

# **GeoWetter**

USP's



-Wetter e.K.

# Who we are

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IP-Wetter e.K. is a start up from Frankfurt am Main,  
Germany

■ Unique combination of Know-How in:

- **Web-GIS,**
- **Weather data and**
- **Communication technologies**

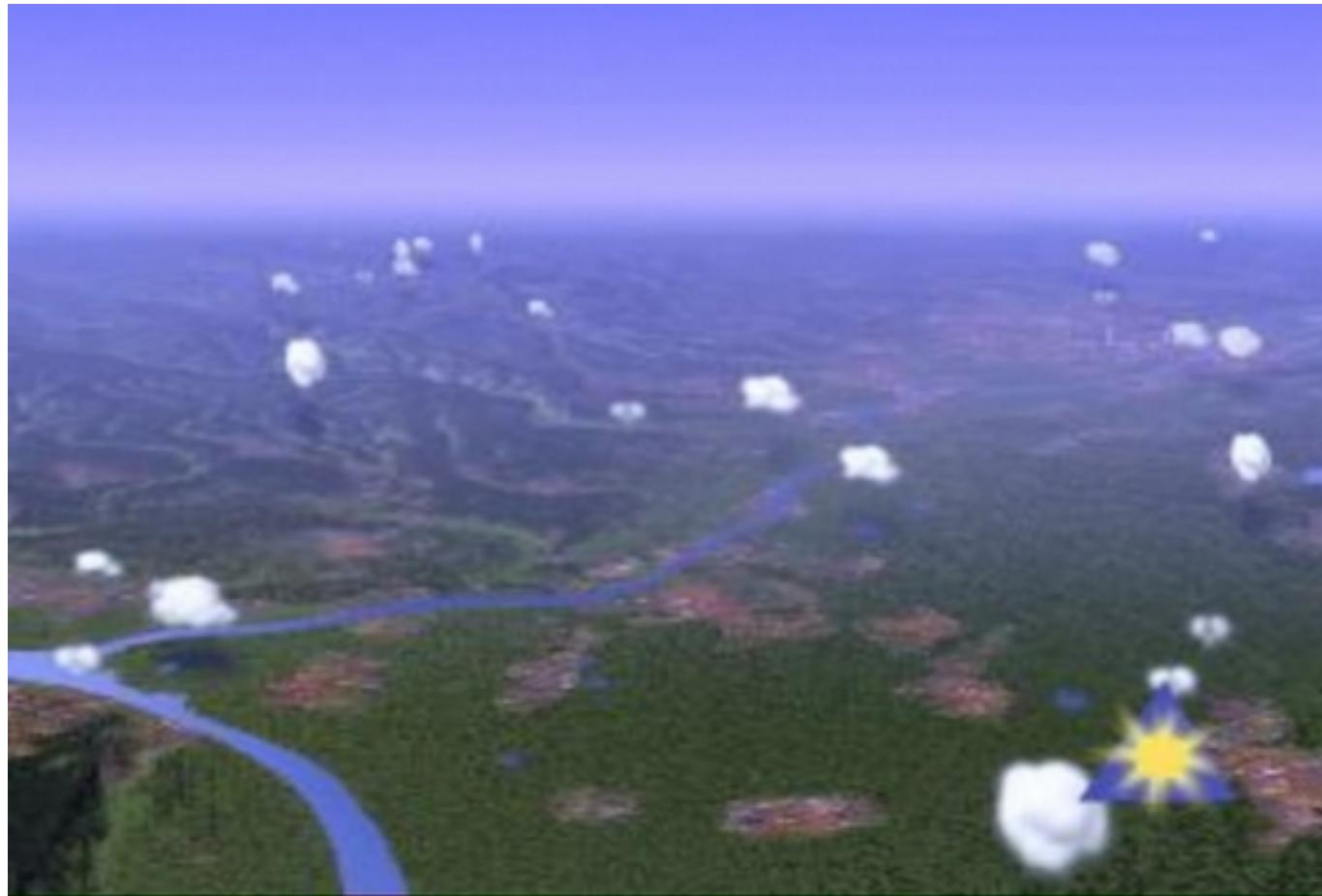
■ Founded by **Regina Stöber-Yurdakul** –

Digital Artist with more than 25-year old professional  
experience, collected as employee at DeutschenWetterdienst,  
in companies for 2D-3D Computer-animation and while  
founding of IP-Wetter e.K.

■ funded by ESA Business Incubation Center in Darmstadt

# **Supremacy of GeoWetter = the result of the founding history**

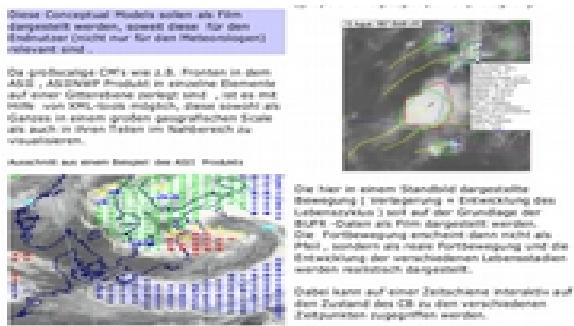
**2001** Lokal 3D-Weather for TV, **2003** transferred to the Internet



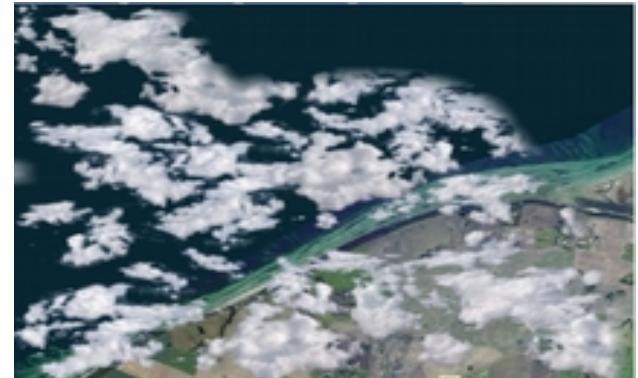
# GeoWetter is based on a matured concept

