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Greenland

Ellen Vaarby Laursen



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Abstract

This report contains statistics on visibility, ceiling and wind observed at selected Greenlandic airports, 1 February 2003 - 31 January 2012. It is primarily intended for aeronautical meteorologists.

Resumé

Rapporten indeholder statistik af sigtbarhed, ceiling og vind observeret ved udvalgte grønlandske lufthavne, 1. februar 2003 - 31. januar 2012. Den primære målgruppe er luftfartsmeteorologer.



Introduction

This report presents 9 years of airport weather statistics, 2003-2012, for the 7 Greenlandic airports listed in Table 1. The 7 airports were selected as the top Greenlandic airports identified by the meteorologists as most valuable for operational aeronautical meteorology, when wishing for both West coast and East coast airports to be represented.

Together with the similar report of Danish and Faroe Islands airport weather statistics (Laursen, 2012), the report is answering the need for an update of the 1996-2001 airport weather statistics of (Jørgensen 2003), and the aim has been to publish statistics on recent data in a design suitable for aeronautical meteorologists' everyday work and educating purposes.

Airport	Availability ^{*)}	Remarks	Start AUTO METAR
BGSF Kangerlussuaq/Sdr. strømfjord	97,8%.		21 June 2011
BGGH Nuuk/Godthåb	75,7%.	Lack of night-time observations and fewer weekend observations, 2003-2006	24 May 2005
BGBW Narsarsuaq	63,7%	Lack of night-time and Sunday observations, 2003-2010.	28 June 2004
BGJN Ilulissat/Jakobshavn	85,4%	lack of night-time and Sunday observations, 2003-2004	31 March 2004
BGSS Sisimiut/Holsteinsborg	75,4%	Low data quality in AUTO METAR	30 January 2004
BGAA Aasiaat/Egedesminde	78,6% ^{**)}	Statistics only on hours 08-17 UTC. Low data quality in AUTO METAR	12 April 2004
BGKK Kulusuk	75,7% ^{**)}	Statistics only on hours 08-17 UTC. Low data quality in AUTO METAR. Lack of observations on Sundays and Mondays	11 June 2005

^{*)} Availability when expecting hourly observations around the clock 1 February 2003 – 31 January 2012 (total 78.888 observations)
^{**)} Calculated for hours 08-17 UTC only

Table 1

Please take notice that the best Greenlandic METAR data material available for this work, other than the manned METAR of Kangerlussuaq Airport, generally had low availability and contained many syntax errors in older data, that were not possible to correct with automated re-run of an updated decoding. The low data availability of the airports involved is therefore partly because of differences in opening hours –e.g. ‘normally no data/flight on Sundays’, *but also* partly because of exclusion from the statistics material of METAR that during the automated decoding process were flagged as having syntax errors.

This means that when comparing airports, the reader should always have these shortcomings in the data material representativeness in mind, and accordingly remember to confer with the airport's total availability and the information on the observation's yearly, monthly and hourly distribution supplied in the availability section for each airport.

All of the statistics are calculated from the METAR and SPECI (cf. FM 15-XIII Ext. METAR and FM 16-XIII Ext. SPECI in WMO pub. No. 306) issued by the airports, received by DMI and decoded and stored in the DMI Weather Services Department MySQL database METAF. The decoded data of the METAF database were found to be the most complete and reliable DMI source of decoded recent METAR, even though only observations since 9 January 2003 were available.

To ensure the best representative coverage of the statistics period, the data material for each airport was selected as one observation every hour through the 108 consecutive months starting with February 2003 and ending with, and including, January 2012, yielding 9 complete years of statistics.

To ensure sound coverage of less favourable conditions, each hourly observation was selected



among quality assured observations as the one METAR or SPECI with lowest visibility during that hourly period. In case of a tie, the observation with lowest ceiling was chosen, and in case both visibility and ceiling were constant then the most recently received.

Quality assurance included exclusion of observations that during the automated decoding process were flagged as having syntax errors and exclusion of erroneous observations identified through a manual screening of extremes, outliers and plots of time series of the various parameters.



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Greenland, seasonal and annual statistics

1 February 2003 – 31 January 2012



BGSF Kangerlussuaq/Sdr. Strømfjord

Mittarfik Kangerlussuaq

Location: 67,017°N 50,700°W

H: 50 m above msl

BGSF observations in statistics: 77.140 hourly METAR¹ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 97,8%.

The BGSF METAR are all manual until 21 June 2011, and mostly AUTO METAR since then.

Cross tables Visibility – Ceiling

Winter (Jan-Feb-Mar): BGSF – Frequencies (%) Visibility - Ceiling

No. Obs = 19.030	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0	0,026	0,063	0,068	0,011	0,079
<1 km	0	0	0,037	0,074	0,079	0,021	0,10
<1.5 km	0	0	0,047	0,16	0,19	0,037	0,23
<3.0 km	0	0	0,089	0,49	1,03	0,76	1,79
< 5.0 km	0	0	0,11	0,56	1,41	2,81	4,22
>= 5,0 km or CAVOK	0	0	0,053	0,16	0,68	95,09	95,78
Total	0	0	0,16	0,72	2,10	97,90	100

Table 2

Spring (Apr-May-Jun): BGSF - Frequencies (%) Visibility - Ceiling

No. Obs = 19.198	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,0052	0,057	0,063	0,063	0	0,063
<1 km	0	0,010	0,078	0,099	0,099	0	0,10
<1.5 km	0	0,010	0,10	0,23	0,23	0,010	0,24
<3.0 km	0	0,010	0,13	0,56	0,90	0,31	1,21
< 5.0 km	0	0,010	0,13	0,60	1,07	1,42	2,48
>= 5,0 km or CAVOK	0	0	0,016	0,089	0,38	97,14	97,52
Total	0	0,010	0,15	0,69	1,45	98,55	100

Table 3

¹ For every hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.



Summer (Jul-Aug-Sep): BGSF - Frequencies (%) Visibility - Ceiling

No. Obs = 19.385	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,010	0,015	0,021	0,021	0	0,021
<1 km	0	0,010	0,015	0,031	0,031	0,015	0,05
<1.5 km	0	0,010	0,05	0,07	0,07	0,021	0,09
<3.0 km	0	0,010	0,08	0,18	0,25	0,10	0,35
< 5.0 km	0	0,010	0,10	0,28	0,48	0,53	1,02
>= 5,0 km or CAVOK	0	0	0,041	0,098	0,51	98,48	98,98
Total	0	0,010	0,14	0,38	0,99	99,01	100

Table 4

Autumn (Oct-Nov-Dec): BGSF - Frequencies (%) Visibility - Ceiling

No. Obs = 19.527	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,020	0,046	0,061	0,061	0	0,061
<1 km	0	0,026	0,061	0,082	0,092	0	0,09
<1.5 km	0	0,026	0,07	0,18	0,23	0,0051	0,23
<3.0 km	0	0,026	0,09	0,44	1,05	0,77	1,82
< 5.0 km	0	0,026	0,09	0,50	1,39	3,11	4,50
>= 5,0 km or CAVOK	0	0	0,026	0,108	0,48	95,02	95,50
Total	0	0,026	0,11	0,60	1,87	98,13	100

Table 5

Annual: BGSF - Frequencies (%) Visibility - Ceiling

No. Obs = 77.140	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,0091	0,036	0,052	0,053	0,0026	0,056
<1 km	0	0,012	0,048	0,071	0,075	0,0091	0,084
<1.5 km	0	0,012	0,07	0,16	0,18	0,018	0,20
<3.0 km	0	0,012	0,09	0,42	0,81	0,48	1,29
< 5.0 km	0	0,012	0,11	0,49	1,09	1,97	3,06
>= 5,0 km or CAVOK	0	0	0,034	0,11	0,51	96,43	96,94
Total	0	0,012	0,14	0,60	1,60	98,40	100

Table 6



Wind direction histograms

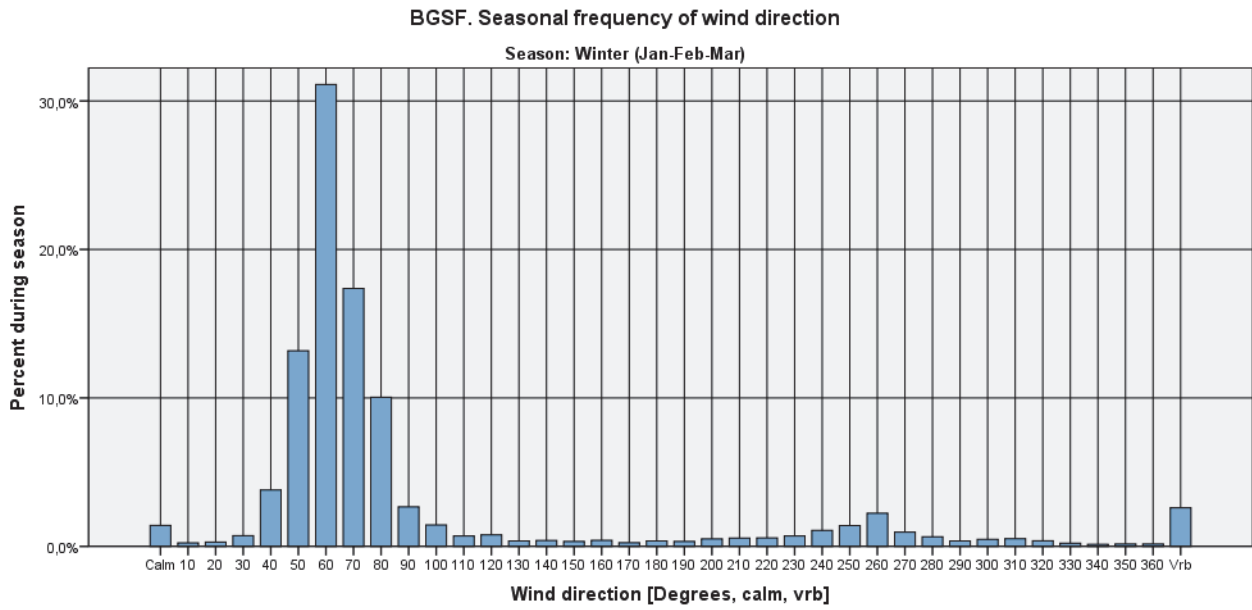


Figure 1

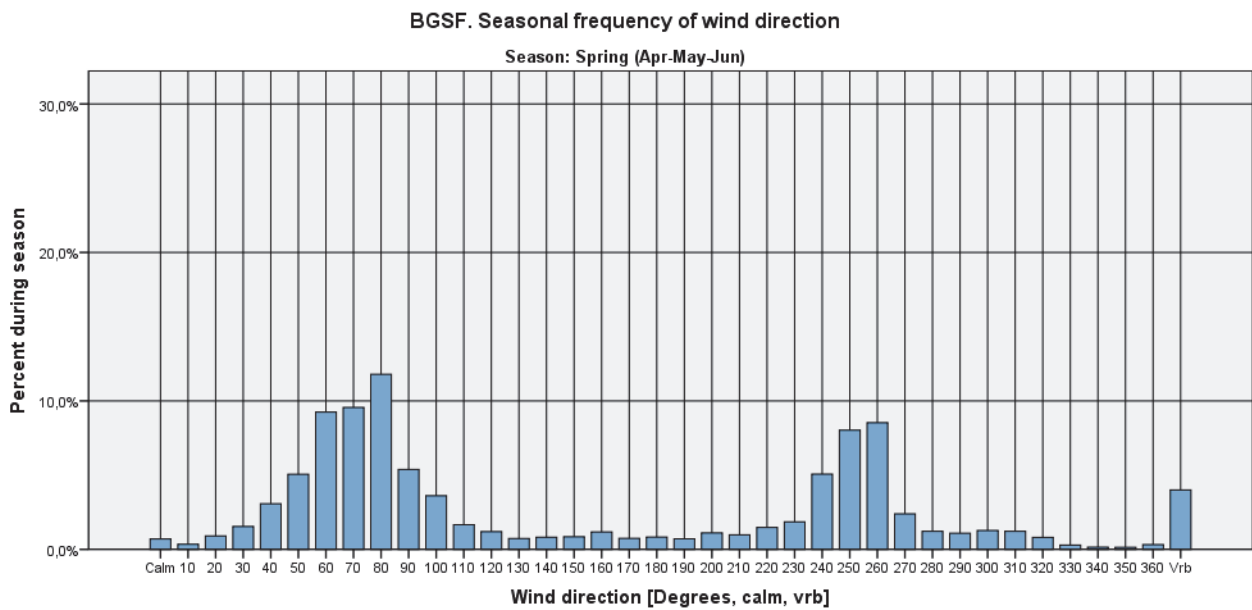


Figure 2

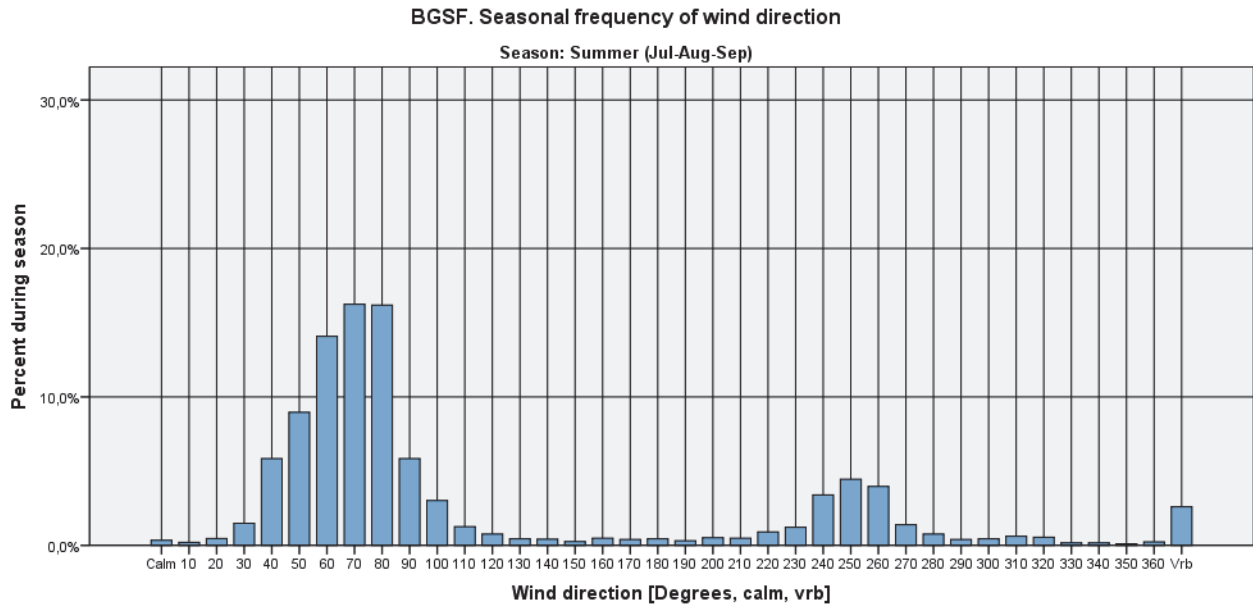


Figure 3

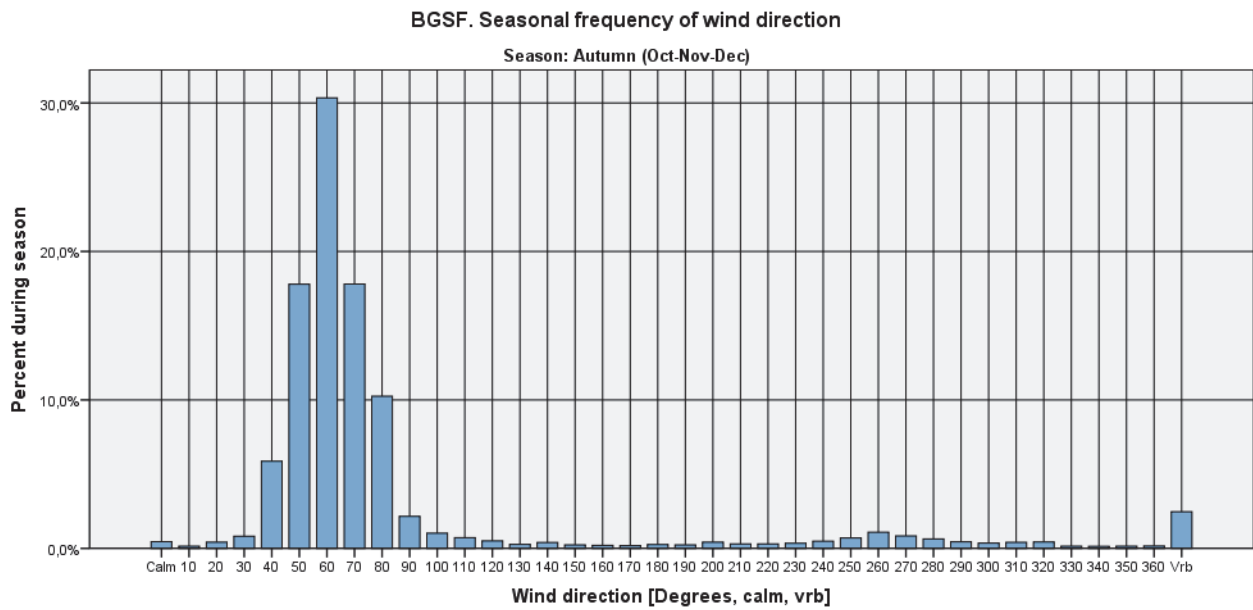


Figure 4

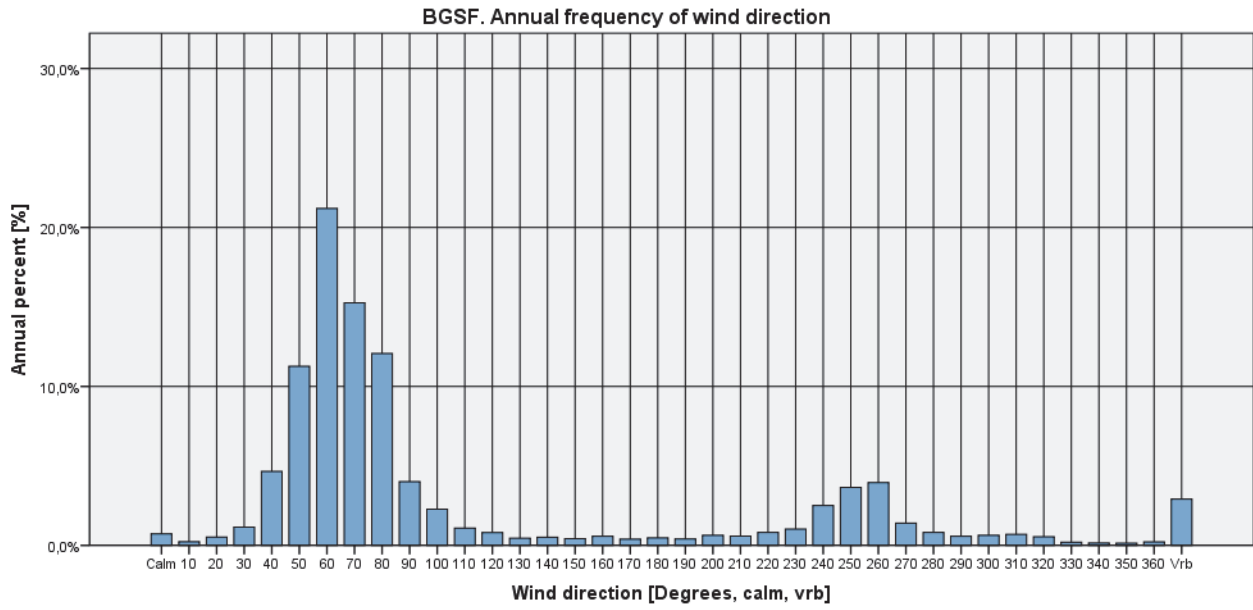


Figure 5



Visibility criteria on wind direction histograms

Visibility < 1000 m

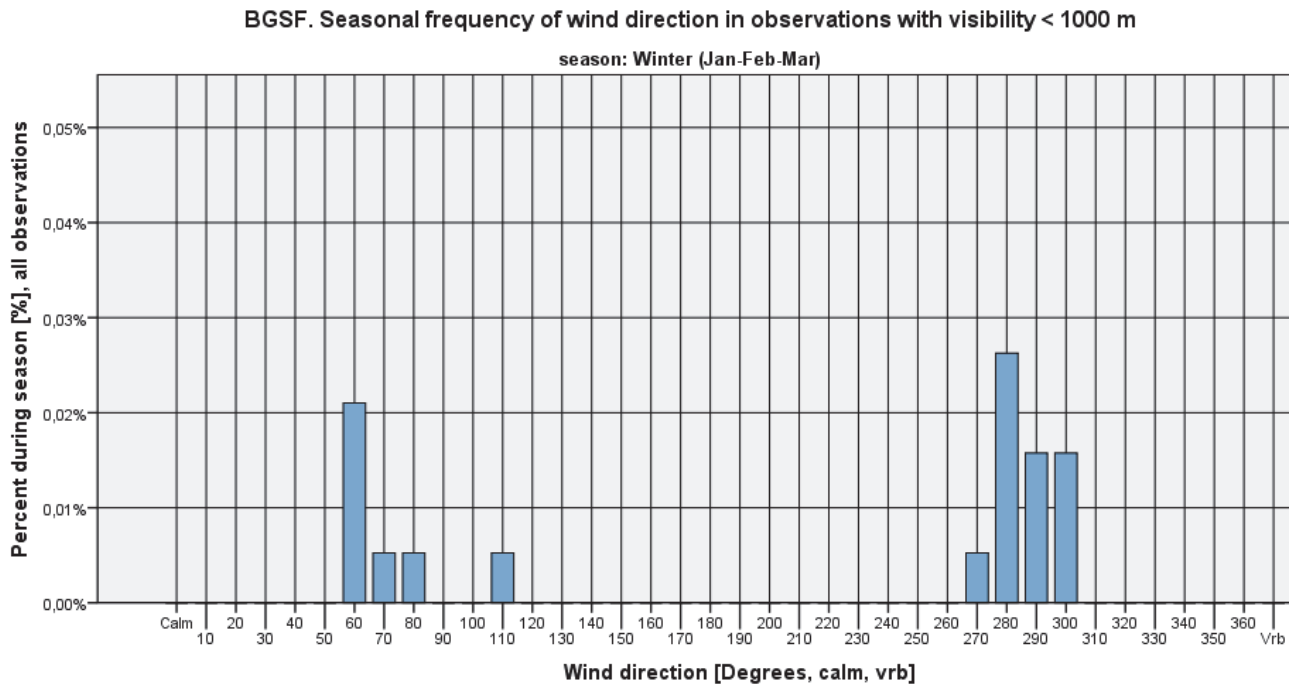


Figure 6

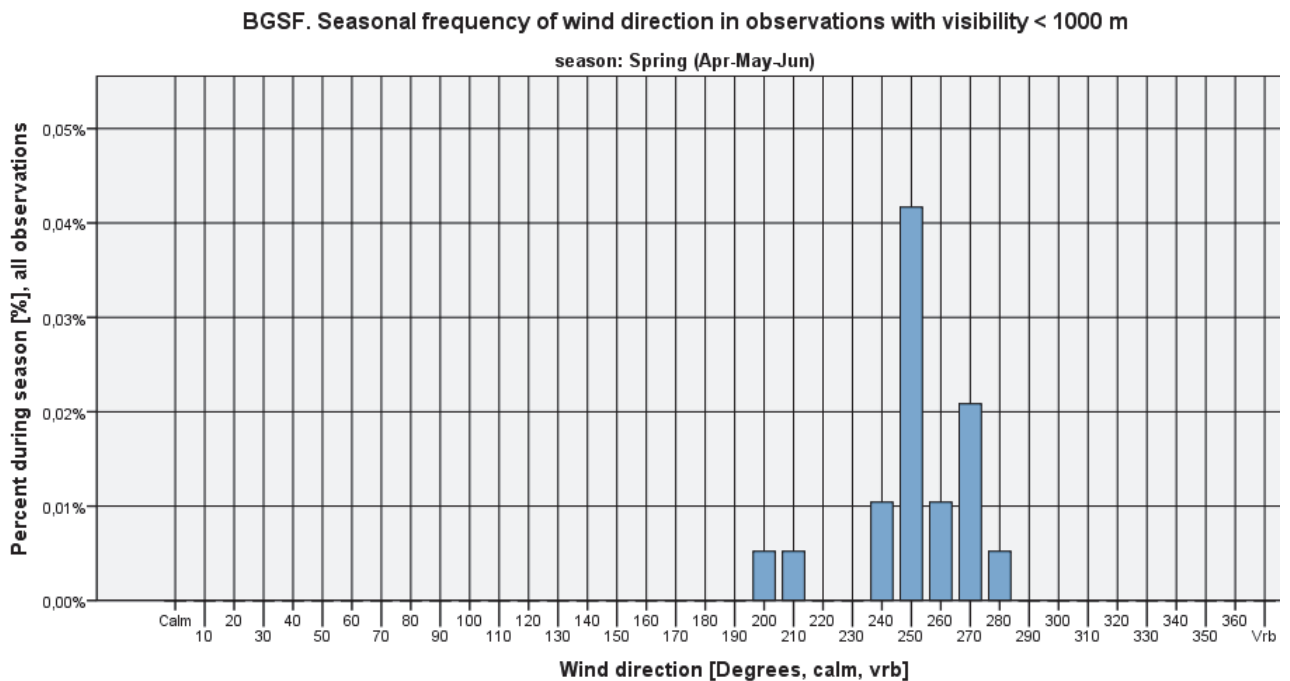


Figure 7

BGSF. Seasonal frequency of wind direction in observations with visibility < 1000 m

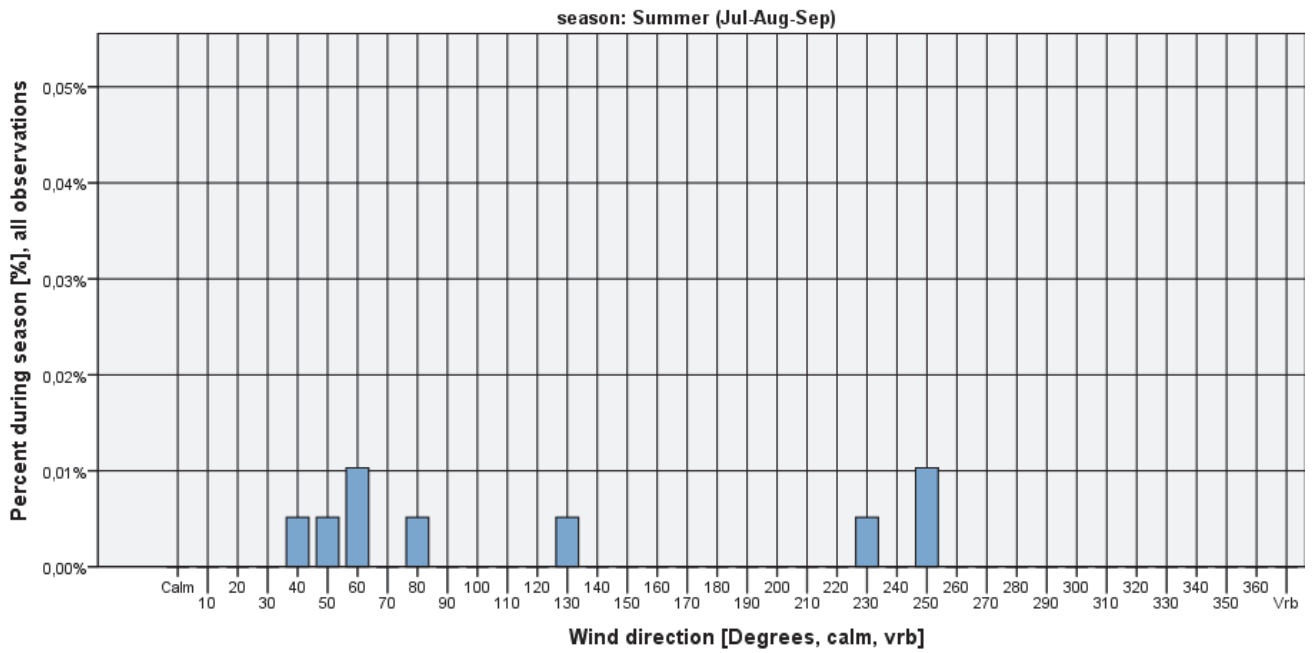


Figure 8

BGSF. Seasonal frequency of wind direction in observations with visibility < 1000 m

