Welcome to ECMWF
&
EGOWS 2010

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ECMWF

Our users require visualisation

- **Forecasters in their daily work using workstations**
- **Forecasters and the general public via the web**
- **Developers of new products**
- **Researchers (model and observations**
  - **by time, space, parameter, ensemble number, …**
- **The video wall**
- **Data volumes are increasing**
  - **Model resolution**
  - **More observation types**
  - **Observations with improved spatial sampling**
- **Users expect Google Earth's interactive capabilities**

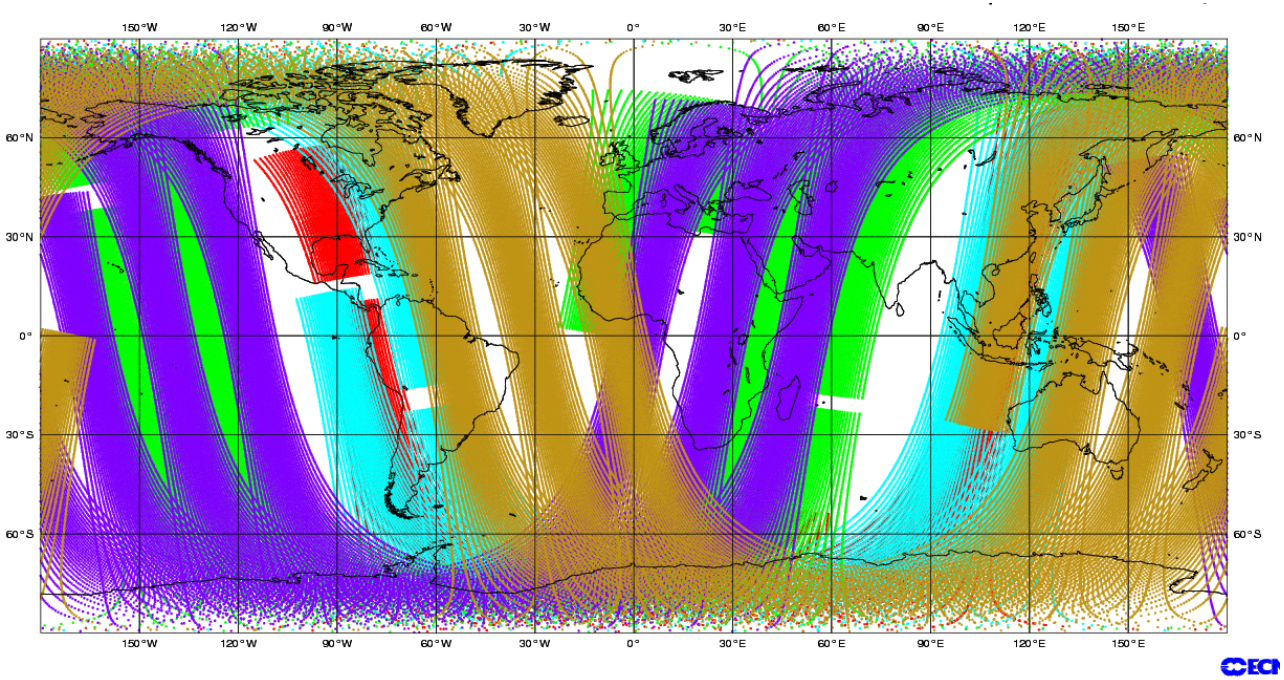
The operational forecast system

- **High resolution deterministic forecast:** **twice per day**
  16 km 91-level, to 10 days ahead
- **Ensemble forecast (EPS):** **twice daily**
  51 members, 30/60 km 62-level, to 15 days ahead
- **Ocean waves:** **twice daily**
  - **Global: 10 days ahead at 28 km**
  - **European Waters: 5 days ahead at 10 km**
  - **Ensemble: 15 days ahead at 55 km**
- **Monthly forecast:** **once a week**
  51-members, 30/60 km 62 levels
- **Seasonal forecast:** **once a month**
  41-members, 125 km 62 levels, to 7 months ahead