Groundwork: Concepts for research- and development projects

**2002** dynamic Nowcast with 3D clouds,



2D-cloud types  
prototyped in  
Geo-meteo



**2005** Feasibility study by contract of BBK:  
Dynamic Nowcast for dispersion modelling

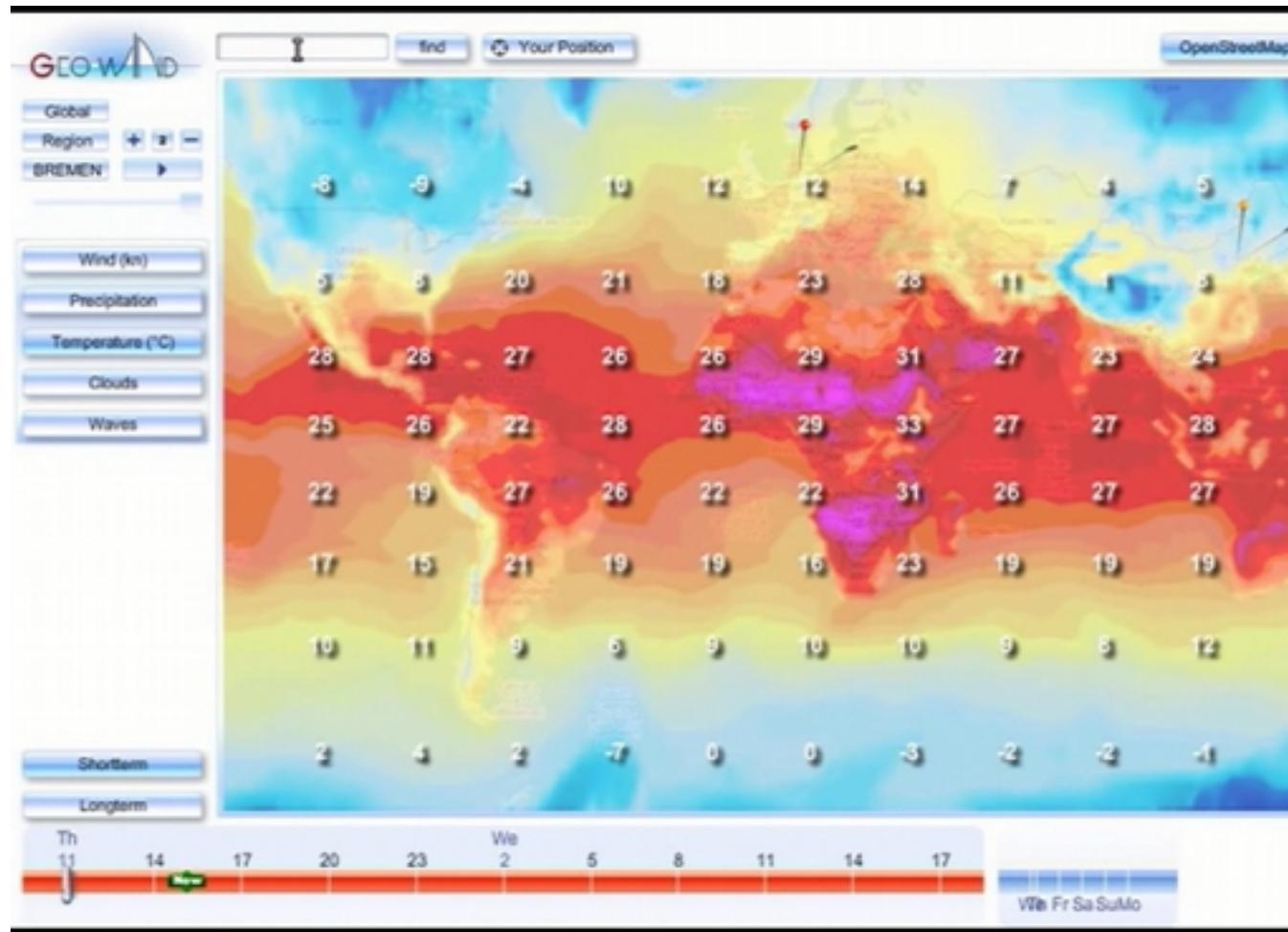


**2007** Concept for Car-2-Car Communication  
In context with the Sim TD Projekt



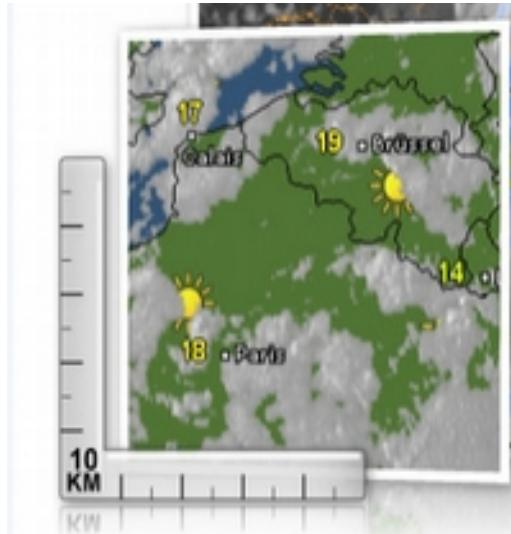
# GeoWetter: Fast, unlimited zoomable Animations

With control of the time dimension



# **Zoom up to the microscale**

Resolution of lightning data 200m



## **Wetter-online Premium:**

Max Zoomlevel 8,  
= map scale ~ 1 : 2 310 000



## **GeoWetter:**

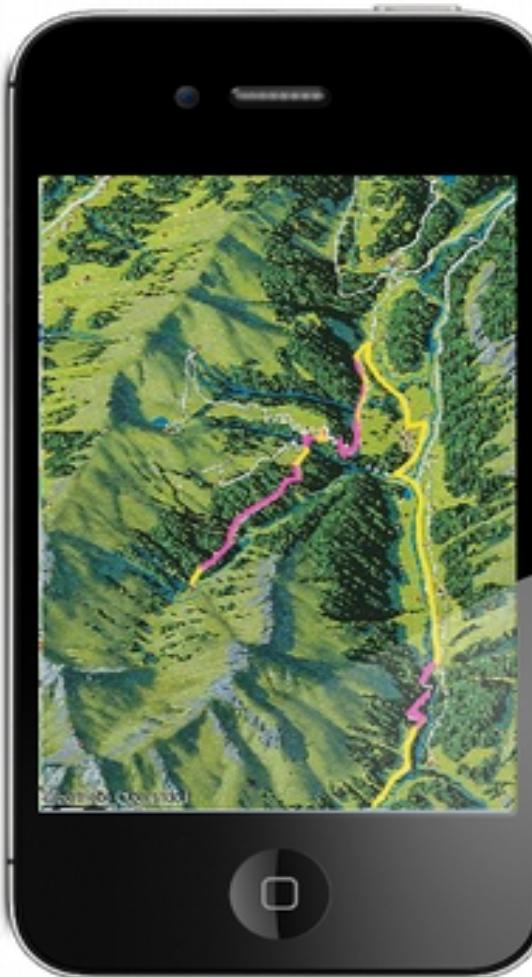
Zoomlevel 15,  
= map scale ~ 1 : 18 000

# Difference to road weather of Meteo-Group

Meteogroup  
map scale ~ 1 : 4 000 000



GeoWetter  
map scale ~ 1 : 18 000

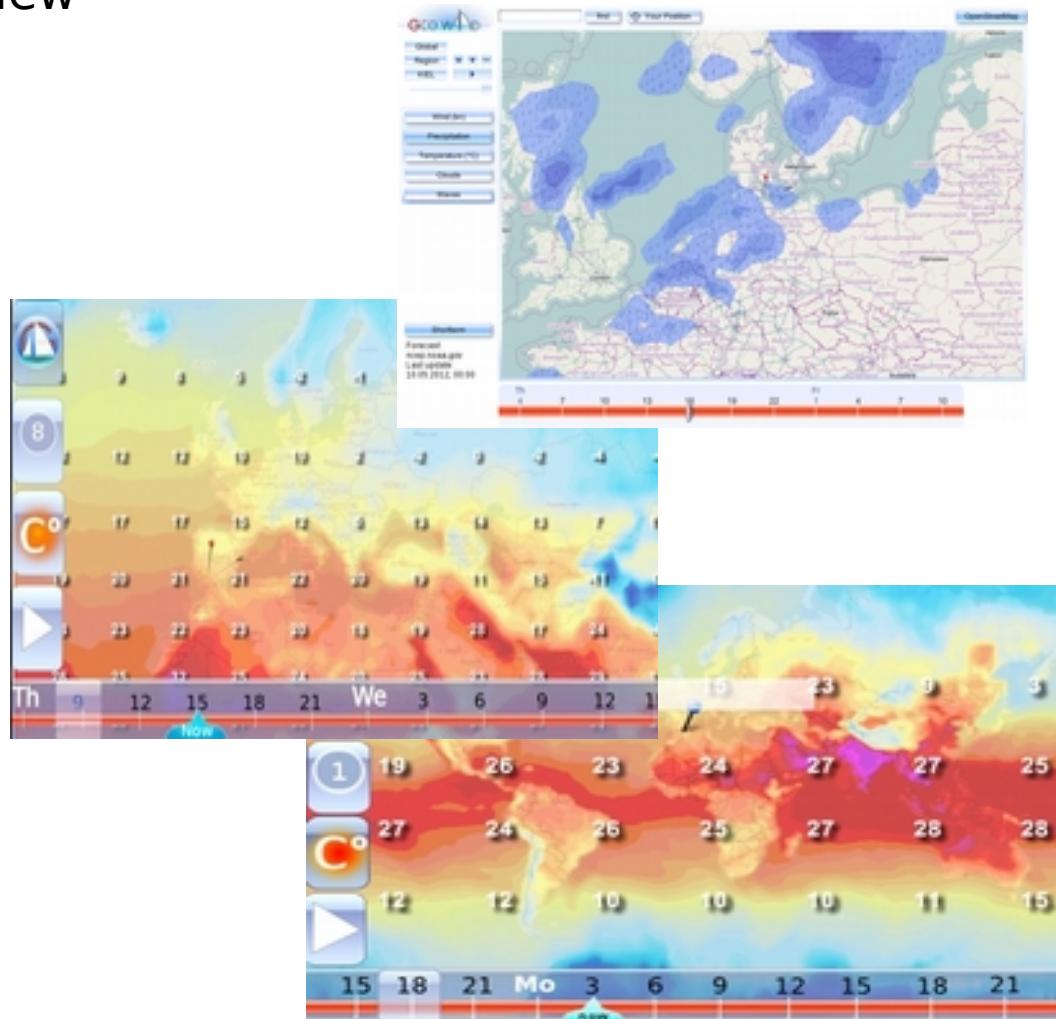
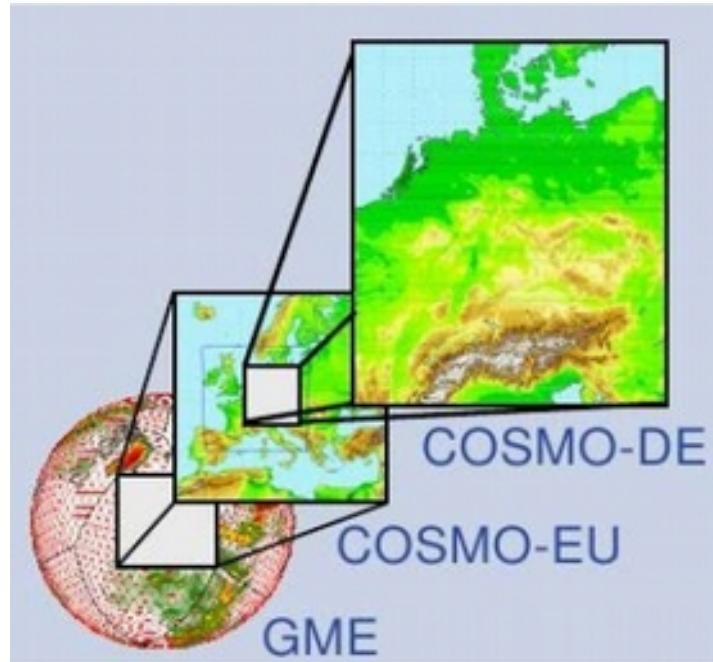


