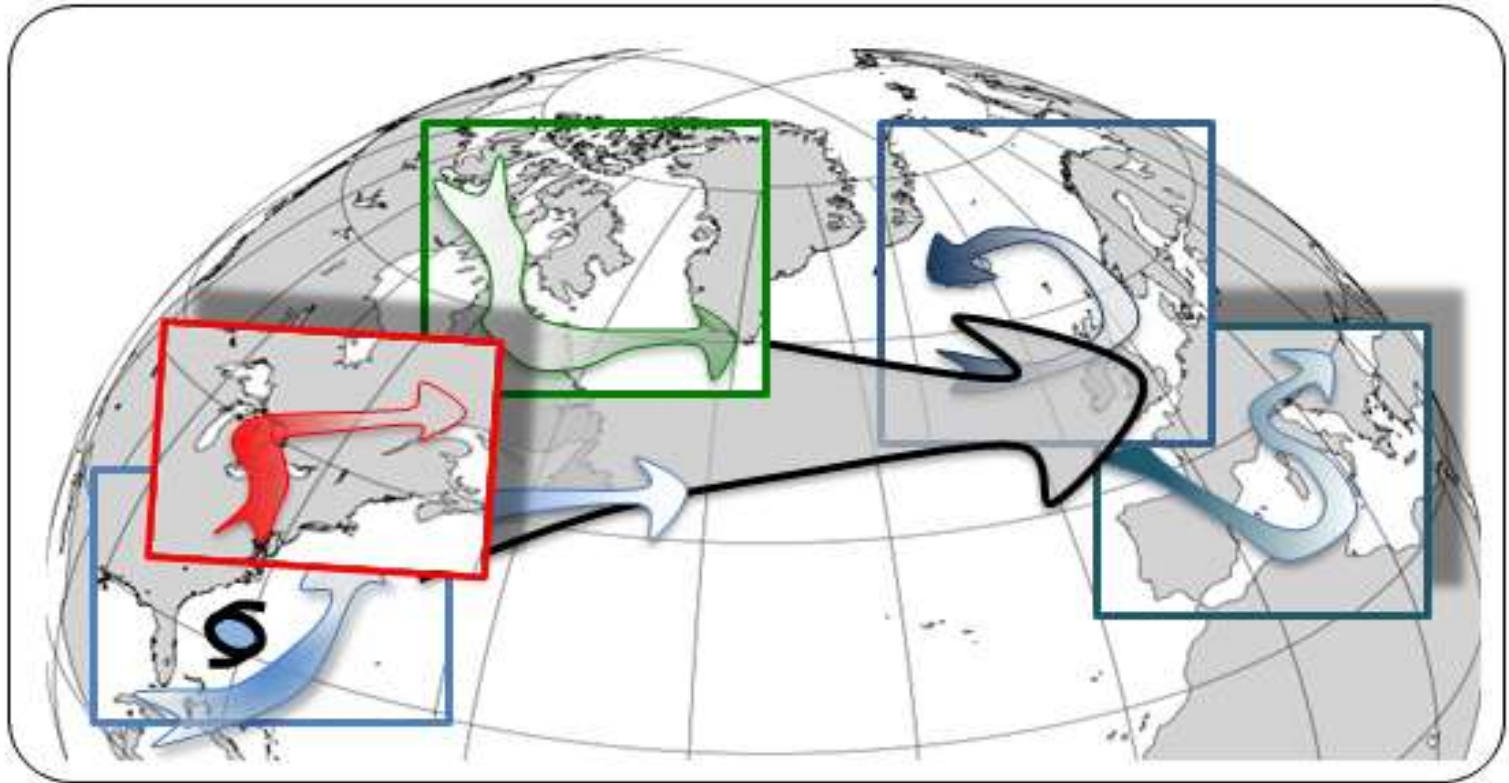


NAWDEX – Flight Planning Meeting

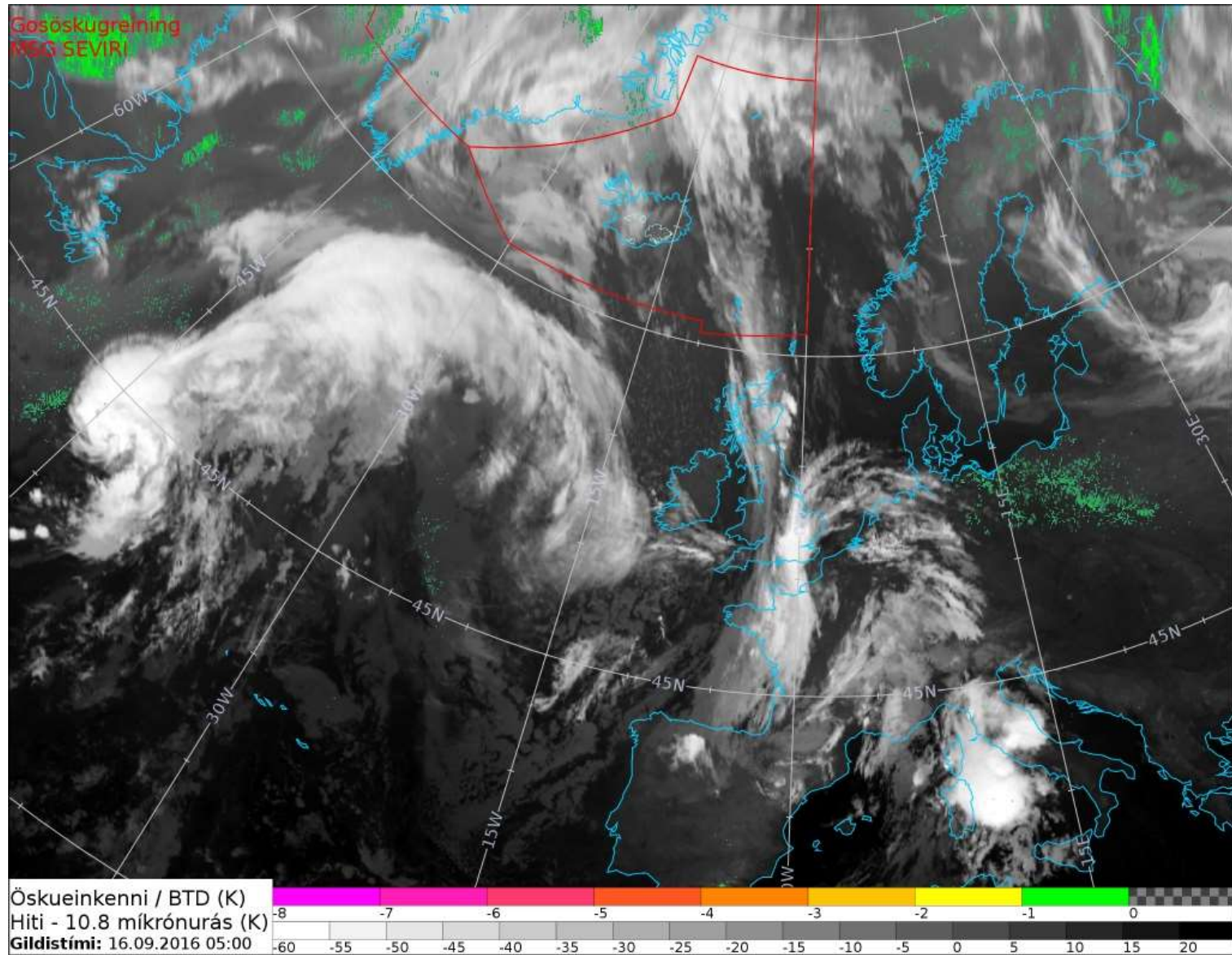
16 September 2016, online conference



Tasks and schedule

- **Final plans for Halo and Falcon** transfer for **Saturday**
- Today's weather briefing
- Evolution on Saturday
- **Discussion about Dropsonde locations**
- Further outlook
- **Opportunities Wed-Fri 21-23 September**
- **Decision about need of UK FAAM Bae-146**

TC Ian Track current situation 16 Sep



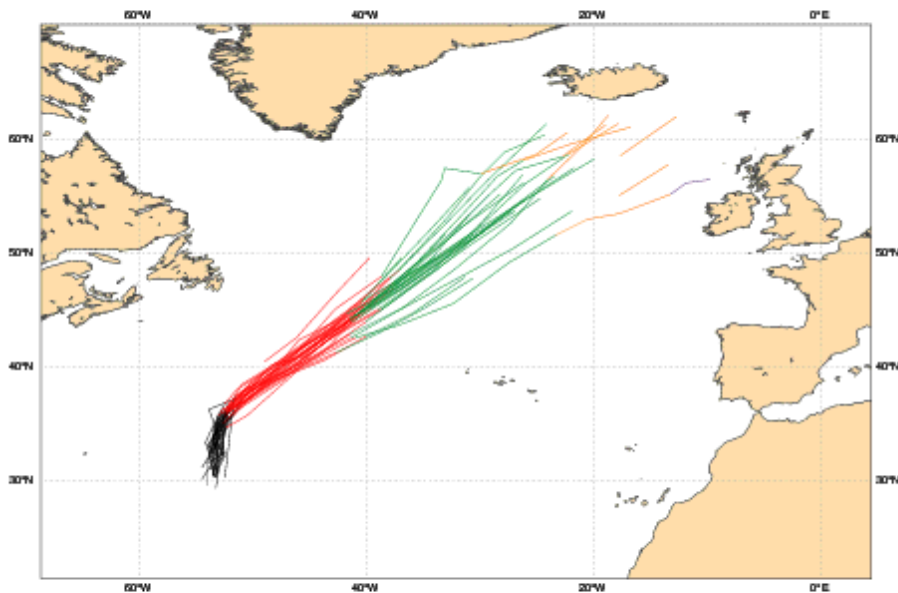
TC Ian Track forecasts 14/12Z

Date 20160914 12 UTC @ECMWF

Individual trajectories for **IAN** 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



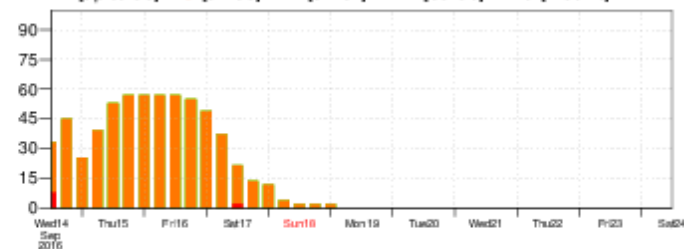
List of ensemble members numbers forecast Tropical Cyclone

Intensity category in colours: **TD**[up to 33] **TS**[34-63] **HR1**[64-82] **HR2**[83-95] **HR3**[> 95 kt]

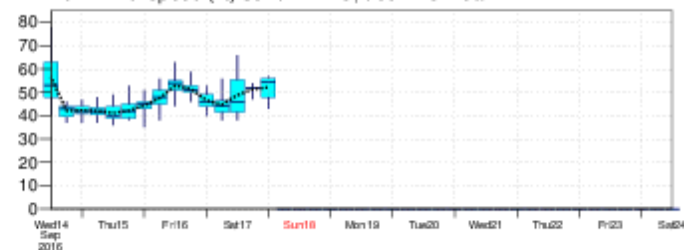
+024 h :	04 05	09 10 11 12	14	16	19 20	23 24 25	28 29	31 32	35 36 37	39 40	43	46 47 48	50
+048 h :	04 05	09 10 11 12	14	16 17	19 20 21	23 24 25	28 29	31 32	35 36 37	39 40	43	46 47 48	50
+072 h :		09 10	12	16 17		23			35 36 37			47	50
+096 h :													50
+120 h :													50
+144 h :													
+168 h :													
+192 h :													
+216 h :													
+240 h :													

Probability (%) of Tropical Cyclone Intensity falling in each category

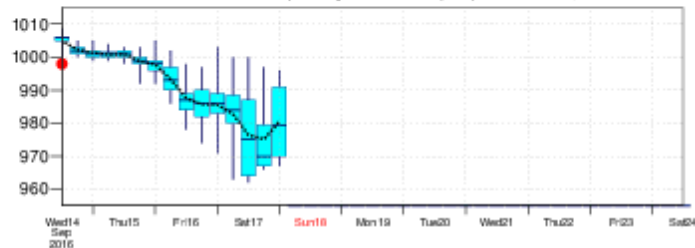
TD[up to 33] **TS** [34-63] **HR1**[64-82] **HR2** [83-95] **HR3** [> 95 kt]



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



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



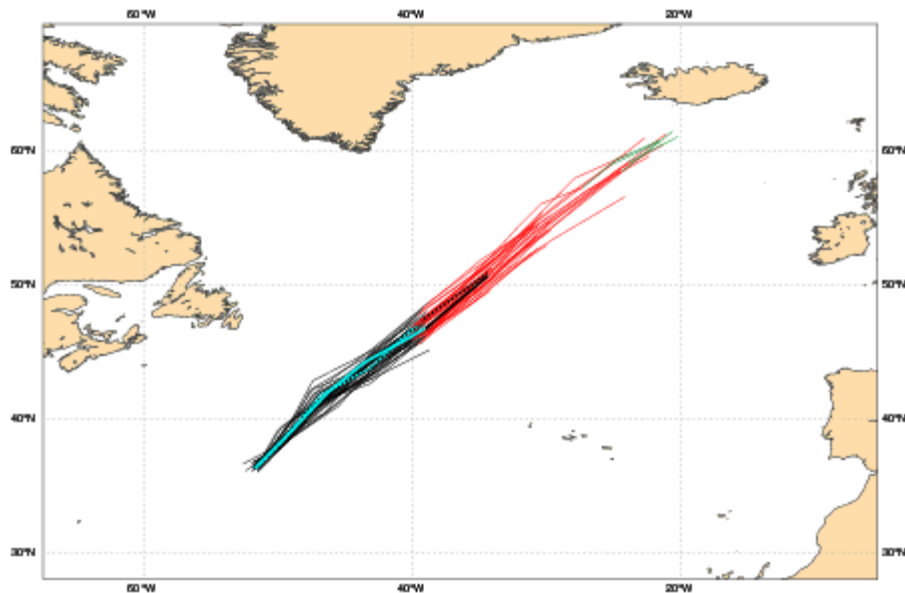
TC Ian Track forecasts 15/12Z

Date 20160915 12 UTC @ECMWF

Individual trajectories for **IAN** 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



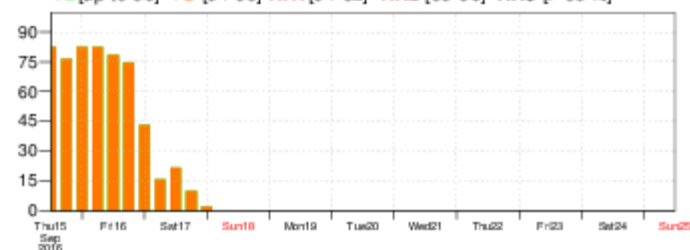
List of ensemble members numbers forecast Tropical Cyclone

Intensity category in colours: **TD**[up to 33] **TS**[34-63] **HR1**[64-82] **HR2**[83-95] **HR3**[> 95 kt]

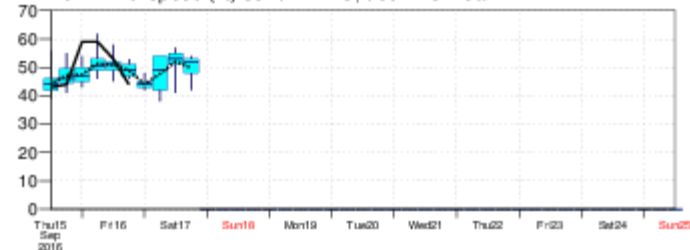
Time Interval	TD	TS	HR1	HR2	HR3
+024 h	1-10	11-12	13-14	15-16	17-18
+048 h	19	20	21	22	23
+072 h	24	25	26	27	28
+096 h	29	30	31	32	33
+120 h	34	35	36	37	38
+144 h	39	40	41	42	43
+168 h	44	45	46	47	48
+192 h	49	50	51	52	53
+216 h	54	55	56	57	58
+240 h	59	60	61	62	63

Probability (%) of Tropical Cyclone Intensity falling in each category

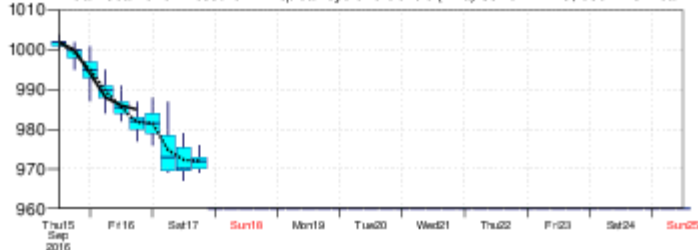
TD[up to 33] **TS** [34-63] **HR1**[64-82] **HR2** [83-95] **HR3** [> 95 kt]



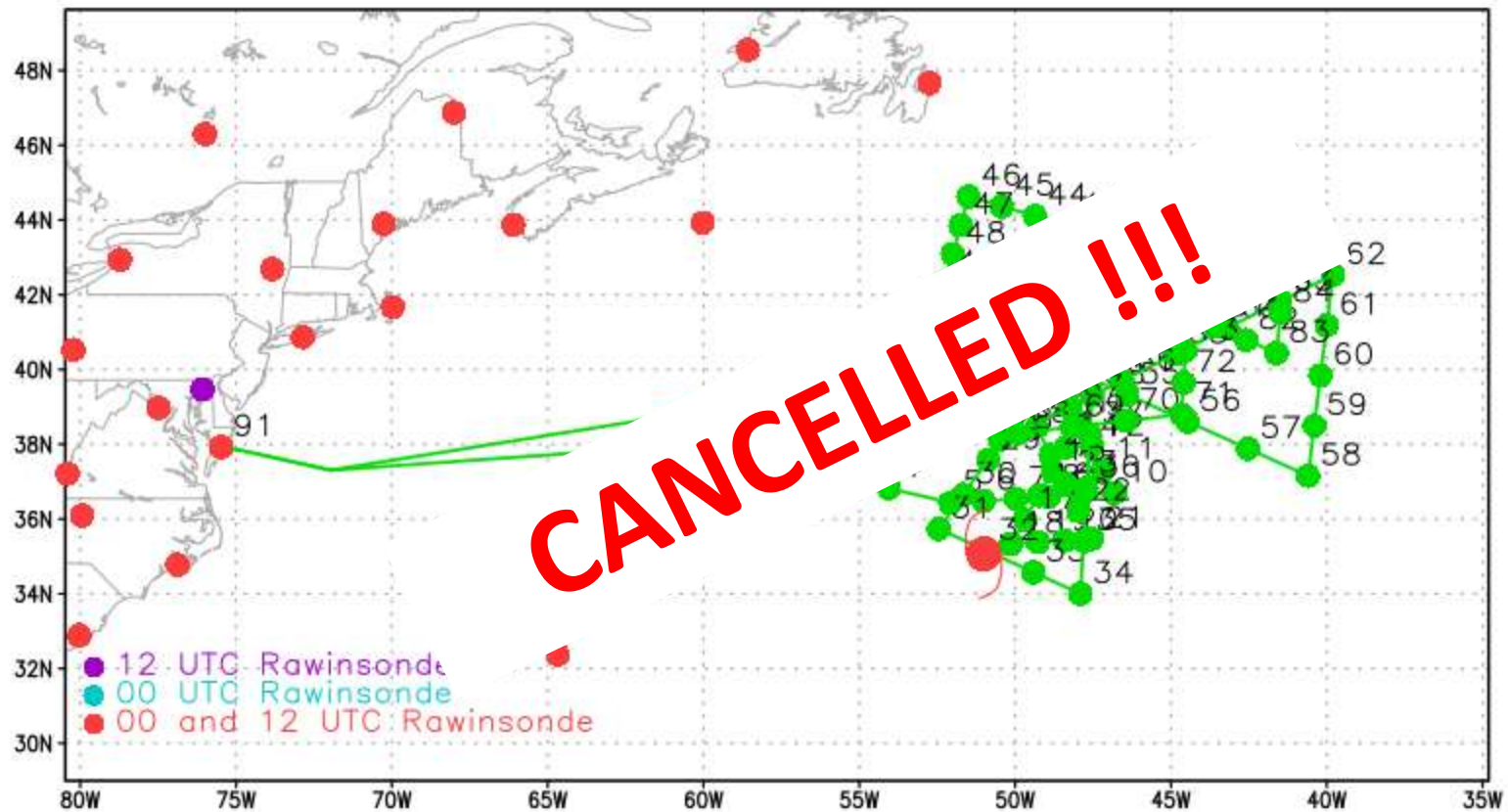
10m Wind Speed (kt) **solid**=HRES; **dot**=Ens Mean



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

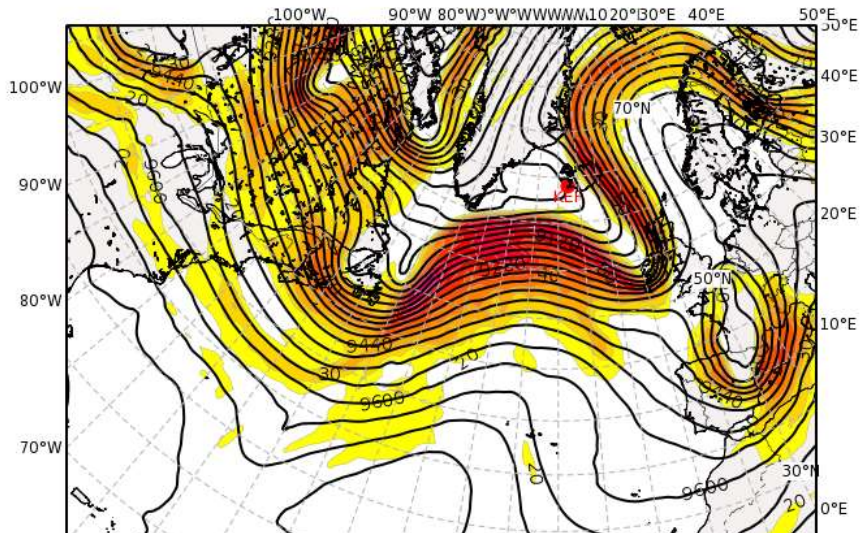


Shout mission in Ian Thu 10 UTC to Fri 04 UTC

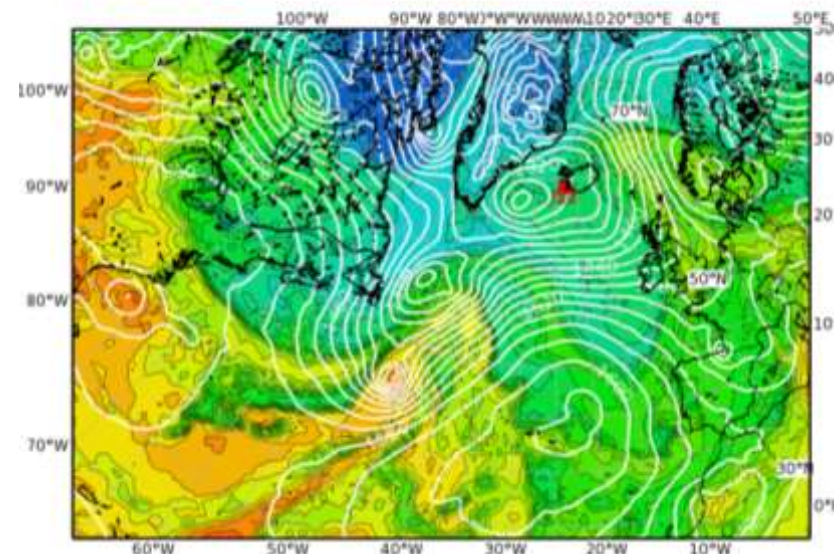


Analysis – 16 Sep 2016, 00 UTC

Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Fri, 16 Sep 2016, 00 UTC (step 000 h from Fri, 16 Sep 2016, 00 UTC)



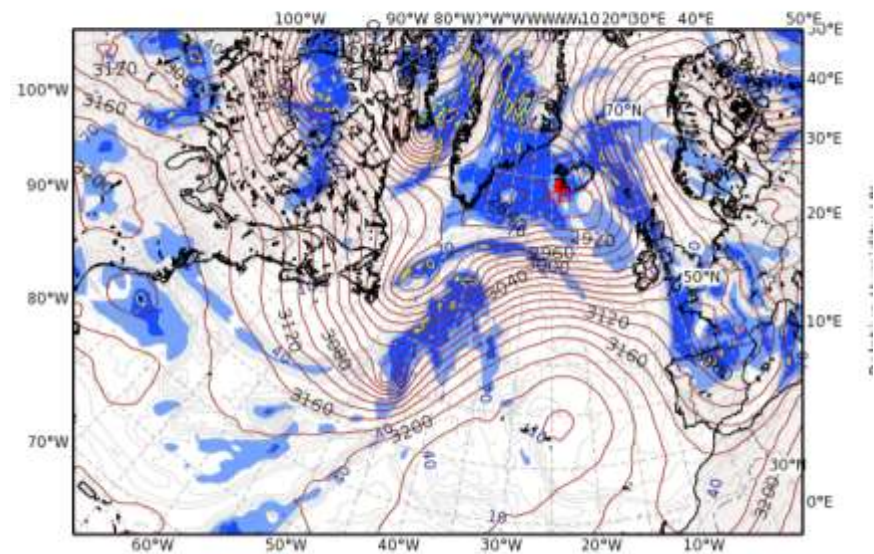
Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Fri, 16 Sep 2016, 00 UTC (step 000 h from Fri, 16 Sep 2016, 00 UTC)



Z300, SAT
THE850, RH700



Relative Humidity (%) and Z (m) at 700 hPa
Valid: Fri, 16 Sep 2016, 00 UTC (step 000 h from Fri, 16 Sep 2016, 00 UTC)