Some additional observational data sets, 2009

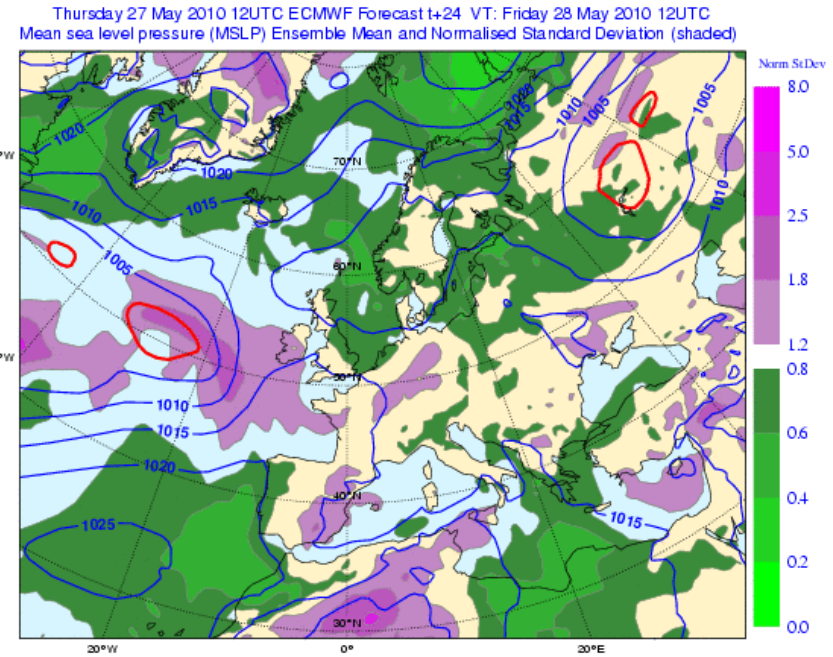
- MSG All Sky Radiances
- ASCAT low resolution level 2 soil moisture data from EUMS (Metop02)
- NOAA-19 ATOVS data
- MSG-2 Atmospheric Motion Vectors
- AVHRR winds produced from CIMSS/UW-Madison (NOAA-15,16,17 and 18)
- SBUV/2 data version 8 NOAA19 ozone profiles
- Coriolis/SDR data (passively monitored)
- Additional weather radar wind profiles from Poland and Slovenia
- ATOVS data from Asia Pacific (RARS – NOAA-15,16,17 and 18)
- Cloud motion winds from Chinese FY-2
- MODIS winds produced from CIMSS/UW-Madison (AQUA - TERRA)
- JASON-2 altimeter data in BUFR format

Visualizing the observations



- **The observation handling project**
  - **The archive (MARS) is being enhanced to support ODB data**
  - **Rapidly increasing volumes of satellite data**
  - **Generic monitoring tools are being developed**

