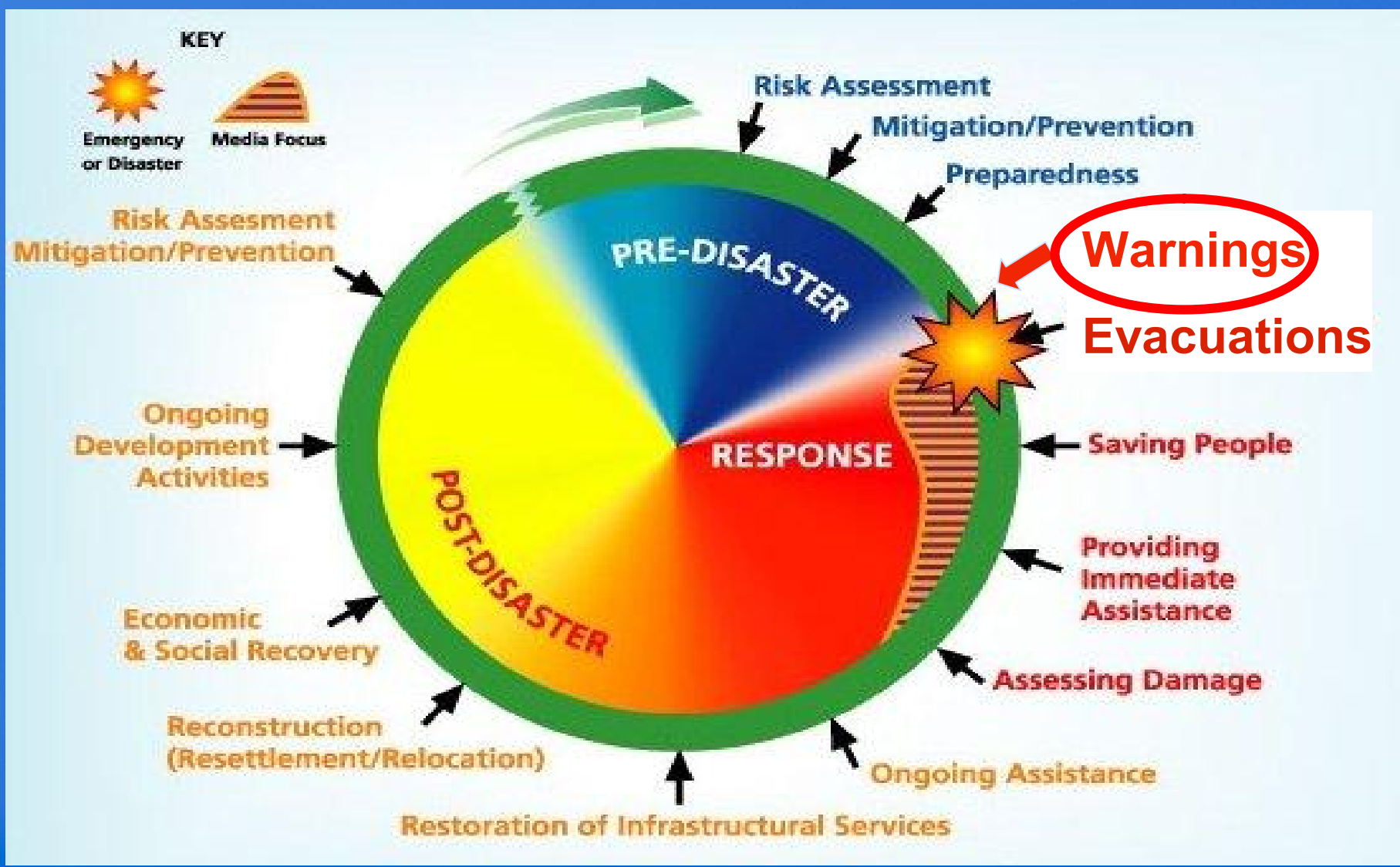


Zentralanstalt für Meteorologie und Geodynamik 

EMMA / METEOALARM Multiservice Meteorological Awareness System  
Michael Staudinger





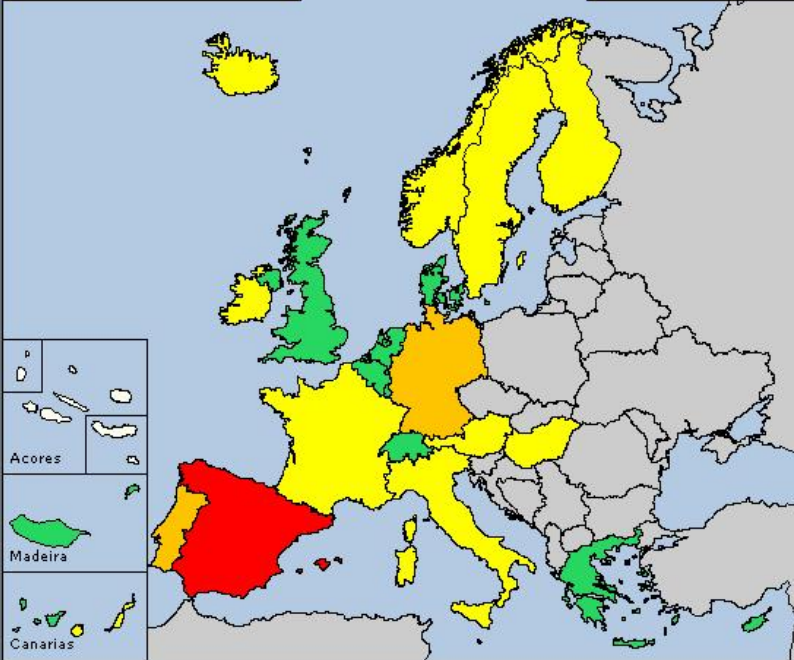




1. Aim of warnings: avoid damage >> the need of user reactions
2. Relationship: Warnings - Damages/Impact
3. Keep highest level very different – really exceptional
4. Use the chances of „multihazard warning systems“

Created: 07.03.2007 11:27:46

Zoom



**Awareness Reports**

You can find detailed information about the warnings in the awareness reports issued for each country. Select the relevant country.

