



*Norwegian  
Meteorological Institute  
met.no*

# Diana: A Free Meteorological Workstation

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# Diana: A free meteorological workstation

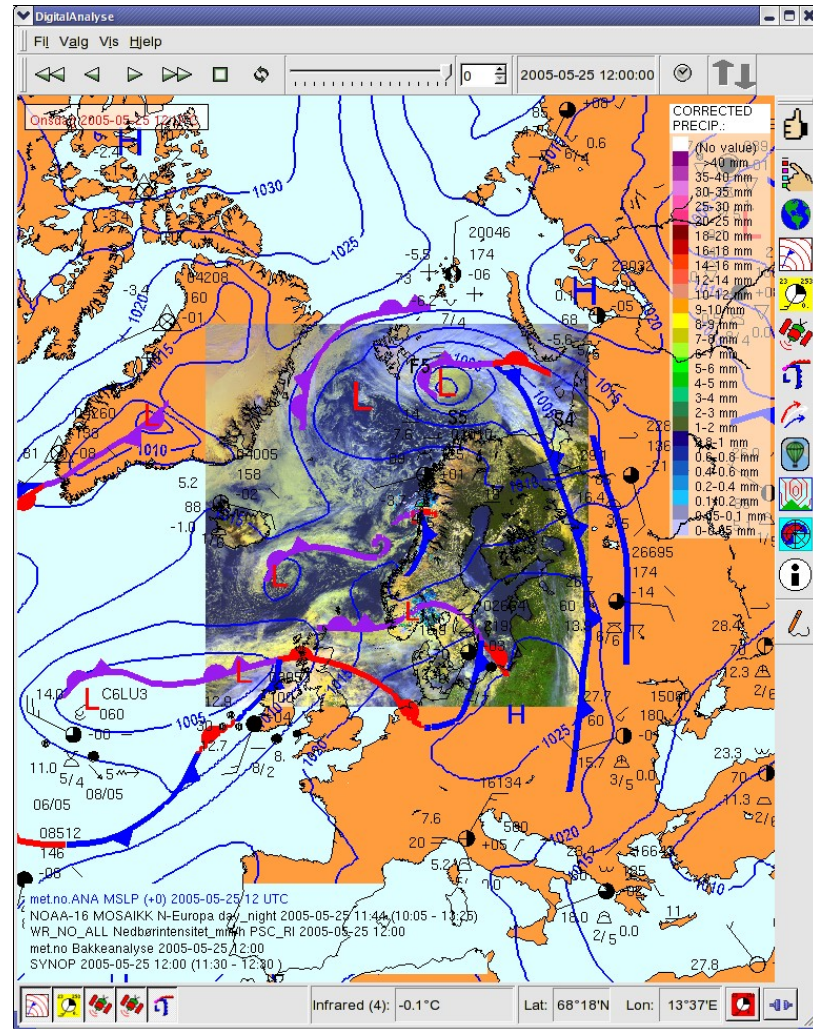
## **Diana**

- is a meteorological visualisation and production software
- is developed at the Norwegian Meteorological Institute, met.no
- has been used operationally since 2001
- used by researchers
- was released as open source under the GPL licence in May 2006
- cooperation with SMHI since 2006



## Visualisation

- Fields
- Satellite and radar images
- Surface observations
- Soundings
- Cross Sections
- Trajectories in isosurfaces
- Forecast products







## DIANA - interfaces

- Dialogs and Quick menus (Standard and private)
- Most options/preferences and command history in a log to next session.
- Keyboard shortcuts for all functions
- Multilingual dialogs
- Batch version – identical code base



# Programming environment

- Linux (Red Hat Fedora Core 5), all *met.no* workstations
- C++ (g++)
- Qt for GUI and window handling, platform independent
- Mesa3D OpenGL