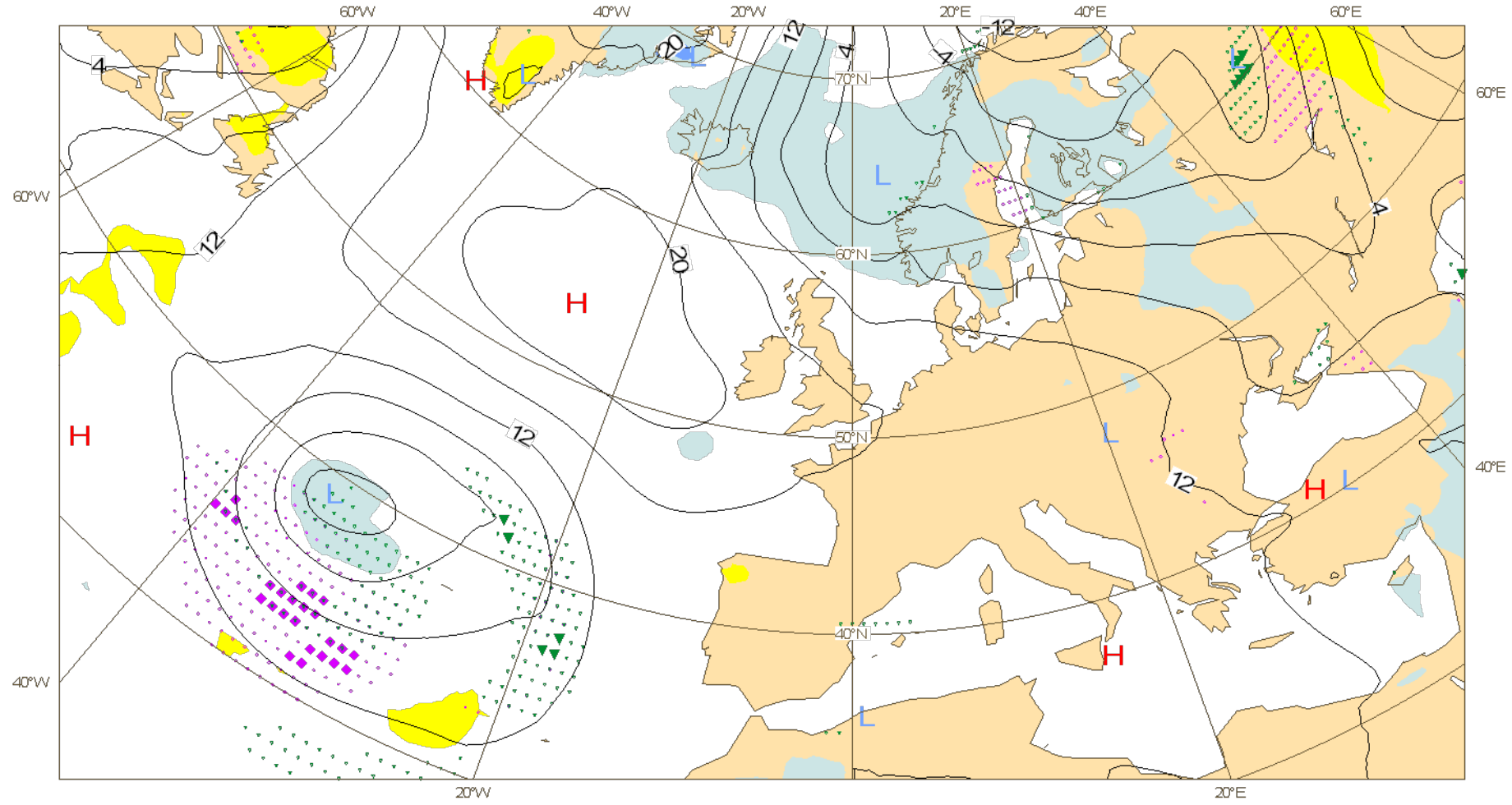
ECMWF – our products



- **Each day we deliver 13 millions products (fields) to Member and Co-operating States and customers**
- **Model resolution is now 16 km which broiught many new challenges:**
  - **Handling of larger data volumes**
  - **Visualizing meteorological features at their true resolution**
- **For next year and increase from 91 to140 model levels is planned**

