

# Predicting the winstorm „Christian“ from 28 Oct 2013

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One of the most severe weather events of the last years was the intense low pressure system “Christian” affected the coastal area of Germany with highest gusts of above 100 mph and up to 120 mph (193 km per hour) This windstorm was causing at least 17 deaths in several European countries.

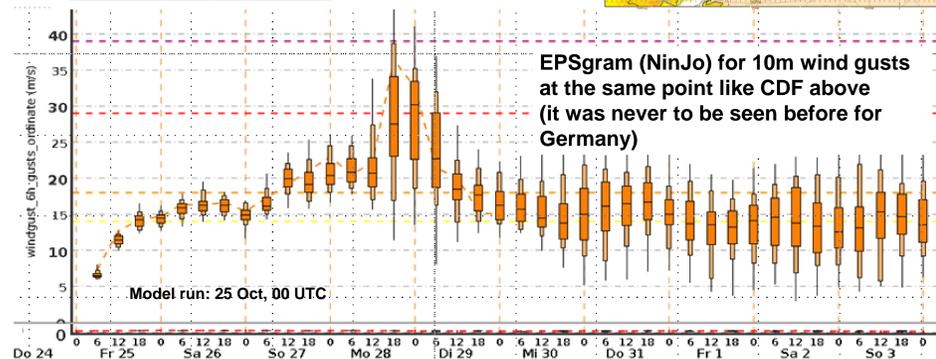
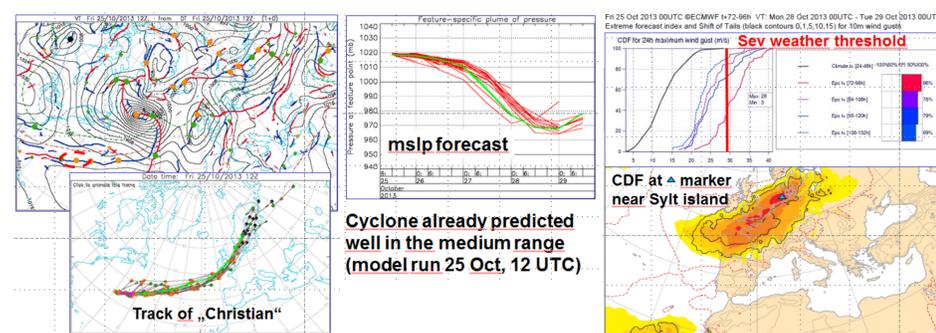
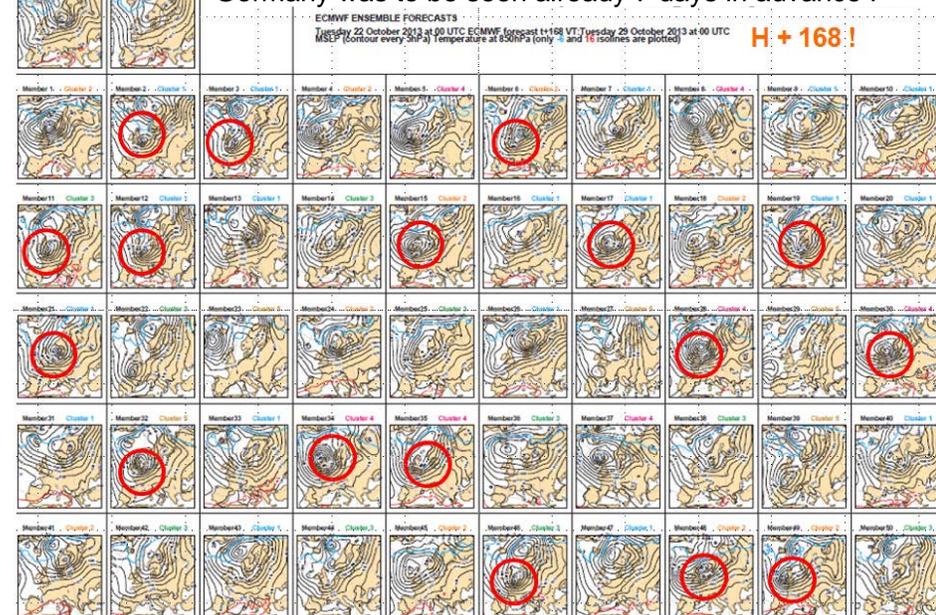
The developing system incorporated the remnants of ex-tropical storm Lorenzo situated in the middle of the Atlantic. The tropical air from this storm provided an input of energy was helping to intensify the cyclone. This has been made forecasts difficult.

An accurate prediction of this type of high-impact events is the core task of the DWD. To provide tailored forecasts for the general public and authorities already during the medium range the web based ECMWF forecast products are essential. Due to the lack of time in operational shifts the access to forecast products should be kept easy.

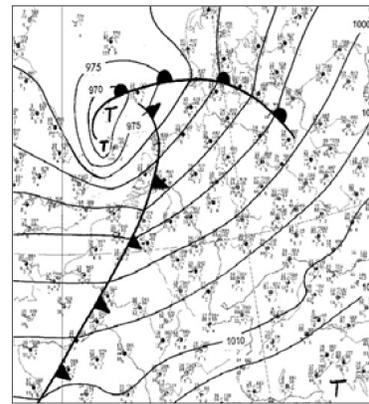
During the medium range the ECMWF forecast system did an excellent job. Already 7 days in advance clear signals detecting a major windstorm event were to be seen so that by the risk assessment of the DWD an intense low pressure system was announced. Closer to the event NWP models should provide a much more detailed guidance. This was for the major wind storm event “Christian” not always the case.

## Predictions during the medium range

A high-impact windstorm event for the northern part of Germany was to be seen already 7 days in advance !



