PRODUCT NAME: **OBS5v1.2 (H05)**		
CASE STUDY PERIOD: 04-05 May 2012	METEOROLOGICAL EVENT: Intense rainfall	
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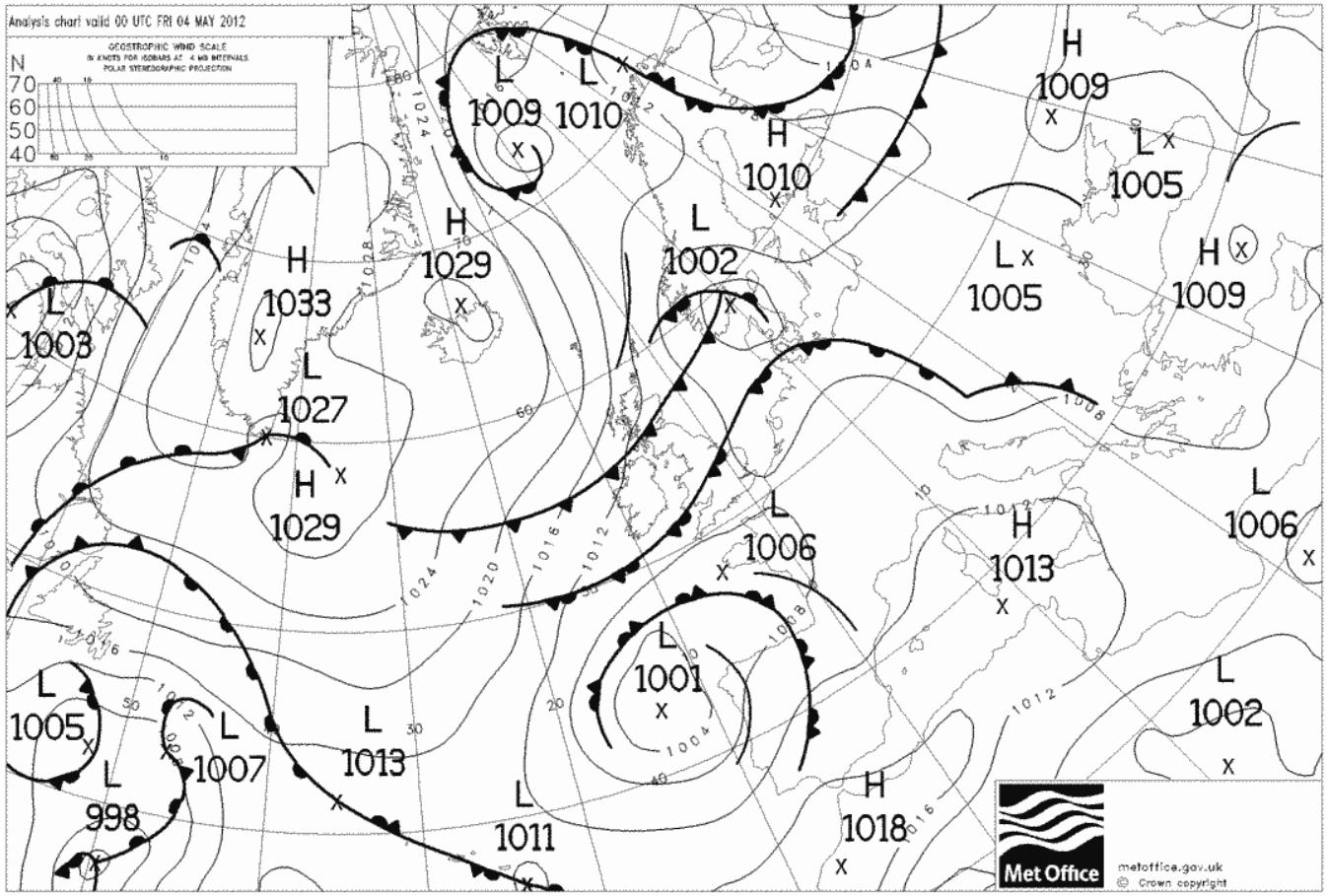
METEOROLOGICAL EVENT DESCRIPTION

A well organized upper troposphere storm approached western Europe on 04-05 May 2012. It was accompanied by low pressure systems on the surface and many active fronts, occluded and cold. The result was extended precipitation periods with locally high rain rates over Belgium and the surrounding countries.

The weather situation on May 04 and 05 2012, 00:00 UTC, is shown in the following synoptic maps.


