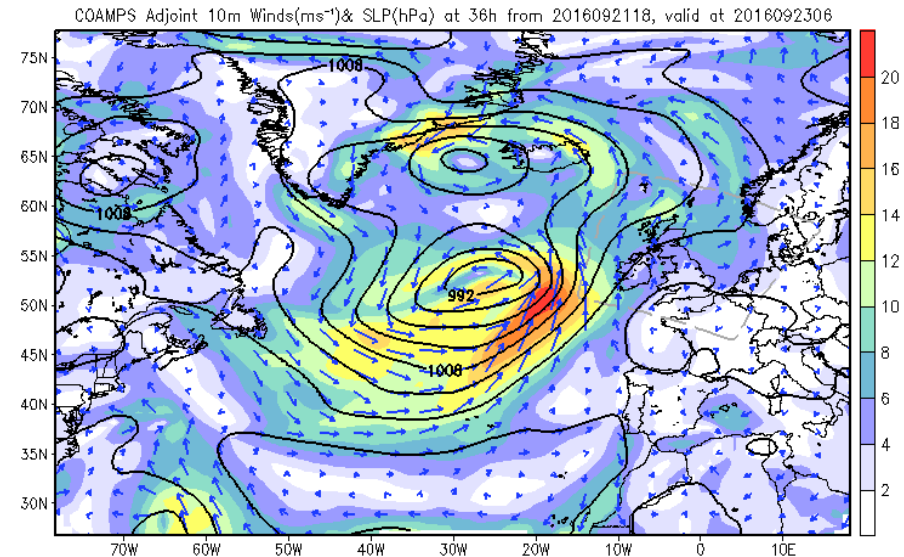
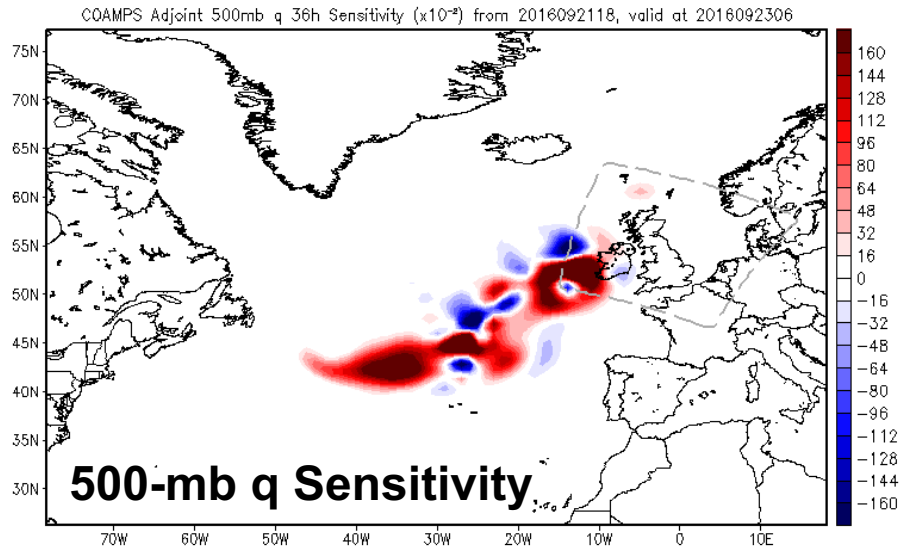


Low Cloud Cover

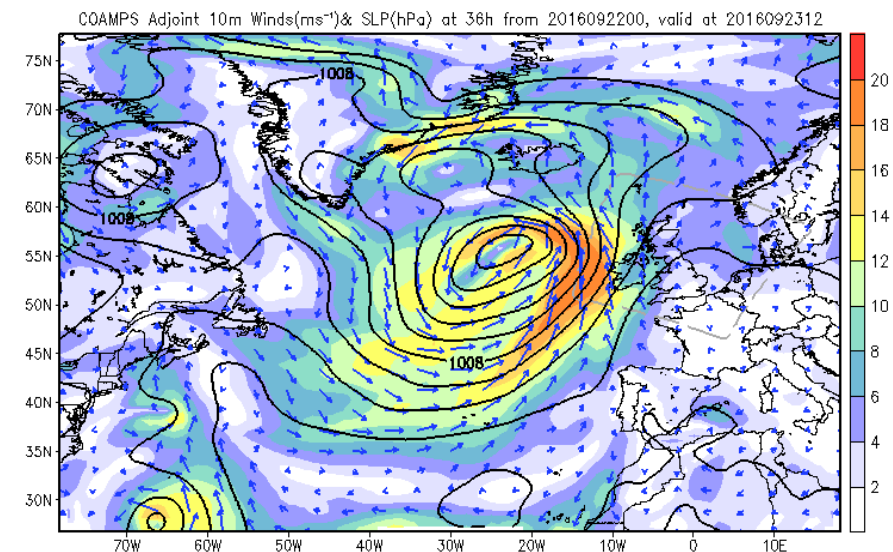
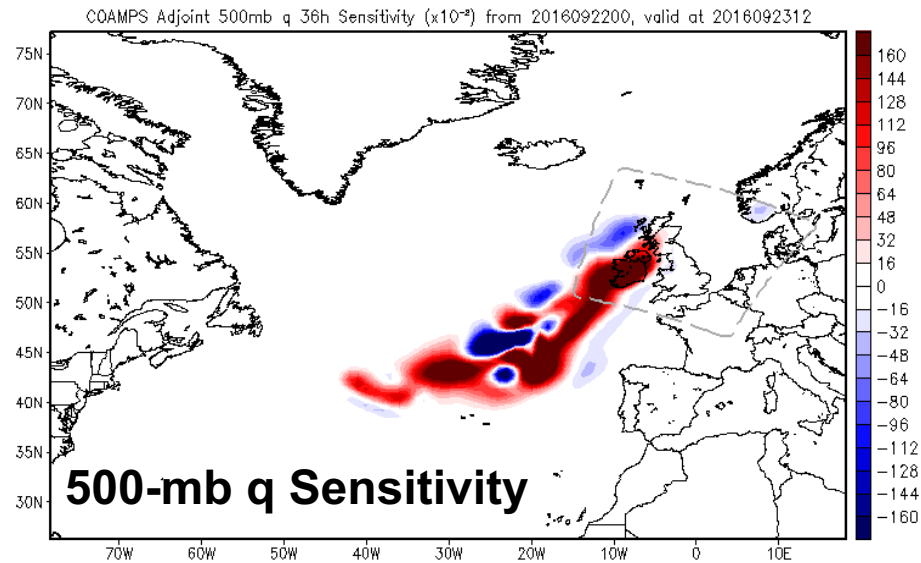
Valid: Fri, 23 Sep 2016, 12 UTC (step 036 h from Thu, 22 Sep 2016, 00 UTC)



# COAMPS Sensitivity (24h) Valid 06Z 23 Sep (Box over UK)



# COAMPS Sensitivity (24h) Valid 12Z 23 Sep (Box over UK)



20

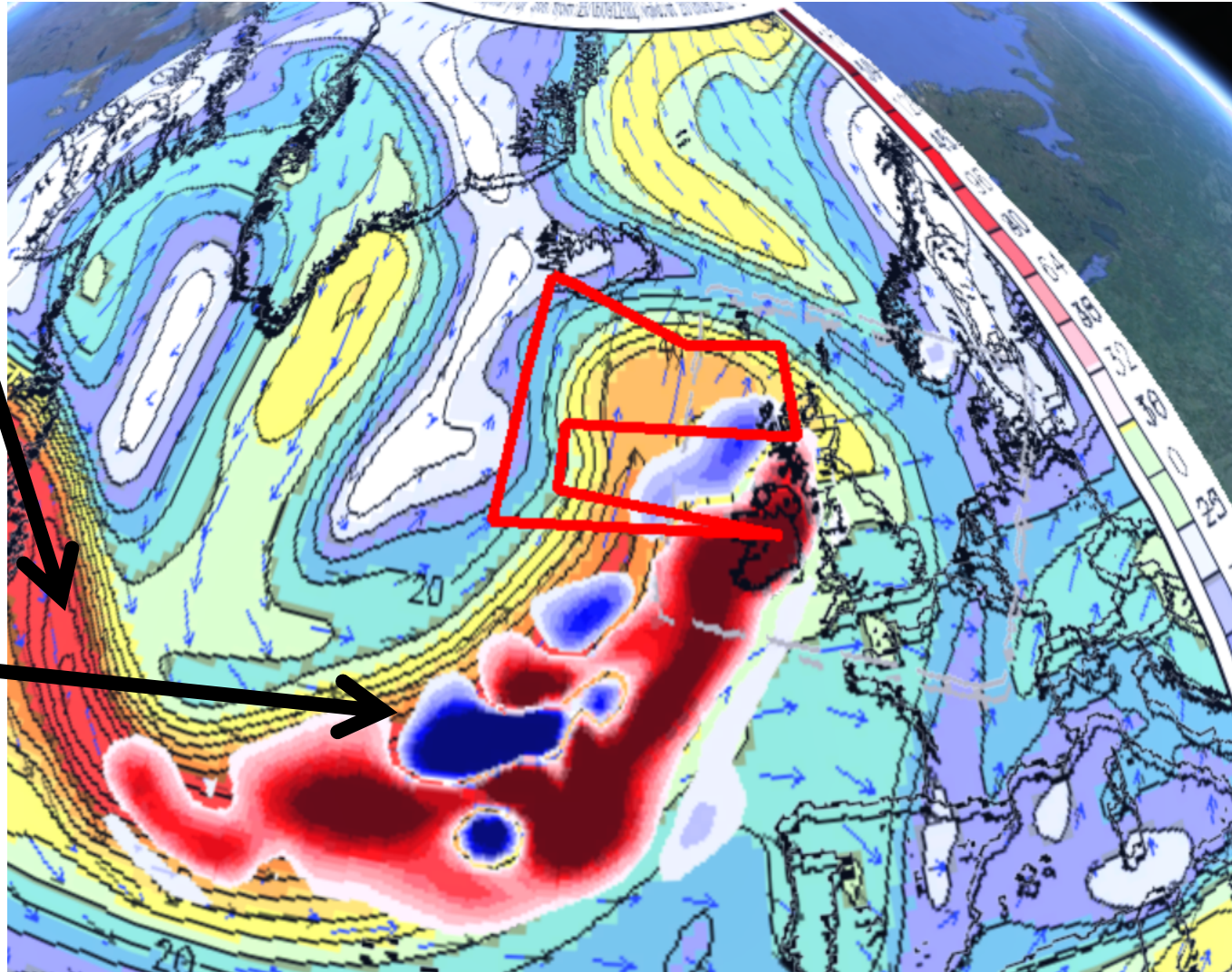
**Moisture sensitivity maximum in mid-levels along ascent in WCB**