Resolution of  
ice warning 25m

# GeoWetter: Zoom of the entire modell chain

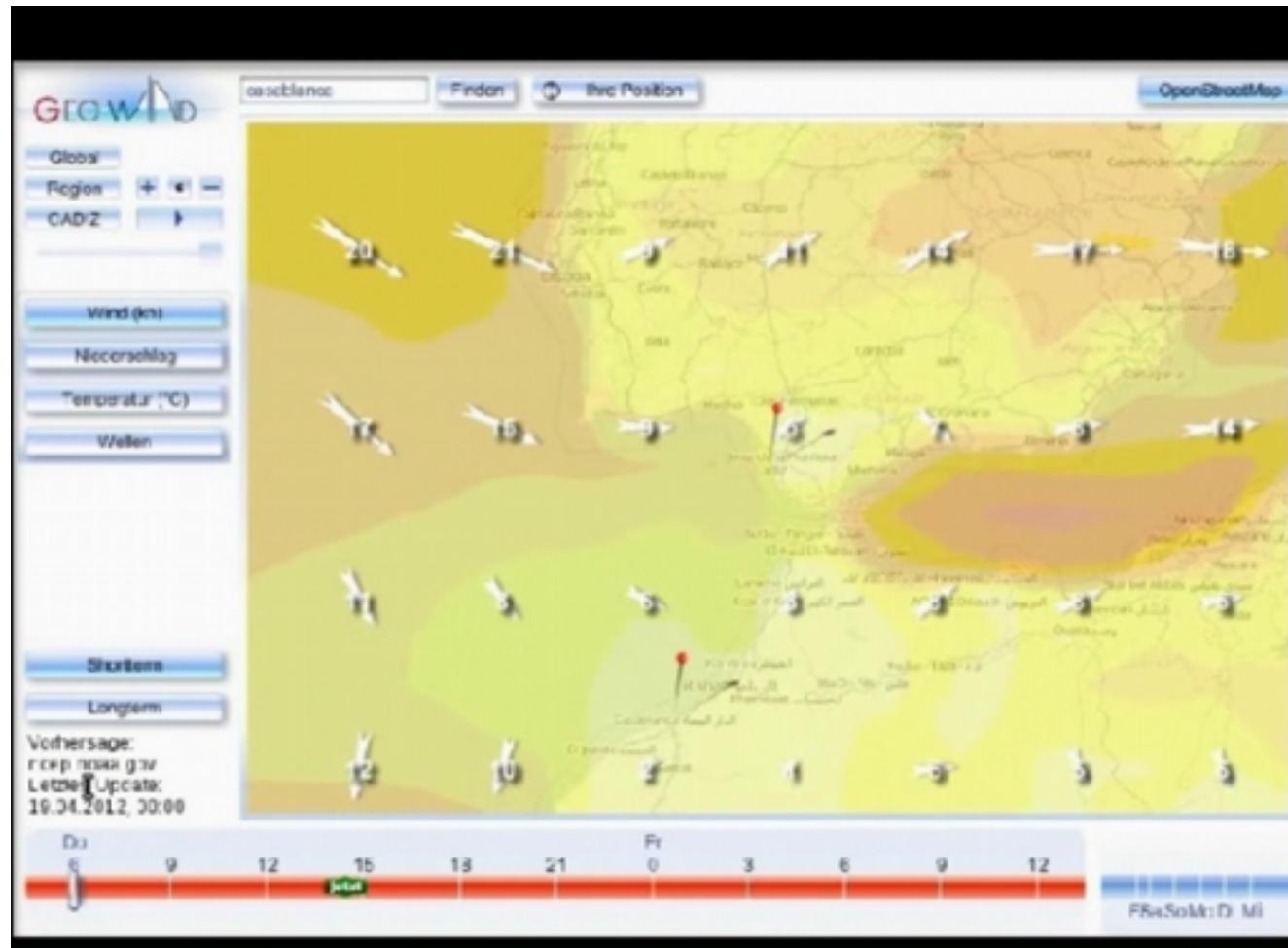
From global models up to mesoscale models

