

## Heavy storm CHRISTIAN on 28 October 2013

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### Introduction

In the last week of October 2013, the heavy storm CHRISTIAN moved across northern Europe (Fig. 1) causing destruction and travel chaos. Europe-wide it claimed at least 15 lives. Due to high wind speeds with hurricane force gusts, trees were toppled and buildings damaged. Power outages were reported not only from the United Kingdom and France, but also from northern Germany. Train services shut down temporarily, as e.g. in the southern United Kingdom and northern Germany, where the rail traffic was partly interrupted for several days. At London and Hamburg even the urban and underground railways were affected. Some streets were impassable. The Öresund Bridge between Denmark and Sweden was closed. Flights were cancelled. The ferry services between Dover and Calais as well as to some North Sea Islands shut down. Many Hallig inhabitants experienced “landunter” (i.e. flooding of the lowlands of the island).

One feature of the storm was its southerly track across the United Kingdom. Another one was the high amount of damaged and toppled trees, because many deciduous trees were still in leaf due to mild weather conditions and therefore more vulnerable to strong winds.

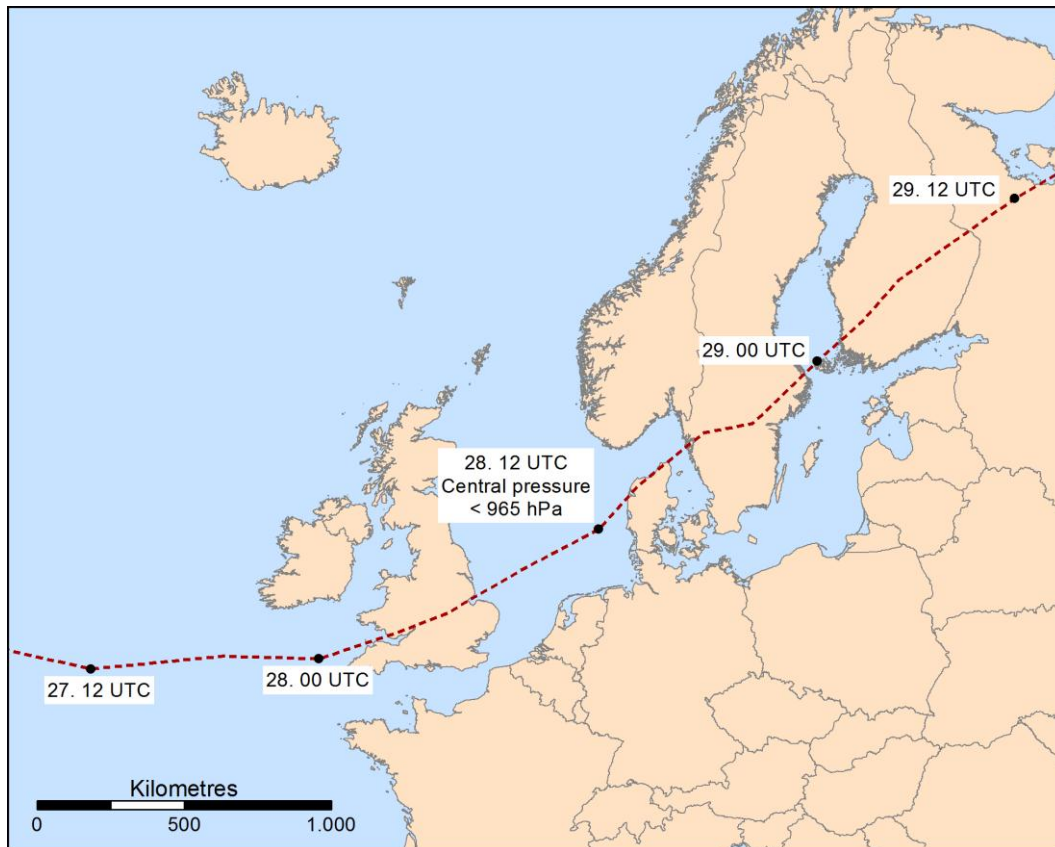


Fig. 1: Track of storm CHRISTIAN from 27 to 29 October 2013. [Source: DWD]

Consecutively used time specifications:

MEZ = Central European Time (CET)

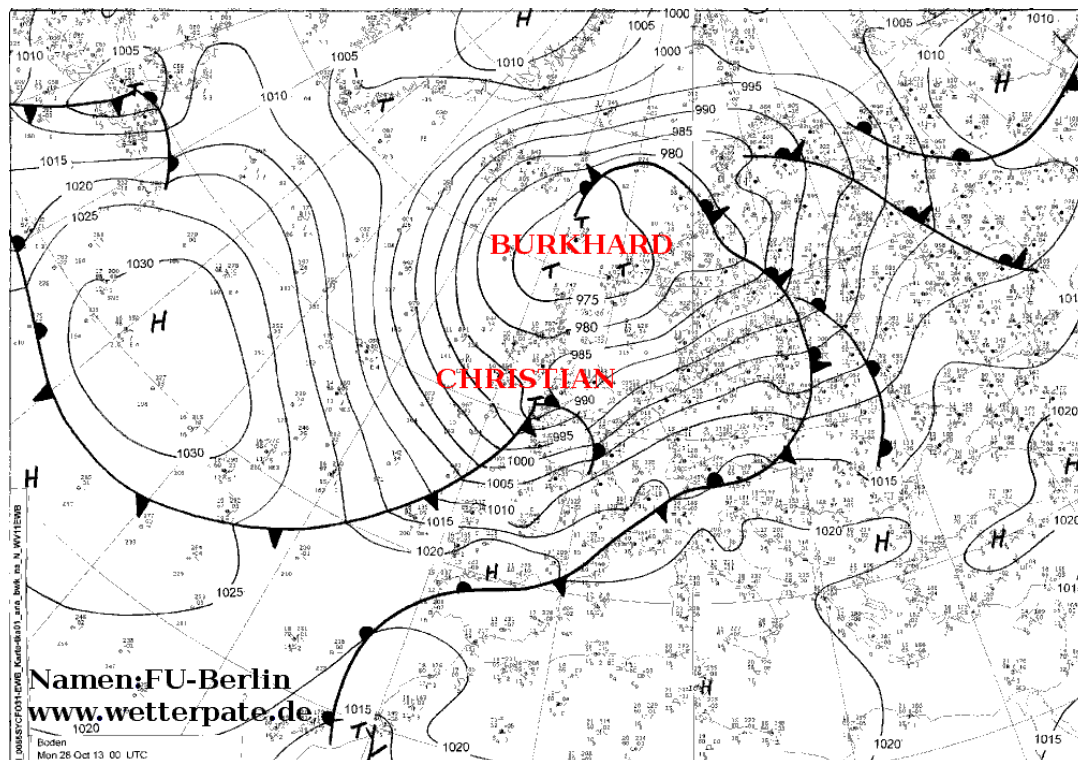
UTC = Universal Time Coordinated (= MEZ minus one hour)

### Development of CHRISTIAN and wind gusts

Storm CHRISTIAN formed on Saturday, 26 October, over the western Atlantic as a secondary depression of the low-pressure system BURKHARD. On its way eastward, the remnants of ex-tropical storm LORENZO provided for an additional input of energy, benefiting the development of CHRISTIAN to an intense low-pressure system. With a forward speed of 1200 km in 12 hours, CHRISTIAN was a rapid moving low.

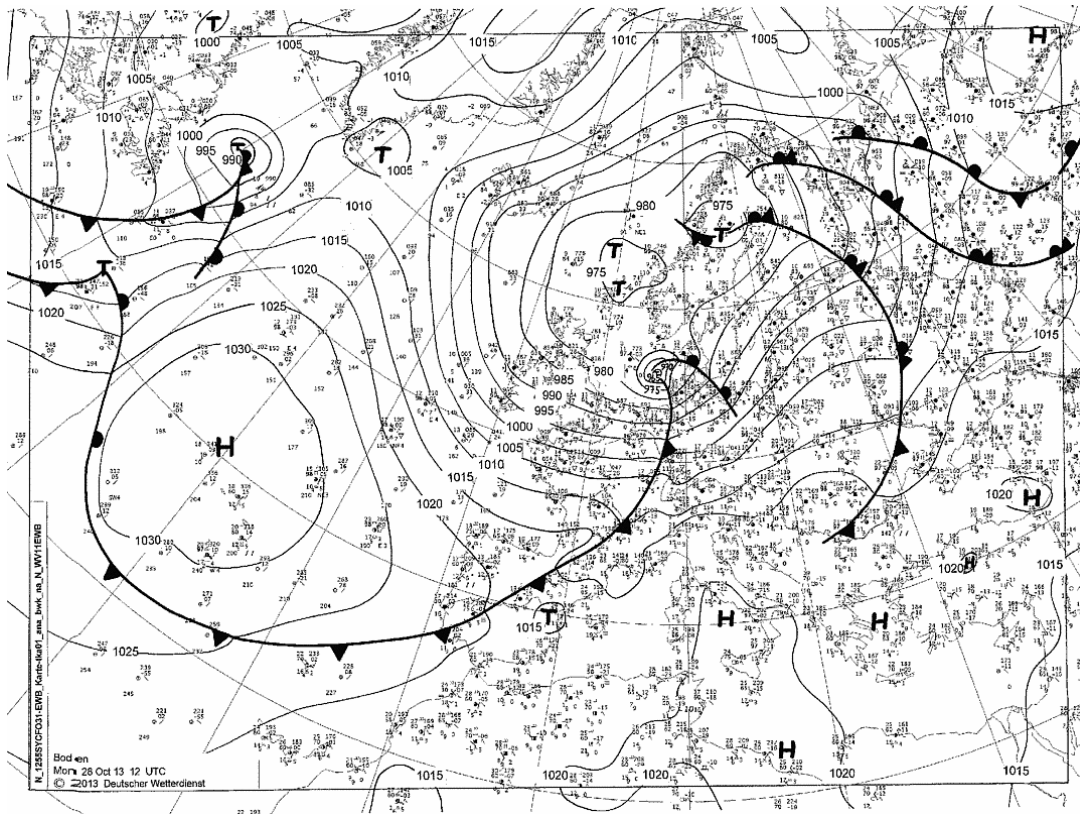
On Sunday the 27th at 18 UTC, CHRISTIAN was located southwest of Ireland with a central pressure of 990 hPa. At 22 UTC, the strong cyclone made landfall in the southwest coast of Great Britain. With a further intensification (central pressure of 986 hPa), the first hurricane gusts were measured on the Breton coast with wind speeds up to 133 km/h (station Ouesant-Stief). On the night to Monday, CHRISTIAN relocated north-eastwards and crossed the south of Great Britain. On Monday morning at 07 UTC, the centre of the storm with a pressure of 977 hPa was located over the East Midlands, near the city of Grimsby. At the same time, a ship on the English Channel reported the so far strongest gust of 168 km/h. On its further track across the southern North Sea heading towards Denmark, the first hurricane gusts on the German North Sea coast were measured at 11 UTC. The weather station Borkum-Süderstraße recorded a gust of 148 km/h. On the Brocken, the highest hill of the Harz mountain range, hurricane gusts were observed already before that time.