AT			
BE			
CH			
CY			
DE			
DK			
ES			
FI			
FR			
GR			
HU			
IE			
IS			
IT			
LU			
NL			
NO			
PT			
SE			
UK			

awareness types  Display:

**meteoalarm**  
alerting europe for extreme weather

EUMETNET  
The Network of European Meteorological Services

Inicio | Novedades | Sobre Meteoalarm | Ayuda | Términos y condiciones de uso | Enlaces | Mapas en escala de grises

Cambio de idioma: español

» Europa:

### Avisos meteorológicos: Europa:

Filtro de parámetros  
meteorológicos Muestra todos los parámetros

Created: 03.12.2007 07:59:30 | Valid for: 03.12.2007

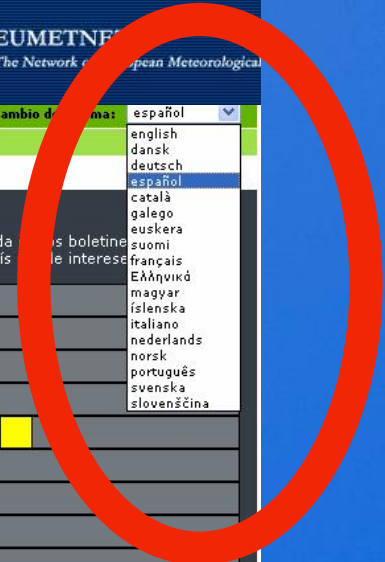
mostrar hoy mañana

**boletines de aviso**  
Se puede encontrar información detallada de los boletines emitidos por cada país. Seleccione el país de interés.

AT		
BE		
CH		
CY		
DE		
DK		
ES		
FI		
FR		
GR		
HU		
IE		
IS		
IT		
LU		
NL		
NO		
PT		
SE		
UK		

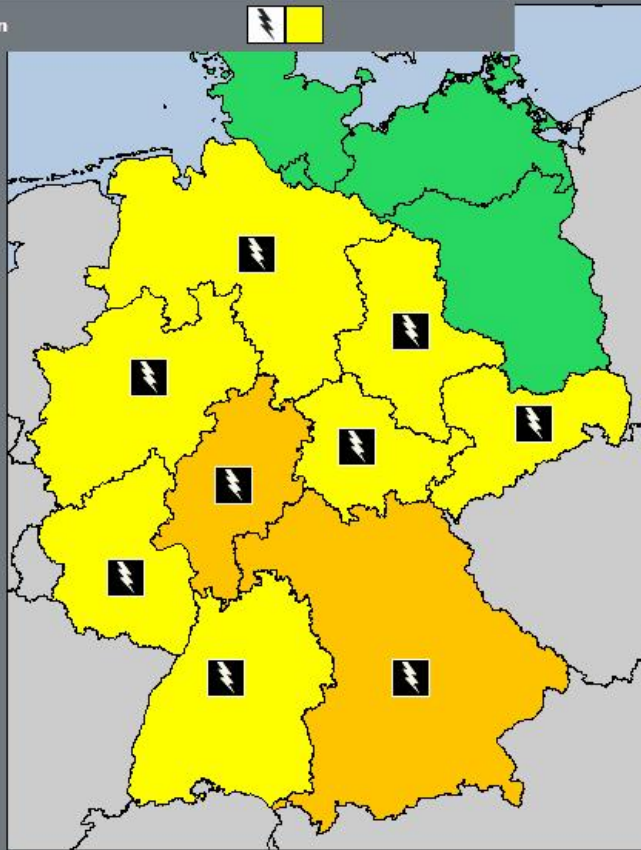
Legend:

- Blanco
- Verde
- Amarillo
- Naranja
- Rojo
- Viento
- Lluvia
- Nieve/hielo
- Tormentas
- Niebla
- Temperatura máxima extrema
- Temperatura mínima extrema
- fenómeno costero
- Incendios
- Aludes



## Wetter-Warnungen: Deutschland

Thüringen



### Gefahrenstufenberichte

Detaillierte Informationen über die Warnungen finden sich in den Berichten der einzelnen Länder. Bitte die entsprechenden Gebiete auswählen.

Baden-Württemberg			
Bayern			
Berlin und Brandenburg			
Bremen und Niedersachsen			
Hamburg			
Hessen			
Mecklenburg-Vorpommern			
Nordrhein-Westfalen			
Saarland und Rheinland-Pfalz			
Sachsen			
Sachsen-Anhalt			
Schleswig-Holstein			
Thüringen			



Mehr Information:

Weiss

Wind

Regen

Extrem niedrige Temperatur



## Warnings for: Dél - Dunántúl



**Valid from** 12.06.2007 13:23:07 CEST **Until** 12.06.2007 23:59:59 CEST

### Thunderstorms

Awareness Level: **Orange**

Locally severe thunderstorm might occur accompanied by very high wind (gusts above 90 km/h) or large hail (above 2 cm).

Heves zivatar! Néhol előfordulhat heves zivatar, amit intenzív csapadék, erős vihar (90 km/h fölötti széllelés) vagy legalább 2 cm nagyságú jég kísérhet.

more information: [Hungarian Meteorological Service](#)



[Back to Europe](#)



[Back to Countrymap](#)



Hungarian  
Meteorological  
Service



**Valid from** 12.06.2007 13:23:07 CEST **Until** 12.06.2007 23:59:59 CEST

### Rain

Awareness Level: **Orange**

Locally there may be intensive precipitation with high amount of rain (above 50 mm in 1-3 hours).

Felhőszakadás! Néhol előfordulhat rövid idő (1-3 óra) alatt 50 mm-nél nagyobb mennyiségű eső.

more information: [Hungarian Meteorological Service](#)

**meteoalarm**  
alerting europe for extreme weather

**EUMETNET**  
The Network of European Meteorological Services

[Início](#) | [Notícias](#) | [Sobre o Meteoalarm](#) | [Ajuda](#) | [Termos e Condições](#) | [Ligações](#) | [Mapas em escala de cinzentos](#)

[Alterar Idioma:](#)

» [Europa:](#)

## Avisos para : PORTO

**Válido desde** 03.12.2007 08:00:00 CET **Até** 03.12.2007 15:59:59 CET

**Agitação Marítima**

Nível de perigo: **Amarelo**

average-wave-height 4-5 m  
Ondas de noroeste superiores a 4 m.