## Data formats

Today: mostly met.no formats

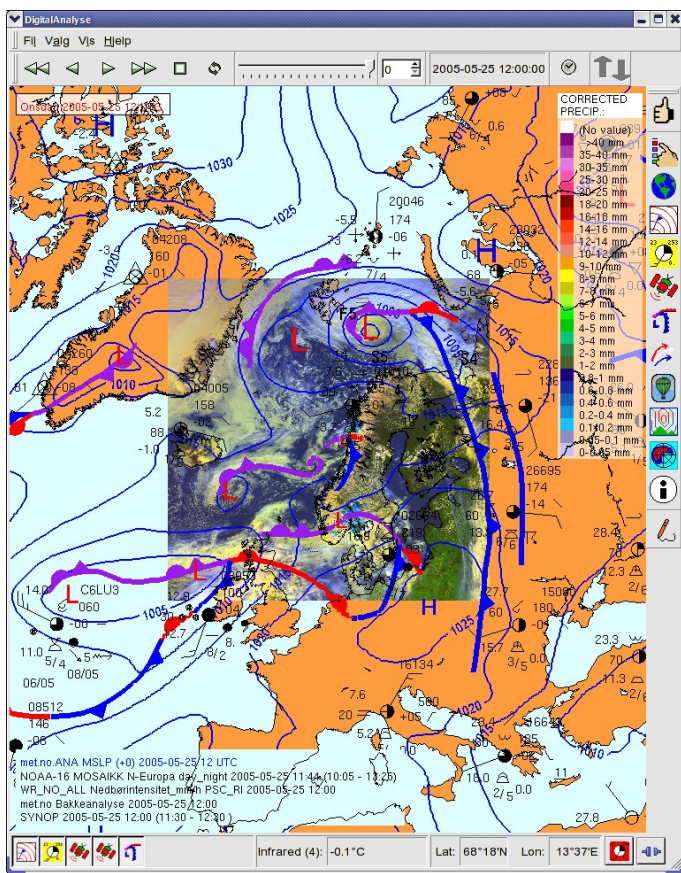
- Observation: BUFR

Future plans

- Fields: NetCDF and GRIB
- Image formats: HDF5, geoTiff



# Diana Demo

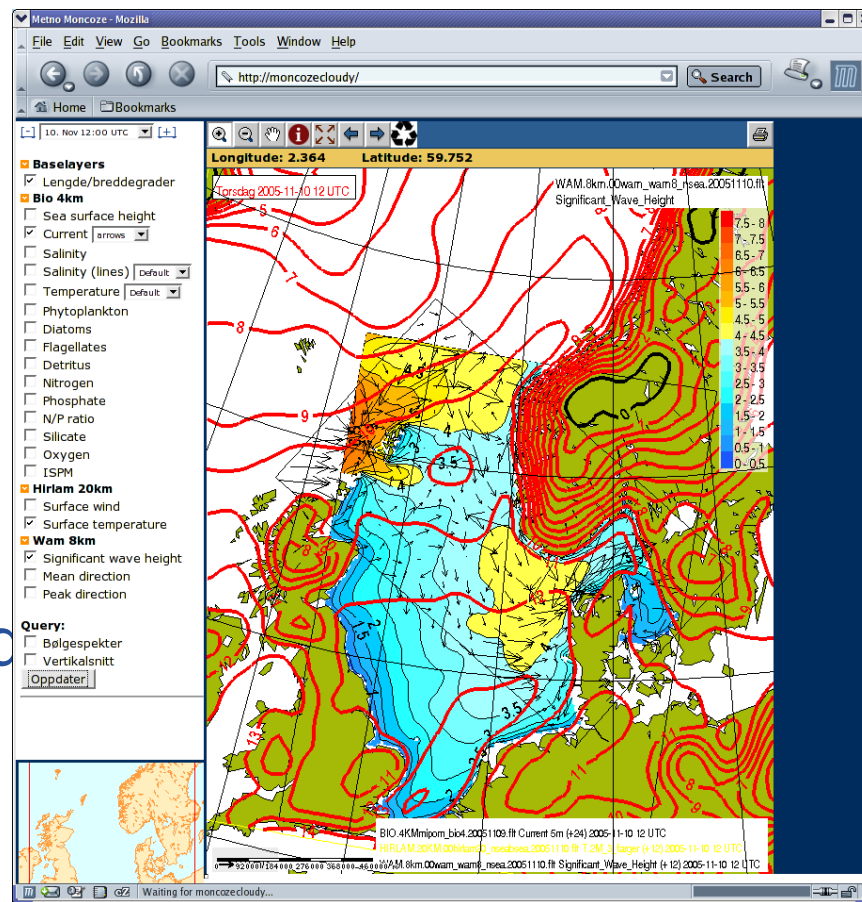


- Fields
- Surface observations
- Satellite and radar
- Soundings
- Cross sections



# Diana Web Map Service

- **WMS**- A standard for showing maps in a web browser
- Defined by Open Geospatial Consortium (OGC)
- Maps can be requested from different servers
- Clients can build customized maps







# How to obtain Diana

Can be downloaded from

<http://met.no/diana>

Contact:

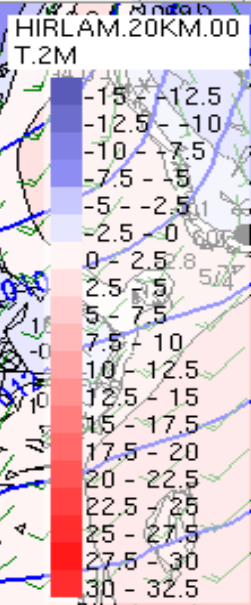
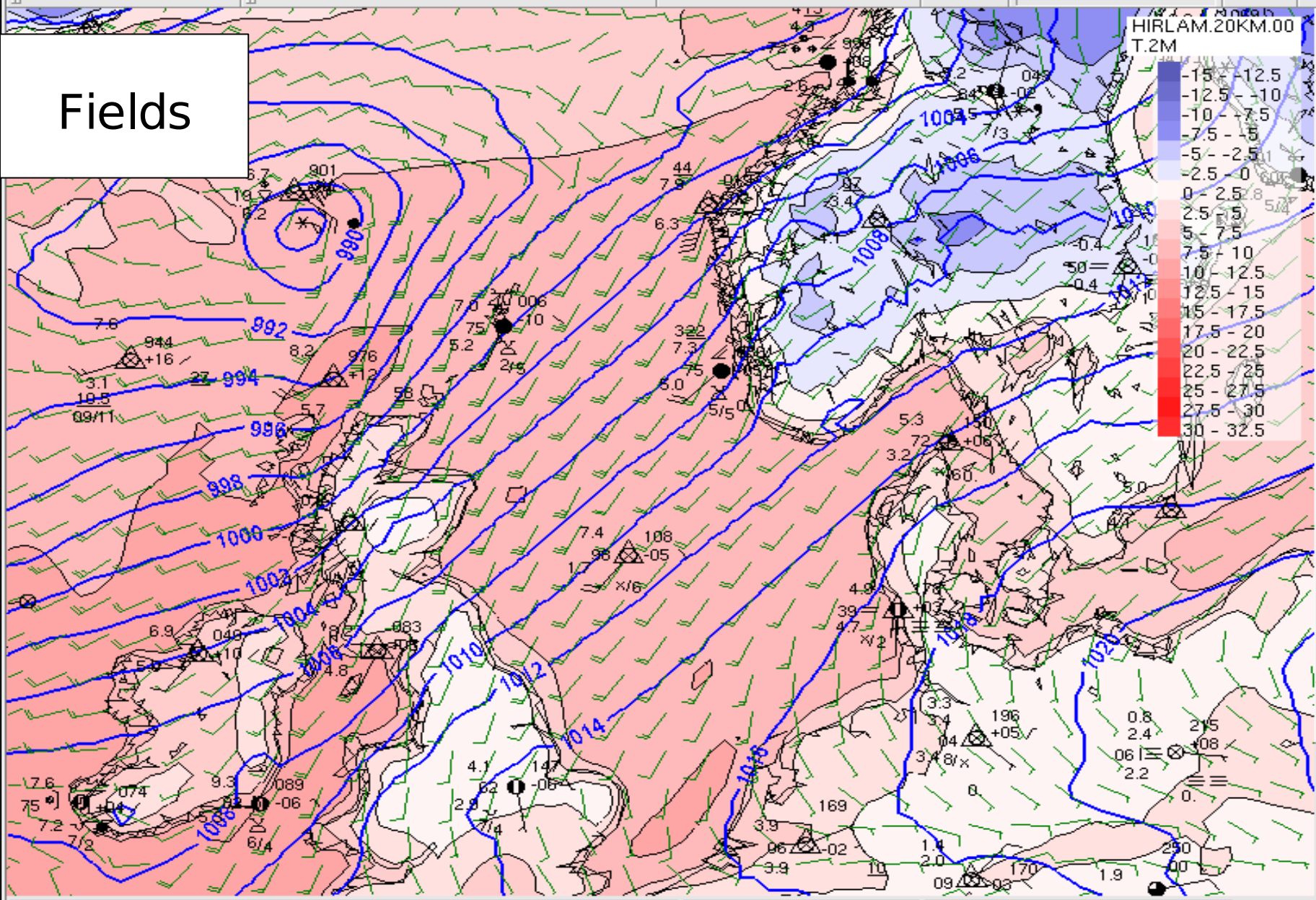
[diana@met.no](mailto:diana@met.no)



## SUMMARY

- Diana is developed for use in an operational forecasting environment, used extensively by researchers.
- Used for 5 years at the Norwegian Meteorological Institute
- Released as open source 2006, available for download at <http://met.no/diana>
- Open source version will be further developed.