## COAMPS Sensitivity (24h) Valid 12Z 23 Sep (Box over UK)

250-mb Jet

Moisture  
sensitivity  
maximum  
along WCB

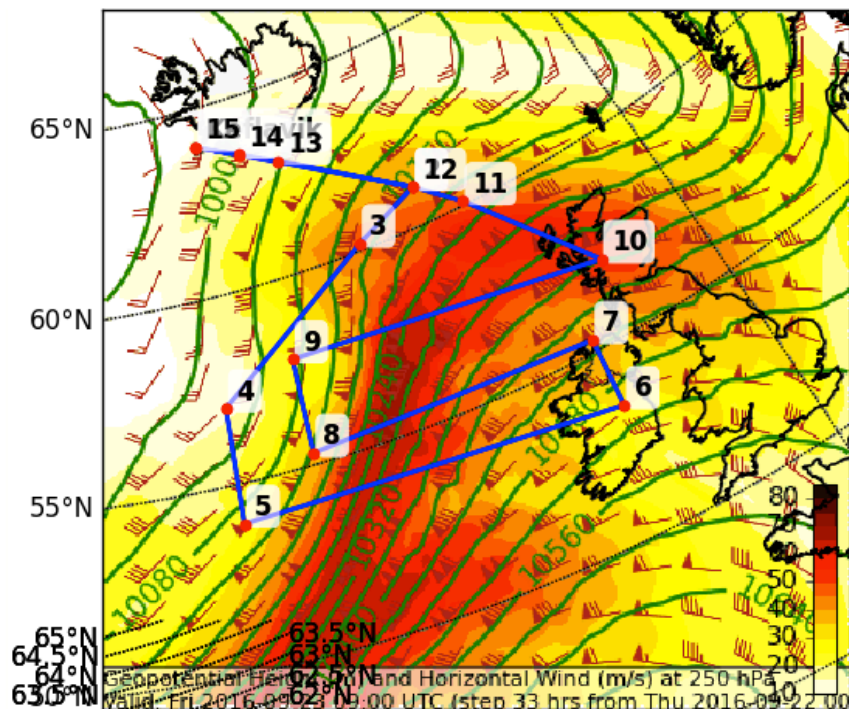




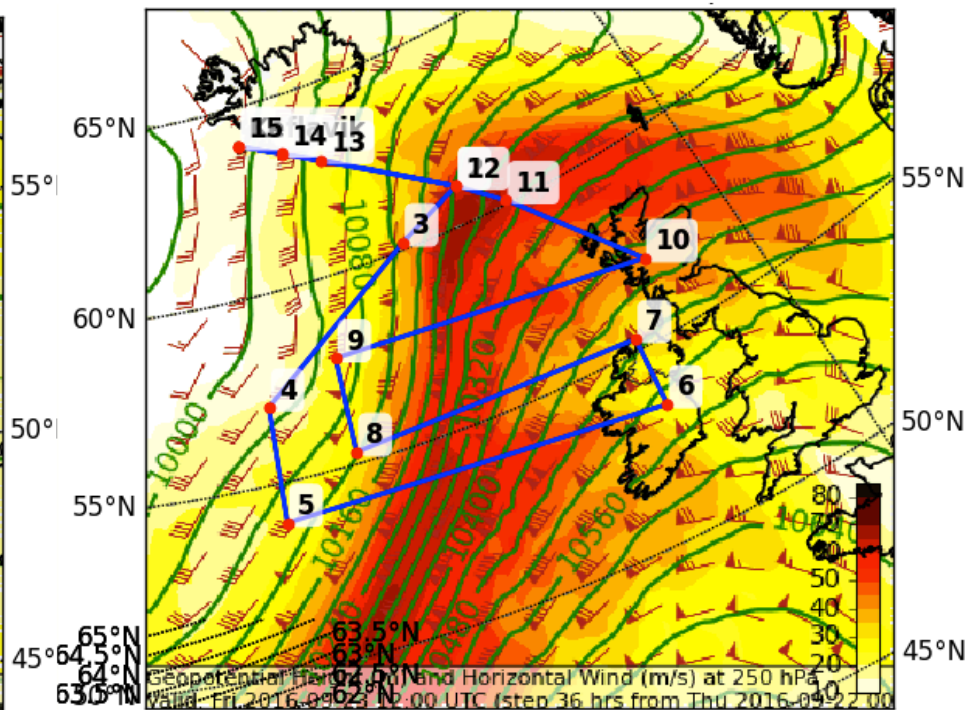
# Friday mission: Flight planning

# Flight planning for Friday, 23 September 2016

09 UTC



12 UTC

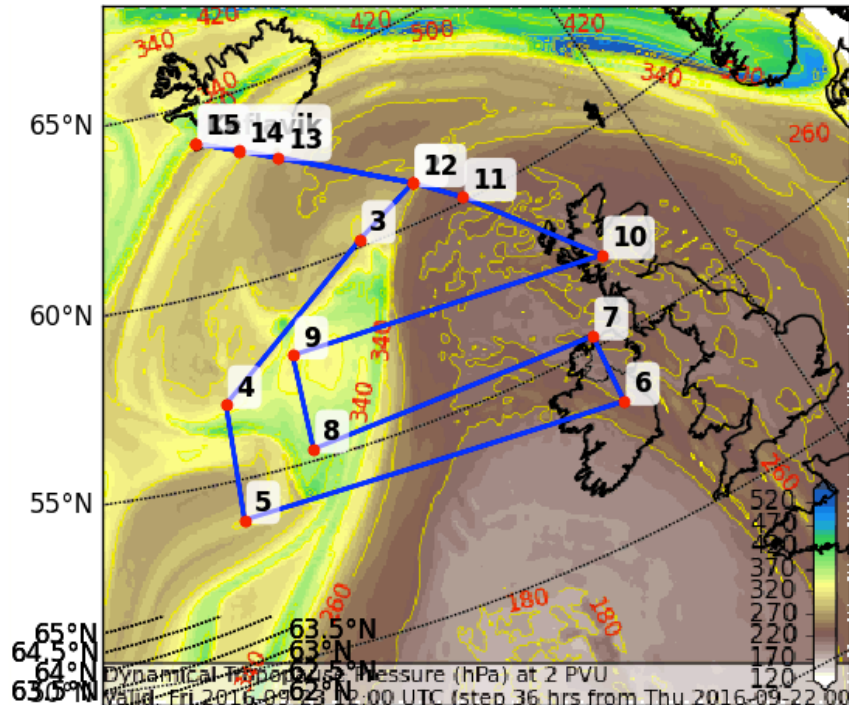


## Update:

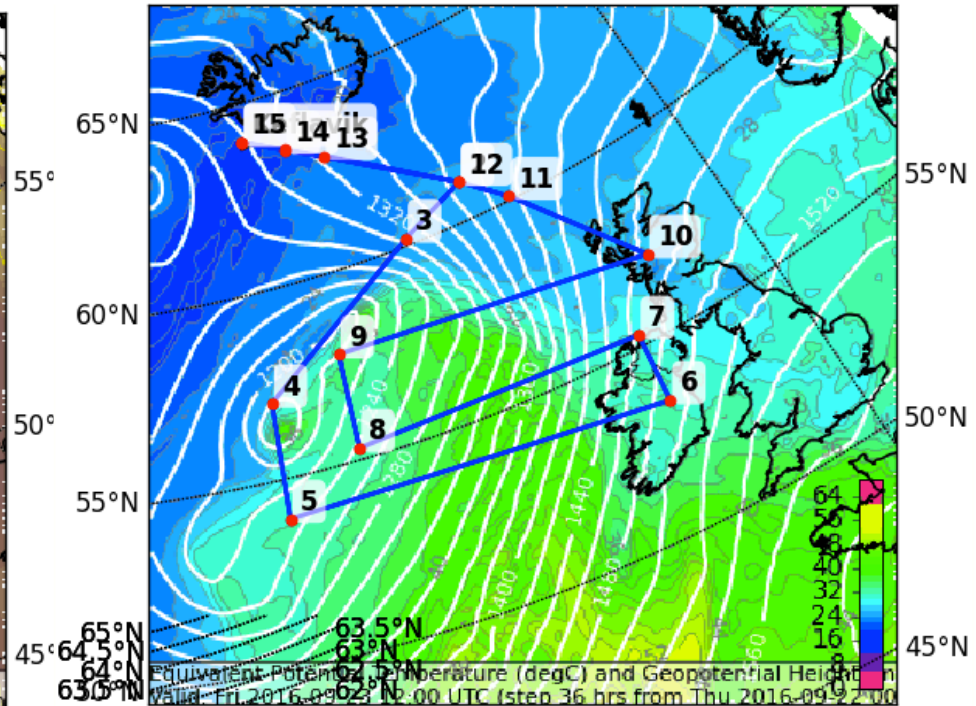
- Coordinated flights HALO: **FALCON** (leg 0-2), **FAAM** (leg 7-8)
- Take-off: FALCON 06:50 UTC, HALO 07:30 UTC
- Approx. 5 dropsondes leg 0-2, 10 dropsondes leg 4-6

# Flight planning for Friday, 23 September 2016

Dynamical tropopause 2PV



$\Theta_e$  (850 hPa)

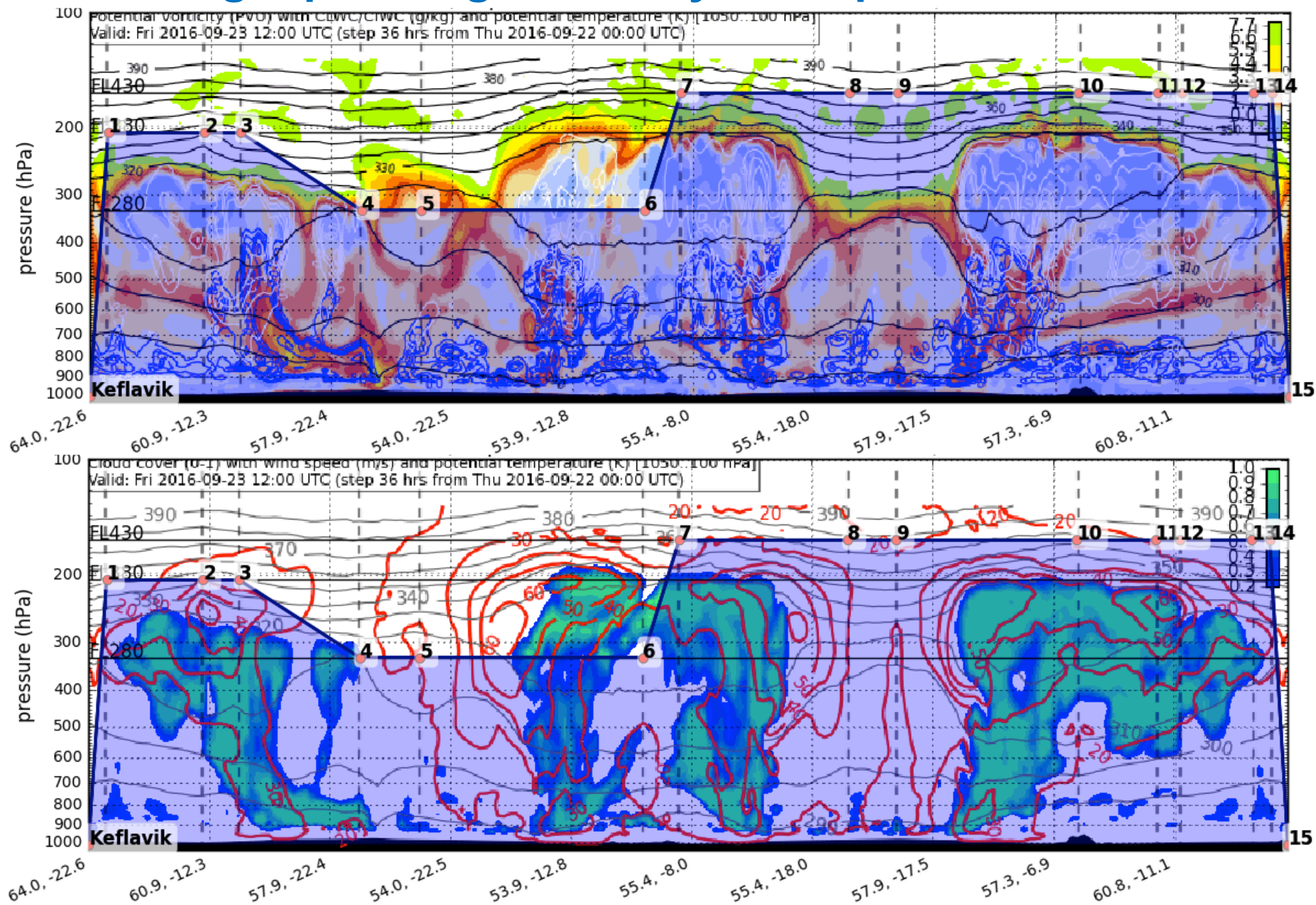


## Update:

- Coordinated flights HALO: **FALCON** (leg 0-2), **FAAM** (leg 7-8)
- Take-off: FALCON 06:50 UTC, HALO 07:30 UTC
- Approx. 5 dropsondes leg 0-2, 10 dropsondes leg 4-6



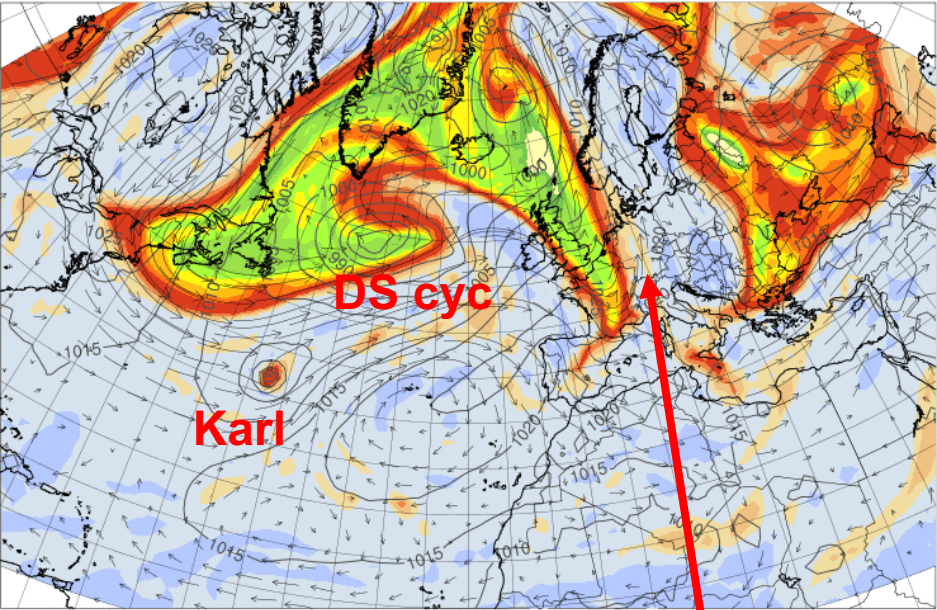
# Flight planning for Friday, 23 September 2016



# Outlook ET Karl and DS cyclone scenarios

VT Mon 26/06 UTC

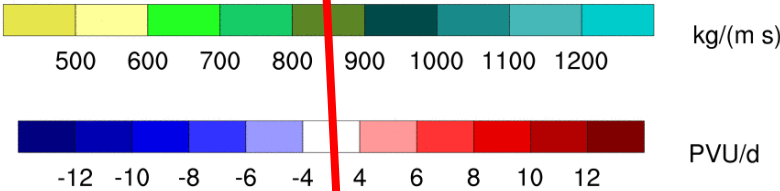
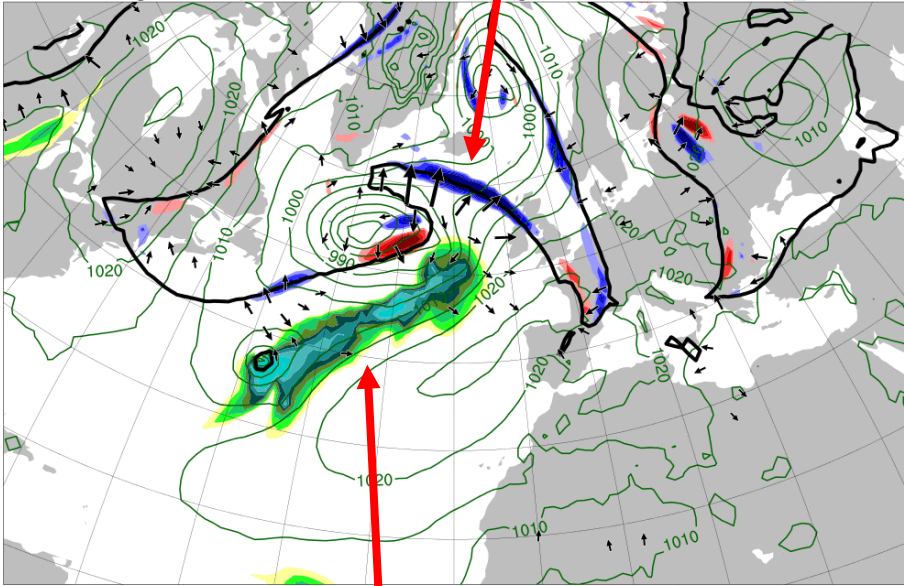
PV@325K at 20160926\_06



Heavy precipitation in Alps

Strong PV advection by divergent wind

2 PVU (black contour), PV advection through divergent wind (shading), divergent wind (vectors) @325K and MSL (green contours) at 20160926\_06

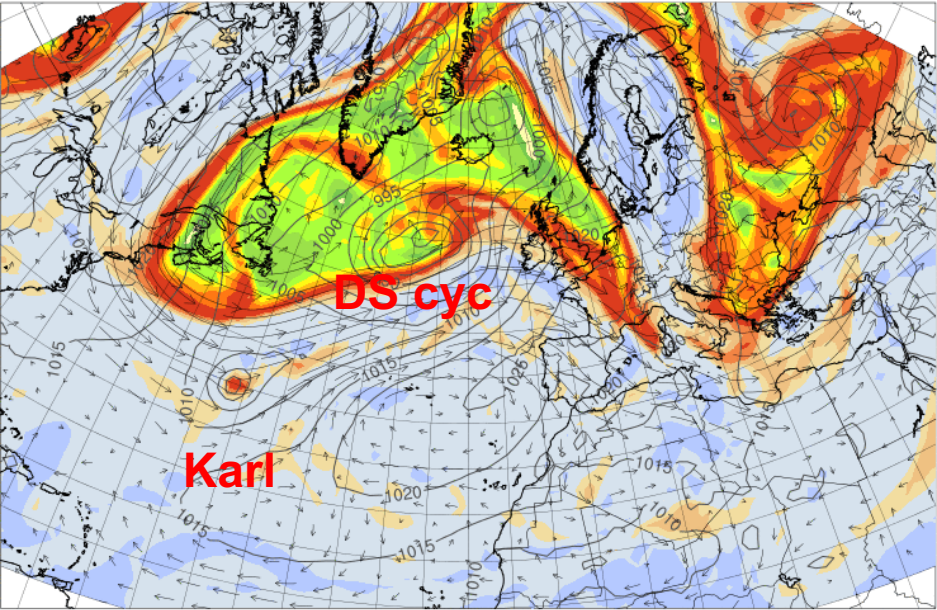


Strong moisture fluxes feeds WCB

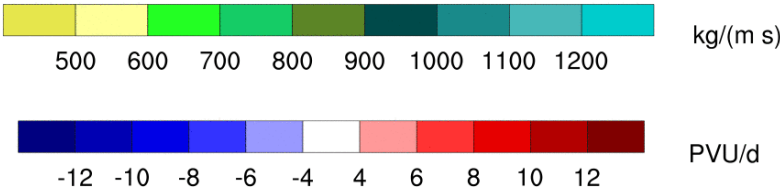
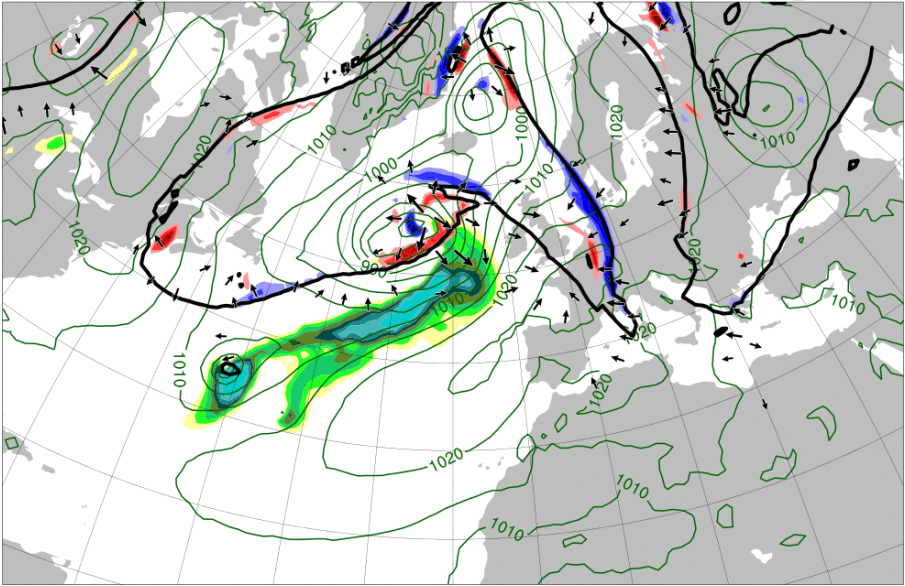