[Voltar Europa:](#)

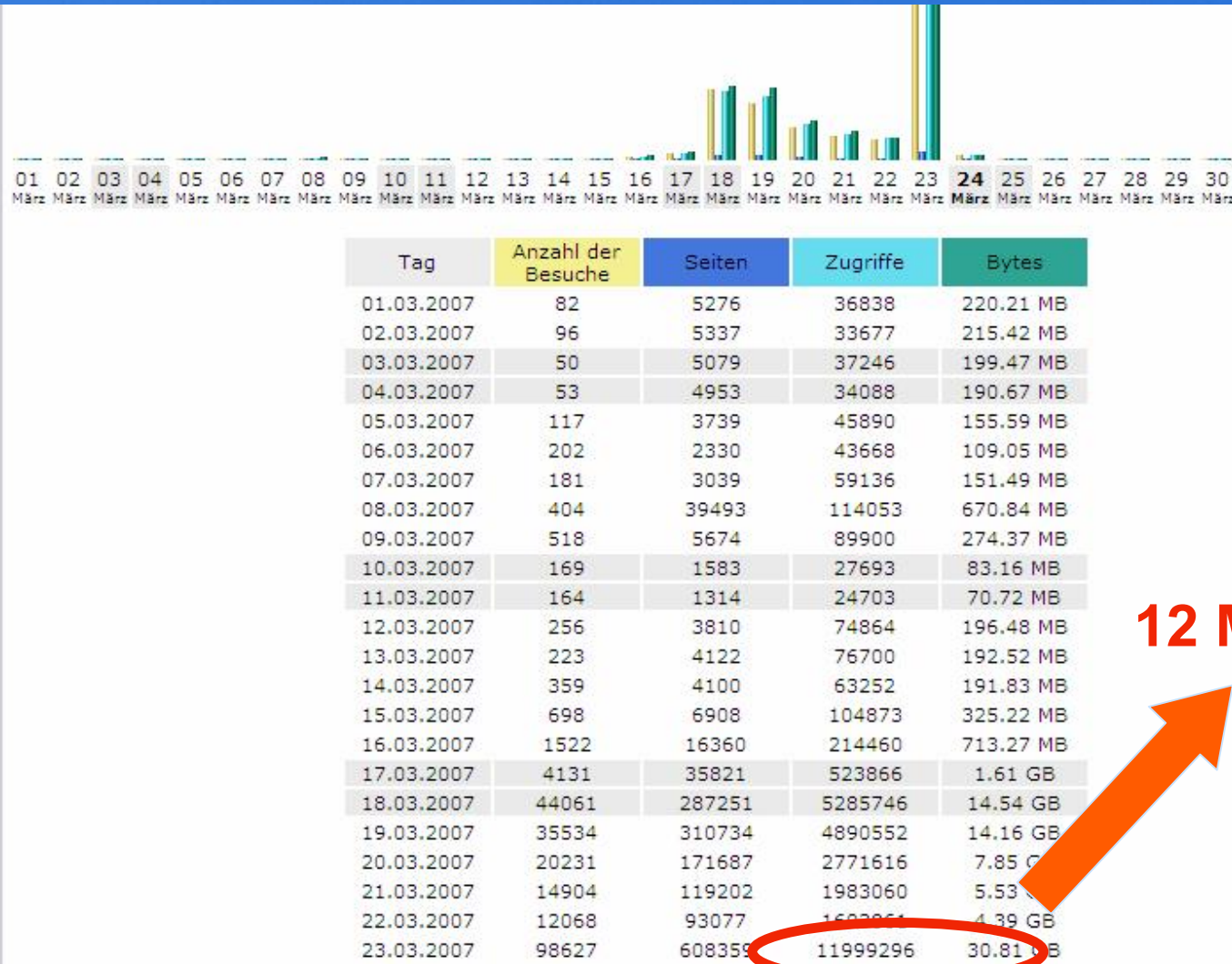


[Voltar Mapa do País:](#)

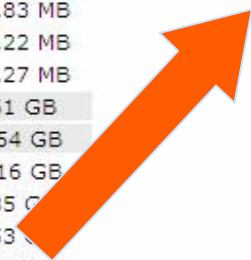


[Mais Informação:](#)





12 Mio hits/d





## Standard set of awareness situations:

Wind (mean wind speed or wind gusts, or any combination)

Rain (heavy rainfall in intensity or in cumulated amount)

Snow/Ice (heavy snowfall, drifting snow and icing phenomena)

Thunderstorms



## Additional set of awareness situations:

Fog

Temperature extremes (heat or cold waves)

Coastal events (such as storm surge, ...)

Forest Fire (risk of forest fire related to meteorological conditions)

Avalanches



## Relationship between:

- meteorological thresholds (valid locally)
- Europe wide valid criteria (meteorologically)
- extent of typical damage
- advice for behaviour (depending on sociocultural and administrative realities)









	Damage / Impact	What to do?	Used how often? (per approx. 300 kkm <sup>2</sup> )	Meteo Treshholds <b>Rain</b> area related + Damage related
<b>Green</b>	- - -	usual phenomena		
<b>yellow</b>	exposed objects (avoidable)	caution with exposed activities	> 30 per year	> 54 mm/12h
<b>orange</b>	general damages  (not avoidable)	keep informed in detail, follow advice of authorities	1 to 30 per year	> 80 mm/12h
<b>red</b>	extreme damage and /or casualties <i>extreme damage (mostly) on large areas, threatening life and properties</i> (not avoidable, even in otherwise safe places)	<b>follow order of authorities under all circumstances</b>  <b>be prepared for extraordinary measures</b>	less then 1 year <i>for large (5000km<sup>2</sup>) scale phenomena</i>	> 140 mm/12h



*Tab. 3.8 Güte der Prognose für den laufenden Tag (06 - 18 Uhr) für die Niederschlagsklasse von 10 – 20mm. Die besten Ergebnisse sind grau hinterlegt.*

Parameter	QFA - OBS	AV - OBS	LM - OBS	MET - OBS
Hit	18	14	13	25
False alarm	29	37	47	34
Miss	39	43	44	32
Correct rejection	1444	1436	1426	1439
Total	1530	1530	1530	1530
Bias	0.8246	0.8947	1.0526	1.0351
POD	0.3158	0.2456	0.2281	0.4386
FAR	0.6170	0.7255	0.7833	0.5763
TSS	0.2961	0.2205	0.1962	0.4155
ETS	0.1929	0.1314	0.1058	0.2568
HSS	0.3234	0.2322	0.1913	0.4086

## forecasters discussion forum

The screenshot shows a Microsoft Internet Explorer window displaying a meteorological forecast map. The browser address bar shows the URL: <http://www.meteorisk.info/v2/intranet/upload/duo.jpg>. The page content includes the following text:

Venerdi 24 Settembre 2004 00UTC LAMI Forecast t+9 VT: Venerdi 24 Settembre 2004 UTC  
Vento a 10m +09h  
Aeronautica Militare UGM - Reg. Emilia Romagna - Reg. Piemonte

The map displays a complex weather system with wind vectors and color-coded areas. The colors range from blue (low values) to red (high values), indicating a gradient across the region. The map is overlaid with a grid of latitude and longitude lines.