Fields



Vertical toolbar with various icons:

- Thumbs up
- Hand cursor
- Globe
- Map grid
- 23/293
- Weather icons: sun, clouds, rain, snow, wind
- Hot air balloon
- Target
- Compass
- Information icon
- Eraser

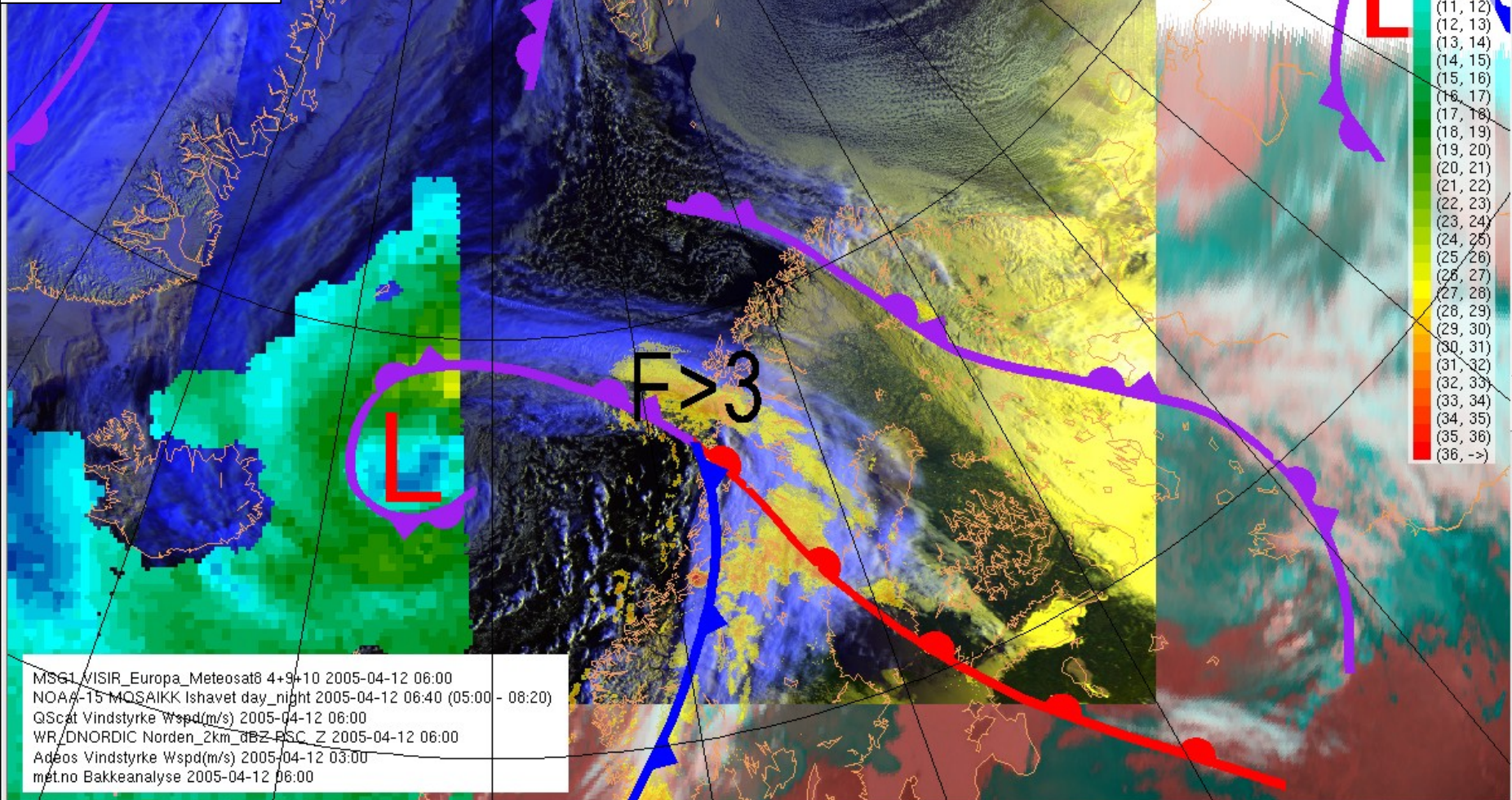
Bottom left toolbar with icons for map grid, compass, and other navigation tools.

Bottom right toolbar with a red square icon and a zoom icon.



Bakkeanalyse for 2005-04-12 06 UTC

# Images

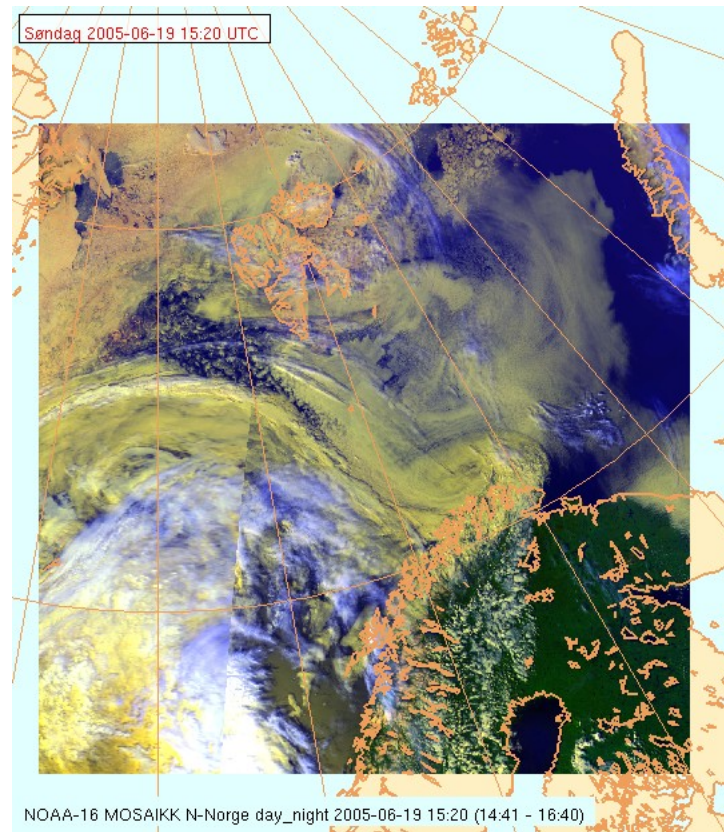
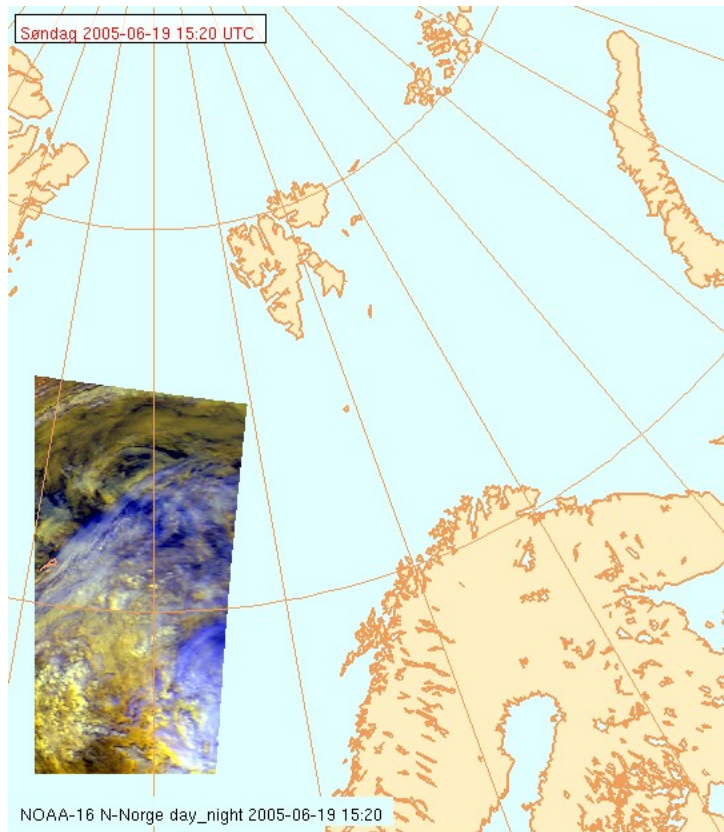