Figures 2a and 2b show the surface analyses on 28 October 2013 at 00 and 12 UTC, Figure 3 the satellite image at 14 UTC and Figure 4 the sustained wind at 14 UTC.

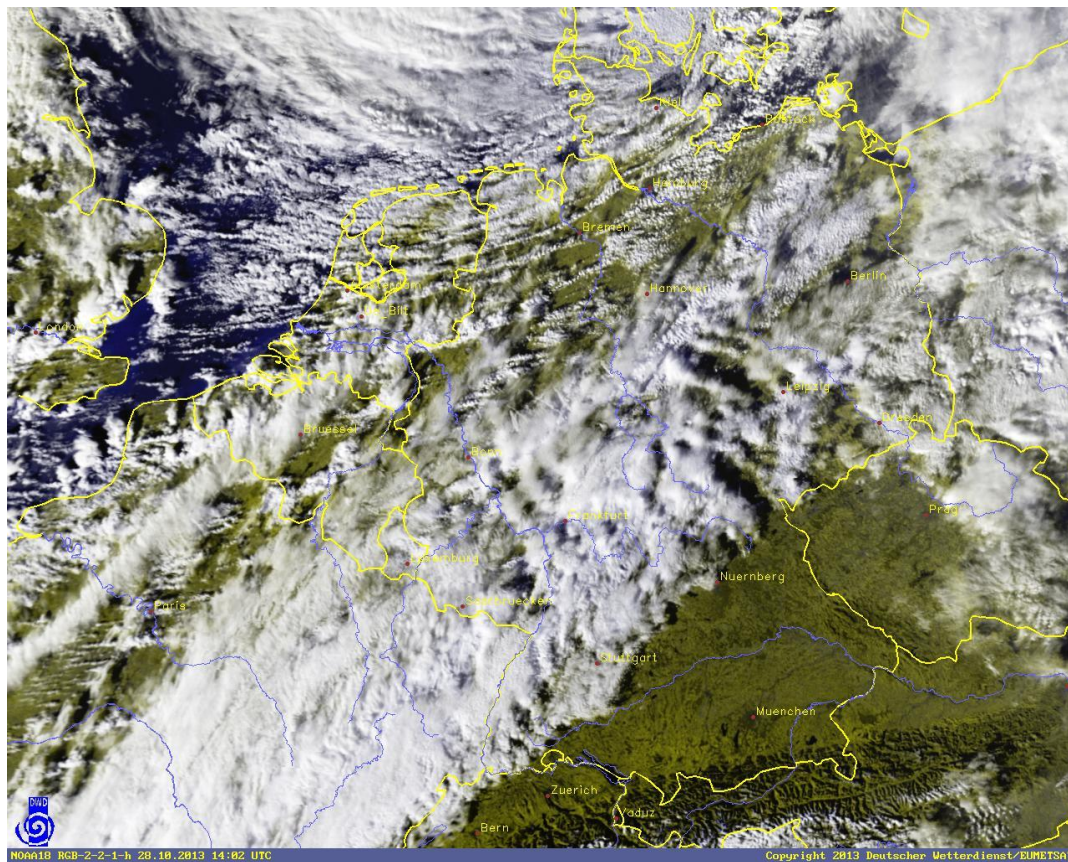


**Fig. 2a:** Surface analysis North Atlantic/Europe on 28 October 2013, 00 UTC.  
[Source: DWD]

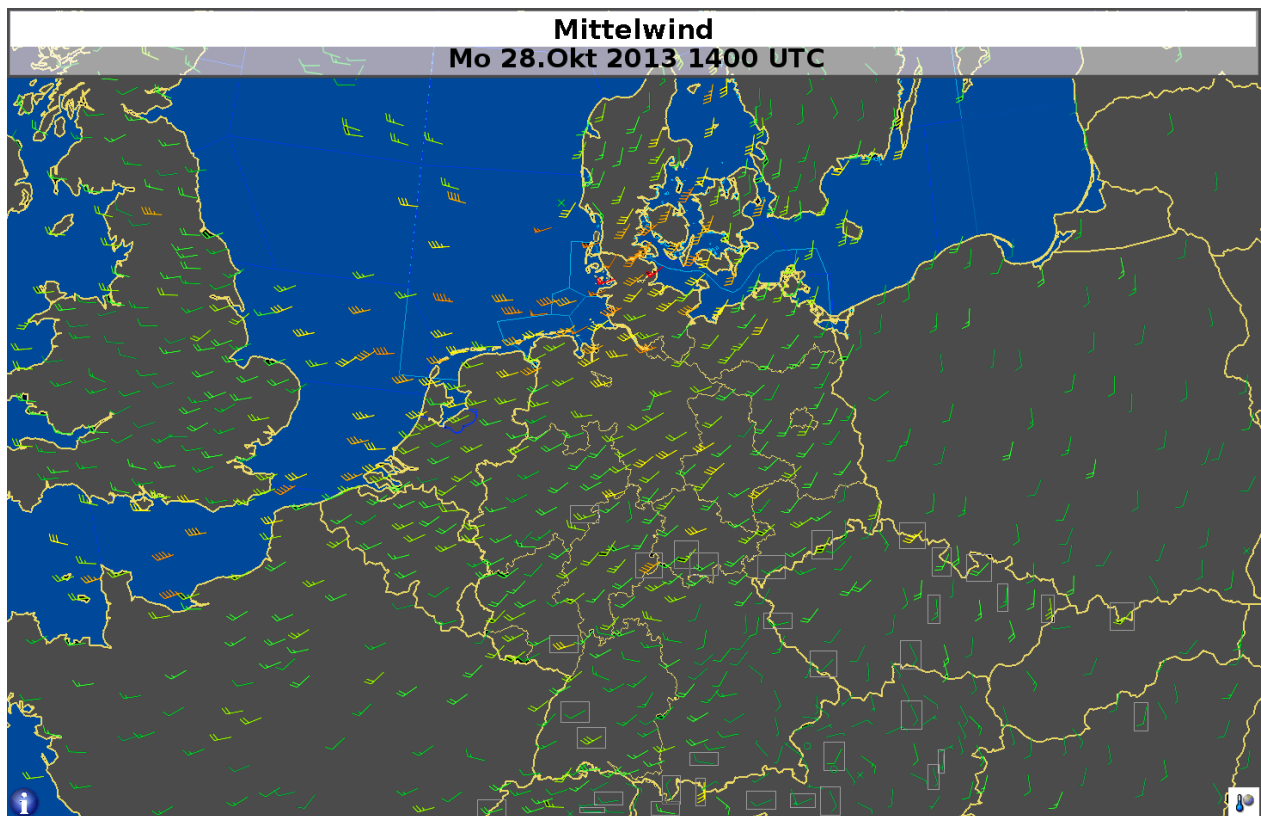




**Fig. 2b:** Surface analysis North Atlantic/Europe on 28 October 2013, 12 UTC. [Source: DWD]



**Fig. 3:** Satellite image acquired on 28 October 2013, 14:02 UTC. [Source: DWD]

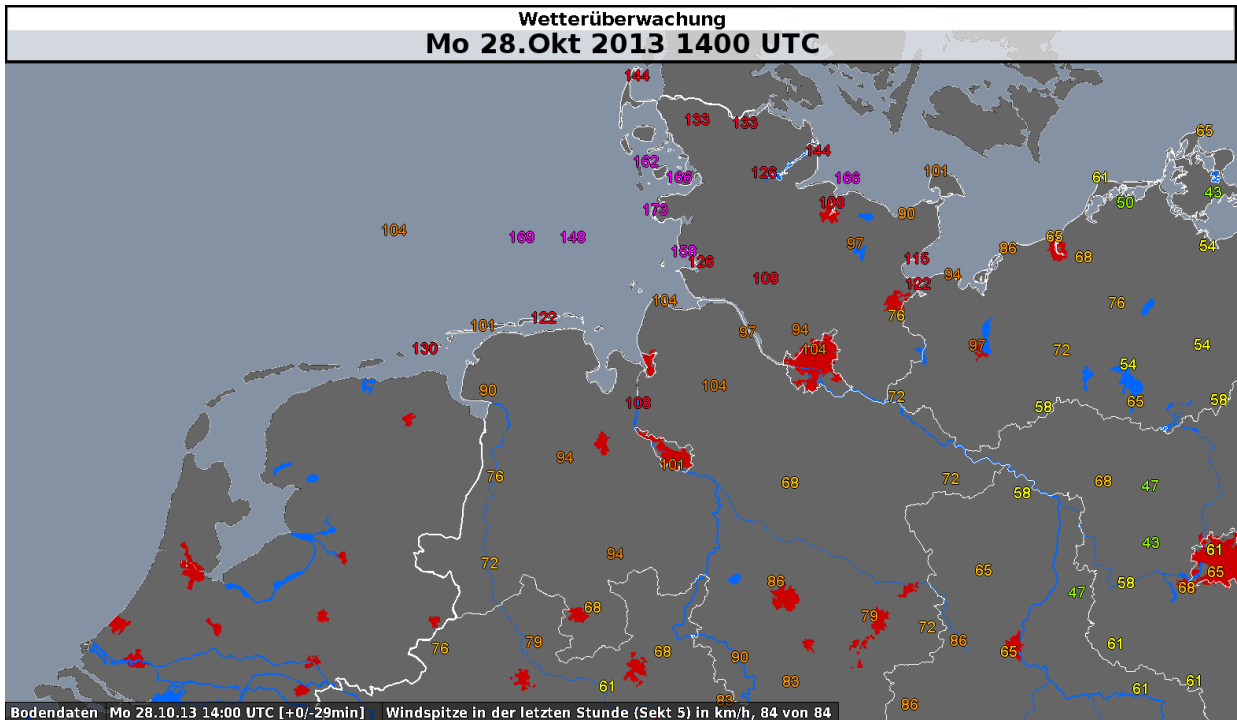


**Fig. 4:** Sustained (10-minute) wind across north-western Europe on 28 October 2013, 14 UTC. [Source: DWD]

In Germany, heavy storm CHRISTIAN caused the highest wind speeds between 13 and 14 UTC (14 and 15 MEZ) over the German Bight and on the west coast of Schleswig-Holstein (Fig. 5). At that time, the centre of the storm was located off the northwest coast of Denmark. As there is no measurement at exactly this site, the actual central pressure can differ from the measurement of 968 hPa on the coast by a few hPa. At the same time, the weather station of **Sankt Peter Ording** recorded with a gust of **172 km/h** the maximum value in the meteorological network of Deutscher Wetterdienst (German Weather Service). During the storm's further shift towards southern Scandinavia, the Danish weather station of **Kegnaes Fyr**, a lighthouse on the Baltic Sea coast near the border of Schleswig-Holstein/Germany, recorded a gust of **193 km/h**.