Below the map, there is a discussion forum post with the following details:

**T. La Rocca, Bove R.**  
**Re:Heavy rain, bora - 24.9.2004**  
Posted: 24.09.2004 | 09:41:32

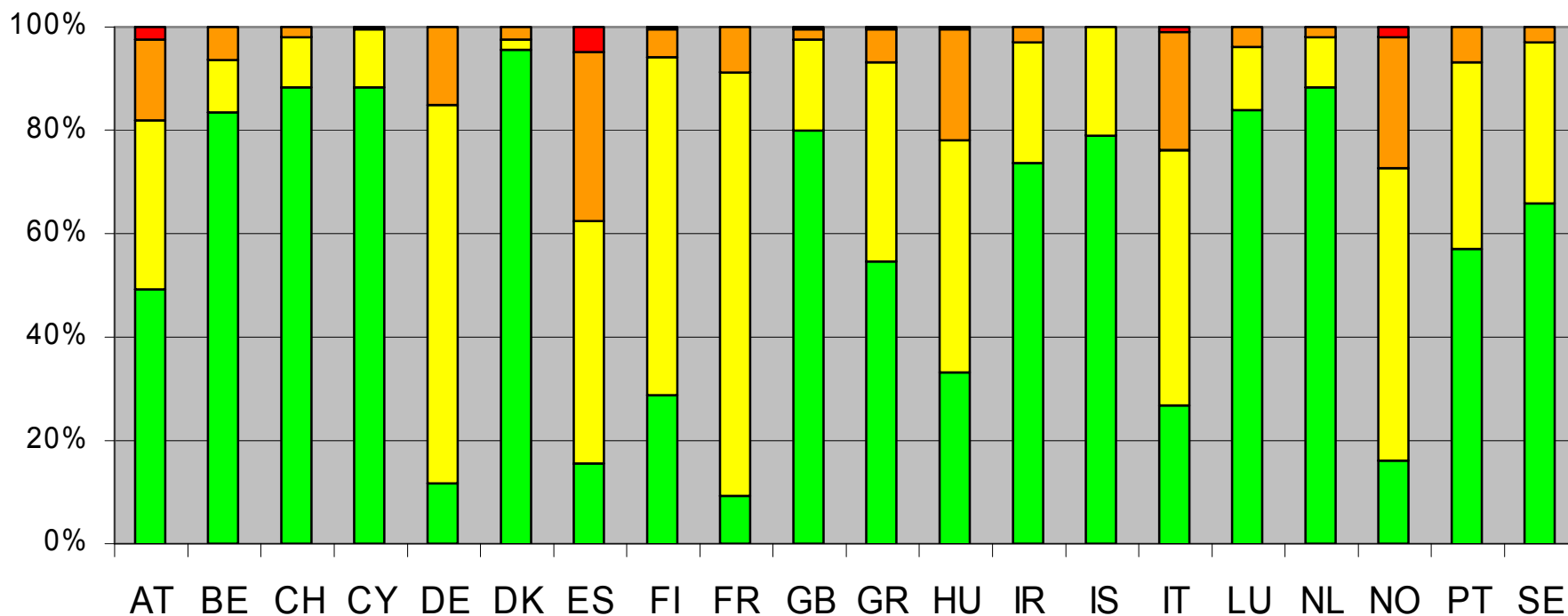
We are agree for bora gusts also in the trieste gulf but not for snow up 1200mt, we suppose that the minimum level of snow is about 1700-1800mt, moreover we denote an interesting sinoptic case of cold front splitted by alpine barrier, you see in the satellite image medium-high clouds coming out from alps and cold air remaining behind the barrier. we suppose also moderate Fohn downwind mountains in the Po Valley.

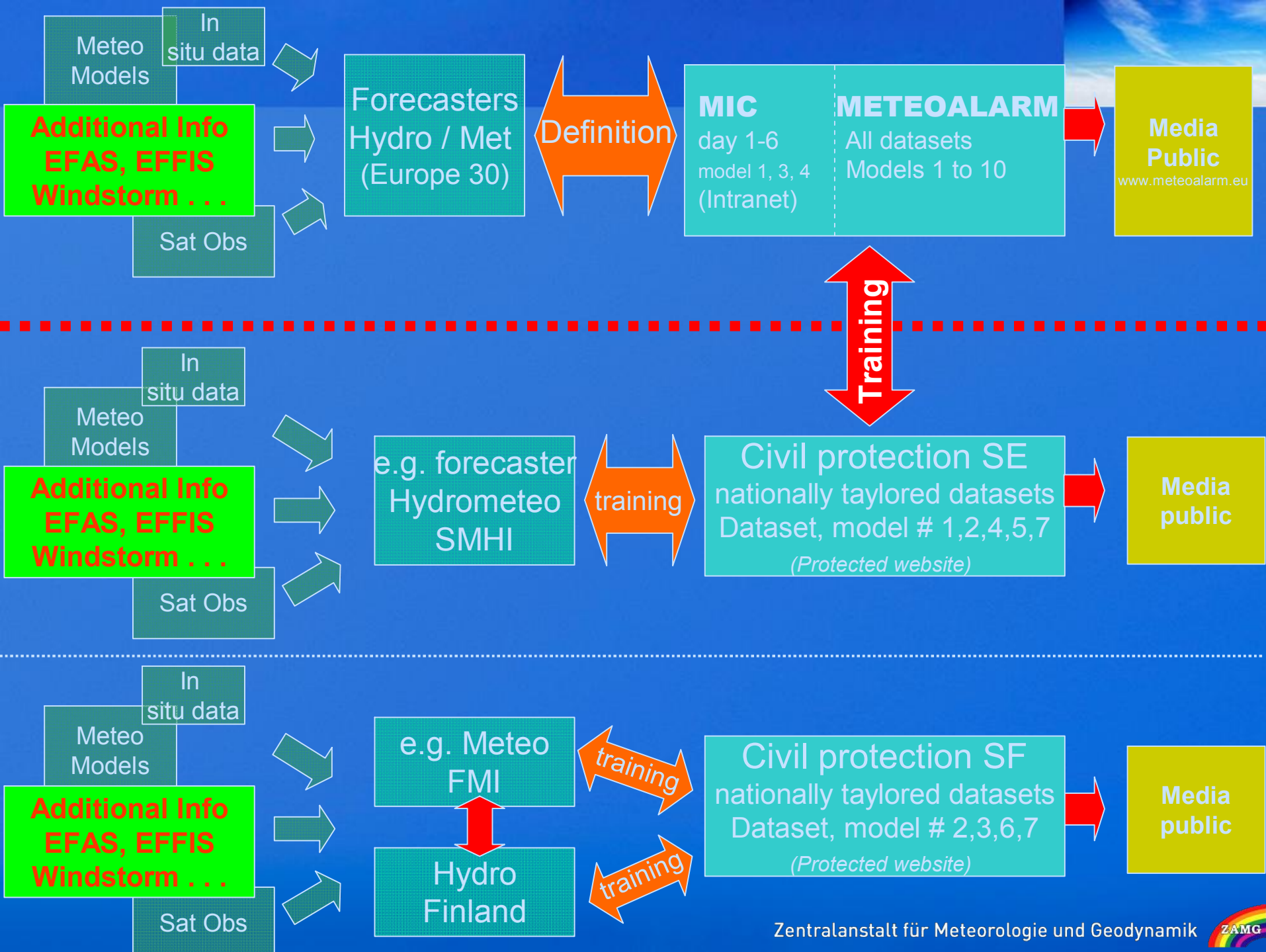
Weblink:  
[www.meteoam.it](http://www.meteoam.it)