MSG1\_VISIR\_Europa\_Meteosat8\_4+9+10\_2005-04-12\_06:00  
 NOAA-15\_MQSAIKK\_Ishavet\_day\_night\_2005-04-12\_06:40 (05:00 - 08:20)  
 QScat\_Vindstyrke\_Wspd(m/s)\_2005-04-12\_06:00  
 WR\_DNORDIC\_Norden\_2km\_dbZ\_PSC\_Z\_2005-04-12\_06:00  
 Adeos\_Vindstyrke\_Wspd(m/s)\_2005-04-12\_03:00  
 met.no\_Bakkeanalyse\_2005-04-12\_06:00



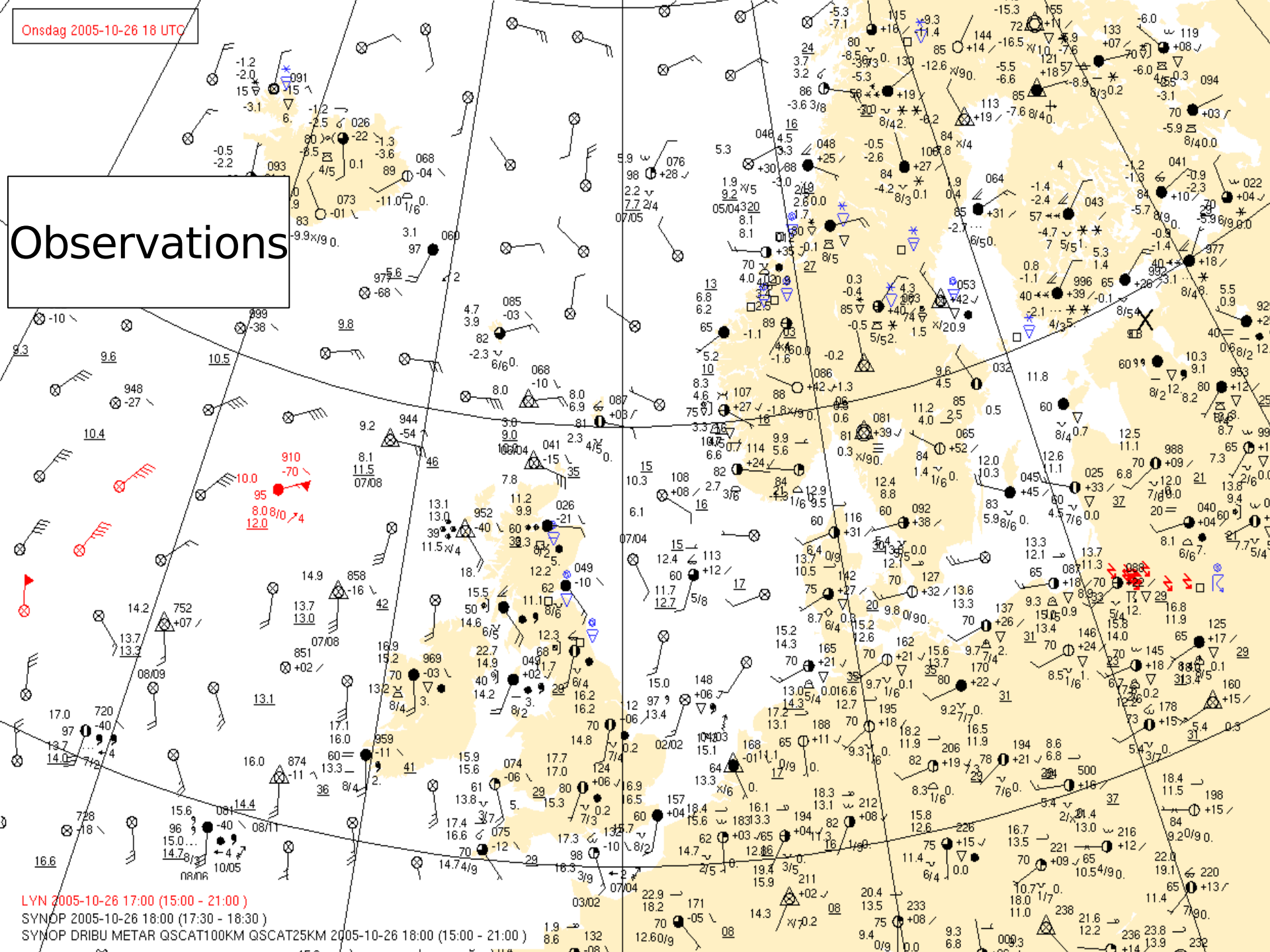


# Diana: Image mosaic



Onsdag 2005-10-26 18 UTC

# Observations

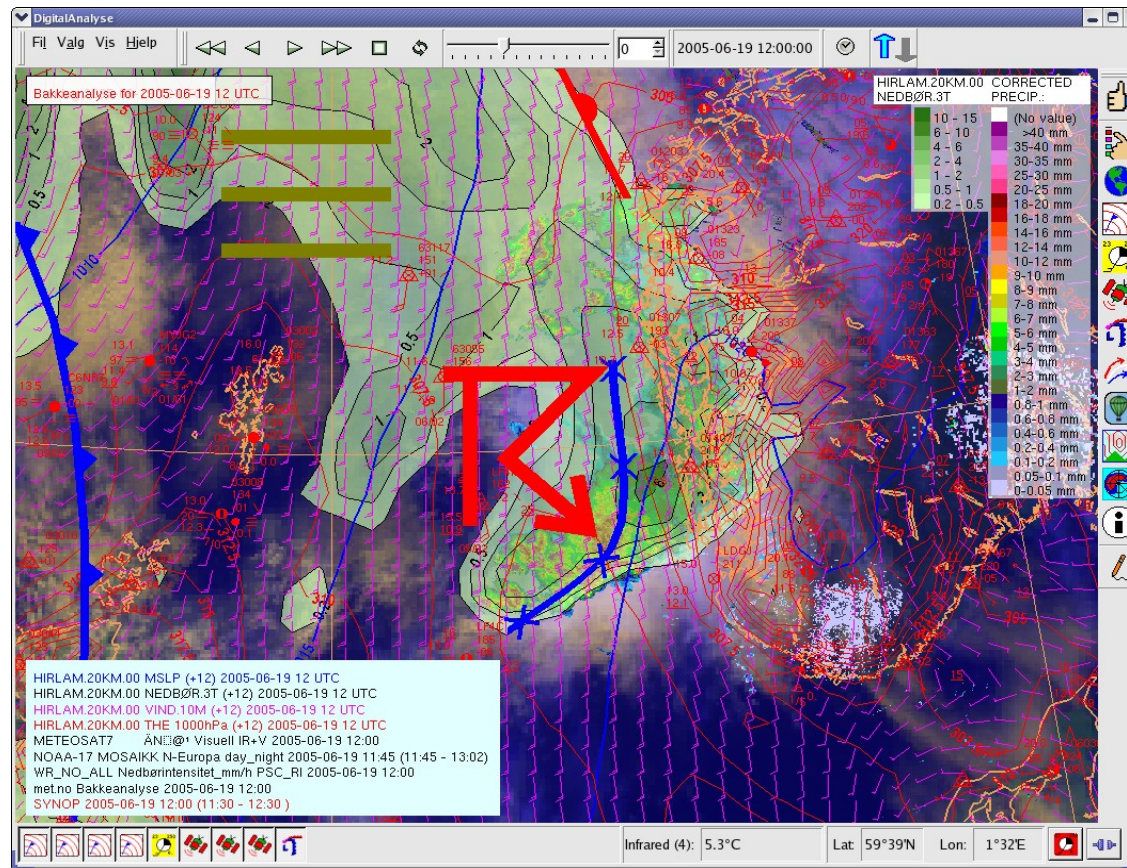


LYN 2005-10-26 17:00 (15:00 - 21:00)  
SYNOP 2005-10-26 18:00 (17:30 - 18:30)  
SYNOP DRIBU METAR QSCAT100KM QSCAT25KM 2005-10-26 18:00 (15:00 - 21:00)