VT Mon 26/06 UTC

PV@325K at 20160926\_06

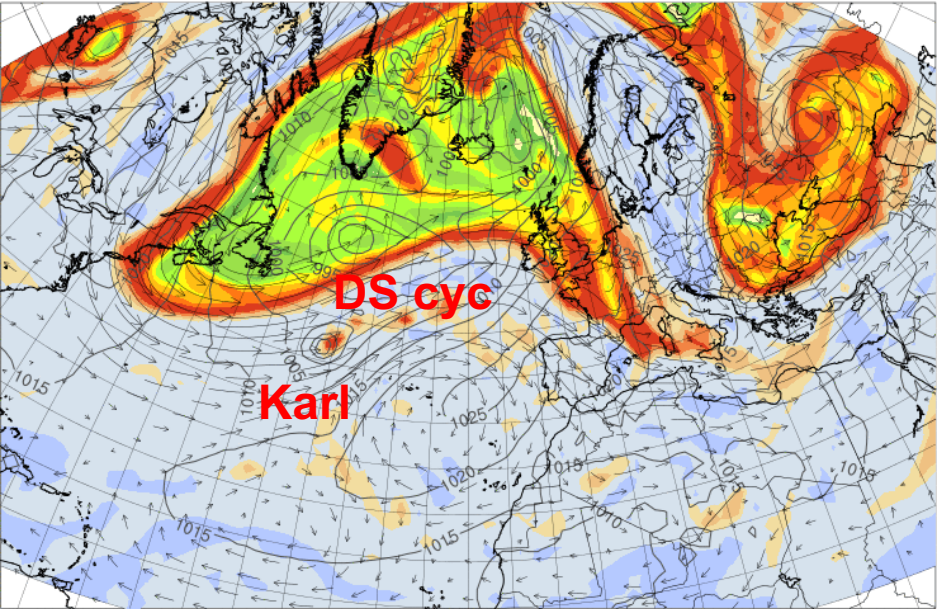


2 PVU (black contour), PV advection through divergent wind (shading), divergent wind (vectors) @325K and MSLP (green contours) at 20160926\_06

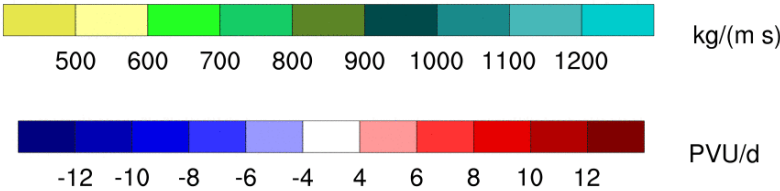
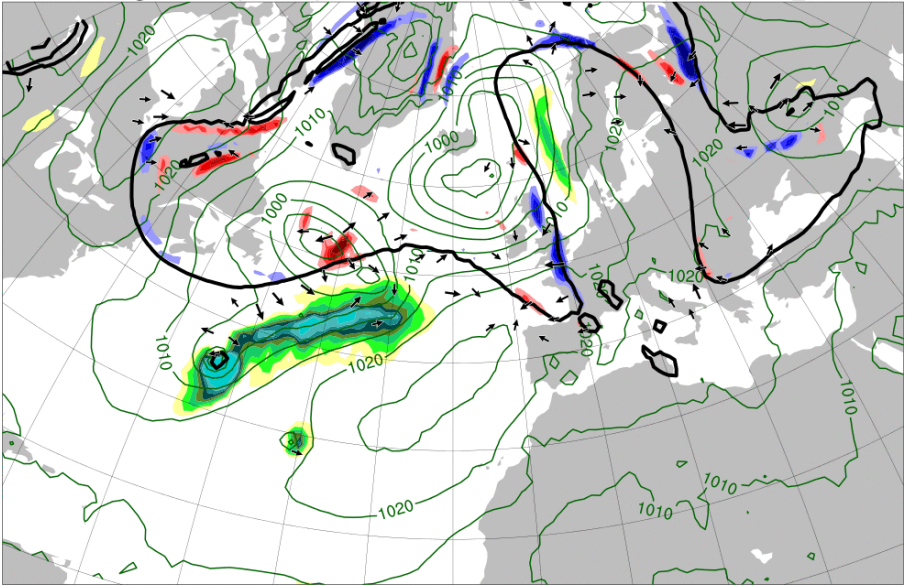


VT Mon 26/06 UTC

PV@325K at 20160926\_06



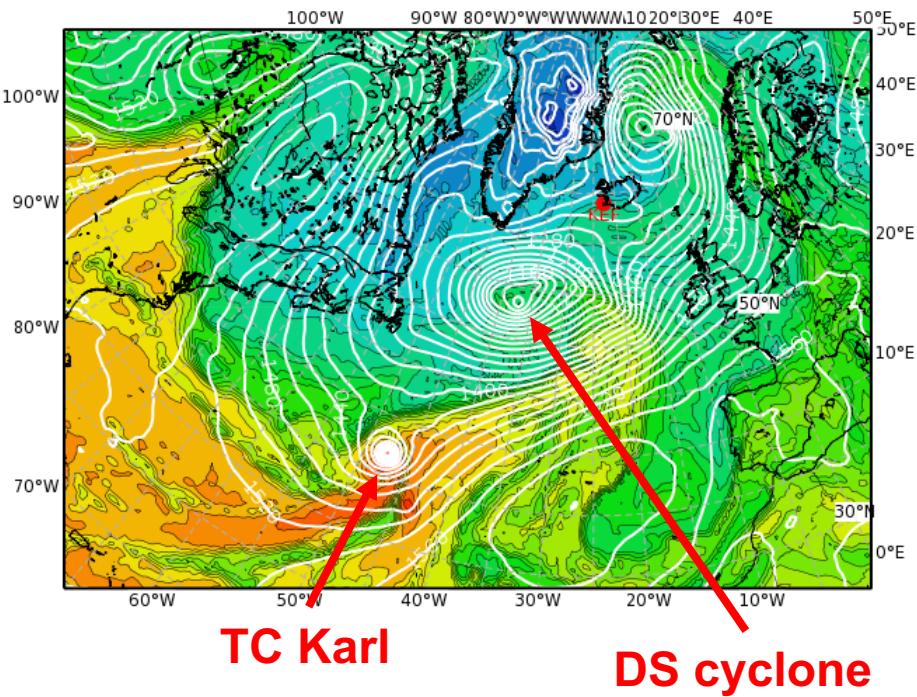
2 PVU (black contour), PV advection through divergent wind (shading), divergent wind (vectors) @325K and MSLP (green contours) at 20160925\_12



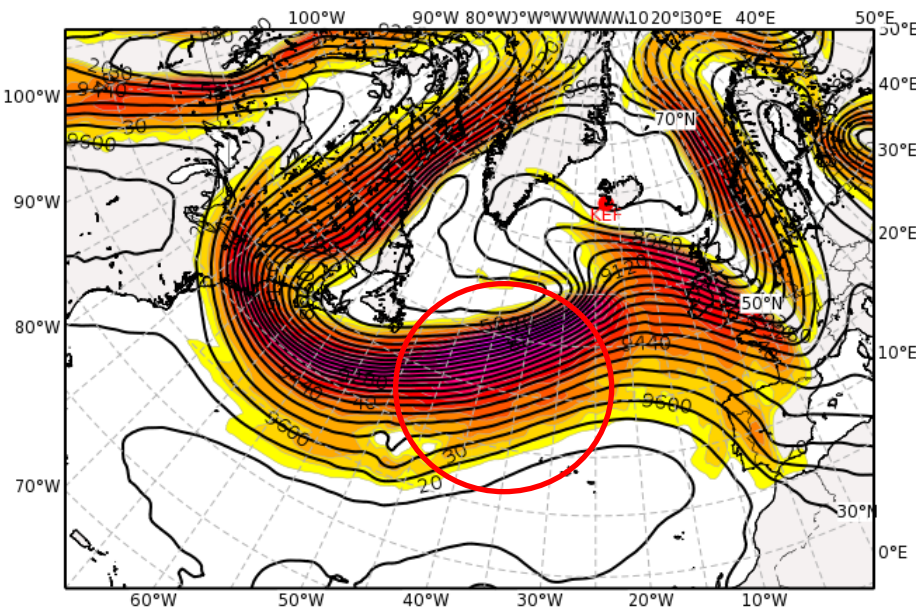


VT Mon 26/06 UTC

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Mon, 26 Sep 2016, 06 UTC (step 126 h from Wed, 21 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Mon, 26 Sep 2016, 06 UTC (step 126 h from Wed, 21 Sep 2016, 00 UTC)

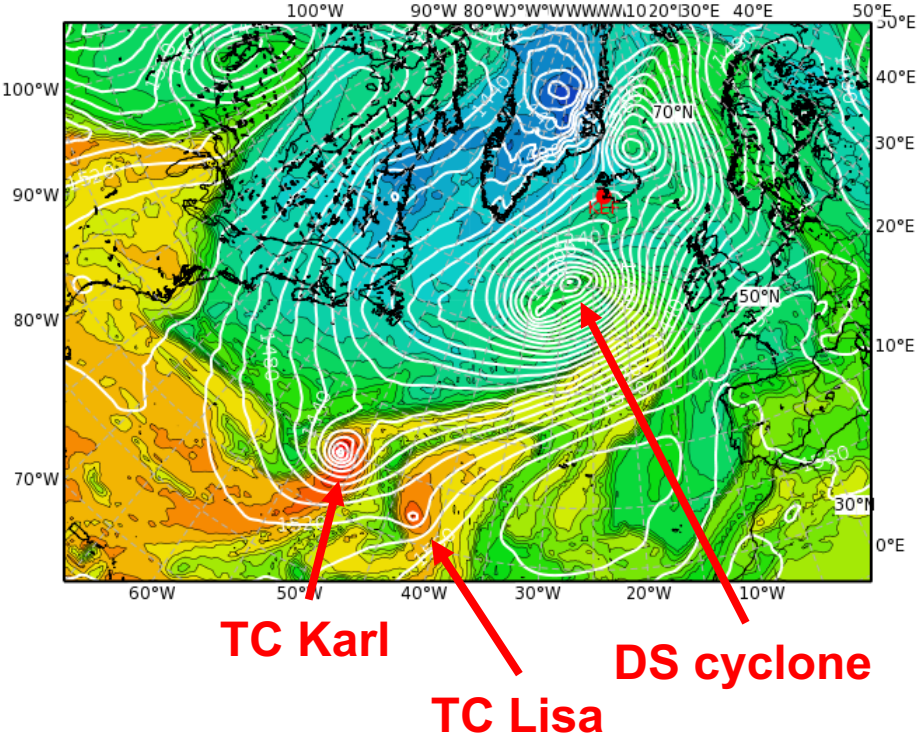


- Lisa not visible yet

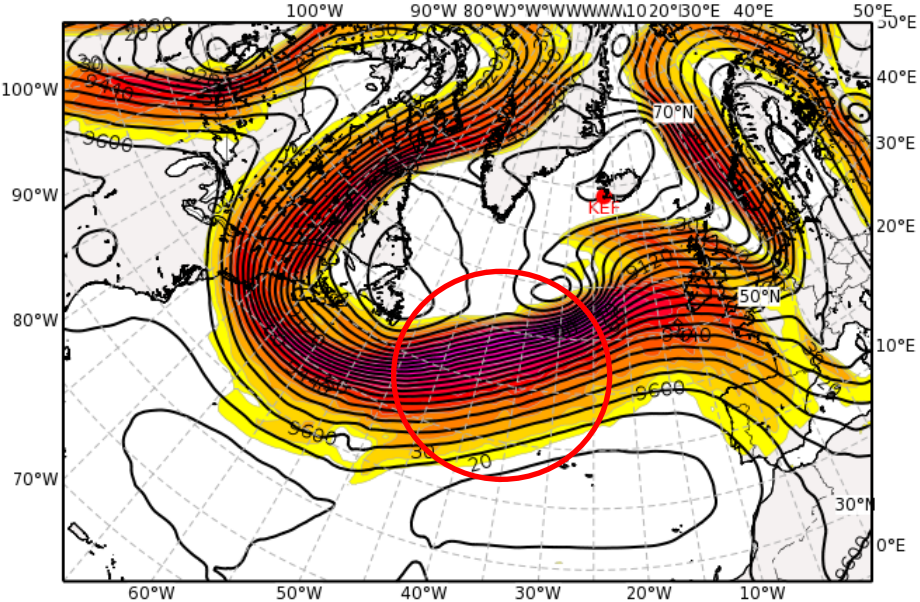


VT Mon 26/06 UTC

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Mon, 26 Sep 2016, 06 UTC (step 114 h from Wed, 21 Sep 2016, 12 UTC)



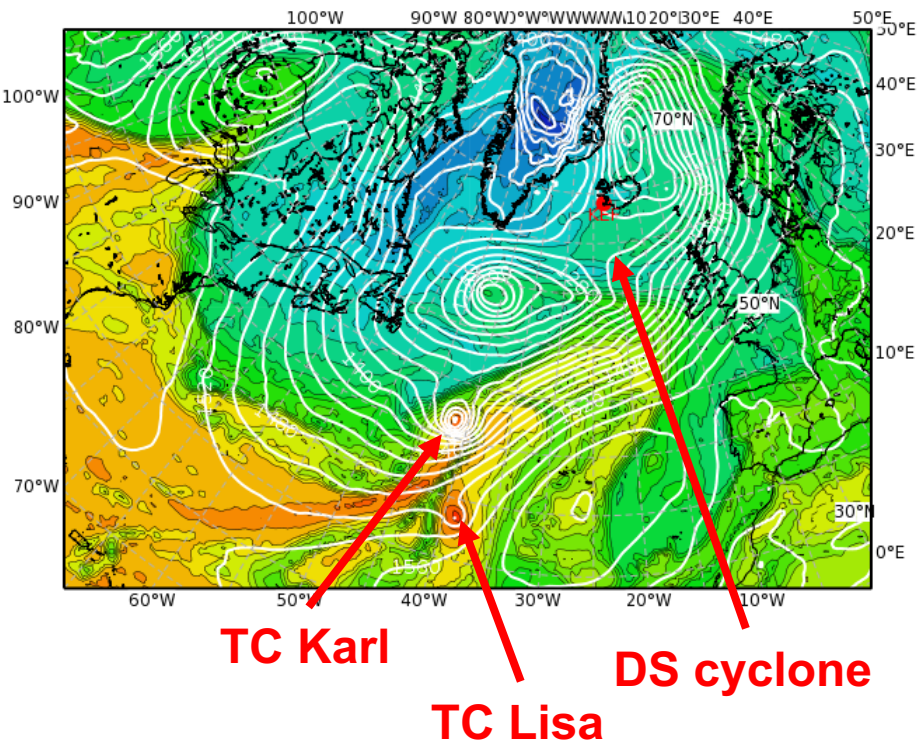
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Mon, 26 Sep 2016, 06 UTC (step 114 h from Wed, 21 Sep 2016, 12 UTC)