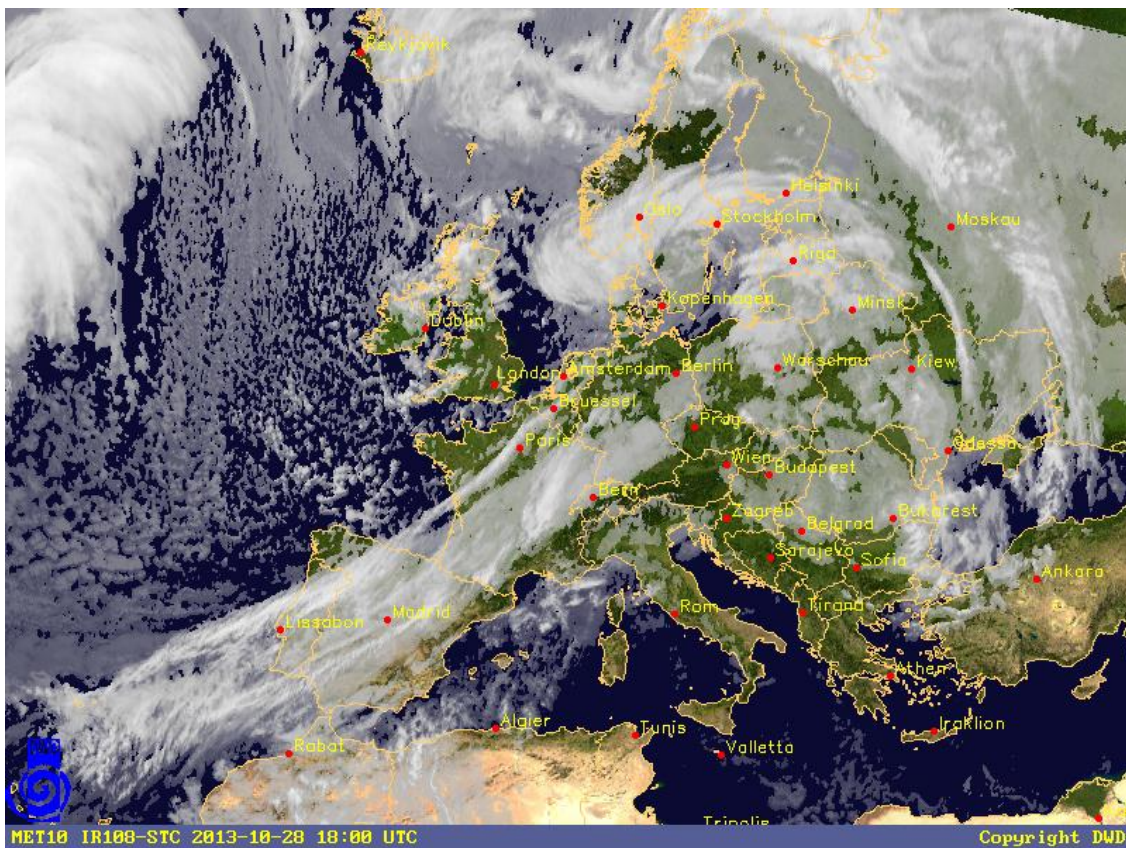
Northern Schleswig-Holstein was particularly hit by CHRISTIAN, because the highest gusts mostly reached hurricane force (at least 118 km/h). In southern Schleswig-Holstein and in Niedersachsen as well as in Mecklenburg-Vorpommern, gusts reached up to hurricane force in island and coastal areas. Hurricane-force gusts were also recorded at Hamburg, where the wind was strongest between 13 and 15 UTC (14 and 16 MEZ). In Mecklenburg-Vorpommern the wind speed was highest in the late afternoon. Storm gusts and accompanied damage occurred not only in northern Germany but also in the central parts. Peak wind speeds of more than 80 km/h were widespread registered in lowlands north a line Straßburg-Heilbronn-Hof-Dresden.



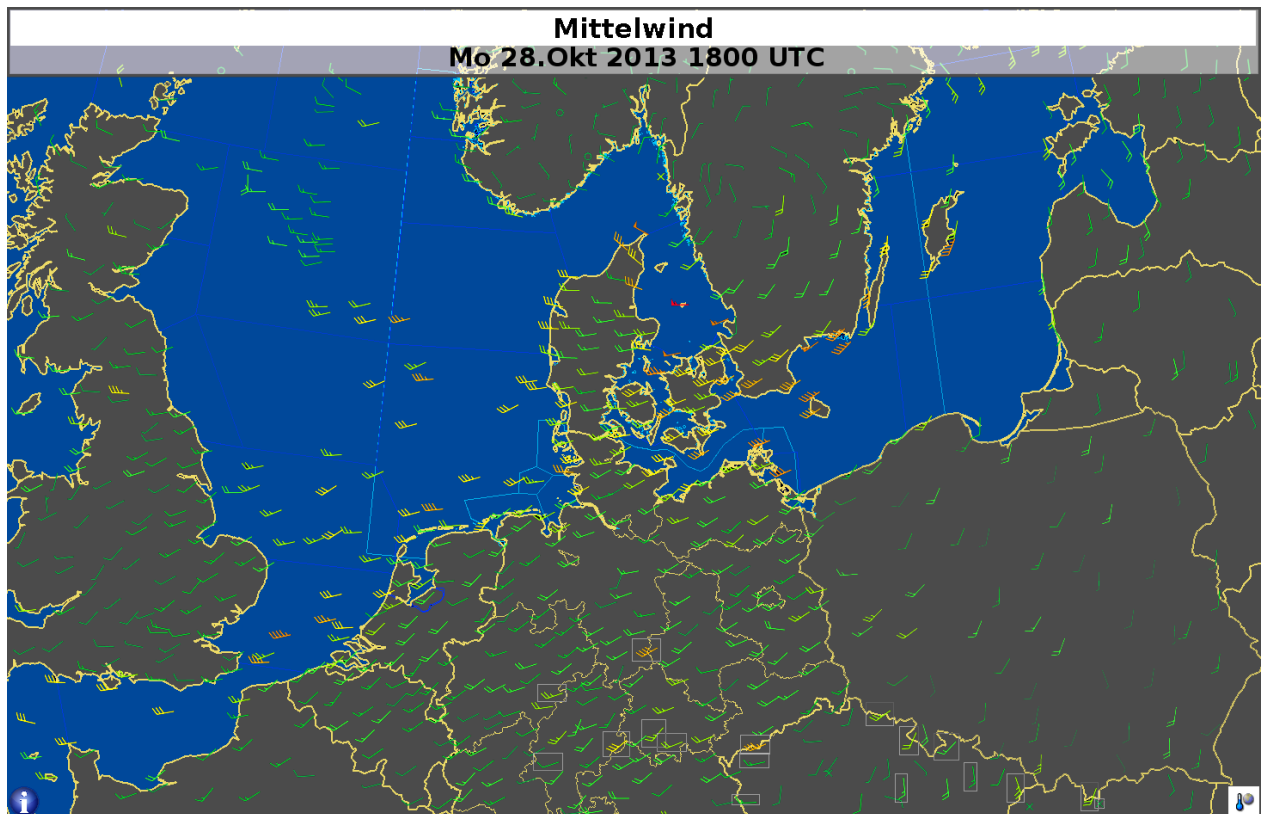


**Fig. 5:** Peak wind gusts between 13 and 14 UTC (14 and 15 MEZ) in northern Germany. [Source: DWD]

The satellite image at 18 UTC shows the cloud swirl of CHRISTIAN across southern Scandinavia (Fig. 6), where the centre was located at that time, and Figure 7 shows the wind rotating anticlockwise around the centre of the storm.