From World-View to the local view



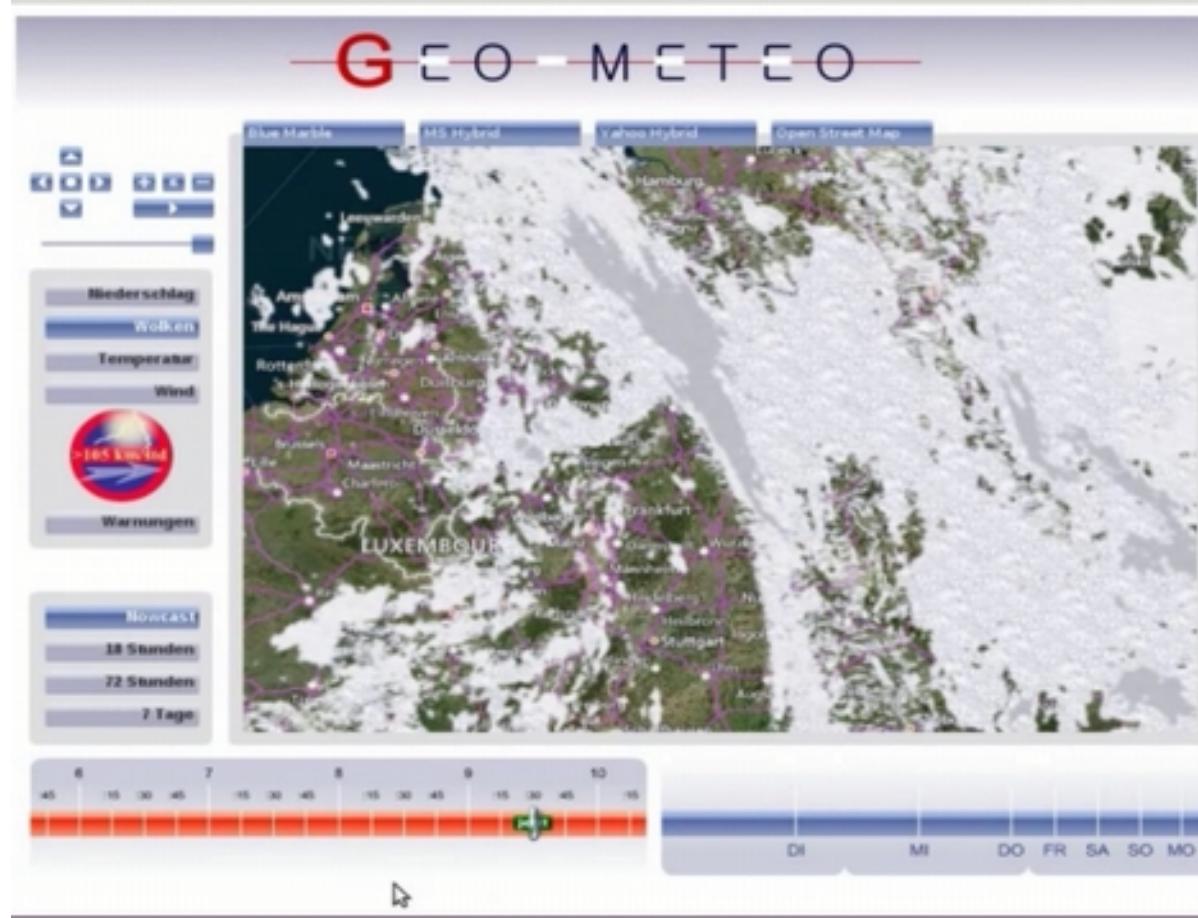
# True Resolution

Show the original position of the model grid points



# GeoWetter: Zoom of the time steps

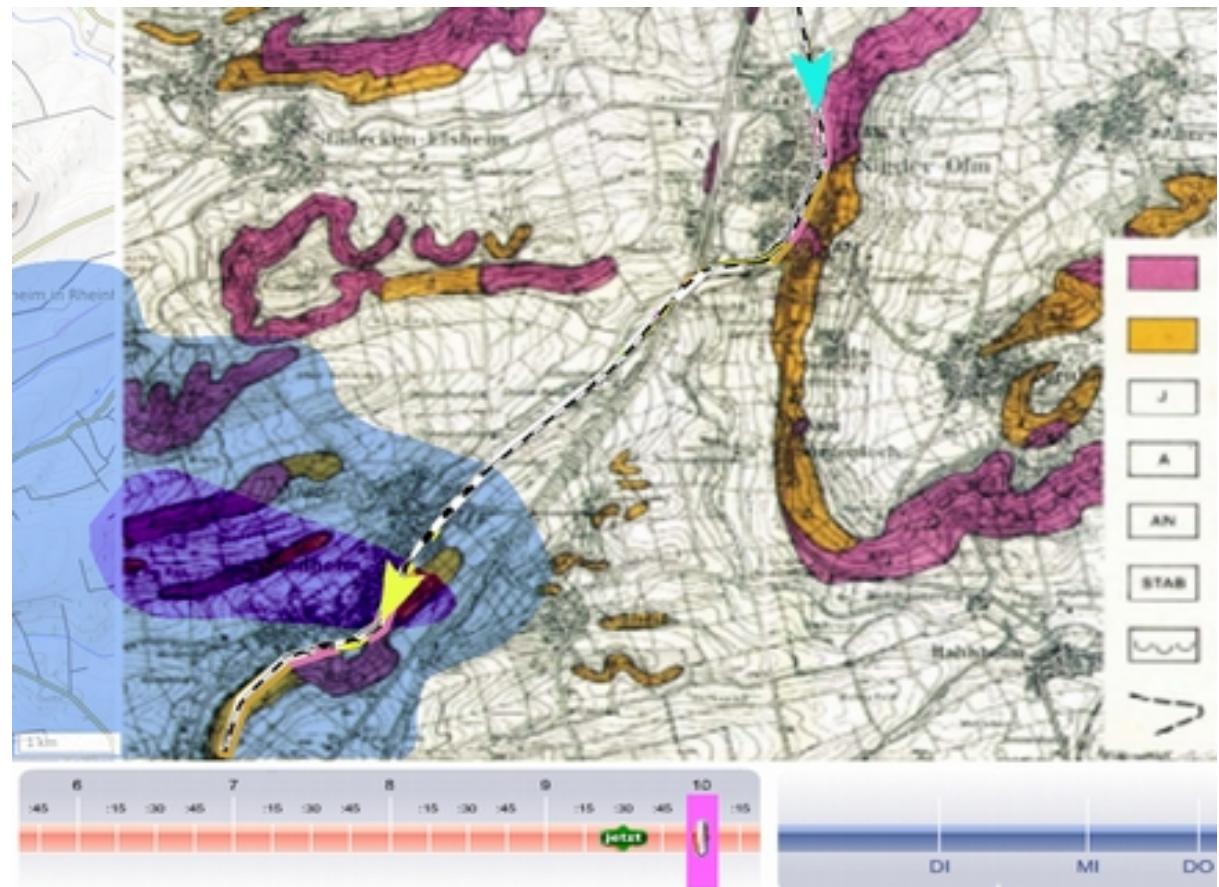
Time steps contract more and more, the nearer they are drawn to the current time, here 15 min , 1 min in the future



# Urgent Warning via Routing across the time

f.e. landslide warning, based on calculating nowcast on landslide hazardous areas

The train (current Position, turquoise Arrow) will pass a landslide hazardous severe weather in half an hour (yellow arrow), driving with regular speed



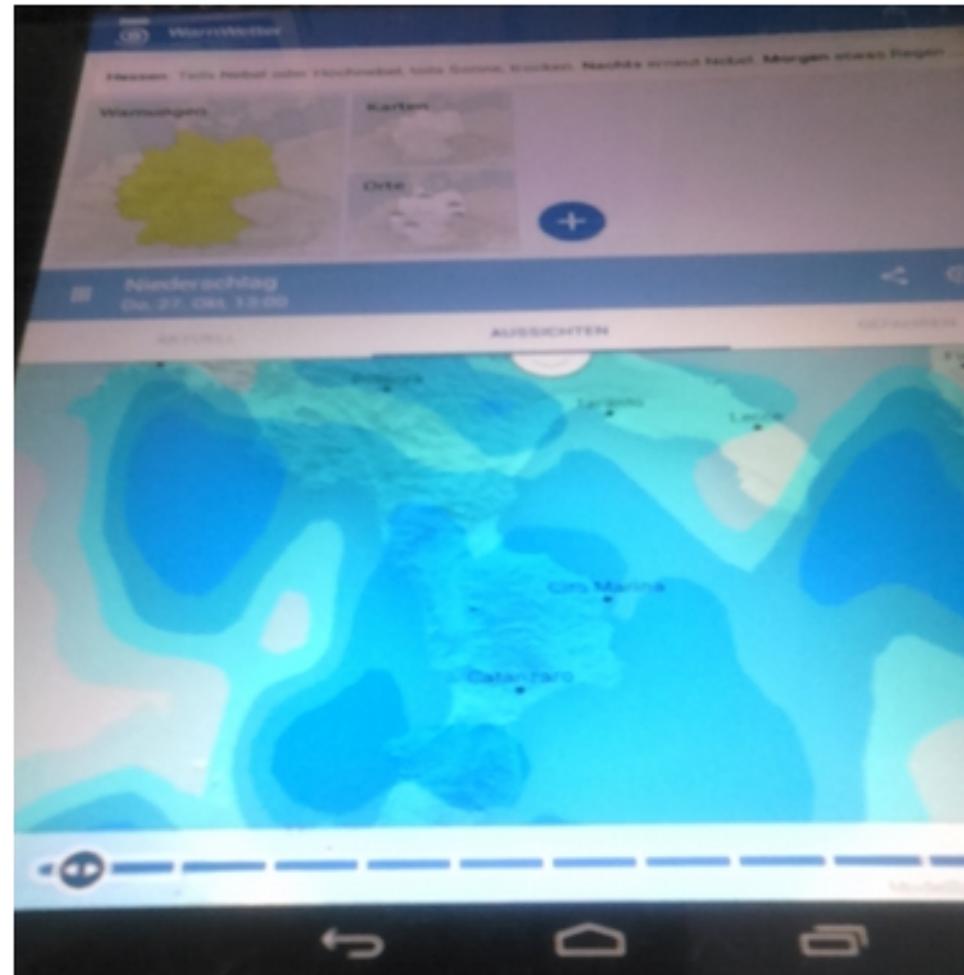
# **Loss of information caused by insufficient zoom technology**