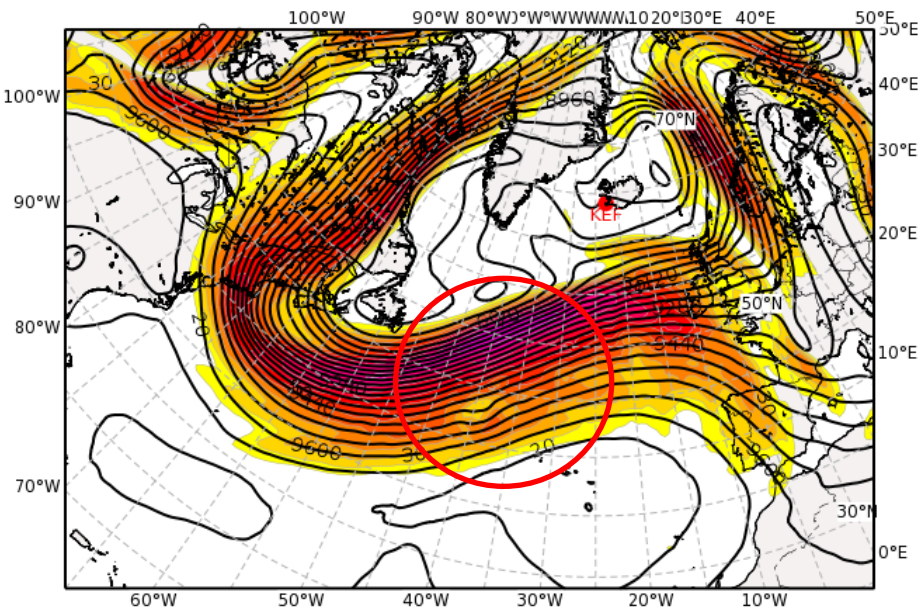
- TC Karl upstream of TC Lisa and will merge in later development

VT Mon 26/06 UTC

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Mon, 26 Sep 2016, 06 UTC (step 102 h from Thu, 22 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Mon, 26 Sep 2016, 06 UTC (step 102 h from Thu, 22 Sep 2016, 00 UTC)

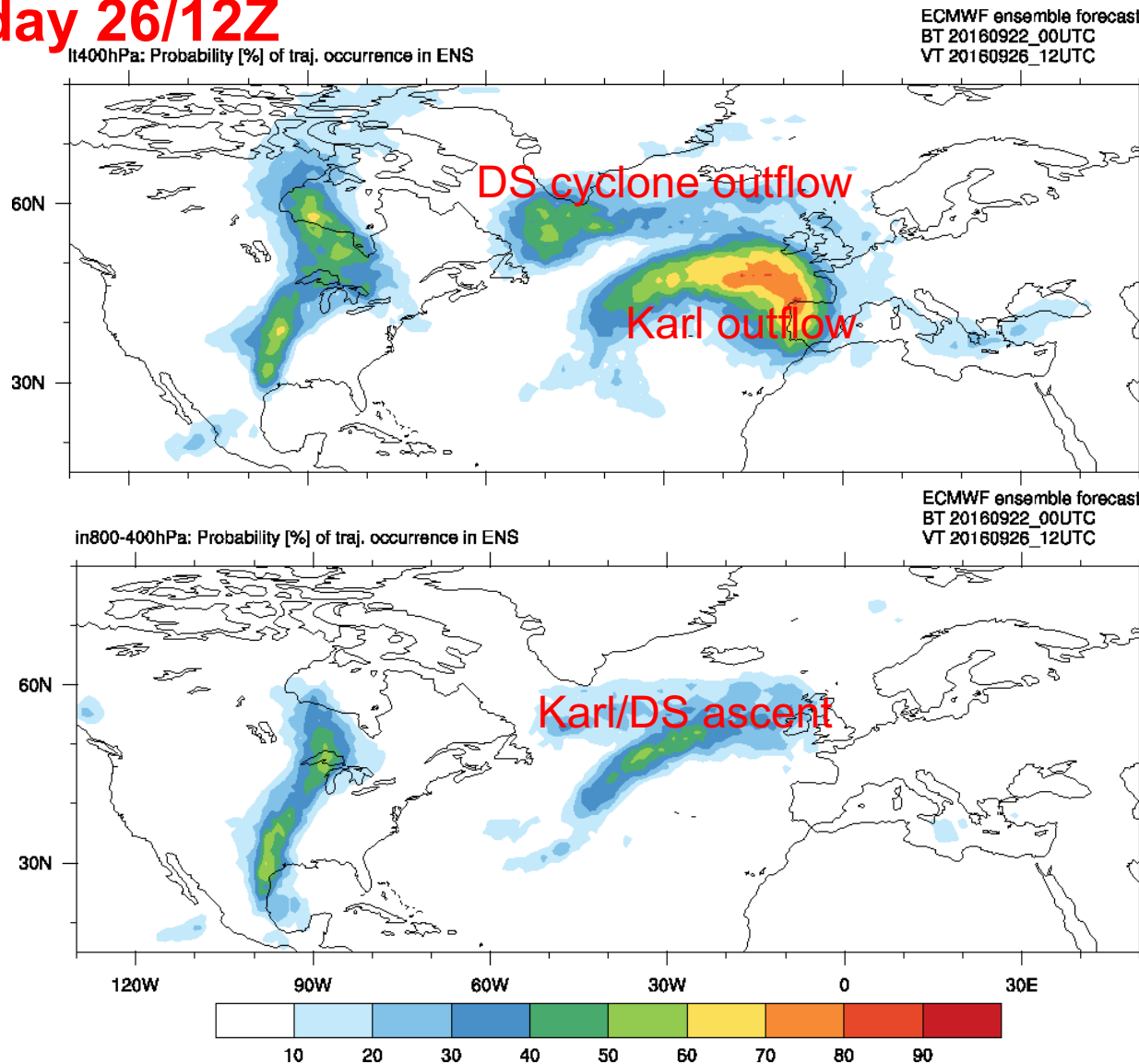


- TC Karl overpasses TC Lisa and propagates eastward as a diabatic Rossby Wave (DRW)

# Outlook Monday– Wednesday: DS cyclone extratropical transition of TC Karl

BT 22/00Z

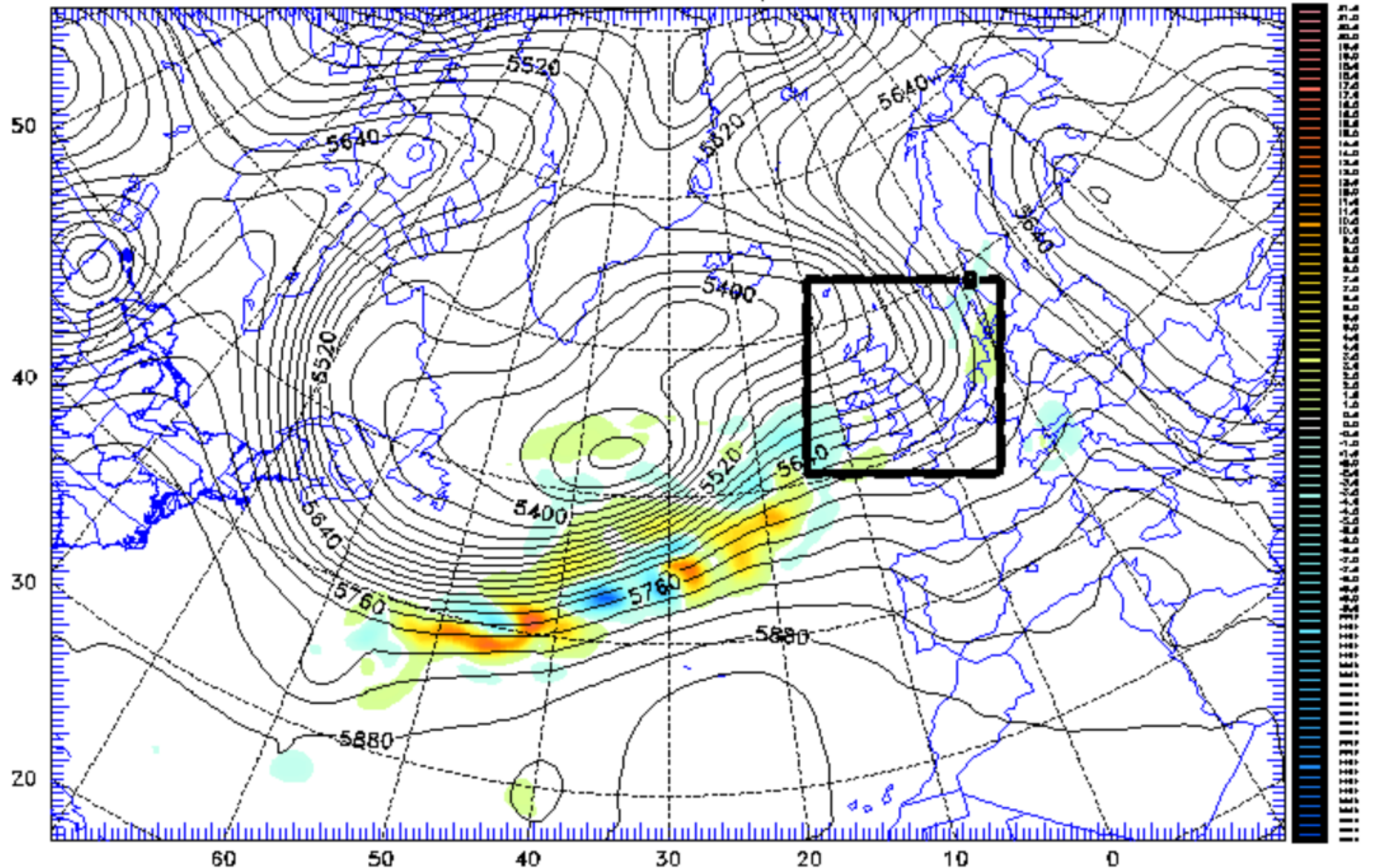
VT Monday 26/12Z





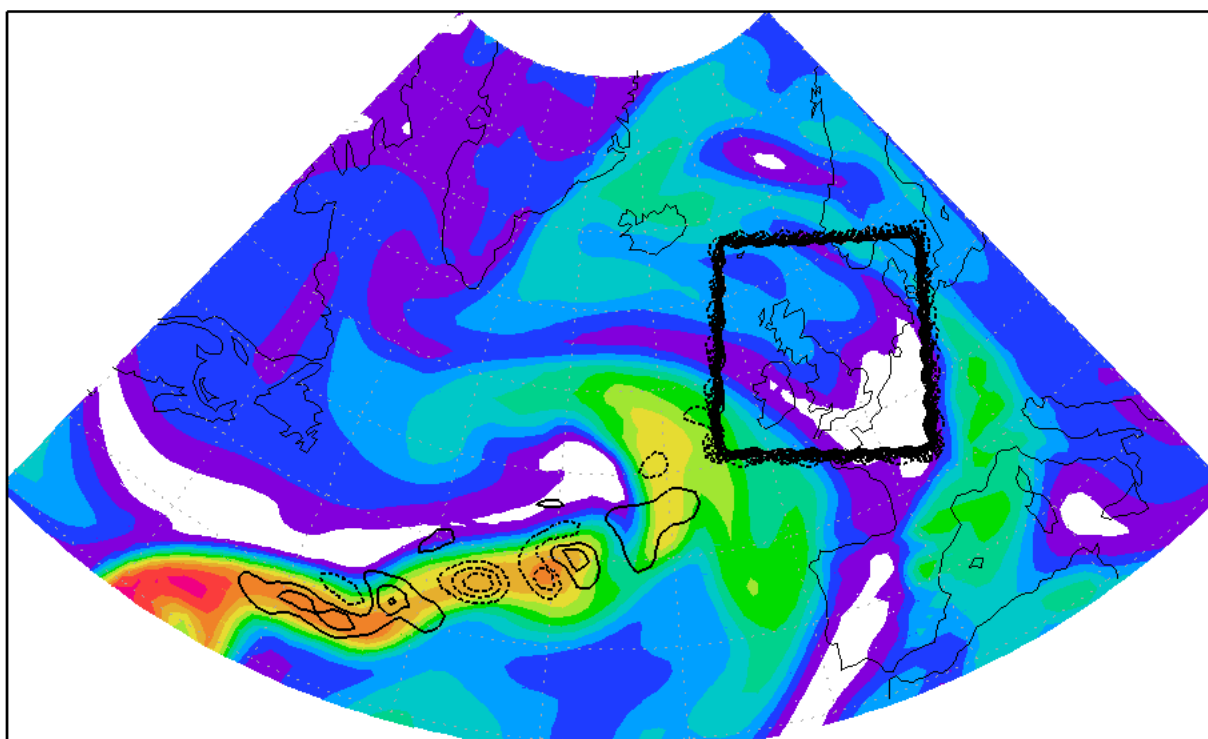
# COAMPS Sensitivity (24h) Valid 12Z 26 Sep (Box over UK)

## 700-hPa Moisture Sensitivity and 500-hPa Heights



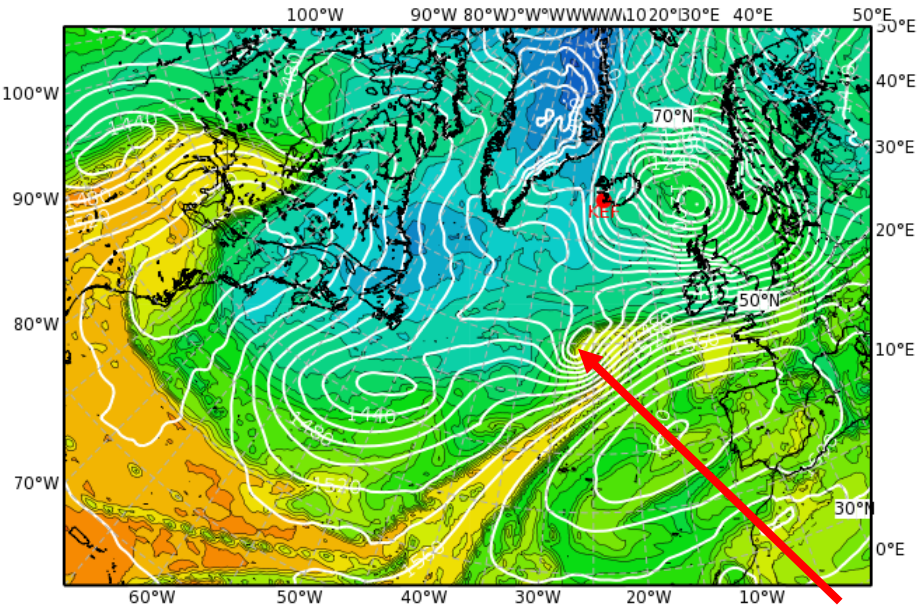
# COAMPS Sensitivity (24h) Valid 12Z 26 Sep (Box over UK) 700-hPa Moisture Sensitivity and Water Vapor (g/kg)