**Fig. 6:** Satellite image acquired on 28 October 2013, 18 UTC. [Source: DWD]

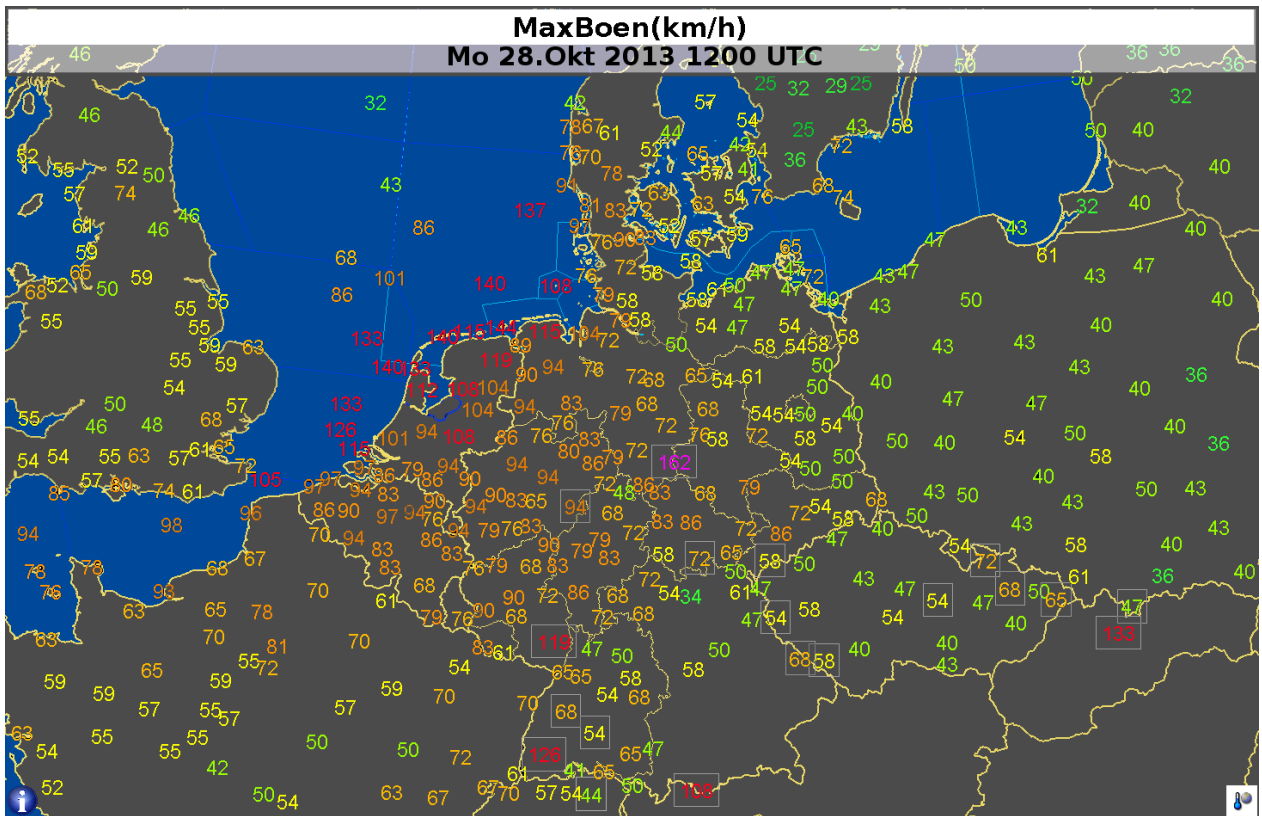


**Fig. 7:** Sustained (10-minute) wind across north-western Europe on 28 October 2013, 18 UTC. [Source: DWD]

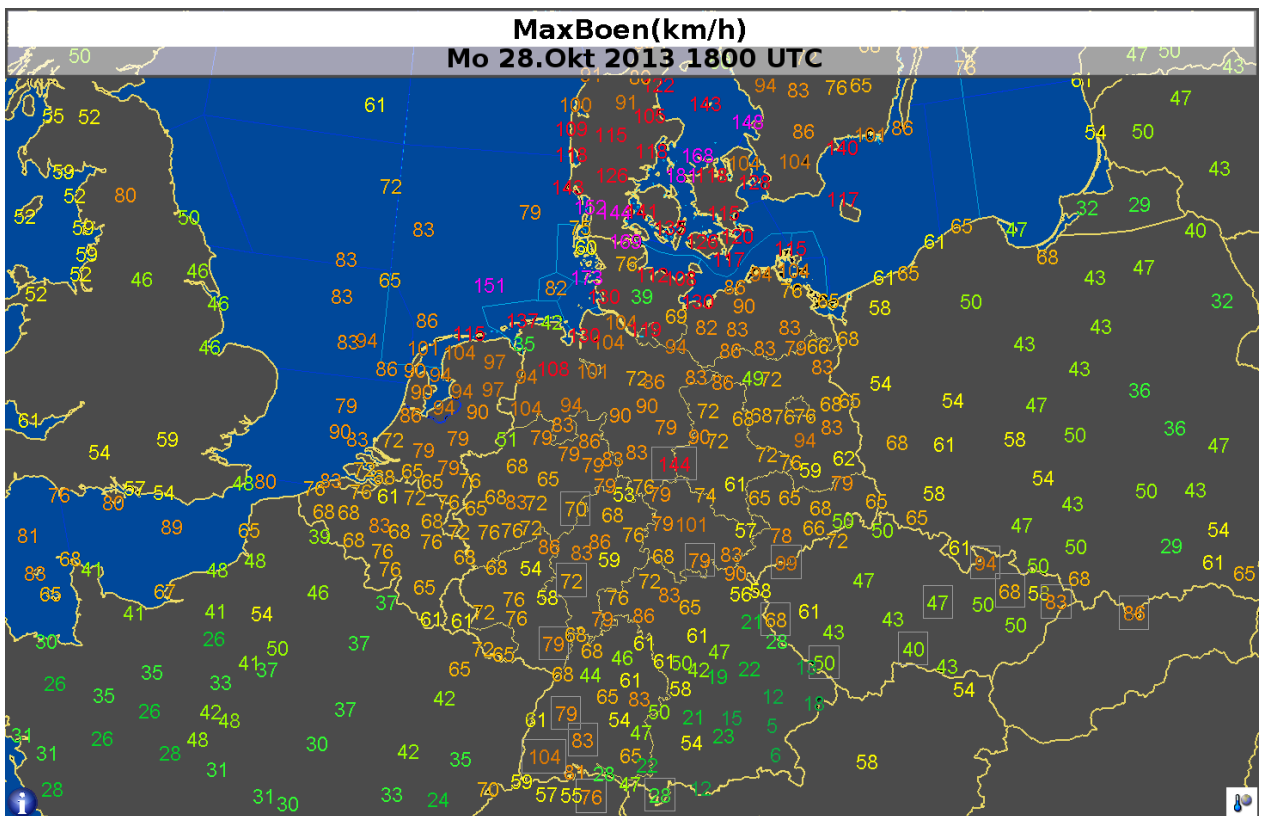
As would be expected in rapid moving lows like CHRISTIAN, the highest wind speeds were measured right (here south) of the centre, where displacement velocity and gradient wind (wind blowing around the centre of the low) add.

On its track in north-eastward direction the cyclone weakened in the evening hours and the strong wind field did so as well. However, some central and northern European countries in the range of CHRISTIAN experienced a stormy night.

Figures 8a-c show the fast relocation of the strong wind field of CHRISTIAN in north-eastern direction.

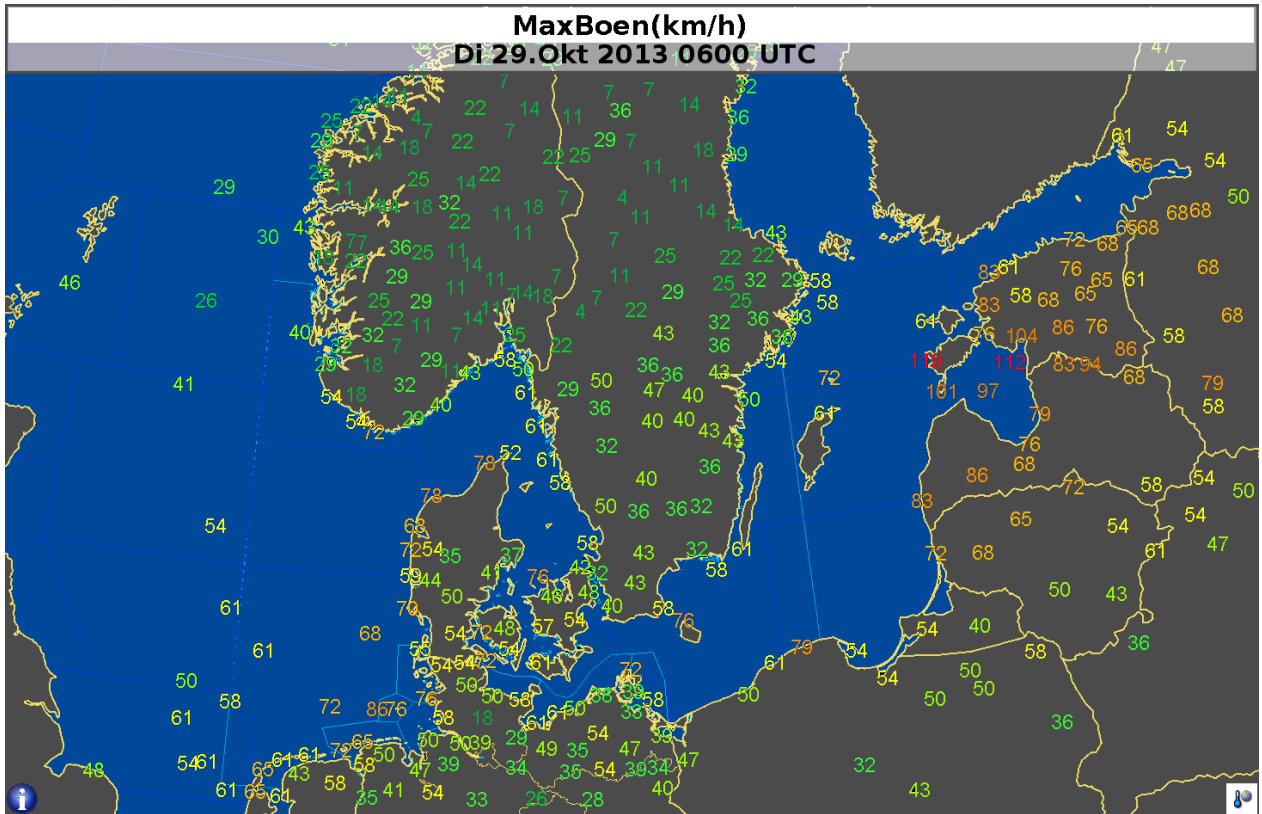


**Fig. 8a:** Maximum wind gusts (in km/h) on 28 October 2013, 12 UTC. [Source: DWD]



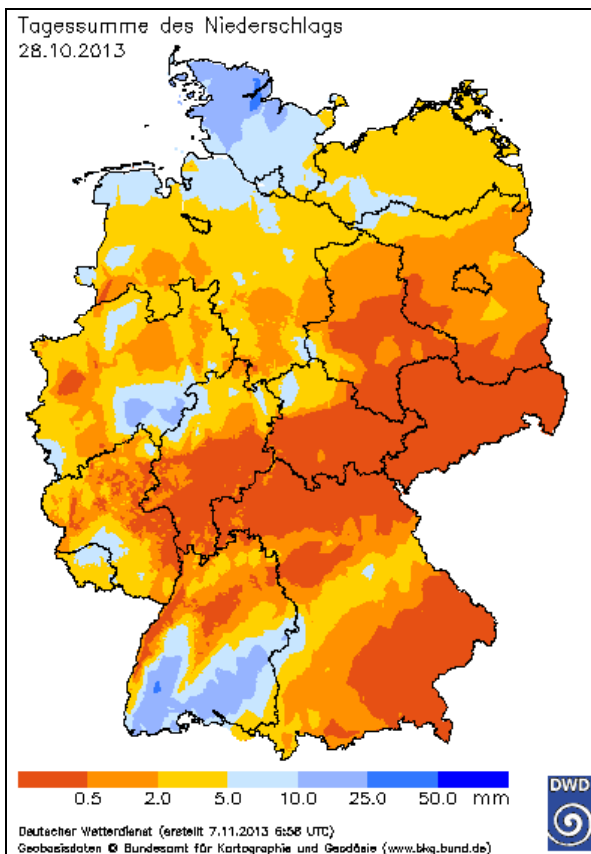
**Fig. 8b:** Maximum wind gusts (in km/h) on 28 October 2013, 18 UTC. [Source: DWD]





**Fig. 8c:** Maximum wind gusts (in km/h) on 29 October 2013, 06 UTC. [Source: DWD]

CHRISTIAN caused considerable rainfall amounts mainly in Schleswig-Holstein with regionally more than 10 mm on the 28th (Fig. 9). Groß Wittensee, located southeast of Schleswig, even reported nearly 32 mm.