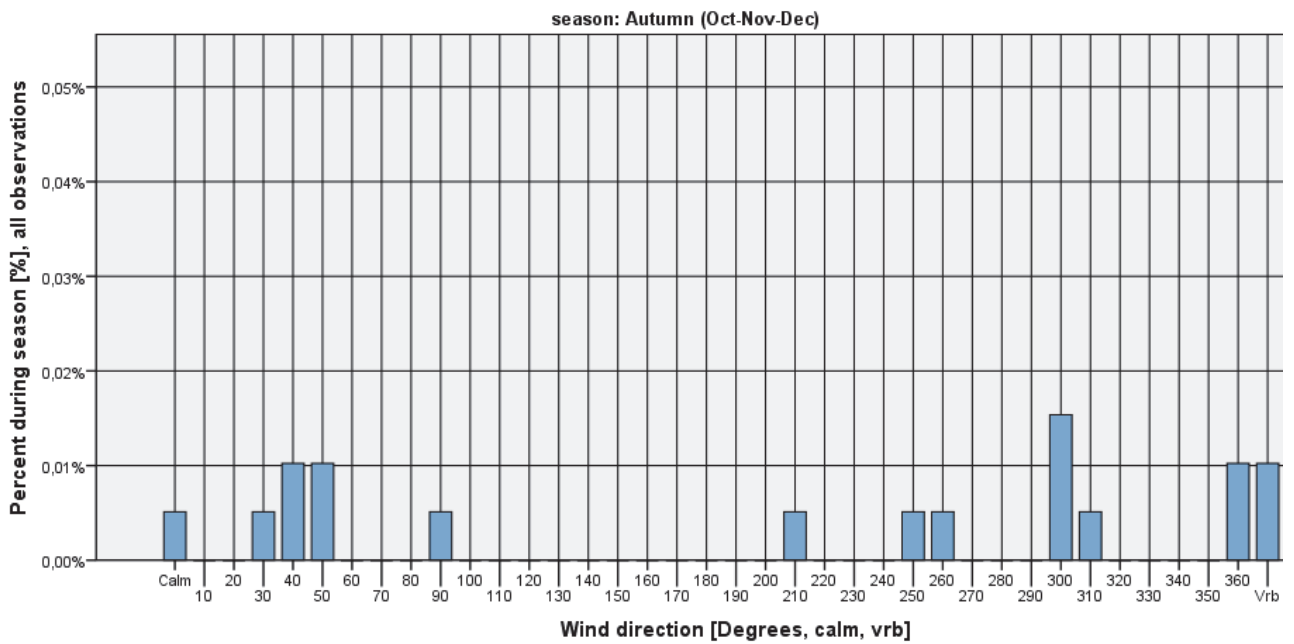


Figure 9

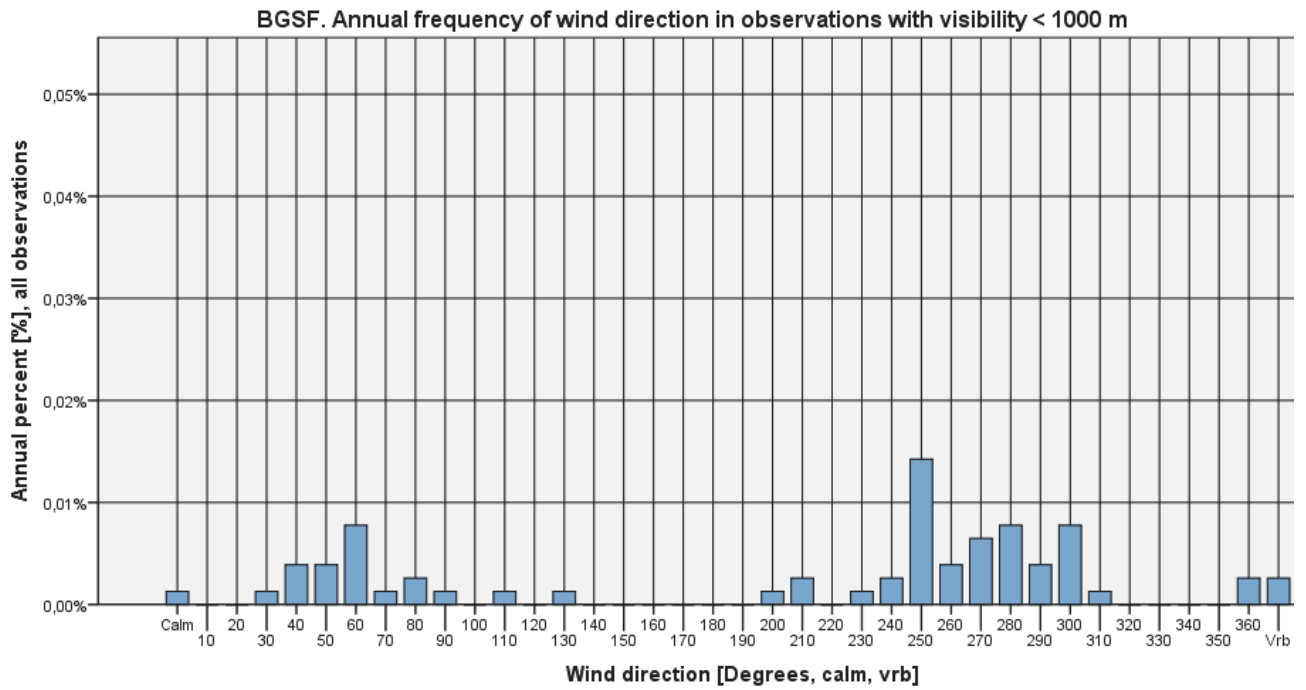


Figure 10



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

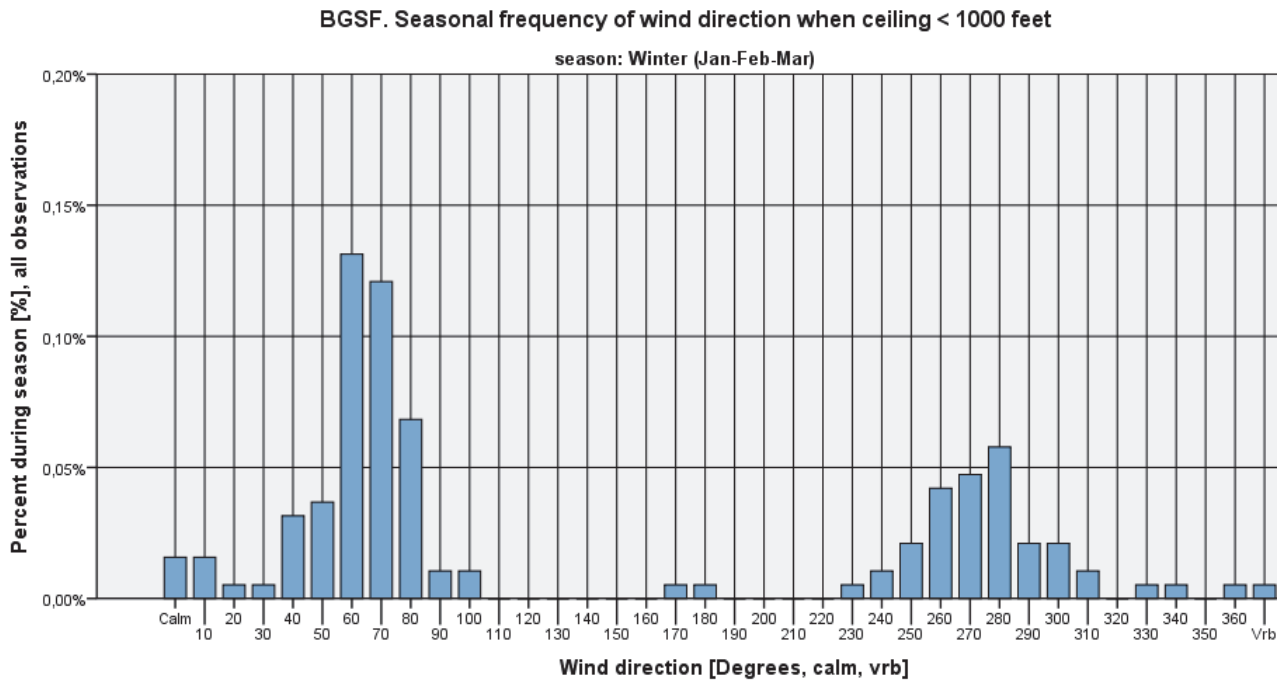


Figure 11

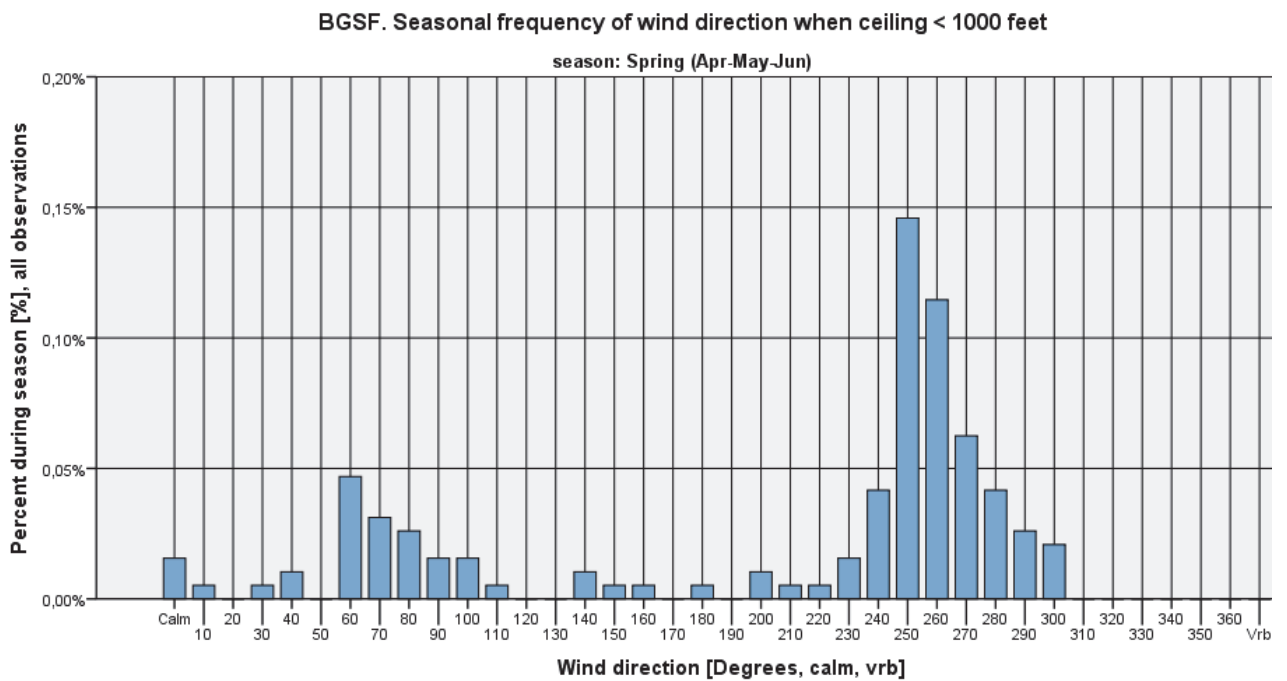


Figure 12



BGSF. Seasonal frequency of wind direction when ceiling < 1000 feet

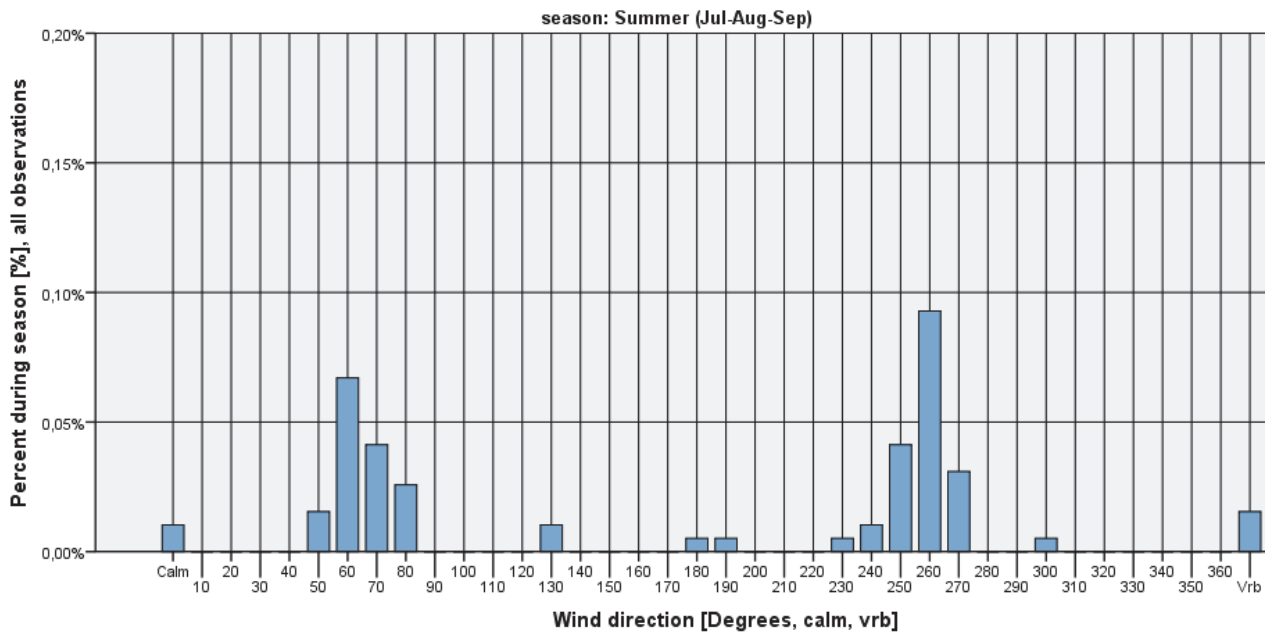


Figure 13

BGSF. Seasonal frequency of wind direction when ceiling < 1000 feet

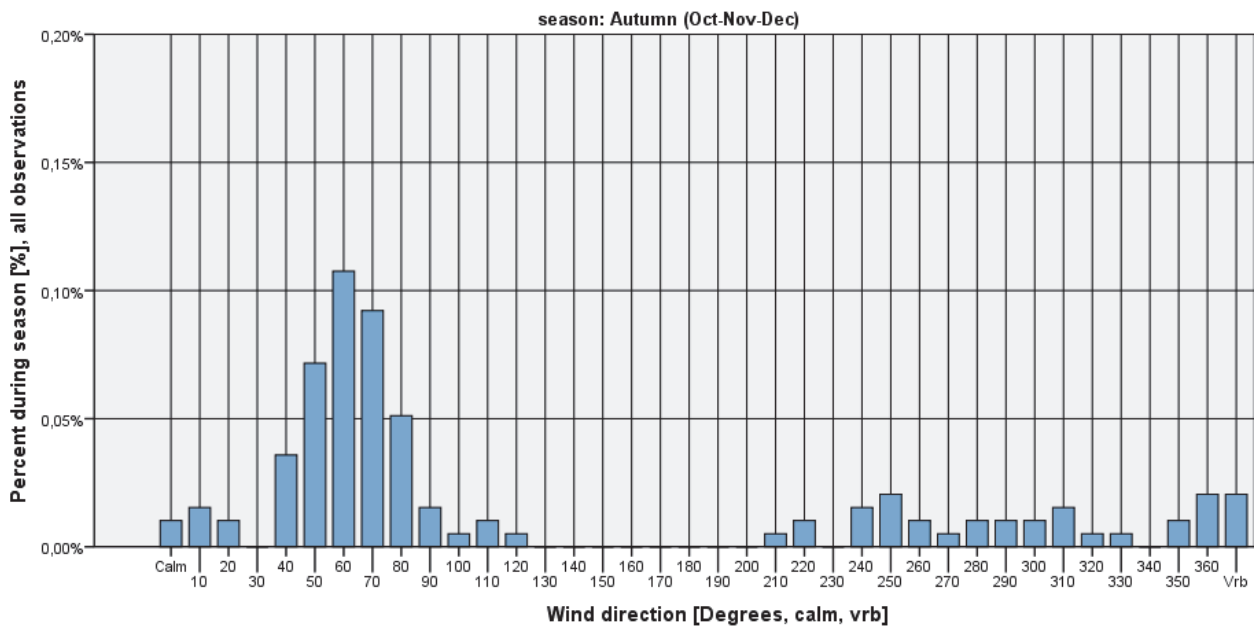


Figure 14

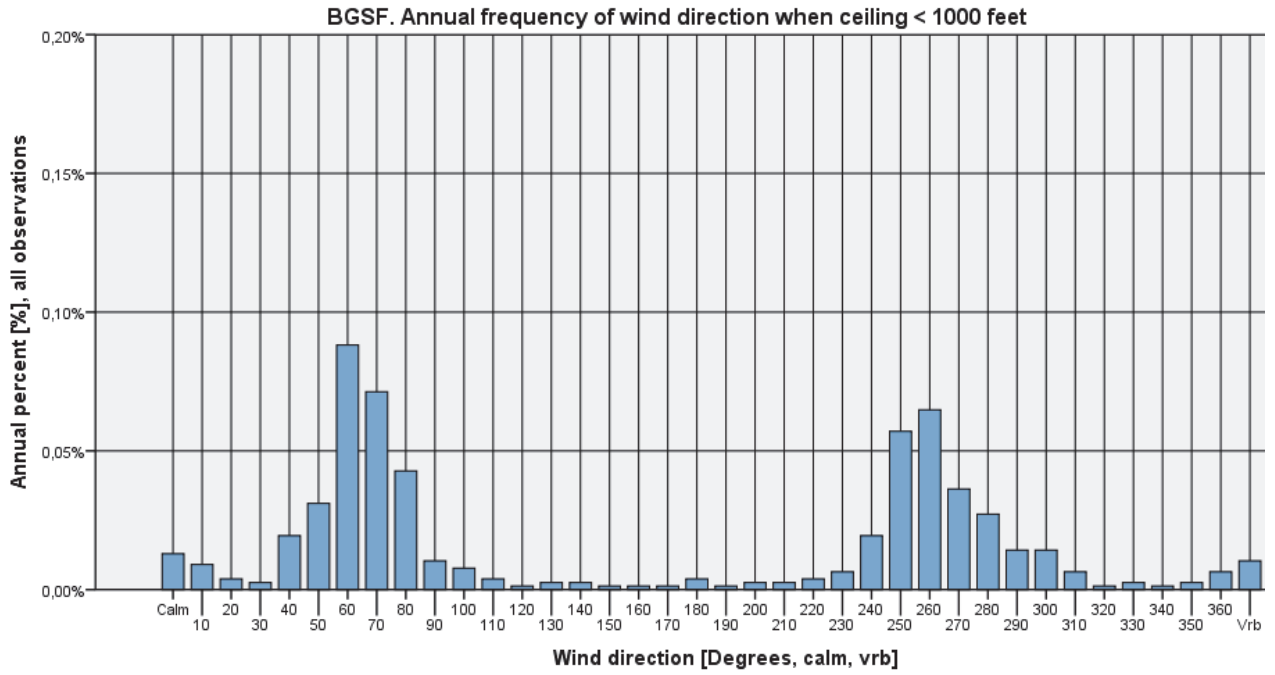


Figure 15



Ceiling < 500 feet

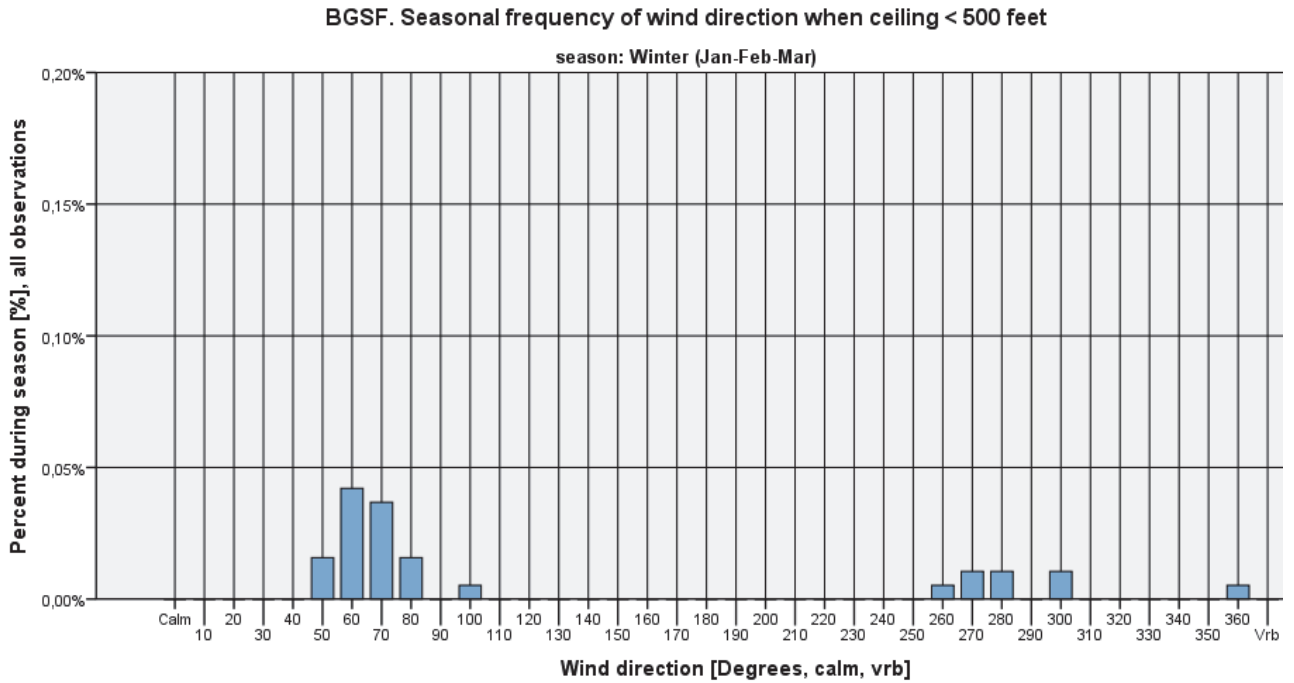


Figure 16

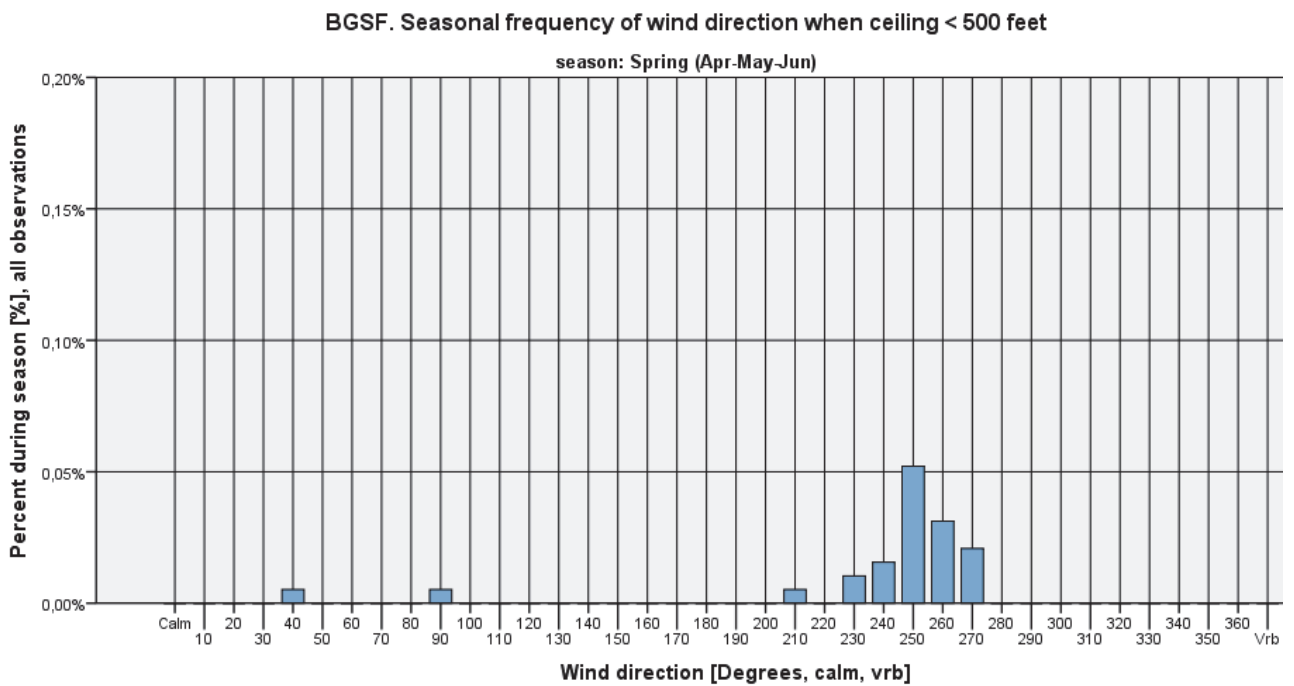


Figure 17



BGSF. Seasonal frequency of wind direction when ceiling < 500 feet

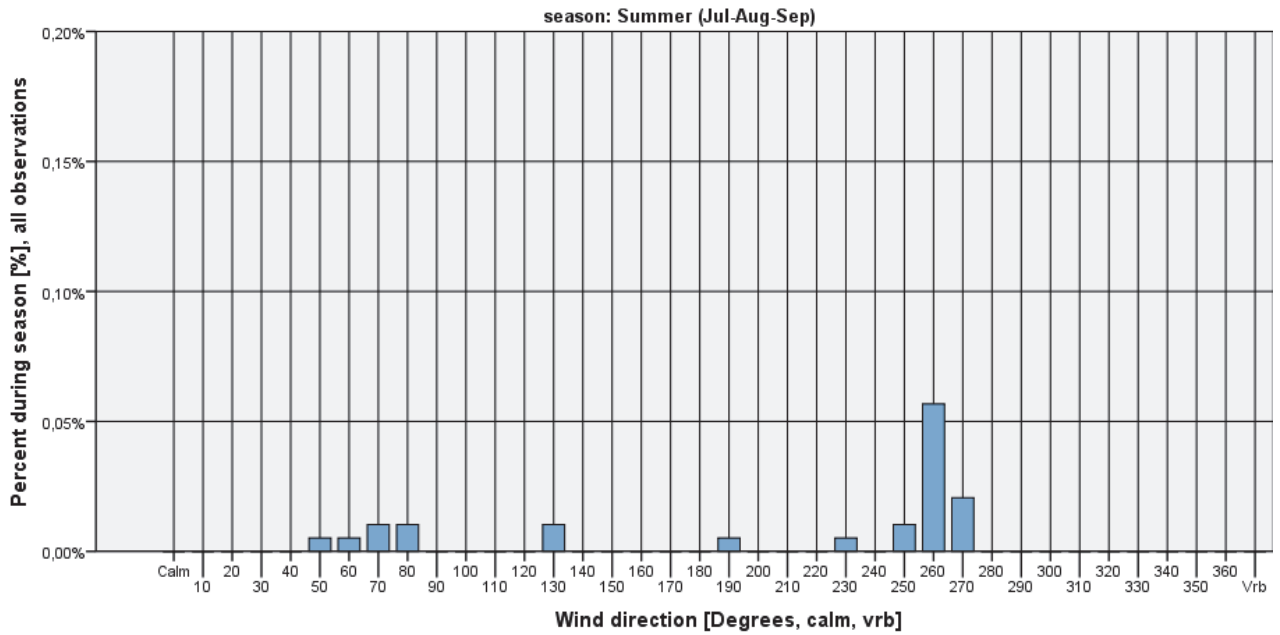


Figure 18

BGSF. Seasonal frequency of wind direction when ceiling < 500 feet

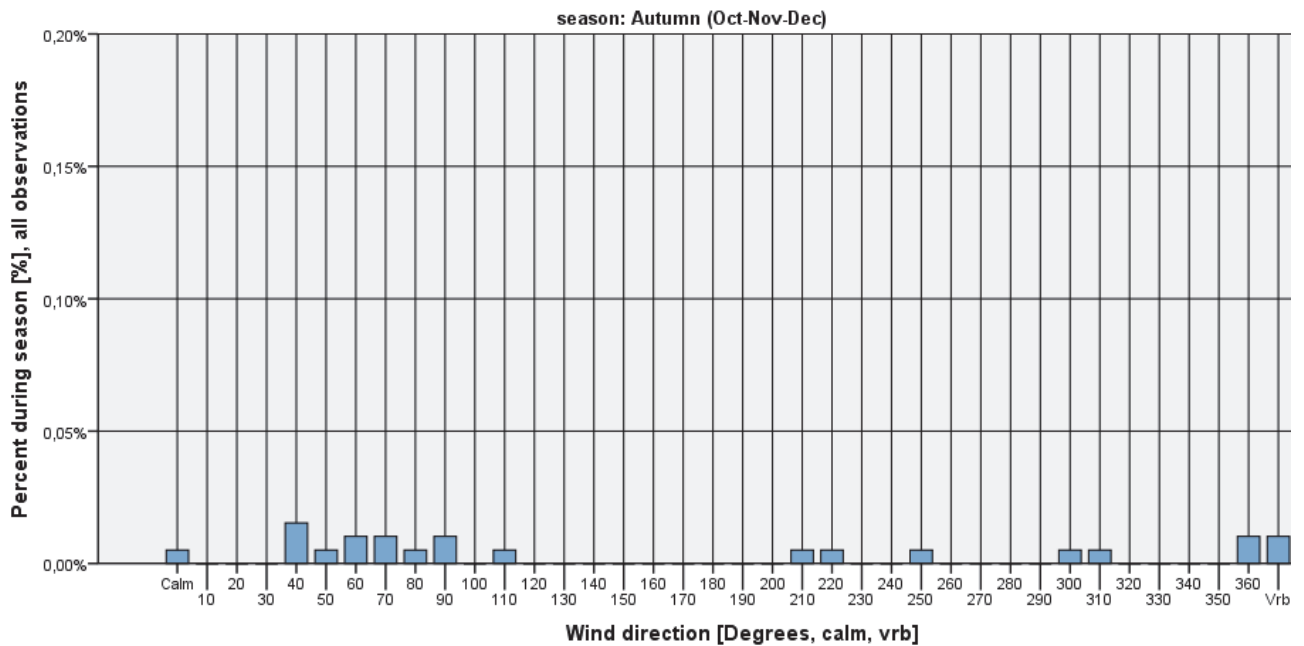


Figure 19

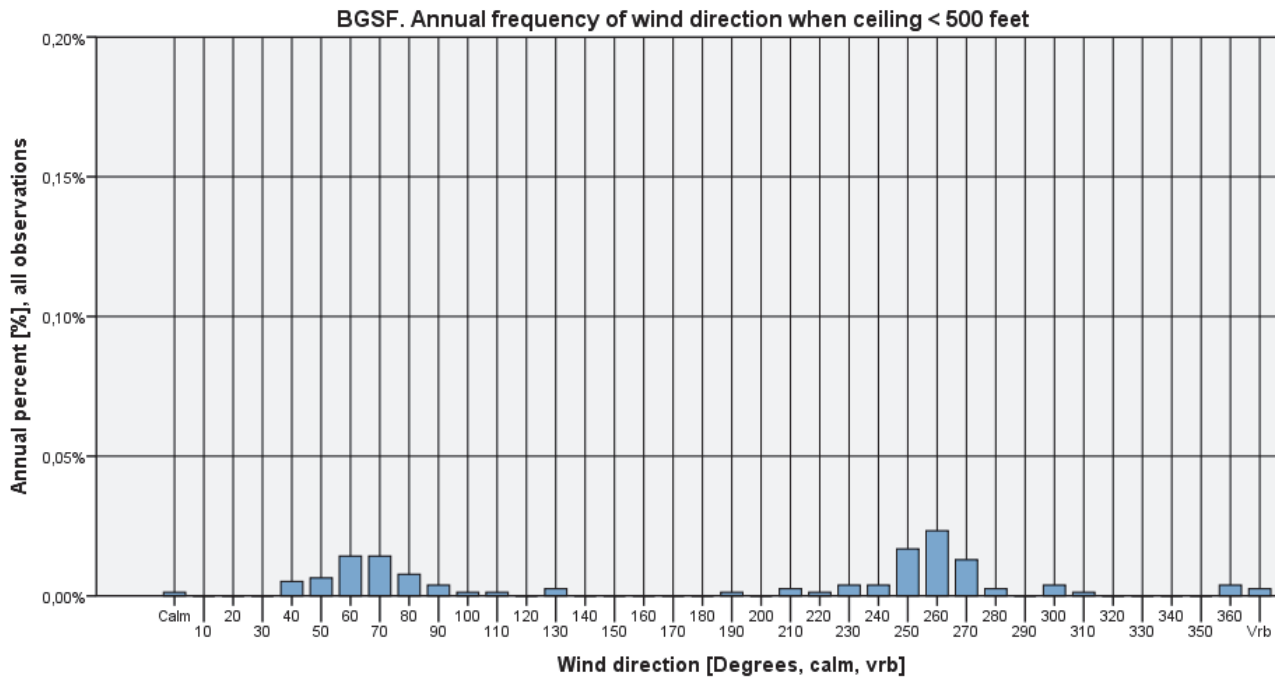


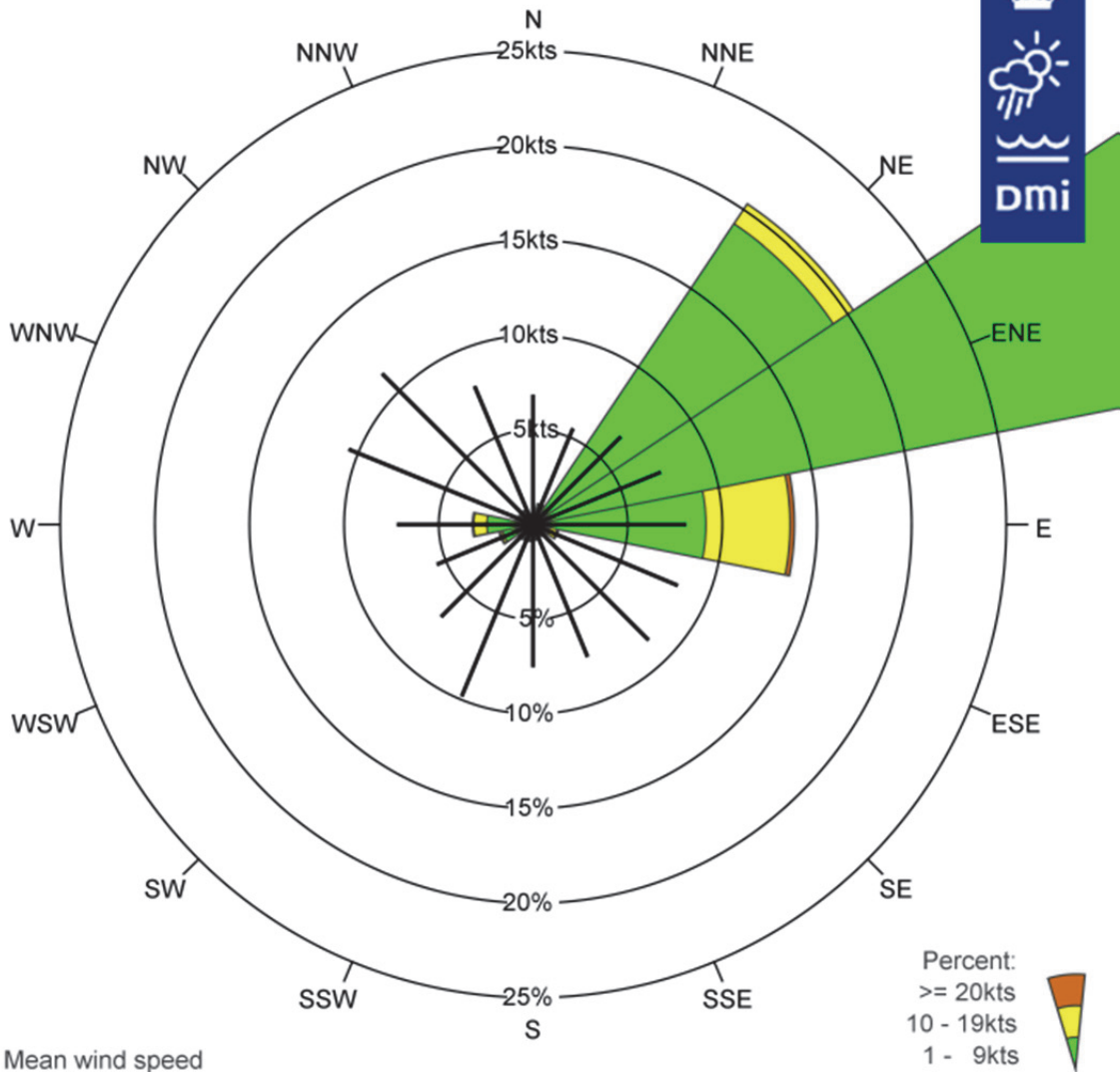
Figure 20



Wind roses

BGSF KANGERLUSSUAQ - SDR. STRØMFJORD AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

Percent:
 >= 20kts
 10 - 19kts
 1 - 9kts

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	0.5	1.1	20.4	48.3	13.8	1.4	0.7	0.6	0.8	0.9	1.0	1.8	3.2	0.8	0.9	0.3	96.5
% 1 - 9kts	0.4	1.0	19.1	39.8	9.1	0.8	0.4	0.4	0.5	0.4	0.7	1.6	2.4	0.4	0.3	0.2	77.7
% 10 - 19kts	0.1	0.1	1.3	8.4	4.5	0.5	0.3	0.2	0.2	0.4	0.2	0.1	0.7	0.3	0.6	0.1	18.0
% >= 20kts	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.8
Mean wind speed	6.8	5.5	6.6	7.3	8.1	8.3	8.7	7.6	7.5	9.8	6.9	5.5	7.2	10.5	11.3	8.0	7.3
Max wind speed	25.0	26.0	21.0	25.0	32.0	28.0	30.0	27.0	24.0	31.0	29.0	30.0	30.0	29.0	26.0	21.0	32.0

Number of observations = 38557

Source: DMI

Calm defined a wind speed = 0kts

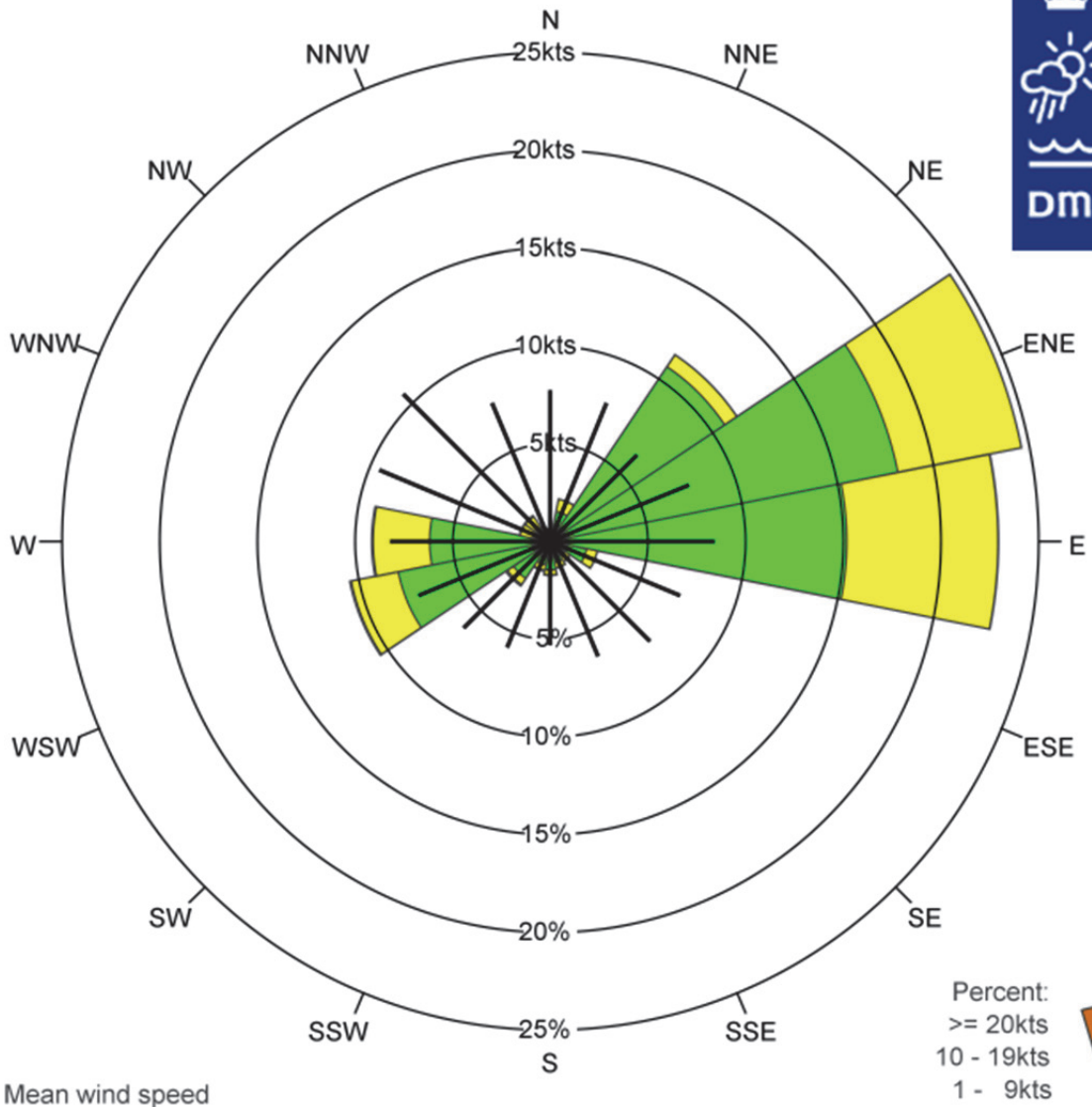
Number of observations with calm/varying wind direction: 1334=3.5%

Observations with calm/varying wind direction are not used in the statistics



BGSF KANGERLUSSUAQ - SDR. STRØMFJORD SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:

— Mean wind speed

Percent:
 >= 20kts
 10 - 19kts
 1 - 9kts



	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	0.7	2.2	11.5	24.6	22.9	2.5	1.2	1.4	1.7	1.5	2.7	10.5	9.1	1.6	1.6	0.4	96.2
% 1 - 9kts	0.4	1.6	10.7	18.1	15.2	1.9	0.9	1.1	1.5	1.2	2.3	7.9	6.2	0.9	0.6	0.3	70.7
% 10 - 19kts	0.2	0.6	0.7	6.4	7.7	0.5	0.3	0.3	0.3	0.3	0.4	2.5	2.9	0.7	0.9	0.1	25.0
% >= 20kts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.4
Mean wind speed	7.7	7.7	6.3	7.7	8.4	7.2	7.1	6.4	5.4	5.9	6.3	7.3	8.2	9.5	10.6	7.7	7.6
Max wind speed	16.0	20.0	18.0	20.0	27.0	26.0	17.0	22.0	21.0	30.0	31.0	29.0	25.0	26.0	24.0	19.0	31.0

Number of observations = 38583

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 1477=3.8%

Observations with calm/varying wind direction are not used in the statistics

Source: DMI



Availability

Yearly distribution of observations. BGSF 01-Feb-2003 - 31-Jan-2012

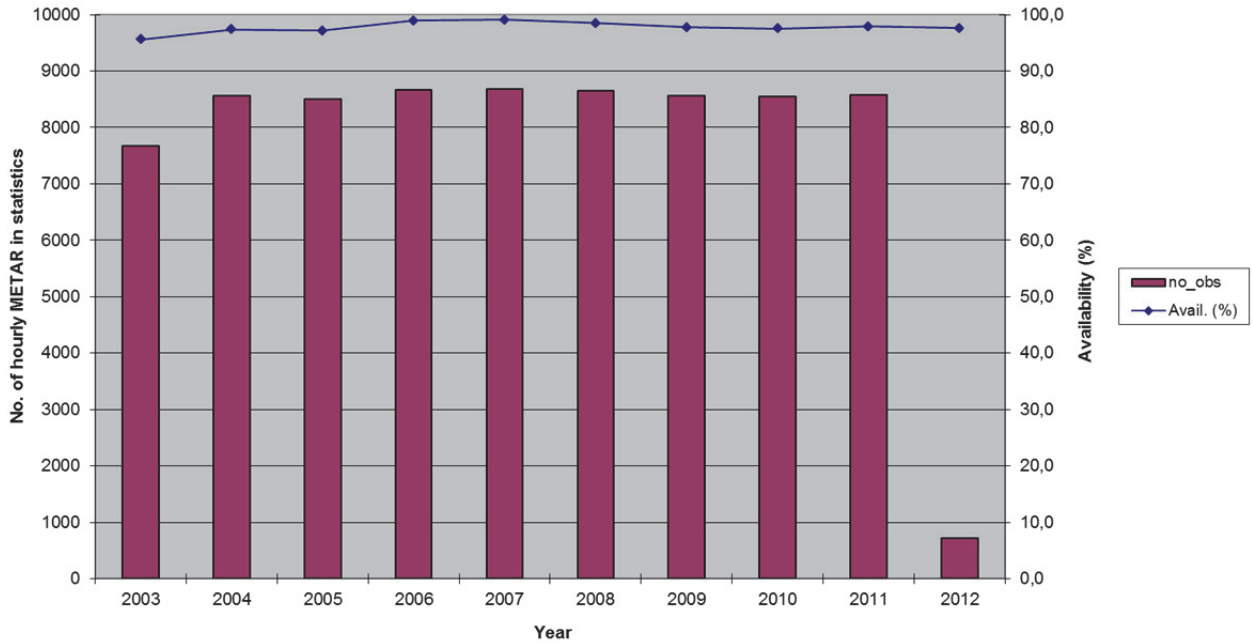


Figure 21

Monthly distribution of observations. BGSF 01-Feb-2003 - 31-Jan-2012