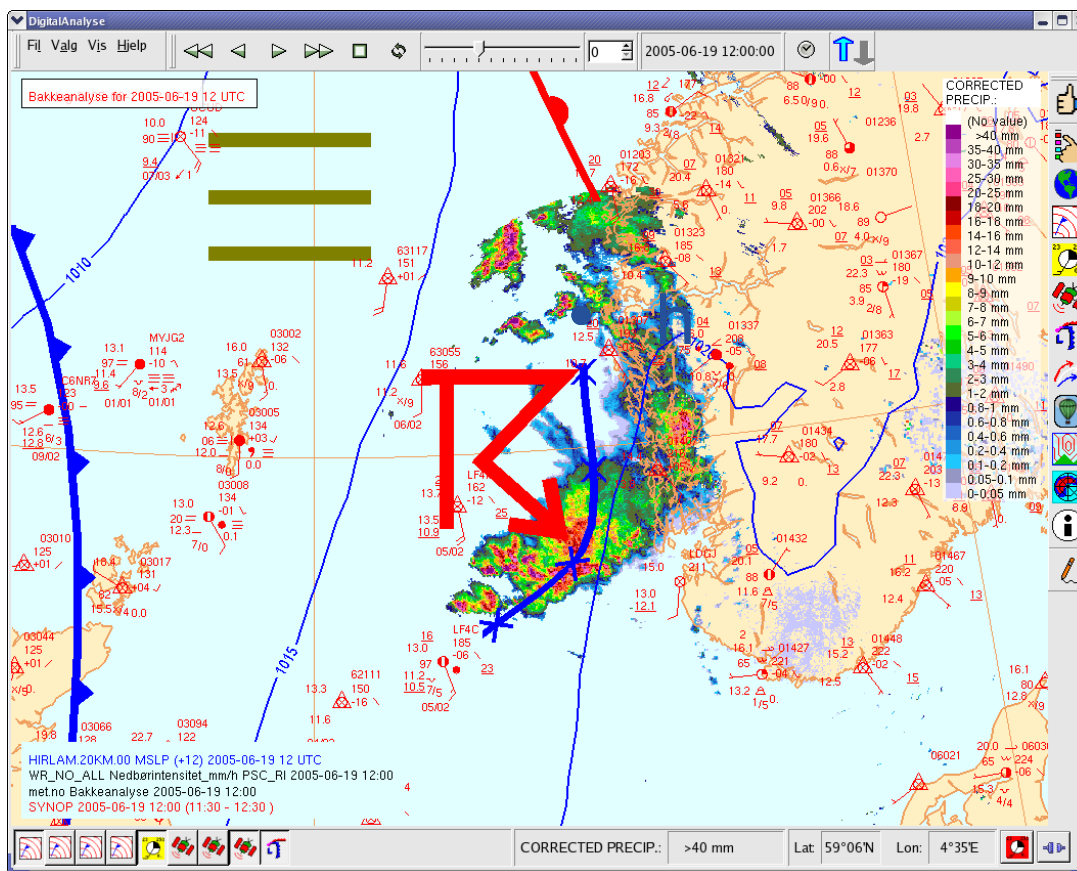


# Diana with too much information





# Diana ... some "layers"

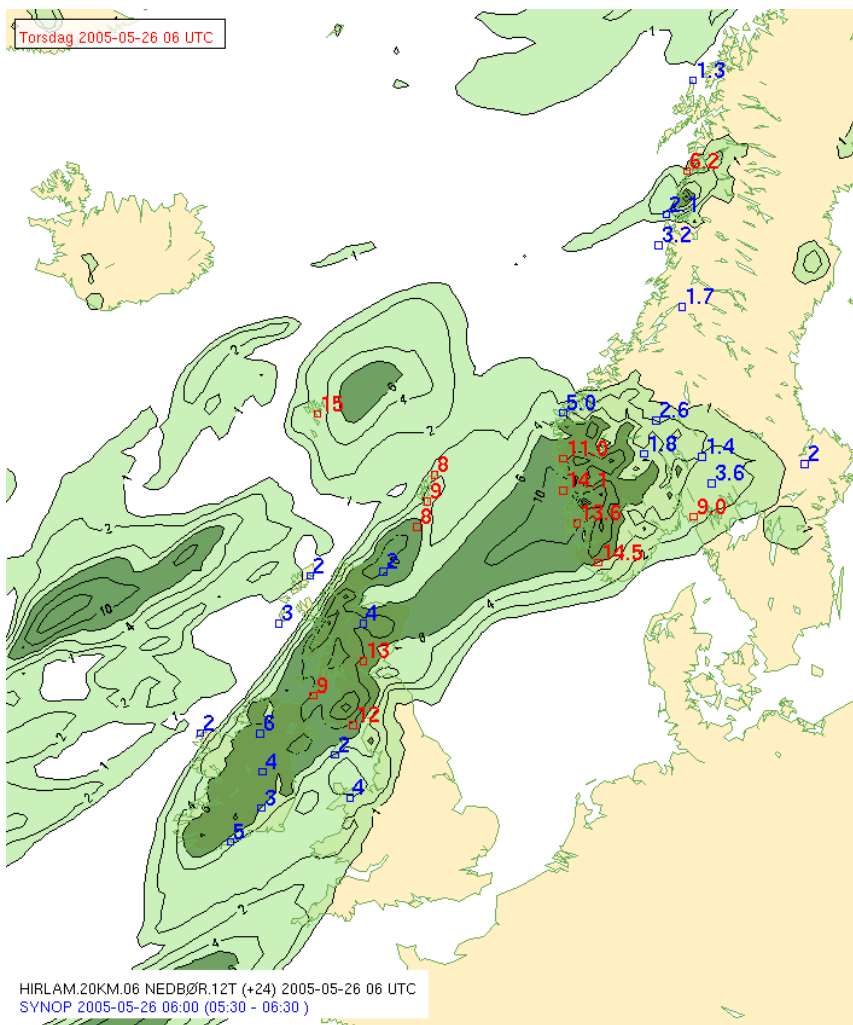






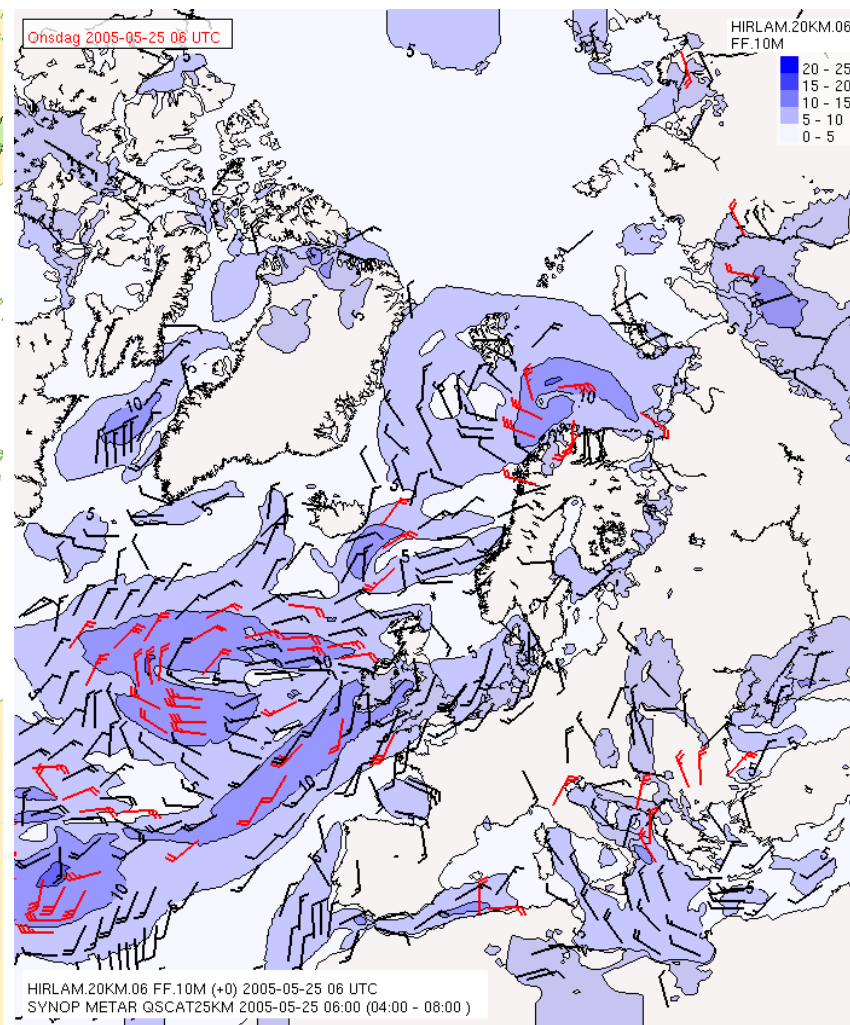
# Precipitation

(Plot RR>1mm, Red)