Analysis chart valid 00 UTC FRI 04 MAY 2012
GEOSTROPHIC WIND SCALE
IN KNOTS FOR ISOBARS AT 4 MB INTERVALS
POLAR STEREOGRAPHIC PROJECTION
N
70
60
50
40
L 1009
L 1010
H 1010
H 1009
L 1005
H 1029
L 1002
L 1005
H 1009
H 1033
L 1003
L 1027
H 1029
L 1006
H 1013
L 1006
L 1001
L 1005
L 1007
L 998
L 1013
L 1011
H 1018
L 1002
1024
1020
1016
1012
1008
1004
1000
996
992
988
1028
1032
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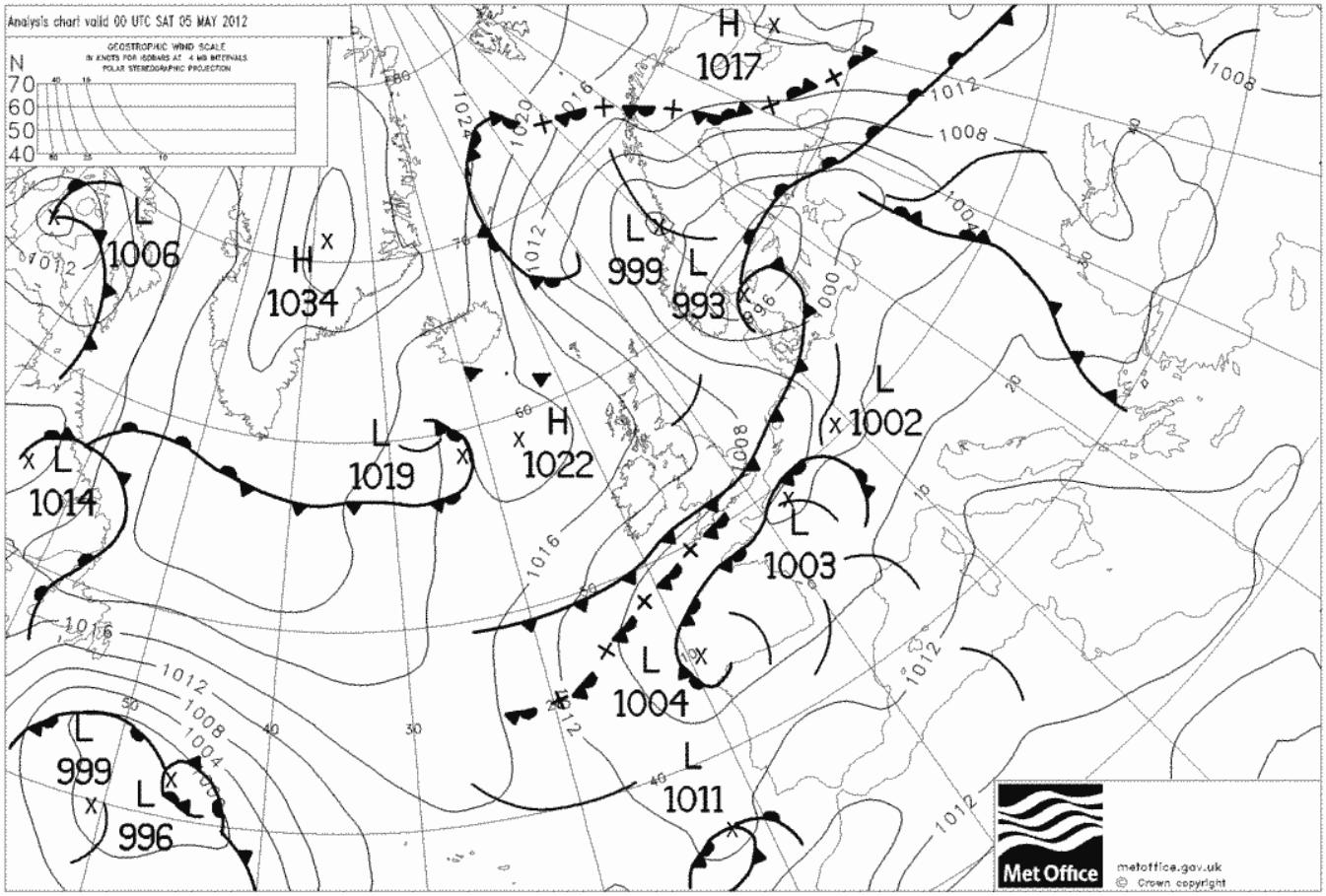
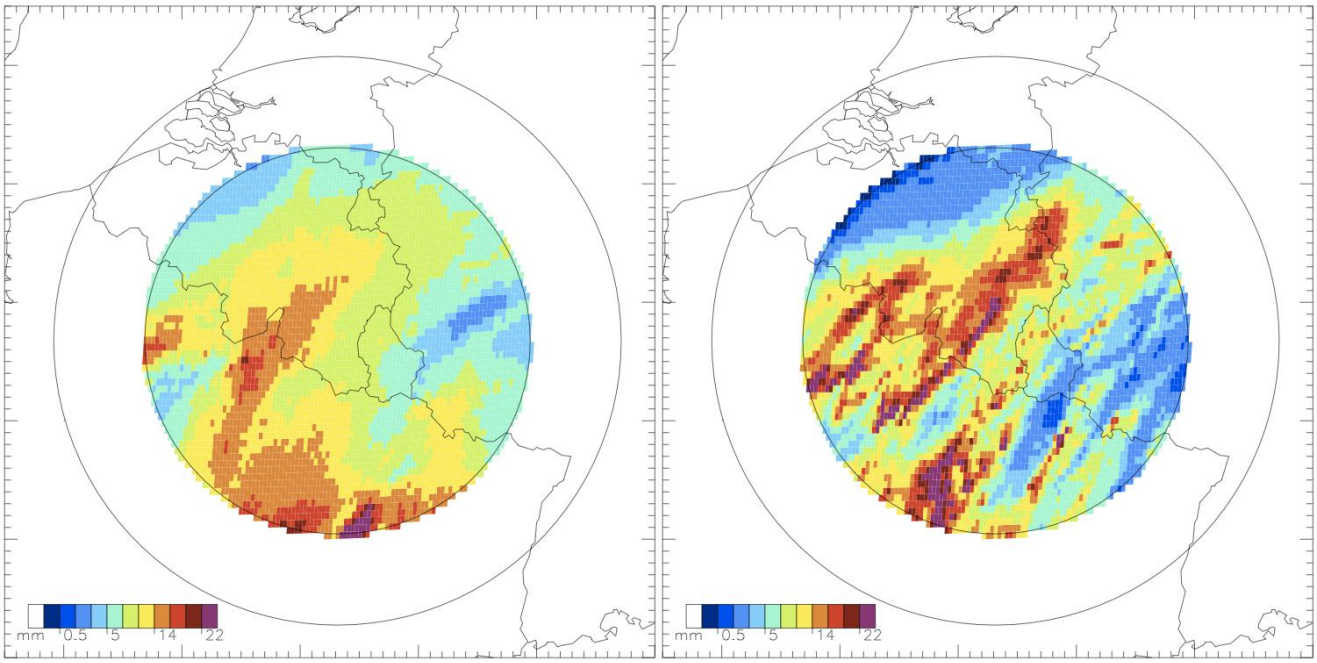