Attached Documents:



### percentage of shown country colors





# decision tree for „red“

Folie 22



<sup>1</sup> might be caused by a combination of parameters

- Senior forecaster (teamleader)
- Board
- Expert on climate
- Media expert
- Civil protection

# METEOALARM warning schedule – local implication

Warning levels are aligned to UK legislation set out in the Civil Contingency Act that requires local authorities to carry out risk assessment using a national scale of impact. This scale of impact aligns to the Emma colours as shown in the table 1 below.

Table 1 – Comparison of Emma colours to CCA risk assessment levels

Emma colour	Emma consequence	Civil Contingency Act (CCA) risk assessment level	CCA Impact	Possible issue frequency for UK
Green	Nil	1	Insignificant number of injuries or people displaced	Daily
Yellow	Inconvenience caused by cancellation of avoidable activity such as leisure activity	2	Small number of people affected, no fatalities, Minor property damage.	20-50 per year
Orange	Health & safety impact requiring shelter in doors	3	Moderate number of fatalities requiring activation of MAJEX in at least one hospital. Damage confined to a specific location or a number of locations but requires additional resources.	1-19 per year
Red	Health & safety impact requiring evacuation to another area or safe shelter	4	Significant number of people affected multiple injuries. Majex procedures across a number of hospitals. Damage requiring external resources. 100-500 people displaced for longer than a week.	Less than 1 per year
Red	Health & safety impact requiring evacuation to another area or safe shelter	5	Very large number of people affected, significant fatalities, large number of people requiring hospitalisation with serious or long-term effects. Extensive property damage requiring major demolition. More than 500 people displaced for a prolonged period. Key infrastructure lost for a prolonged period. Communities unable to function without support.	

Note: the CCA considers level 1 and 2 are not emergencies.



The screenshot shows a web browser window with the address bar containing `http://demo.severe.worldweather.org/`. The website header features the WMO logo and the text "World Meteorological Organization" and "Severe Weather Information Centre Official Observations. Official Warnings." A left-hand navigation menu includes links for HOME, Severe Weather, Tropical Cyclones, Heavy Rain/Snow, Thunderstorms, Official Observations, Cloudiness & Rain, What's New, and Links. The main content area displays a world map with red and blue markers and a "NOTES" section with instructions on how to use the map symbols.

**World Meteorological Organization**  
*Severe Weather Information Centre*  
Official Observations. Official Warnings.

**HOME**  
Severe Weather  
Tropical Cyclones  
Heavy Rain/Snow  
Thunderstorms  
Official Observations  
Cloudiness & Rain

**What's New**  
New Link to Meteoalarm

**Introductory Pamphlet**  
About this web site  
Participating Members  
Notes To Users

**Links**  
World Meteorological Organization  
GMDSS  
Official World City Forecasts  
Meteoalarm (alerting Europe for extreme weather)

**Disclaimer**  
This World Meteorological Organization (WMO) web site is developed and

**Severe Weather Information Centre**  
Official Observations. Official Warnings.

Last Updated at 2006-08-03 06:49 UTC [Past Positions](#)

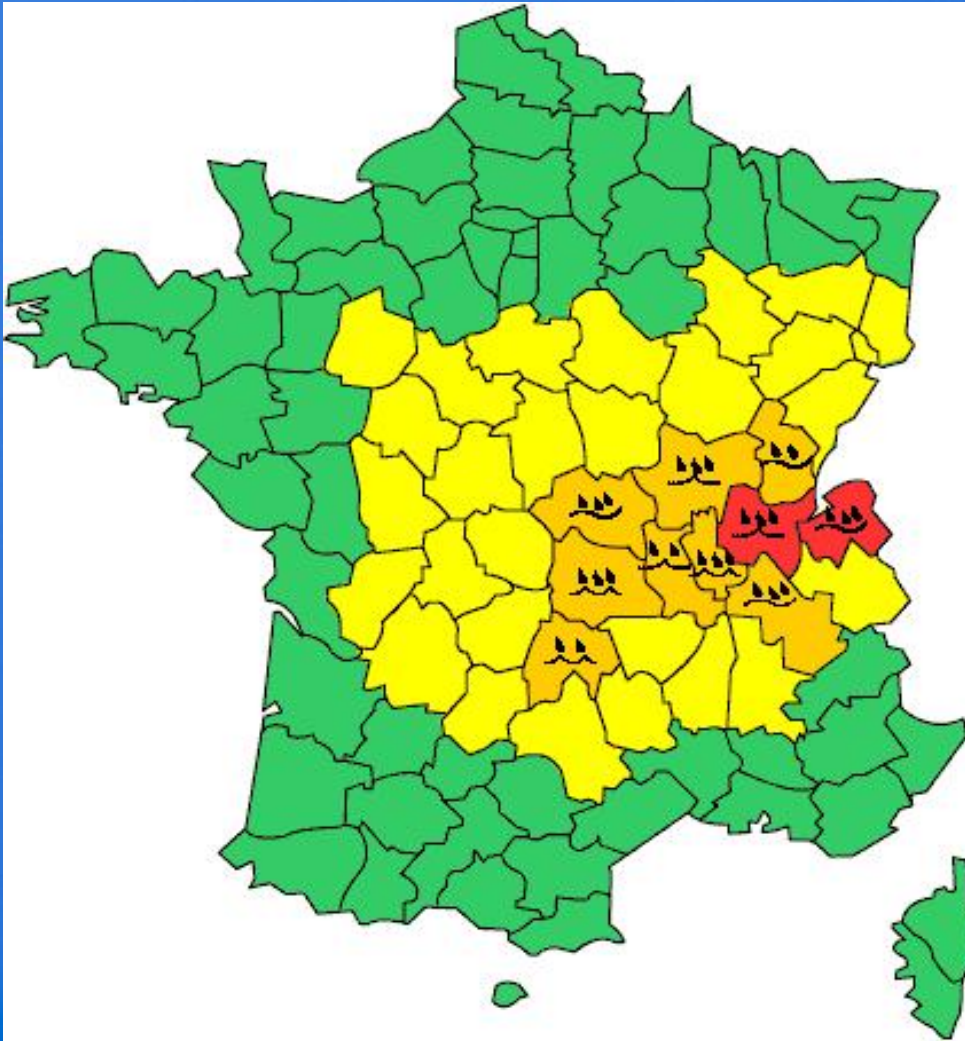
**NOTES**

- ▶ Click on the symbol or for advisories and warnings on the tropical cyclone.
- ▶ Click on the symbol for information from individual WMO Members participating in the [web site](#).
- ▶ Click on individual boxes to view zoom-in maps.
- ▶ This page is best viewed with a display resolution of 1024 x 768 pixels.