DWD-App: limitation in forecast resolution to 7km (Cosmo-EU)

Although High res  
DWD model  
 $\text{Cosmo-De} = 2,8 \text{ km}$

Zoom technology  
allows only one model

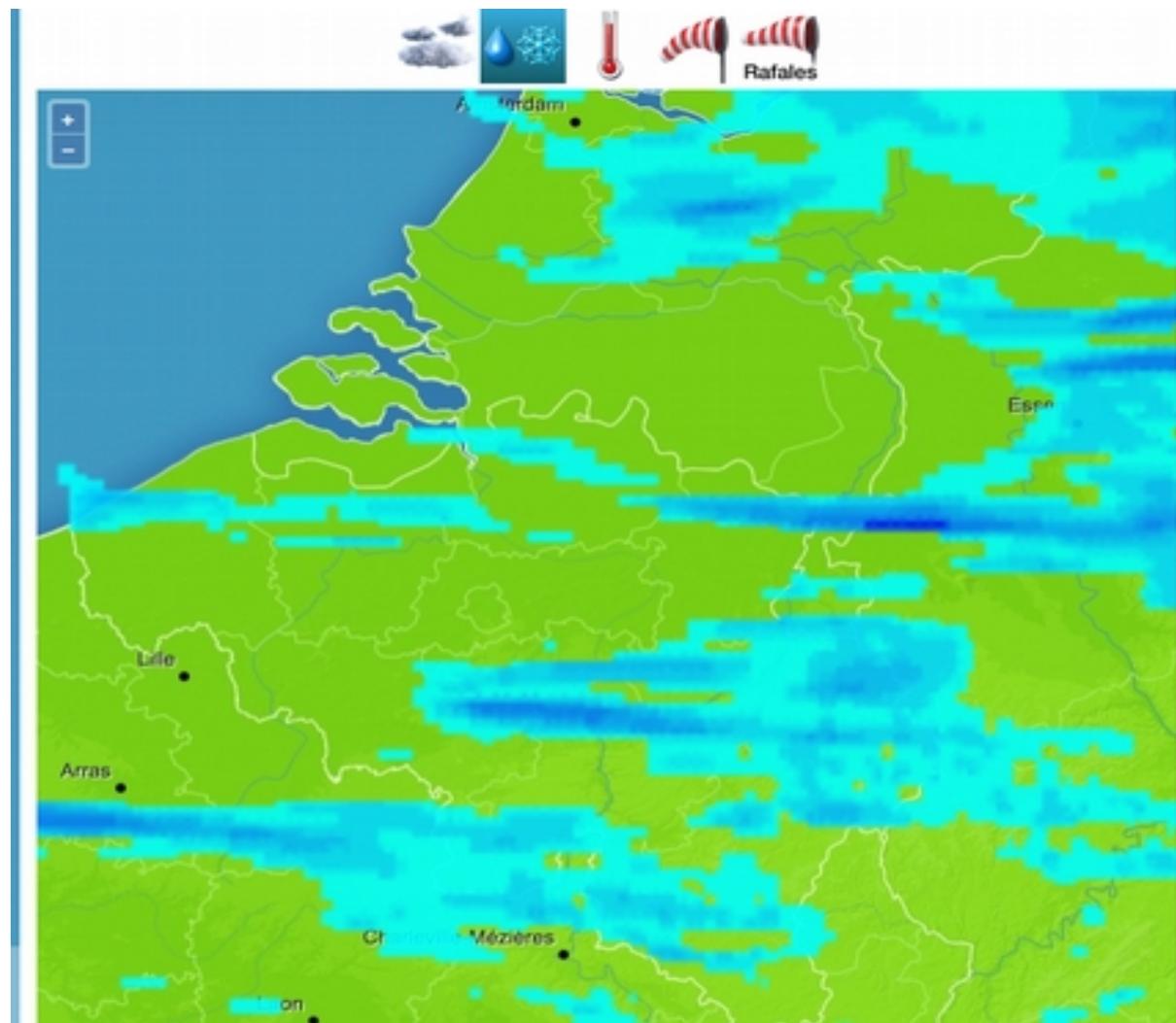
Max zoom level 8



# Loss of information caused by insufficient zoom technology

Meteo France  
max Zoom-Level 7,5

For the Meteo France  
1,5 km NWP model  
Zoom-Level 12  
is required



# Anachronism at Met-office:

Outdated weather symbols for NWP forecast

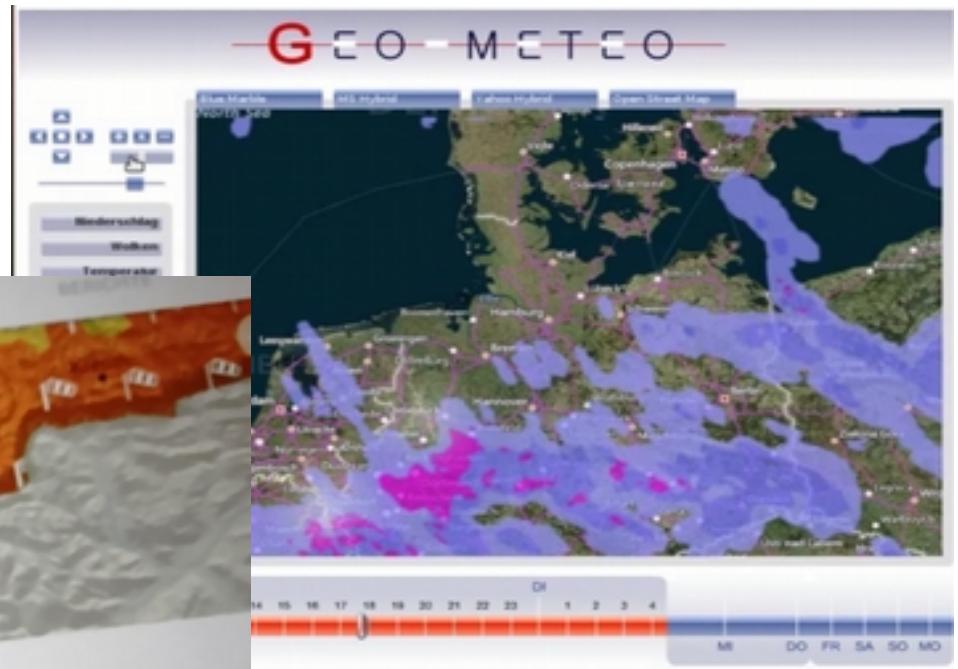
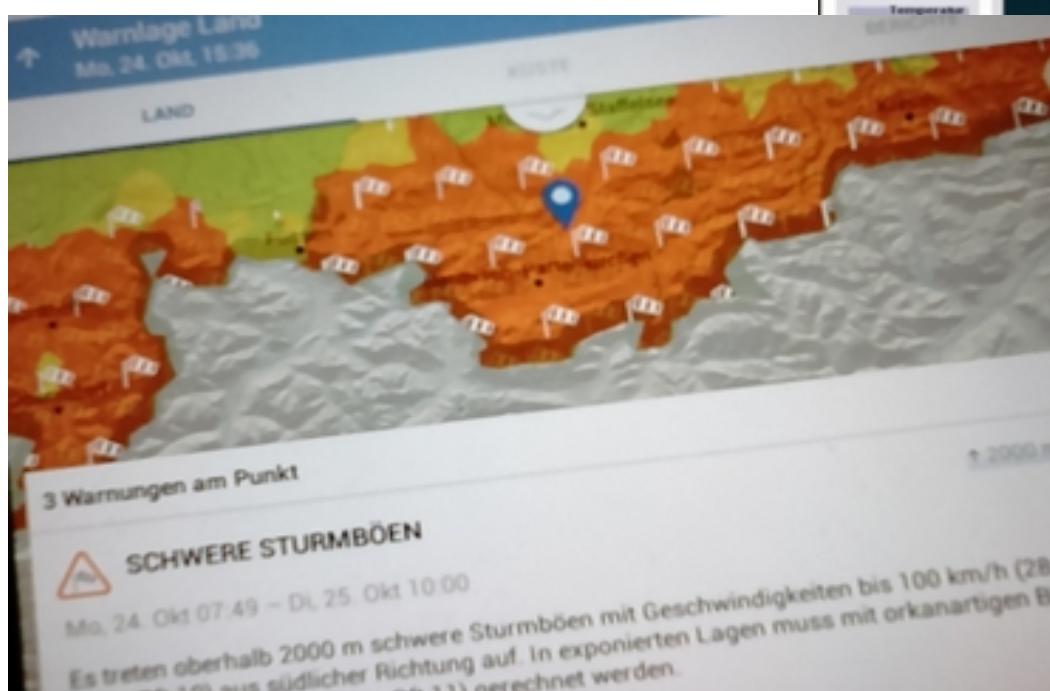