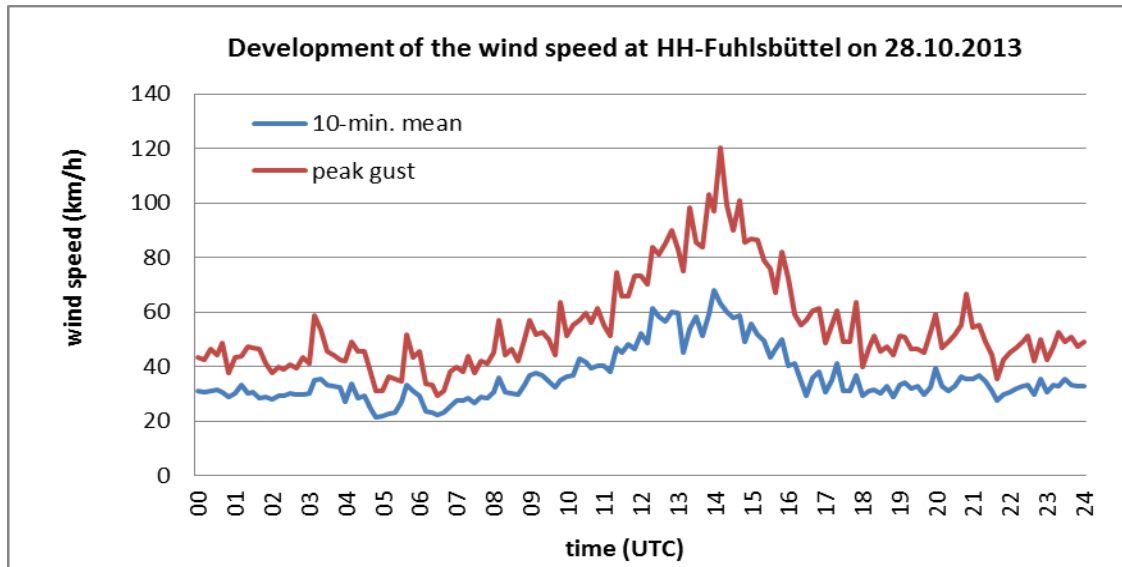


**Fig. 9:** Precipitation total for Germany on 28 October 2013. [Source: DWD]

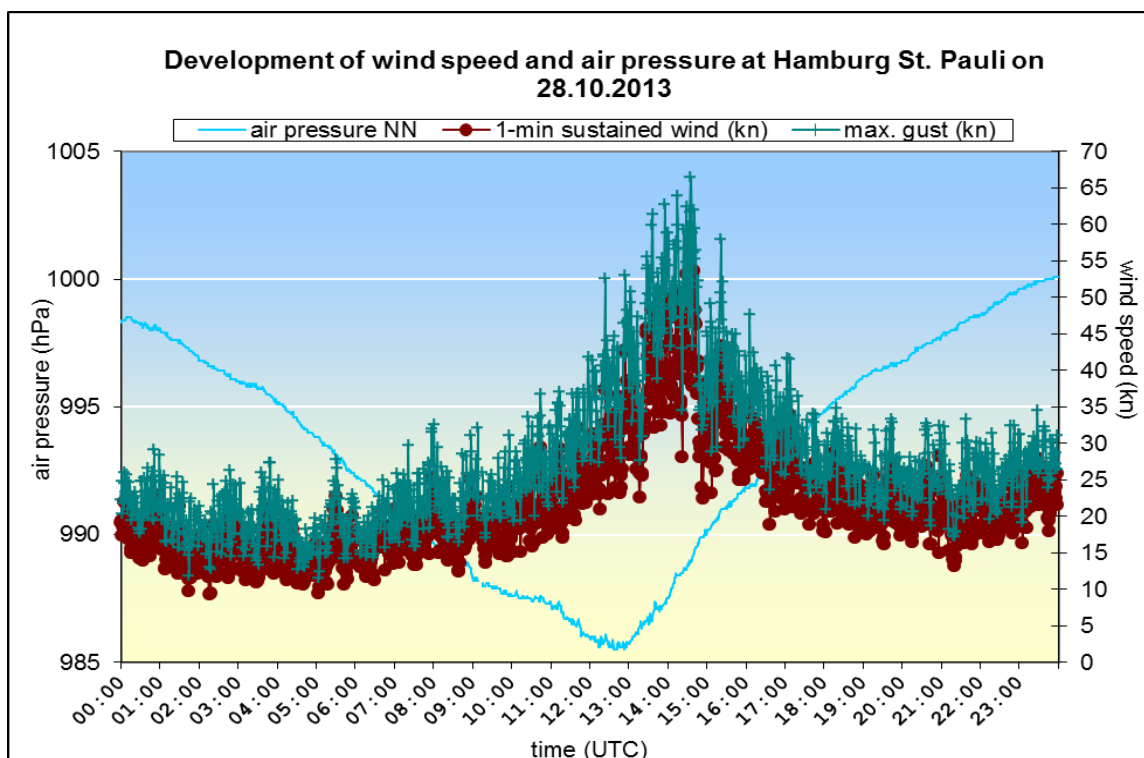


## Wind speeds at Hamburg on 28 October

Figure 10 shows the development of the wind speed (10-minute mean and peak gusts) at the airport Hamburg-Fuhlsbüttel. The highest recorded gust of the day was 120.2 km/h occurring between 14:00 and 14:10 UTC (15:00 and 15:10 MEZ). Figure 11 depicts the development of the wind speed (1-minute mean and maximum gust) and the air pressure reduced to NN at the Seewetteramt (Maritime Weather Office) in Hamburg-St. Pauli. It shows impressively the strong increase in wind speed after the passing of the cold front at about 13 UTC (14 MEZ). The highest gust of 66.4 kn (122 km/h) was recorded at 14:35 UTC (15:35 MEZ).



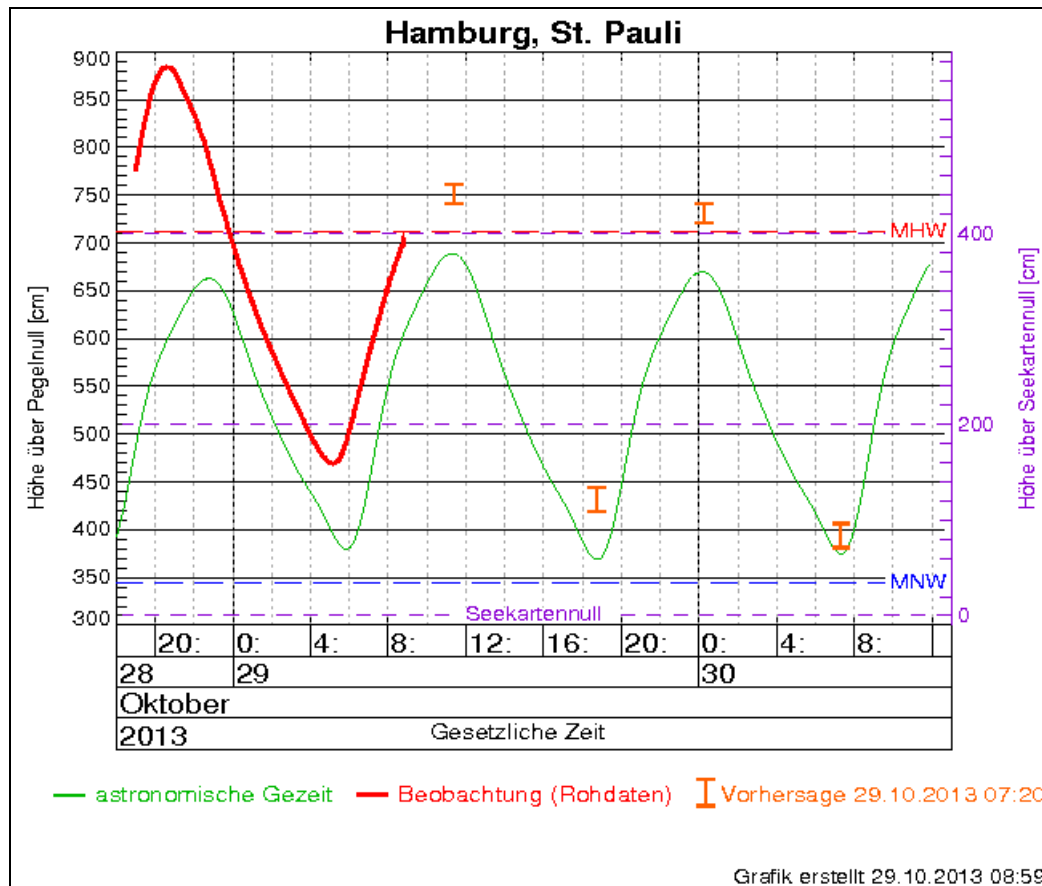
**Fig. 10:** Development of the wind speed (in km/h) at Hamburg-Fuhlsbüttel on 28 October 2013. The sustained (10-minute) wind is coloured blue and highest gusts red. [Source: DWD]



**Fig. 11:** Development of wind speed (in knots) and air pressure at Hamburg-St. Pauli on 28 October 2013. The sustained (1-minute) wind is coloured red brown, the highest gusts green and the air pressure light blue. [Source: DWD]

## Storm surge in Schleswig-Holstein and Hamburg

A storm surge alert was issued on account of CHRISTIAN. The water level at Hamburg-St. Pauli rose 1.74 m above the mean high water (Fig. 12) being not as high as suspected.



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**Fig. 12:** Current water level and forecast from 28 to 30 October 2013. [Source: [BSH](#)]

There was also no severe storm surge in Schleswig-Holstein, and the damage to dykes was small. In a [report](#) of the Ministerium für Energiewende, Landwirtschaft, Umwelt und ländliche Räume Schleswig-Holstein it says [text translated]: “In the evening hours of 28 October 2013, a storm surge occurred on the west coast and the Elbe. At the levels of Husum and Eiderstedt, the maximum water level exceeded the mean high tide by more than two metres. At other discharge sites in the Elbe, the maximum water levels were about 1.7 metres above the mean high tide. On the islands and Halligen in the North Friesian Wadden Sea as well as in the region of Dithmarschen, the maximum water levels were just below 1.5 metres above the mean high tide. ... On the west coast of Sylt losses of the foredunes occurred and in some areas on Amrum low sand losses.”