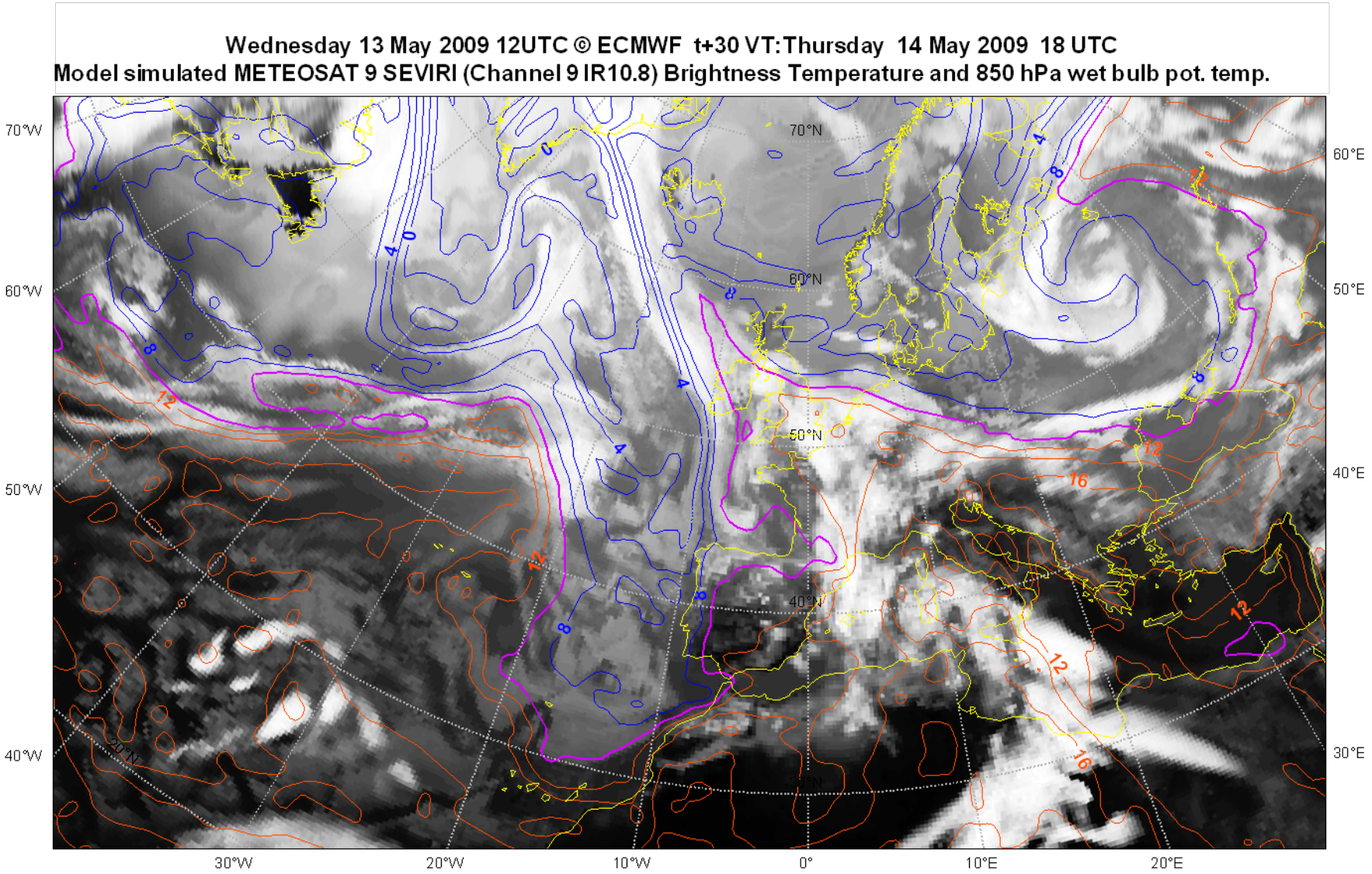
Interactive EFI
Extreme Forecast Index

Anomalous weather p
1000 hPa Z ensemble
and EFI values for To **rature (all 24h)**
valid for 24hours from Wednesday 30 September 2009 at 00 UTC to Thursday 01 October 2009 at 00 UTC