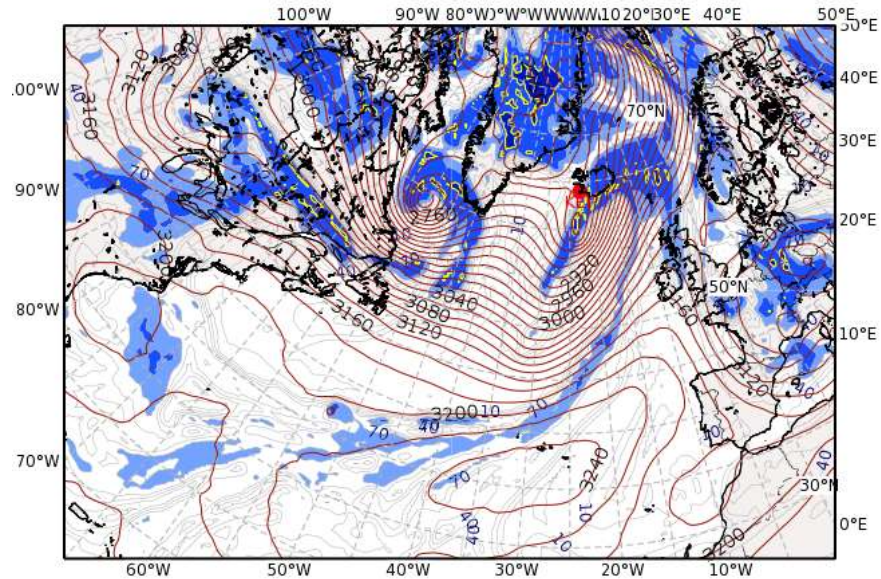
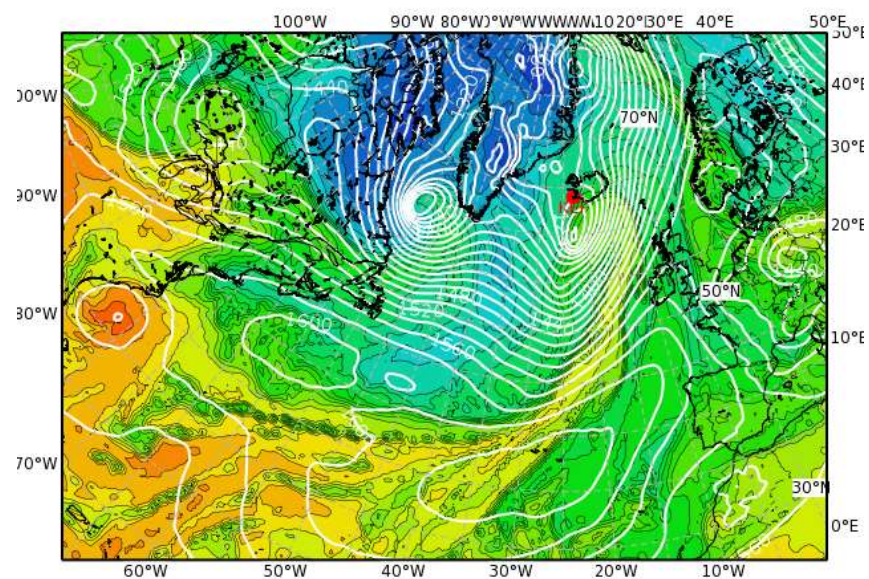
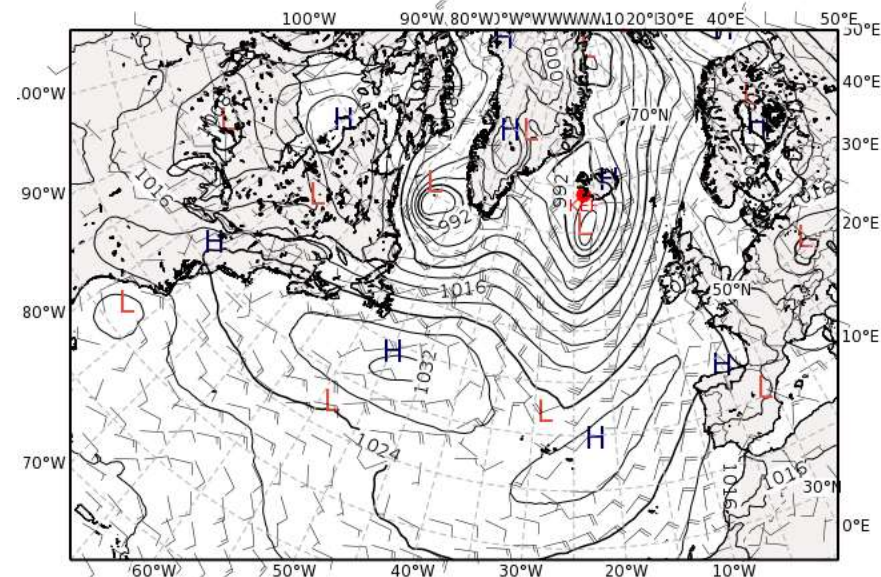
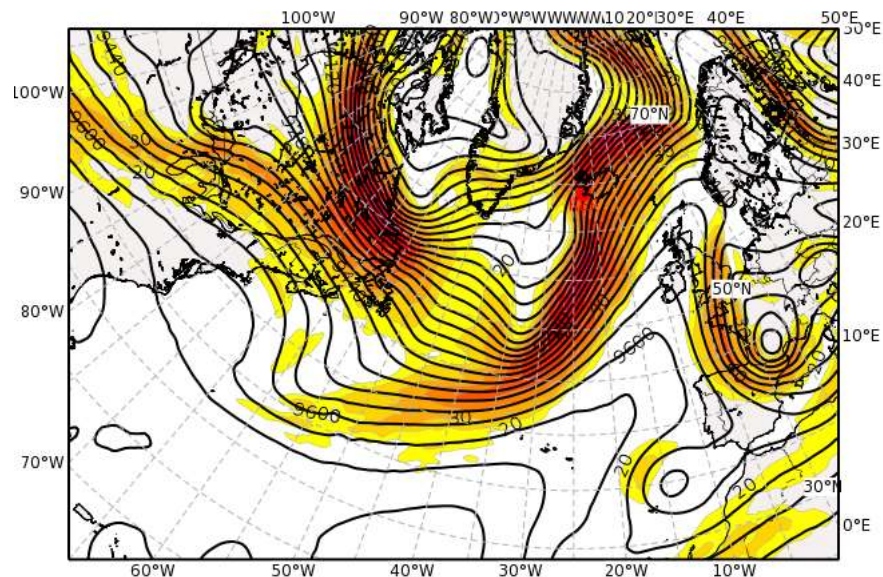


Forecast for Sat, 17 Sep 2016 12 UTC

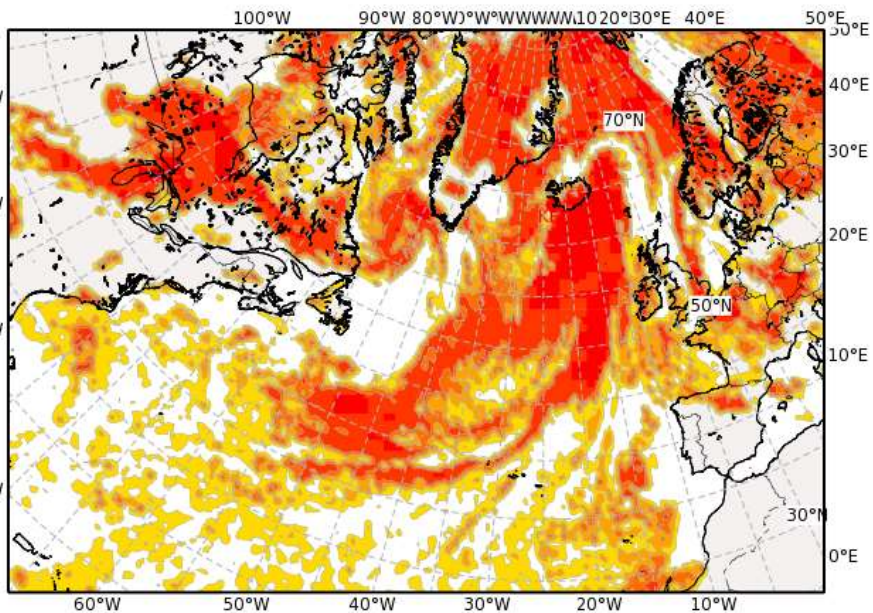
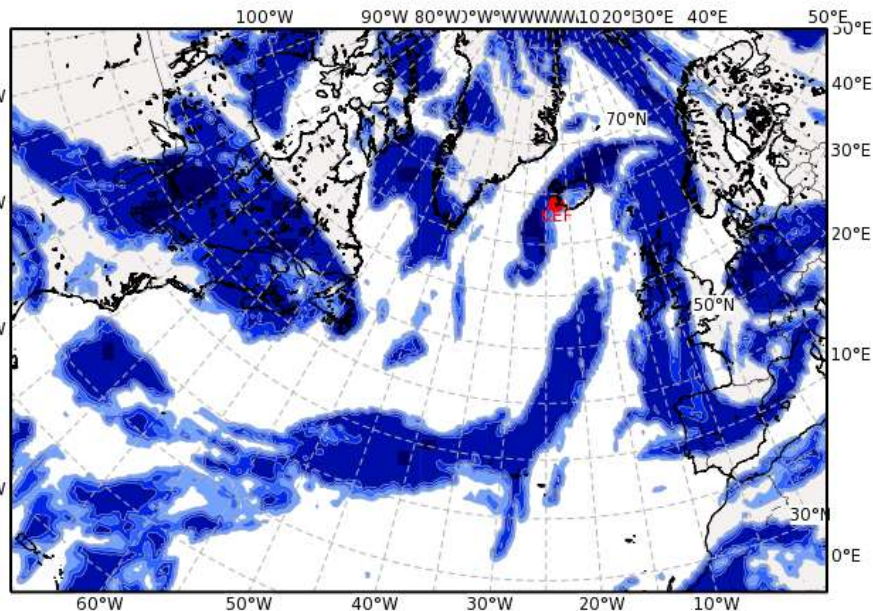
Z300, SLP

THE850, RH700

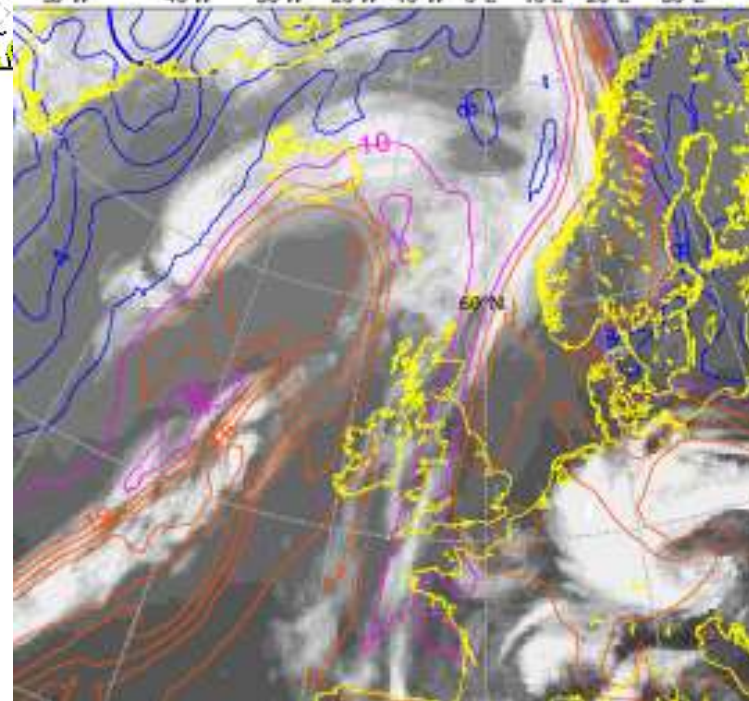
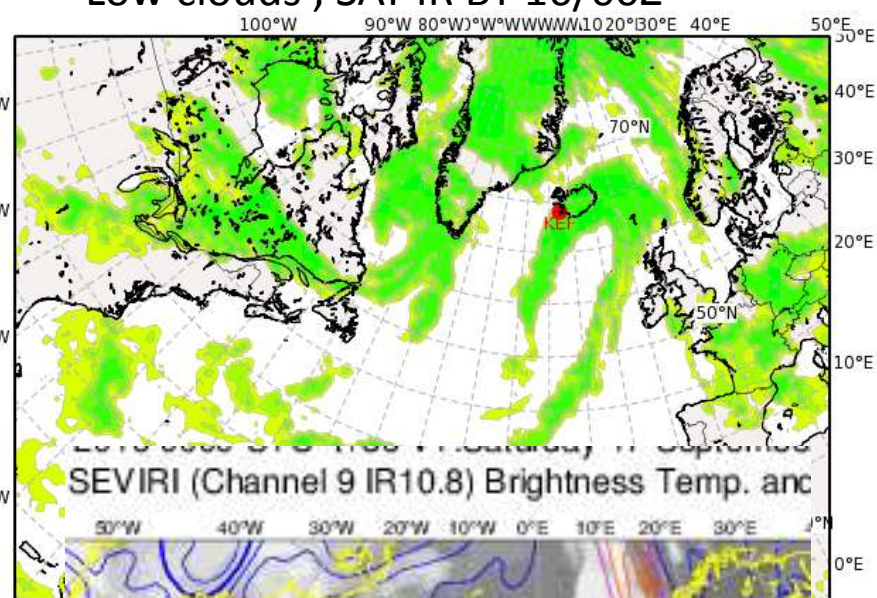
BT16/00Z



Forecast for Sat, 17 Sep 2016 12 UTC



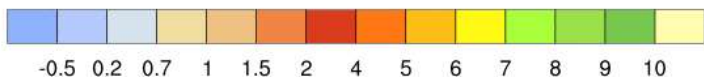
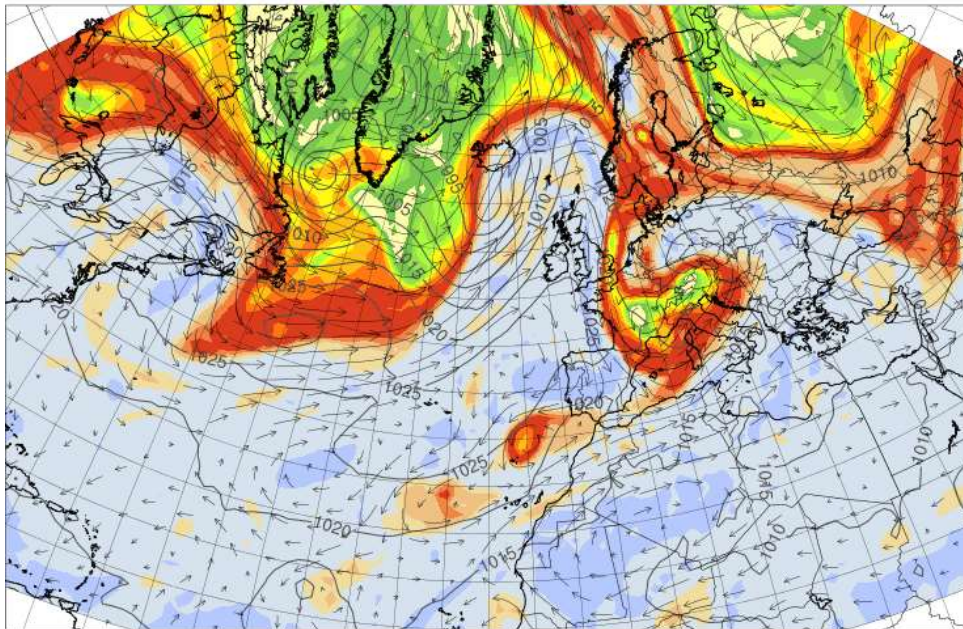
High, mid
Low clouds , SAT IR BT 16/00Z



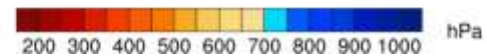
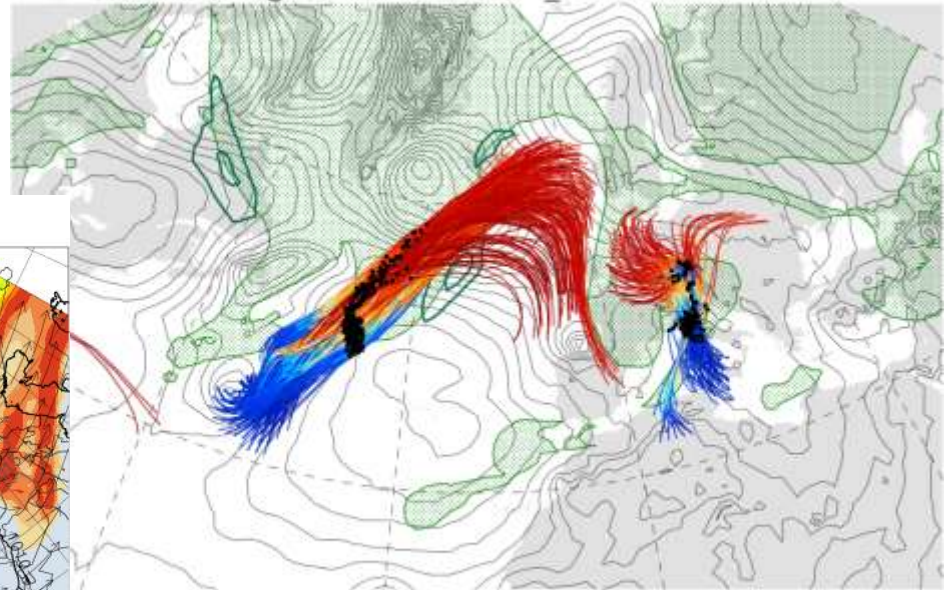
Forecast for Sat, 17 Sep 2016 12 UTC

BT14/12Z

PV@330K at 20160917_12



Trajectory start and SLP VT: 20160915_12
WCB outflow and PV@250hPa VT: 20160917_12



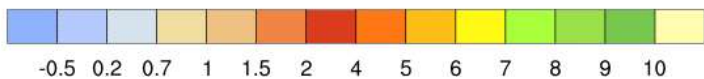
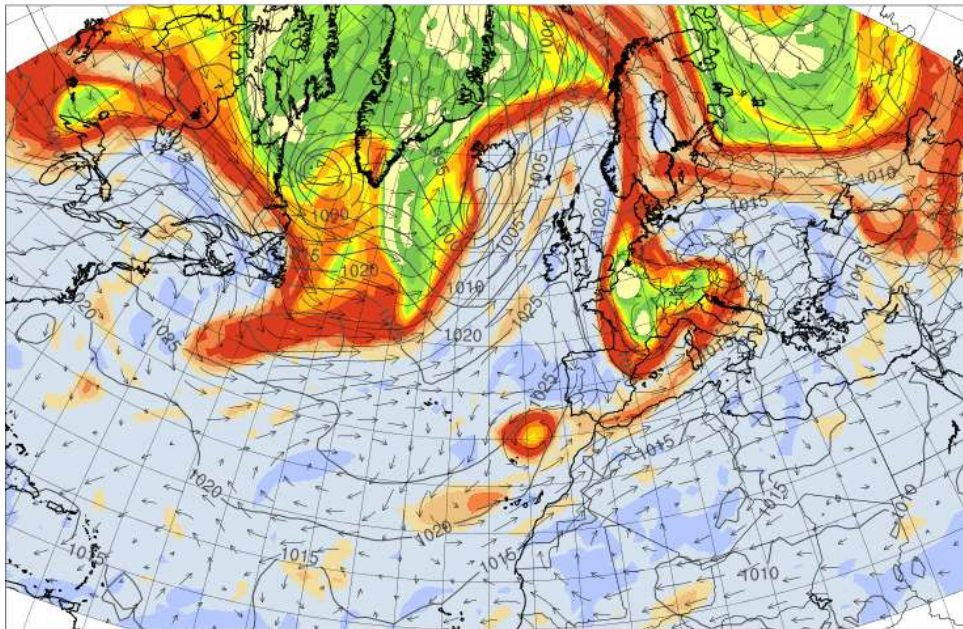
pvu

hPa

Forecast for Sat, 17 Sep 2016 12 UTC

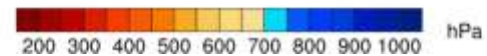
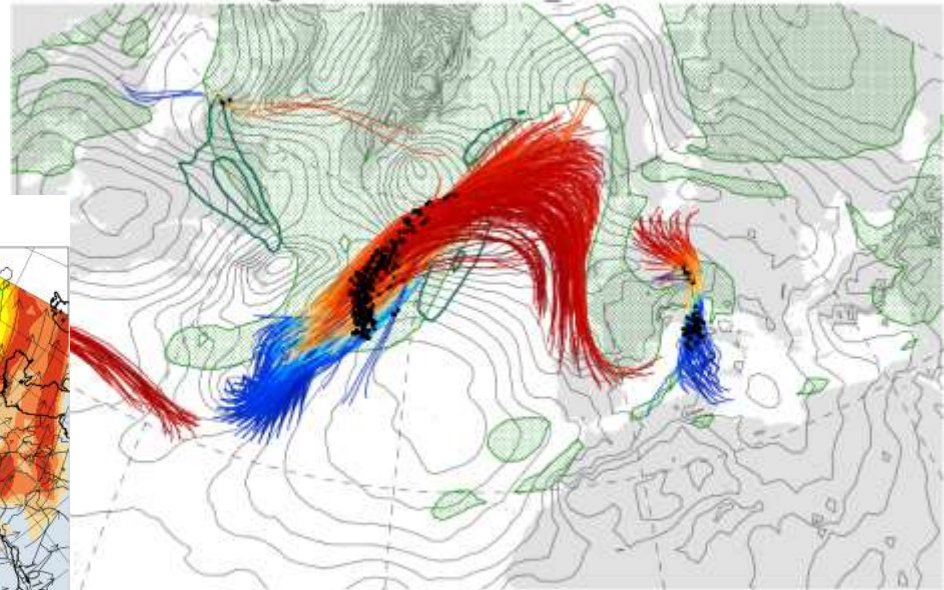
BT14/12Z

PV@330K at 20160917_12



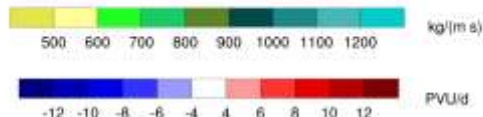
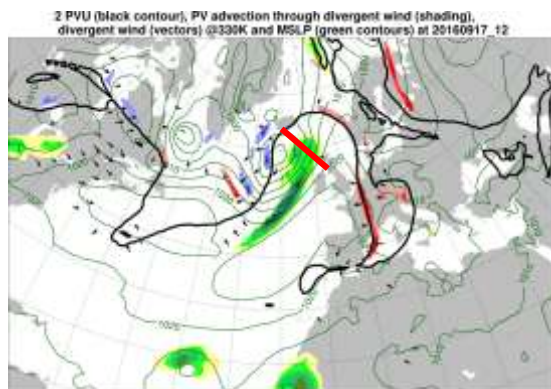
pvu

Trajectory start and SLP VT: 20160915_12
WCB outflow and PV@250hPa VT: 20160917_12

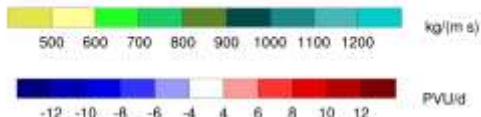
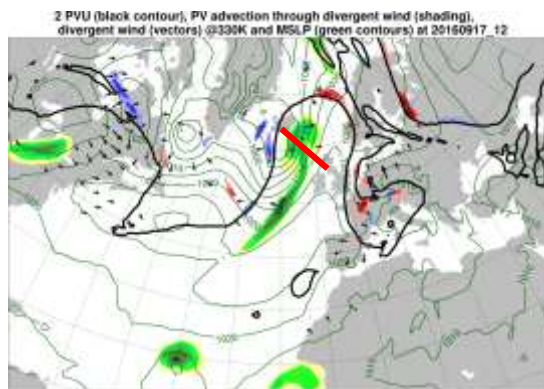


hPa

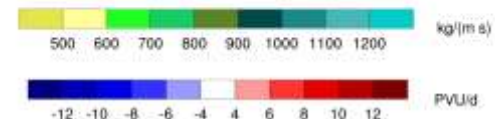
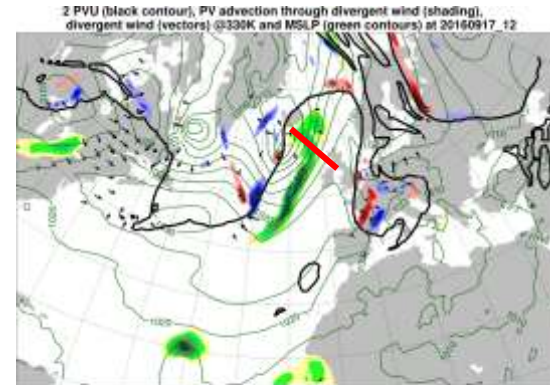
Overview model consistency Sat 17/12Z ECMWF Hres