WVAP, Q sensitivity, 700 hPa 12z26SEP



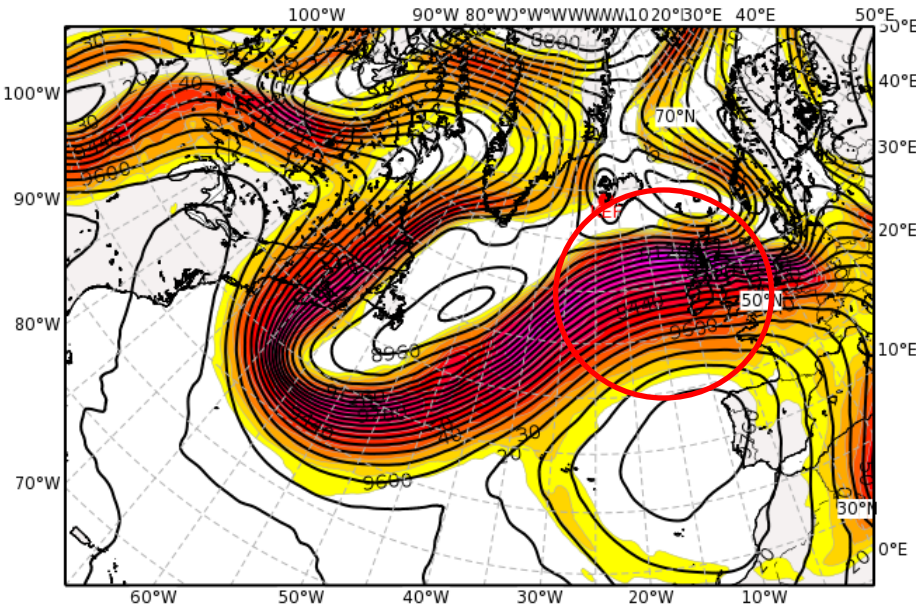
VT Tue 27/18 UTC

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Tue, 27 Sep 2016, 18 UTC (step 150 h from Wed, 21 Sep 2016, 12 UTC)



Ex-TC Karl

Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Tue, 27 Sep 2016, 18 UTC (step 150 h from Wed, 21 Sep 2016, 12 UTC)

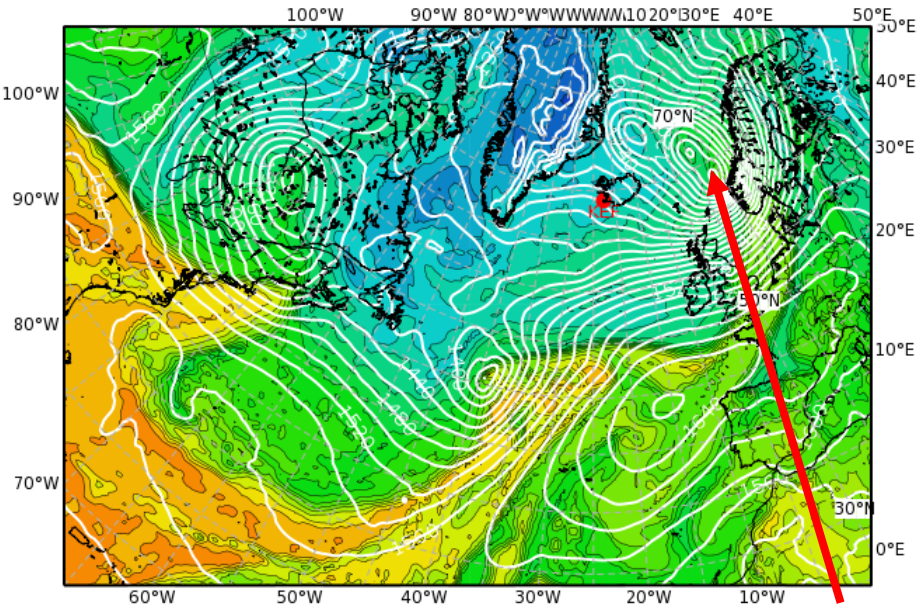


- Slower propagation of Ex-TC Karl, explosive intensification over the North Sea
- Karl merged with Lisa

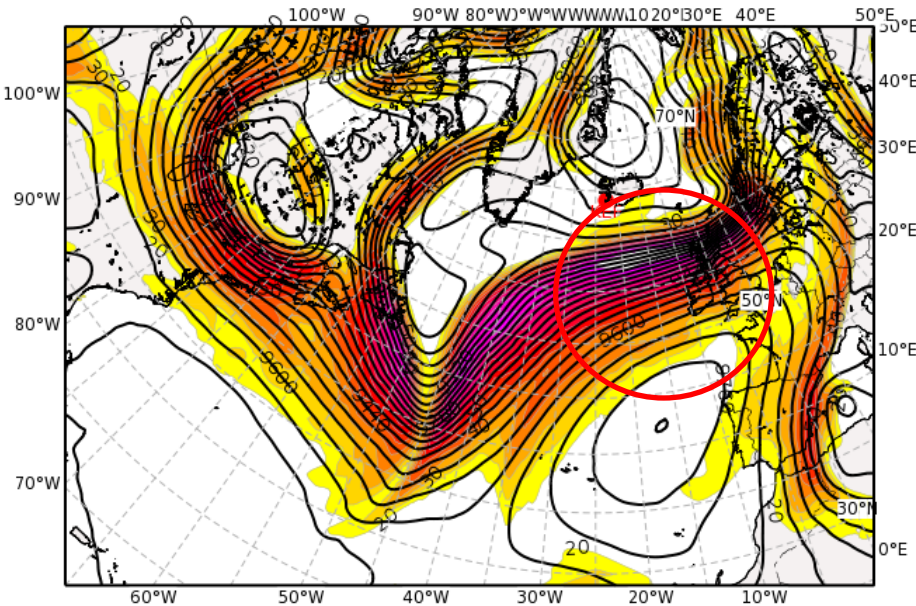


VT Tue 27/18 UTC

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Tue, 27 Sep 2016, 18 UTC (step 138 h from Thu, 22 Sep 2016, 00 UTC)



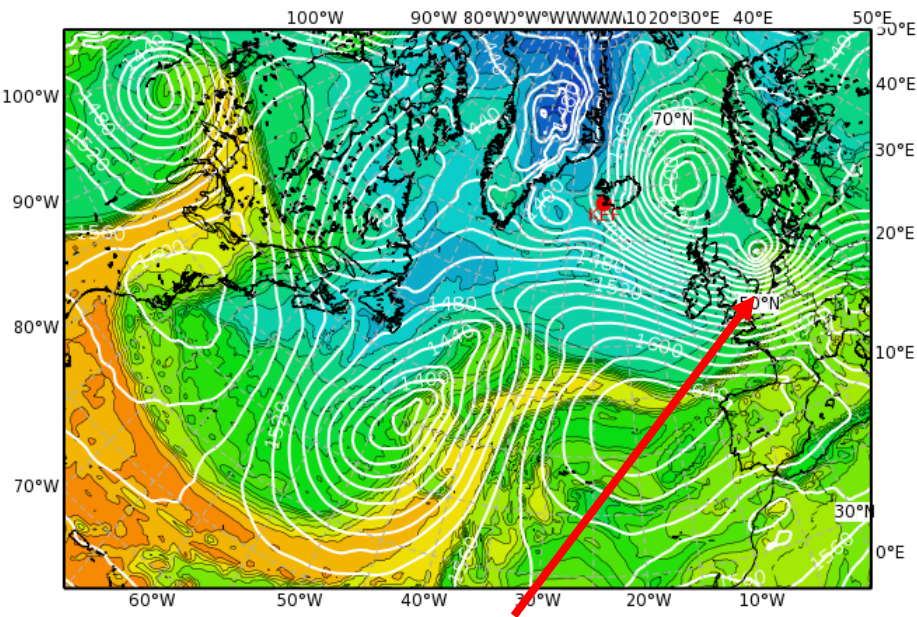
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Tue, 27 Sep 2016, 18 UTC (step 138 h from Thu, 22 Sep 2016, 00 UTC)



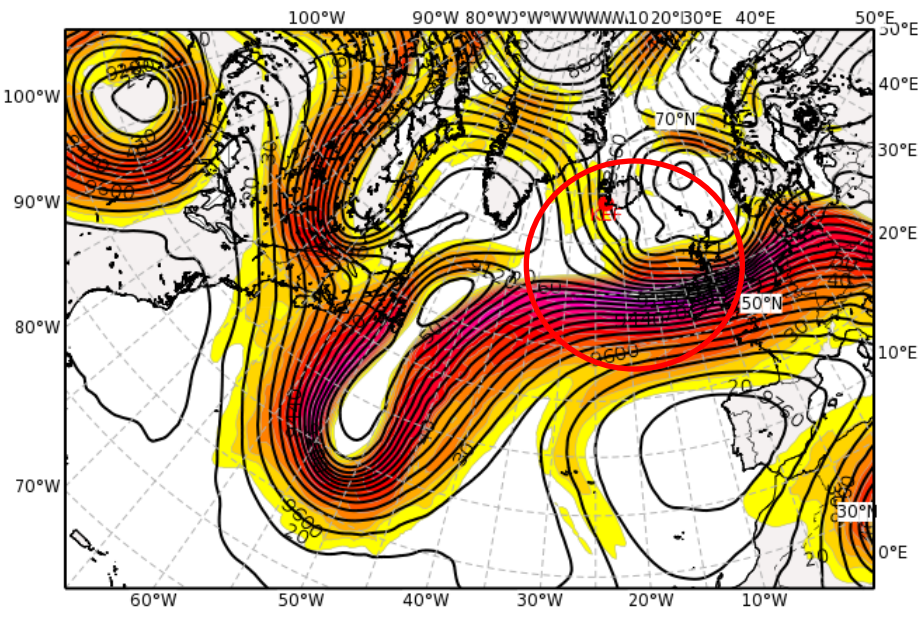
- Fast propagation as DRW, Karl overtook Lisa, strong winter storm close to Norway

VT Wed 28/18 UTC

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Wed, 28 Sep 2016, 18 UTC (step 174 h from Wed, 21 Sep 2016, 12 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Wed, 28 Sep 2016, 18 UTC (step 174 h from Wed, 21 Sep 2016, 12 UTC)

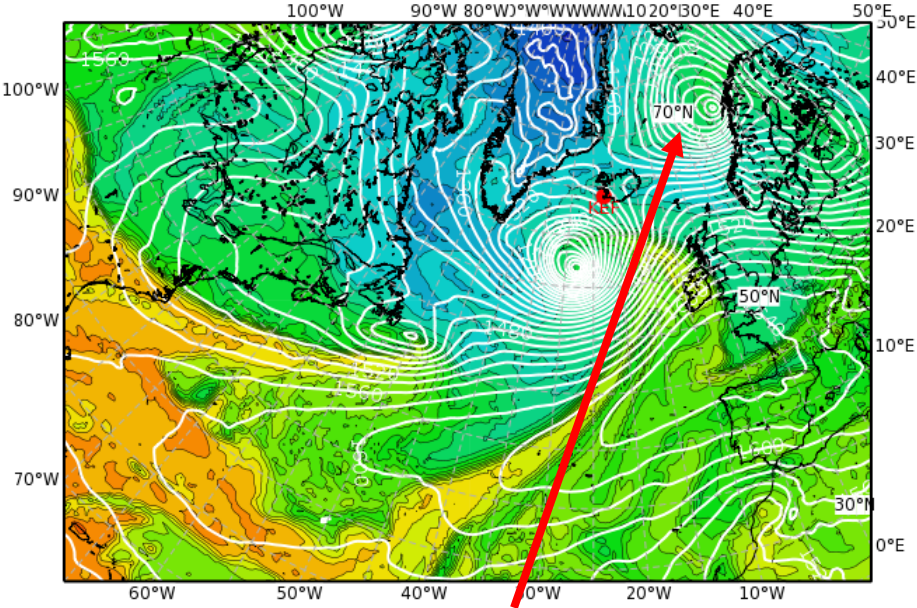


Ex-TC Karl:  
Affects North and Baltic Sea region

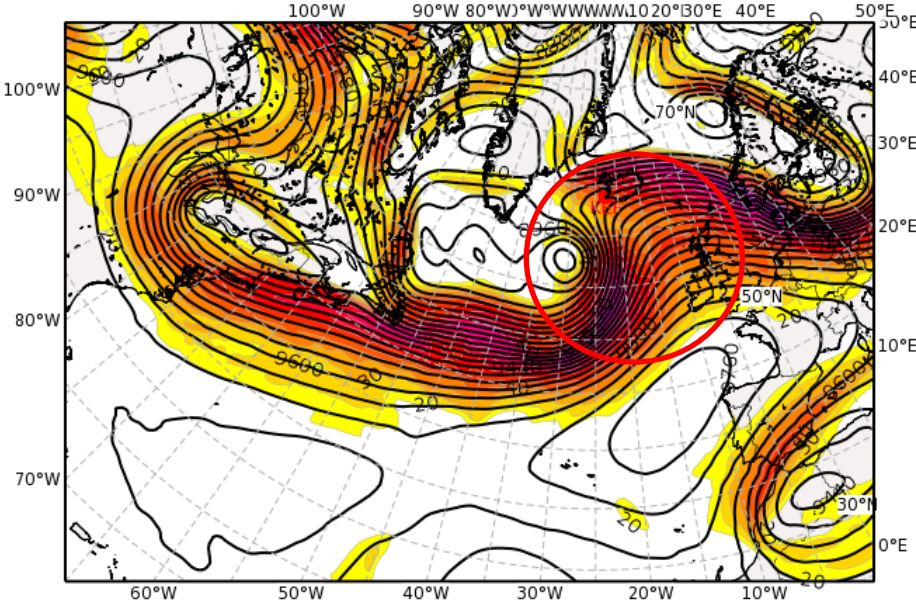


VT Wed 28/18 UTC

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa  
Valid: Wed, 28 Sep 2016, 18 UTC (step 162 h from Thu, 22 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa  
Valid: Wed, 28 Sep 2016, 18 UTC (step 162 h from Thu, 22 Sep 2016, 00 UTC)



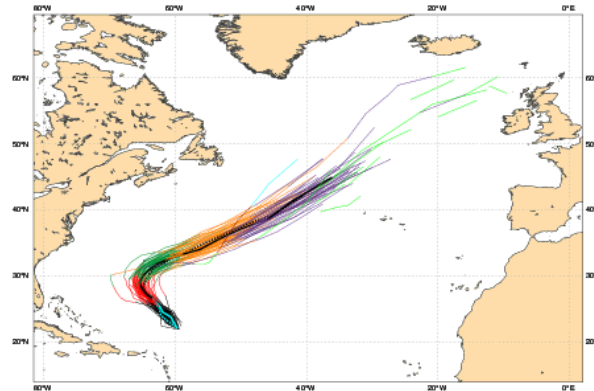
**Ex-TC Karl:**  
**DRW development, affects Norway**



# Outlook Monday– Wednesday: extratropical transition of TC Karl and Lisa

Date 20160922 00 UTC @ECMWF

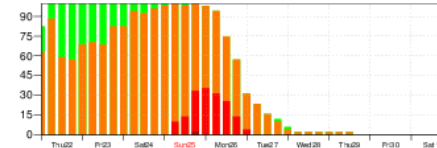
Individual trajectories for **KARL** during the next 240 hours  
tracks: **thick solid**=HRES; **thick dot**=CTRL; **thin solid**=EPS members [coloured]  
0-24h 24-48h 48-72h 72-96h 96-120h 120-144h 144-168h 168-192h 192-216h 216-240h