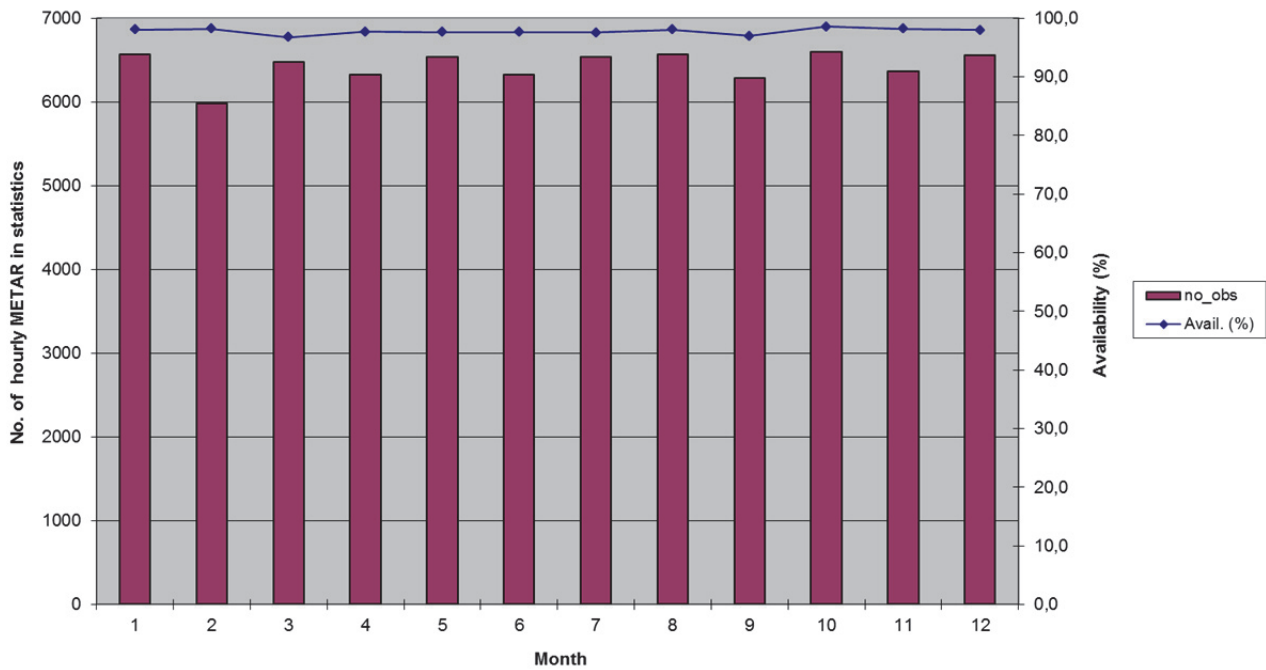


Figure 22

Hourly distribution of observations. BGSF 01-Feb-2003 - 31-Jan-2012

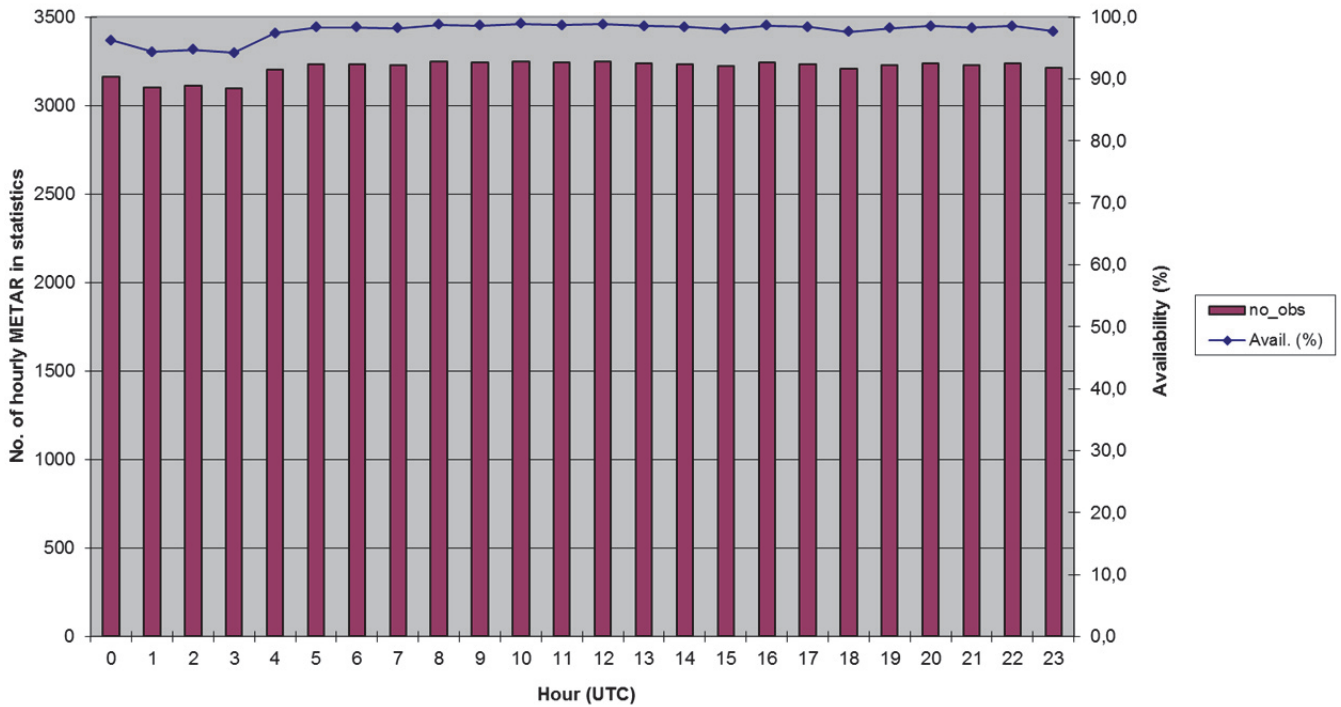


Figure 23

BGSF. Average no. of hourly observations in statistics, 1 February 2003 - 31 January 2012

Hour (UTC)		year									
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	,9	,9	1,0	1,0
1	,9	1,0	1,0	1,0	1,0	1,0	,9	,9	,9	1,0	1,0
2	,9	1,0	,9	1,0	1,0	1,0	1,0	1,0	,9	1,0	1,0
3	,9	1,0	,9	1,0	1,0	1,0	1,0	,9	,9	1,0	1,0
4	1,0	1,0	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
5	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
6	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	,9
7	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
8	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
9	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
10	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
11	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	,9
12	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
13	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
14	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
15	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	,9
16	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	,9
17	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
18	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
19	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
20	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
21	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	,9
22	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
23	1,0	1,0	1,0	1,0	1,0	1,0	1,0	,9	1,0	1,0	1,0

Table 7



BGGH Nuuk/Godthåb

Mittarfik Nuuk

Location: 64,200°N 51,683°W

H: 86 m above msl

BGGH observations in statistics: 59.686 hourly METAR² covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 75,7%.

The availability is partly lowered by lack of nightly observations and fewer weekend observations during 2003-2006, more details are shown in the Availability section.

The BGGH METAR are all manual until 24 May 2005, and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

Winter (Jan-Feb-Mar): BGGH- Frequencies (%) Visibility - Ceiling

No. Obs = 14.748	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,22	0,65	1,88	2,45	2,72	0,48	3,20
<1 km	0,22	0,66	2,03	2,88	3,30	0,64	3,94
<1.5 km	0,22	0,66	2,29	3,76	4,60	1,06	5,66
<3.0 km	0,22	0,66	2,58	5,30	7,85	2,90	10,75
< 5.0 km	0,22	0,66	2,74	6,11	9,98	6,02	16,00
>= 5,0 km or CAVOK	0	0,014	0,25	2,18	5,52	78,48	84,00
Total	0,22	0,67	2,99	8,29	15,50	84,50	100

Table 8

Spring (Apr-May-Jun): BGGH- Frequencies (%) Visibility - Ceiling

No. Obs = 14.821	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,39	1,64	3,15	3,35	3,43	0,14	3,58
<1 km	0,39	1,70	3,66	4,00	4,12	0,20	4,31
<1.5 km	0,40	1,72	4,08	4,66	4,90	0,30	5,20
<3.0 km	0,40	1,76	5,09	6,82	7,81	1,09	8,90
< 5.0 km	0,40	1,79	5,99	8,74	10,82	2,74	13,56
>= 5,0 km or CAVOK	0	0,054	3,09	8,79	13,45	72,98	86,44
Total	0,40	1,84	9,08	17,54	24,28	75,72	100

Table 9

² For every hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.