BT 14/00Z

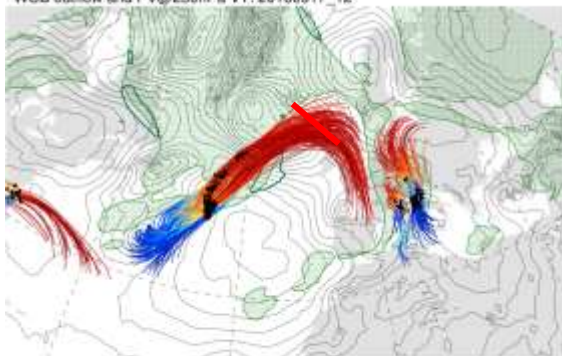


BT 14/12Z

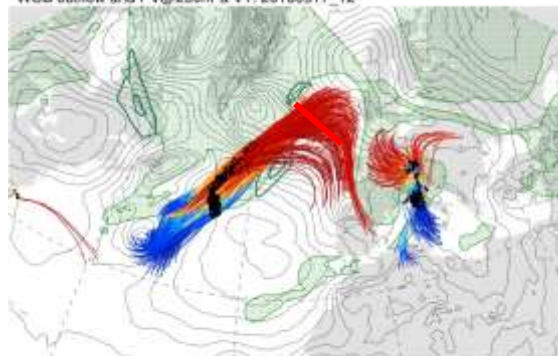


BT 15/00Z

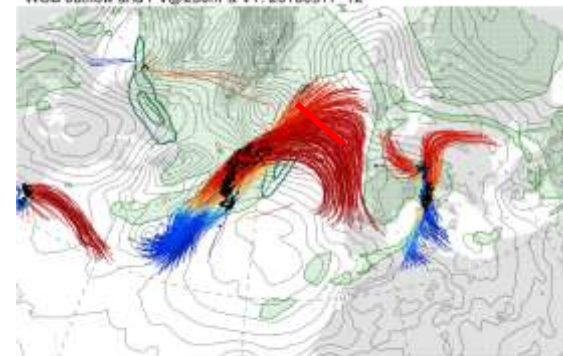
Trajectory start and SLP VT: 20160915_12
WCB outflow and PV@250hPa VT: 20160917_12



Trajectory start and SLP VT: 20160915_12
WCB outflow and PV@250hPa VT: 20160917_12



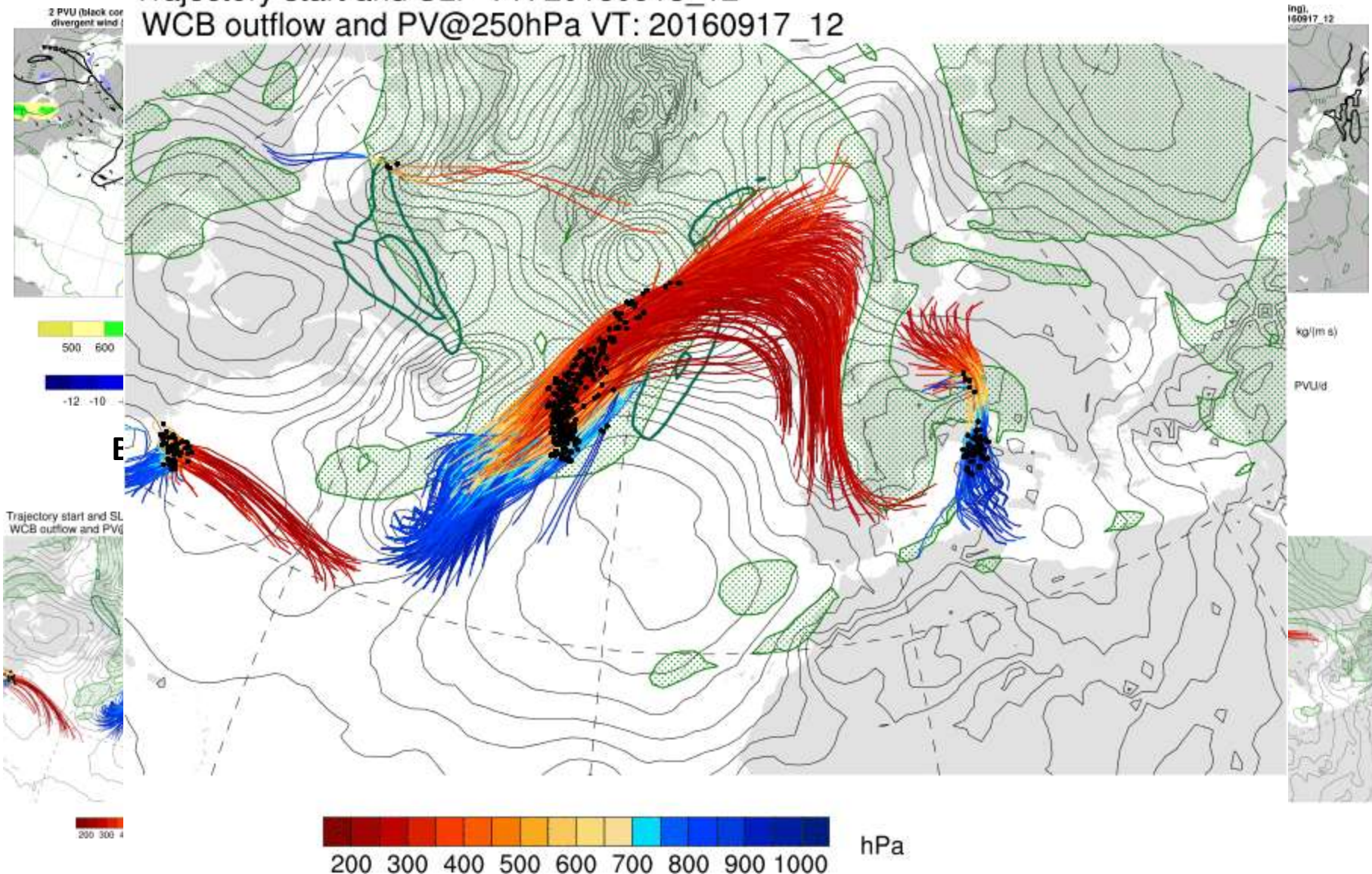
Trajectory start and SLP VT: 20160915_12
WCB outflow and PV@250hPa VT: 20160917_12



Overview model consistency Sat 17/12Z ECMWF Hres

Trajectory start and SLP VT: 20160915_12

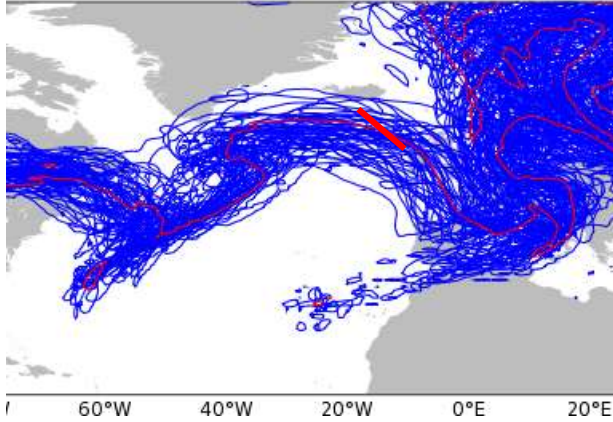
WCB outflow and PV@250hPa VT: 20160917_12



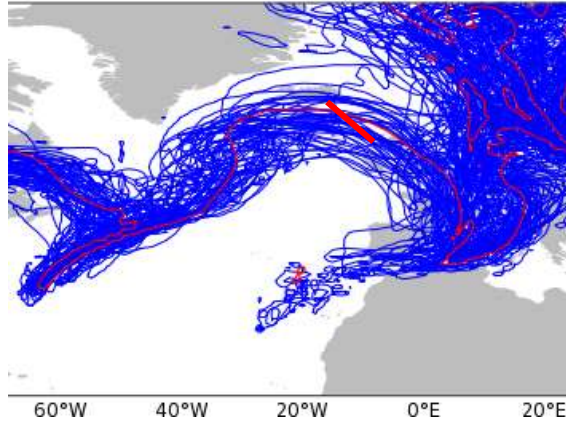
Overview model consistency Sat 17/12Z ECMWF Ensemble

JTC

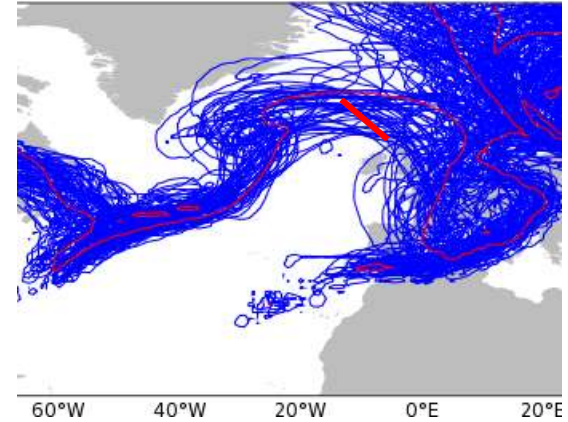
BT 12/12Z



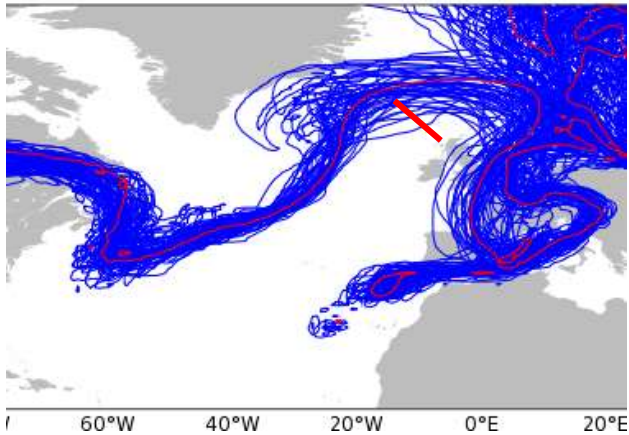
BT 13/00Z



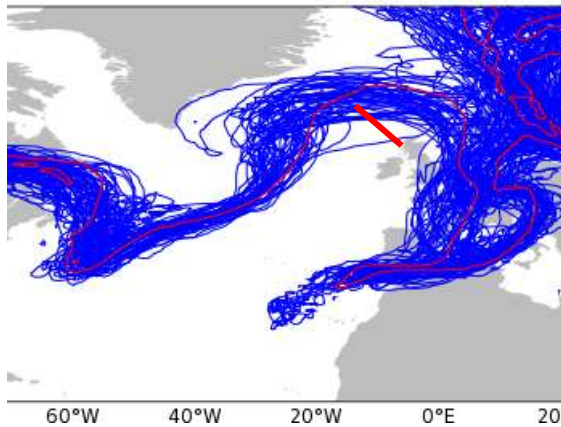
BT 13/12Z



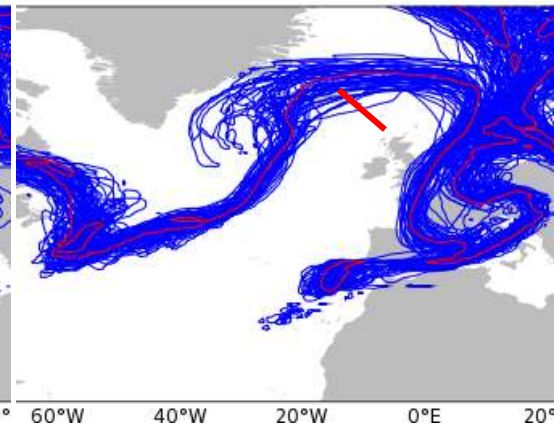
BT 14/00Z



BT 14/12Z



BT 15/00Z



Overview model consistency Sat 17/12Z ECMWF Ensemble

JTC

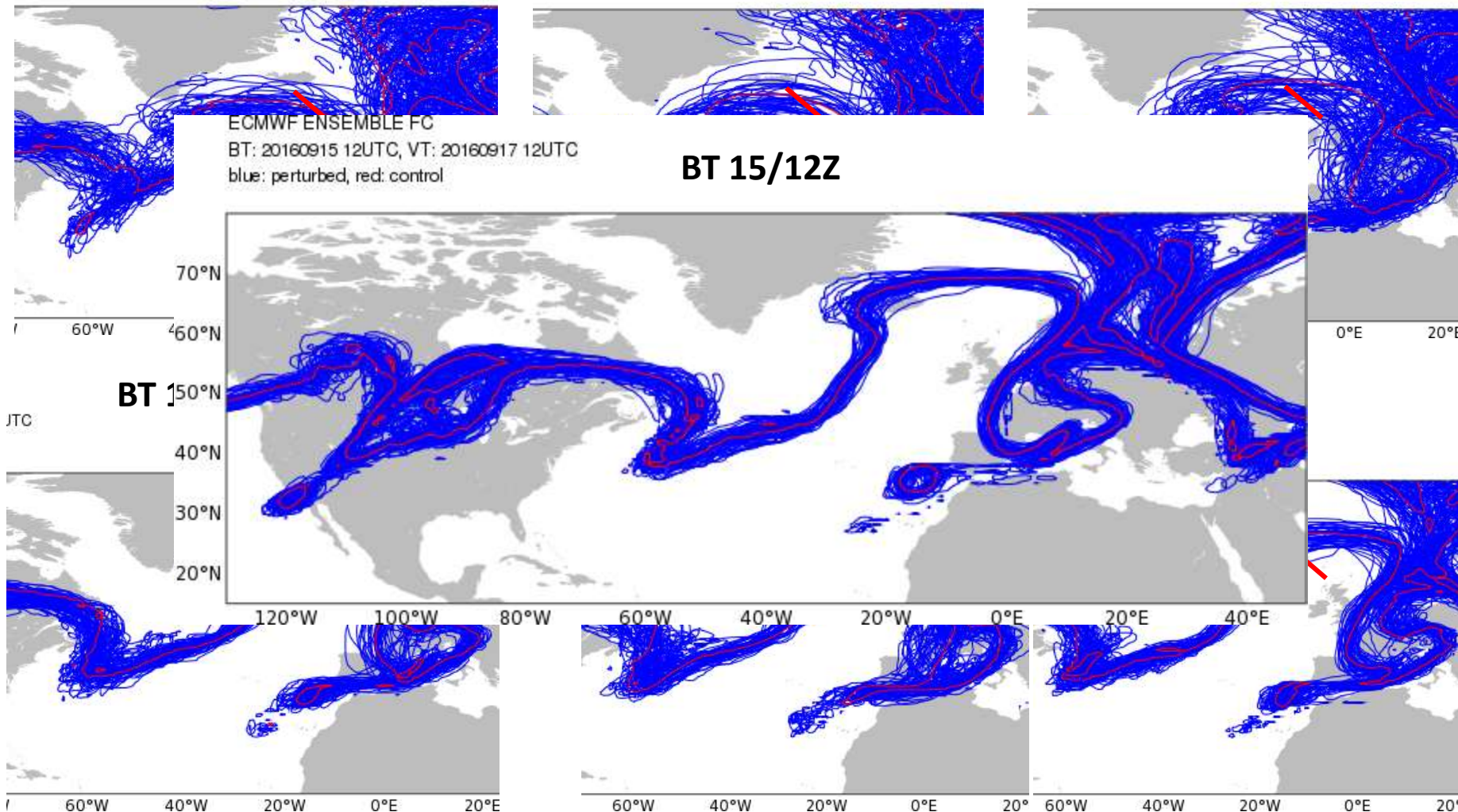
BT 12/12Z

BT 13/00Z

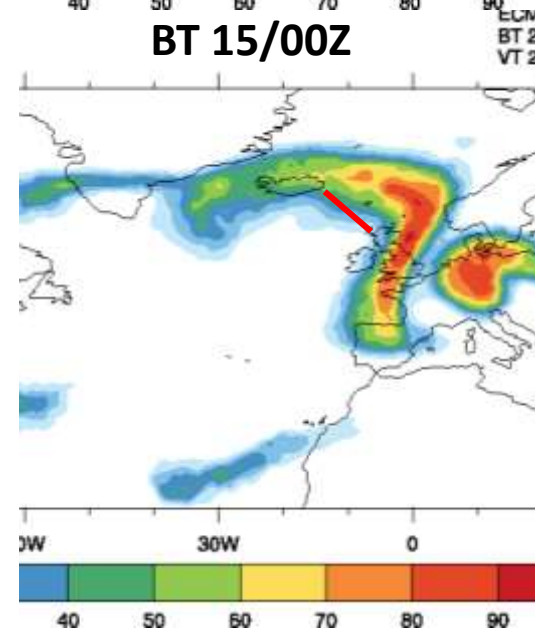
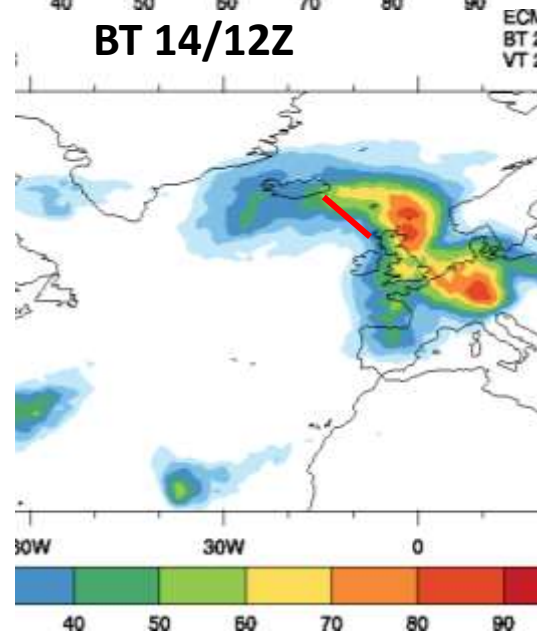
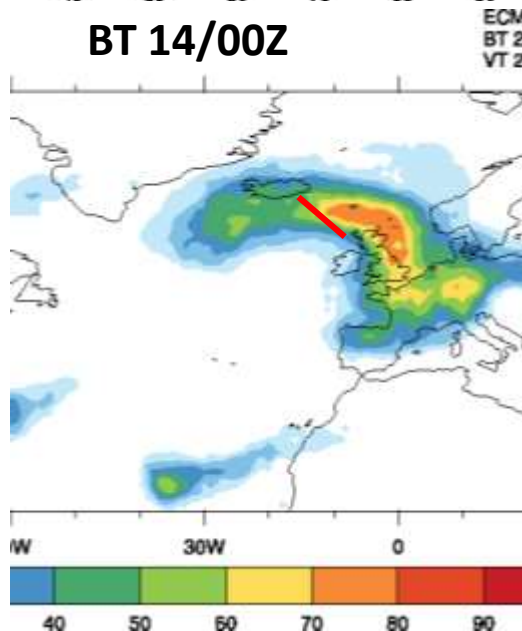
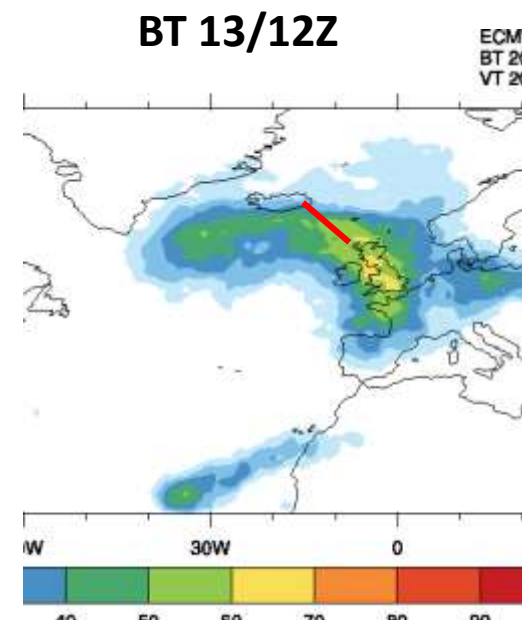
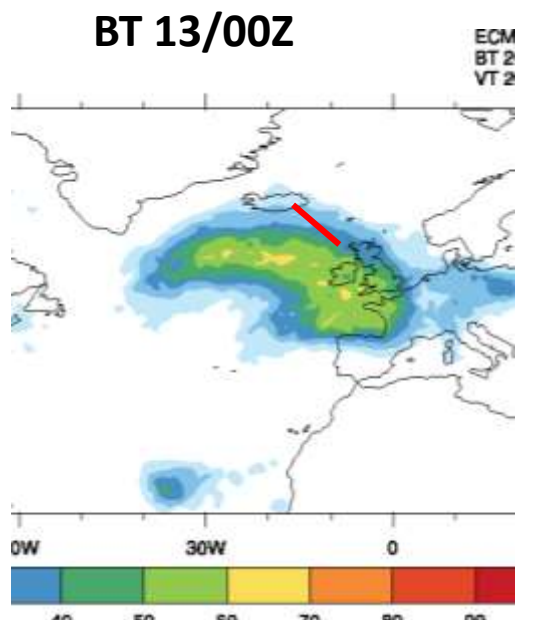
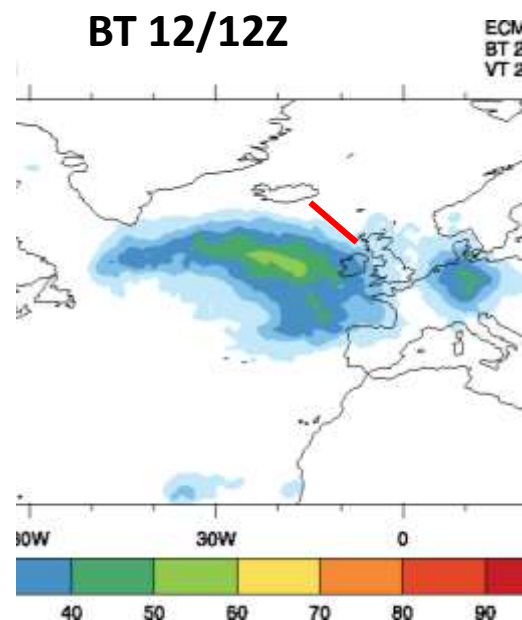
BT 13/12Z

ECMWF ENSEMBLE FC
BT: 20160915 12UTC, VT: 20160917 12UTC
blue: perturbed, red: control

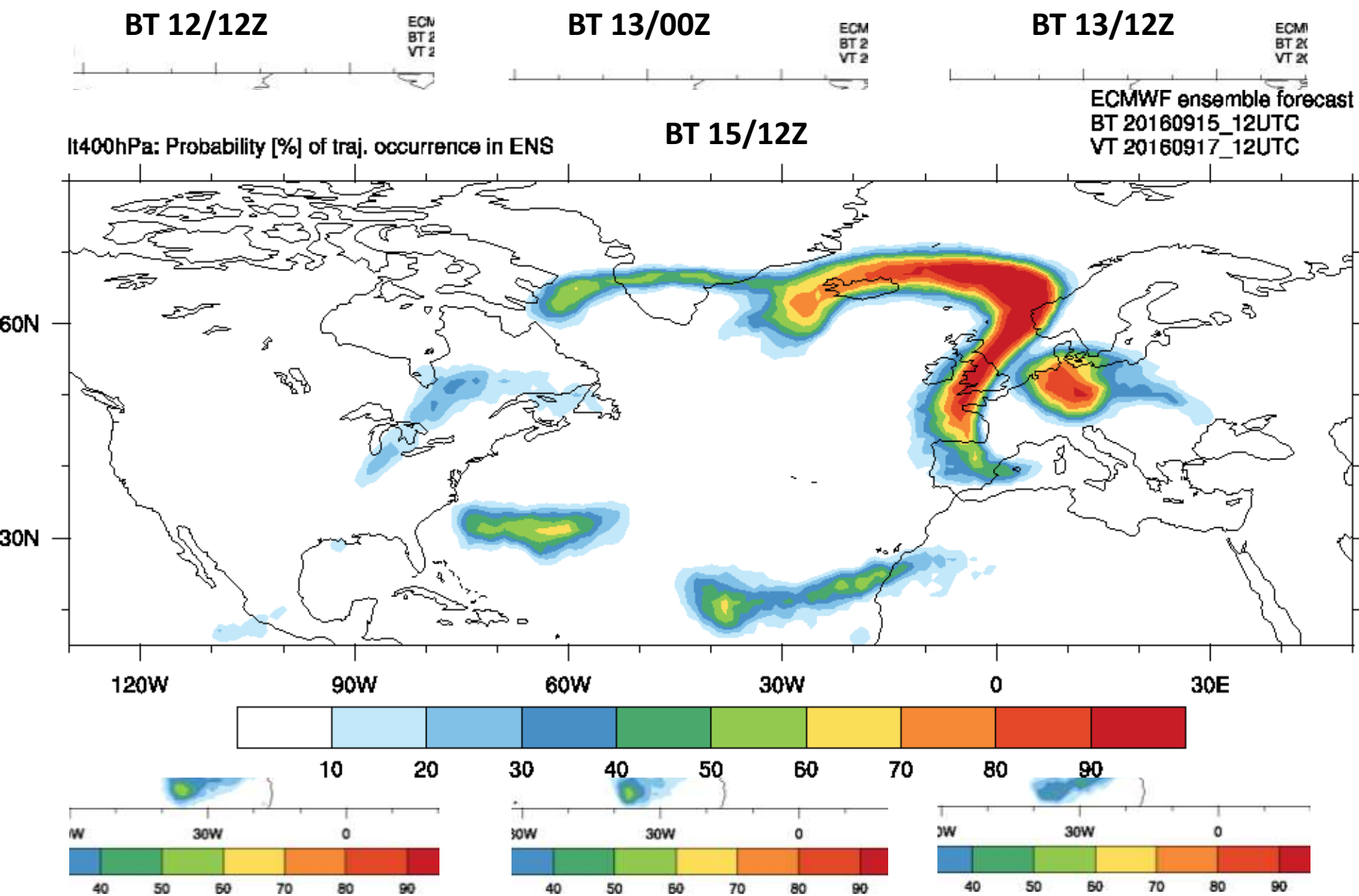
BT 15/12Z



Overview model consistency Sat 17/12Z ECMWF Ensemble



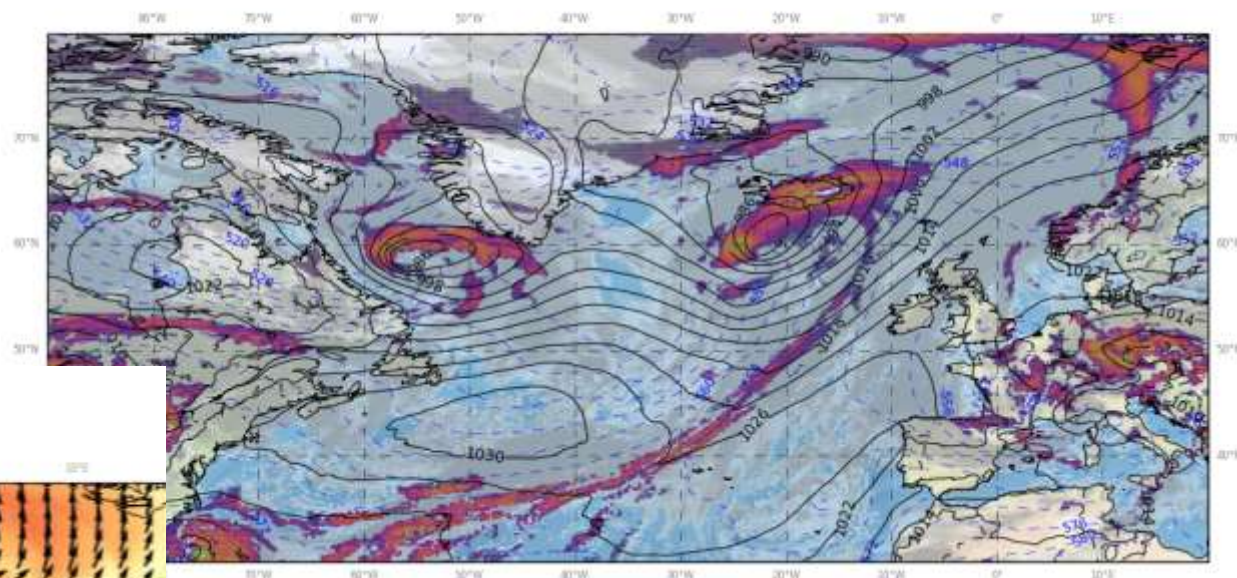
Overview model consistency Sat 17/12Z ECMWF Ensemble