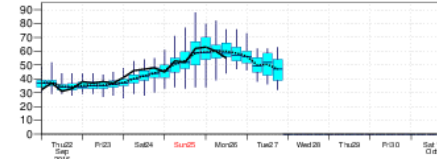
List of ensemble members numbers forecast Tropical Cyclone  
Intensity category in colours: **TD**[up to 33] **TS**[34-63] **HR1**[64-82] **HR2**[83-95] **HR3**[> 95 k]

+024 h: 1v 01 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+048 h: 1v 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+072 h: 1v 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+096 h: 1v 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+120 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+144 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+168 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+192 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+216 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+240 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

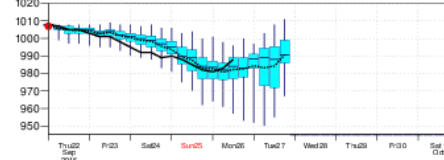
Probability (%) of Tropical Cyclone Intensity falling in each category  
**TD**[up to 33] **TS** [34-63] **HR1**[64-82] **HR2** [83-95] **HR3** [> 95 k]



10m Wind Speed (kt) **solid**=HRES; **dot**=Ens Mean

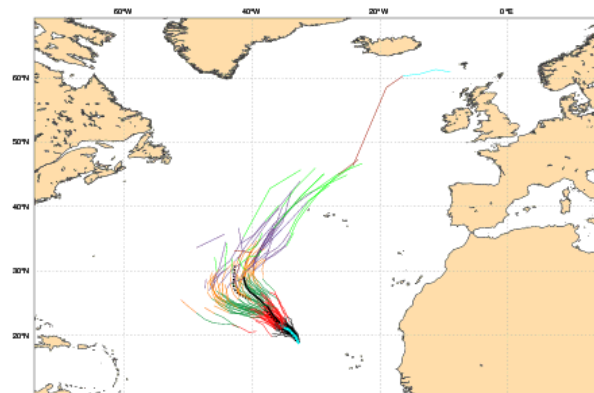


Mean Sea Level Pressure in Tropical Cyclone Centre (hPa) **solid**=HRES; **dot**=Ens Mean



Date 20160922 00 UTC @ECMWF

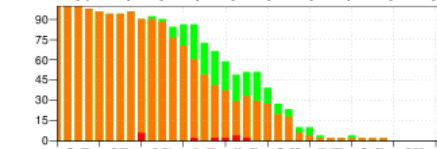
Individual trajectories for **LISA** during the next 240 hours  
tracks: **thick solid**=HRES; **thick dot**=CTRL; **thin solid**=EPS members [coloured]  
0-24h 24-48h 48-72h 72-96h 96-120h 120-144h 144-168h 168-192h 192-216h 216-240h



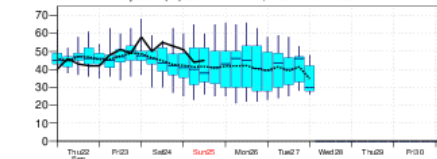
List of ensemble members numbers forecast Tropical Cyclone  
Intensity category in colours: **TD**[up to 33] **TS**[34-63] **HR1**[64-82] **HR2**[83-95] **HR3**[> 95 k]

+024 h: 1v 01 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+048 h: 1v 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+072 h: 1v 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+096 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+120 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+144 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+168 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+192 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+216 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50  
+240 h: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

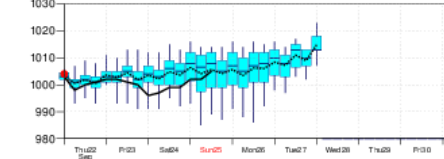
Probability (%) of Tropical Cyclone Intensity falling in each category  
**TD**[up to 33] **TS** [34-63] **HR1**[64-82] **HR2** [83-95] **HR3** [> 95 k]



10m Wind Speed (kt) **solid**=HRES; **dot**=Ens Mean



Mean Sea Level Pressure in Tropical Cyclone Centre (hPa) **solid**=HRES; **dot**=Ens Mean



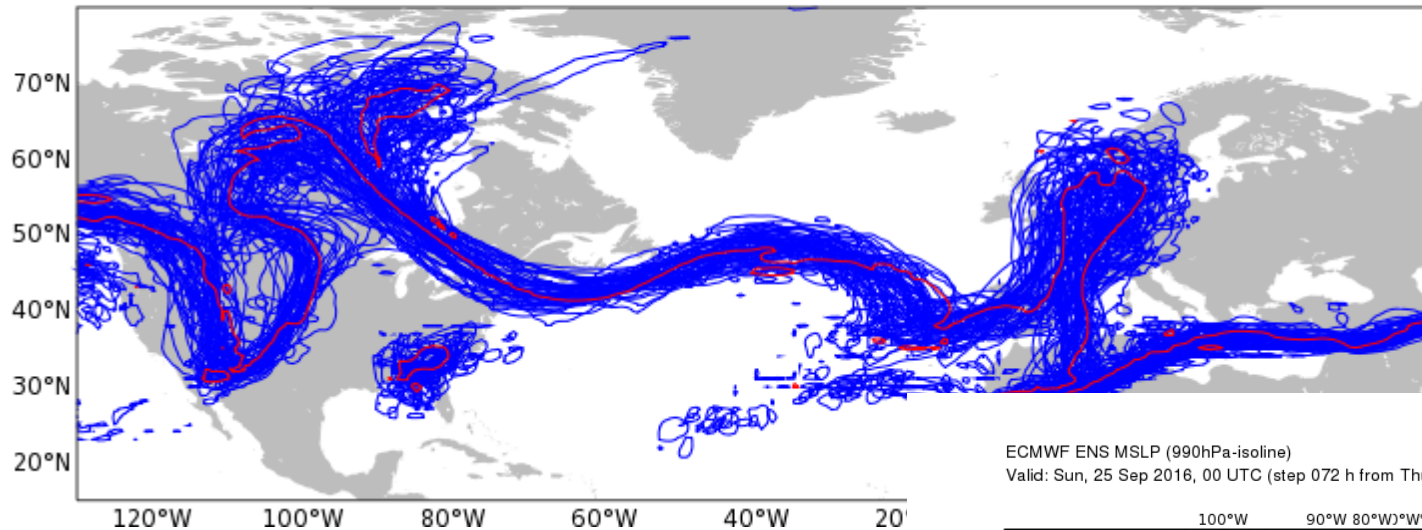
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

## Sun 25/00Z

ECMWF ENSEMBLE FC

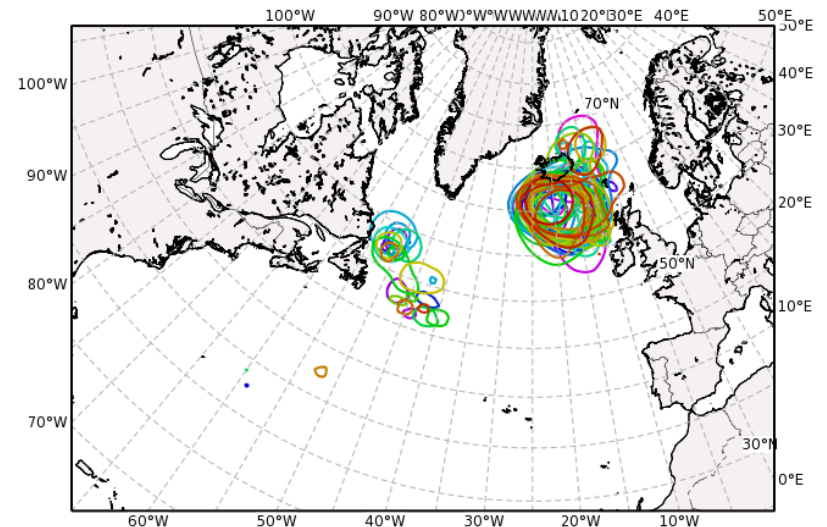
BT: 20160921 00UTC, VT: 20160925 00UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Sun, 25 Sep 2016, 00 UTC (step 072 h from Thu, 22 Sep 2016, 00 UTC)



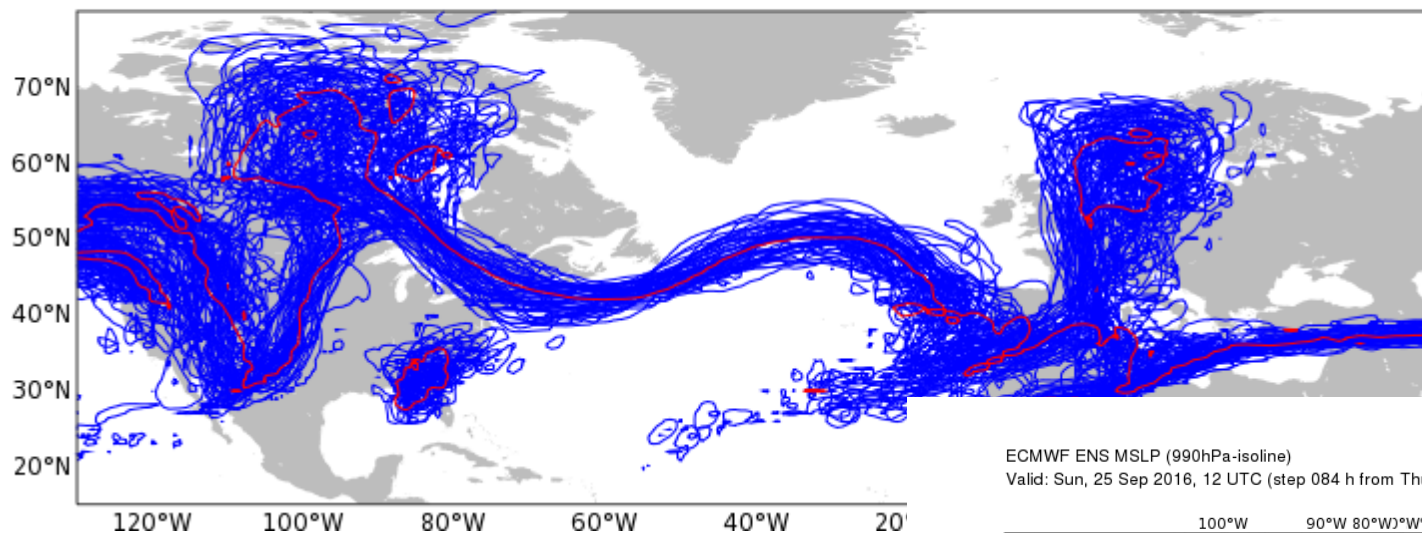
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

## Sun 25/12Z

ECMWF ENSEMBLE FC

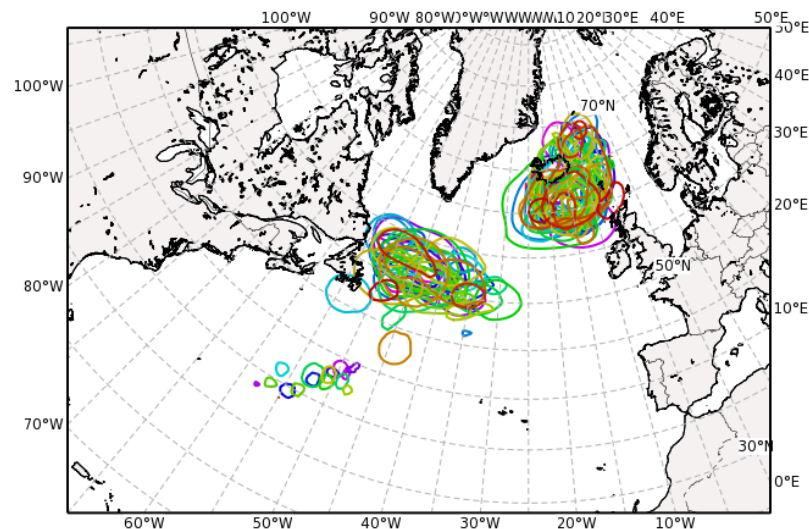
BT: 20160921 00UTC, VT: 20160925 12UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Sun, 25 Sep 2016, 12 UTC (step 084 h from Thu, 22 Sep 2016, 00 UTC)





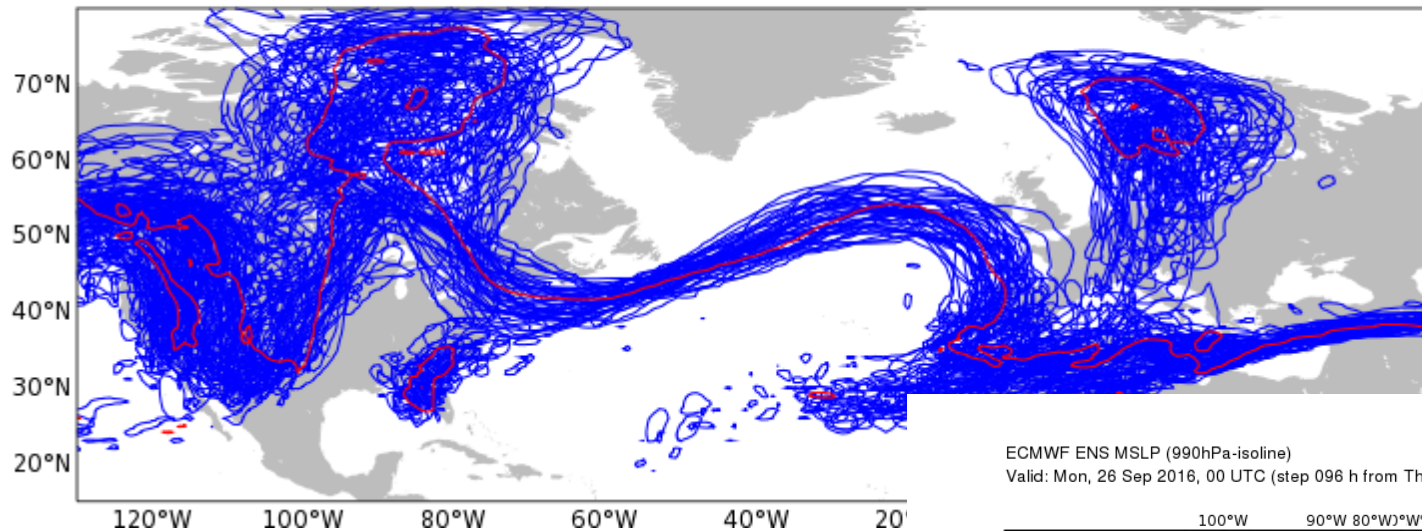
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

## Mon 26/00Z

ECMWF ENSEMBLE FC

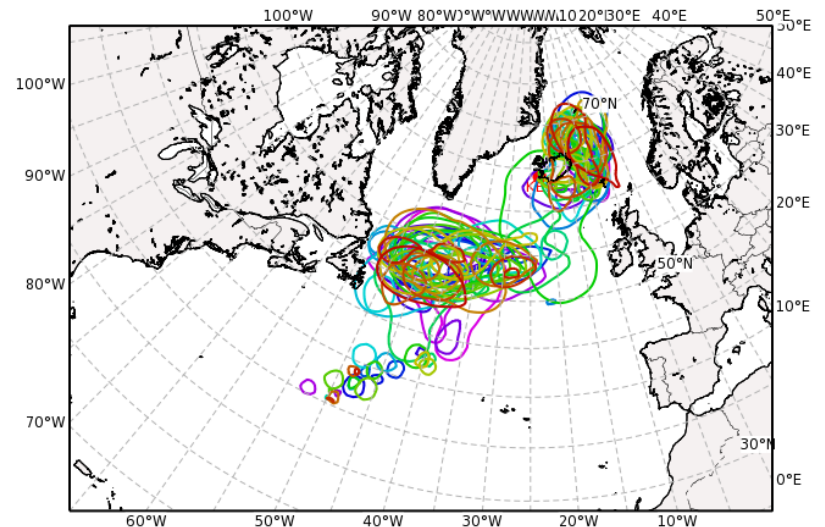
BT: 20160921 00UTC, VT: 20160926 00UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Mon, 26 Sep 2016, 00 UTC (step 096 h from Thu, 22 Sep 2016, 00 UTC)