## Peak gusts and 10-minute sustained winds in Germany on 28 October 2013

Table 1 specifies peak gusts of Bft 11 (103 to 117 km/h) and Bft 12 (118 km/h or higher) recorded at German weather stations on 28 October, ordered by size, as well as the maximum sustained (10-minute) winds at these stations.

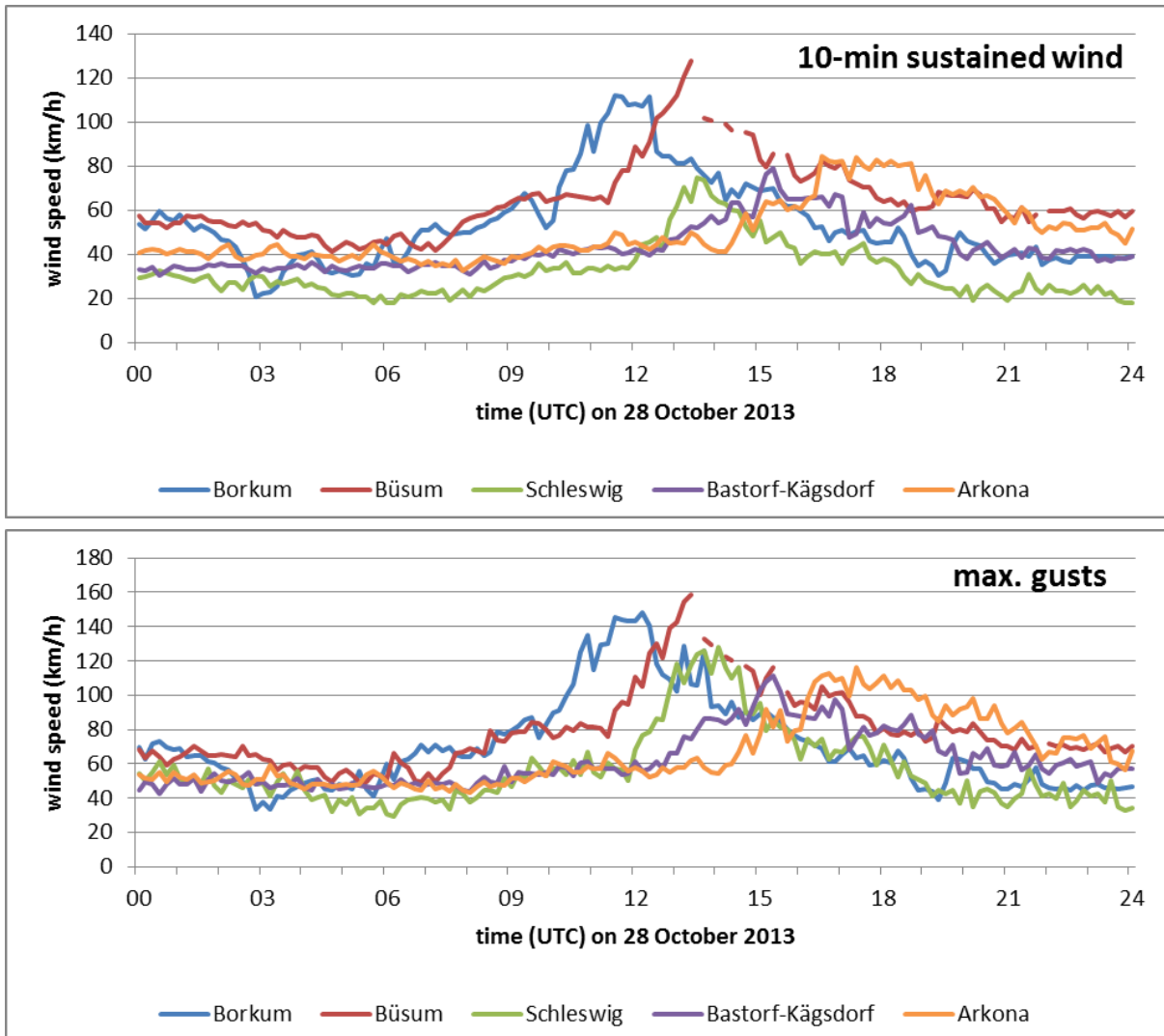
station	station height (m)	peak gust (km/h)	max. sustained (10-min.) wind (km/h)
Sankt Peter-Ording	5	171.72	<b>118.1</b>
UFS Deutsche Bucht	0	168.48	—
Strucklahnungshörn	7	165.96	<b>136.8</b>
Brocken	1142	162.36	<b>121.0</b>
Hallig Hooge	4	162	<b>132.8</b>
Büsum	7	158.76	<b>127.4</b>
List auf Sylt	26	157.32	<b>110.5</b>
Spiekeroog (SWN)	14	157.32	<b>110.9</b>
Borkum-Süderstraße	11.6	148.32	<b>112.0</b>
Helgoland	4	147.24	<b>103.3</b>
Schönhagen (Ostseebad)	2	143.64	97.9
Norderney	11	136.44	84.6
Flensburg (Schäferhaus)	41	131.76	84.2
Boltenhagen	15	129.24	73.4
Bremerhaven	7	129.24	88.9
Elpersbüttel	3	128.88	102.2
Schleswig	43	128.16	74.9
Weinbiet	553	127.08	86.0
Feldberg/Schwarzwald	1489.6	126.72	83.2
Travemünde	2.3	120.96	50.0
Darßer Ort (SWN)	4	120.6	92.9
Hamburg-Fuhlsbüttel	11	120.24	68.0
Wasserkuppe	921	118.8	85.3
Cuxhaven	5	117.36	68.8
Arkona	42	116.28	84.2
Pelzerhaken	1	115.92	70.2
Greifswalder Oie	12	114.48	76.7
Kiel-Holtenau	27	111.6	59.4
Bastorf-Kägsdorf (SWN)	51	111.24	79.2
Zugspitze	2964	109.08	84.6
Brake	1	108.72	65.9
Itzehoe	21	108.72	59.8
Putlos	5	108.72	75.2
Groß Lüsewitz	34	106.92	70.2
Schwerin	59	106.92	59.8
Fichtelberg	1213	106.56	82.4
Friesoythe-Altenoythe	5.7	106.56	69.1
Dörnick	26.3	106.2	65.9
Bremervörde	10	105.12	70.6
Emden	0	104.76	67.0
Putbus	39.5	104.04	59.4

**Tab. 1:** Peak gusts and maximum sustained (10-minute) wind speeds at German weather stations on 28 October 2013. Violent storm (Bft 11) is marked in orange and winds of hurricane force (Bft 12) in red. [Source: DWD]



The peak gusts as well as the maximum sustained winds were mainly recorded at the German North Sea coast. 10-minute sustained winds of Bft 11 or 12 (coloured in Tab. 1) are a rare event in Germany, except in exposed upper sites (e.g. the Brocken).

The development of wind speed at weather stations in the area of North Sea and Baltic Sea on 28 October 2013 (Fig. 13) shows how the main wind field relocated to eastern directions. Accordingly, the maximum winds are chronologically shifted. At the North Sea, the wind was much stronger than at the Baltic Sea, resulting in some measurement failures at Büsum.



**Fig. 13:** Development of wind speeds (in km/h) at weather stations in the area of the North Sea and the Baltic Sea on 28 October 2013. Top: 10-minute sustained wind. Bottom: gusts. [Source: DWD]

### Ranking of the storm in Germany

For a classification of the heavy storm CHRISTIAN in the list of further notable storms, a short overview of the top 5 of the strongest gusts since 1990 is given at first. Here, only values of weather stations below a height of 600 m are considered to get a better comparison with the station of Sankt Peter Ording (5 m above NN). The data from 1992 was measured in summer and therefore could not be directly associated with a storm in autumn or winter.

1999 List/Sylt 183,6 km/h  
 1992 Saarbrücken 166,7 km/h (summer)  
 1993 Kap Arkona 164,9 km/h  
 1990 Cuxhaven 160,9 km/h  
 1995 Kap Arkona 159,1 km/h

This compilation shows that the peak gust of 172 km/h at Sankt Peter Ording caused by CHRISTIAN ranks among the top 5 of peak gust of the previous 30 years at German weather stations below 600 m.

Tables 2a-f, listing the peak gusts of the previous decades at several weather stations in northern Germany, show that the peak gusts of 28 October 2013 at Hamburg-Fuhlsbüttel and partly on the North Sea Islands and onshore rank in the top 11. In contrast, the peak gusts at Cuxhaven, Bremen, and Kap Arkona do not rank within the top 50.

**Tab. 2a: Helgoland (since 01.01.1959) [Source: DWD]**

date	peak gust (km/h)	name of the storm event
23.02.1967	149.4	ADOLPH-BERMPOHL
01.02.1983	148.3	
17.10.1967	148.0	SKANE
24.11.1981	147.6	Nordfrieslandflut
<b>28.10.2013</b>	147.2	CHRISTIAN SIMONE (Sweden) St Jude's Day Storm (United Kingdom)

**Tab 2b: Norderney (since 01.01.1969) [Source: DWD]**

date	peak gust (km/h)	name of the storm event
03.01.1976	163.1	CAPELLA
25./26.01.1990	149.8	DARIA
13.11.1972	148.3	QUIMBURGA, Niedersachsen-Orkan
26.02.1990	148.3	VIVIAN
26.03.1978	144.7	
13./14.01.1984	142.9	
28.01.1994	140.0	LORE
31.12.1980	139.0	
02.04.1973	138.6	
<b>28.10.2013</b>	136.4	CHRISTIAN SIMONE (Sweden) St Jude's Day Storm (United Kingdom)

**Tab. 2c: List / Sylt (since 01.01.1950) [Source: DWD]**

date	peak gust (km/h)	name of the storm event
03.12.1999	183.6	ANATOL
03.01.1976	163.1	CAPELLA
17.10.1967	159.5	SKANE
16.02.1962	158.4	VINCINETTE, Hamburger Sturmflut
07.10.1981	158.0	
<b>28.10.2013</b>	157.3	CHRISTIAN SIMONE (Sweden) St Jude's Day Storm (United Kingdom)

**Tab. 2d: Sankt Peter Ording (since 01.01.1969) [Source: DWD]**

date	peak gust (km/h)	name of the storm event
<b>28.10.2013</b>	171.7	CHRISTIAN SIMONE (Sweden) St Jude's Day Storm (United Kingdom)
25./26.01.1990	149.4	DARIA
26.02.1990	147.6	VIVIAN
13.01.1993	147.2	VERENA
26.02.2002	140.8	ANNA

**Tab. 2e: Schleswig (since 01.02.1958) [Source: DWD]**

date	peak gust (km/h)	name of the storm event
26.01.1990	144.4	DARIA
23.02.1967	142.2	ADOLPH-BERMPOHL
26.02.1990	140.8	VIVIAN
06.12.1985	135.4	
17.10.1967	133.6	SKANE
03.01.1976	133.6	CAPELLA
13.01.1993	133.2	VERENA
06.12.1961	131.8	
15.01.1968	129.6	HURRICANE LOW Q Great Glasgow Storm (United Kingdom)
24.11.1981	129.6	Nordfrieslandflut
<b>28.10.2013</b>	128.2	CHRISTIAN SIMONE (Sweden) St Jude's Day Storm (United Kingdom)



**Tab. 2f: Hamburg (since 01.01.1951) [Source: DWD]**

date	peak gust (km/h)	name of the storm event
25./26.01.1990	140.8	DARIA
30.03.1953	129.6	
23.12.1954	128.9	
17.10.1967	127.8	SKANE
26.05.1953	122.4	
26.02.1990	122.4	VIVIAN
13./14.01.1993	122.4	VERENA
<b>28.10.2013</b>	120.2	CHRISTIAN SIMONE (Sweden) St Jude's Day Storm (United Kingdom)

### Concluding evaluation for Germany

Storm CHRISTIAN definitely caused wind speeds in the range of heavy storms. Though the area of strong winds around its centre was not very large, and the duration of stormy winds of this rapid moving low was relatively short.