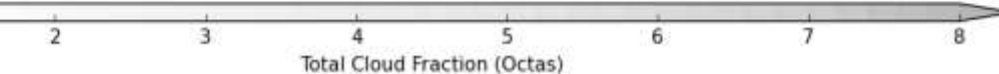
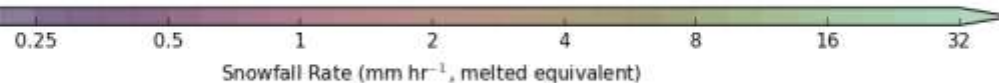
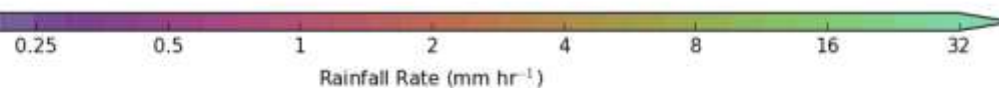
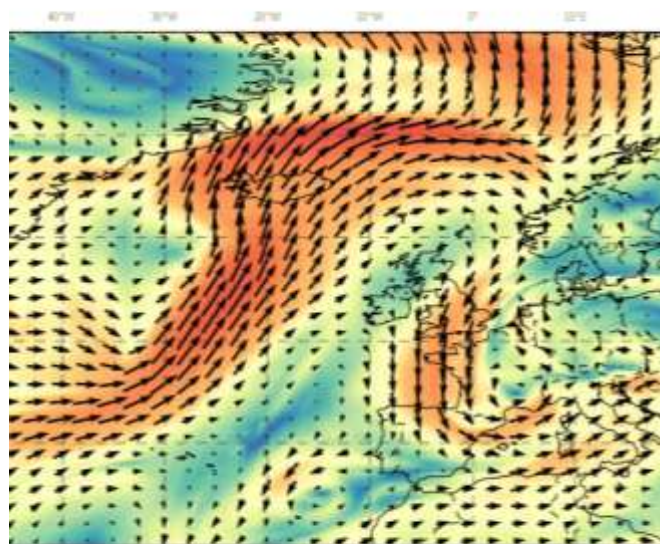
Overview Sat 17/12Z UKMO BT16/00Z



Met Office Oper. Global: P_{mole} 500hPa Thickness, Precip Rates, Cloud
2016/09/17 12Z T+36 from 2016/09/16 00Z

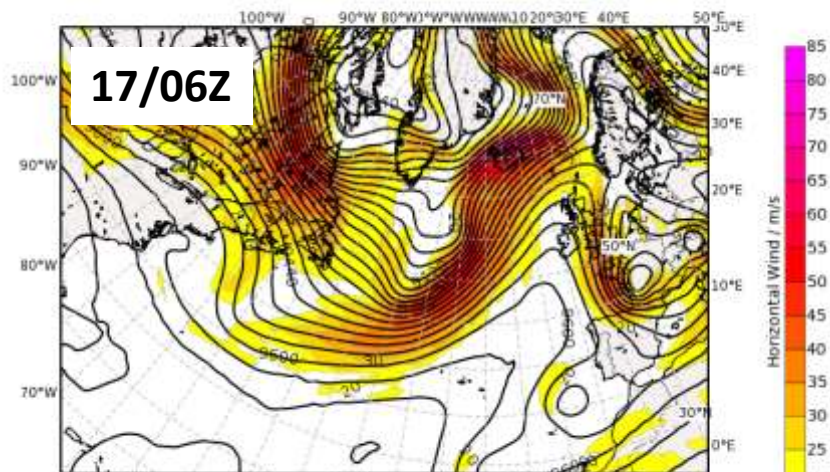


Wind speed and direction (ms^{-1}) at 300 hPa
12Z T+36 from 2016/09/16 00Z

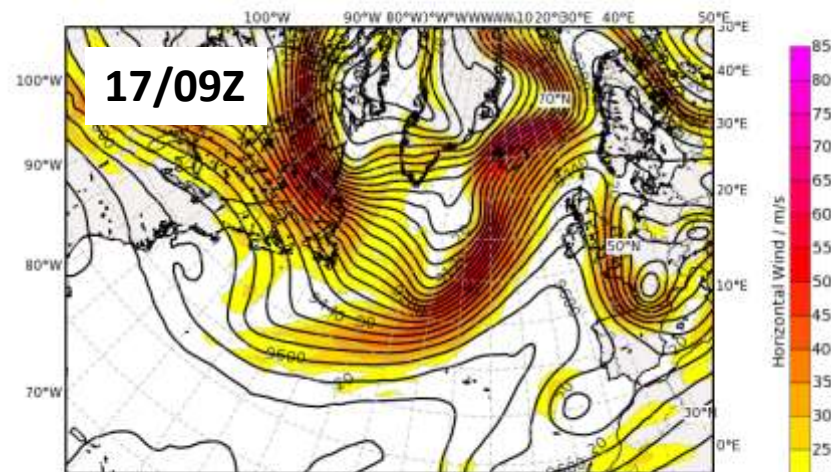


Outlook Sat 17/12Z : Z500 (based EC Hres 16/00Z)

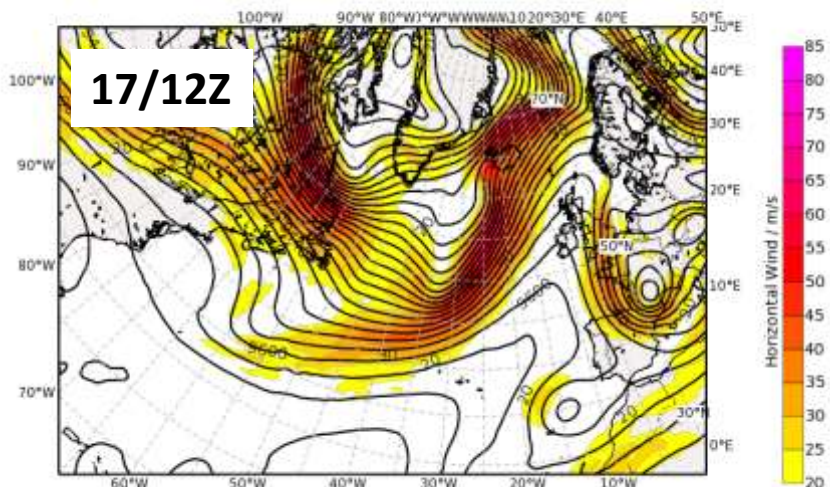
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Sat, 17 Sep 2016, 06 UTC (step 030 h from Fri, 16 Sep 2016, 00 UTC)



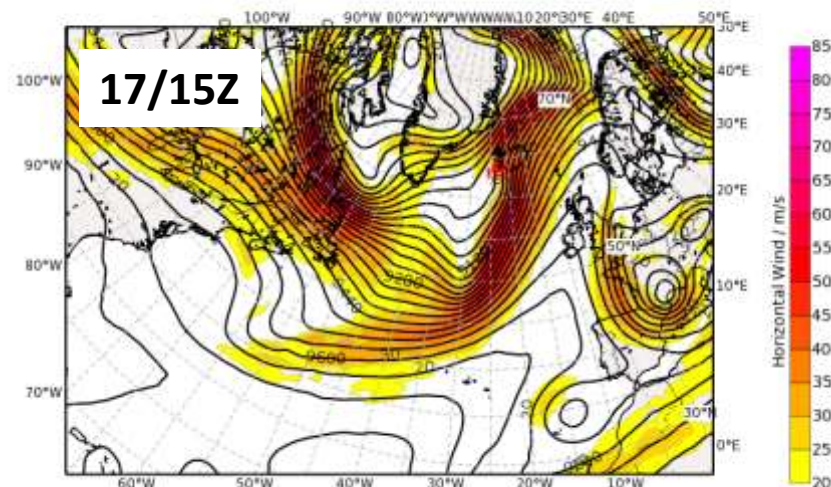
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Sat, 17 Sep 2016, 09 UTC (step 033 h from Fri, 16 Sep 2016, 00 UTC)



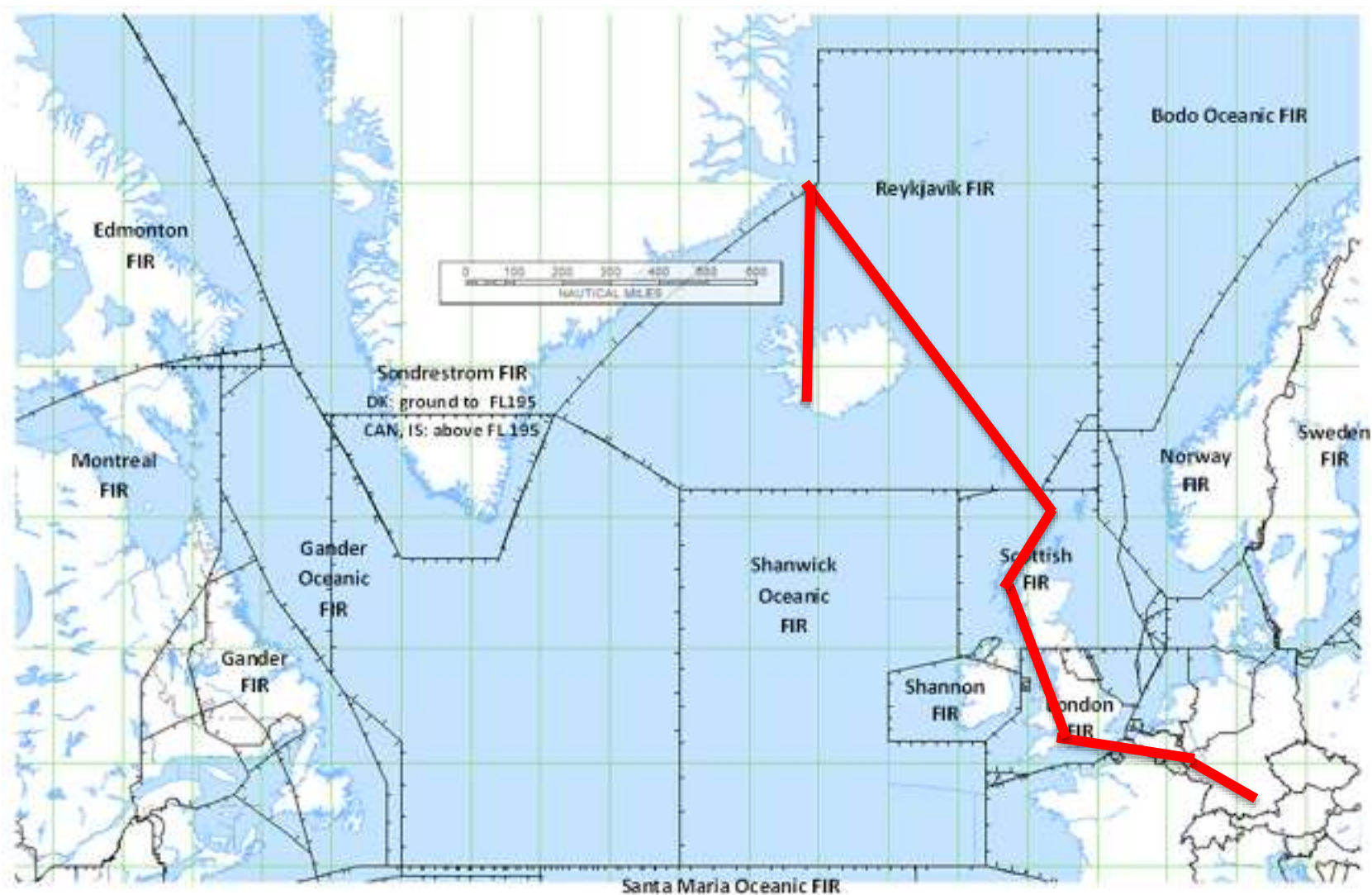
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Sat, 17 Sep 2016, 12 UTC (step 036 h from Fri, 16 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Sat, 17 Sep 2016, 15 UTC (step 039 h from Fri, 16 Sep 2016, 00 UTC)

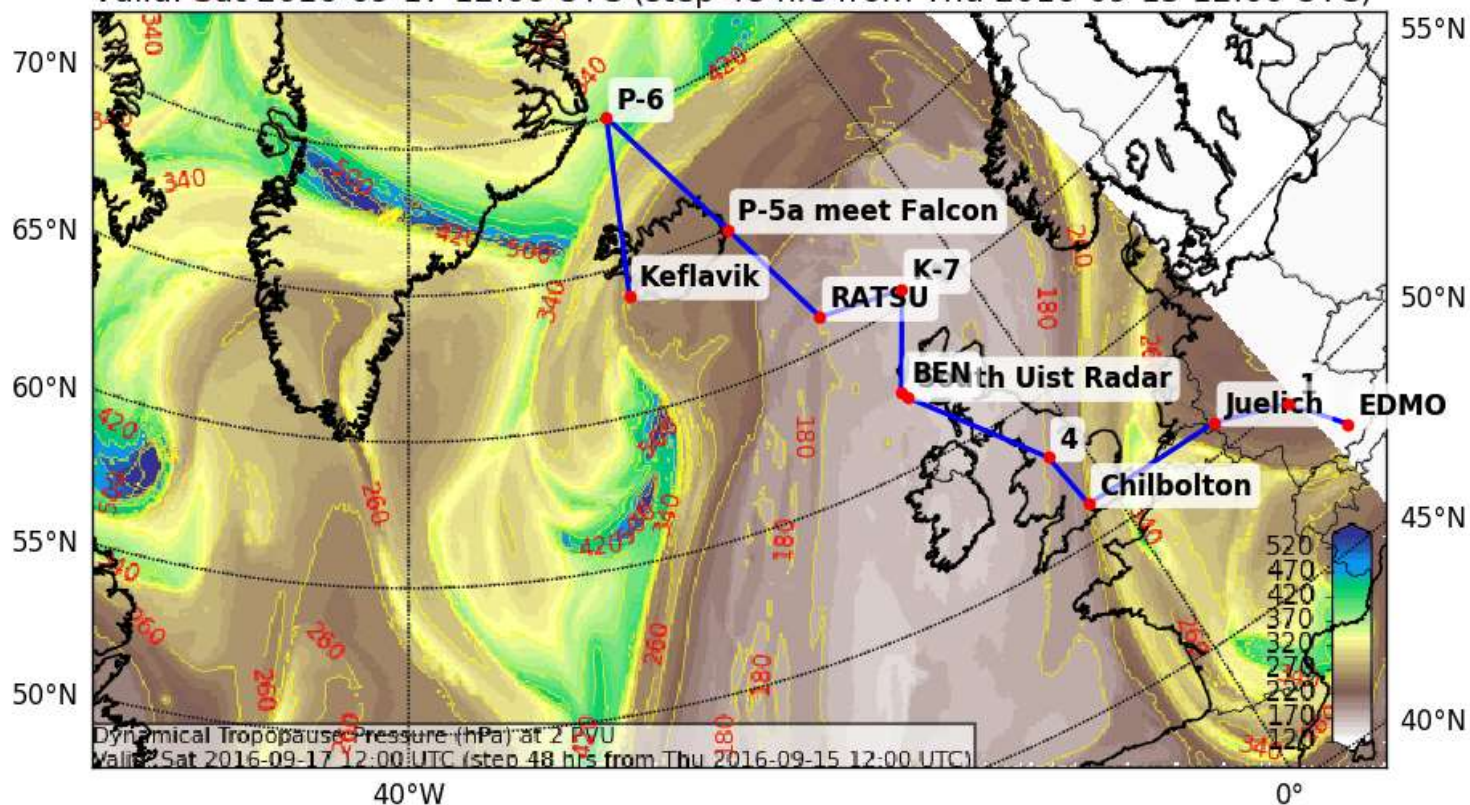


Flight route and Air spaces



HALO Flight route and 2PVU pressure

Dynamical Tropopause (Pressure (hPa)) at 2000 (10^{-3} PVU)
Valid: Sat 2016-09-17 12:00 UTC (step 48 hrs from Thu 2016-09-15 12:00 UTC)



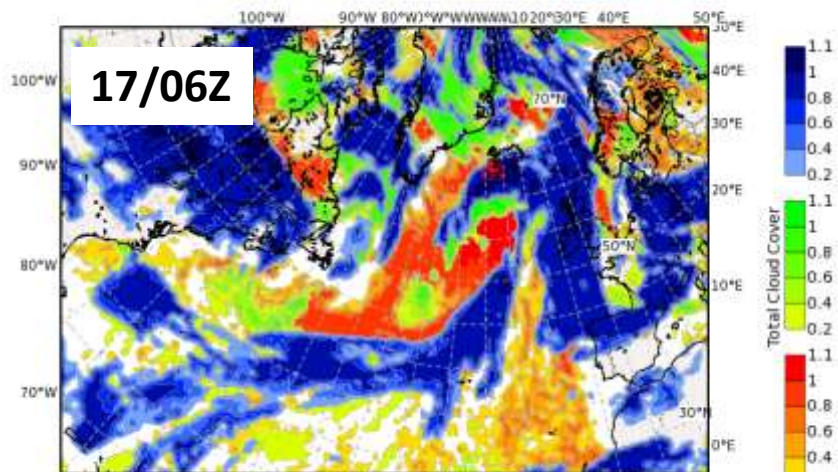
EPSG:77760320

- Decision about dropsondes leg BEN to K-7 to P-6

Outlook Sat 17/12Z : Z500 (based EC Hres 15/00Z)

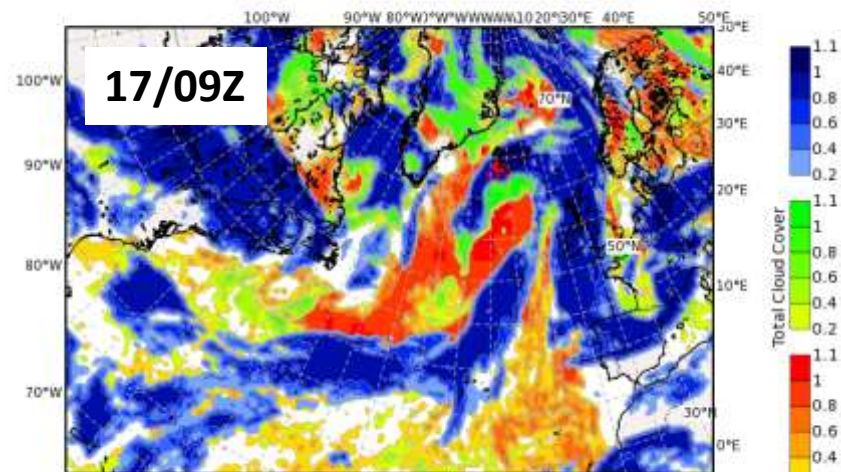
Total Cloud Cover

Valid: Sat, 17 Sep 2016, 06 UTC (step 030 h from Fri, 16 Sep 2016, 00 UTC)



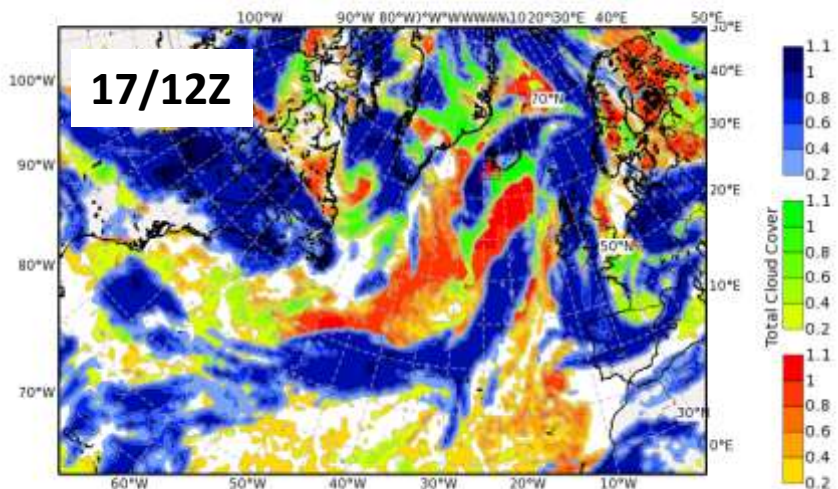
Total Cloud Cover

Valid: Sat, 17 Sep 2016, 09 UTC (step 033 h from Fri, 16 Sep 2016, 00 UTC)



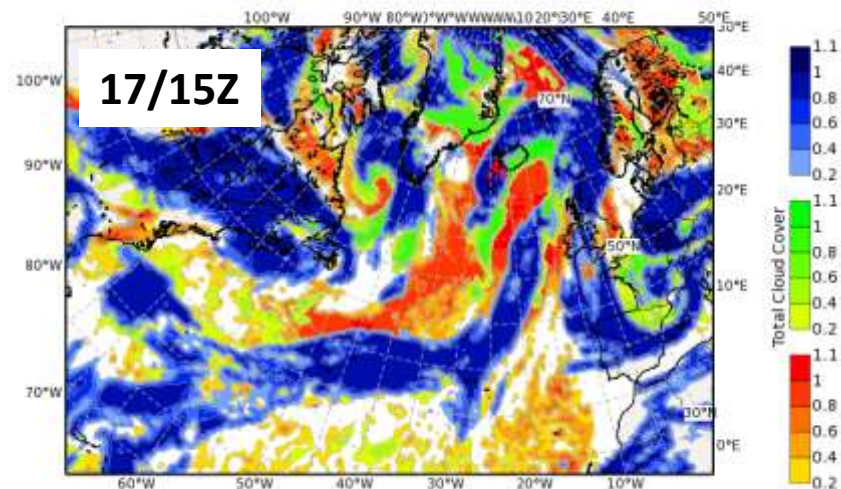
Total Cloud Cover

Valid: Sat, 17 Sep 2016, 12 UTC (step 036 h from Fri, 16 Sep 2016, 00 UTC)



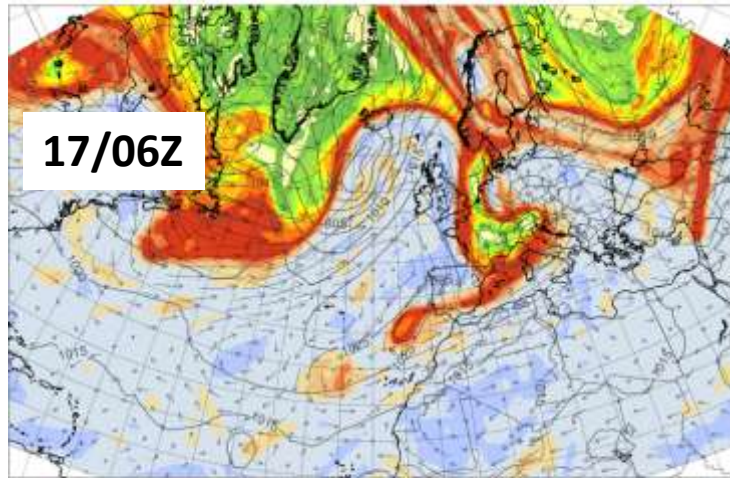
Total Cloud Cover

Valid: Sat, 17 Sep 2016, 15 UTC (step 039 h from Fri, 16 Sep 2016, 00 UTC)

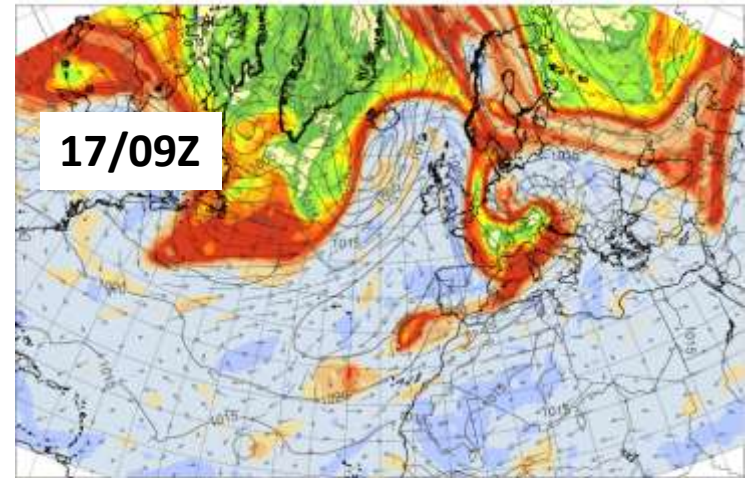


Outlook Sat 17/12Z : PV330K (based EC Hres 14/12Z)