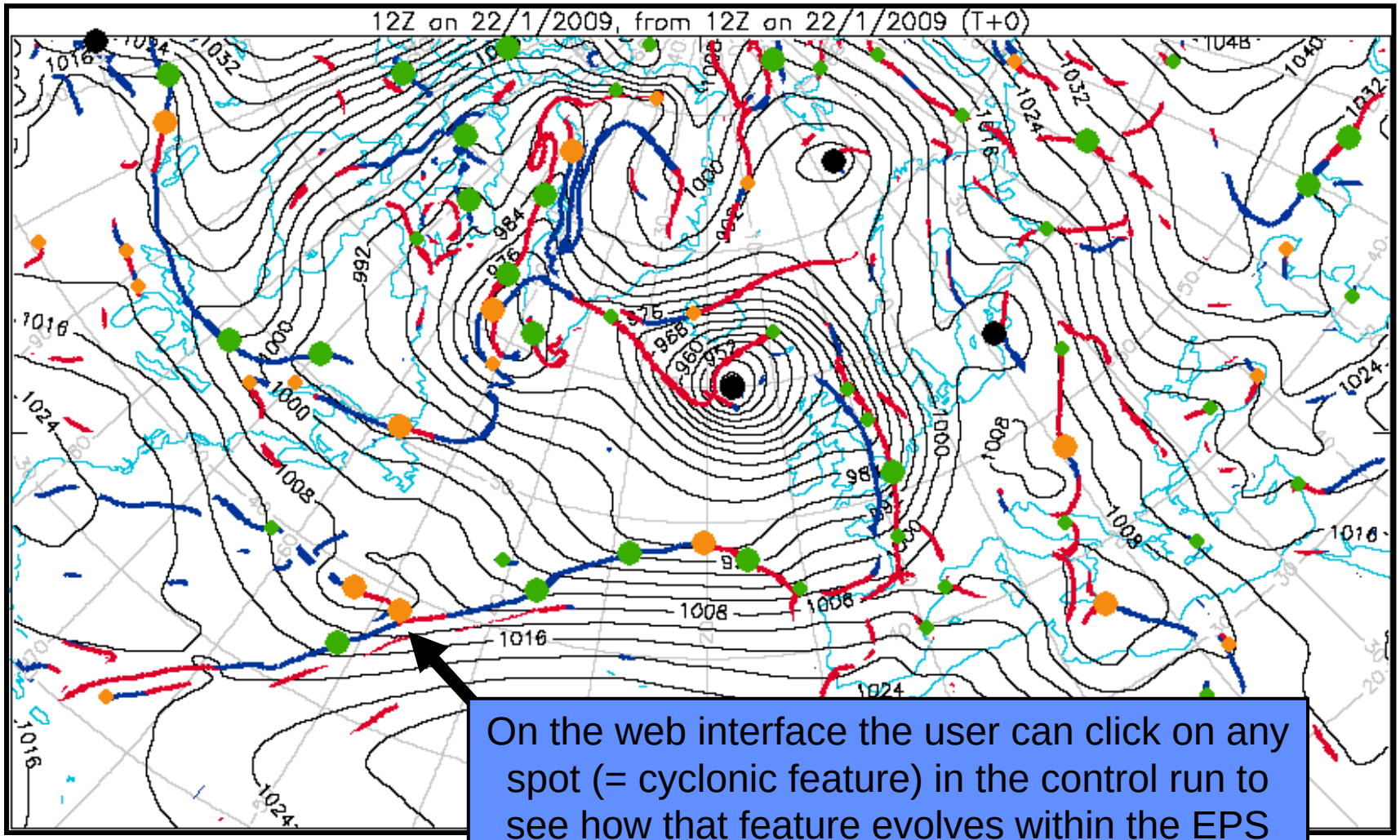


extreme cold | cold | warm | extreme warm | wind | extreme wind | precip | extreme precip