### Analyses of other European weather services

Due to the damage caused by the storm in several European countries, the following provides an abstract of the analyses published by the Meteorological Services of these countries. The data in km/h are approximated values.

#### United Kingdom (UK)

In the United Kingdom storm CHRISTIAN is called ST JUDE'S DAY STORM. Among its highest measured wind gust are: **159 km/h** at the **Needles** off the Isle of Wight (island off the south coast of England), 132 km/h at Langdon Bay in Kent (bay east of Dover) and 130 km/h on the Isle of Portland in Dorset (limestone tied island off the south coast of England). At Heathrow, i.e. in Greater London, a peak gust of 111 km/h was recorded.

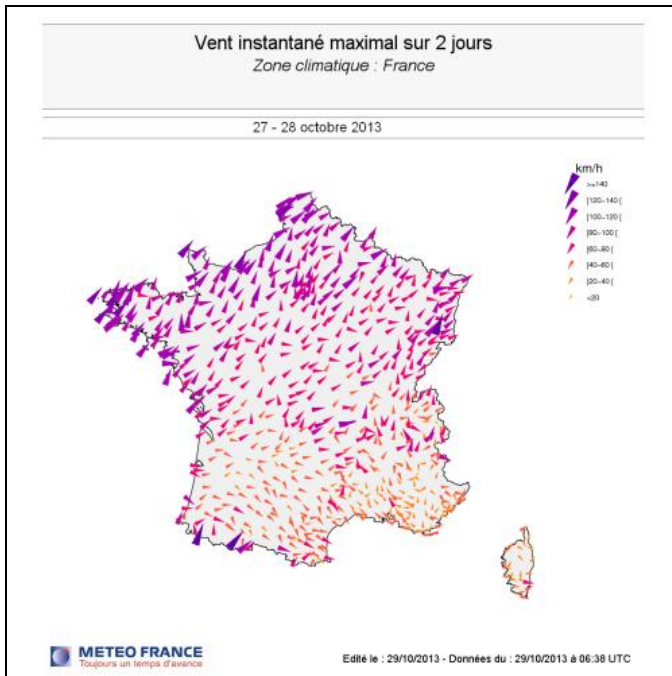
There were regionally heavy rains associated with the storm. For example, the weather station of Otterbourne W WKS in Hampshire reported 50 mm within 14 hours (from 6 pm on 27 October to 8 am on 28 October).

Regarding the wind speeds, the UK experienced several more powerful storms in history, e.g. one in January 2012 causing a peak gust of 165 km/h at Edinburgh. A significant characteristic of cyclone CHRISTIAN was its track, because powerful Atlantic storms are seen rarely across southern parts of England and Wales. In comparison with other autumn storms in southern England over the past 40 years, analysing the number of weather stations which recorded a gust of 60 kn (111 km/h) or more for each storm, CHRISTIAN ranks seventh, while the storm of 27 October 2002 ranks first.

Besides the southerly track, the timing was mentioned as another significant characteristic of this storm: October, when trees are in full leaf and therefore much more vulnerable to strong winds.

## France

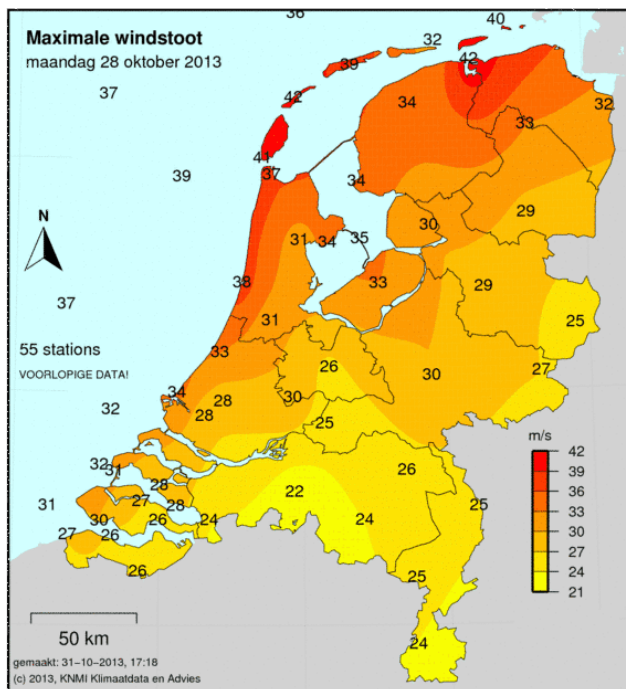
In the north-western and northern parts of France, wind speeds of more than 100 km/h in-bound and 130 km/h on the coasts were measured during the passage of storm CHRISTIAN on 27th/28th October (Fig. 14). Among the peak gusts were **147 km/h** at **Cap Gris-Nez** (Pas-de-Calais), 133 km/h at Ouessant (Finistère) and 130 km/h at Port-en-Bessin (Calvados).



**Fig. 14:** Wind analysis for France on 27th/28th October 2013. [Source: [Meteo France](#)]

## Netherlands

In the Netherlands, the storm reached its peak on the 28th about noon.



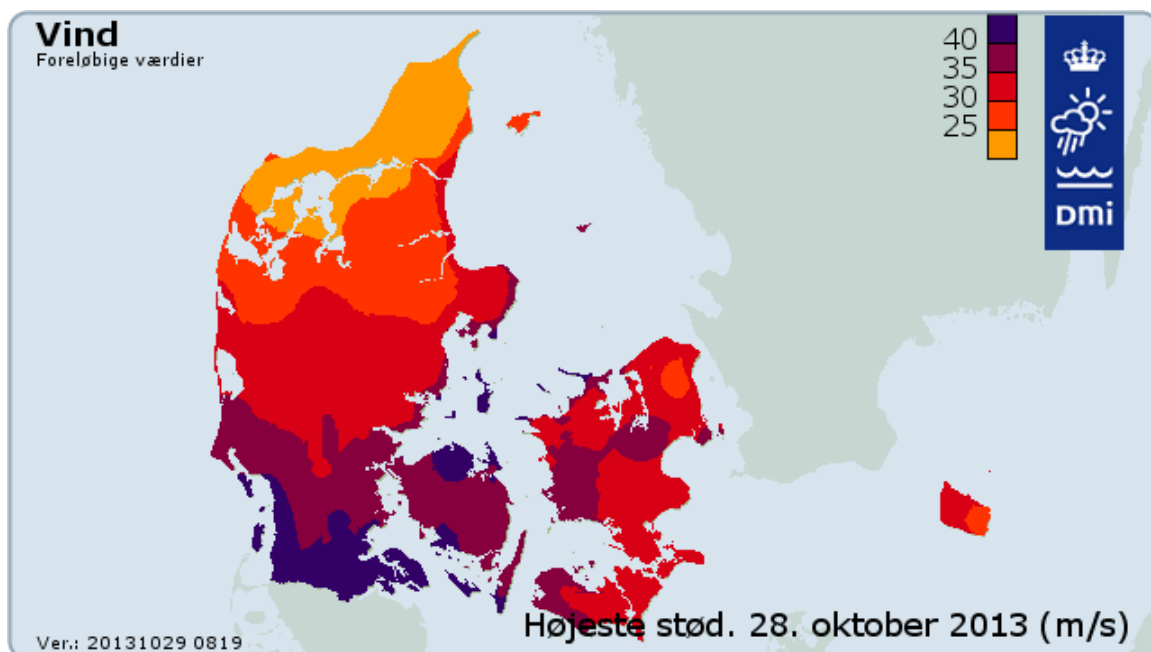
**Fig. 15:** Wind analysis for the Netherlands on 28 October 2013. [Source: [KNMI](#)]

The winds were strongest across the Wadden Sea, where the hurricane gusts reached more than 140 km/h. The peak gust of **151 km/h** was measured on the island of **Vlieland** (Fig. 15).

Furthermore, several stations in the Wadden Sea recorded a 1-hour sustained wind speed of 104 km/h. Such a high mean wind was not recorded since the storm of 25 January 1990 (DARIA).

## Denmark

On 28 October 2013, hurricane gusts occurred widespread in the south of Denmark (Fig. 16). According to the Danish Meteorological Institute (DMI), the peak gust was recorded on the island of Als at **Kegnæs Fyr** with 53.5 m/s (**193 km/h**) in the afternoon. It was the so far highest gust recorded in Denmark. The previous record was 51.4 m/s (185 km/h), measured during winter storm ANATOL on 3rd/4th December 1999. Other peak gusts, measured during storm CHRISTIAN, were 181 km/h at Røsnæs Fyr and 168 km/h at Griben.



**Fig. 16:** Wind analysis for Denmark on 28 October 2013. [Source: [DMI](#)]

The three maximum sustained (10-minute) wind speeds on 28 October 2013 were also recorded at the above mentioned stations: 39.5 m/s (142 km/h) at Røsnæs Fyr, 38.7 m/s (139 km/h) at Kegnæs Fyr and 34.8 m/s (125 km/h) at Griben. By the value of 39.5 m/s, a new Danish record for the 10-minute mean was set.