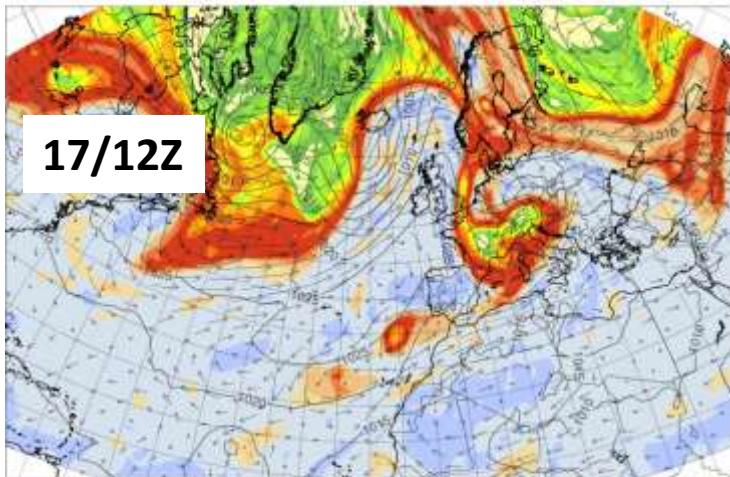
PV@330K at 20160917_06



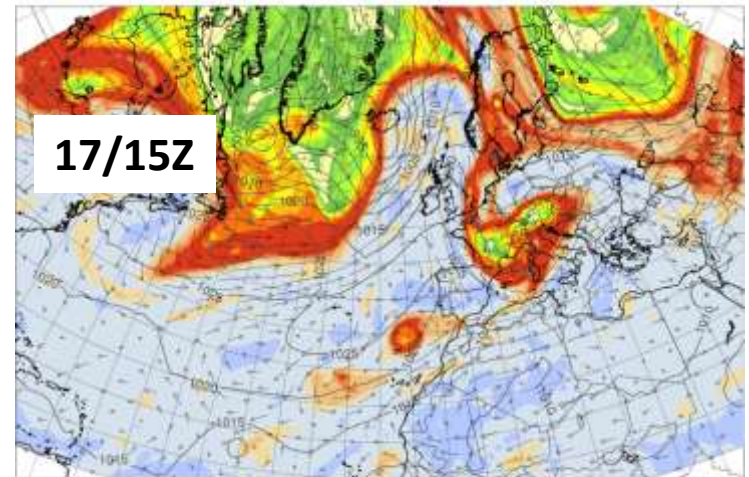
PV@330K at 20160917_09



PV@330K at 20160917_12

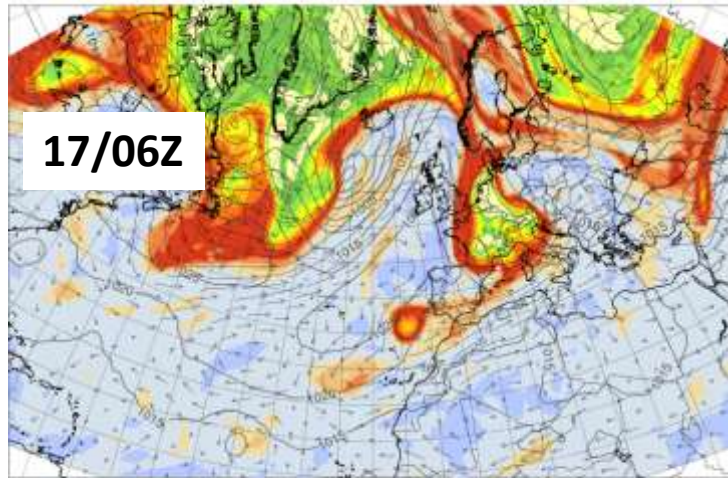


PV@330K at 20160917_15

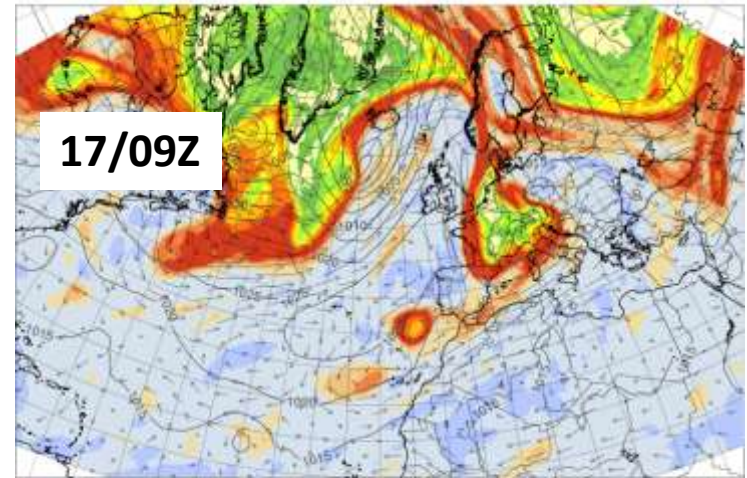


Outlook Sat 17/12Z : PV330K (based EC Hres 15/12Z)

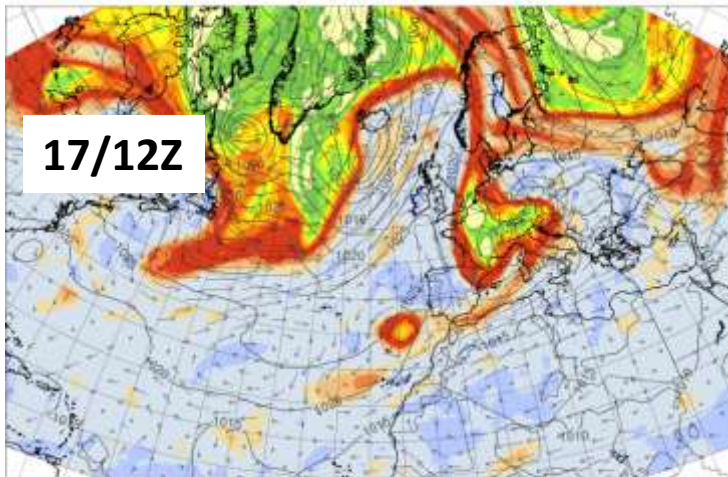
PV@330K at 20160917_06



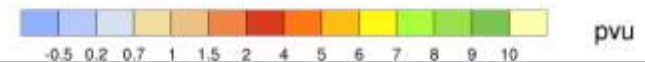
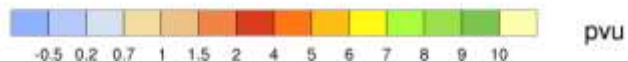
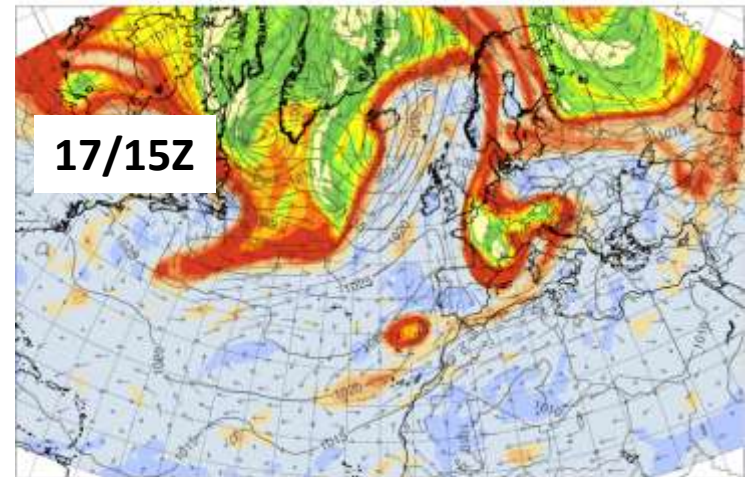
PV@330K at 20160917_09



PV@330K at 20160917_12



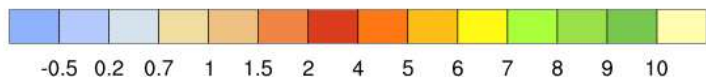
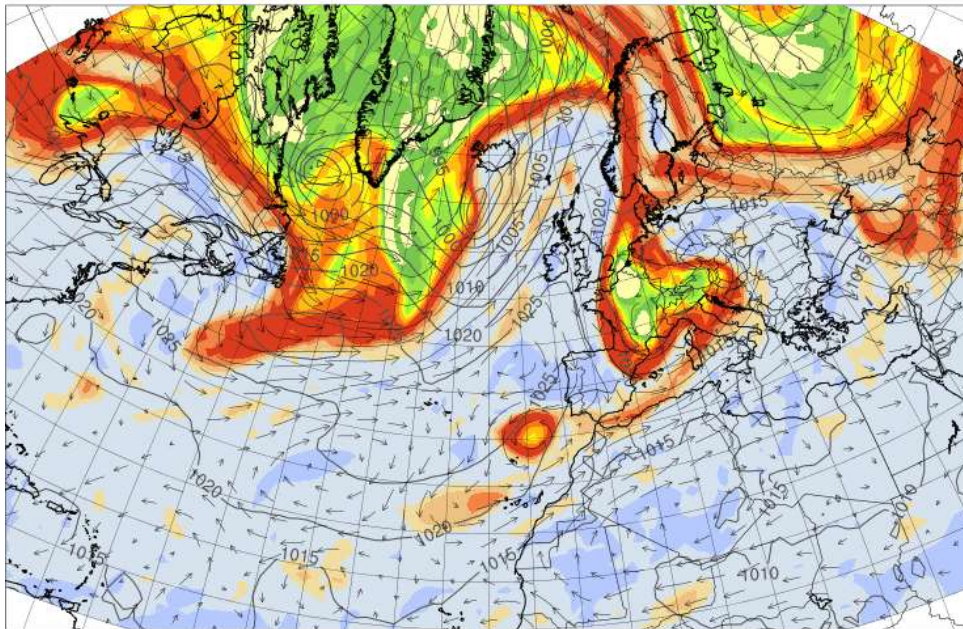
PV@330K at 20160917_15



Forecast for Sat, 17 Sep 2016 12 UTC

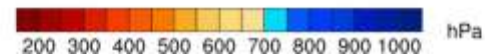
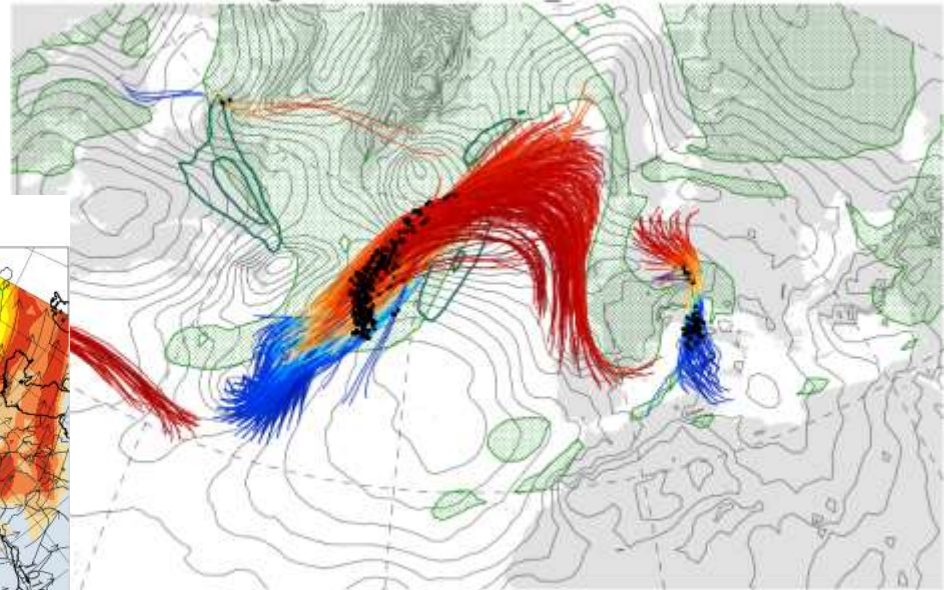
BT14/12Z

PV@330K at 20160917_12



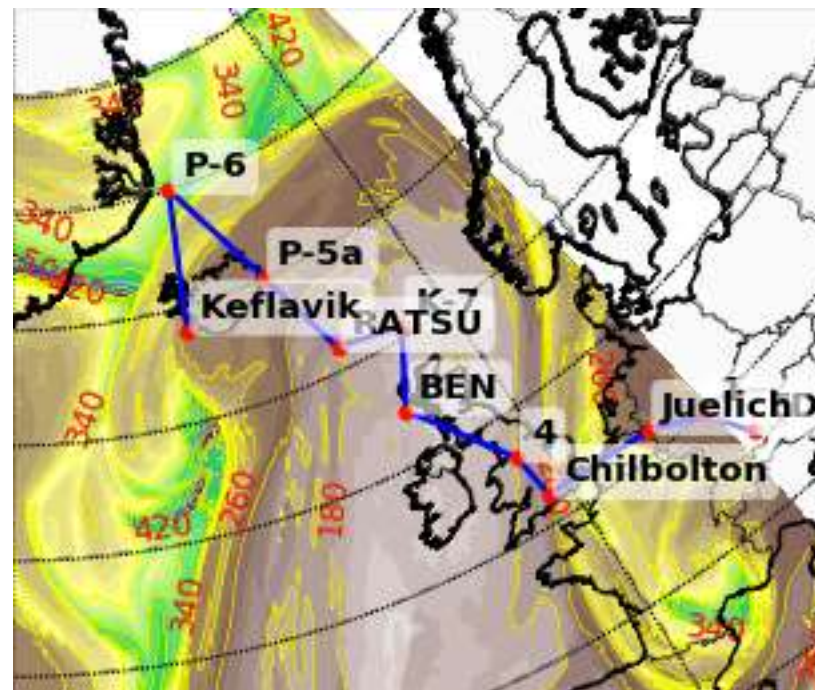
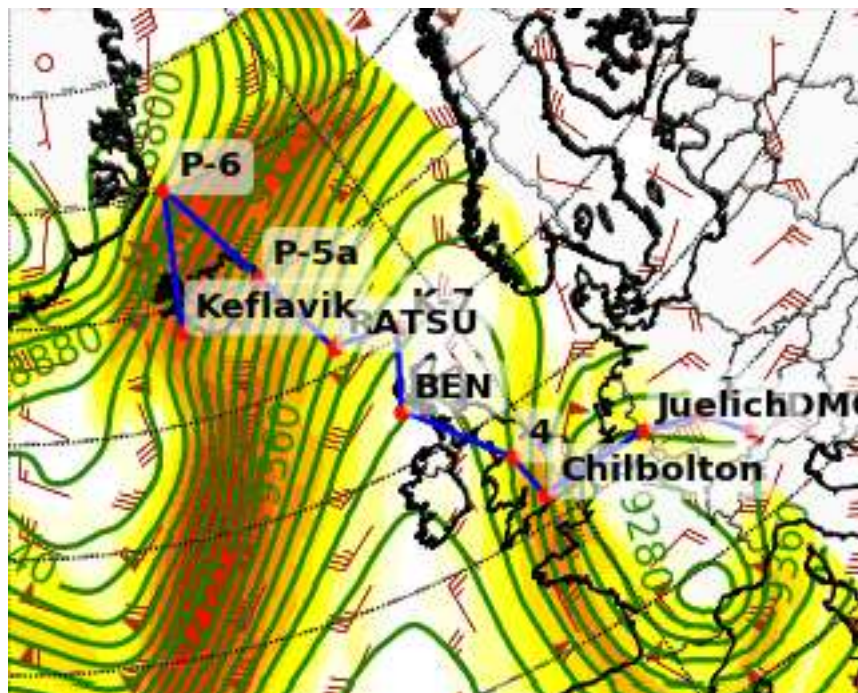
pvu

Trajectory start and SLP VT: 20160915_12
WCB outflow and PV@250hPa VT: 20160917_12



hPa

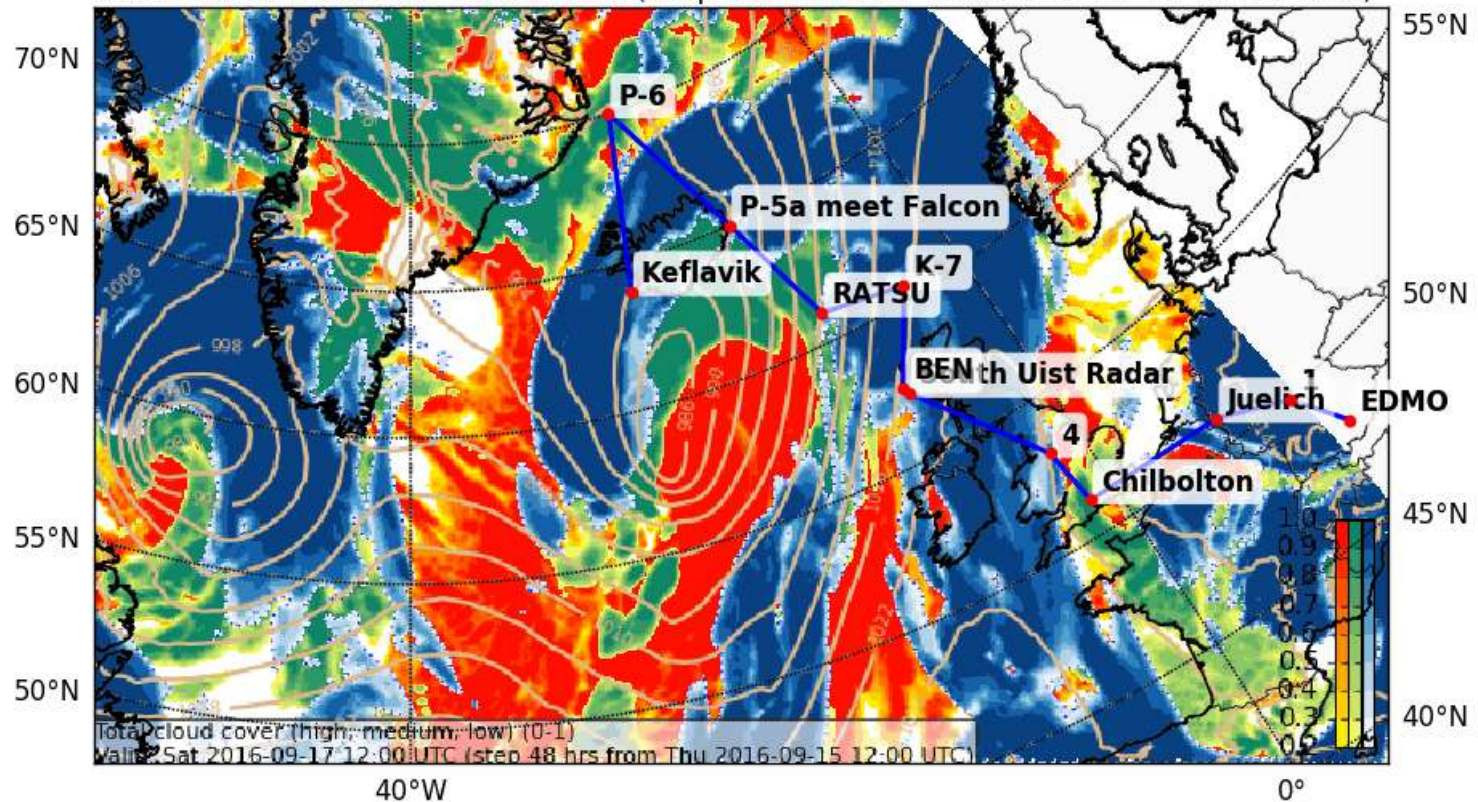
Forecast for Sat, 17 Sep 2016 12 UTC



Forecast for Sat, 17 Sep 2016 12 UTC

Cloud Cover (0-1) (Total Cloud Cover)

Valid: Sat 2016-09-17 12:00 UTC (step 48 hrs from Thu 2016-09-15 12:00 UTC)

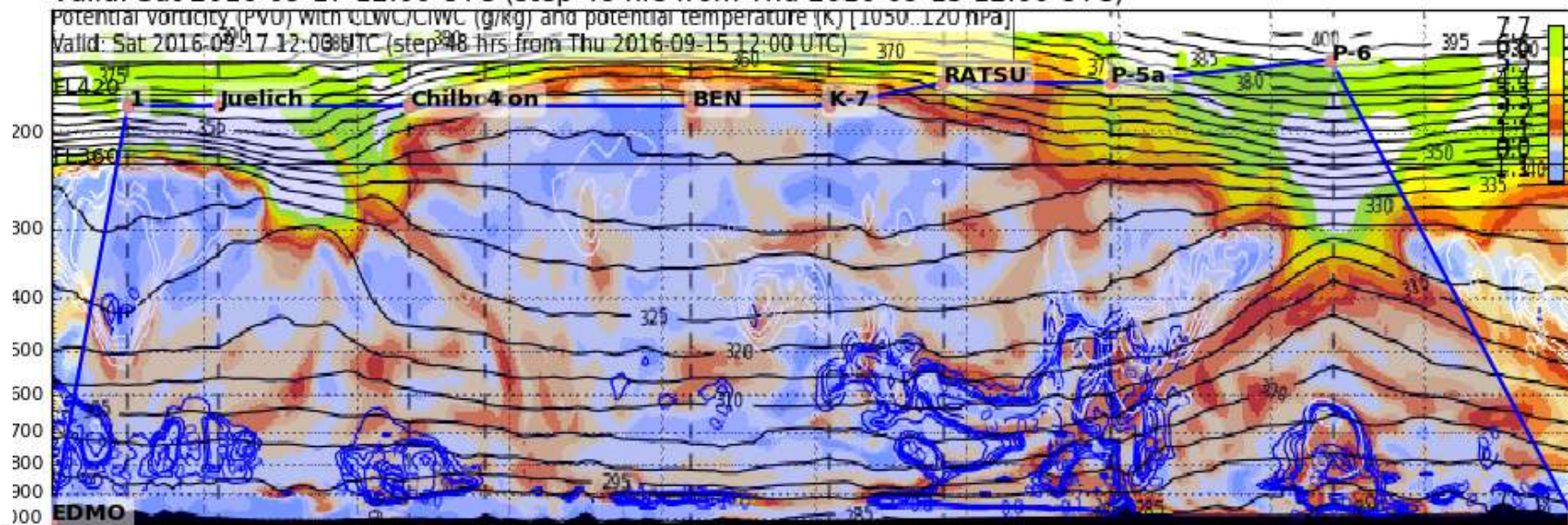


EPSG:77760320

Flight cross section for Sat, 17 Sep 2016 12 UTC

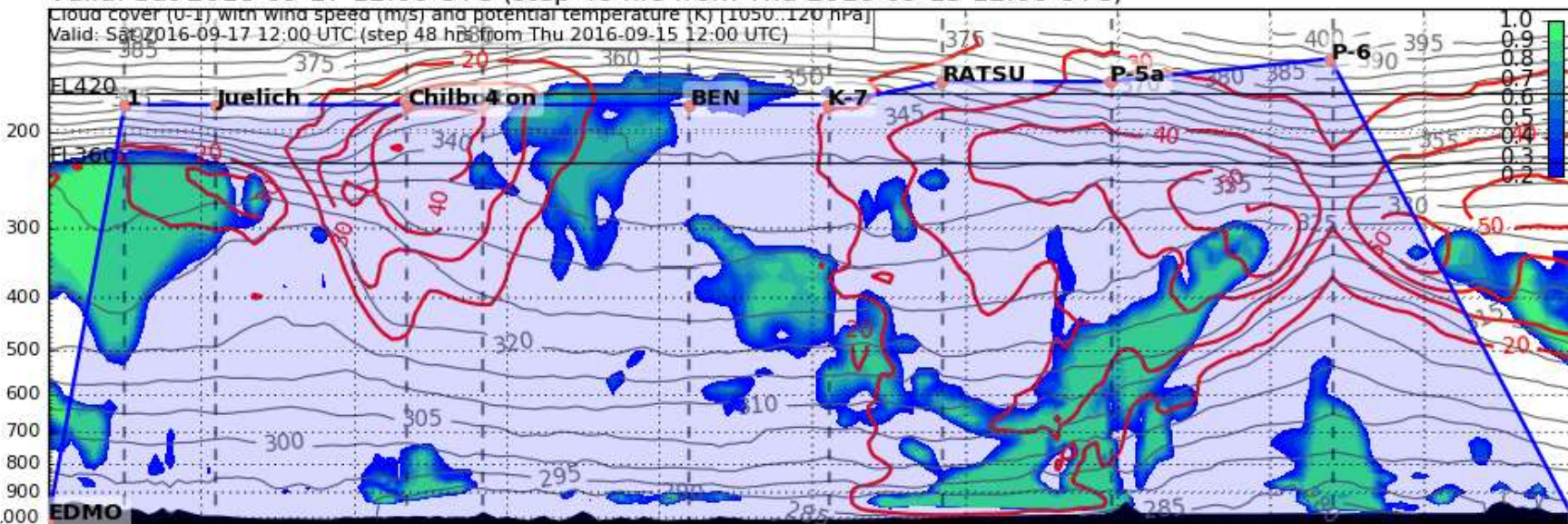
Potential Vorticity (PVU) Vertical Section (Northern Hemisphere)

Valid: Sat 2016-09-17 12:00 UTC (step 48 hrs from Thu 2016-09-15 12:00 UTC)