# Wind speed

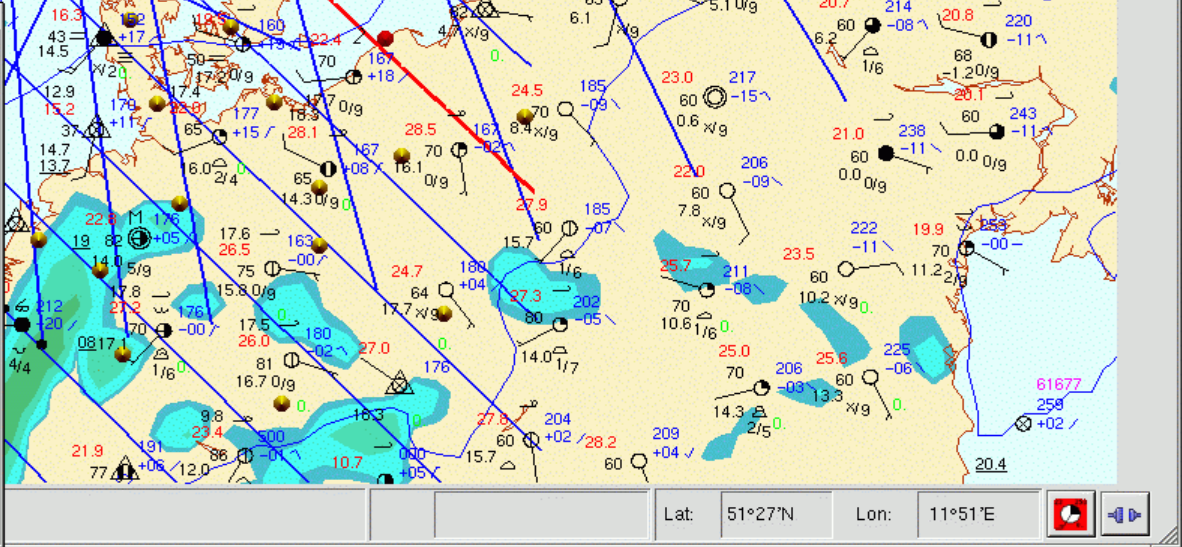
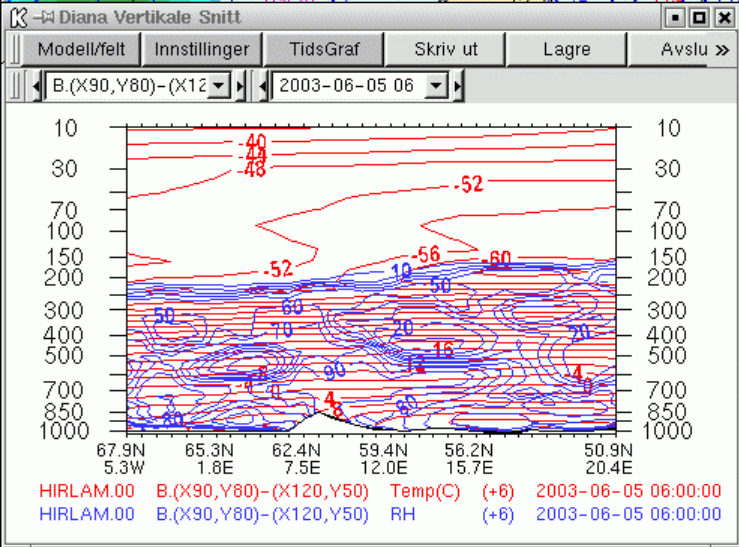
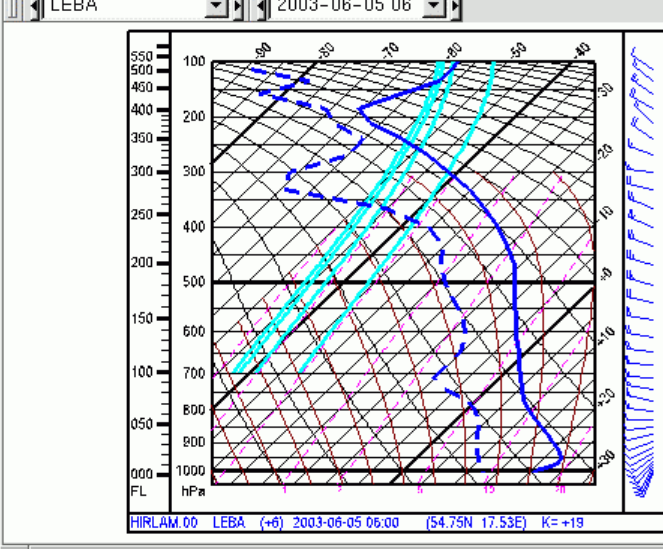
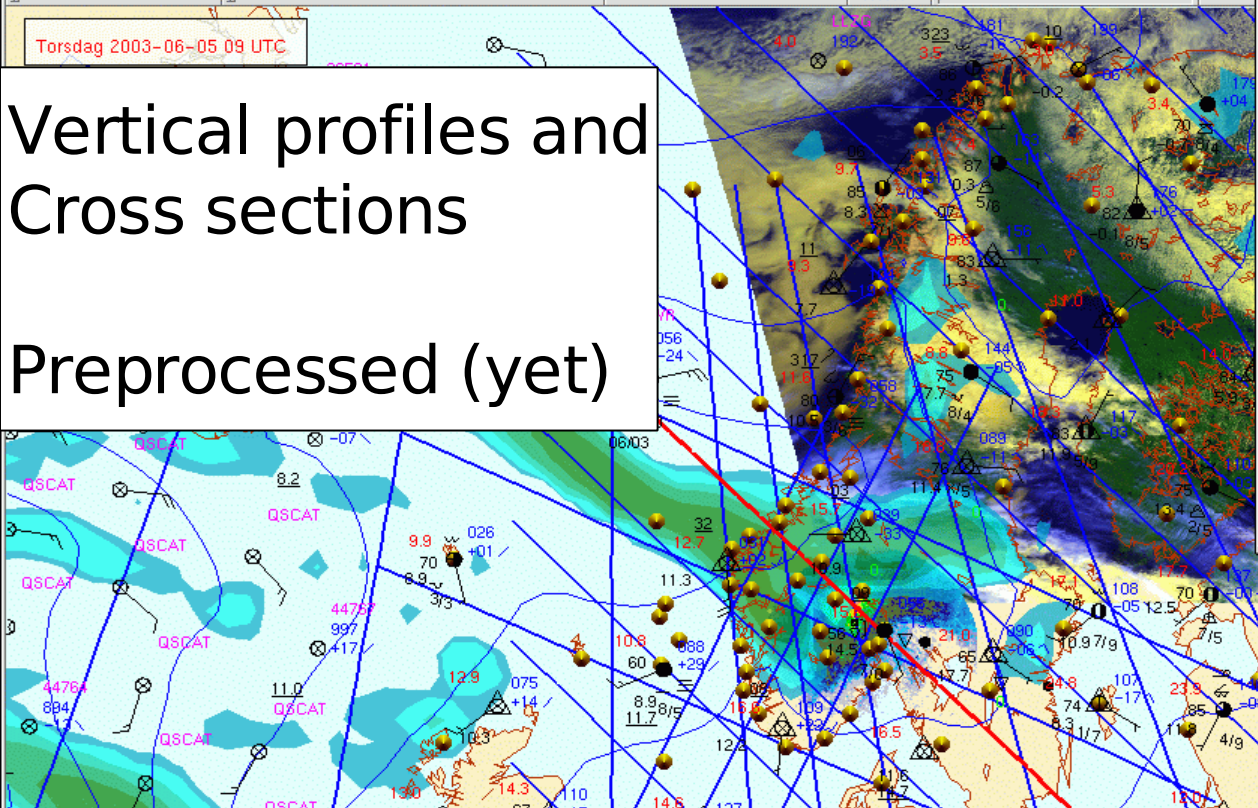
(Plot ff>5m/s, ff>10m/s)