Weather symbols represent points. No information about the spatial extent and movement of the weather fields

# Anachronism in DWD Severe weather warning

Static Warning for the entire timerange of 26 hrs, for the entire area without animation

Information loss about the movement and the geographical position of the severe weather cells



# Met-office: The same static weather warning

Overview      Detail

### Met Office Weather Warning Overview: United Kingdom

Issued on Tue 14 Mar

Tue 14 Mar

Tue 14 Mar    Wed 15 Mar    Thu 16 Mar    Fri 17 Mar    Sat 18 Mar

Use the small maps above to select the weather warnings over the next five days. Click on your chosen region below for more details of current warnings in force.

United Kingdom	
Orkney & Shetland	
Highlands & Eilean Siar	
Grampian	
Strathclyde	
Central, Tayside & Fife	
Dumfries, Galloway, Lothian & Borders	
Northern Ireland	
Wales	
North West England	
North East England	
Yorkshire & Humber	
West Midlands	
East Midlands	
East of England	
South West England	
London & South East England	

Warnings:

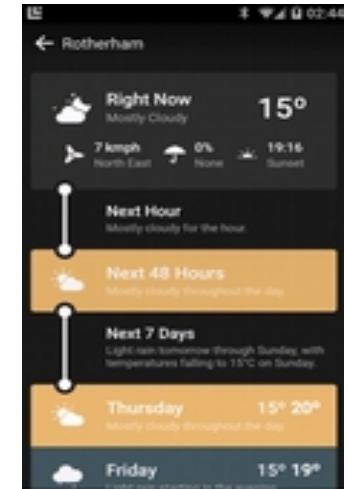
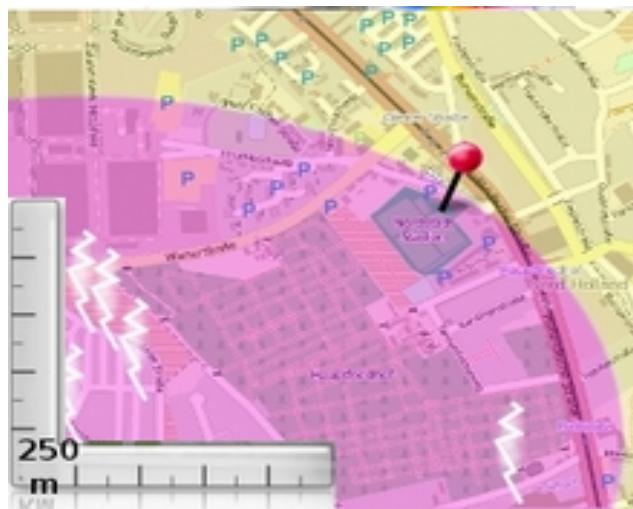
- Be aware
- Be prepared
- Take action

Rain    Wind    Snow    Ice    Fog

The Met Office has responsibility for providing weather warnings for the UK.  
Coloured regions on the map show where severe weather warnings have been issued. When issued the public are advised to take action. Further information and advice can be found at [www.metoffice.gov.uk](#).

# Anachronism at Google

Google promotes wearables with outdated point information



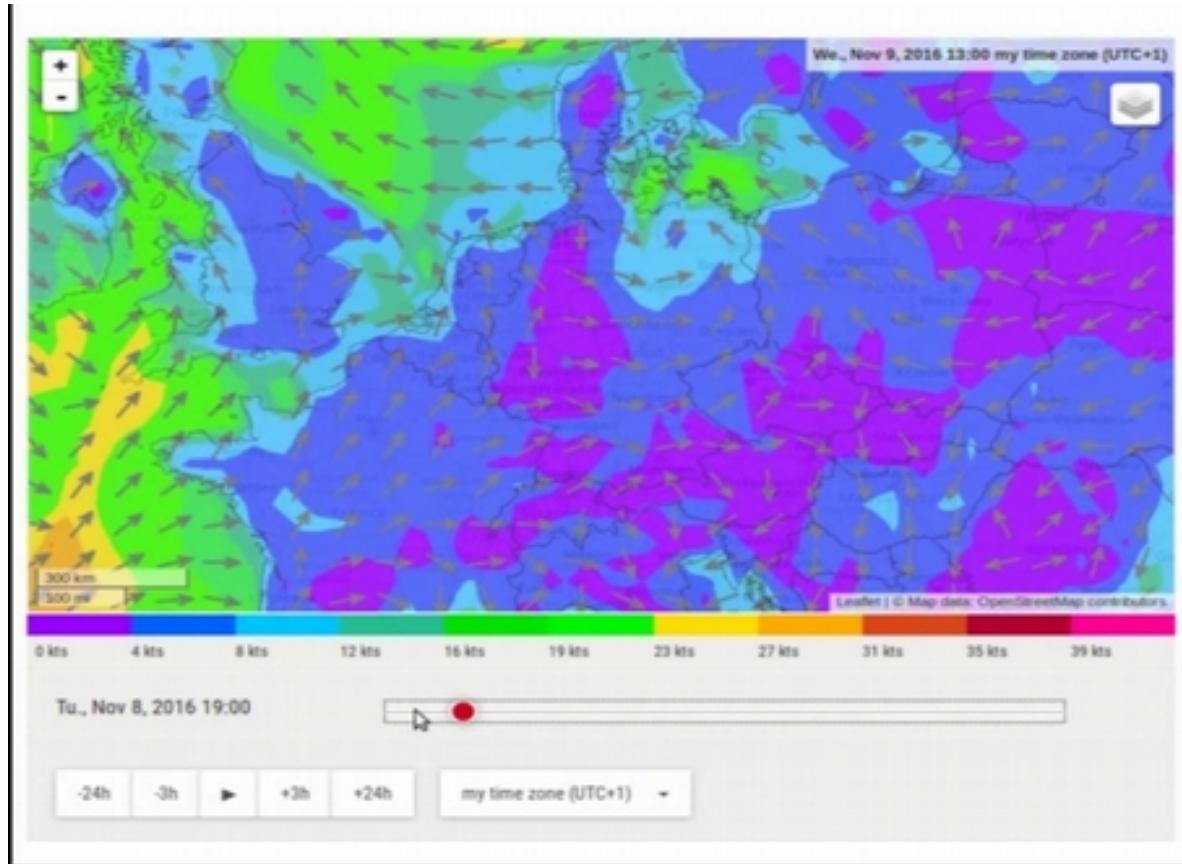
GeoWetter (future):  
Lightning warning for wearables  
with Soundnotification

After the sound warning , the user can  
watch the movement of the severe weather  
cell in relation to his position on the map