Summer (Jul-Aug-Sep): BGGH- Frequencies (%) Visibility - Ceiling

No. Obs = 14.805	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,72	2,47	4,87	4,95	5,01	0,45	5,46
<1 km	0,72	2,55	5,48	5,61	5,69	0,53	6,21
<1.5 km	0,74	2,63	5,83	6,07	6,17	0,64	6,82
<3.0 km	0,74	2,71	6,86	7,58	7,94	1,55	9,49
< 5.0 km	0,74	2,75	7,95	9,30	10,25	3,43	13,68
>= 5,0 km or CAVOK	0,014	0,095	3,54	8,69	12,95	73,37	86,32
Total	0,76	2,84	11,49	17,99	23,19	76,81	100

Table 10

Autumn (Oct-Nov-Dec): BGGH- Frequencies (%) Visibility - Ceiling

No. Obs = 15.312	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,072	0,19	0,99	1,40	1,67	0,62	2,29
<1 km	0,078	0,22	1,21	1,92	2,32	0,78	3,10
<1.5 km	0,078	0,22	1,42	2,65	3,29	1,29	4,58
<3.0 km	0,078	0,22	1,84	4,23	5,92	3,37	9,29
< 5.0 km	0,078	0,22	2,02	5,14	7,84	6,19	14,03
>= 5,0 km or CAVOK	0	0,0065	0,37	1,31	3,34	82,63	85,97
Total	0,078	0,22	2,39	6,45	11,17	88,83	100

Table 11

Annual: BGGH - Frequencies (%) Visibility - Ceiling

No. Obs = 59.686	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,35	1,23	2,71	3,03	3,20	0,43	3,62
<1 km	0,35	1,27	3,08	3,59	3,84	0,54	4,38
<1.5 km	0,36	1,30	3,39	4,27	4,73	0,83	5,56
<3.0 km	0,36	1,33	4,07	5,97	7,37	2,24	9,60
< 5.0 km	0,36	1,34	4,65	7,31	9,71	4,61	14,31
>= 5,0 km or CAVOK	0,0034	0,042	1,80	5,21	8,77	76,91	85,69
Total	0,36	1,39	6,46	12,52	18,48	81,52	100

Table 12



Wind direction histograms

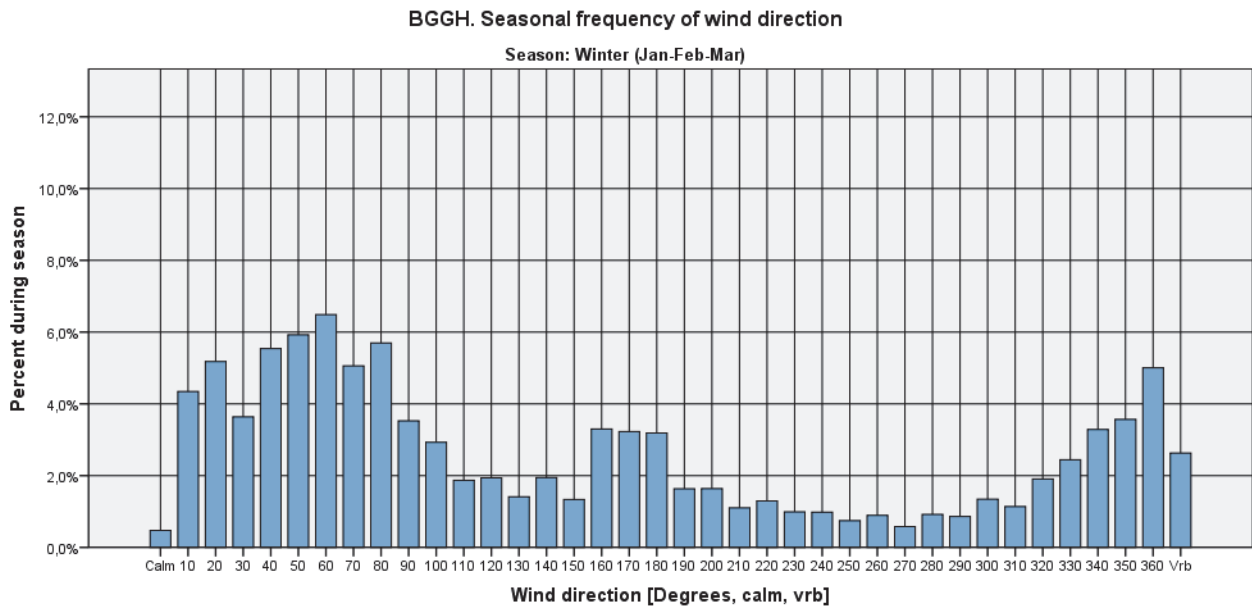


Figure 24

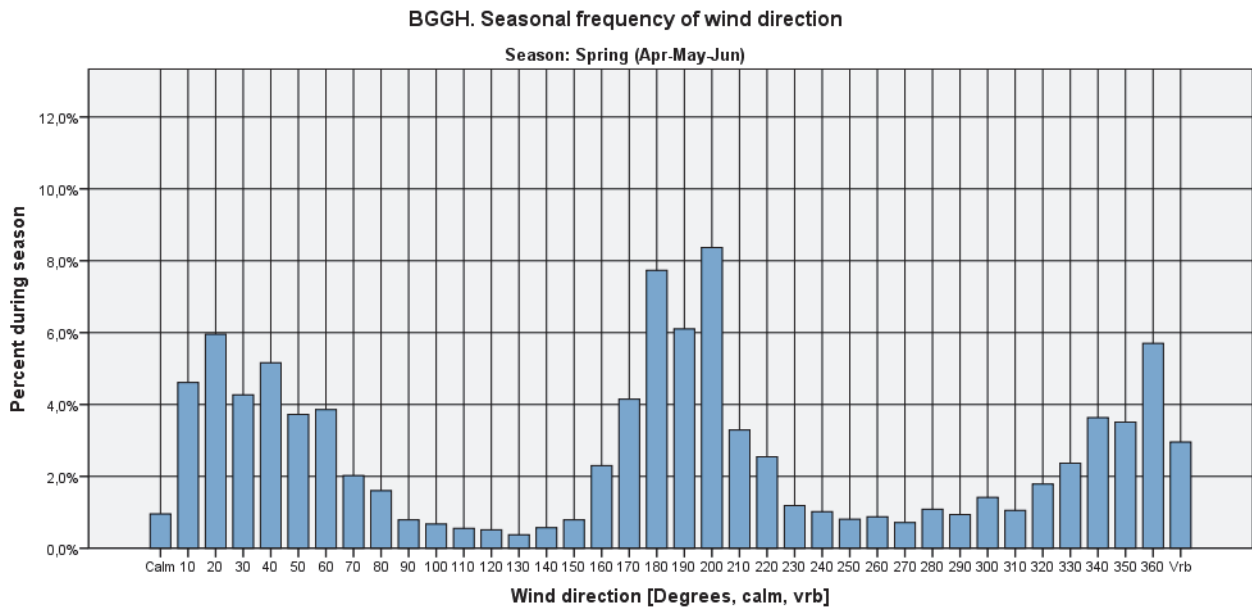


Figure 25

BGGH. Seasonal frequency of wind direction

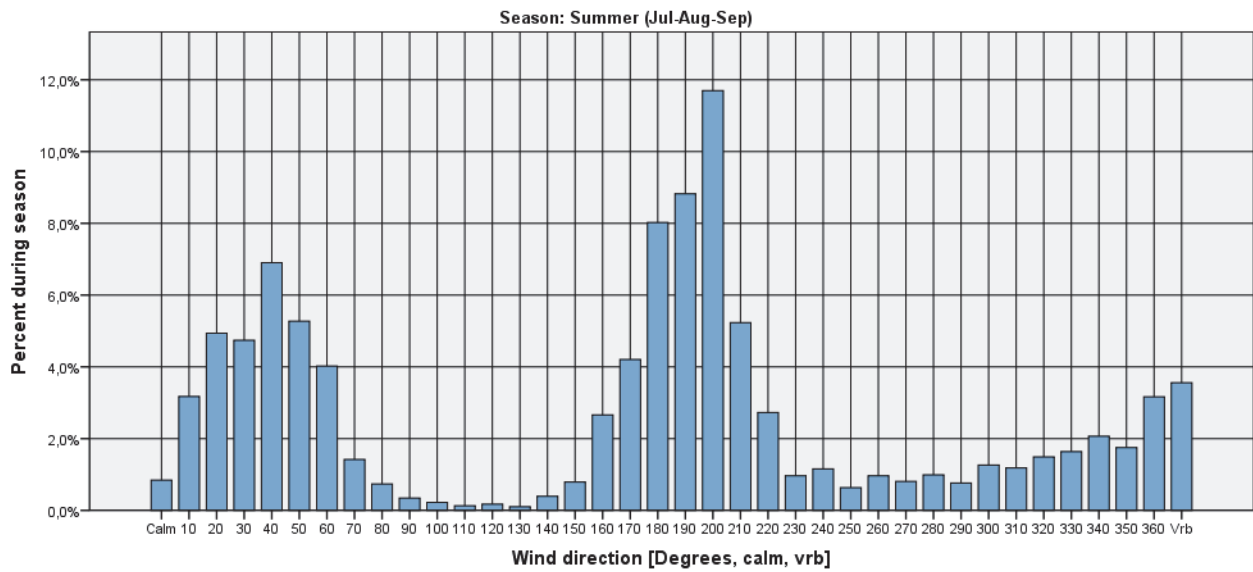


Figure 26

BGGH. Seasonal frequency of wind direction

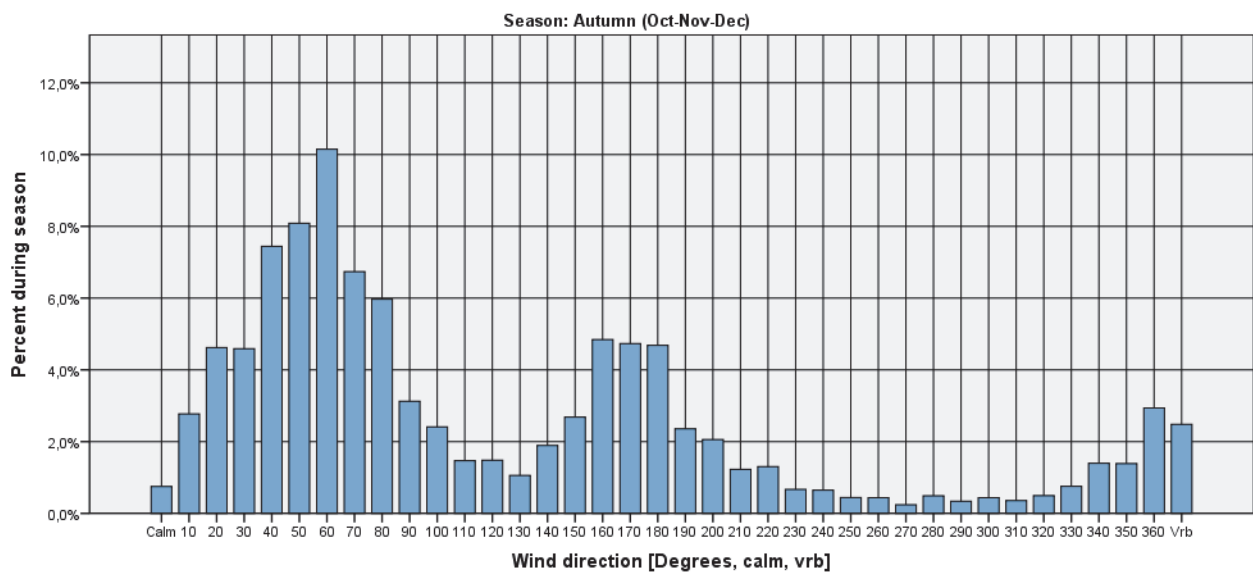


Figure 27

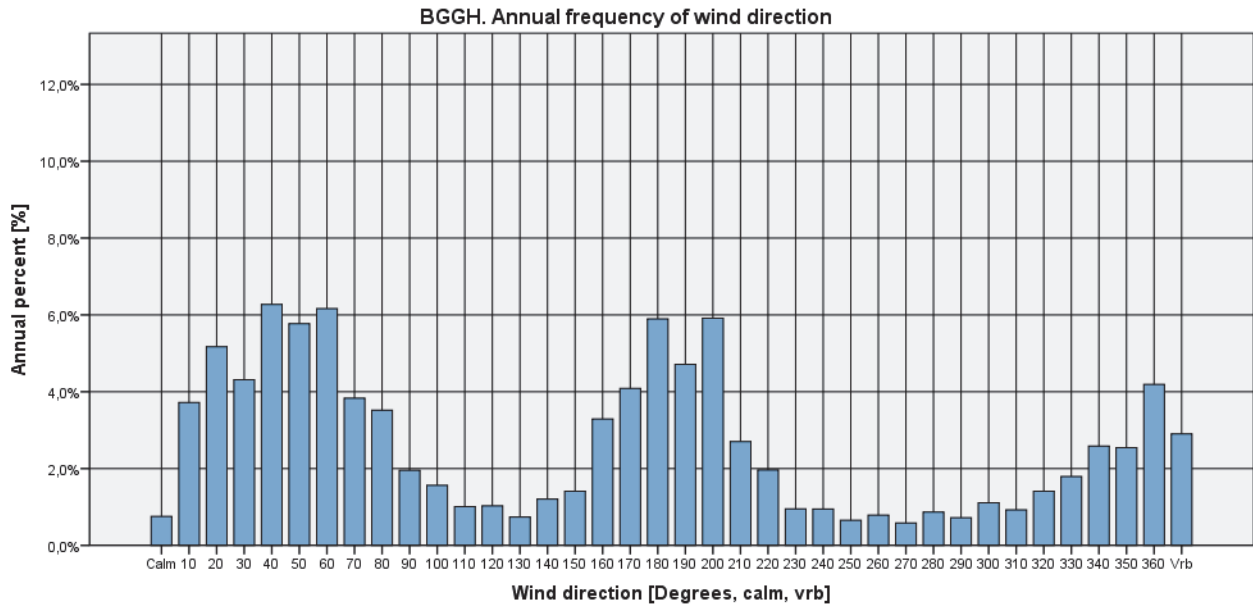


Figure 28



Visibility criteria on wind direction histograms

Visibility < 1000 m

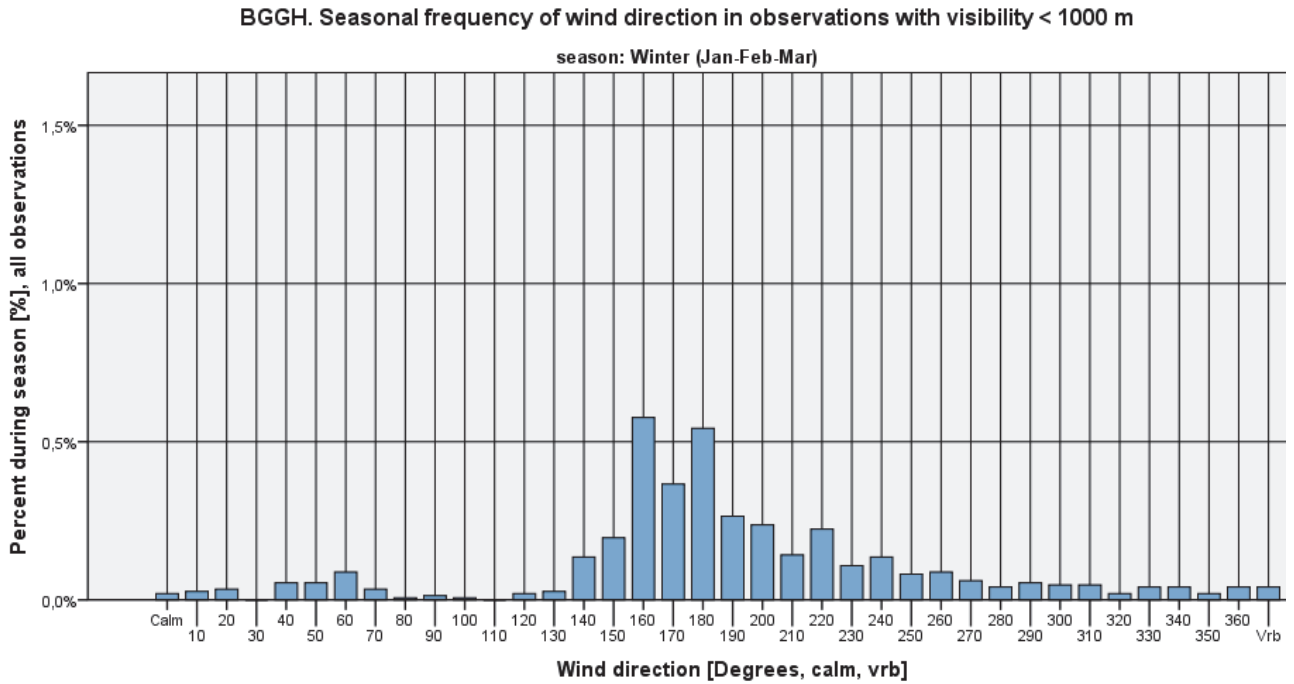


Figure 29

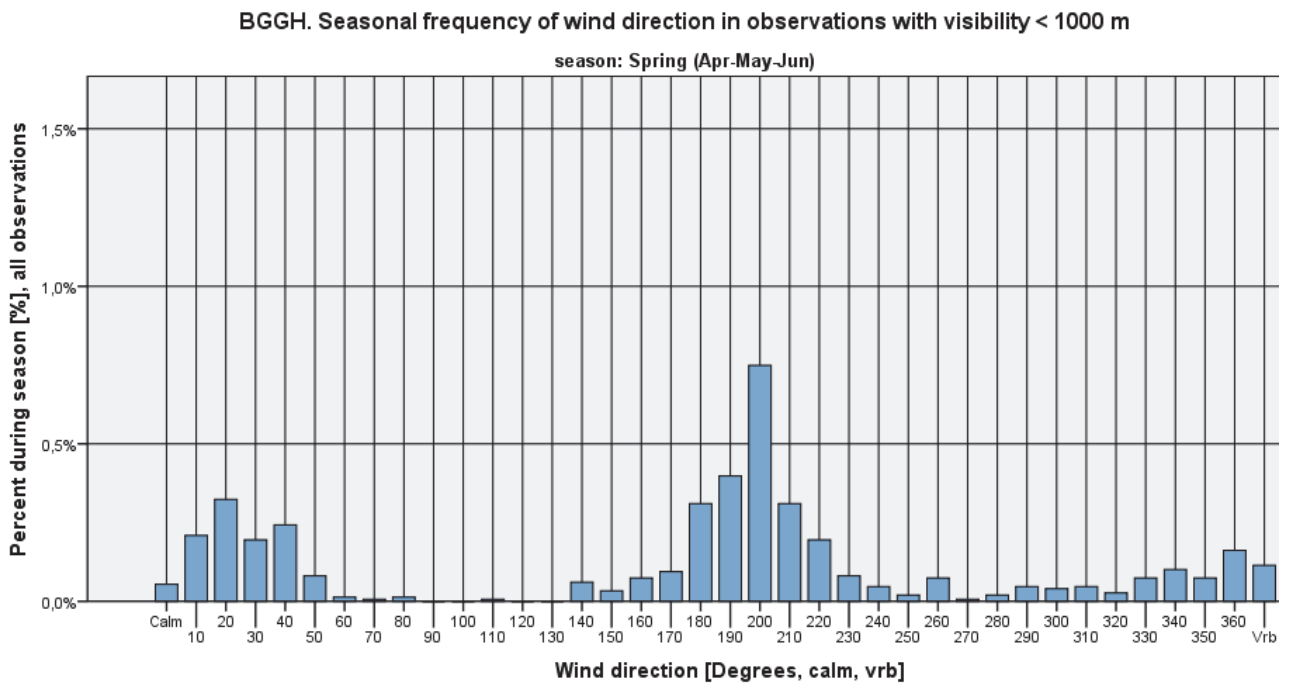


Figure 30

BGGH. Seasonal frequency of wind direction in observations with visibility < 1000 m

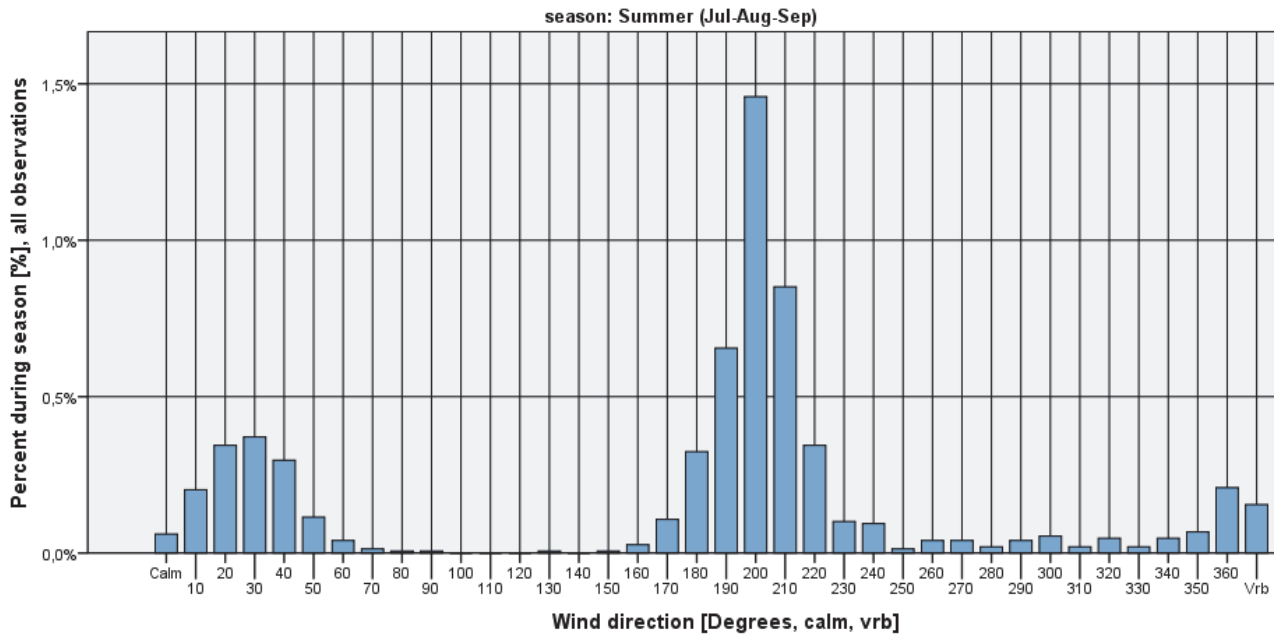


Figure 31

BGGH. Seasonal frequency of wind direction in observations with visibility < 1000 m