Torsdag 2003-06-05 09 UTC

# Vertical profiles and Cross sections

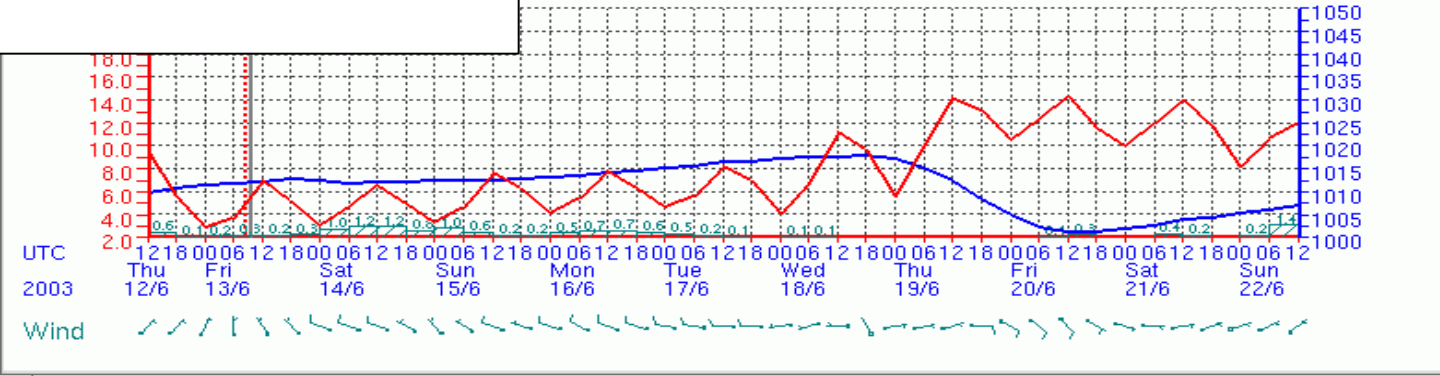
## Preprocessed (yet)



HIRLAM.00 B.(X90,Y80)-(X12,Y50) Temp(C) (+) 2003-06-05 06:00:00  
 HIRLAM.00 B.(X90,Y80)-(X12,Y50) RH (+) 2003-06-05 06:00:00