- **Structured integration of new partners (EU30)**
- **Further awareness types: coastal sea effects, floods**
- **Cooperation /Integration with other international programs (SWIC, WINDSTORM, EFAS, EFFIS)**
- **Integration of METEOALARM results in other projects: BOSS4GMES, (satellite retasking), SAFER, . . . .**
- **Cooperation with stakeholders on a more organised level civil protection, emergency units, MIC . . . .**

e.g. Combined precipitation / flood warnings

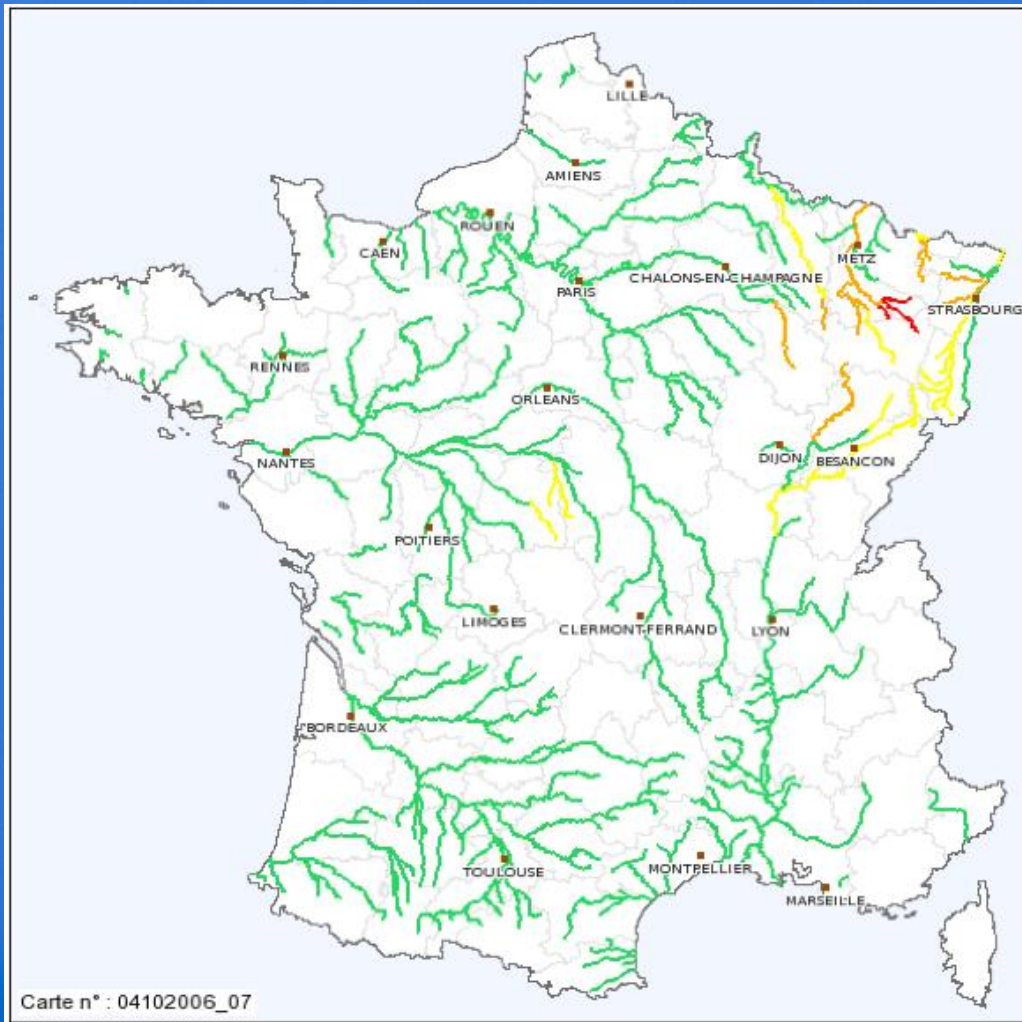


France:  
SCHAPI system

# Future activities: New awareness types

Folie 28

e.g. Combined precipitation / flood warnings



France:  
SCHAPI system

Hochwasserbox  
eingerrichtet

für die Mitarbeiter  
aller Einsatzkräfte

siehe

<http://wetterbox.kso.ac.at>

User:

Passwd:

**wetter-box**  
user hochwasser  
08:53 UTC  
02-05-2006  
Update Quit

**Letzte Hochwasserwarnung ZAMG-HYDRO**  
ZAMG  
Wetterdienste:  
Klagenfurt  
Amt der Kärntner  
Landesregierung,  
Hydrographischer Dienst  
**HOCHWASSERWARNUNG!**

**HYDROGRAPHIE Homepage**  
KÄRNTEN  
WETTER-UND KLIMADIENT  
Amt der Kärntner Landesregierung,  
Hydrographischer Dienst  
Tel. 0463 536 31614

**5-Tages Prognose Kärnten**  
WETTER-PROGNOSE  
für KÄRNTEN (5Tage)  
update 08 und 15 Uhr  
www.zamg.ac.at  
Wetterdienst Klagenfurt

**Wetterwarnungen ZAMG**  
Klick zur aktuellen  
**Wetterwarnung**  
für Österreich  
Zentralanstalt für Meteorologie & Geodynamik  
ZAMG www.zamg.ac.at

**Wetterwarnungen METEORISK**  
Klick zur aktuellen  
**Wetterwarnung**  
für den  
gesamten  
Alpenraum  
METEORISK www.meteorisk.info