The most intense rainfall took place in the afternoon of May 04 and we focus on that part of the day.

DATA/PRODUCTS USED

We compare here the 24-hour accumulated rain from OBS5v1.2 (H05) to the radar-observed accumulated rain for the same time period.



Satellite (OBS5v1.2 on the left) and radar (on the right) on May 05, 2012.

The radar images seen on the right are the result of the up-scaling of the Wideumont radar data in the H05 grid, using the common code for this purpose.

In this case, the satellite image matches reasonably well the corresponding radar image, regarding both precipitation distribution and accumulated values. The satellite detects also correctly the two areas where precipitation accumulation drops (northwest and east of the circular validation domain). The main difference is that in the satellite image the higher values of cumulated precipitation have a more limited presence. Therefore, several high rainfall pixels do not appear in the satellite image. Also, the low values in the satellite image do not fall as low as in the radar image.

RESULTS OF COMPARISON

In order to summarize the results of the comparison, we present some statistical measures describing the areal behaviour and the error of the satellite observation. These are: (1) percentages of pixels inside the radar range with accumulated precipitation equal or greater than 1 mm (P1Rad, P1Sat), 8 mm (P8Rad, P8Sat) and 32 mm (P32Rad, P32Sat); (2) maximum accumulated precipitation value (in mm) inside the radar range (MaxRad, MaxSat). Also, mean error (ME) and root mean square error (RMSE) are calculated.

Product: OBS5v1.2 (H05)						
Time (rad/sat)	**P1Rad**	**P8Rad**	**P32Rad**	**P1Sat**	**P8Sat**	**P32Sat**
05/05/2012	97.57%	55.63%	0.27%	100.00%	68.78%	0.00%

Product: OBS5v1.2 (H05)				
Time (rad/sat)	**MaxRad**	**MaxSat**	**MD**	**RMSD**
05/05/2012	41.22	27.59	0.75	5.09

These tables confirm the precious qualitative comments on the satellite and radar images. The percentages of pixels for each precipitation class are fairly close, especially in the lower class. A more marked difference is observed in the maximum values, explaining the total absence of 32 mm pixels in the satellite image.
COMMENTS
Indications to Developers