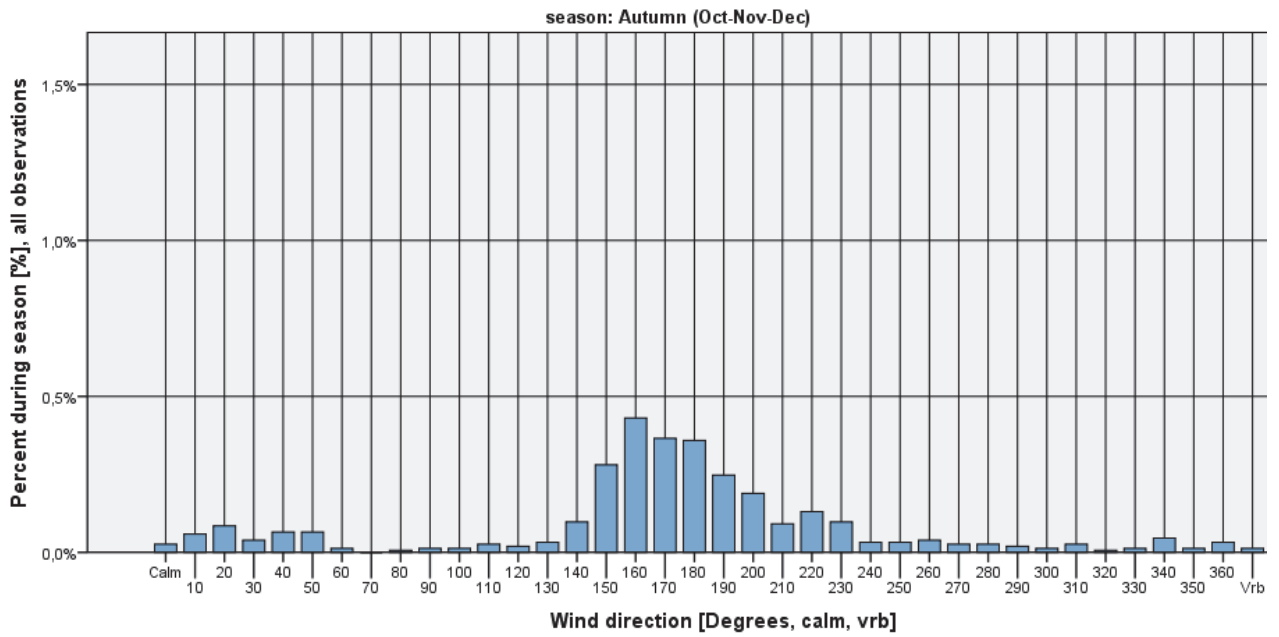


Figure 32

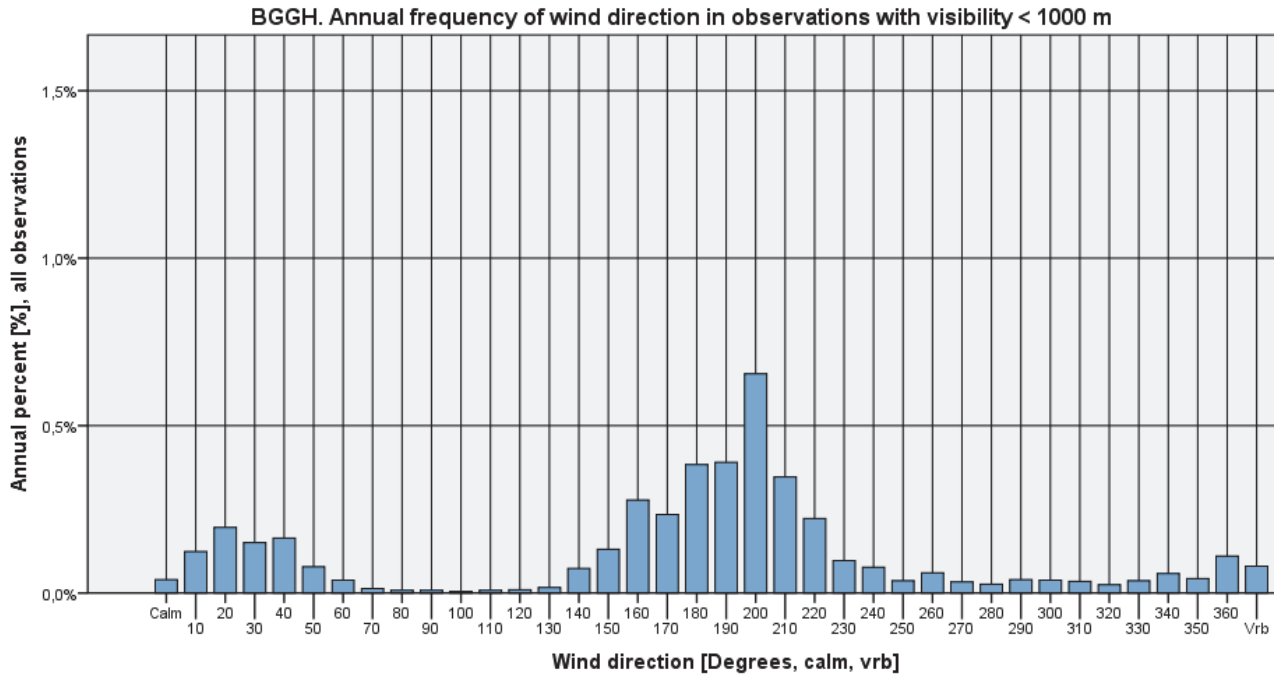


Figure 33



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

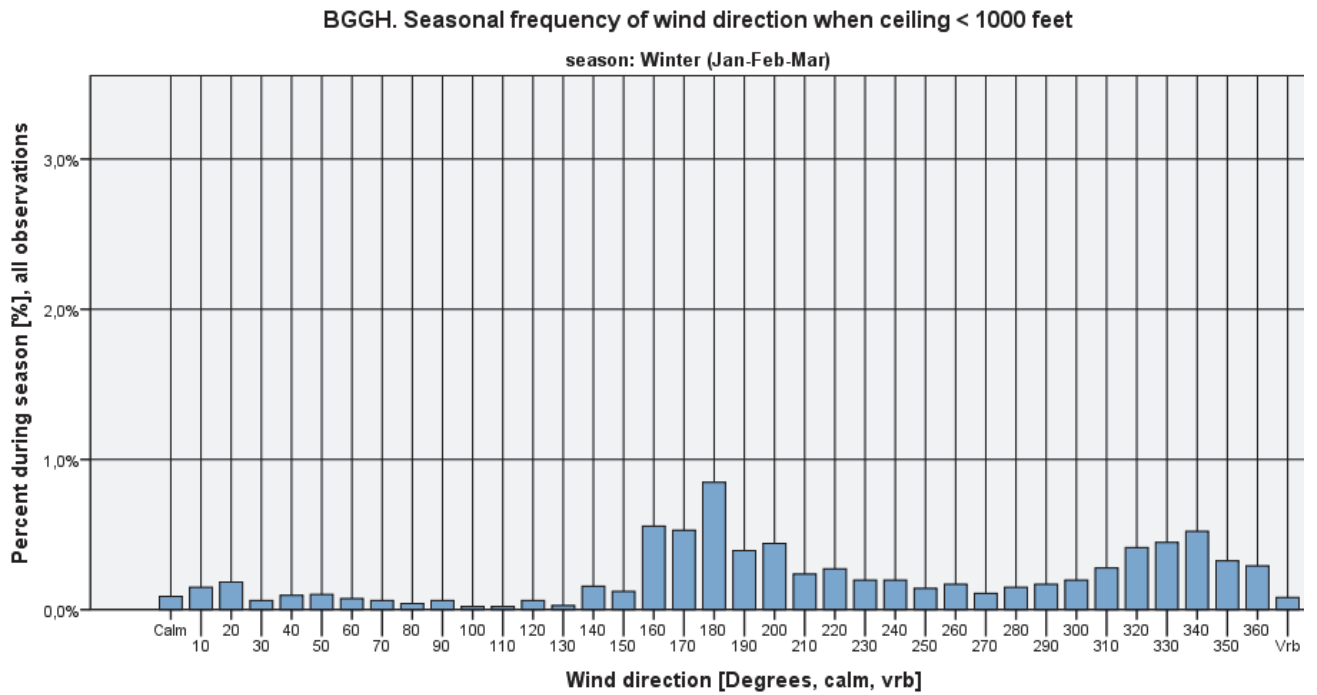


Figure 34

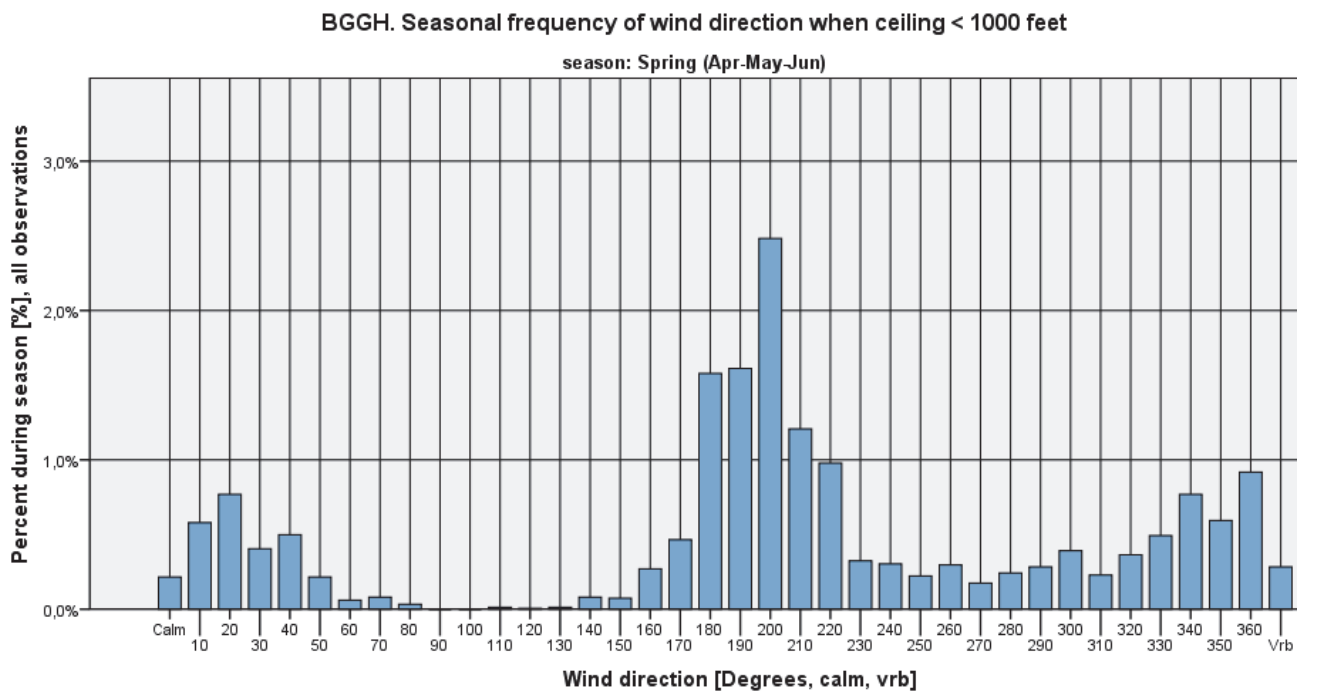


Figure 35



BGGH. Seasonal frequency of wind direction when ceiling < 1000 feet

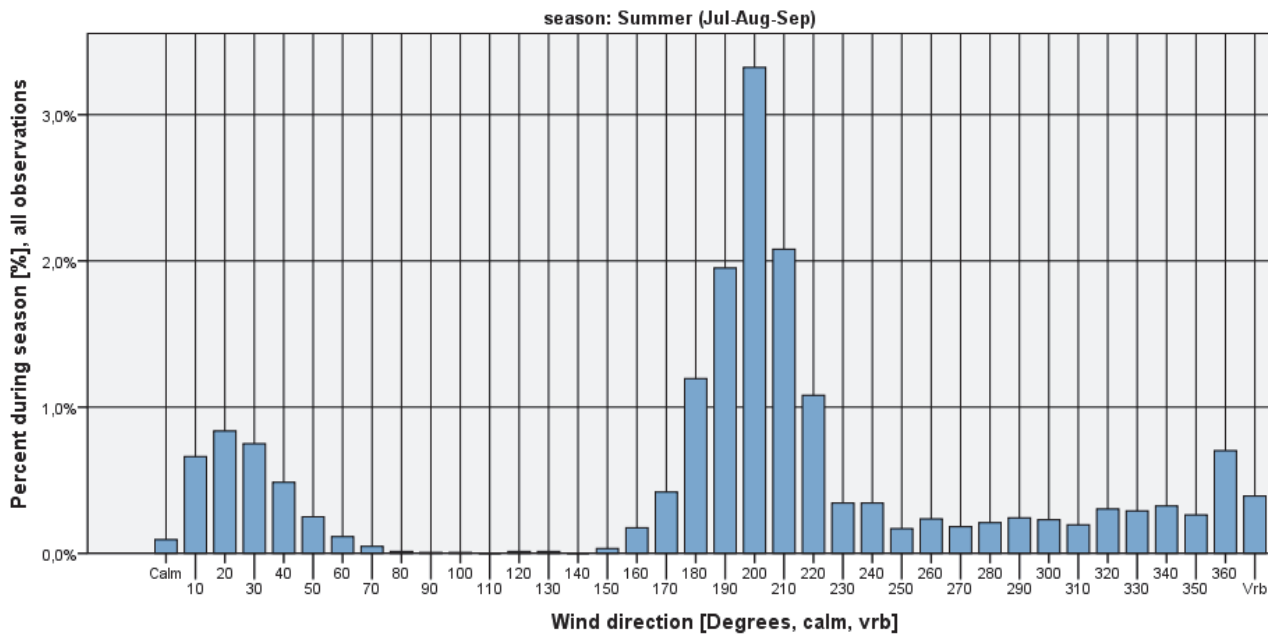


Figure 36

BGGH. Seasonal frequency of wind direction when ceiling < 1000 feet

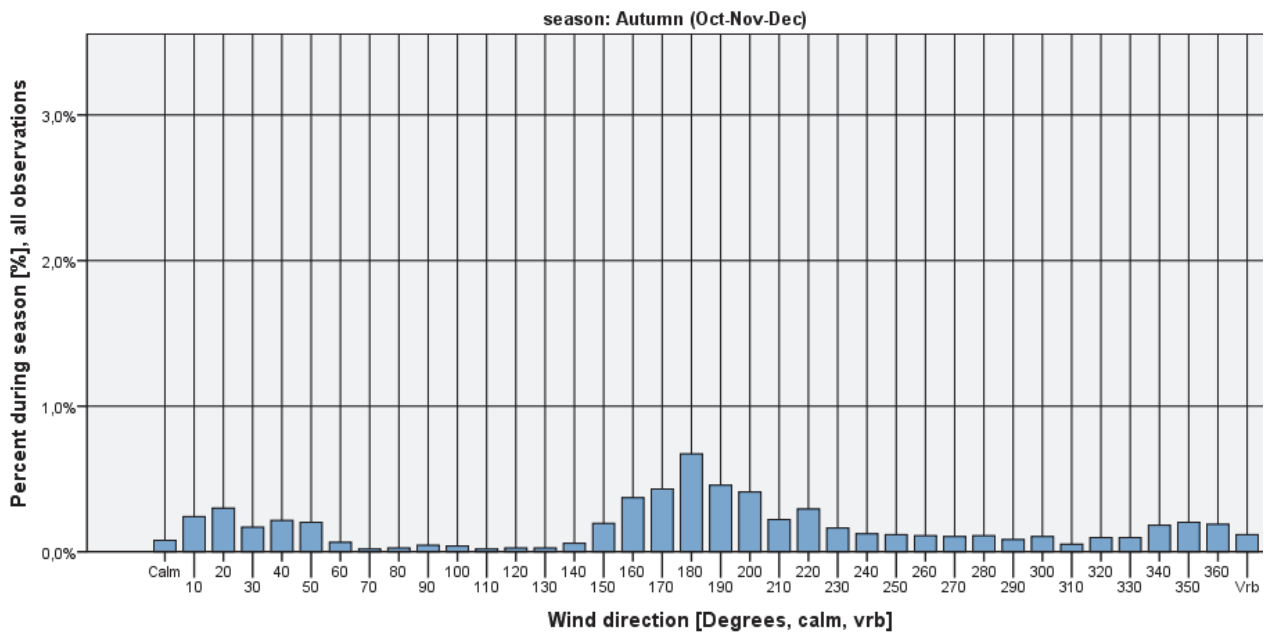


Figure 37

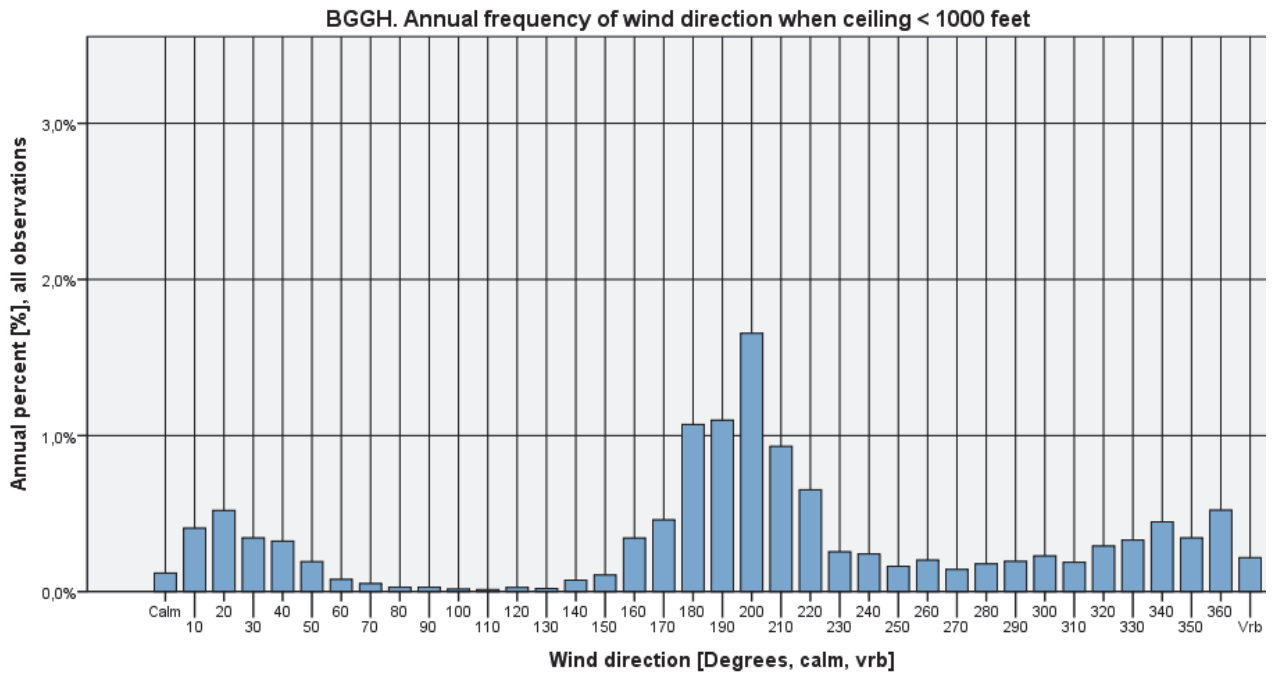


Figure 38



Ceiling < 500 feet

BGGH. Seasonal frequency of wind direction when ceiling < 500 feet

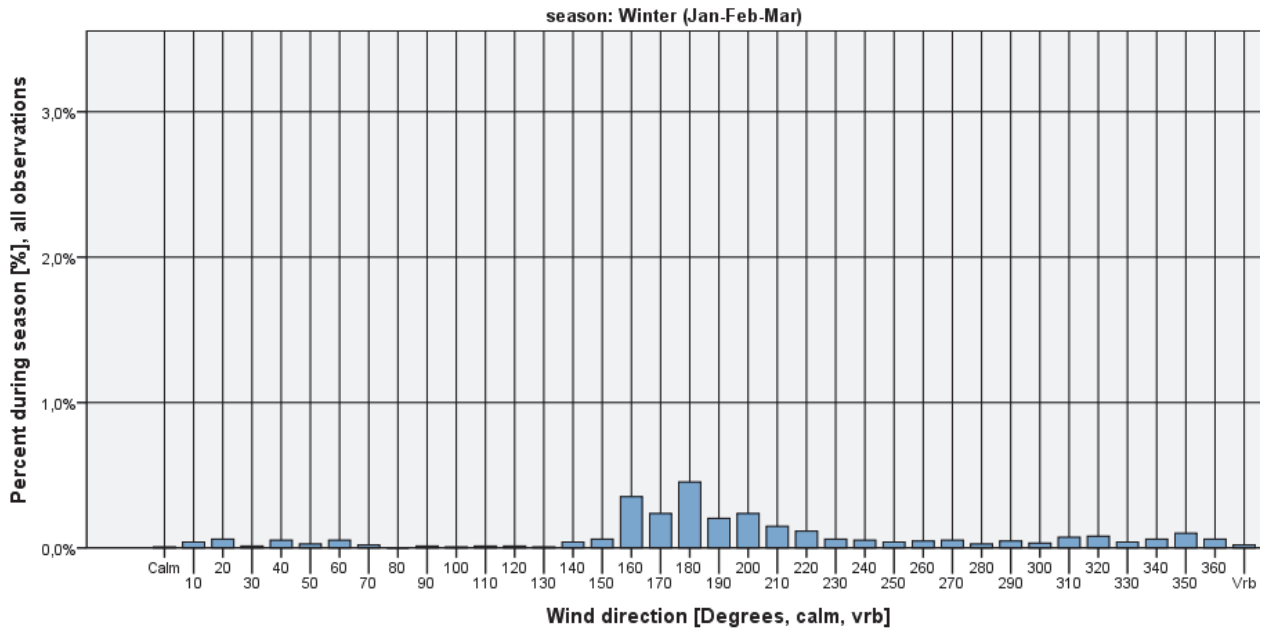


Figure 39

BGGH. Seasonal frequency of wind direction when ceiling < 500 feet

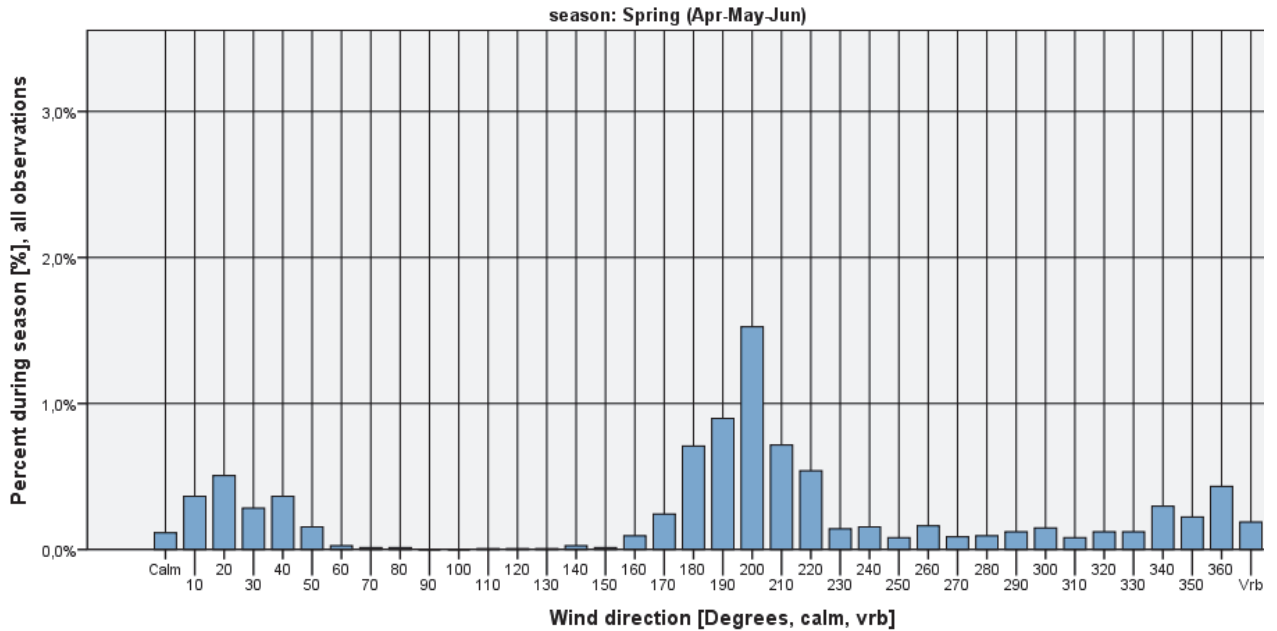


Figure 40



BGGH. Seasonal frequency of wind direction when ceiling < 500 feet

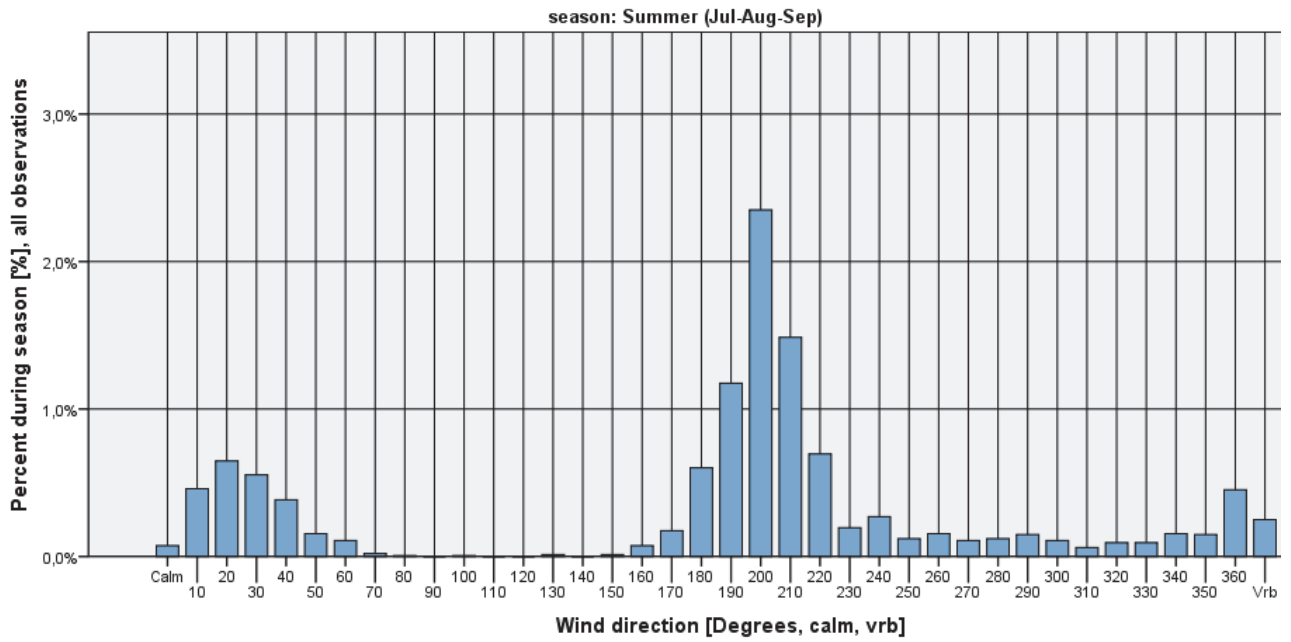


Figure 41

BGGH. Seasonal frequency of wind direction when ceiling < 500 feet

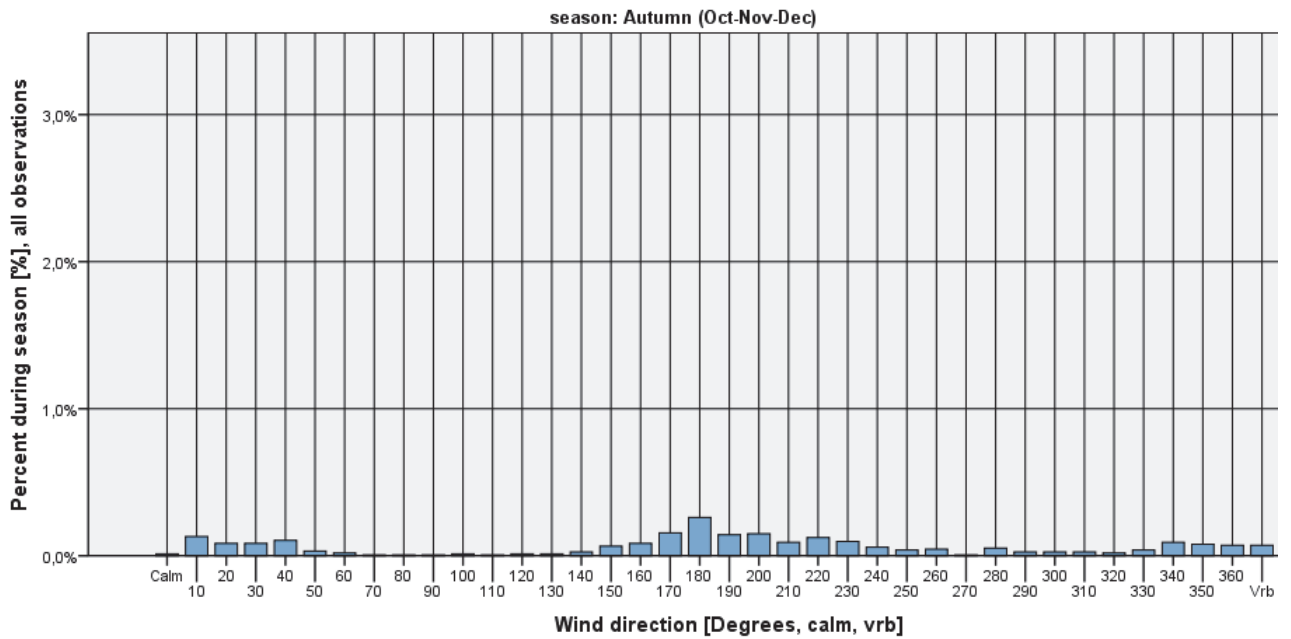


Figure 42

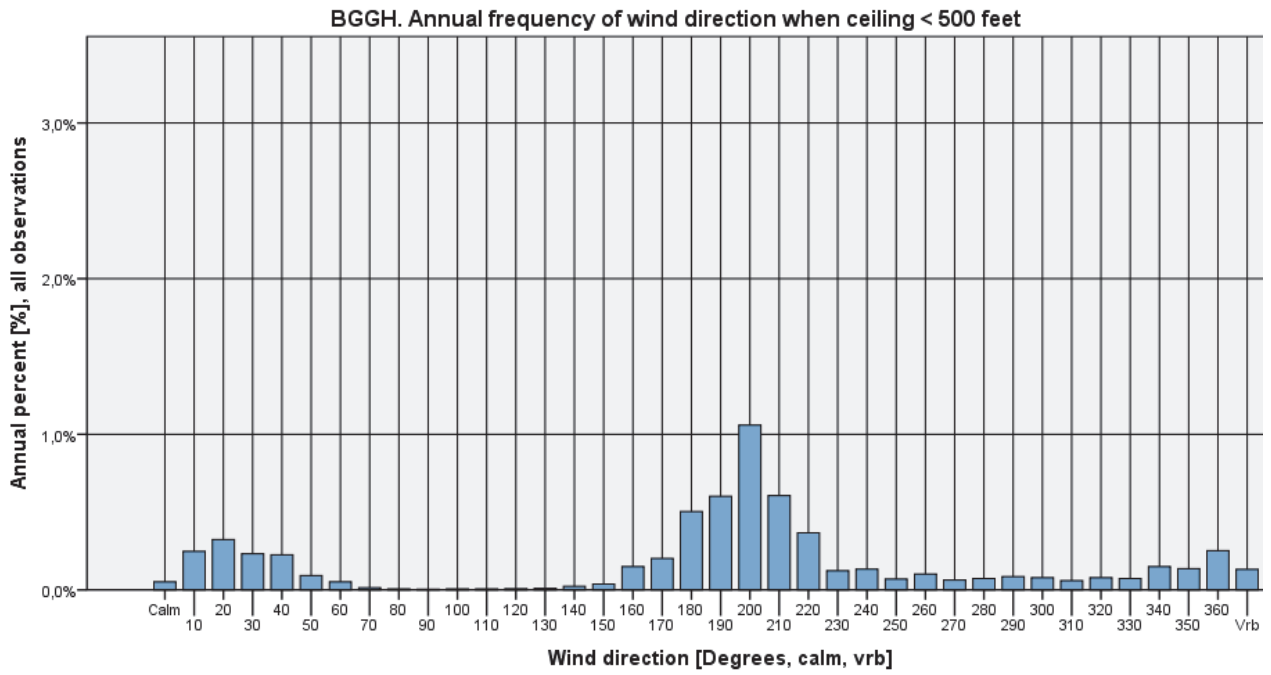
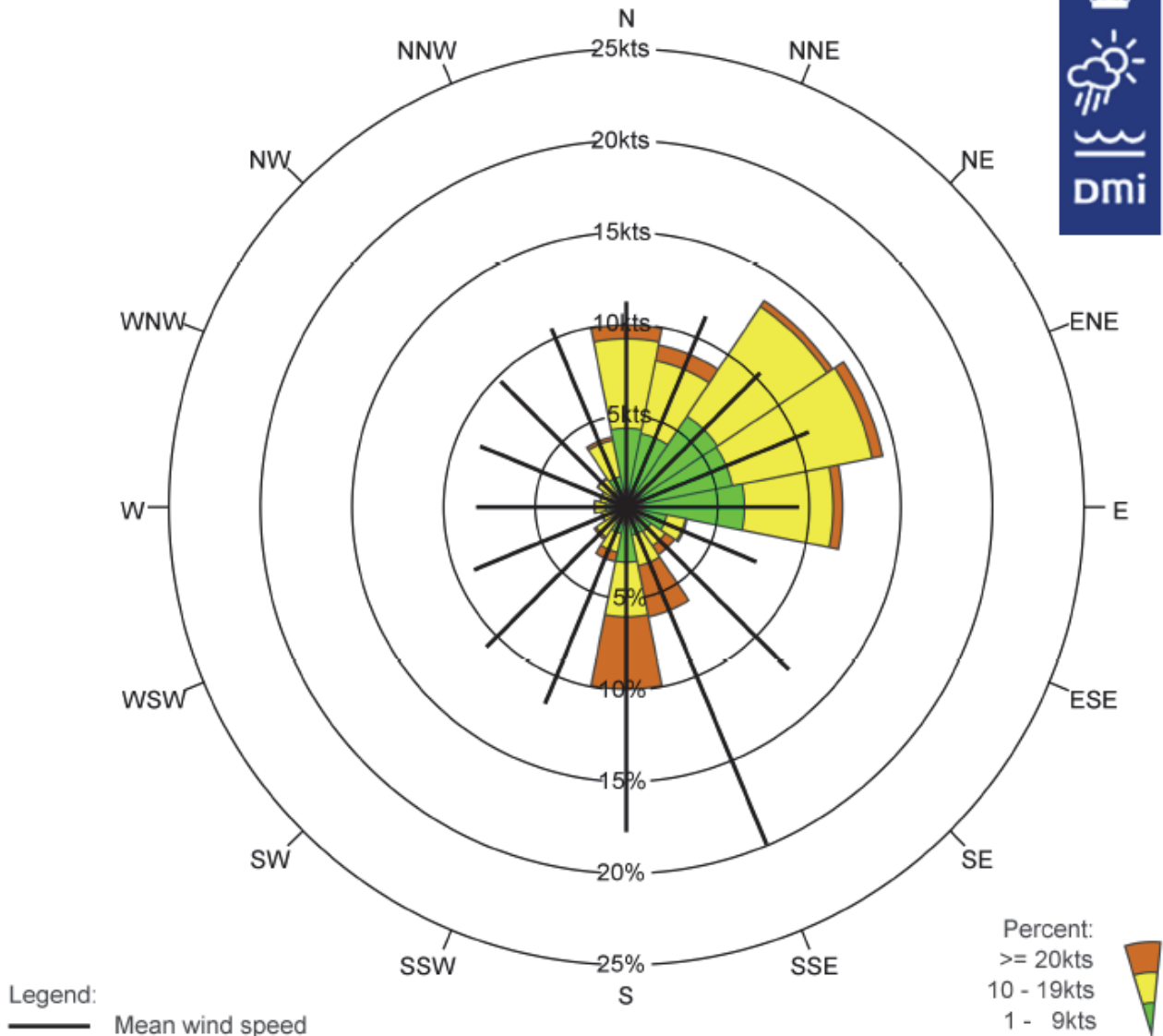


Figure 43



Wind roses

BGGH NUUK/GODTHÅB AUTUMN & WINTER: OCTOBER - MARCH 01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

Percent:
 >= 20kts
 10 - 19kts
 1 - 9kts

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	10.0	9.0	13.5	14.3	11.8	3.4	3.2	6.1	9.9	3.0	2.1	1.4	1.8	1.5	1.9	3.9	96.8
% 1 - 9kts	4.3	4.1	6.0	5.9	6.4	2.2	1.6	1.6	3.0	1.5	0.9	0.8	1.1	0.9	1.0	1.7	43.0
% 10 - 19kts	4.9	4.1	7.2	7.8	4.8	1.0	0.9	1.7	3.0	1.1	1.1	0.6	0.6	0.5	0.9	2.0	42.2
% >= 20kts	0.8	0.9	0.4	0.6	0.6	0.1	0.6	2.8	3.9	0.5	0.2	0.0	0.0	0.0	0.1	0.2	11.6
Mean wind speed	11.2	11.3	10.4	10.8	9.4	7.7	12.5	19.9	17.8	11.6	10.8	9.0	8.2	8.6	9.7	10.6	11.8
Max wind speed	38.0	41.0	31.0	46.0	36.0	36.0	61.0	58.0	60.0	39.0	30.0	27.0	22.0	25.0	24.0	28.0	61.0