Cloud Cover (0-1) and Wind Speed (m/s) Vertical Section

Valid: Sat 2016-09-17 12:00 UTC (step 48 hrs from Thu 2016-09-15 12:00 UTC)



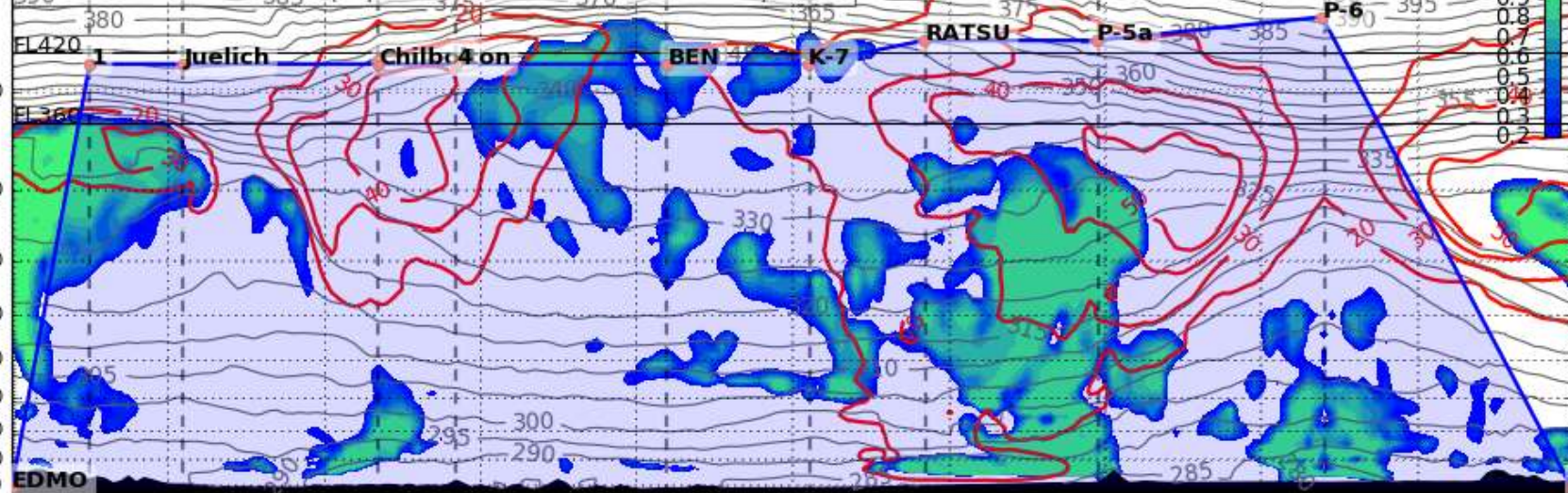
Flight cross section for Sat, 17 Sep 2016, 09 UTC

Cloud Cover (0-1) and Wind Speed (m/s) Vertical Section

Valid: Sat 2016-09-17 09:00 UTC (step 45 hrs from Thu 2016-09-15 12:00 UTC)

Cloud cover (0-1) with wind speed (m/s) and potential temperature (K) [1050..120 nPa]

Valid: Sat 2016-09-17 09:00 UTC (step 45 hrs from Thu 2016-09-15 12:00 UTC)

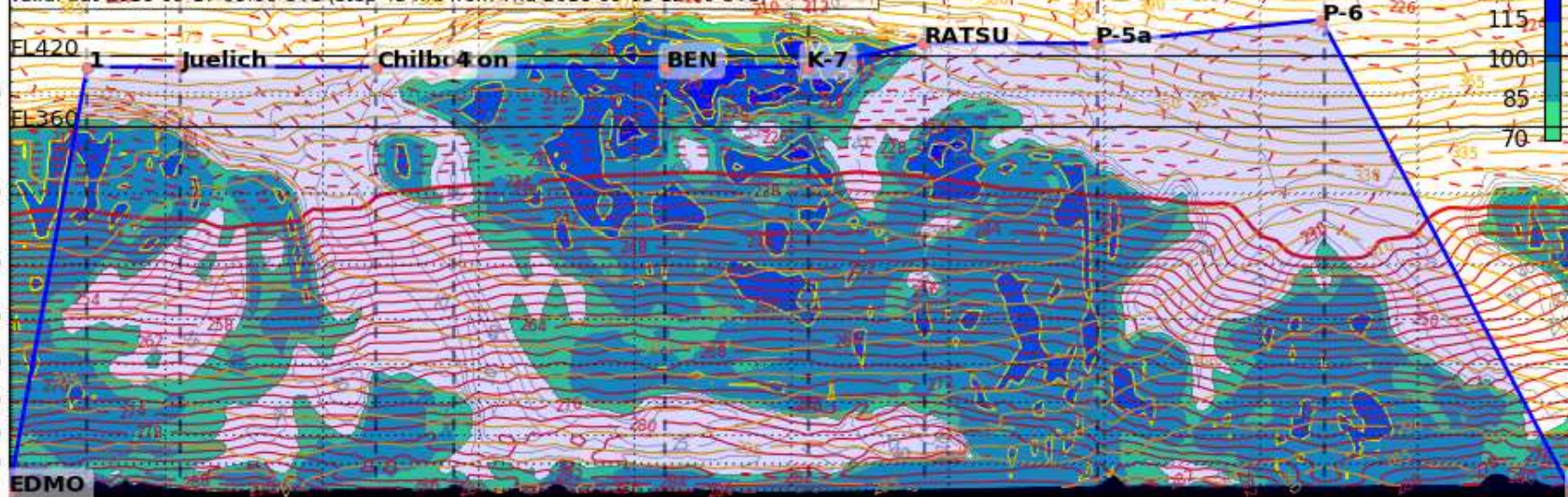


Cloud cover

Valid: Sat 2016-09-17 09:00 UTC (step 45 hrs from Thu 2016-09-15 12:00 UTC)

Relative humidity (%) with temperature (K) and potential temperature (K) [1050..120 nPa]

Valid: Sat 2016-09-17 09:00 UTC (step 45 hrs from Thu 2016-09-15 12:00 UTC)



RH

- **Decision about dropsondes**

Date of flight: 17-Sep-2016

Callsign: **D-ADLR**

Type of Aircraft: G550

Departure Aerodrome: EDMO

Destination Aerodrome: BIKF

Takeoff Time:	0715 UTC
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Cruising-Level:

initially FL410

Planned Routing:

MAH UM726 ERNAS Y101 OSBIT UL984
LOHRE UL610 BATTY UL608 DENUT
UL610 KOPUL DCT CPT Q295 BPK UN601
TLA UL602 GOW DCT BEN DCT STN DCT
6029N00410W DCT GONUT DCT
6110N01000W 6500N01330W DCT
7000N02000W DCT KFY

Remarks:

req. 2 "Holding Patterns" oyhd "Chilbolton"
at **FL410** - dimensions: ~ 25 x 12 NM
(see figure on next page)

req. 1 Circle (360°) @ 6029N 00410W
at FL410, duration 10 min

req. 1 Circle (360°) @ 70N 20W
at FL450, duration 10 min

req. dropping of 9 MET Probes
on the routing BEN - GONUT - 6029N00410W -
6110N10W - 70N20W (not over land)
out of FLFL410 / FL450





Date of flight:	17-Sep-2016
Call sign:	D-ADLR
Type of Aircraft:	G550
Departure Aerodrome:	EDMD
Destination Aerodrome:	BKF
Takeoff Time:	0715 UTC
<u>Cruising-Level:</u>	
initially FL410	
<u>Planned Routing:</u>	
MAH UM726 ERNAS Y101 OSBIT UL984	
LOHRE UL610 BATTY UL608 DENUT	
UL610 KOPUL DCT CPT Q295 BPK UN601	
TLA UL602 GOW DCT BEN DCT STN DCT	
6029N00410W DCT GONUT DCT	
6110N01000W 6500N01330W DCT	
7000N02000W DCT KVF	
<u>Remarks:</u>	
req. 2 "Holding Patterns" exhd "Chilbolton"	
at FL410 - dimensions: ~ 25 x 12 NM	
(see figure on next page)	
req. 1 Circle (360°) @ 6029N 00410W	
at FL410 - duration 10 min	
req. 1 Circle (360°) @ 70N 20W	
at FL430 - duration 10 min	
req. dropping of 9 MET Probes	
on the routing BEN - GONUT - 6029N00410W -	
6110N10W - 70N20W (not over land)	
out of FL410 / FL430	

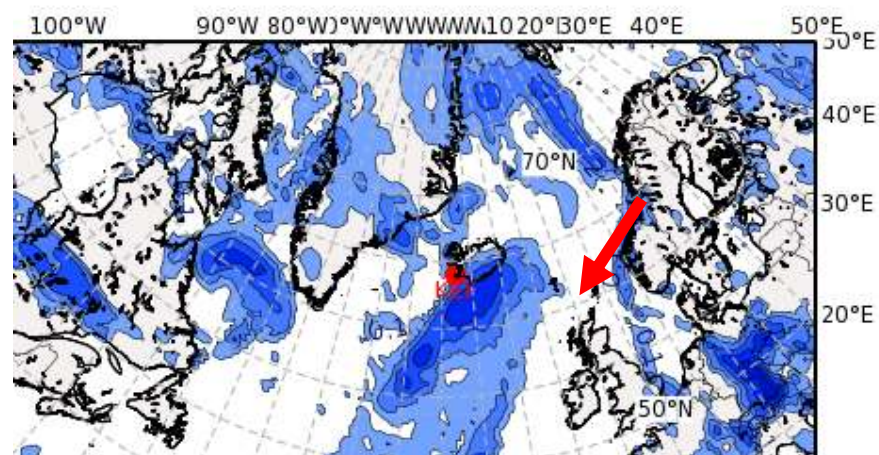
Zeitplan

- 0715 UT Takeoff HALO
- 0905 UT Start Pattern über Chilbolton
- 1035 UT Start Pattern über Boje 7
- 1145 UT Treffen mit Falcon P-5a (6500N 01330W)
- 1230 UT über P-6 (70N 20W) - Radiometer-Box
- 1345 UT Landung

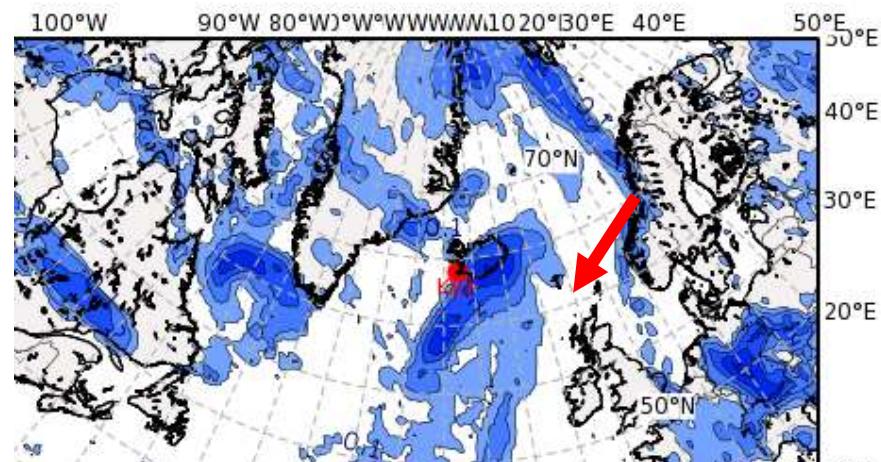
flight planning Sat 17 precipitation

BT16/00Z

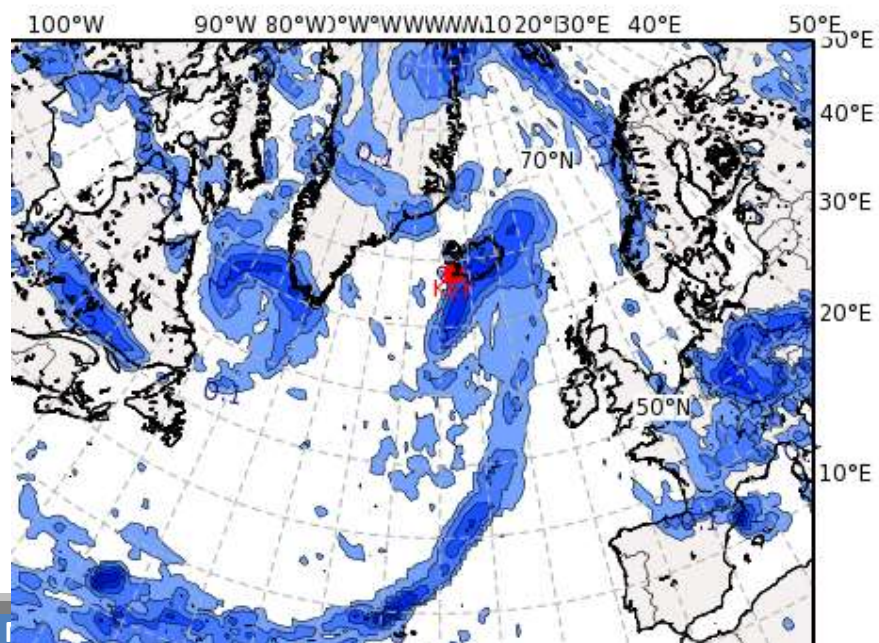
simulated over 3 hours prior to valid time (mm)
, 09 UTC (step 033 h from Fri, 16 Sep 2016, 00 UTC)



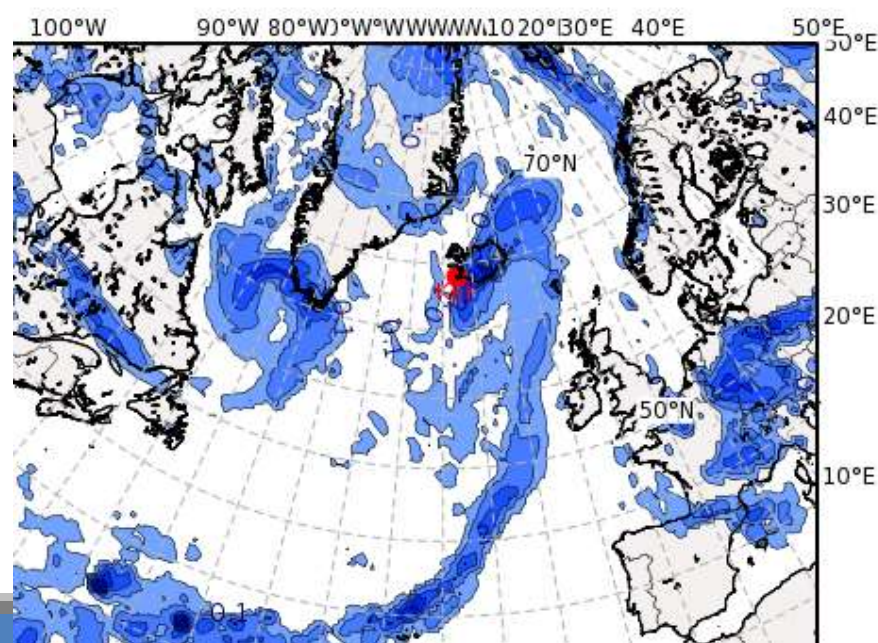
simulated over 3 hours prior to valid time (mm)
, 12 UTC (step 036 h from Fri, 16 Sep 2016, 00 UTC)



simulated over 3 hours prior to valid time (mm)
, 15 UTC (step 039 h from Fri, 16 Sep 2016, 00 UTC)



simulated over 3 hours prior to valid time (mm)
, 18 UTC (step 042 h from Fri, 16 Sep 2016, 00 UTC)



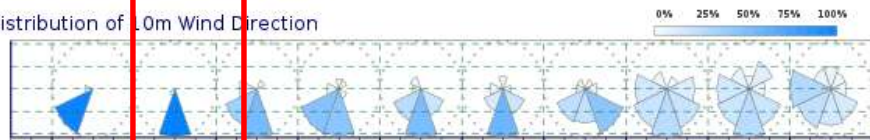
flight planning Sat 17/09Z: wave diagram buoy K-7

Wave ENSgram

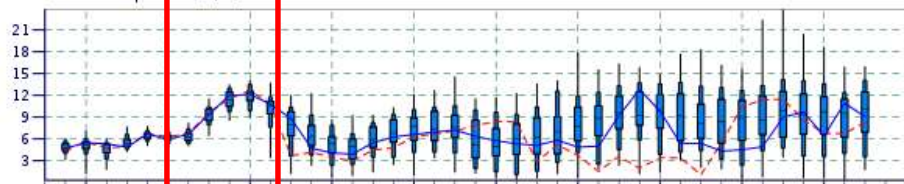
60.52°N 4.21°W (ENS sea point)

High resolution forecast and ENS distribution Thursday 15 September 2016 12 UTC

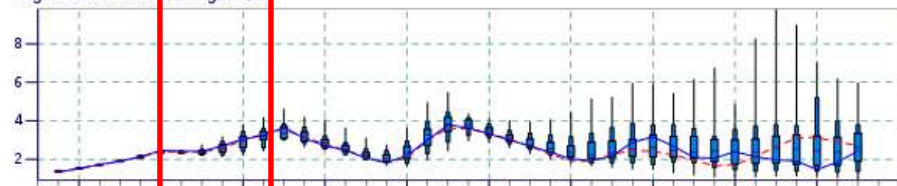
Distribution of 10m Wind Direction



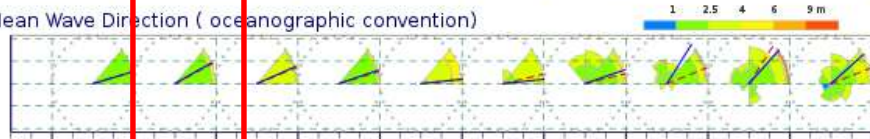
10m Wind Speed (m/s)



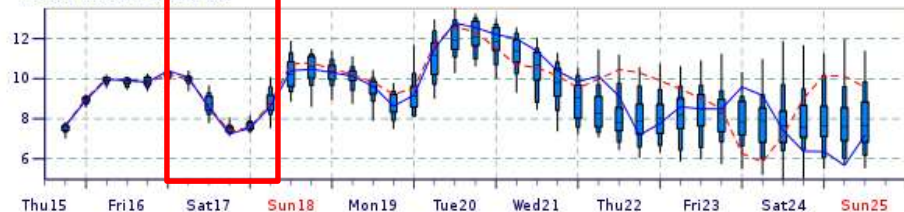
Significant wave height (m)



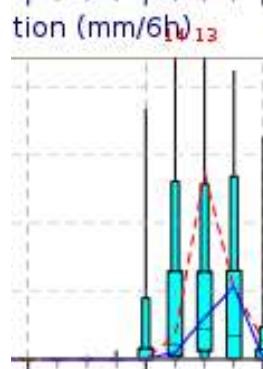
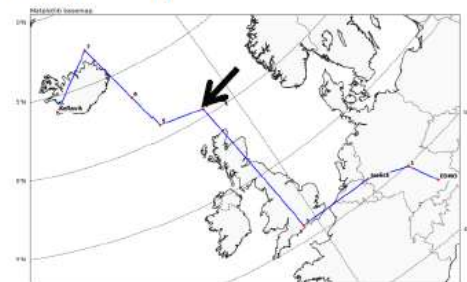
Mean Wave Direction (oceanographic convention)



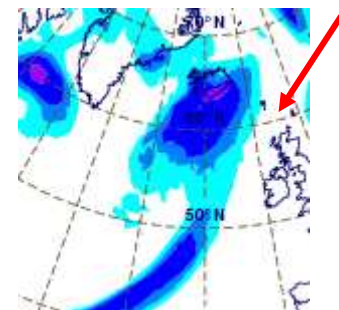
Mean Wave Period (s)



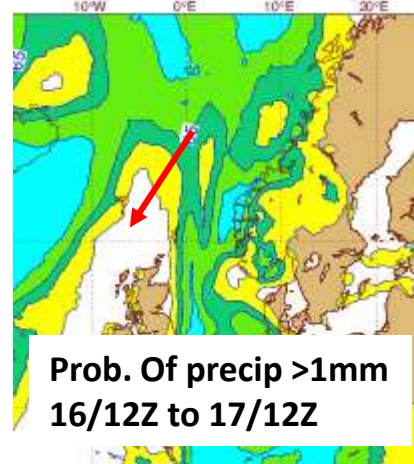
ECMWF ENS Meteogram For K7 Buoy



Sat 17/00Z Sun 18/00Z



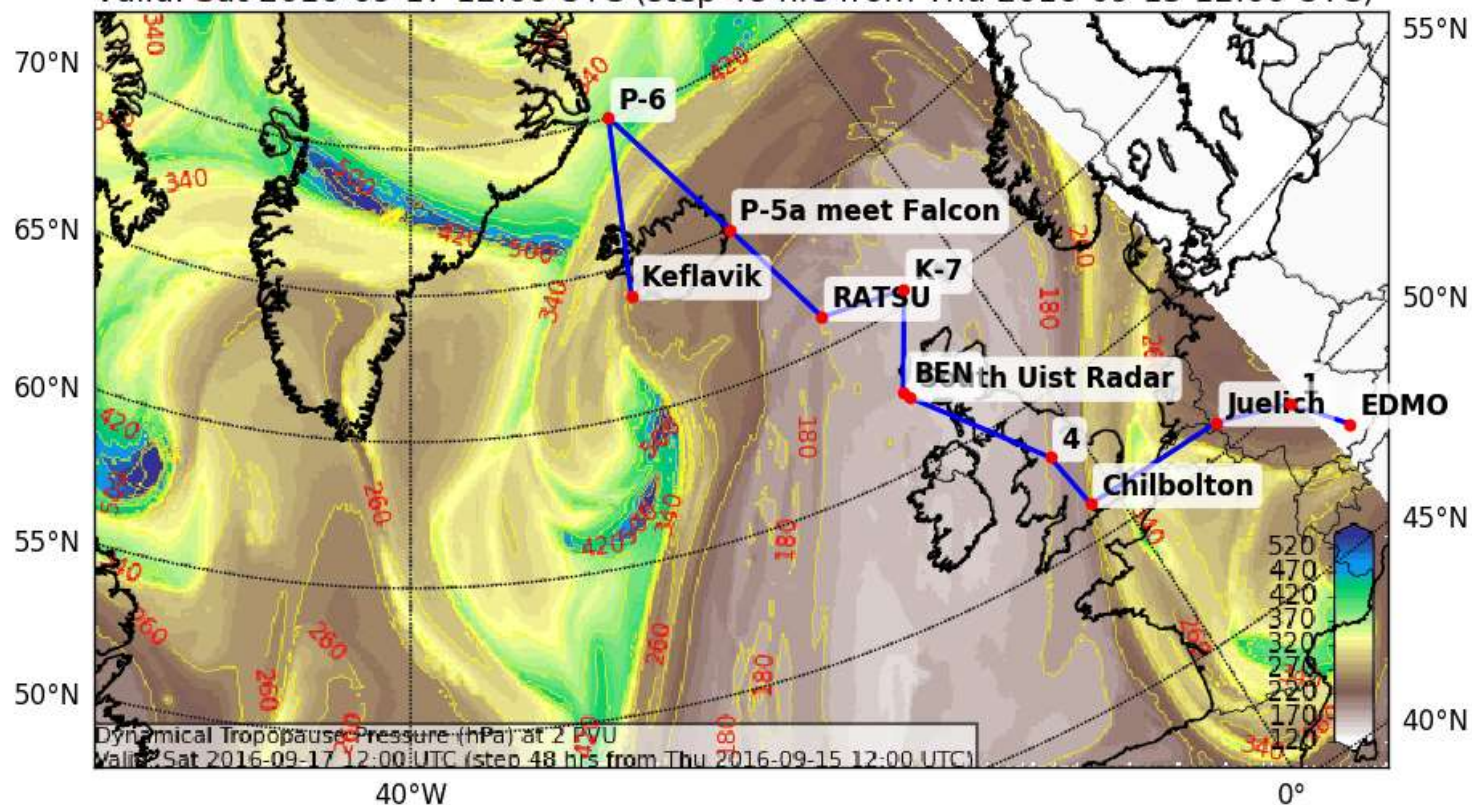
Prob. of precip Q75
METEOFRANCE EPS



Prob. Of precip >1mm
16/12Z to 17/12Z

HALO Flight route

Dynamical Tropopause (Pressure (hPa)) at 2000 (10^{-3} PVU)
Valid: Sat 2016-09-17 12:00 UTC (step 48 hrs from Thu 2016-09-15 12:00 UTC)