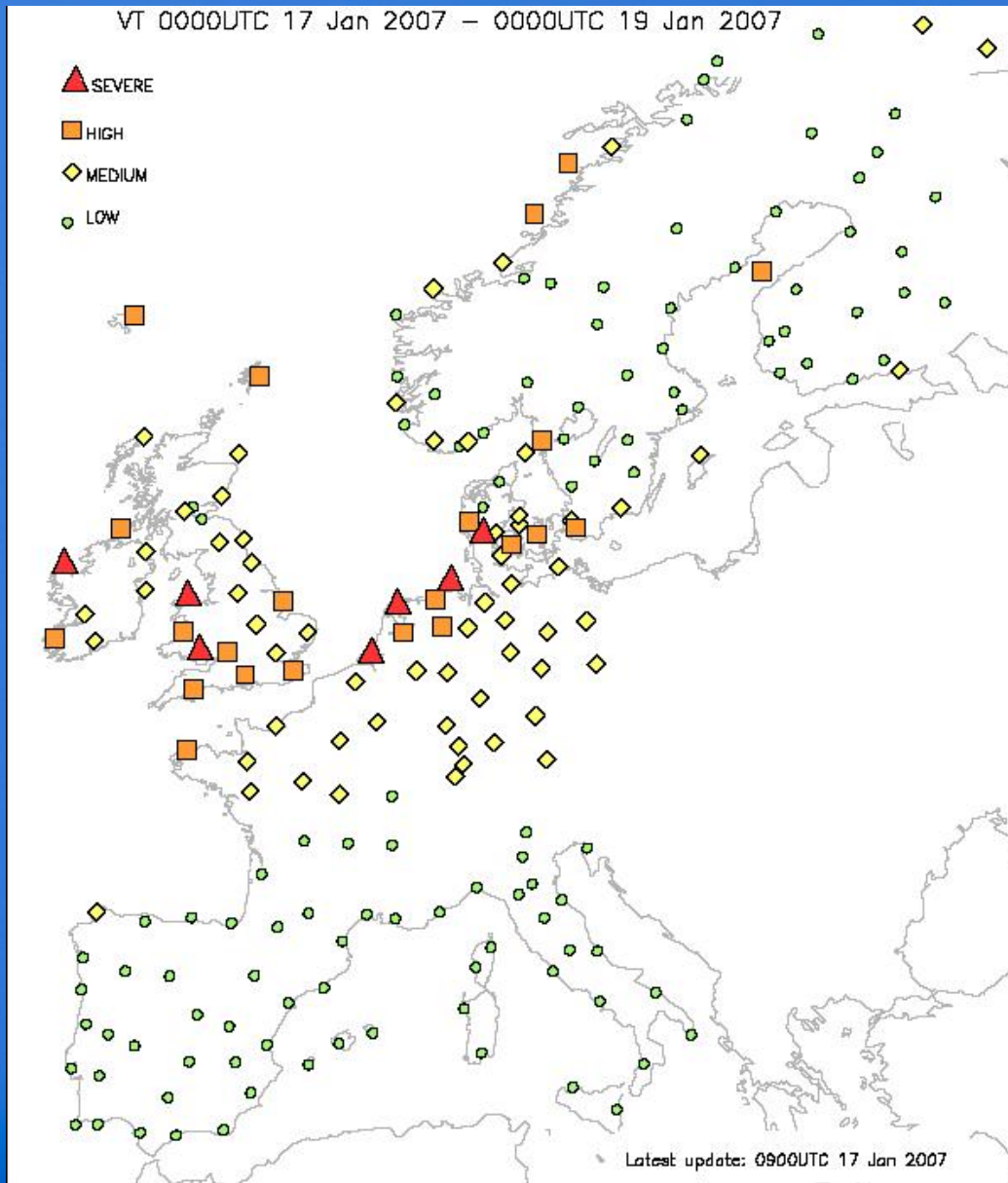
**Aktuelles Satellitenbild (halbstündlich)**

**Aktuelle Niederschlagsdaten**

**Aktuelle Abflussdaten der Flüsse**

**Wetterkarte**  
Klick zur aktuellen  
**Wetterkarte**  
Deutscher Wetterdienst www.dwd.de

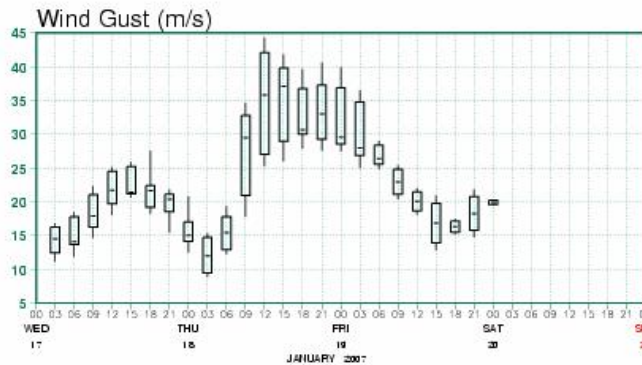
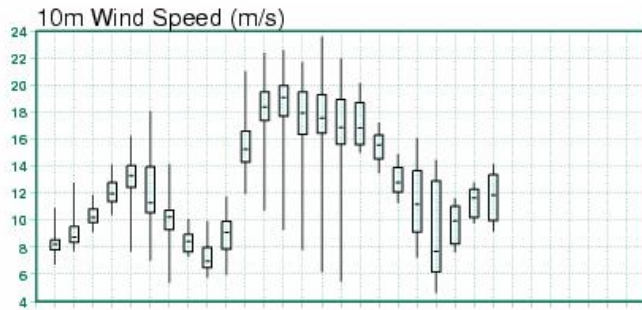
© KSO & ZAMG Klagenfurt  
queried 02-05-2006 09:03 UTC, 722  
CamVis  
Meteo Cams Visualization System