# Meteogram tool



Meteogram

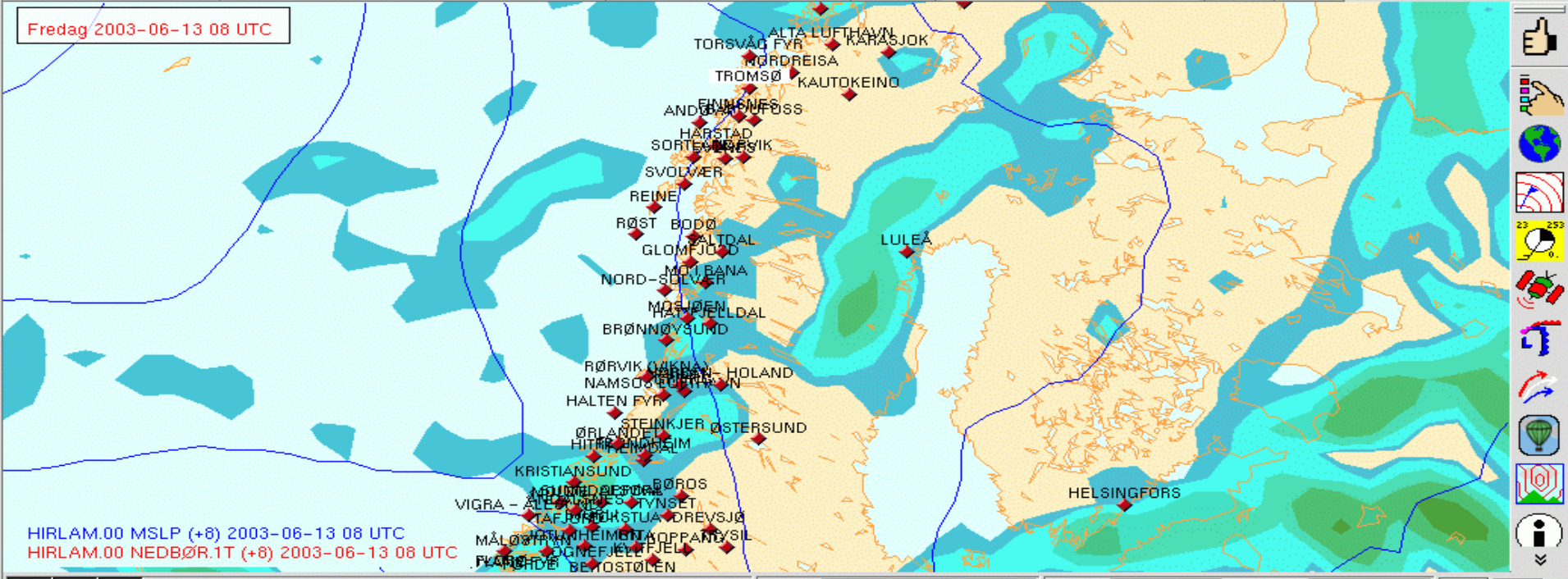
Ecmwf 12

ODDA  
OKSØY FYR  
OMASTRAND  
OPPDAL  
OSLO

Diana

DigitalAnalyse

2003-06-13 08:00:00



Lat: 72°47'N Lon: 8°18'E





# MSLP and Front Analysis

Bakkeanalyse for 2005-04-12 09 UTC

▼ Editering

Bakkeanalyse1 TEST 2005-04-12 09:00  
Ikke lagret

Produkt Lagre Send

Felt Objekter Koble

MSLP

Endre verdi  
Flytte  
Endre gradient  
Linje, u/glatting  
Linje, m/glatting  
Linje, begrenset, u/glatting  
Linje, begrenset, m/glatting  
Glatte  
Erstatt udefinerte verdier

Sirkel  Ellipse(senter)  
 Firkantet  Ellipse(brennpunkt)

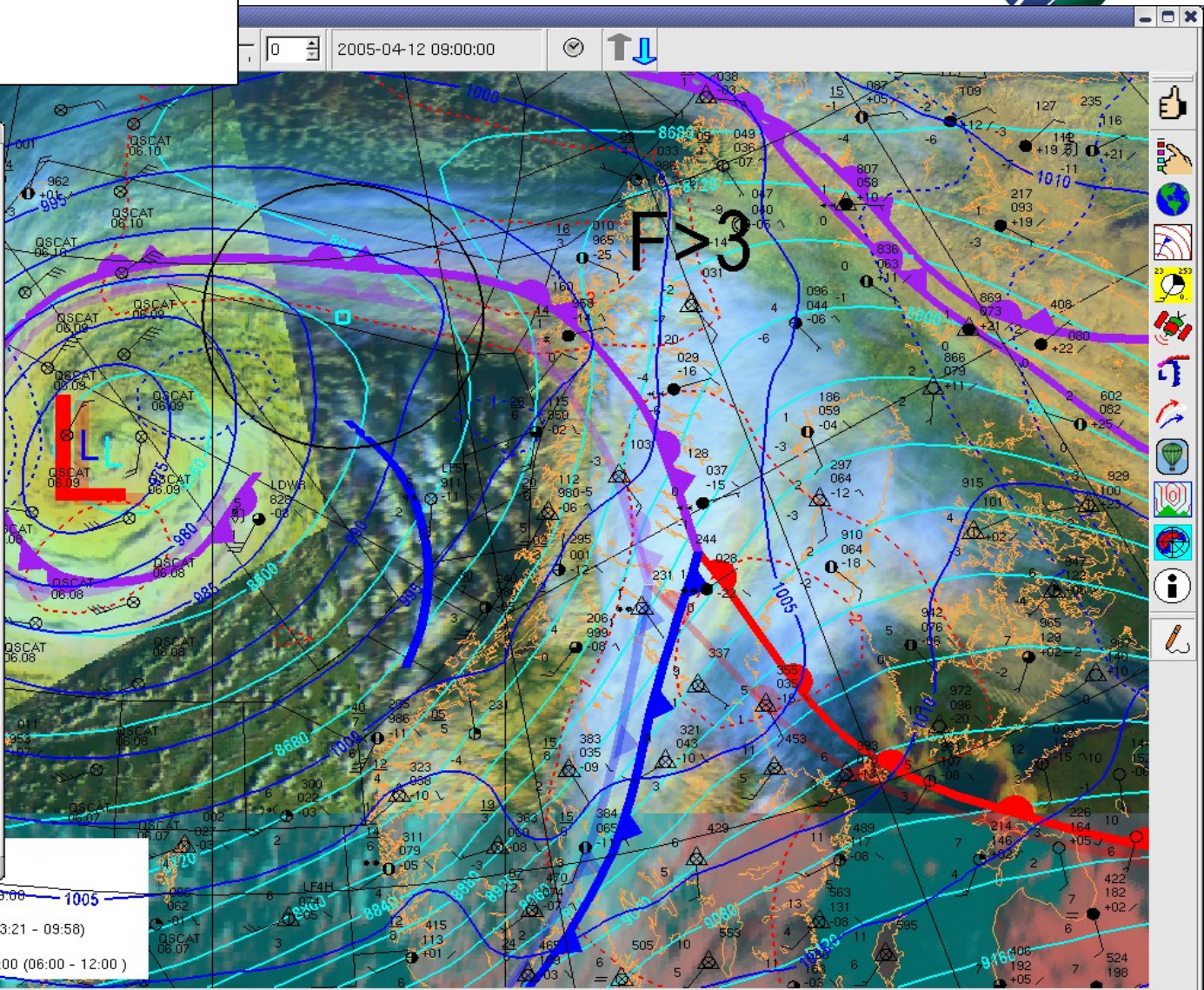
Ellipseform

Vis ekstra editeringslinjer

Angre Gjenta

Obs. tidskritt: 1 Pause Kommentarer

Avslutt Skjul Hjelp



METEOSAT7 AN@1 Vanndamp WV\_CAL 2005-04-12 09:00  
MSG1 VISIR\_Europa\_Meteosat8 3+9+10 2005-04-12 09:00  
NOAA-17 MOSAIKK Ishavet\_day\_night 2005-04-12 09:19 (03:21 - 09:58)  
DNMI Bakkeanalyse 2005-04-12 09:00  
SYNOP DRIBU QSCAT100KM QSCAT25KM 2005-04-12 09:00 (06:00 - 12:00)

Infrared (4): -13.6°C Lat: 69°25'N Lon: 5°40'E