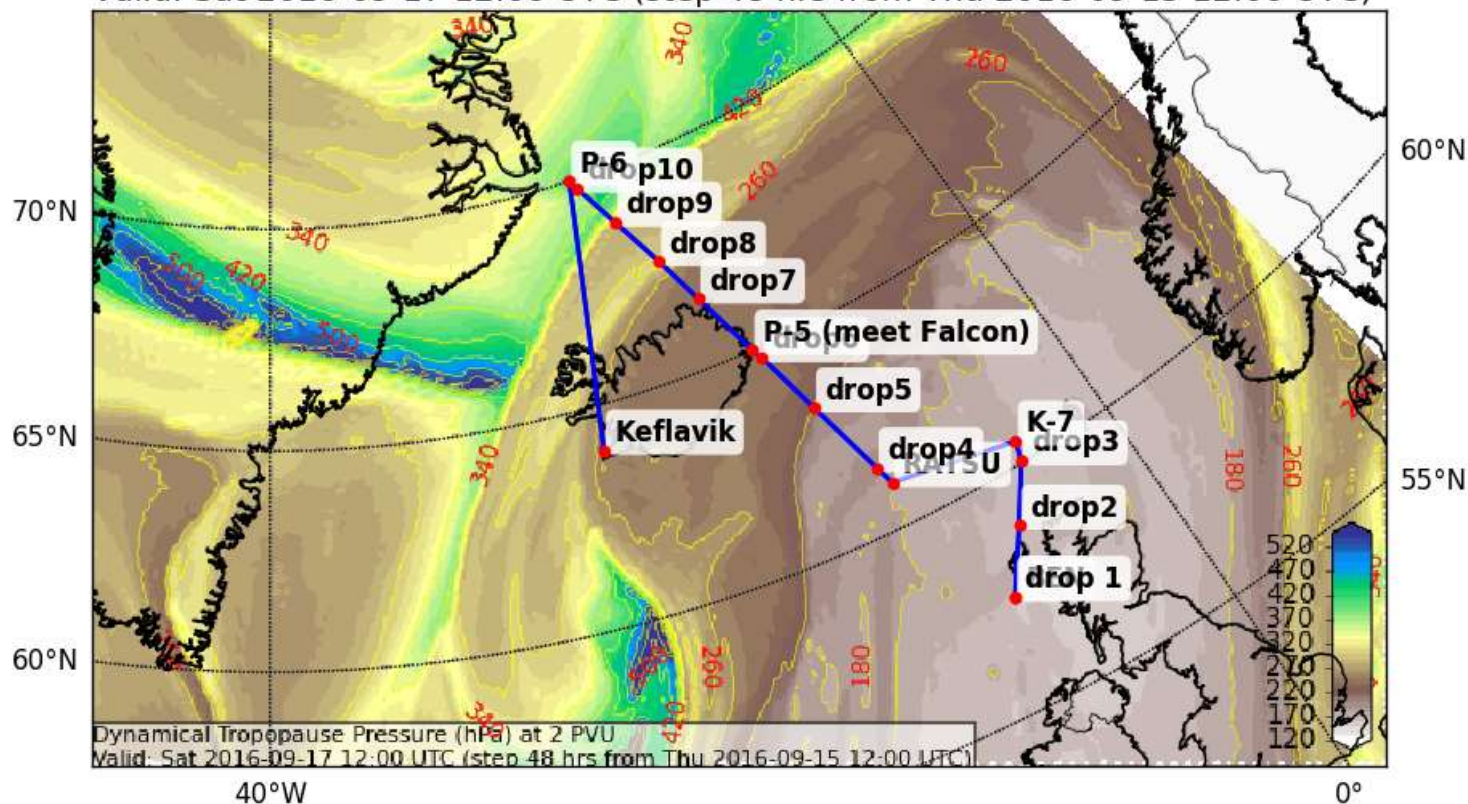


EPSG:77760320

- Decision about dropsondes

HALO Flight route

Dynamical Tropopause (Pressure (hPa)) at 2000 (10^{-3} PVU)
Valid: Sat 2016-09-17 12:00 UTC (step 48 hrs from Thu 2016-09-15 12:00 UTC)



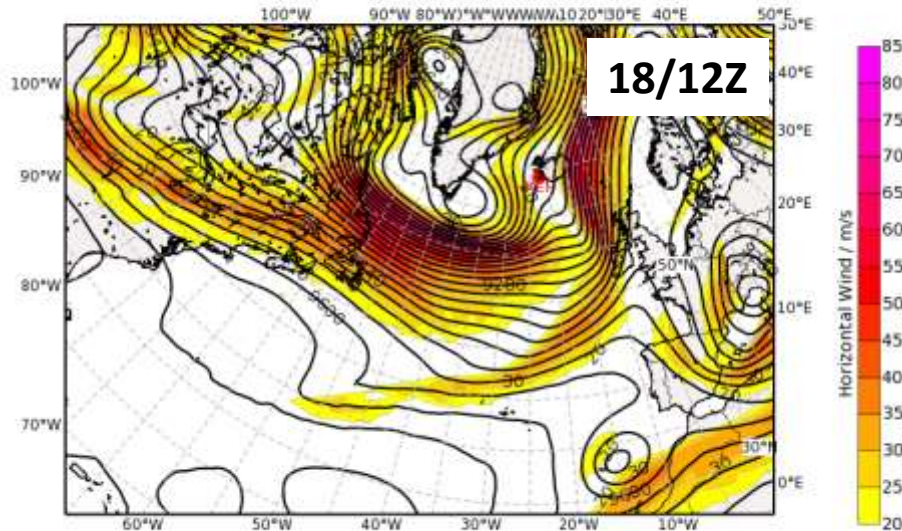
EPSG:77760320

- Decision about dropsondes

Outlook Sat 17/00Z to Wed 21/00Z : Z500 (based EC Hres 15/00Z)

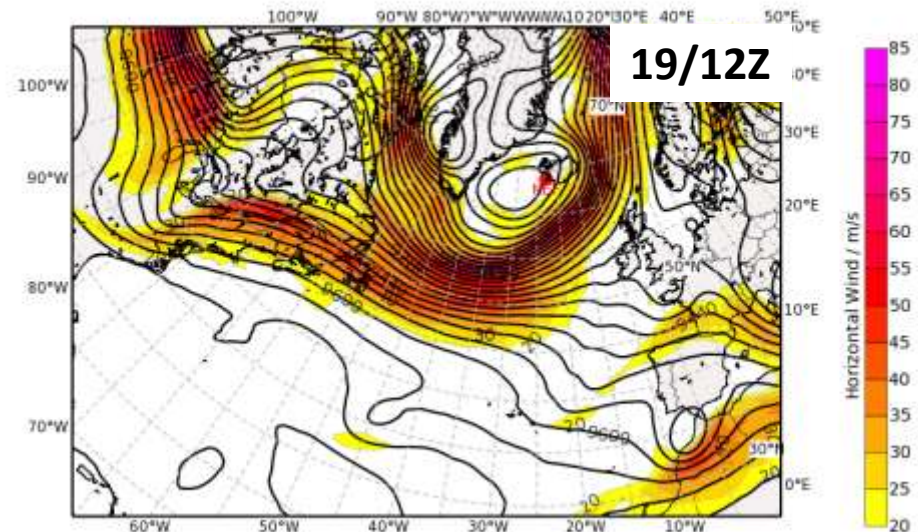
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa

Valid: Sun, 18 Sep 2016, 12 UTC (step 060 h from Fri, 16 Sep 2016, 00 UTC)



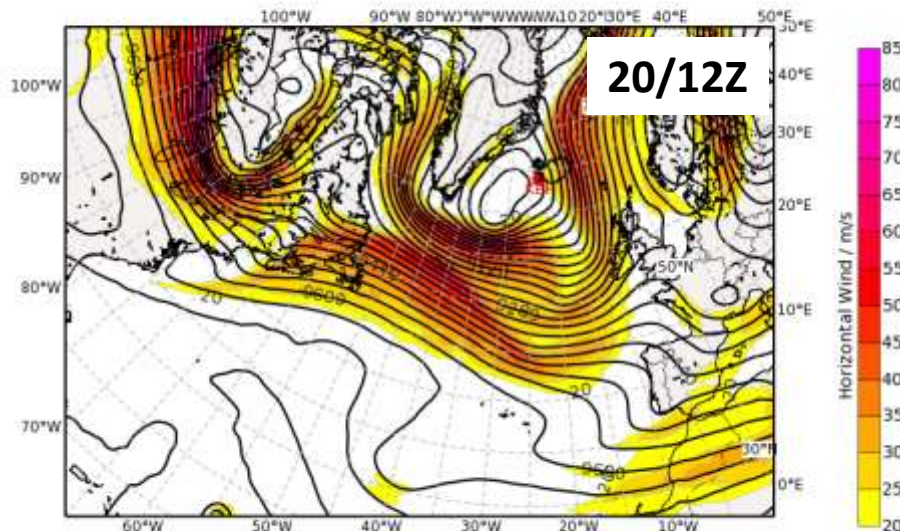
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa

Valid: Mon, 19 Sep 2016, 12 UTC (step 084 h from Fri, 16 Sep 2016, 00 UTC)



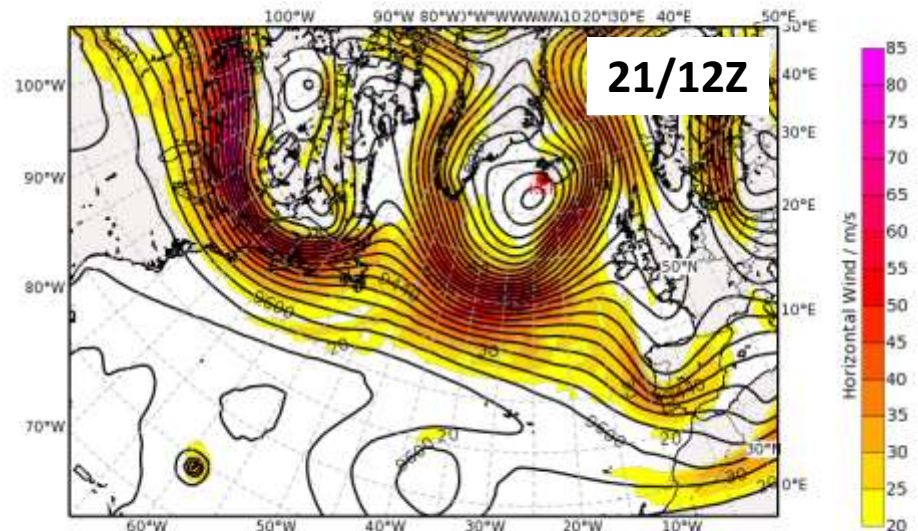
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa

Valid: Tue, 20 Sep 2016, 12 UTC (step 108 h from Fri, 18 Sep 2016, 00 UTC)



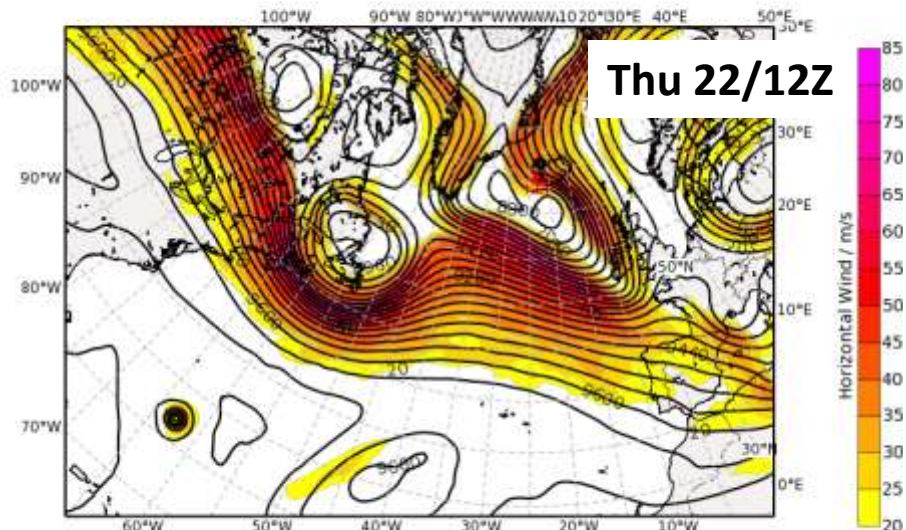
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa

Valid: Wed, 21 Sep 2016, 12 UTC (step 132 h from Fri, 16 Sep 2016, 00 UTC)

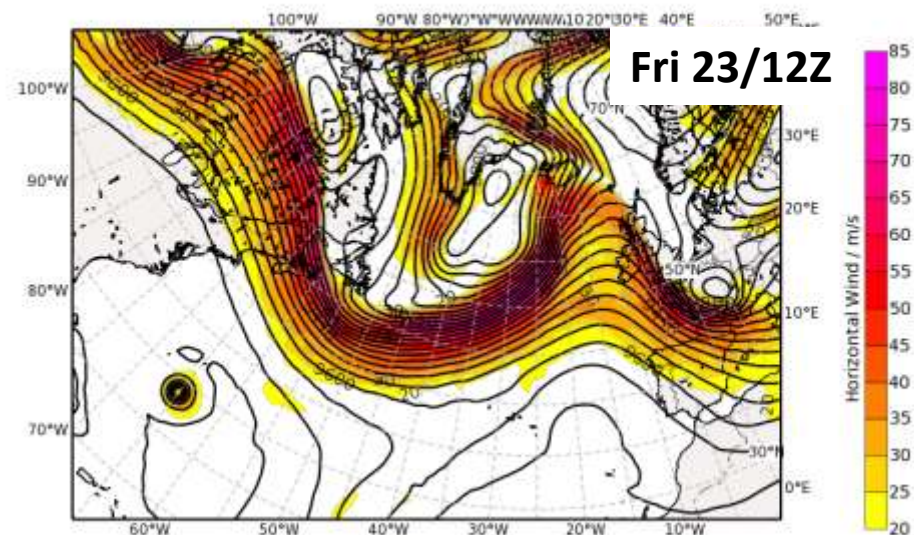


Outlook Sat 17/00Z to Wed 21/00Z : Z500 (based EC Hres 15/00Z)

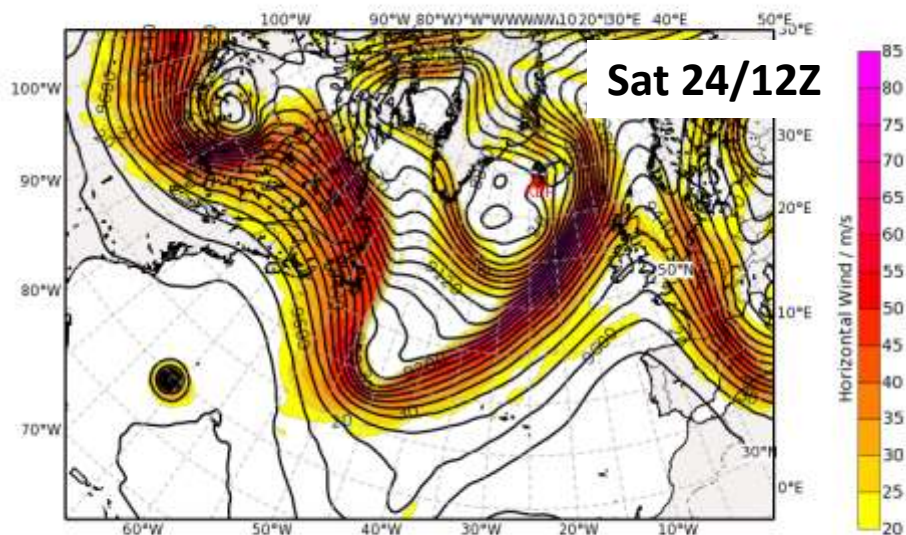
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Thu, 22 Sep 2016, 12 UTC (step 156 h from Fri, 16 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Fri, 23 Sep 2016, 12 UTC (step 180 h from Fri, 16 Sep 2016, 00 UTC)



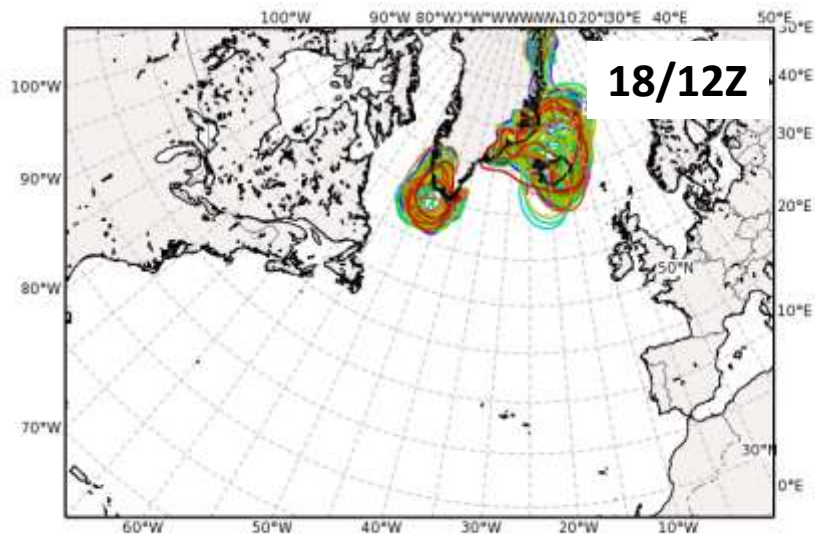
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Sat, 24 Sep 2016, 12 UTC (step 204 h from Fri, 16 Sep 2016, 00 UTC)



Outlook Sat 17/00Z to Wed 21/00Z : Z500 (based EC Hres 15/00Z)

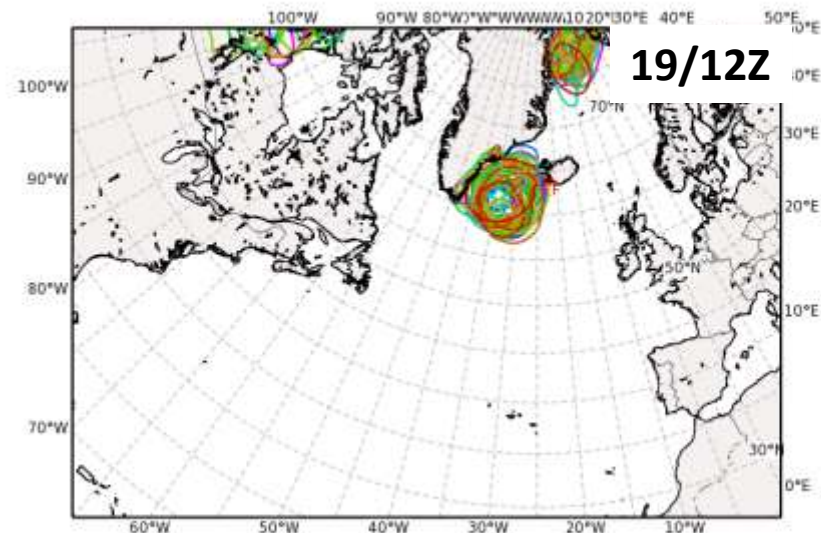
ECMWF ENS MSLP (990hPa-isoline)

Valid: Sun, 18 Sep 2016, 00 UTC (step 060 h from Thu, 15 Sep 2016, 12 UTC)



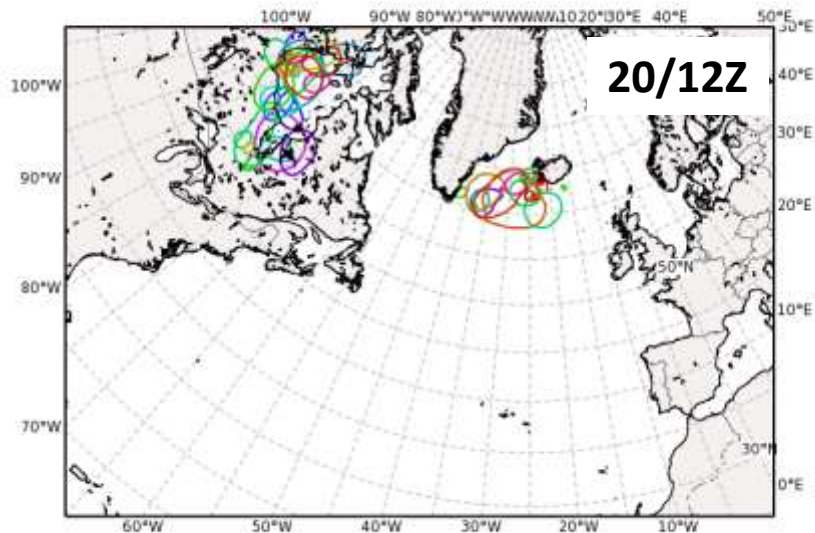
ECMWF ENS MSLP (990hPa-isoline)

Valid: Mon, 19 Sep 2016, 00 UTC (step 084 h from Thu, 15 Sep 2016, 12 UTC)



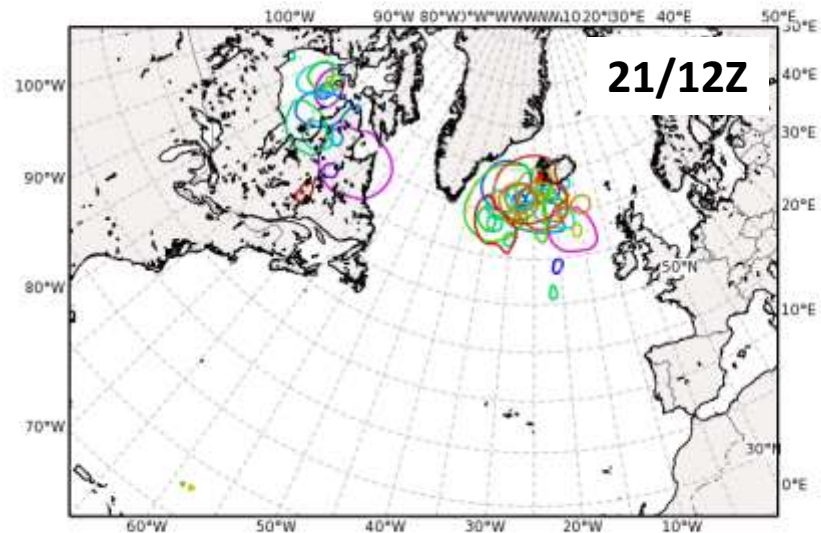
ECMWF ENS MSLP (990hPa-isoline)

Valid: Tue, 20 Sep 2016, 12 UTC (step 120 h from Thu, 15 Sep 2016, 12 UTC)



ECMWF ENS MSLP (990hPa-isoline)

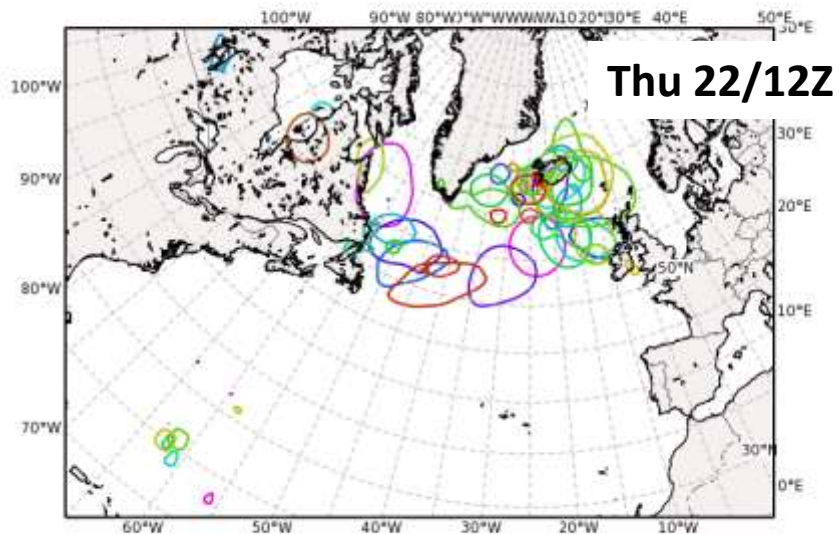
Valid: Wed, 21 Sep 2016, 12 UTC (step 144 h from Thu, 15 Sep 2016, 12 UTC)



Outlook Sat 17/00Z to Wed 21/00Z : Z500 (based EC Hres 15/00Z)

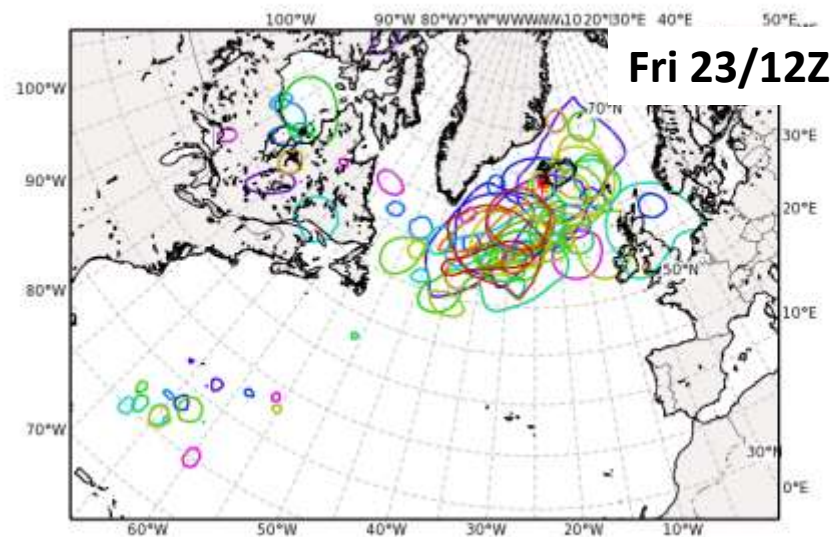
ECMWF ENS MSLP (990hPa-isoline)

Valid: Thu, 22 Sep 2016, 12 UTC (step 168 h from Thu, 15 Sep 2016, 12 UTC)



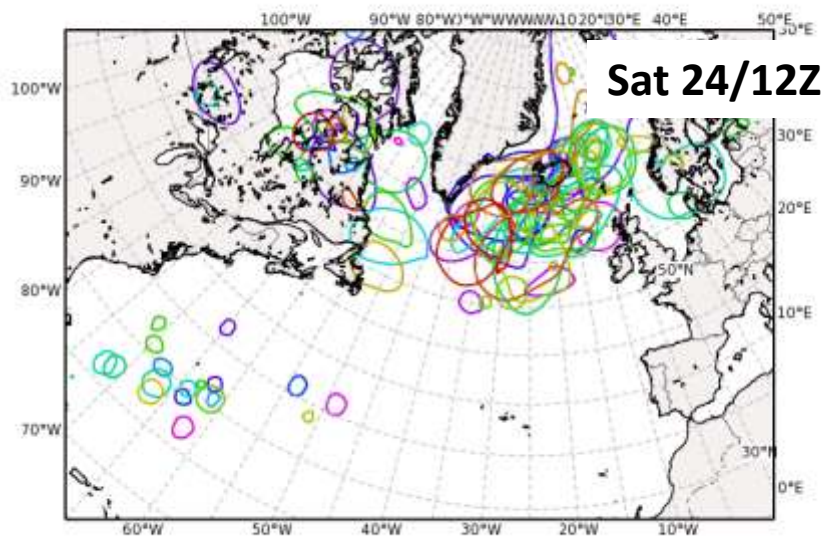
ECMWF ENS MSLP (990hPa-isoline)