© Paul Davies, MetOffice

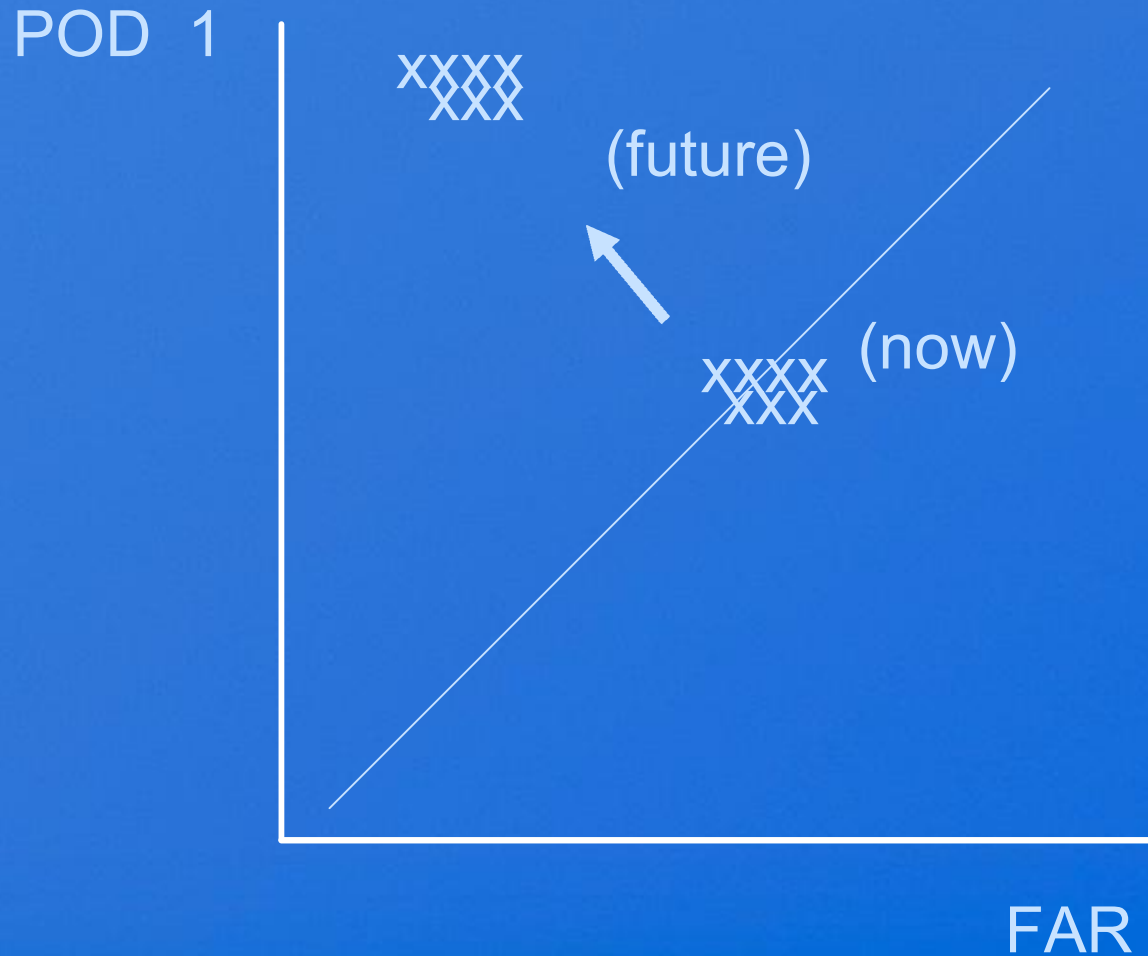


PEPS Ensemble Meteogram  
VLISSINGEN (06310) 51.5° N 3.6° E  
RAW - EPS Forecasts : 17 January 2007 00 UTC

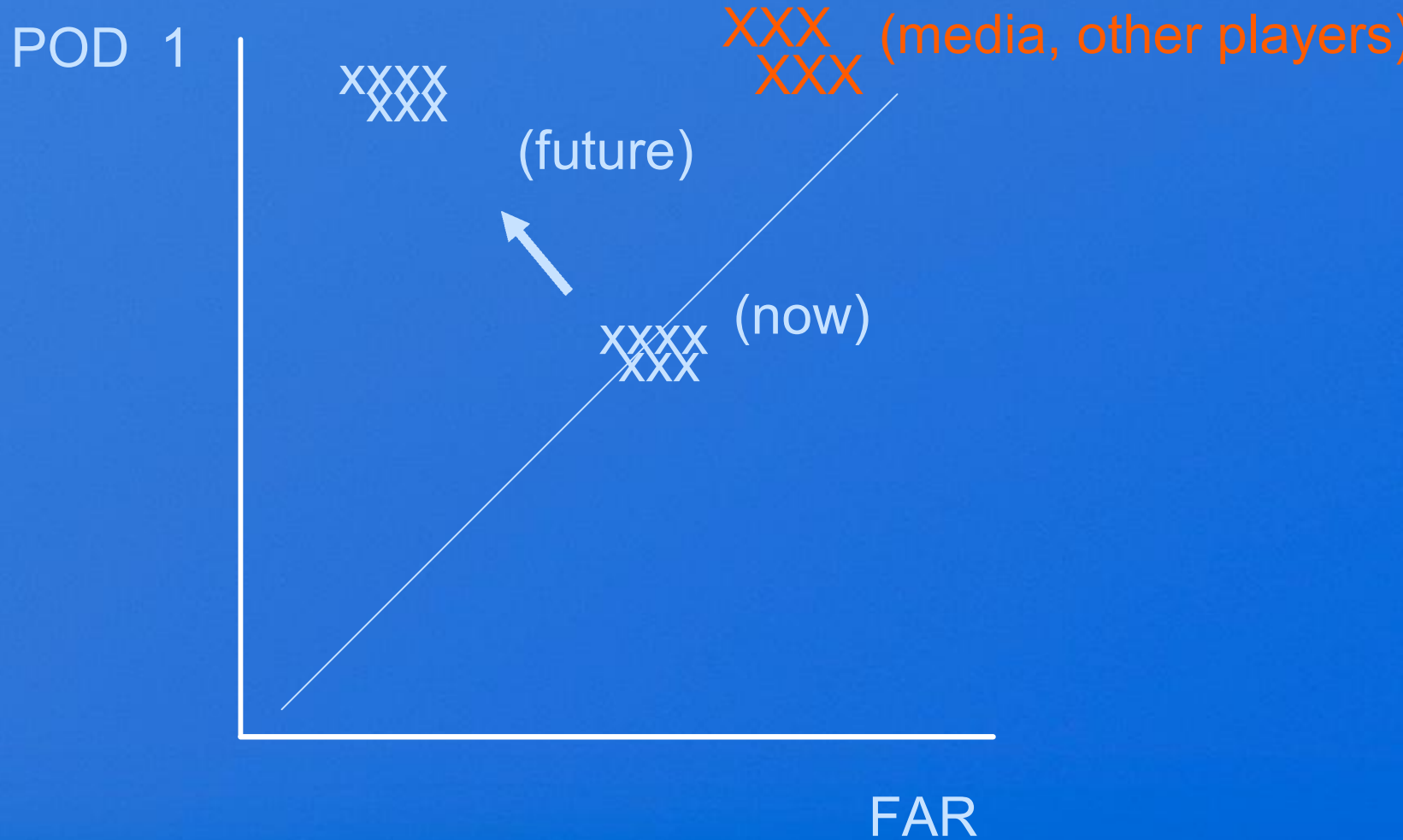


© Paul Davies, MetOffice









Txs for your attention!

Folie 34