Number of observations = 30060

Source: DMI

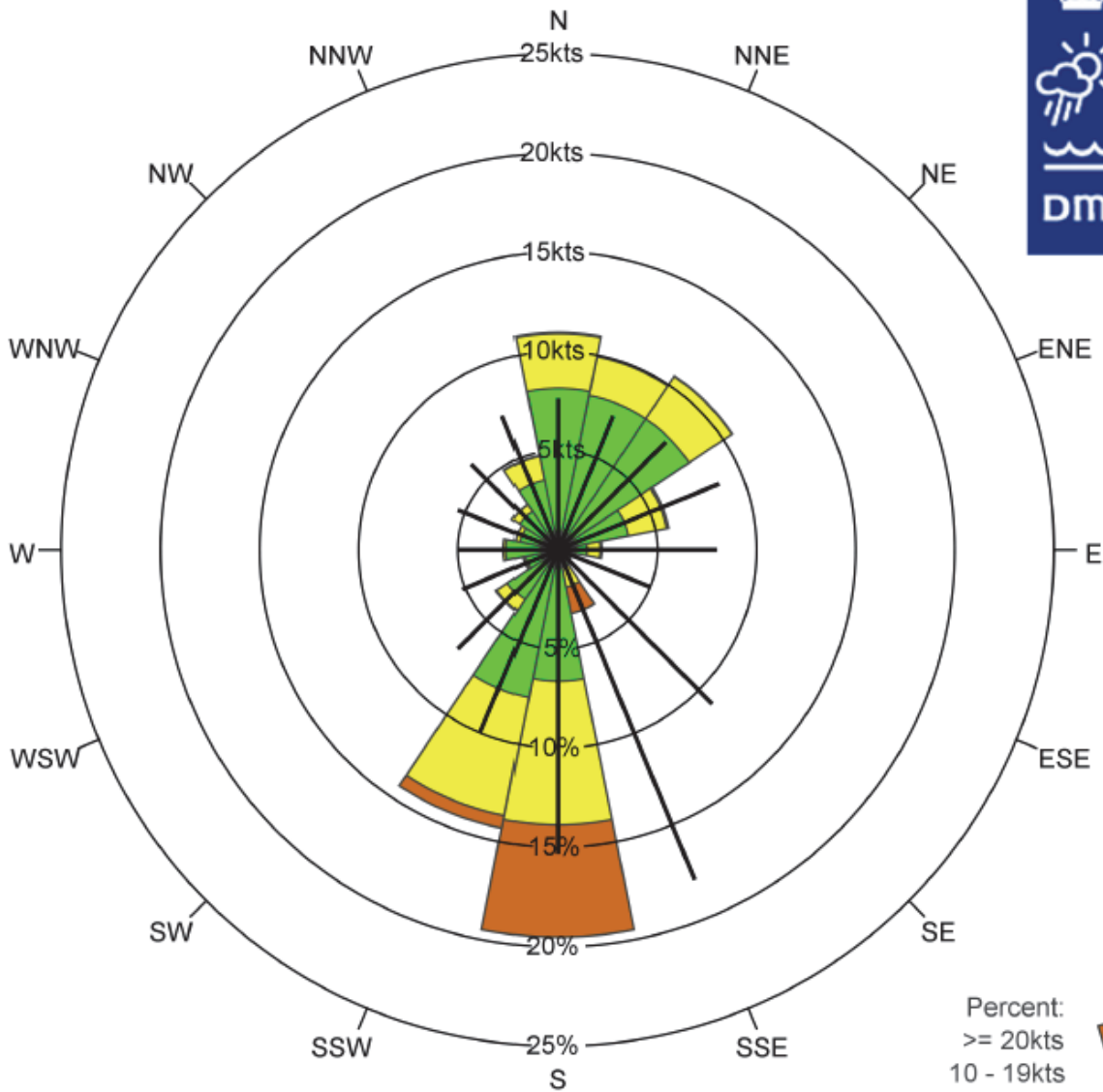
Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 953=3.2%

Observations with calm/varying wind direction are not used in the statistics



BGGH NUUK/GODTHÅB SPRING & SUMMER: APRIL - SEPTEMBER 01-02-2003 - 01-02-2012



Legend:
 Mean wind speed

Percent:
 >= 20kts
 10 - 19kts
 1 - 9kts

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	11.0	10.0	10.5	5.7	2.2	0.7	0.7	3.3	19.5	14.3	3.7	1.8	2.7	2.2	2.8	4.9	95.8
% 1 - 9kts	8.1	7.9	7.9	3.6	1.4	0.6	0.5	0.9	6.6	7.6	3.0	1.7	2.6	2.0	2.3	3.6	60.4
% 10 - 19kts	2.8	2.0	2.6	2.0	0.7	0.1	0.1	1.0	7.2	6.1	0.6	0.1	0.1	0.2	0.4	1.2	27.2
% >= 20kts	0.1	0.0	0.0	0.1	0.1	0.0	0.2	1.4	5.7	0.6	0.1	0.0	0.0	0.0	0.0	0.1	8.3
Mean wind speed	7.6	7.3	7.7	8.7	8.0	5.0	11.0	18.0	15.3	10.0	7.0	5.1	5.0	5.4	6.1	7.4	9.7
Max wind speed	23.0	29.0	24.0	28.0	33.0	33.0	56.0	56.0	56.0	31.0	31.0	38.0	25.0	18.0	24.0	27.0	56.0

Number of observations = 29626

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 1232=4.2%

Observations with calm/varying wind direction are not used in the statistics

Availability

Yearly distribution of observations. BGGH 01-Feb-2003 - 31-Jan-2012

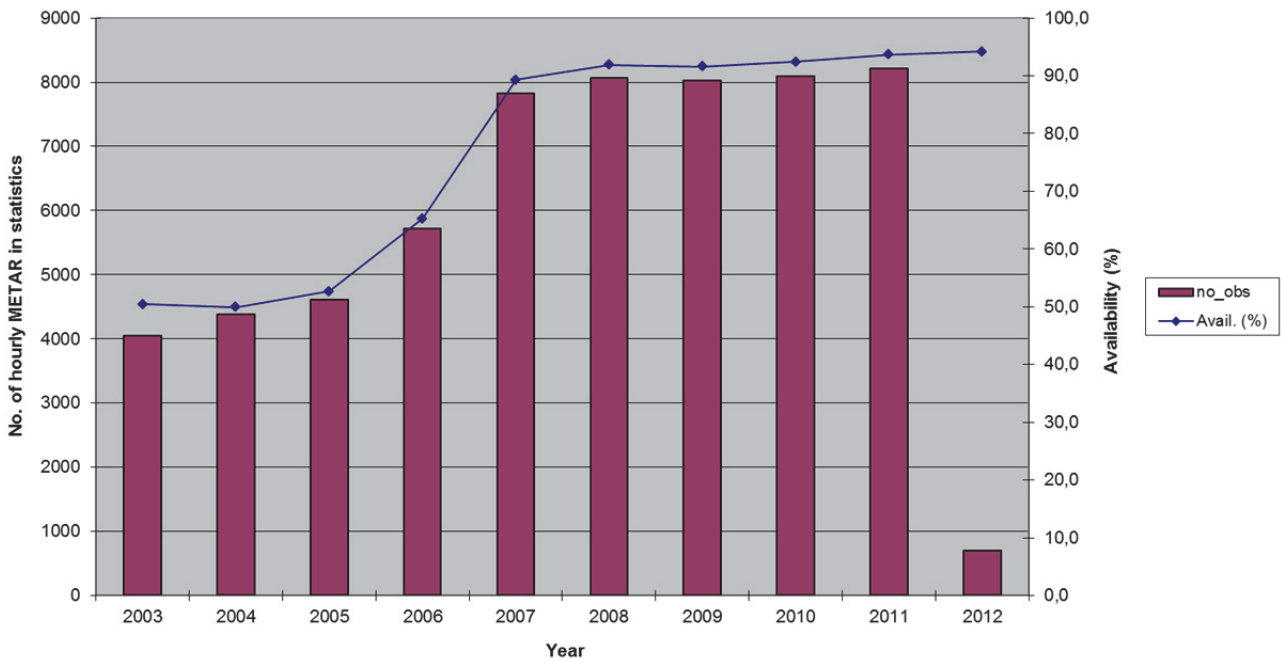


Figure 44

Monthly distribution of observations. BGGH 01-Feb-2003 - 31-Jan-2012

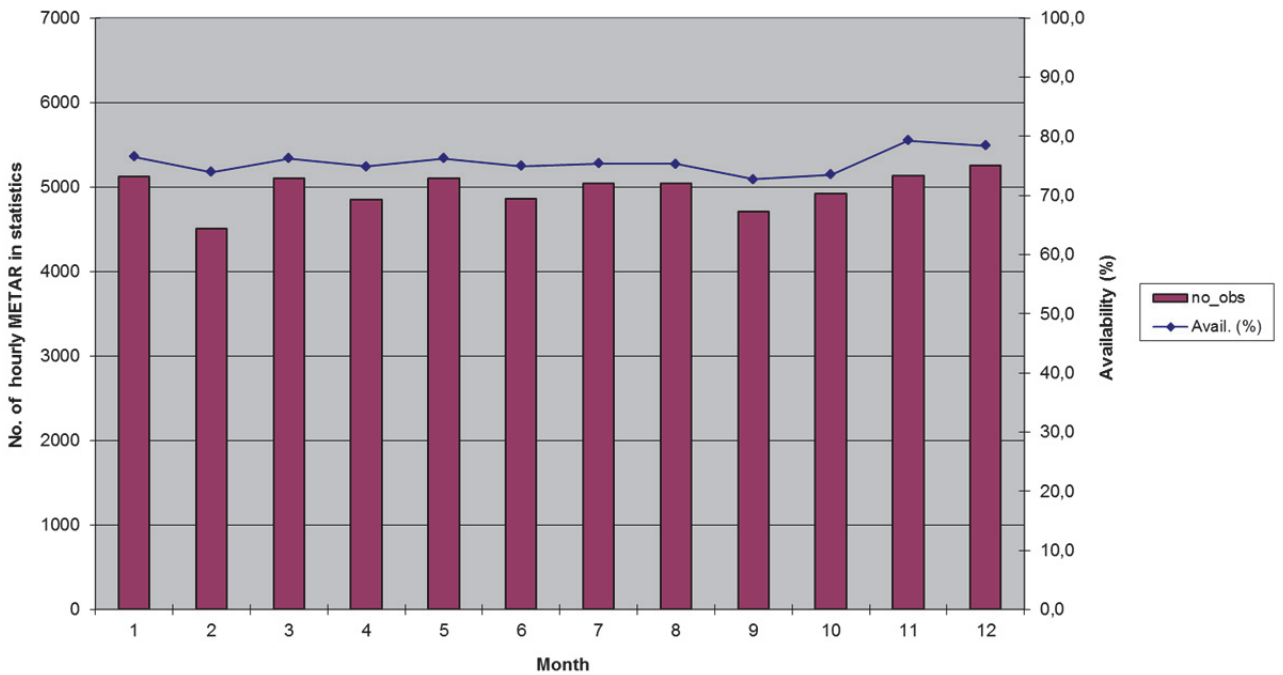


Figure 45

Hourly distribution of observations. BGGH 01-Feb-2003 - 31-Jan-2012

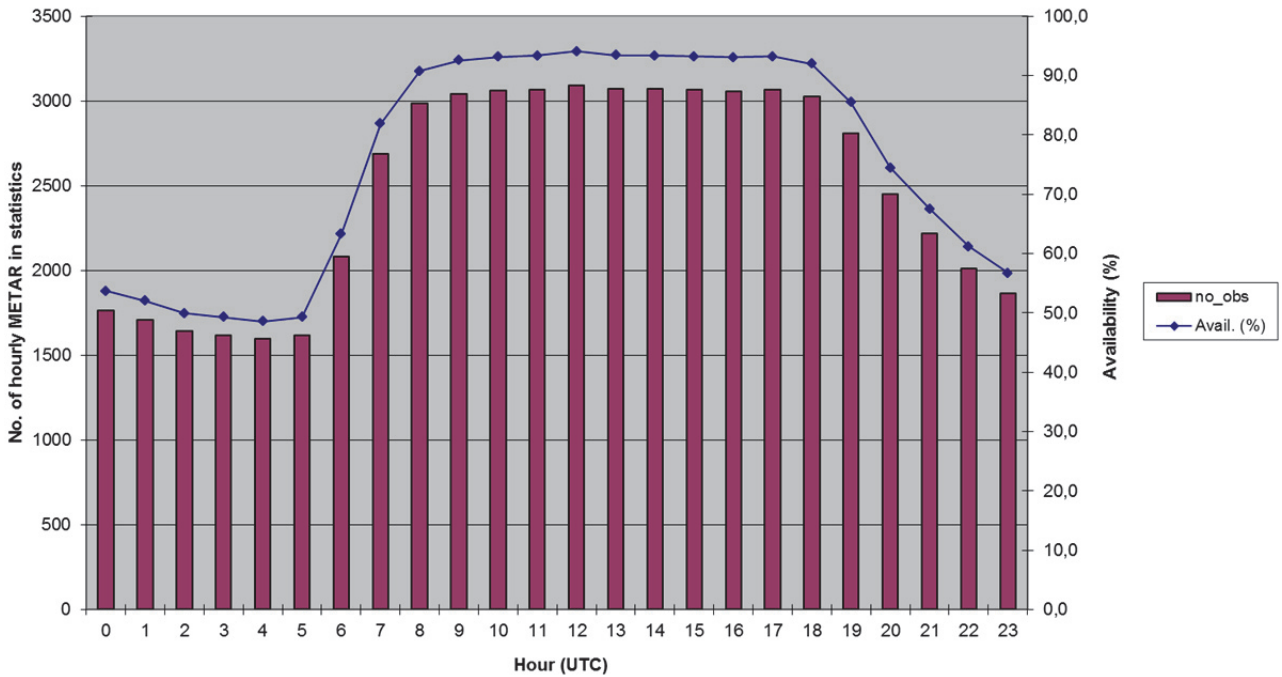


Figure 46

BGGH. Average no. of hourly observations in statistics, 1 February 2003 - 31 January 2012

Hour (UTC)	year									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
0	,1	,1	,1	,3	,8	,9	,9	,9	,9	,9
1	,0	,0	,0	,2	,8	,8	,8	,9	,9	,9
2	,0	,0	,0	,2	,8	,8	,8	,9	,9	,9
3	,0	,0	,0	,2	,7	,8	,8	,8	,9	,9
4	,0	,0	,0	,2	,8	,8	,8	,8	,9	,9
5	,0	,0	,0	,2	,8	,8	,8	,8	,9	,9
6	,3	,2	,4	,6	,8	,8	,8	,9	,9	,9
7	,6	,6	,7	,7	,9	,9	,9	,9	,9	1,0
8	,8	,8	,8	,9	,9	1,0	1,0	1,0	1,0	1,0
9	,9	,8	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0
10	,9	,9	,9	,9	1,0	1,0	1,0	1,0	,9	1,0
11	,9	,9	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0
12	,9	,9	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0
13	,9	,9	,9	,9	1,0	1,0	1,0	1,0	,9	1,0
14	,9	,9	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0
15	,9	,8	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0
16	,9	,9	,9	,9	1,0	1,0	1,0	1,0	1,0	,9
17	,9	,8	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0
18	,8	,8	,8	,9	1,0	1,0	1,0	1,0	1,0	,9
19	,6	,7	,7	,9	1,0	1,0	1,0	1,0	,9	,9
20	,4	,4	,5	,7	,9	1,0	,9	1,0	,9	,9
21	,2	,2	,3	,5	,9	1,0	1,0	,9	1,0	,9
22	,1	,2	,2	,4	,9	,9	,9	,9	,9	,9
23	,1	,1	,1	,3	,8	,9	,9	,9	,9	1,0

Table 13



BGBW Narsarsuaq

Mittarfik Narsarsuaq

Location: 61,167°N 45,417°W

H: 27 m above msl

BGBW observations in statistics: 50.289 hourly METAR³ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 63,7%.

The availability is mostly lowered because the period 2003-2010 only contains few nightly observations and few observations on Sundays. More details are shown in the Availability section.

The BGBW METAR are all manual until 28 June 2004, and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

Winter (Jan-Feb-Mar): BGBW - Frequencies (%) Visibility - Ceiling

No. Obs = 12.684	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,0079	0,25	0,48	0,51	0,26	0,77
<1 km	0	0,0079	0,32	0,84	0,89	0,32	1,21
<1.5 km	0	0,0079	0,38	1,32	1,60	0,51	2,11
<3.0 km	0	0,0079	0,43	1,85	2,78	1,18	3,97
< 5.0 km	0	0,0079	0,43	1,98	3,19	2,30	5,50
>= 5,0 km or CAVOK	0	0	0,016	0,24	1,13	93,38	94,50
Total	0	0,0079	0,45	2,22	4,32	95,68	100

Table 14

Spring (Apr-May-Jun): BGBW - Frequencies (%) Visibility - Ceiling

No. Obs = 11.907	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,0084	0,042	0,17	0,27	0,27	0,09	0,36
<1 km	0,0084	0,042	0,28	0,50	0,50	0,11	0,60
<1.5 km	0,0084	0,042	0,34	0,72	0,76	0,18	0,94
<3.0 km	0,0084	0,042	0,34	0,97	1,22	0,38	1,60
< 5.0 km	0,0084	0,042	0,39	1,18	1,59	0,66	2,25
>= 5,0 km or CAVOK	0	0	0,15	1,44	4,10	93,65	97,75
Total	0,0084	0,042	0,54	2,61	5,69	94,31	100

Table 15

³ For every hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.



Summer (Jul-Aug-Sep): BGBW - Frequencies (%) Visibility - Ceiling

No. Obs = 12.952	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,054	0,16	0,22	0,22	0,02	0,25
<1 km	0	0,062	0,22	0,32	0,33	0,03	0,36
<1.5 km	0	0,062	0,27	0,42	0,44	0,08	0,52
<3.0 km	0	0,062	0,42	0,67	0,73	0,12	0,86
< 5.0 km	0	0,069	0,61	1,10	1,34	0,25	1,59
>= 5,0 km or CAVOK	0	0,031	0,60	2,70	6,99	91,42	98,41
Total	0	0,10	1,21	3,81	8,33	91,67	100

Table 16

Autumn (Oct-Nov-Dec): BGBW - Frequencies (%) Visibility - Ceiling

No. Obs = 12.746	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,12	0,43	0,63	0,67	0,16	0,84
<1 km	0	0,12	0,55	1,02	1,18	0,21	1,39
<1.5 km	0	0,13	0,64	1,58	1,99	0,45	2,44
<3.0 km	0	0,13	0,75	2,13	3,01	1,00	4,01
< 5.0 km	0	0,13	0,78	2,42	3,64	1,91	5,55
>= 5,0 km or CAVOK	0	0	0,055	0,46	1,72	92,73	94,45
Total	0	0,13	0,83	2,87	5,36	94,64	100

Table 17

Annual: BGBW - Frequencies (%) Visibility - Ceiling

No. Obs = 50.289	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,0020	0,056	0,25	0,40	0,42	0,14	0,56
<1 km	0,0020	0,058	0,34	0,67	0,73	0,17	0,89
<1.5 km	0,0020	0,060	0,41	1,01	1,20	0,30	1,51
<3.0 km	0,0020	0,062	0,49	1,41	1,94	0,67	2,61
< 5.0 km	0,0020	0,064	0,55	1,67	2,45	1,28	3,73
>= 5,0 km or CAVOK	0	0,0080	0,21	1,21	3,49	92,78	96,27
Total	0,0020	0,072	0,76	2,89	5,94	94,06	100