Severe October storms are a rare event in Denmark. Since 1950 there were only three: small ones in 2002 and 2006 and a powerful one on 18 October 1967.

## Sweden

Storm CHRISTIAN, referred to as SIMONE in Sweden, caused strong winds in the south of the country with partly violent storm gusts (28.5 to 32.6 m/s), while gusts of hurricane force (more than 32.7 m/s) rarely occurred. The peak gusts, recorded on 28th/29th October 2013, were 42 m/s (**151 km/h**) at the weather station of **Halland Väderö** and 41 m/s (148 km/h) at the station of Hano. The wind speed of 42 m/s also set a new record for October.



The storm triggered high water levels for a short time. E.g. the water level at Halmstad, on the southwest coast of Sweden, rose 169 cm above the mean water level in the evening of 28 October. That was the second highest level on record, i.e. since 2004, for that site. The highest level there was recorded on 8 October 2006 (178 cm above the mean water level).

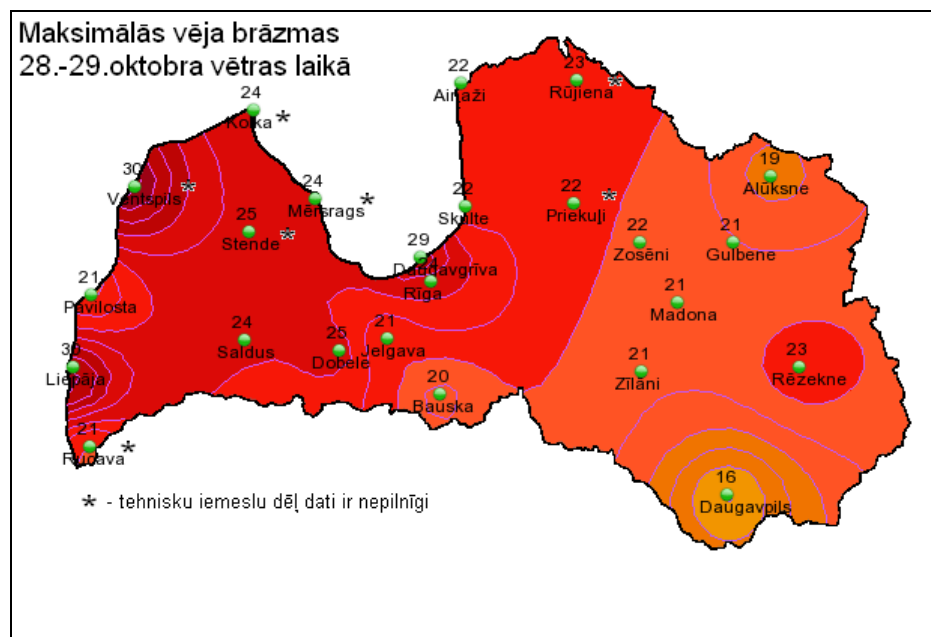
## Estonia

In Estonia, highest gusts were recorded on the night of 28th to 29th October 2013. The automatic coastal weather station of Roomassaare recorded violent storm gusts of more than 30 m/s (108 km/h). The peak gust was 32.6 m/s (117 km/h). On the morning of the 29th, even a hurricane gust of 33.2 m/s (**119 km/h**) was measured at the station of **Vilsandi**, which is also a coastal station.

## Latvia

At the weather station of Daugavgrīva, near Rīgā, a wind gust of 29 m/s (104 km/h) was recorded. But there were somewhat higher wind speeds further in the west of the country (Fig. 17). The highest gust on the Baltic Sea coast was 30 m/s (**108 km/h**), measured in the harbour of **Liepājas**.

Warm air masses, carried by the storm to Latvia, resulted here in new temperature records.



**Fig. 17:** Wind analysis for Latvia on 28th/29th October 2013.  
[Source: [Latvijas Vides, ģeoloģijas un meteoroloģijas centrs](#)]

## Lithuania

In Lithuania, the weather station of **Klaipėdos** (Klaipeda) on the Baltic Sea coast measured a wind speed of 23.8 m/s (**86 km/h**) during the storm. Mažeikiuose, a station further inland, reported 23.4 m/s (84 km/h).

## Sources

- Bundesamt für Seeschifffahrt und Hydrographie (BSH), Sturmflutwarndienst. <http://www.sturmflutwarnungen.de/>
- Bundesamt für Seeschifffahrt und Hydrographie (BSH), Sturmflutwarndienst: Die Nord-seesturmflut vom 28.10.2013. Erste Nordseesturmflut des Herbstes 2013. [http://www.bsh.de/de/Meeresdaten/Vorhersagen/Sturmfluten/Berichte/Sturmflut\\_28\\_10\\_13.pdf](http://www.bsh.de/de/Meeresdaten/Vorhersagen/Sturmfluten/Berichte/Sturmflut_28_10_13.pdf)
- Danmark Meteorologiske Institut (DMI). <http://www.dmi.dk/vejr/>
- Danmark Meteorologiske Institut (DMI): Arkiv Nyheder 2013. <http://www.dmi.dk/nyheder/arkiv/nyheder-2013/>
- Danmark Meteorologiske Institut (DMI): 1967. Da oktoberorkanen slog til mod Danmark. <http://www.dmi.dk/nyheder/arkiv/nyheder-2013/10/1967-da-oktoberorkanen-slog-til-mod-danmark/>
- Danmark Meteorologiske Institut (DMI): Orkan satte Danmarksrekord i vind – se kortene. <http://www.dmi.dk/nyheder/arkiv/nyheder-2013/10/her-slog-stormen-til-se-kortene/http://www.dmi.dk/nyheder/arkiv/nyheder-2013/10/se-stormen-passere-i-dmis-produkter/>
- Deutscher Wetterdienst (DWD): Data archive.
- Deutscher Wetterdienst (DWD): Thema des Tages vom 26.10.2013, 27.10.2013, 28.10.2013 und 29.10.2013 <http://www.dwd.de/>
- Estonian Environment Agency. <http://www.emhi.ee/>
- Estonian Environment Agency: Uudised 28.-29. oktoobri tormi järelkaja. <http://www.emhi.ee/index.php?id=2&shownews=403>
- Koninklijk Nederlands Meteorologisch Instituut (KNMI): Weeralarm voor zware herfststorm. [http://www.knmi.nl/cms/content/116311/weeralarm\\_voor\\_zware\\_herfststorm](http://www.knmi.nl/cms/content/116311/weeralarm_voor_zware_herfststorm)
- Koninklijk Nederlands Meteorologisch Instituut (KNMI): Zeer zware storm op 28 oktober. [http://www.knmi.nl/klimatologie/storm\\_okt13.html](http://www.knmi.nl/klimatologie/storm_okt13.html)
- Latvijas Vides, ģeoloģijas un meteoroloģijas centrs: 2013. gada 28.-29. oktobra vētra Latvijā ir bijusi stiprākā kopš 2008. gada 23. februāra. <http://www.meteo.lv/jaunumi/laika-apstakli/2013-gada-28-29-oktobra-vetra-latvija-ir-bijusi-stipraka-kops-2008-gad?id=540&cid=100>
- Latvijas Vides, ģeoloģijas un meteoroloģijas centrs: 2013. gada 27., 28. un 29. oktobris - vissiltākie atbilstošie datumi Latvijas meteoroloģisko novērojumu vēsturē. <http://www.meteo.lv/jaunumi/laika-apstakli/2013-gada-27-28-un-29-oktobris-vissiltakie-atbilstosie-datumi-latvijas?id=541&cid=100>
- Latvijas Vides, ģeoloģijas un meteoroloģijas centrs: Laika apstākļi 2013. gada oktobra 3. dekādē. <http://www.meteo.lv/jaunumi/laika-apstakli/laika-apstakli-2013-gada-oktobra-3-dekade?id=543&cid=100>
- Lietuvos hidrometeorologijos tarnyba (LHMT): Vėjuota antradienio naktis 2013-10-29. <http://www.meteo.lt/naujiena.php?id=568>
- Meteo France (28.10.2013): Première tempête automnale sur l'Ouest et le Nord France. [http://france.meteofrance.com/france/actu/actu?portlet\\_id=97636&document\\_id=28016](http://france.meteofrance.com/france/actu/actu?portlet_id=97636&document_id=28016)
- Meteo France (30.10.2013): Bilan climatique: un mois d'octobre chaud mais perturbé. [http://france.meteofrance.com/france/actu/actu?portlet\\_id=97636&document\\_id=28025](http://france.meteofrance.com/france/actu/actu?portlet_id=97636&document_id=28025)
- Met Office, UK (28.10.2013): Major Atlantic storm – wind speeds and rainfall totals. <http://metofficenews.wordpress.com/2013/10/28/major-atlantic-storm-fastest-winds-and-heaviest-rain/>
- Met Office, UK (30.10.2013): How powerful was Monday's storm? <http://metofficenews.wordpress.com/2013/10/30/how-powerful-was-mondays-storm/>
- Ministerium für Energiewende, Landwirtschaft, Umwelt und ländliche Räume Schleswig-Holstein: Sturmflut an der Westküste ohne nennenswerte Schäden. (29.10.2013)

[http://www.schleswig-holstein.de/MELUR/DE/Service/Presse/PI/2013/1013/MELUR\\_131029\\_Sturmflut.html](http://www.schleswig-holstein.de/MELUR/DE/Service/Presse/PI/2013/1013/MELUR_131029_Sturmflut.html)

- Seewetteramt Hamburg (2002): Seewetter. 2. überarbeitete und erweiterte Aufl., DSV, Hamburg, 388 S.
- Sveriges meteorologiska och hydrologiska institut (SMHI): Svenska vindrekord.  
<http://www.smhi.se/kunskapsbanken/meteorologi/svenska-vindrekord-1.31798>
- Sveriges meteorologiska och hydrologiska institut (SMHI): Simone drabbade främst sydligaste Sverige.  
<http://www.smhi.se/nyhetsarkiv/simone-drabbade-framst-sydligaste-sverige-1.33915?search=yes&month=10&year=2013>
- Sveriges meteorologiska och hydrologiska institut (SMHI): Simone gav ovanligt högt vattenstånd utanför Halmstad.  
<http://www.smhi.se/nyhetsarkiv/simone-gav-ovanligt-hogt-vattenstand-utanfor-halmstad-1.33955?search=yes&month=10&year=2013>
- Sveriges meteorologiska och hydrologiska institut (SMHI): Årets oktober mest hågkommen för stormen Simone.  
<http://www.smhi.se/nyhetsarkiv/arets-oktober-mest-hagkommen-for-stormen-simone-1.33985>