Valid: Fri, 23 Sep 2016, 12 UTC (step 192 h from Thu, 15 Sep 2016, 12 UTC)



ECMWF ENS MSLP (990hPa-isoline)

Valid: Sat, 24 Sep 2016, 12 UTC (step 216 h from Thu, 15 Sep 2016, 12 UTC)



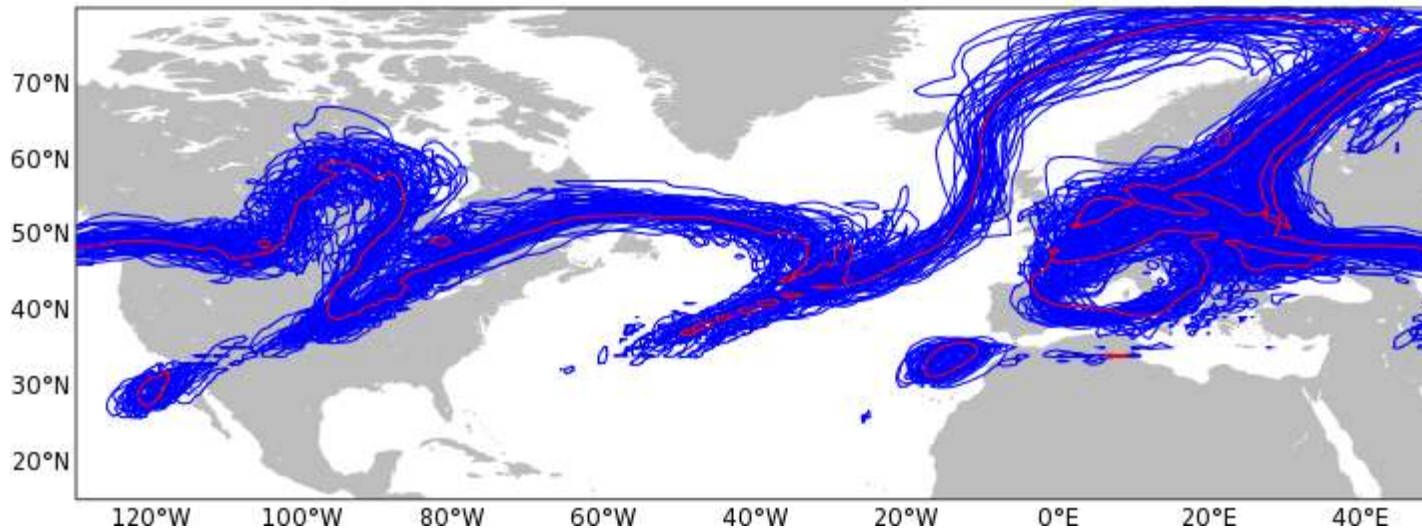
Outlook Mon 19/12Z to Fri 23/12Z : 2PVU@330K(based EC Ens 15/12Z)

Sun 18/12Z

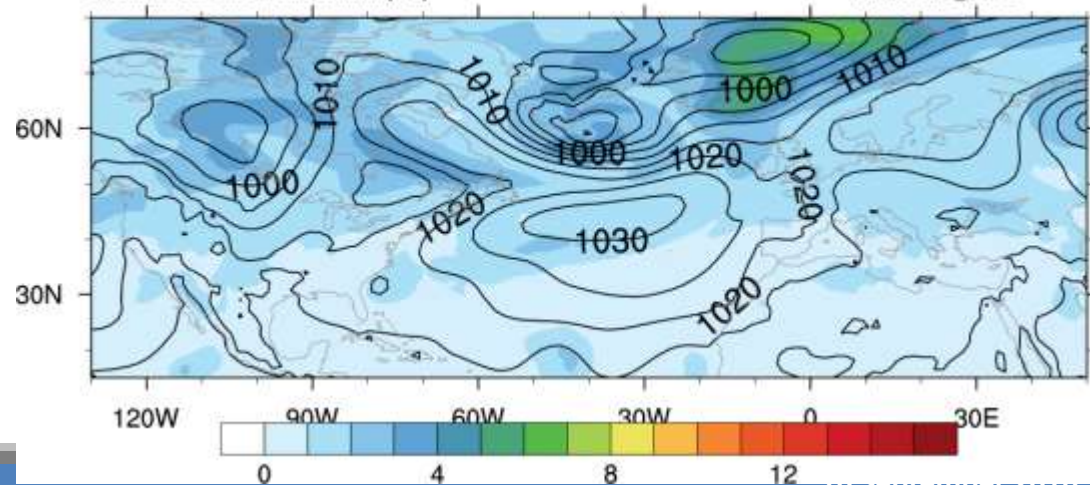
ECMWF ENSEMBLE FC

BT: 20160915 12UTC, VT: 20160918 12UTC

blue: perturbed, red: control



Pressure at mean sea level
ensemble mean and standard deviation [hPa]



ECMWF 51 member ensemble
BT 20160915_12UTC
VT 20160918_12UTC

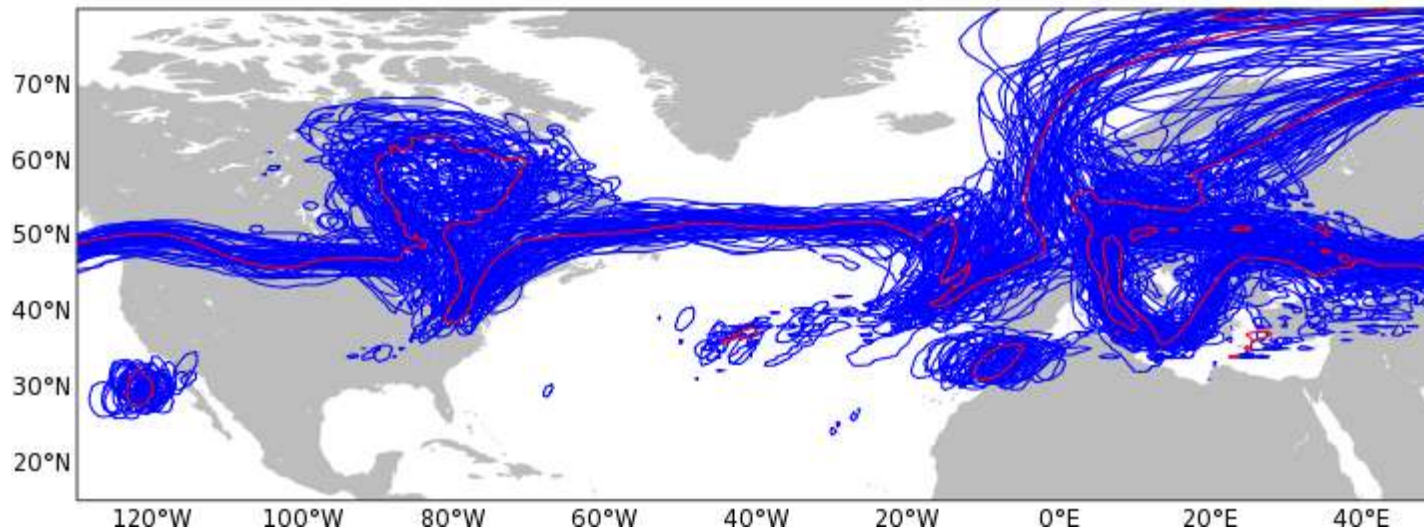
Outlook Mon 19/12Z to Fri 23/12Z : 2PVU@330K(based EC Ens 15/12Z)

Mon 19/12Z

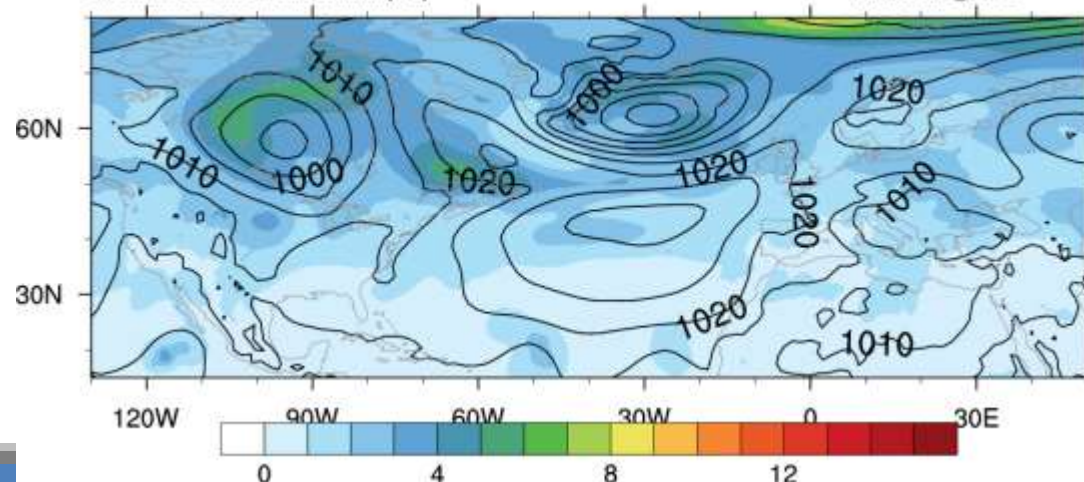
ECMWF ENSEMBLE FC

BT: 20160915 12UTC, VT: 20160919 12UTC

blue: perturbed, red: control



Pressure at mean sea level
ensemble mean and standard deviation [hPa]



ECMWF 51 member ensemble
BT 20160915_12UTC
VT 20160919_12UTC

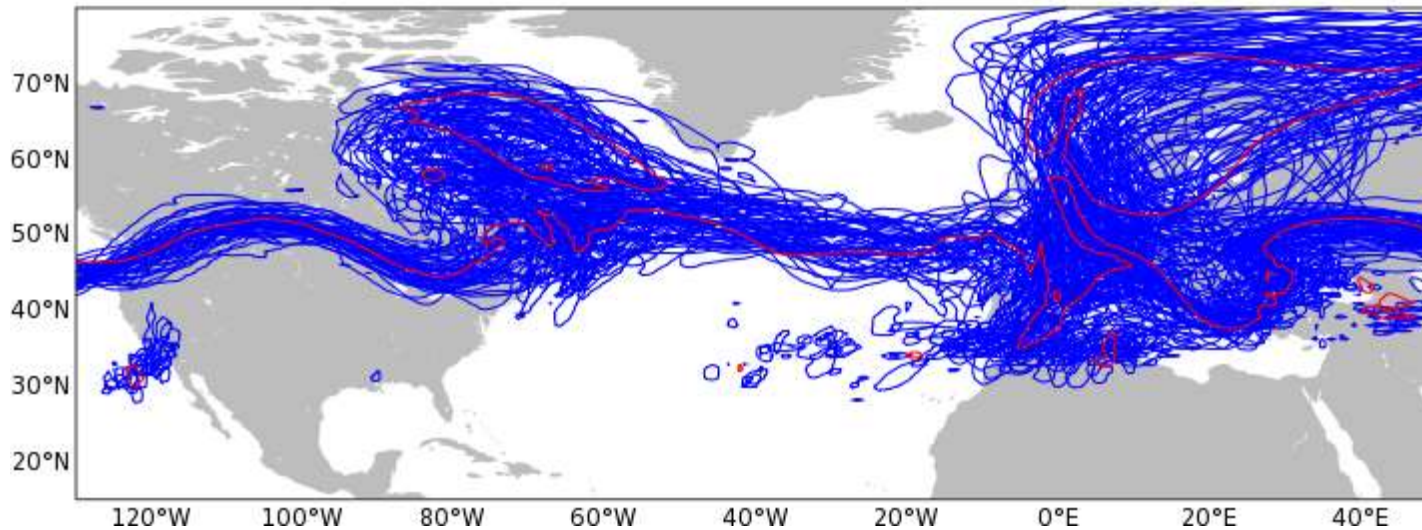
Outlook Mon 19/12Z to Fri 23/12Z : 2PVU@330K(based EC Ens 15/12Z)

Tue 20/12Z

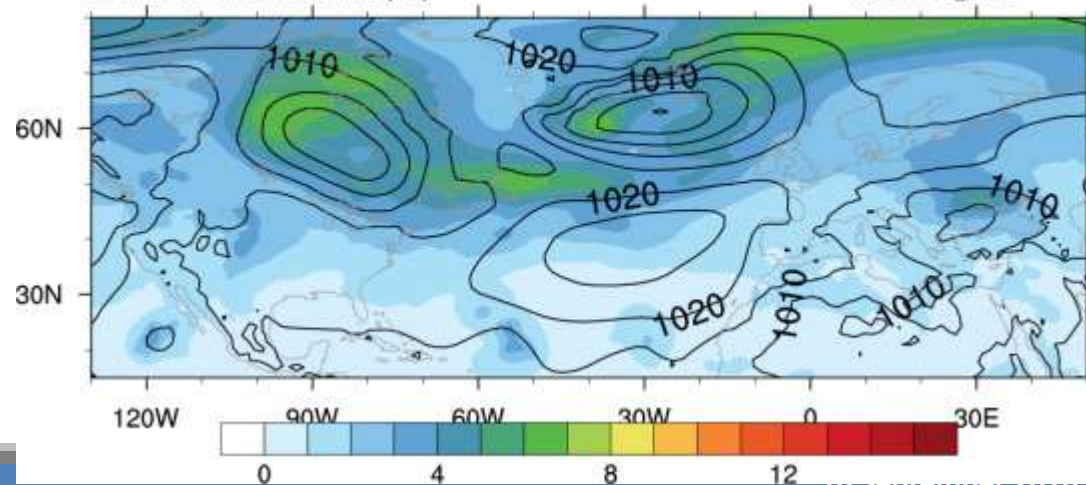
ECMWF ENSEMBLE FC

BT: 20160915 12UTC, VT: 20160920 12UTC

blue: perturbed, red: control



Pressure at mean sea level
ensemble mean and standard deviation [hPa]



ECMWF 51 member ensemble
BT 20160915_12UTC
VT 20160920_12UTC

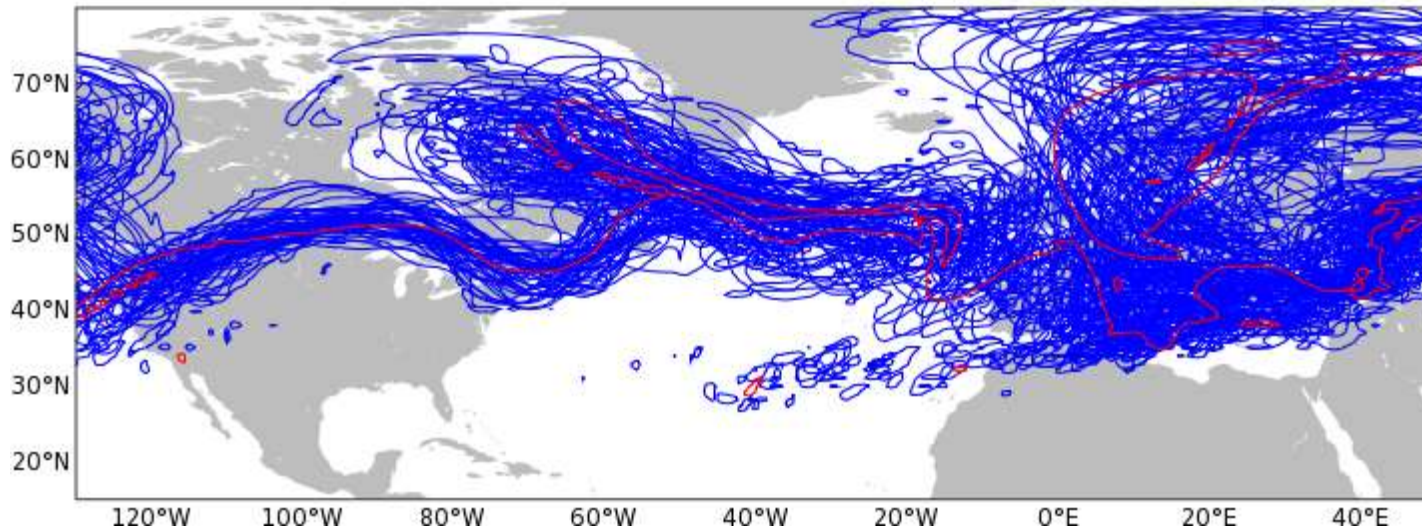
Outlook Mon 19/12Z to Fri 23/12Z : 2PVU@330K(based EC Ens 15/12Z)

Wed 21/12Z

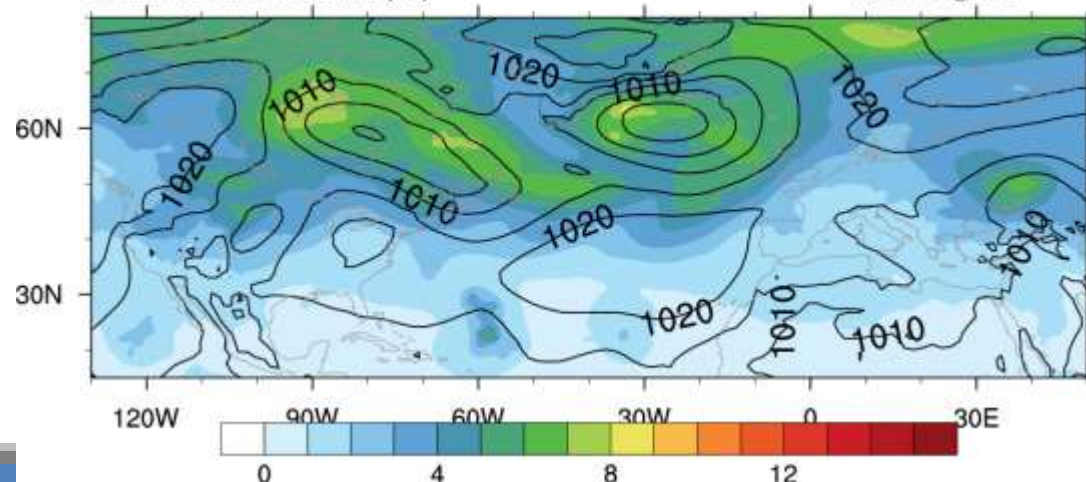
ECMWF ENSEMBLE FC

BT: 20160915 12UTC, VT: 20160921 12UTC

blue: perturbed, red: control



Pressure at mean sea level
ensemble mean and standard deviation [hPa]



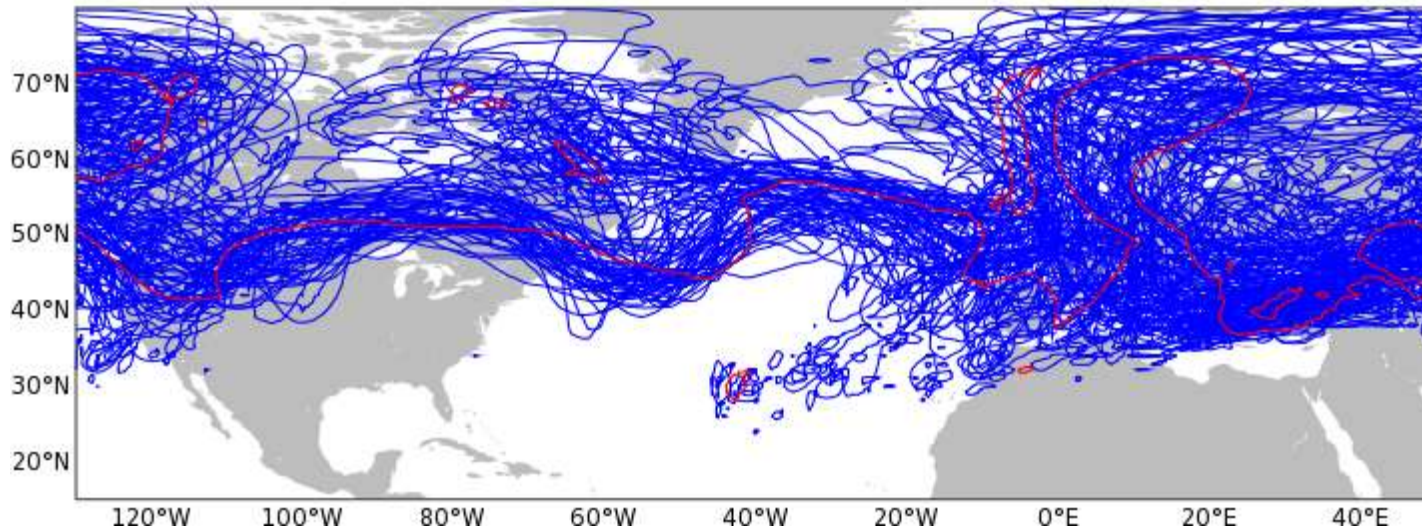
Outlook Mon 19/12Z to Fri 23/12Z : 2PVU@330K(based EC Ens 15/12Z)

Thu 22/12Z

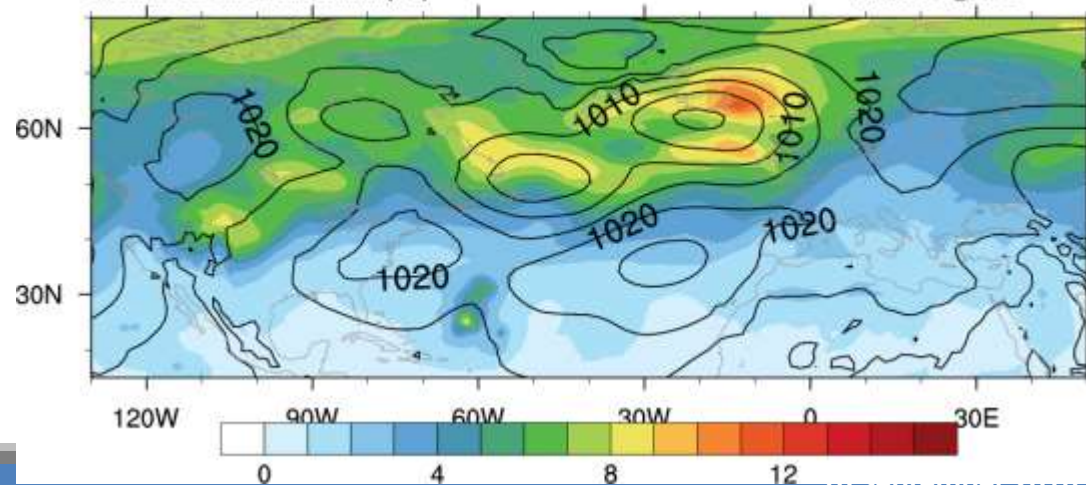
ECMWF ENSEMBLE FC

BT: 20160915 12UTC, VT: 20160922 12UTC

blue: perturbed, red: control



Pressure at mean sea level
ensemble mean and standard deviation [hPa]



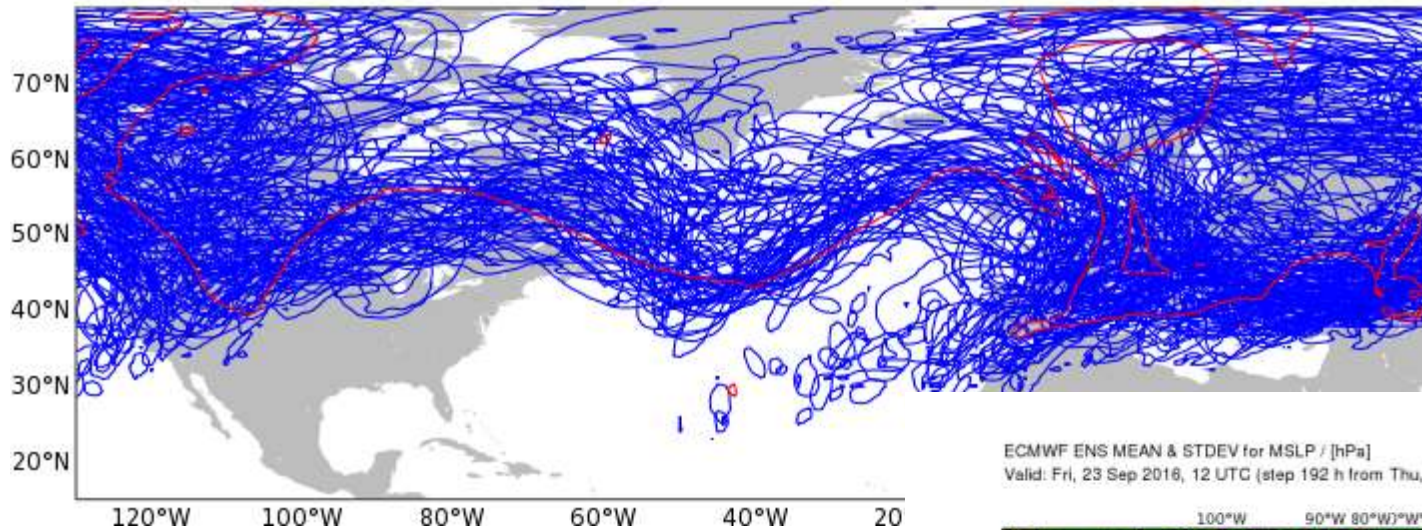
Outlook Mon 19/12Z to Fri 23/12Z : 2PVU@330K(based EC Ens 15/12Z)

Fri 23/12Z

ECMWF ENSEMBLE FC

BT: 20160915 12UTC, VT: 20160923 12UTC

blue: perturbed, red: control



ECMWF ENS MEAN & STDEV for MSLP / [hPa]

Valid: Fri, 23 Sep 2016, 12 UTC (step 192 h from Thu, 15 Sep 2016, 12 UTC)