Table 18



Wind direction histograms

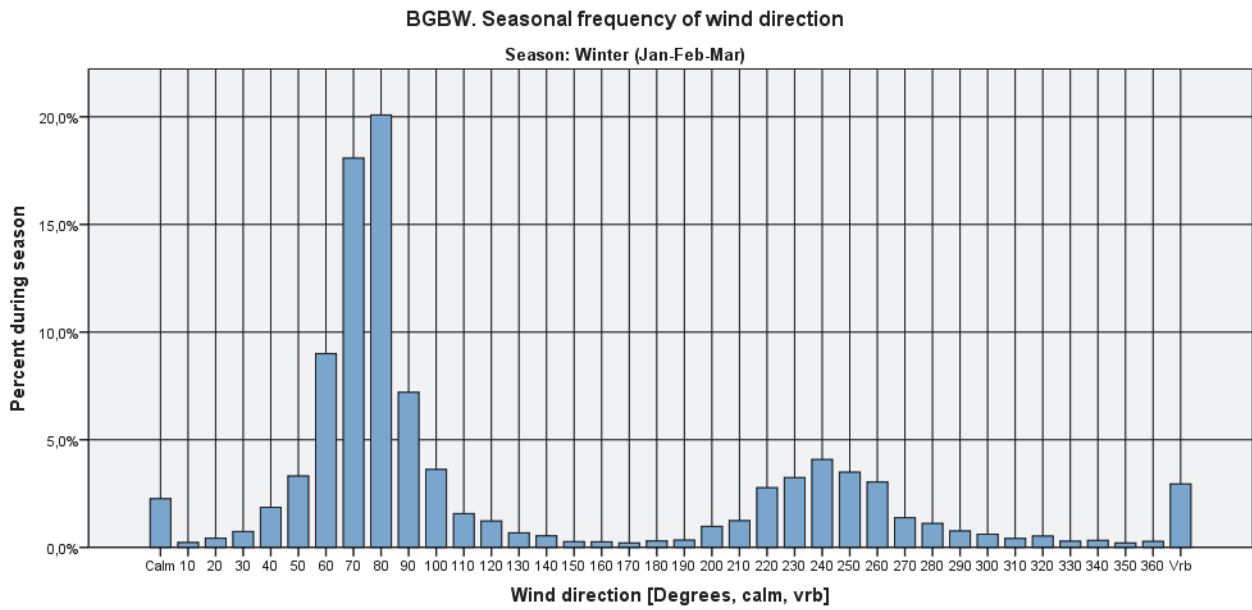


Figure 47

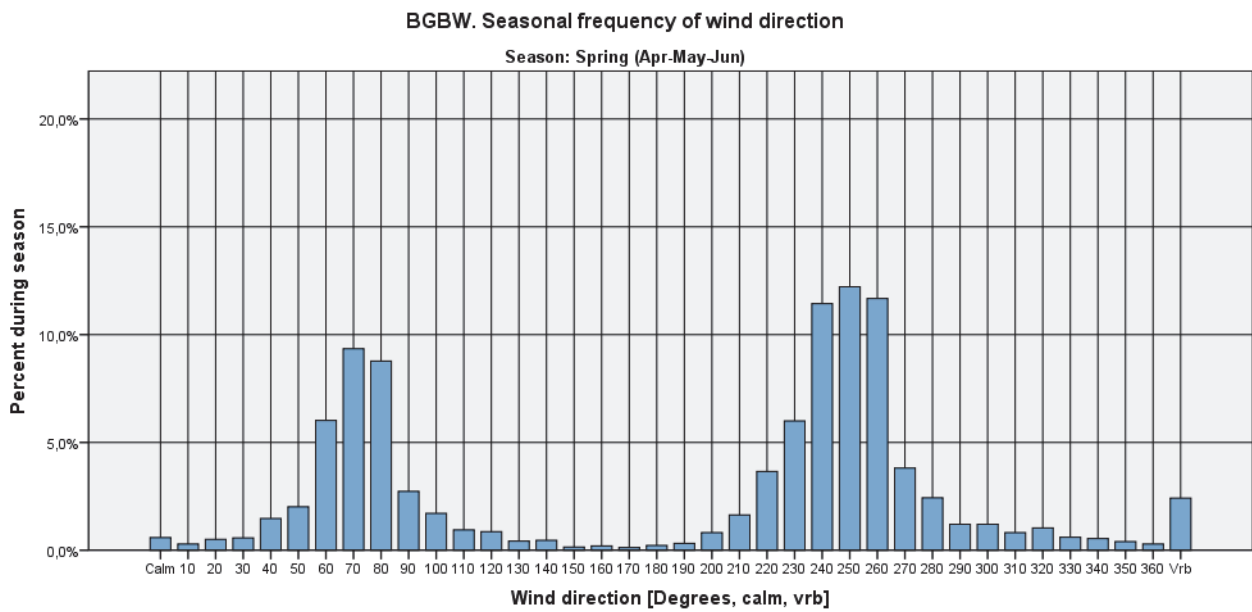


Figure 48

BGBW. Seasonal frequency of wind direction

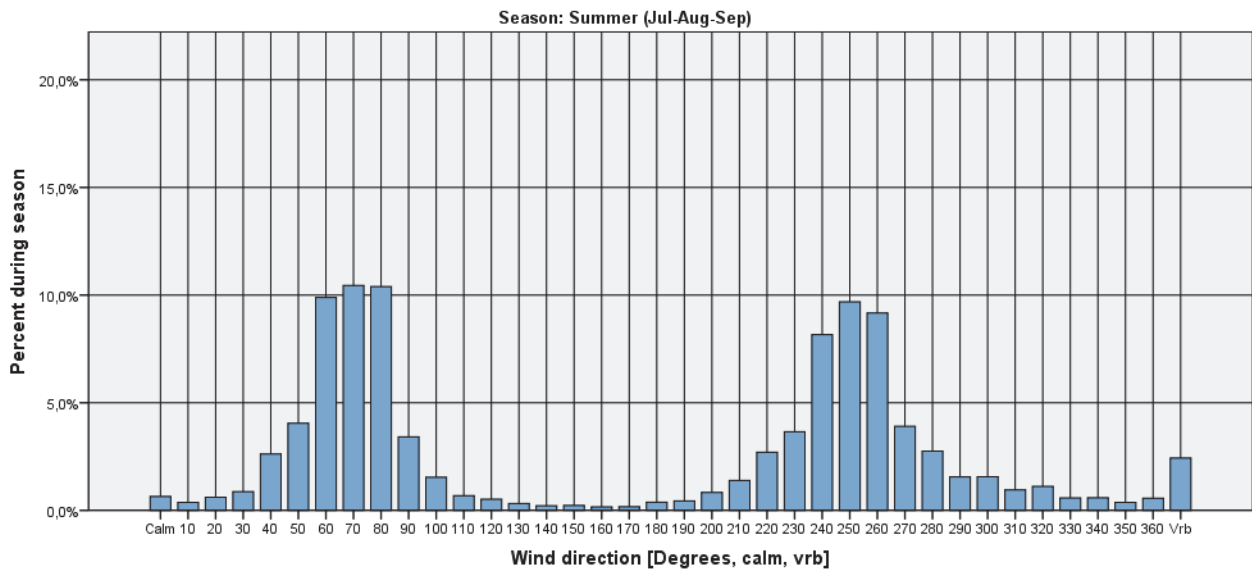


Figure 49

BGBW. Seasonal frequency of wind direction

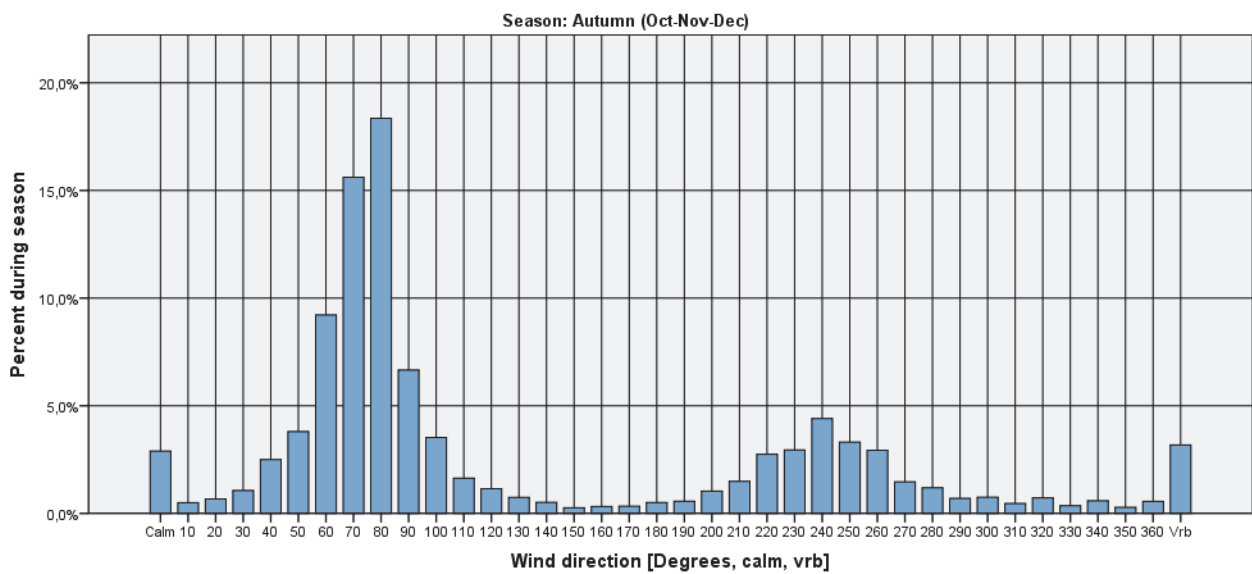


Figure 50

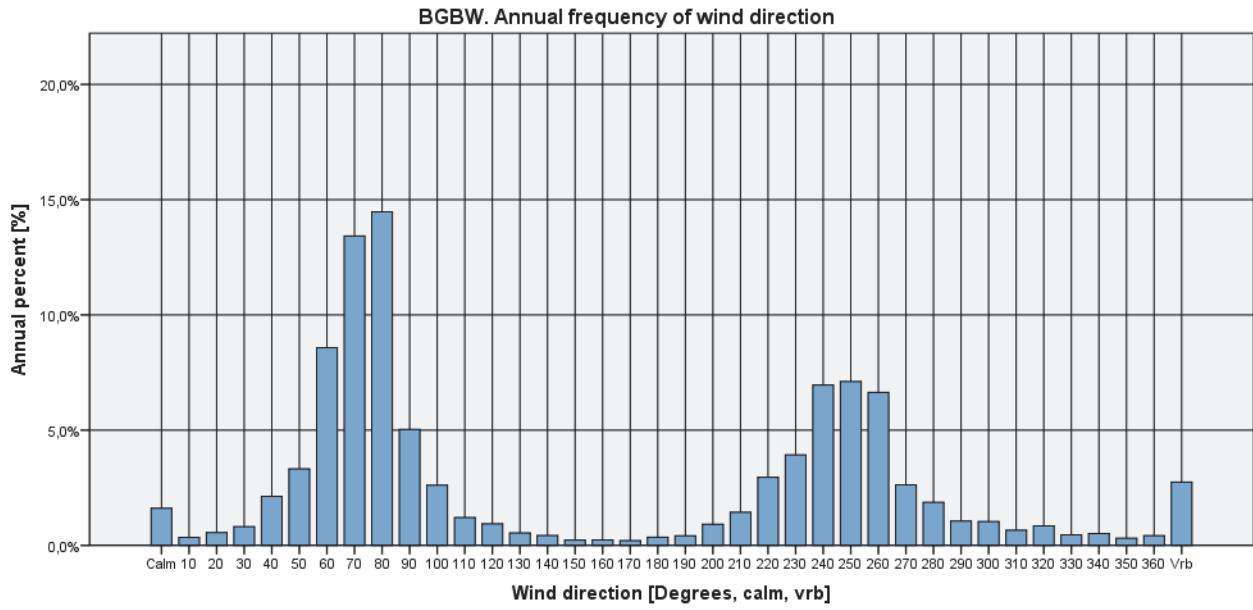


Figure 51



Visibility criteria on wind direction histograms

Visibility < 1000 m

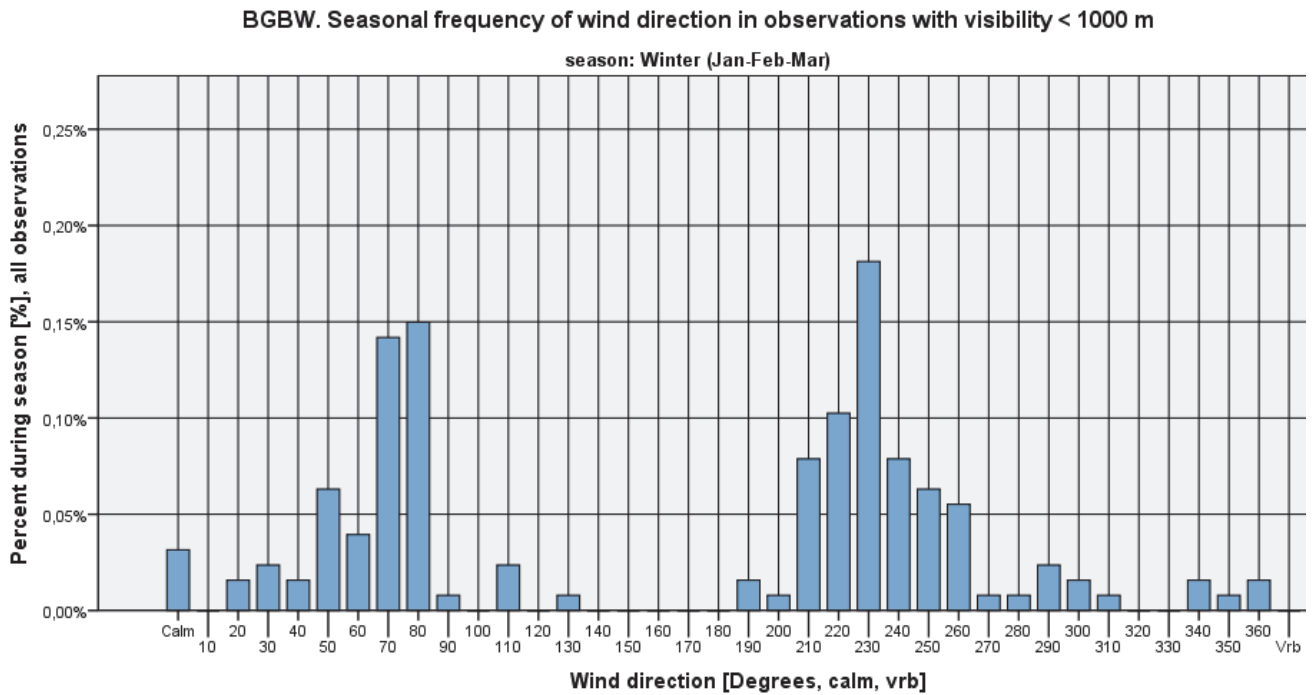


Figure 52

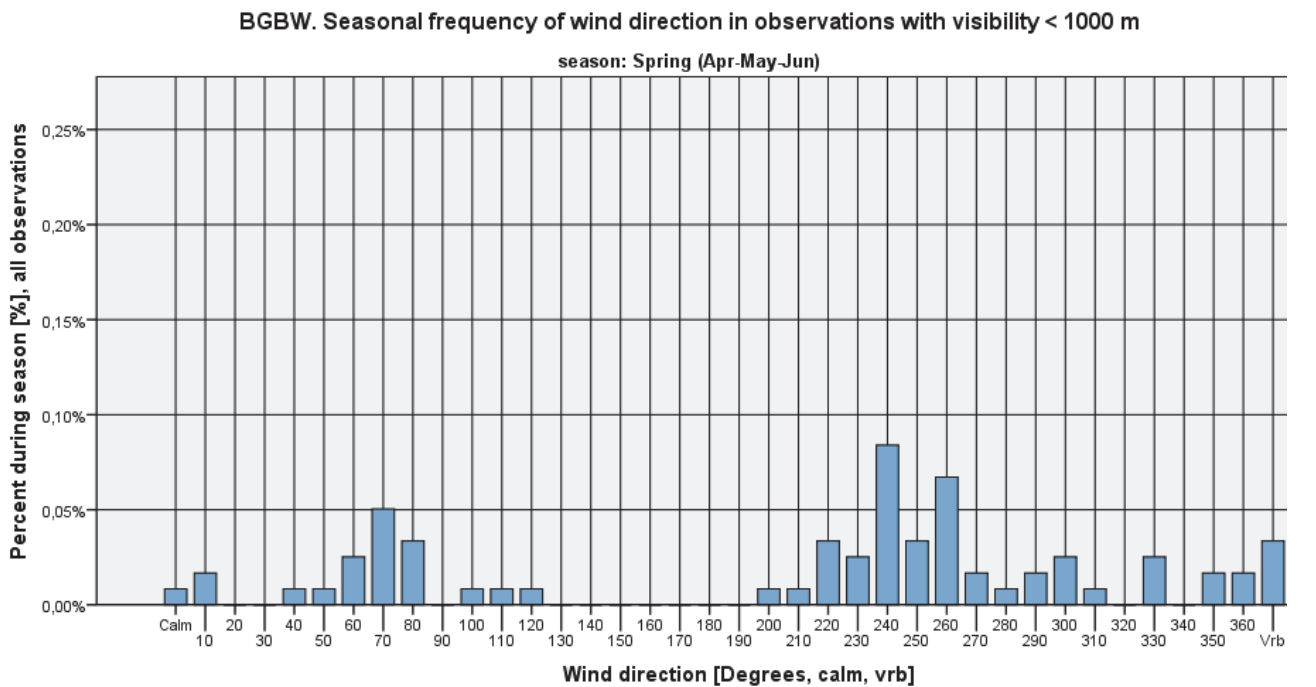


Figure 53

BGBW. Seasonal frequency of wind direction in observations with visibility < 1000 m

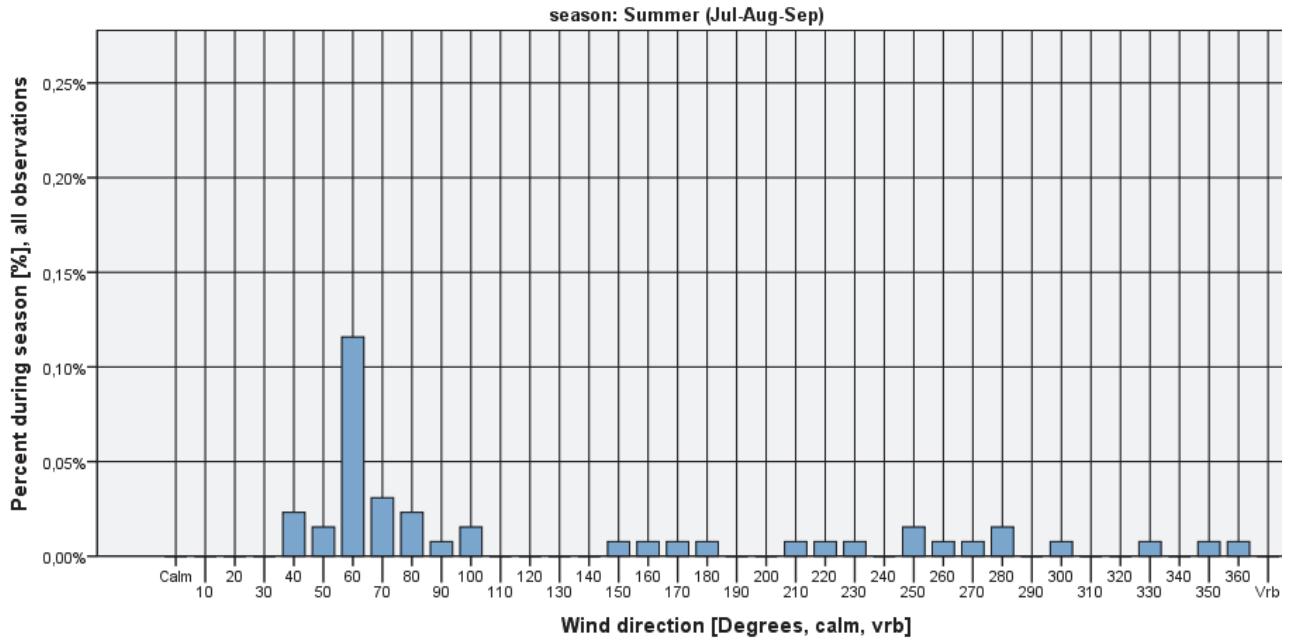


Figure 54

BGBW. Seasonal frequency of wind direction in observations with visibility < 1000 m