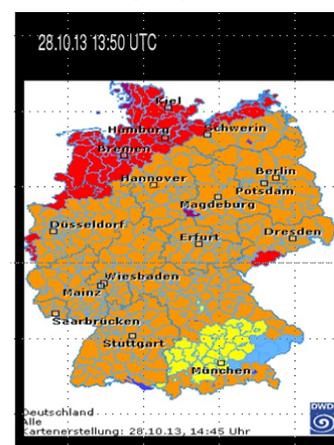
Medium range risk assessment (issued on 25th October for the general public): Gusts above 104 km per hour over NW Germany are very likely, at the North Sea coast in excess of 140 km per hour possible!



MSLP analysis), 28 Oct, 09 UTC

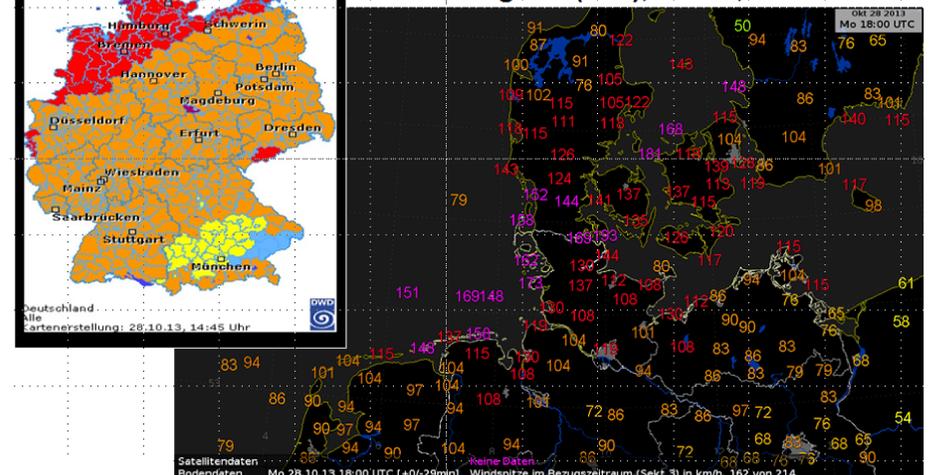


Container in the port of Bremerhaven; Photography: Uwe Müller, Bremerhaven, Published at 29.10.2013, Wetterforum

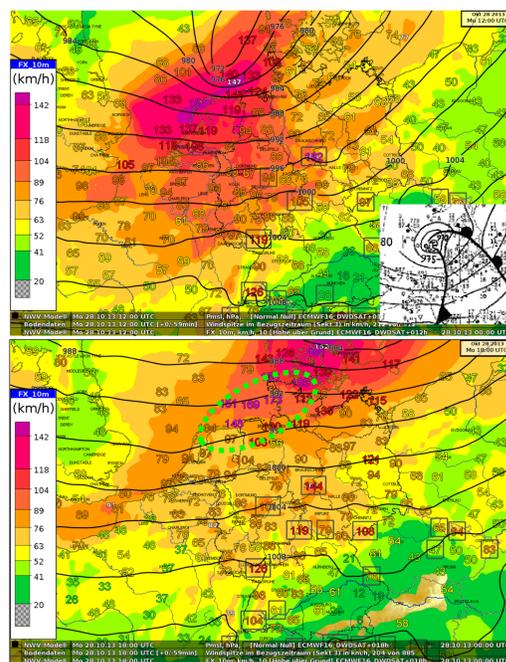


Warning status, 28 Oct, 13:50 UTC

10m windgusts (obs), 28 Oct, 12 ... 18 UTC



## Short range forecasts of „Christian“



The model runs issued 27 Oct, 12 UTC and 28 Oct, 00 UTC predicted the position and the shape of „Christian“ at 12 UTC quite well. The core pressure was in the model slightly too weak in comparison to the verified analysis.

For the late afternoon and the evening both runs showed a turn of Christian’s track too far and too fast into northwesterly direction what is typical for a mature cyclone and finally to an underestimation of wind gusts. Probably this was an effect of the tropical storm „Lorenzo“ provided an input of energy.

MSLP forecast (isolines) and 10m wind gusts forecasts (isoareas), based on ECMWF, det model, 28 Oct 2013, 00 UTC. Gust observations (digits). Upper part: 28 Oct, 12 UTC. Lower part of the Figure: 28 Oct, 18 UTC. Red colors indicates the severe weather threshold, violet colors extreme severe wind gusts. Is the gust forecast perfect isoareas and digits corresponds each other. Slides: Courtesy of J. Anger, DWD, Central Forecasting, NWP Evaluation

Orkantief Wetterstation Messwerte in km/h	ANATOL 03.12.1999	JEANETT 27.10.2002	KARLA 31.12.2006	FRANZ 11.01.2007	KYRILL 18.01.2007	CHRISTIAN 28.10.2013
List/Sylt	183 *	126	119	130	130	159
Hörnum/Sylt	-	128	133	128	139	183
Glücksburg-Meierwik	156	107	119	107	133	168
Pellworm	-	128	142	141	144	157
Strucklahnungshörn	-	-	141	119	148	165
Westerhever	143	128	-	107	109	161
St. Peter-Ording	141	119	-	115	126	172
Schleswig/Jagel	138	107	119	96	111	155
Helgoland-Oberland	141	141	165	133	143	191 ***
Borkum	150	135	135	178	141	191 ***

At North Sea coastal area the windstorm „Christian“ was the heaviest gale event for at least the last 20 years !

Maximum wind gusts of „Christian“ in kph, in relation to previous windstorms. Courtesy of „Meteoedia“