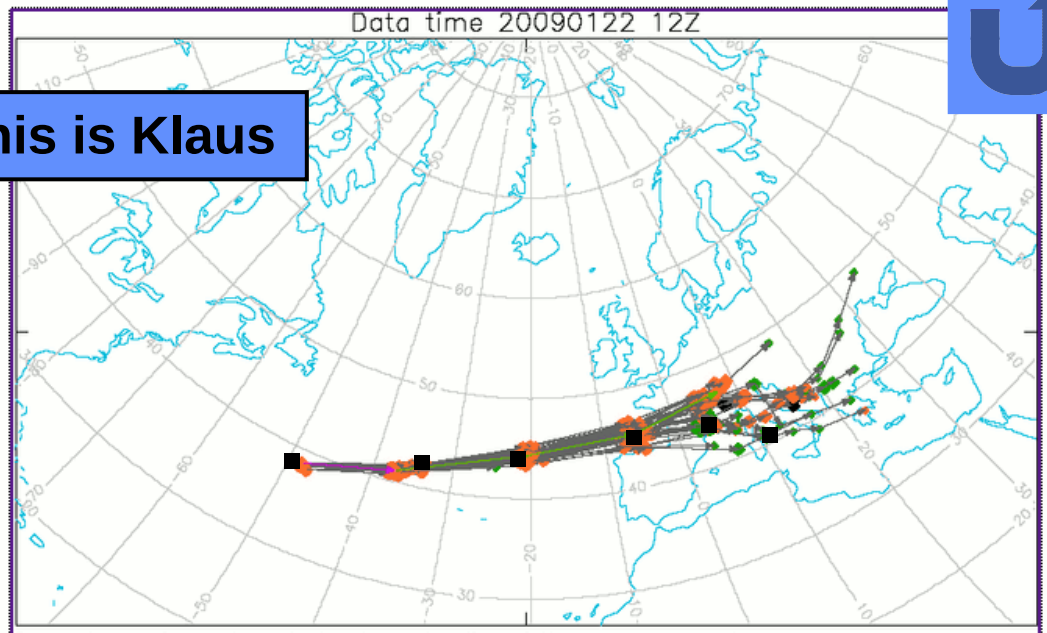
Model simulated satellite images

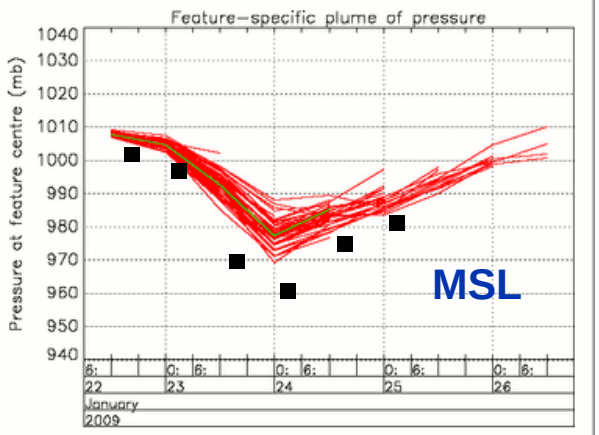


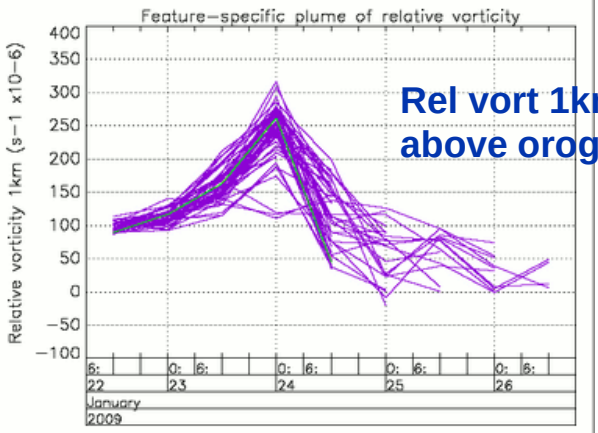
Plume Diagrams - revisit earlier 'Klaus' example:



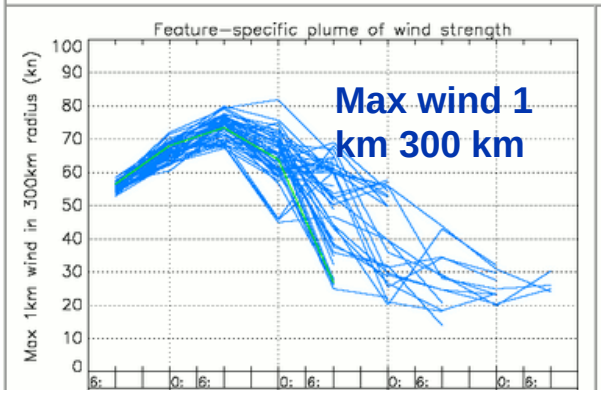
This is Klaus

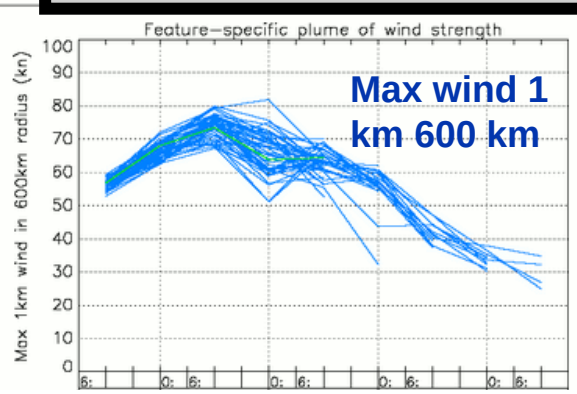


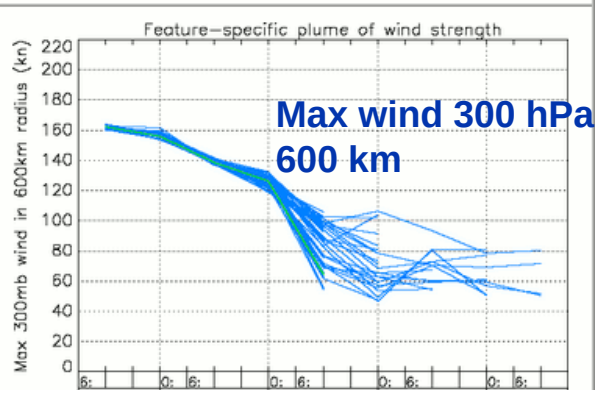




‘Plume’ diagrams







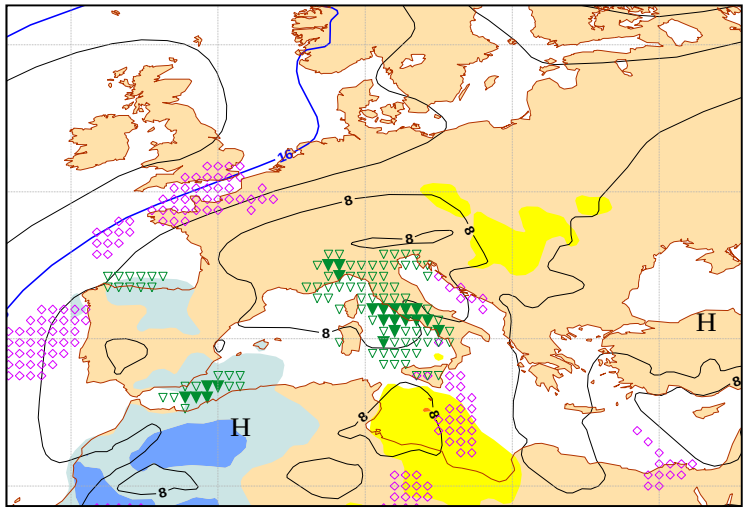
Tim Hewson http://www.ecmwf.int/newsevents/meetings/workshops/2009/MOS_12/Presentations/index.html

EGOWS is an important community for ECMWF

- **The forecaster workstation is often the means by which forecasters access our products**

- **We appreciate the efforts of developers to catch up with our changes in products ...**

- **We are keen to operate with exciting new developments, such as OGC standards**



ECMWF – providing some support for your work

- **ECMWF software libraries**
  - **Grib_API**
  - **Magics**
  - **SCIN general interpolation package**
- **We actively support WMO standards**
- **ECMWF will support new standards**
  - **Becoming OGC member**
- **Exciting developments with Metview 4 and WREP, the web re-engineering project**