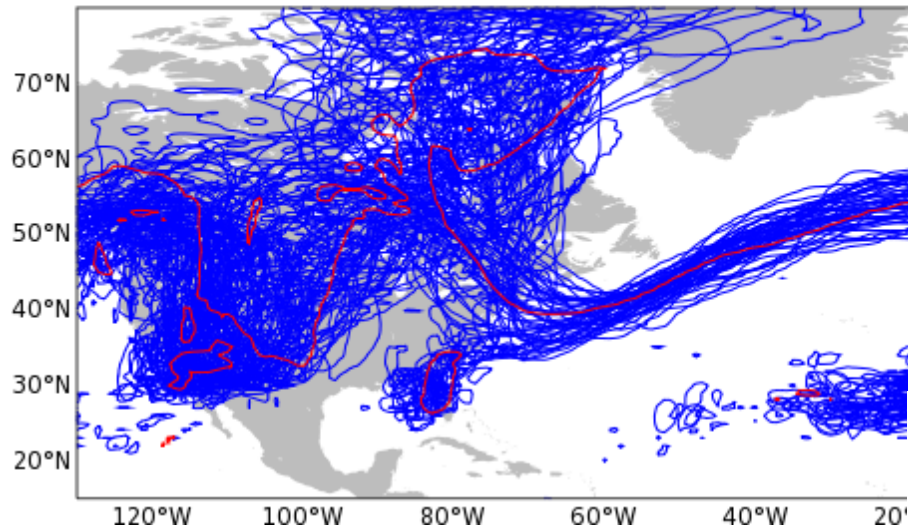
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

## Mon 26/12Z

ECMWF ENSEMBLE FC

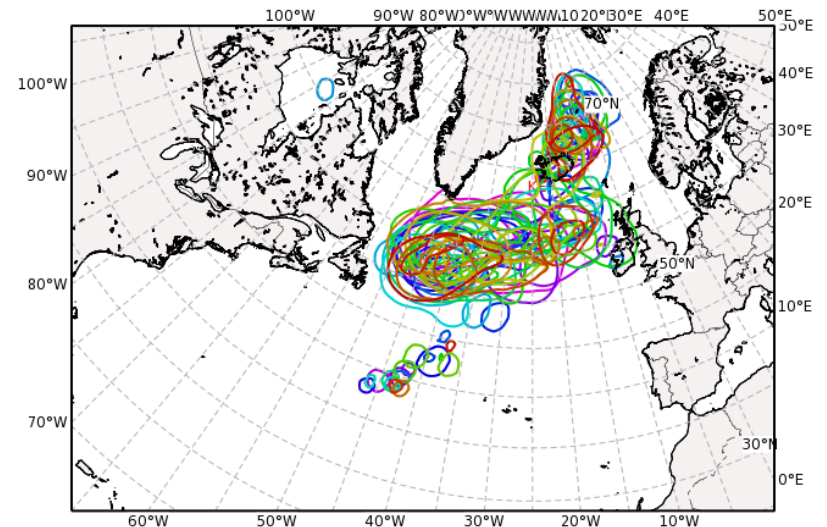
BT: 20160921 00UTC, VT: 20160926 12UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Mon, 26 Sep 2016, 12 UTC (step 108 h from Thu, 22 Sep 2016, 00 UTC)



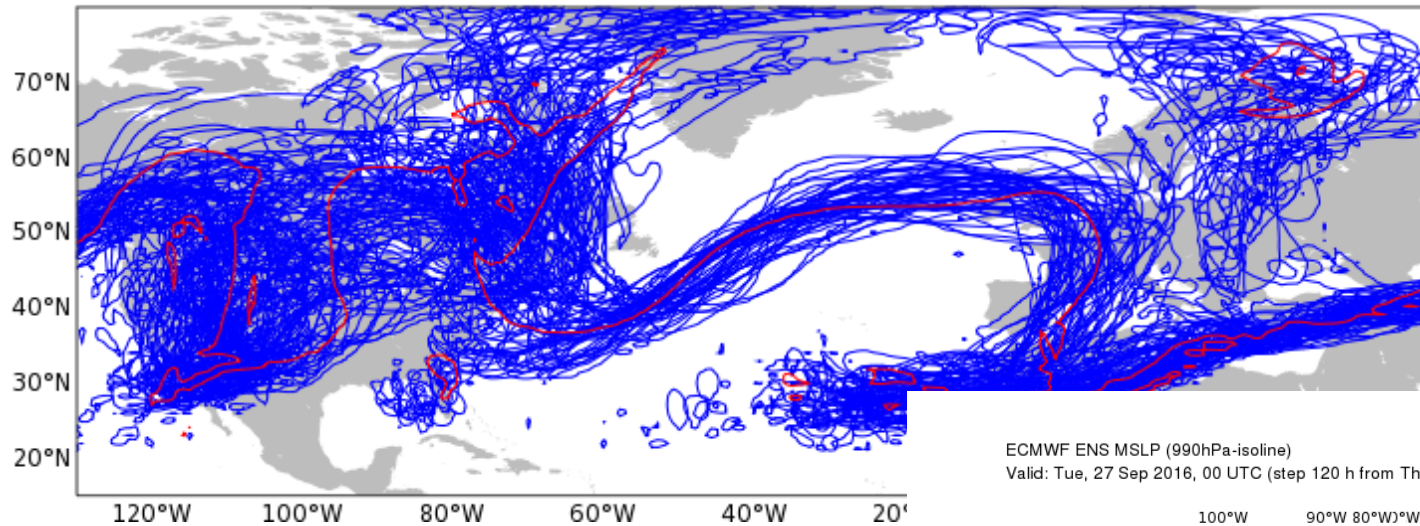
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

## Tue 27/00Z

ECMWF ENSEMBLE FC

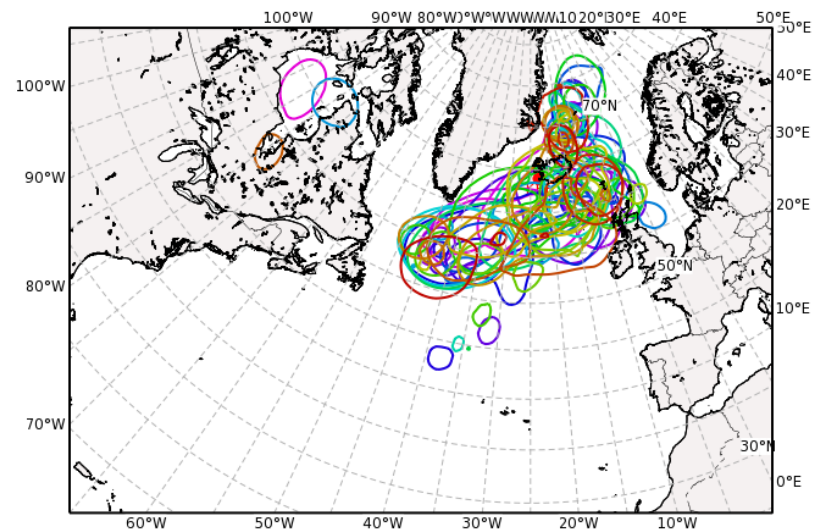
BT: 20160921 00UTC, VT: 20160927 00UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Tue, 27 Sep 2016, 00 UTC (step 120 h from Thu, 22 Sep 2016, 00 UTC)





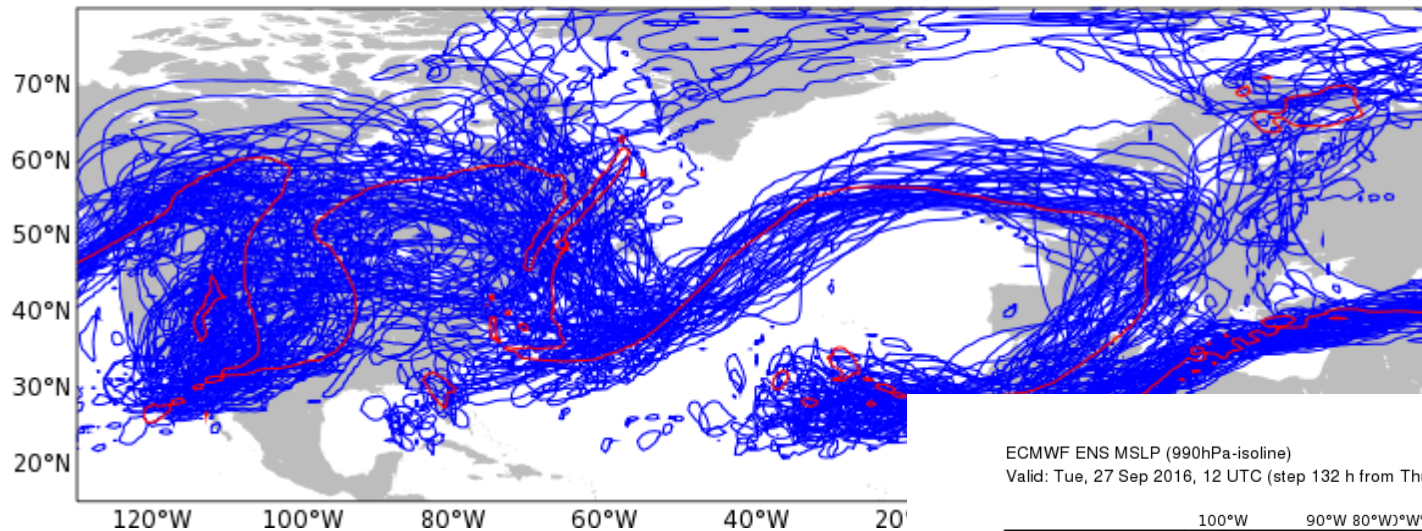
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

## Tue 27/12Z

ECMWF ENSEMBLE FC

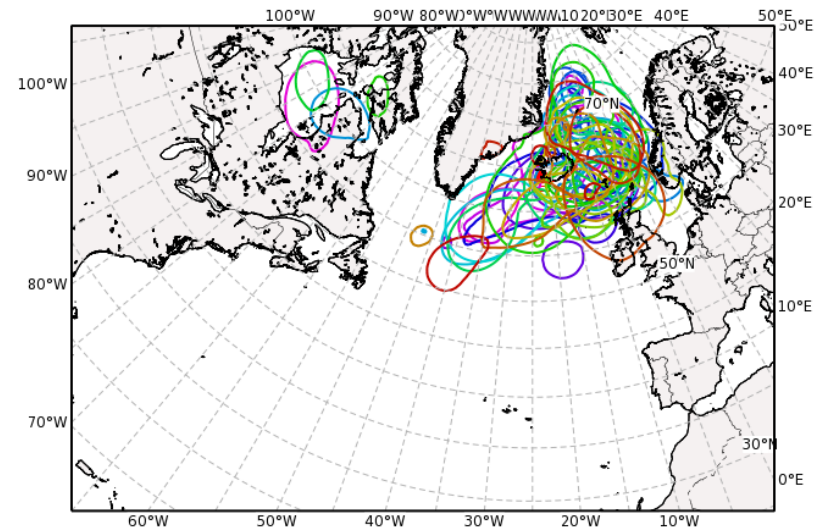
BT: 20160921 00UTC, VT: 20160927 12UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Tue, 27 Sep 2016, 12 UTC (step 132 h from Thu, 22 Sep 2016, 00 UTC)



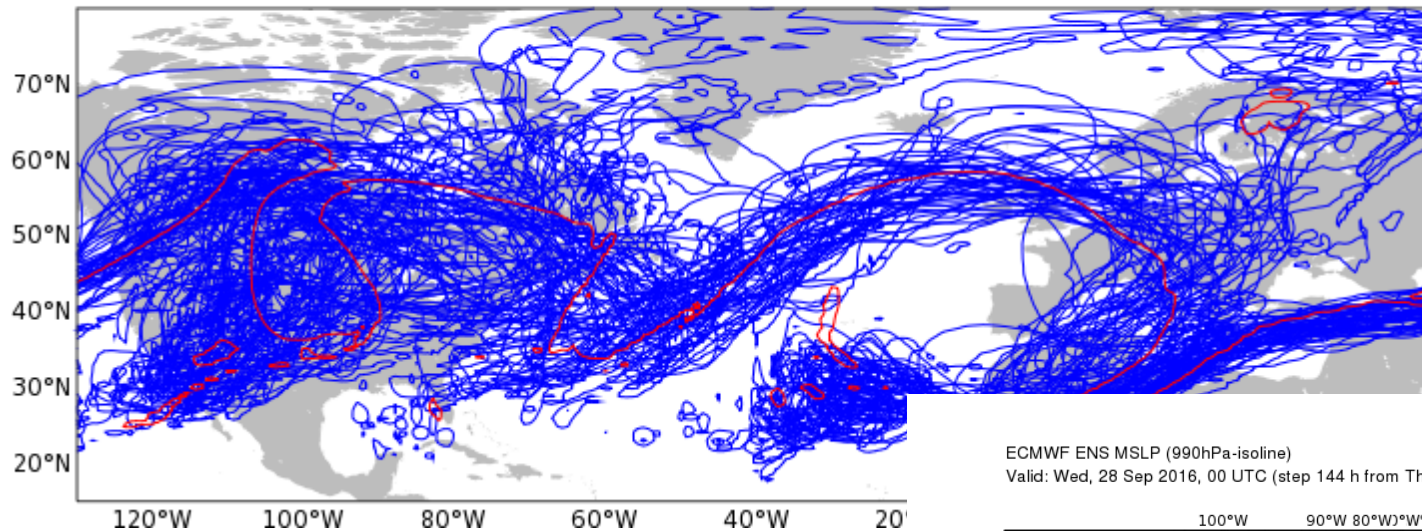
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

## Wed 28/00Z

ECMWF ENSEMBLE FC

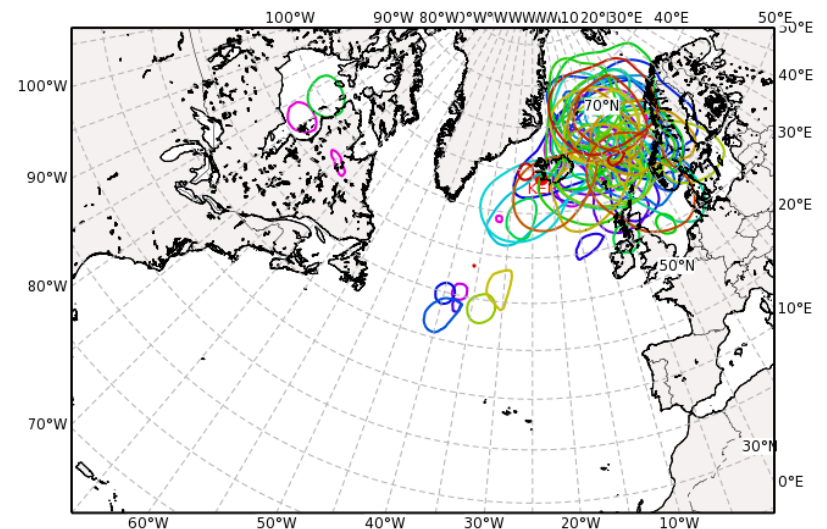
BT: 20160921 00UTC, VT: 20160928 00UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Wed, 28 Sep 2016, 00 UTC (step 144 h from Thu, 22 Sep 2016, 00 UTC)