# Windfinder: Only one NWP-model, no zoom of time steps

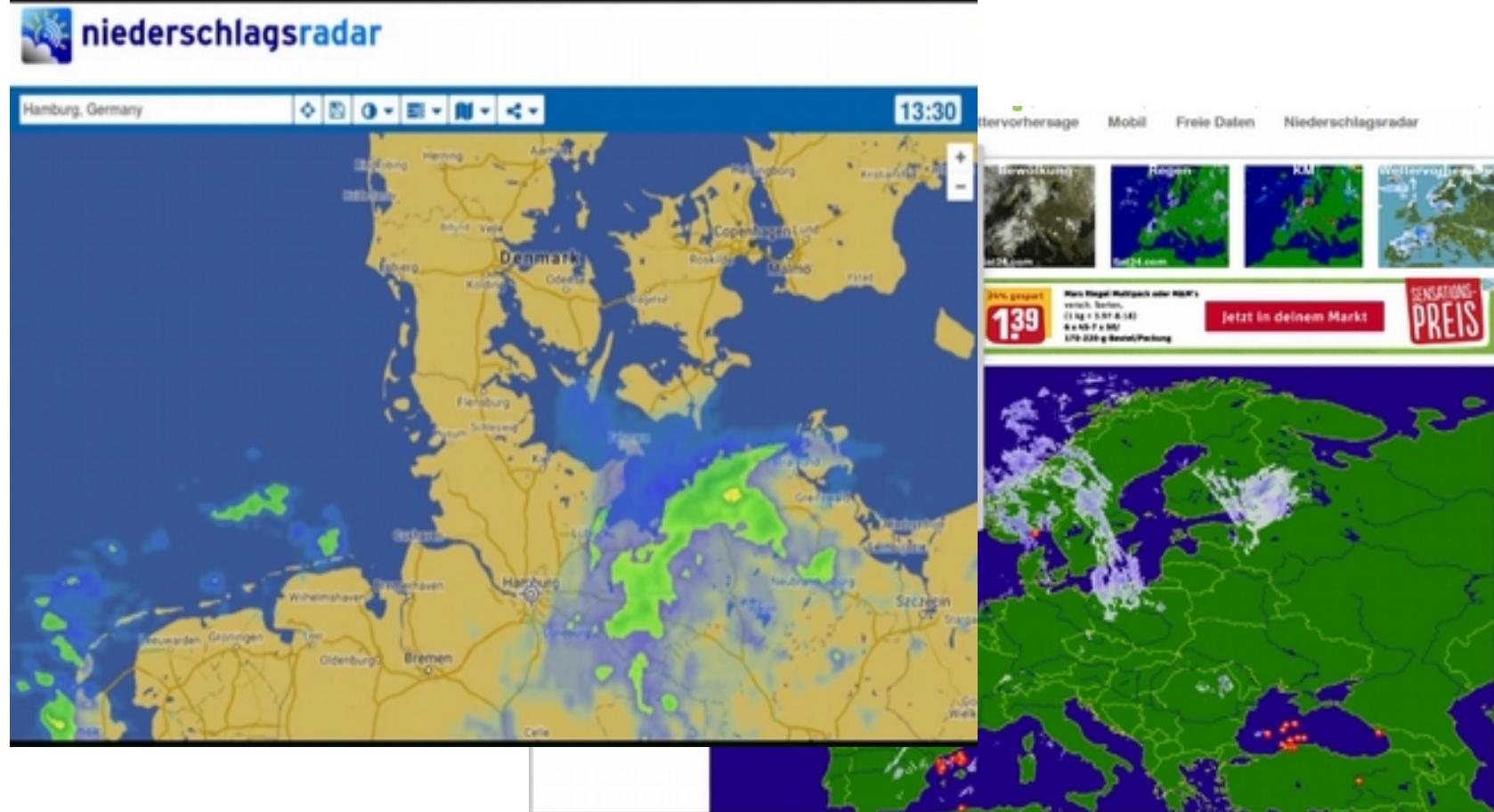
Limited zoom range, max model resolution=11 km

3 hrs time steps from time point 0 up to the next 7 days  
erratic animation



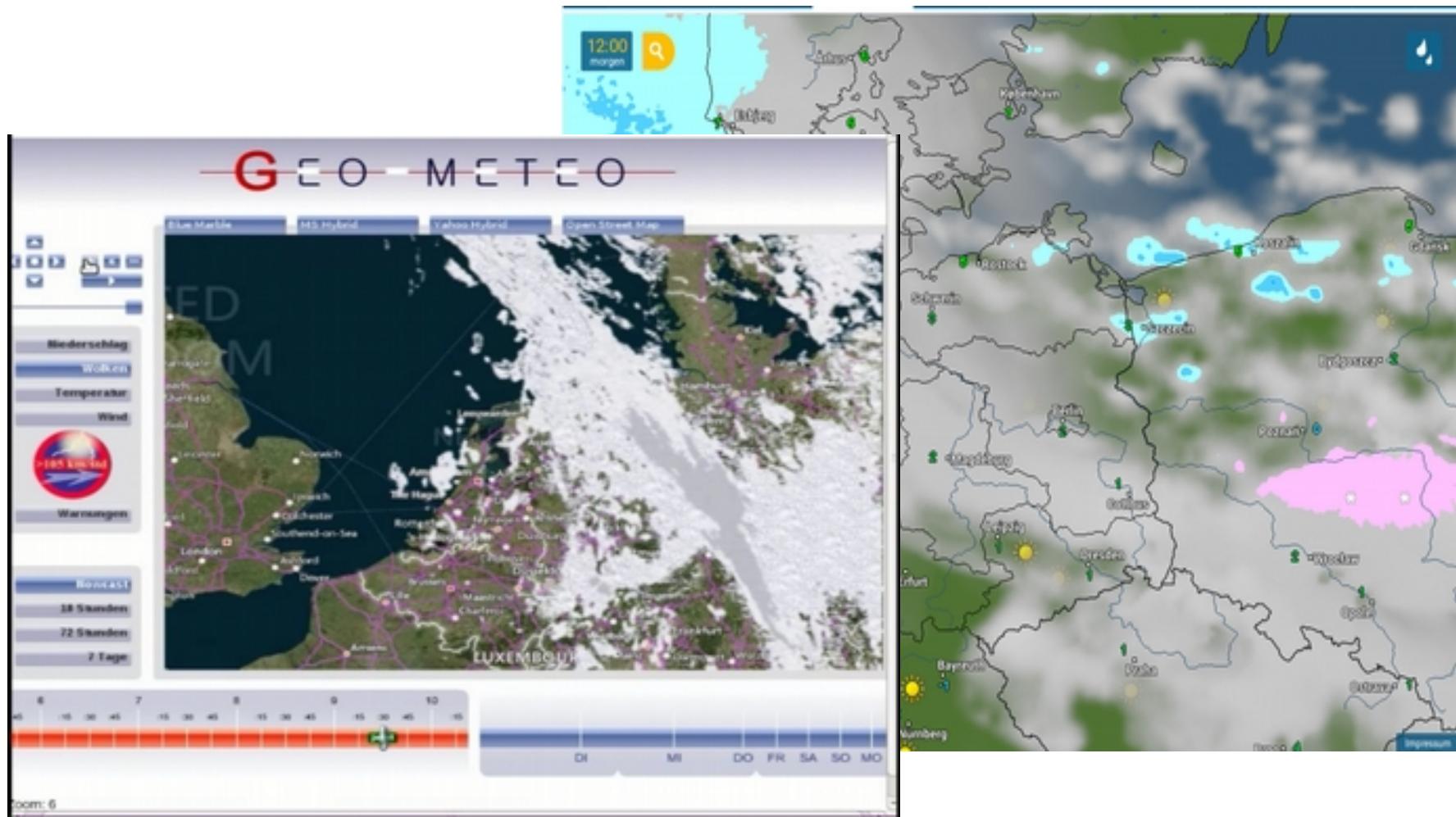
# Niederschlagsradar: No control of the time dimension

No navigation through the time steps, zoomable animations only for radar  
(with Google maps api):