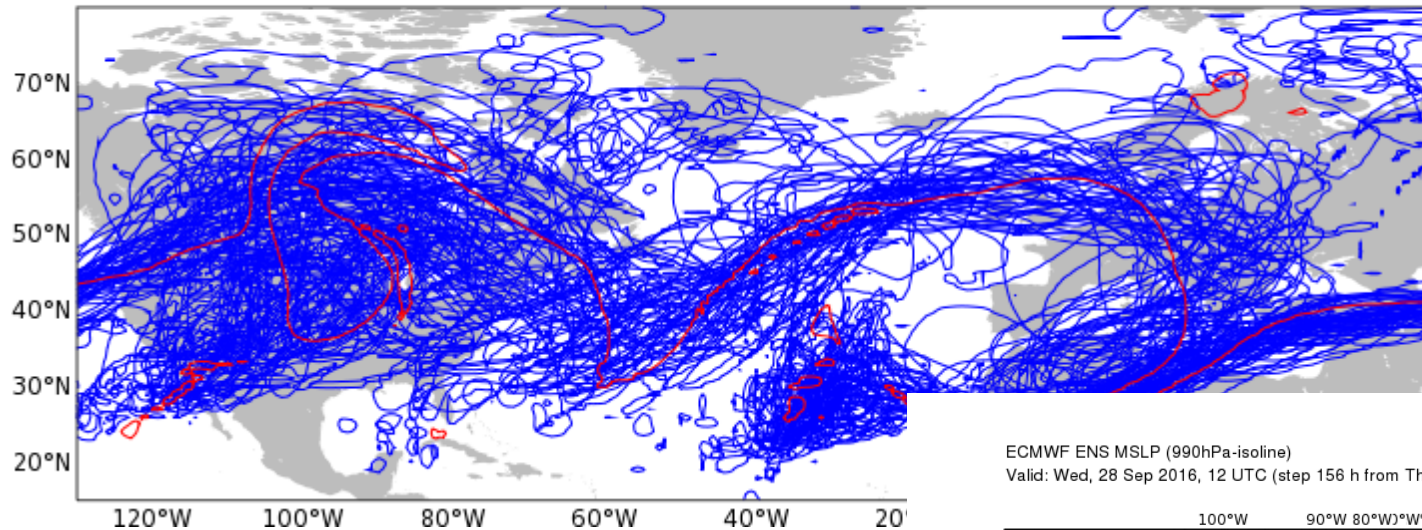
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

Wed 28/12Z

ECMWF ENSEMBLE FC

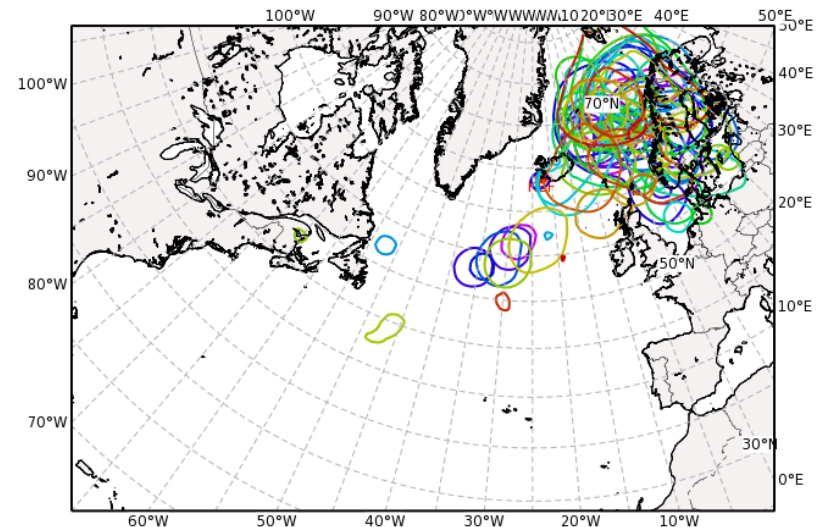
BT: 20160921 00UTC, VT: 20160928 12UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Wed, 28 Sep 2016, 12 UTC (step 156 h from Thu, 22 Sep 2016, 00 UTC)





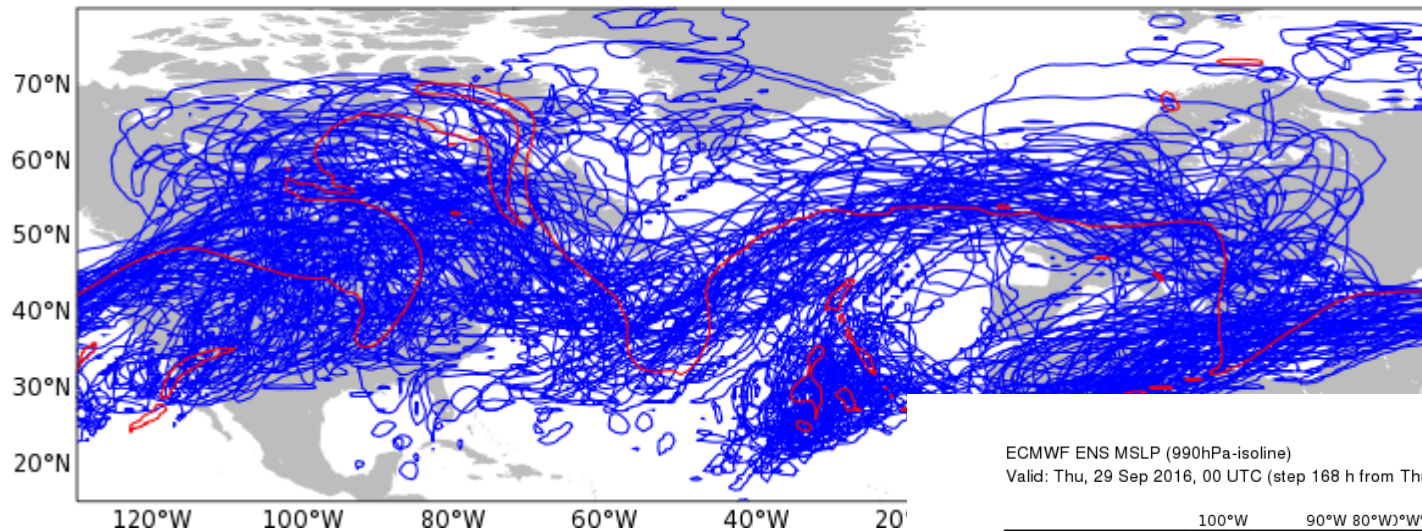
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

## Thu 29/00Z

ECMWF ENSEMBLE FC

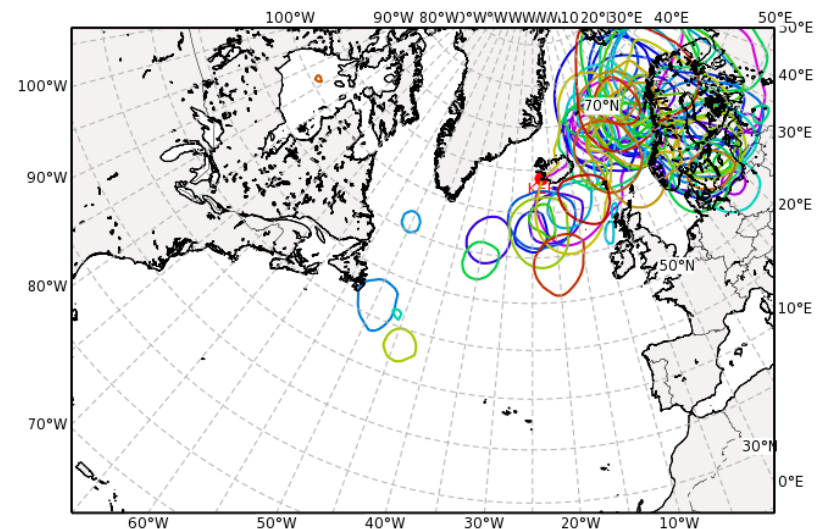
BT: 20160921 00UTC, VT: 20160929 00UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Thu, 29 Sep 2016, 00 UTC (step 168 h from Thu, 22 Sep 2016, 00 UTC)



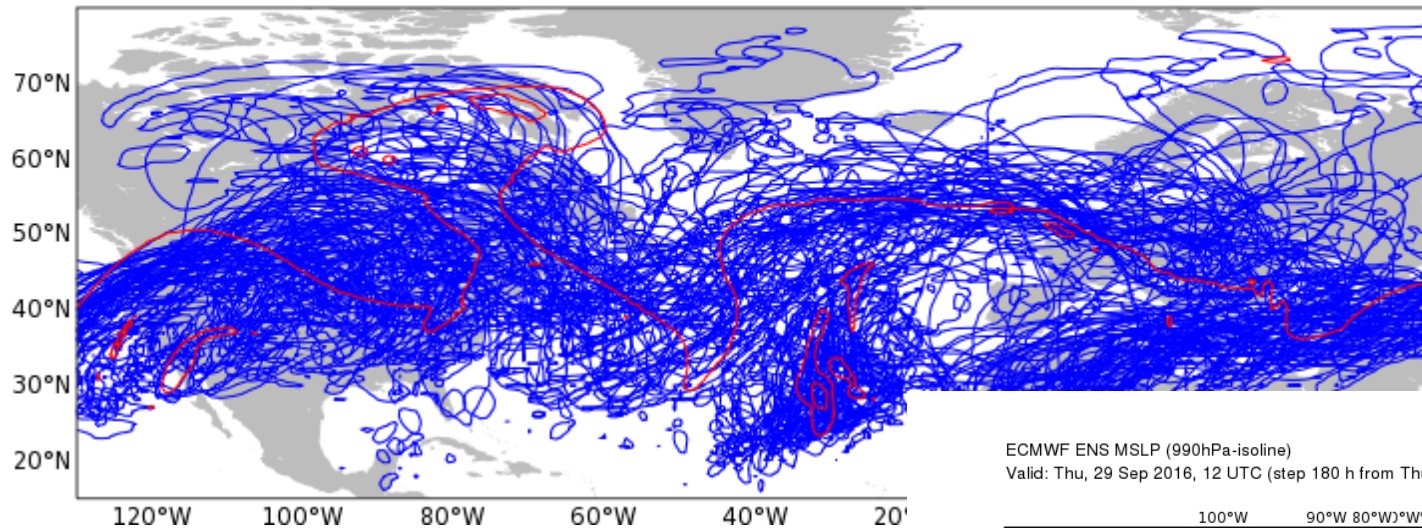
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

## Thu 29/12Z

ECMWF ENSEMBLE FC

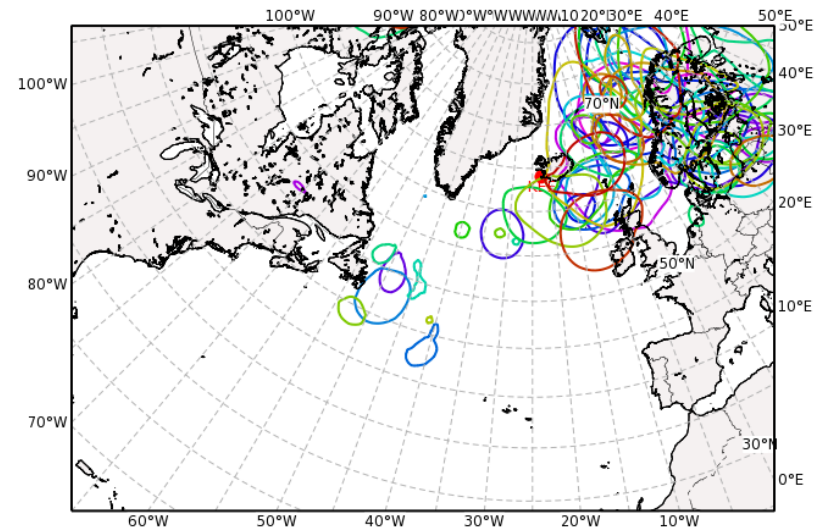
BT: 20160921 00UTC, VT: 20160929 12UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Thu, 29 Sep 2016, 12 UTC (step 180 h from Thu, 22 Sep 2016, 00 UTC)



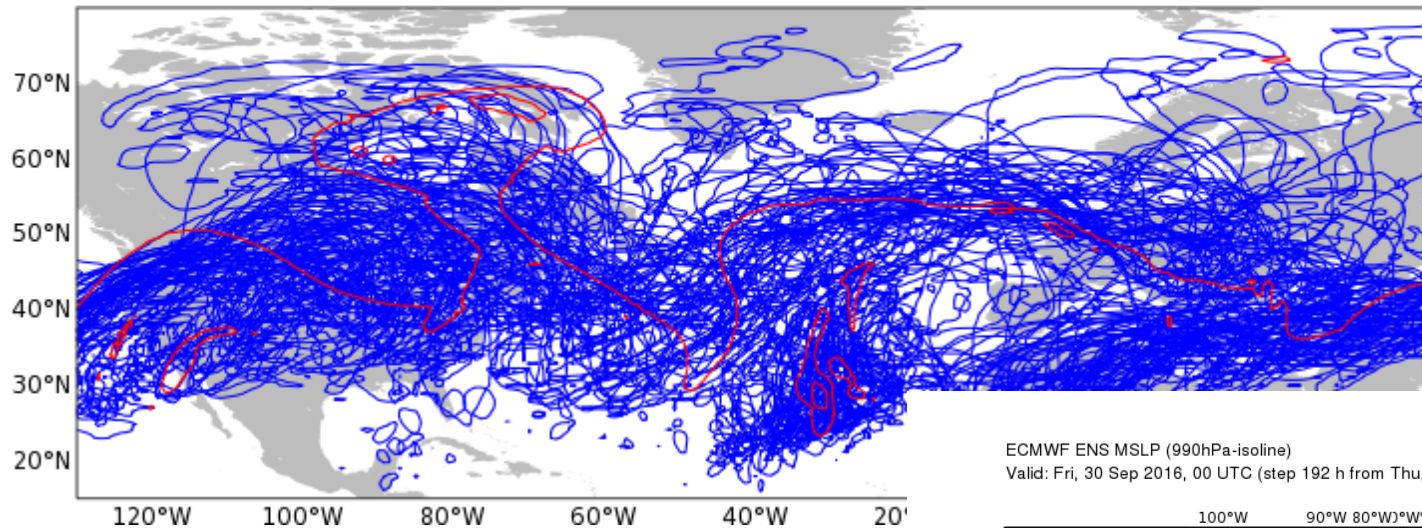
# Outlook Sun 25/00Z to Fr 30/00Z : 2PVU@340K, MSLP 990-hPa isoline (based EC Ens 21/00Z)

## Fri 30/00Z

ECMWF ENSEMBLE FC

BT: 20160921 00UTC, VT: 20160929 12UTC

blue: perturbed, red: control



ECMWF ENS MSLP (990hPa-isoline)

Valid: Fri, 30 Sep 2016, 00 UTC (step 192 h from Thu, 22 Sep 2016, 00 UTC)