# GeoWetter: Quality of clouds increases zooming-in

Picture quality of clouds at Wetter-online



# **GeoWetter: Unlimited zoom for everything**

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for



all parameter: Wind, temperature, precipitation , clouds



all time ranges: Nowcast, short range forecast, long range forecast



## **All others only partial zoom**

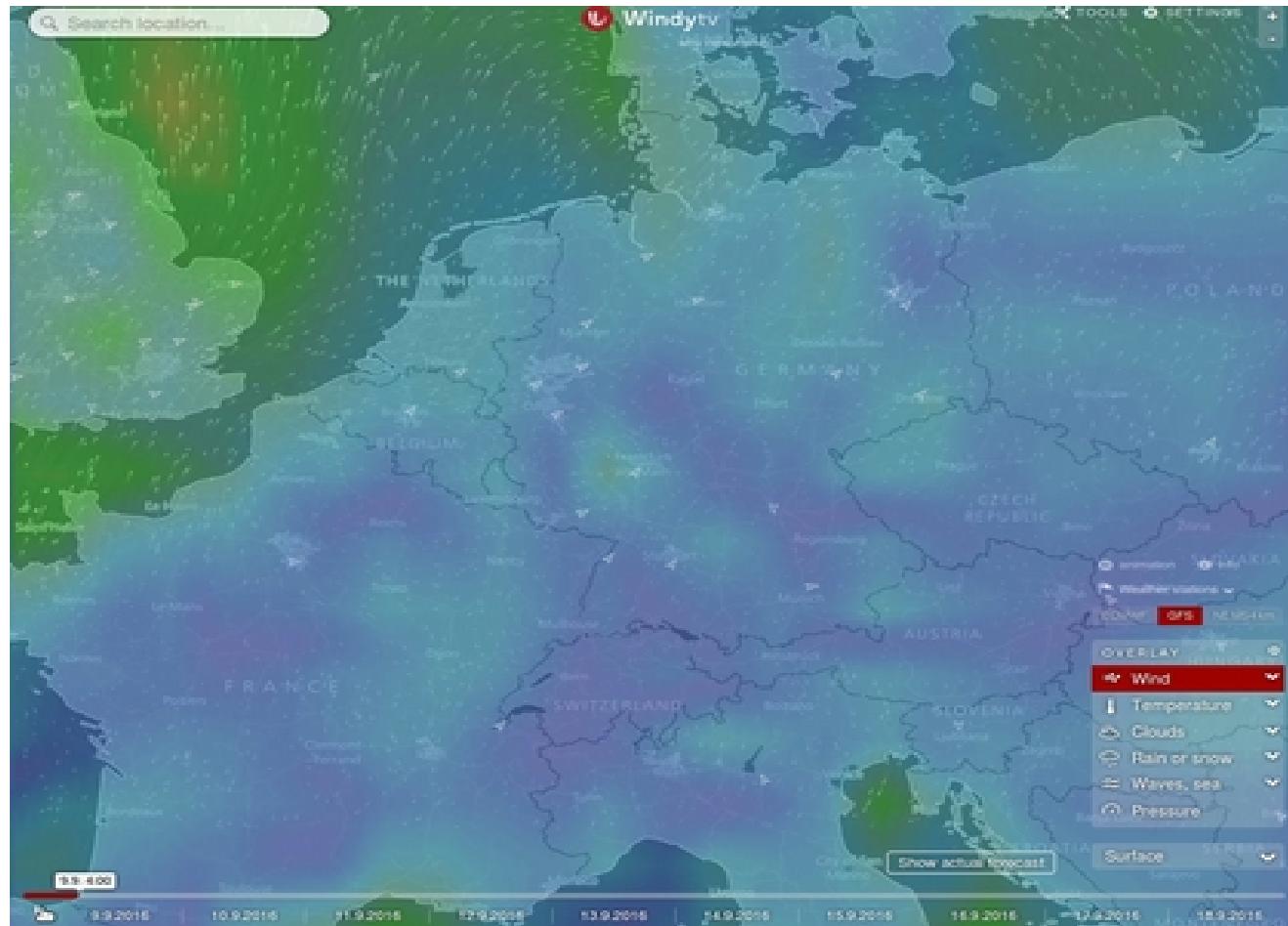
Wetter-online: Only for clouds and precipitation

Windfinder: Only for wind  
Only for NWP, not for nowcast

Niederschlagsradar: Only for precipitation (Radar),  
Only for Nowcast, not for NWP

# Windyty: Unsufficient animation speed

No overview of the weather development possible



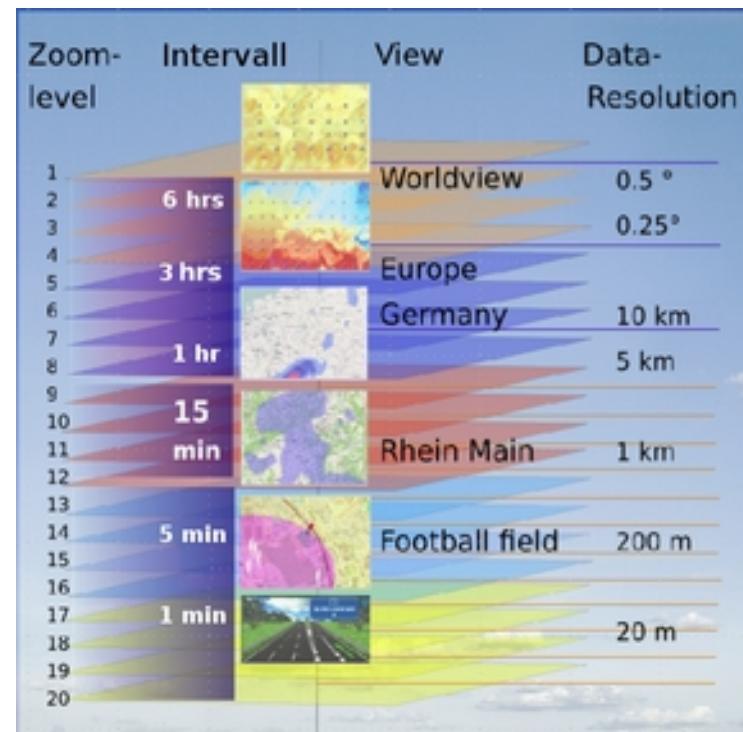
GeoWetter is  
8-10 times  
faster than  
Windyty

# Only GeoWetter is Web-Gis-Weather

All features of Web-Gis (Google maps, Open-street map) are transferred to weather:

## Worldwide USP's

- Unlimited zoomable, animations for all parameter and forecast ranges, up to the microscale
  
- High animation speed, Navigation through the time steps, zoom of the time steps, combined time line
  
- Dynamic Web-Gis calculations complex positioning features, Routing in the time



# GeoWetter compared to others

	GeoWetter	Windfinder	DWD-App	Niederschlagsradar	Wetter-Online	Windyty
Unlimited Zoom with time-control	★ ★ ★					★
Very fast animation speed	★ ★ ★			★		★
Zoom in the time dimension	★ ★ ★				★	
Entire model chain	★ ★ ★					
Zoom up to the microscale	★ ★ ★			★		★
Combined forecast ranges	★ ★ ★				★	
Routing over time	★ ★ ★					
Quality of clouds increase zooming in	★ ★					
All in one display	★				★	★
Complex positioning features	★ ★					
Detailed Map (G-map, OSM)	★ ★ ★			★		★
True Resolution	★ ★ ★	★		★		★
Limited zoom without time-control						
Limited zoom with time-control	★	★	★	★	★	
Only one model /limited resolution		★	★	★	★	
Not all Parameter	★			★	★	
Unsufficient animation speed						★ ★
Missing time control				★ ★		
Faulty		★ ★				
Navigation labyrinth				★ ★		
Return to static styles		★ ★	★ ★	★ ★	★ ★	★ ★

Legend:

- Plus (Light Blue Box): ★
- Limited Plus (Medium Blue Box): ★
- Restrictions (Grey Box): ★
- Negatives (Yellow Box): ★

# GeoWetter is the only Web-Gis-Weather

All others control the Web-Gis-Weather technology only partly, rudimentary or not at all

Technologie				
By the time dimension extended Web-Gis-System , in which dynamic weather data processing and visualisation are unified	<b>GeoWetter</b>	Unlimited zoom with control of the time Very fast animation speed The entire model chain in one display	Combined timeline for all forecast ranges Zoom of the time steps Routing in the time	Dynamic data processing True Resolution Complex positioning features
Own development, main parts based on video technology	<b>Windyty</b>	Unlimited zoom with control of the time	insufficient animation speed	
WebGis with staticGis-Client f.e. Googlemaps api or Leaflet	<b>Niederschlagsradar</b> <b>Windfinder</b>	limited zoom range without control of the time limited zoom range	Navigation labyrinth not all parameter Animation problems not all parameter	No microscale
Own development without Web-Gis	<b>Wetter-Online</b>	limited zoom range	not all parameter	No microscale
No Web-Gis, Zoomable Animations based on preinstalled Zoom of mobile devices (not working in the web browser)	<b>DWD-App</b>	limited zoom range		No microscale

# Contact data

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## Kontaktdaten

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