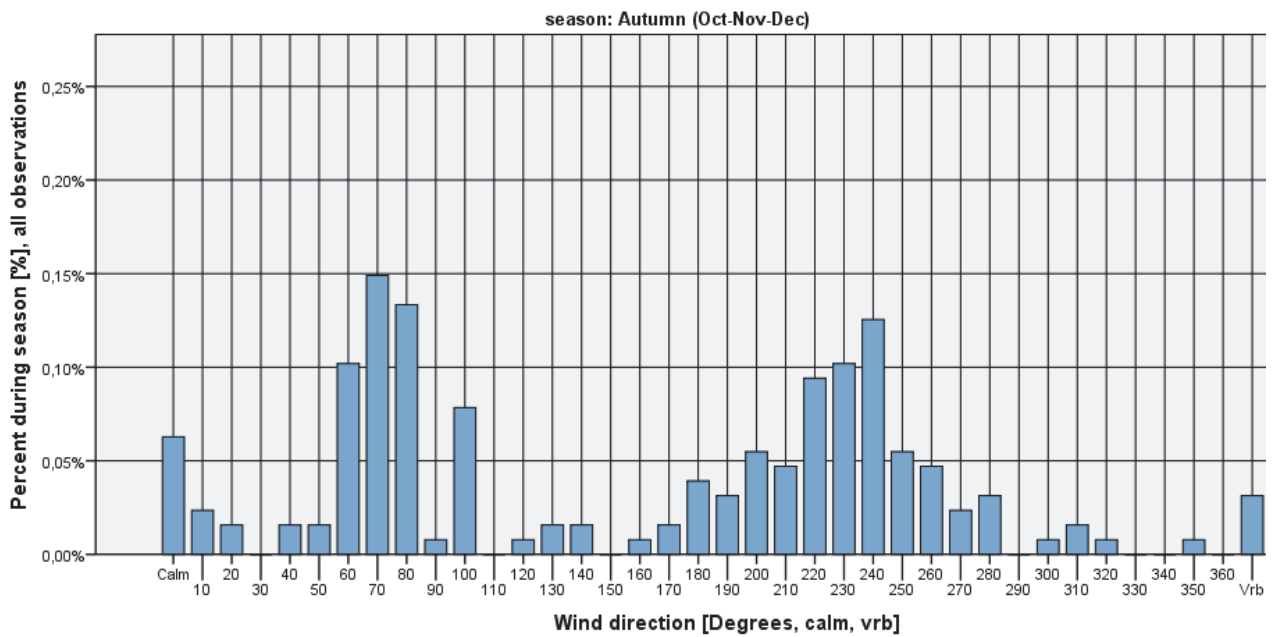


Figure 55

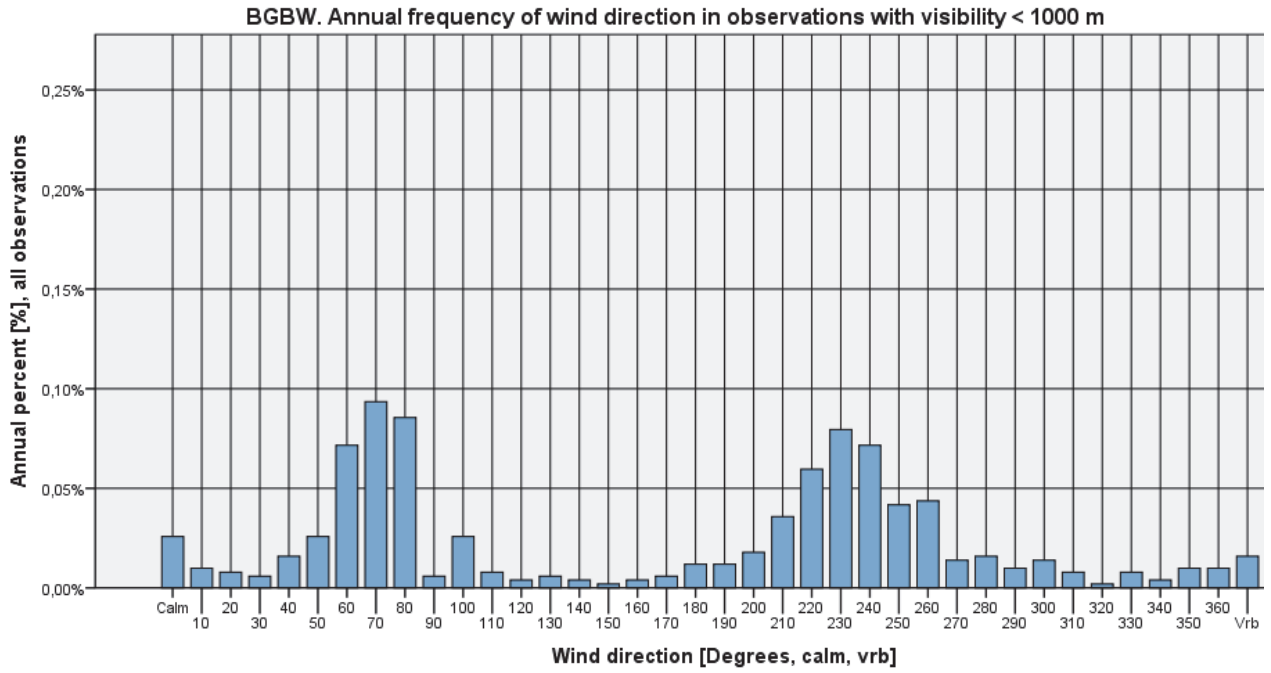


Figure 56



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

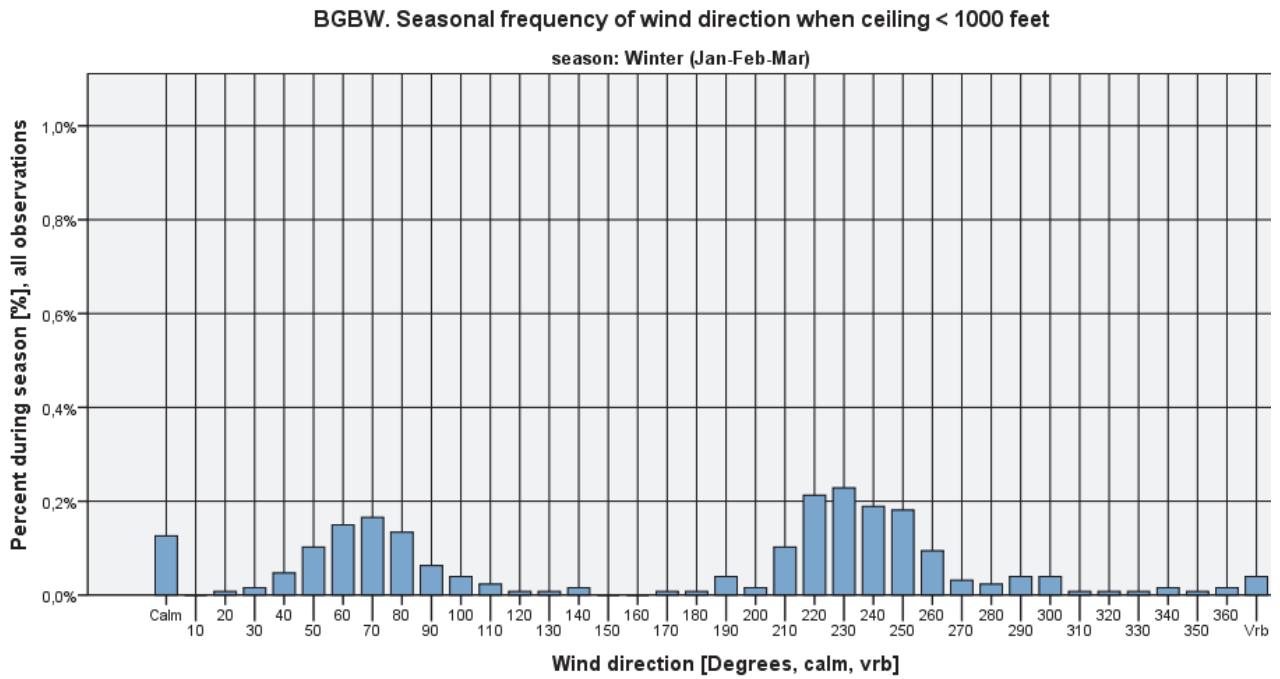


Figure 57

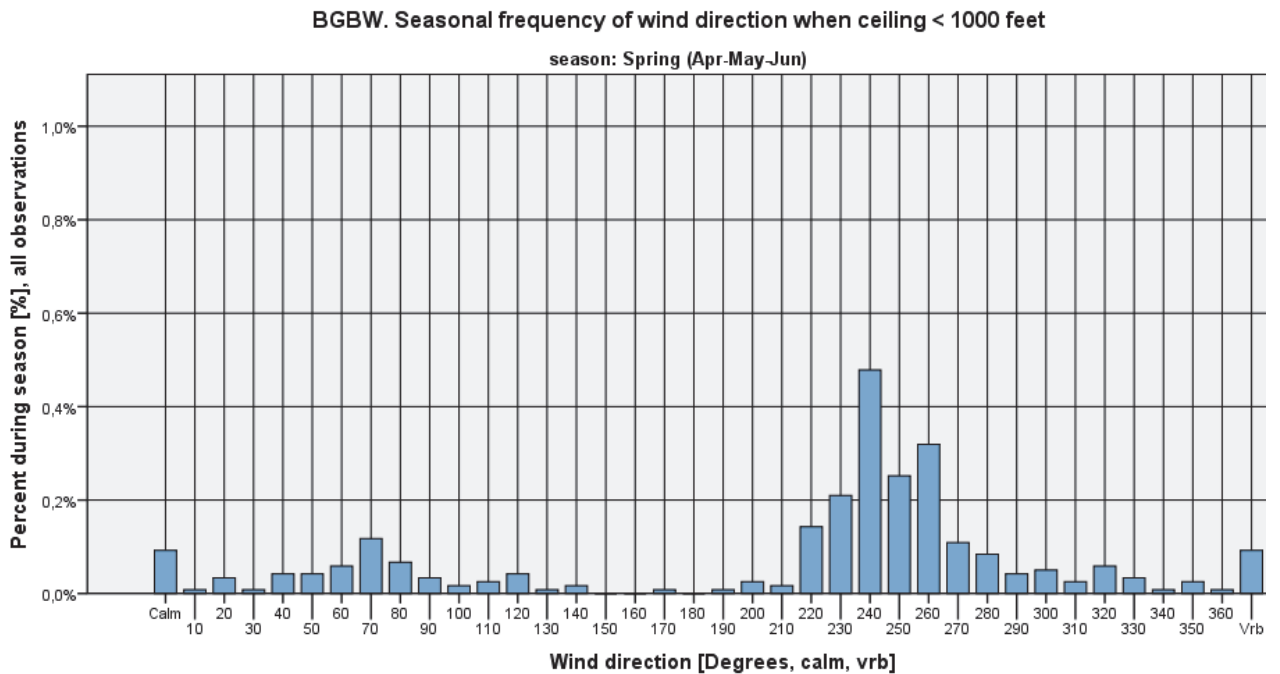


Figure 58

BGBW. Seasonal frequency of wind direction when ceiling < 1000 feet

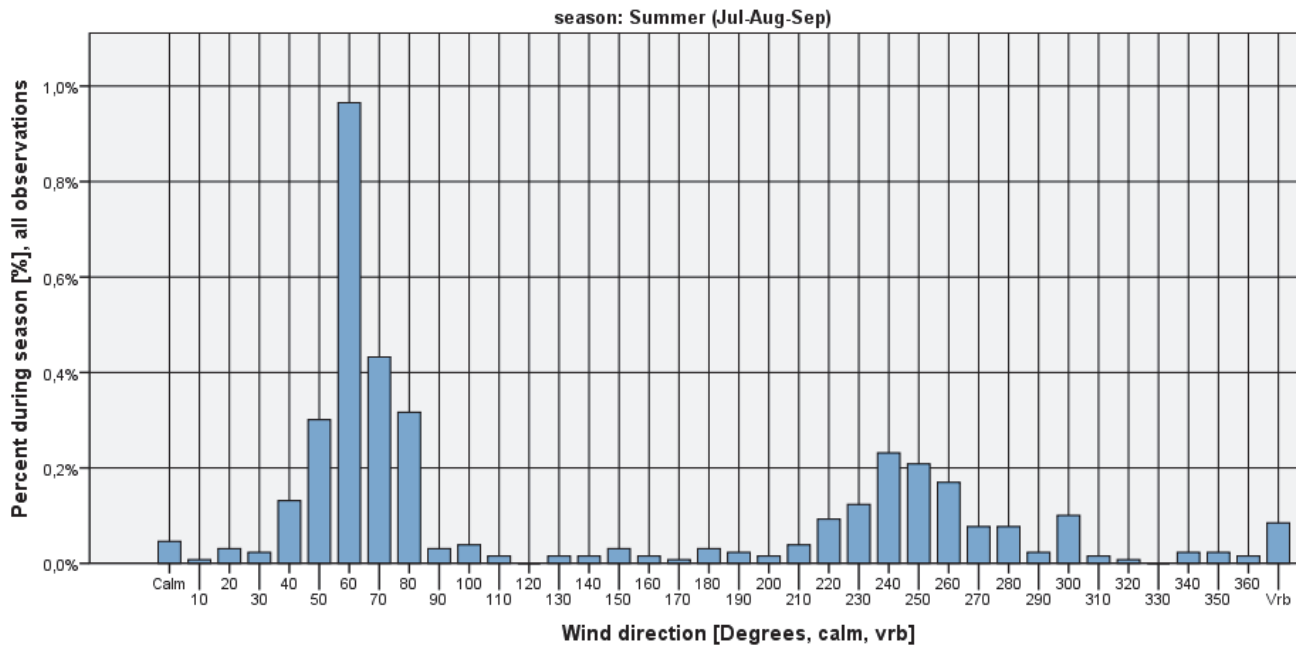


Figure 59

BGBW. Seasonal frequency of wind direction when ceiling < 1000 feet

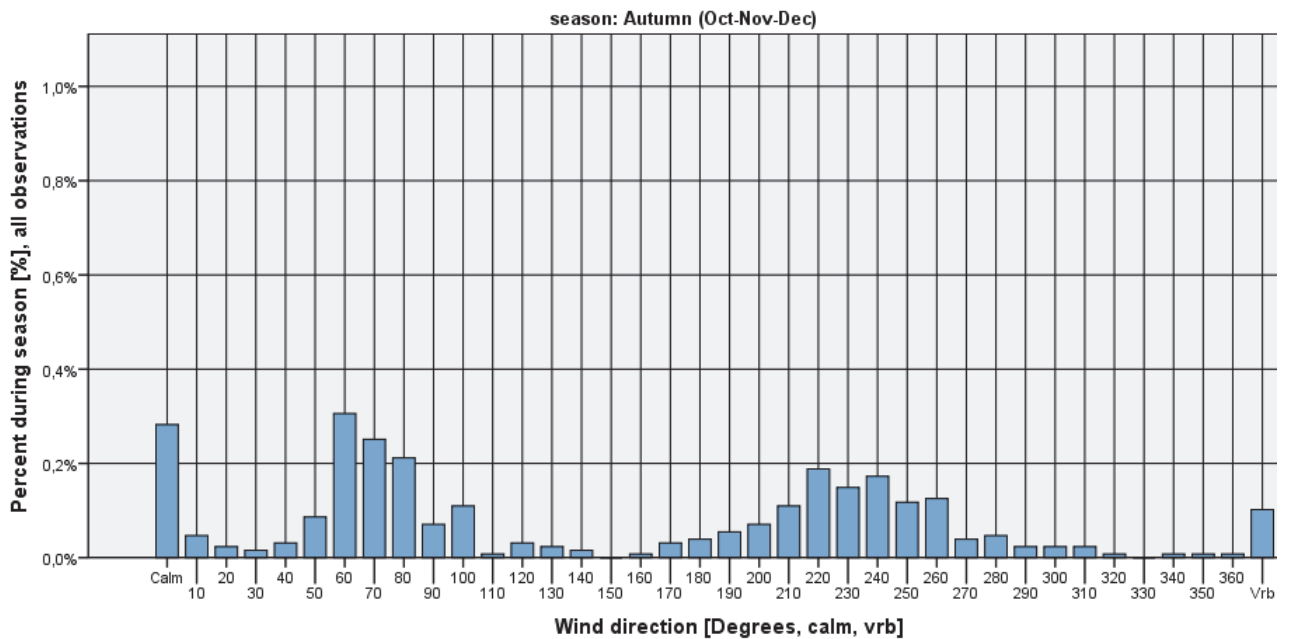


Figure 60

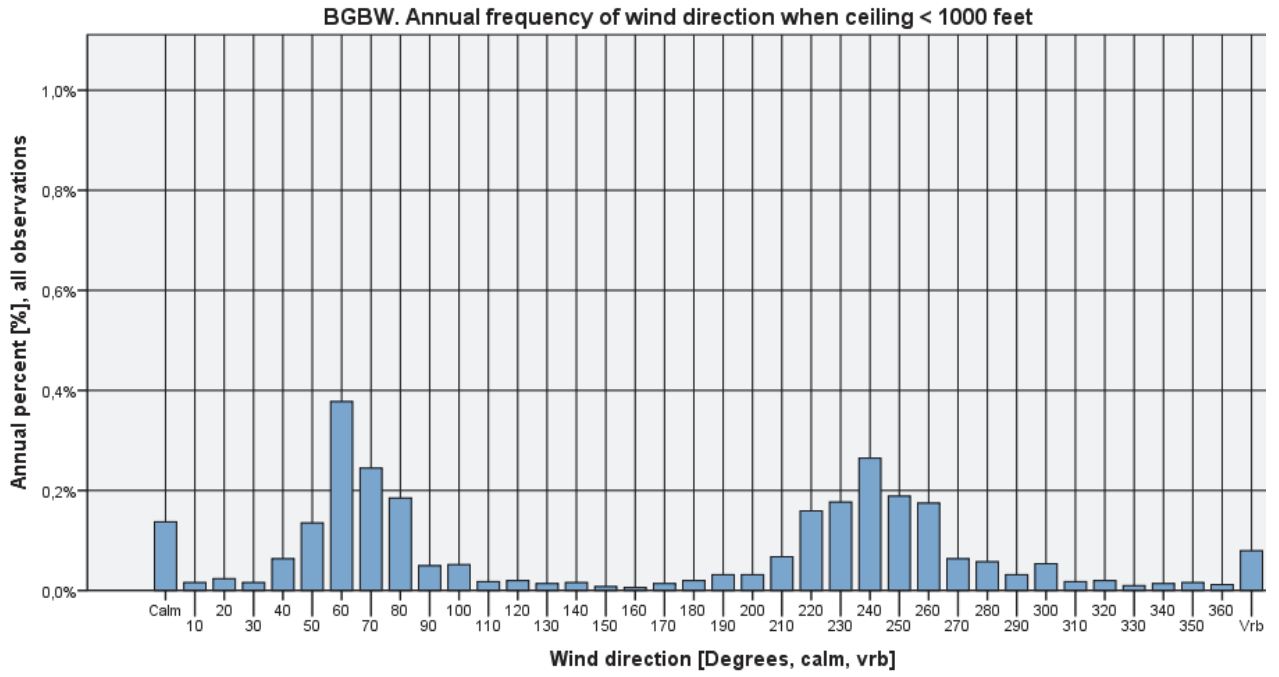


Figure 61



Ceiling < 500 feet

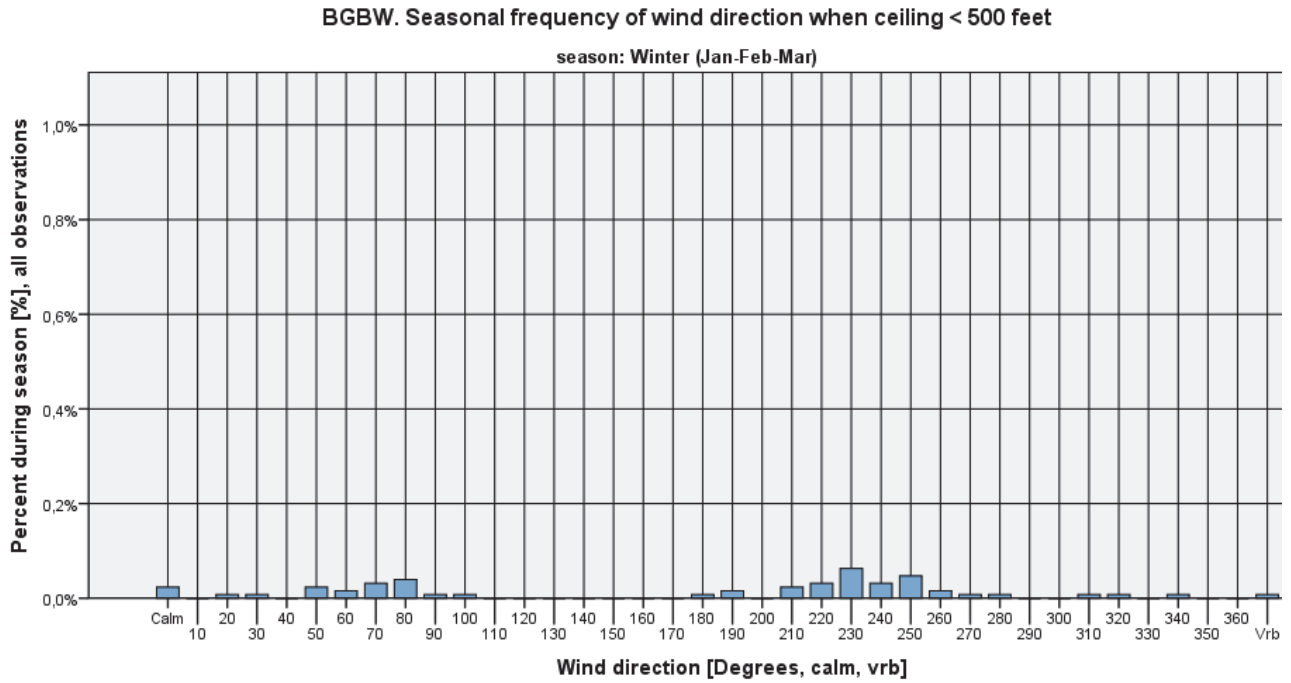


Figure 62

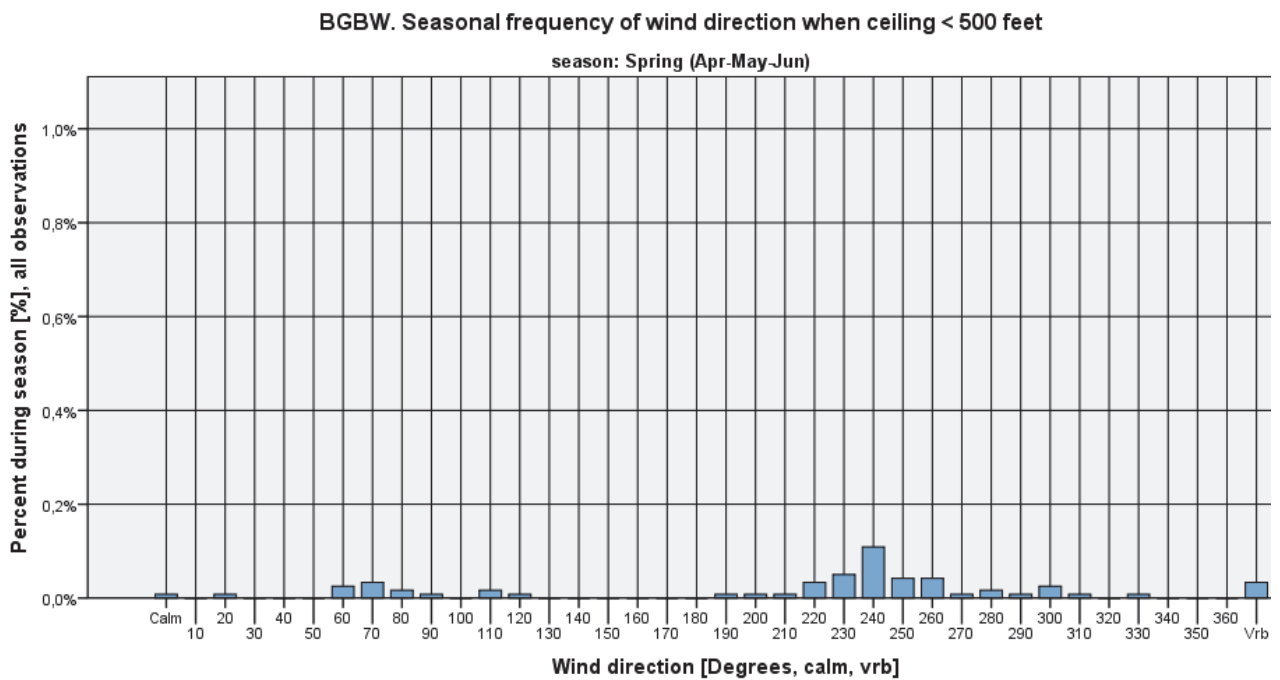


Figure 63



BGBW. Seasonal frequency of wind direction when ceiling < 500 feet

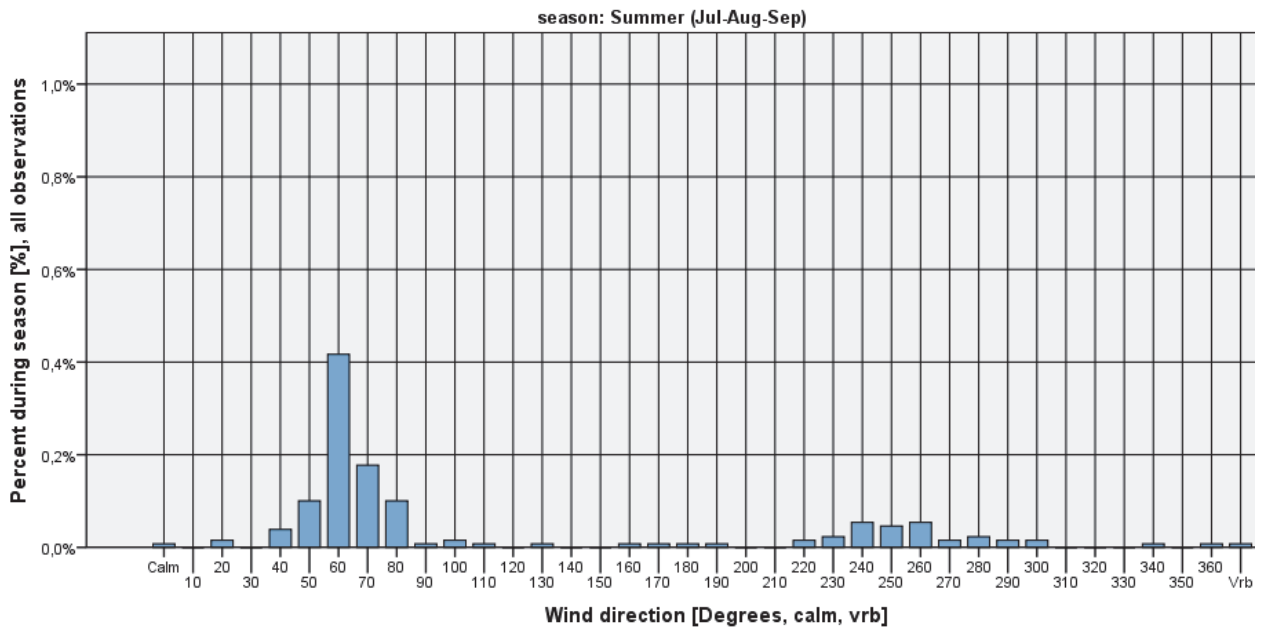


Figure 64

BGBW. Seasonal frequency of wind direction when ceiling < 500 feet

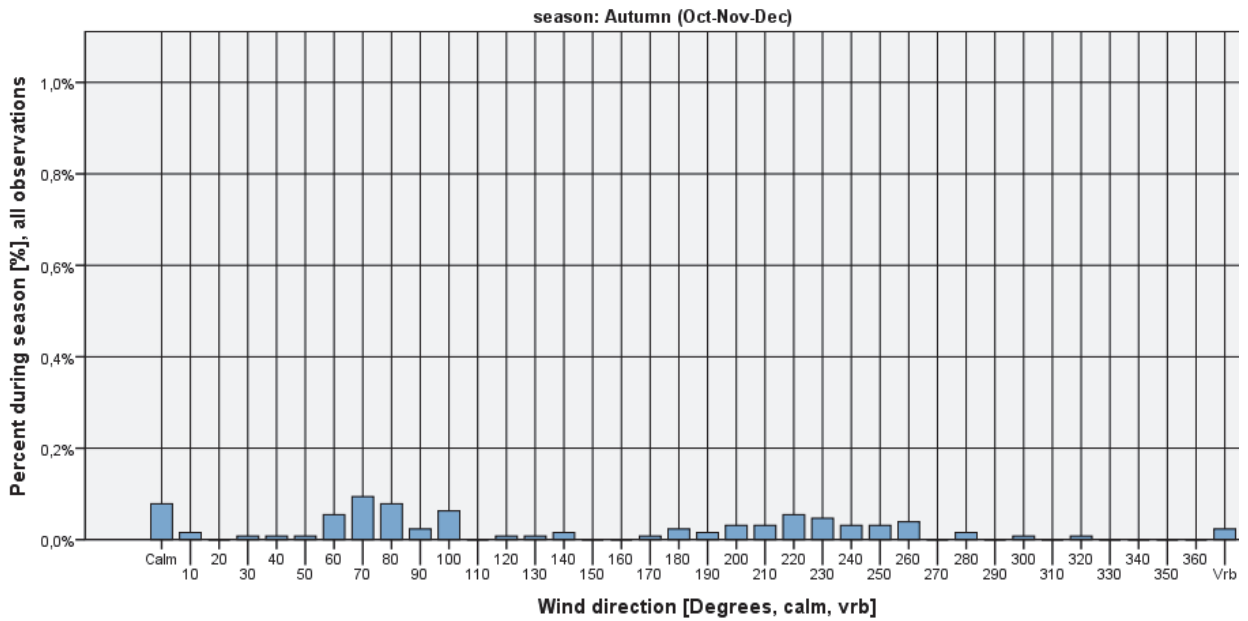


Figure 65

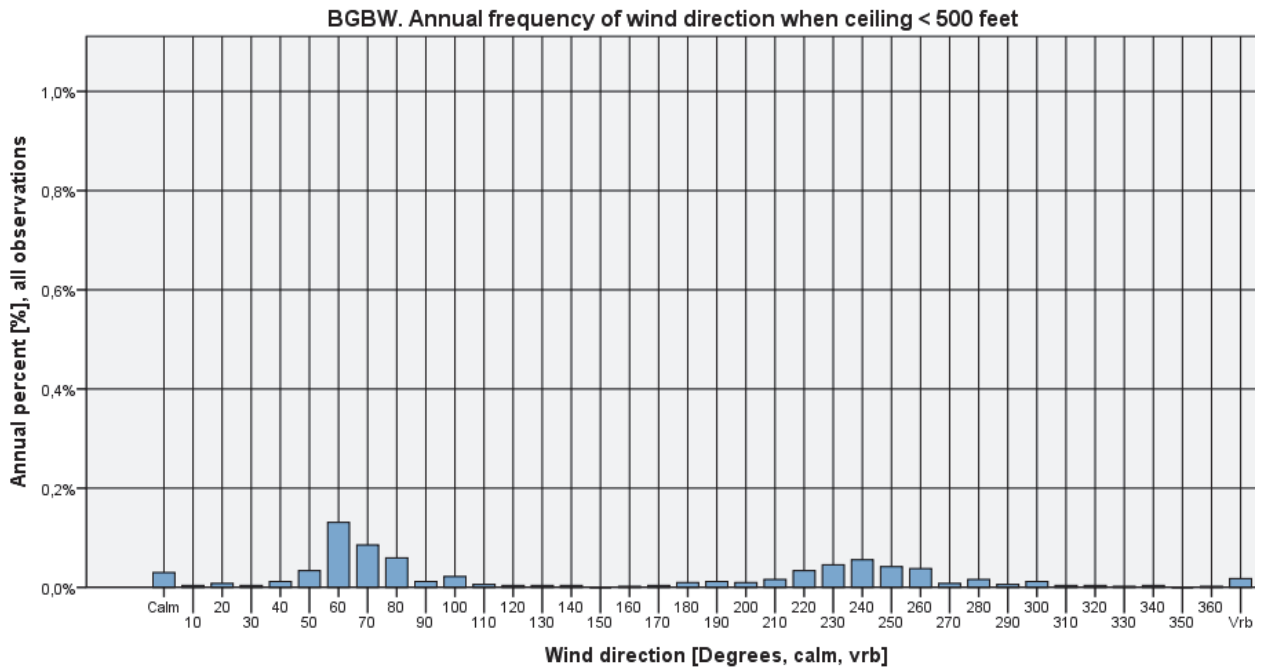
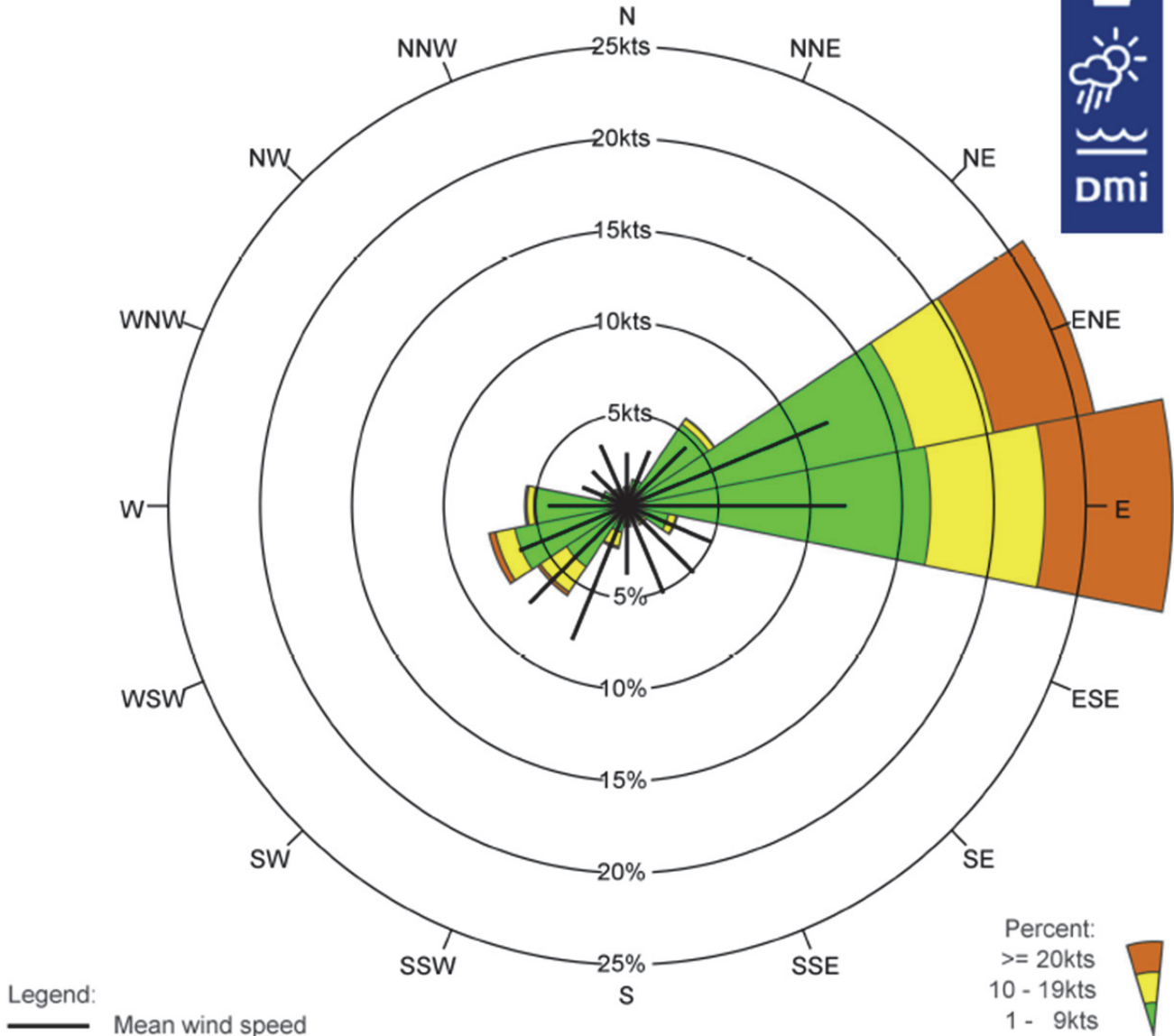


Figure 66



Wind roses

BGBW Narsarsuaq AUTUMN & WINTER: OCTOBER - MARCH 01-02-2003 - 01-02-2012



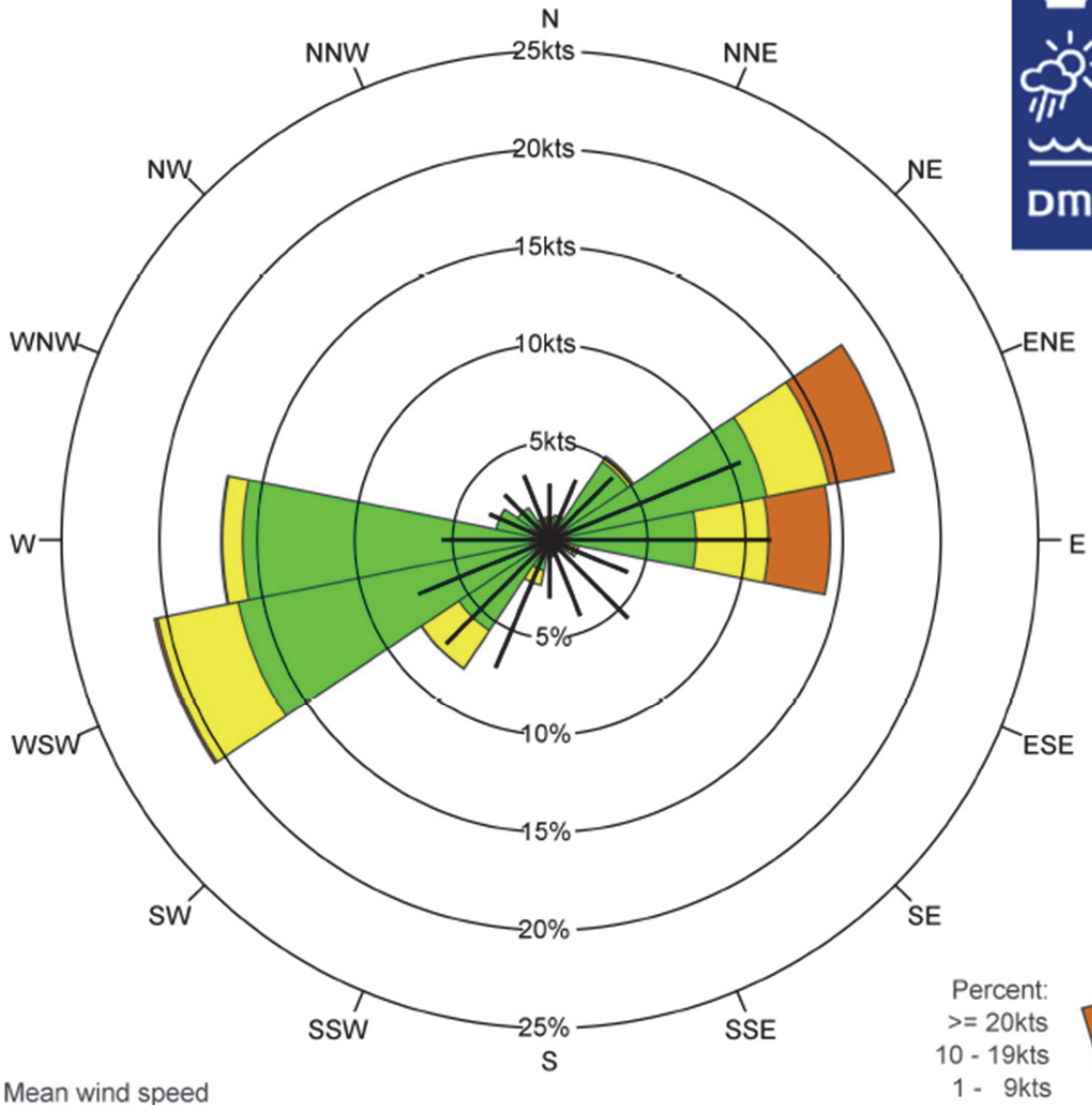
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	1.0	1.5	5.7	26.0	29.7	2.8	1.2	0.6	1.1	2.4	5.9	7.7	5.6	1.4	1.1	0.8	94.4
% 1 - 9kts	1.0	1.4	5.3	16.0	16.5	2.3	1.0	0.4	1.1	1.5	4.0	6.2	5.1	1.4	1.1	0.7	65.0
% 10 - 19kts	0.0	0.0	0.4	4.4	6.2	0.4	0.2	0.1	0.1	0.8	1.7	1.1	0.4	0.0	0.0	0.0	15.8
% >= 20kts	0.0	0.0	0.1	5.6	7.0	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.0	0.0	0.0	13.5
Mean wind speed	2.8	3.3	4.5	11.9	12.0	5.1	5.1	5.1	3.7	7.9	7.5	6.3	4.3	2.7	2.6	3.6	9.2
Max wind speed	21.0	25.0	50.0	62.0	63.0	27.0	24.0	17.0	17.0	29.0	30.0	32.0	32.0	15.0	17.0	24.0	63.0

Number of observations = 25430
 Calm defined a wind speed = 0kts
 Number of observations with calm/varying wind direction: 1435=5.6%
 Observations with calm/varying wind direction are not used in the statistics

Source: DMI



BGBW Narsarsuaq SPRING & SUMMER: APRIL - SEPTEMBER 01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

Percent:
 >= 20kts
 10 - 19kts
 1 - 9kts

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	1.2	1.3	5.1	18.0	14.3	1.5	0.7	0.4	0.8	2.3	7.9	20.6	16.8	2.8	2.0	1.2	97.0
% 1 - 9kts	1.1	1.2	4.8	11.3	7.5	1.3	0.5	0.3	0.8	1.6	5.6	16.3	15.7	2.8	2.0	1.1	74.0
% 10 - 19kts	0.0	0.0	0.3	3.2	3.7	0.2	0.2	0.0	0.0	0.7	2.3	4.2	1.0	0.0	0.0	0.0	16.1
% >= 20kts	0.0	0.0	0.0	3.4	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	6.9
Mean wind speed	2.9	3.4	4.6	10.5	11.4	4.4	5.6	4.2	3.0	7.1	7.6	7.4	5.5	3.3	3.3	3.6	7.6
Max wind speed	19.0	29.0	26.0	63.0	58.0	20.0	23.0	16.0	10.0	22.0	26.0	34.0	28.0	14.0	19.0	22.0	63.0

Number of observations = 24859

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 757=3.0%

Observations with calm/varying wind direction are not used in the statistics

Availability

Yearly distribution of observations. BGBW01-Feb-2003 - 31-Jan-2012

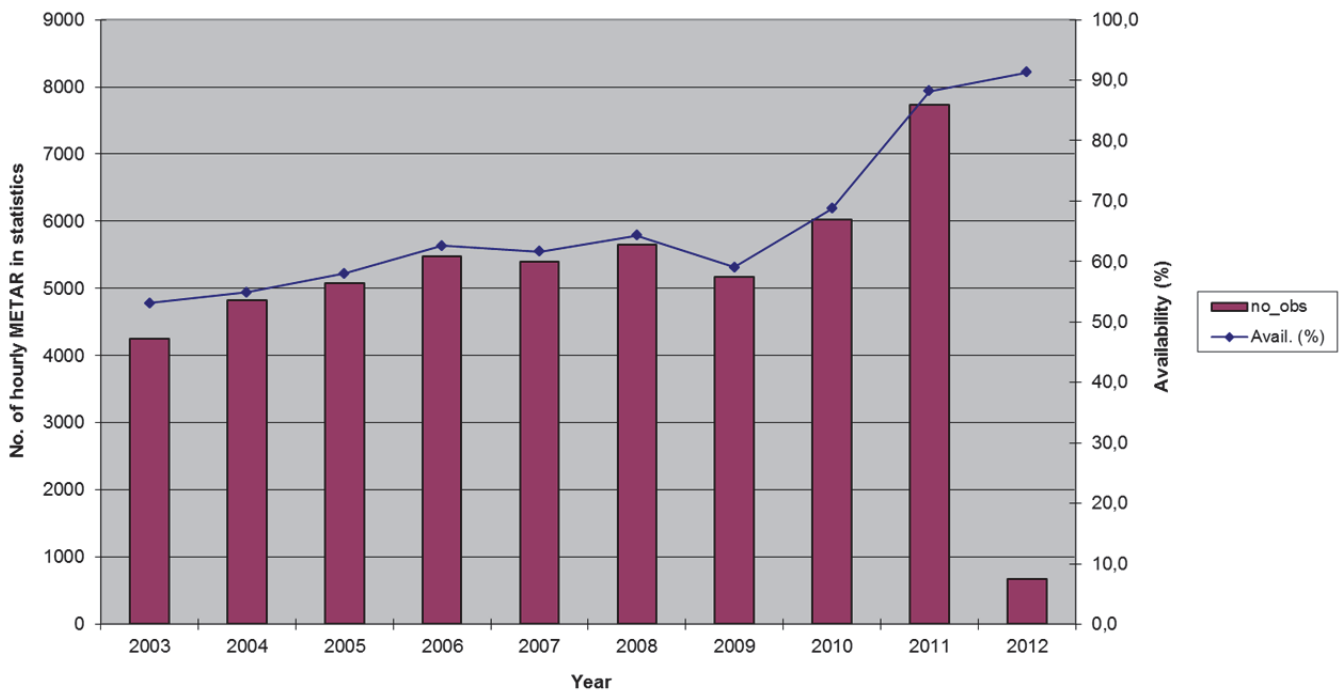


Figure 67

Monthly distribution of observations. BGBW 01-Feb-2003 - 31-Jan-2012

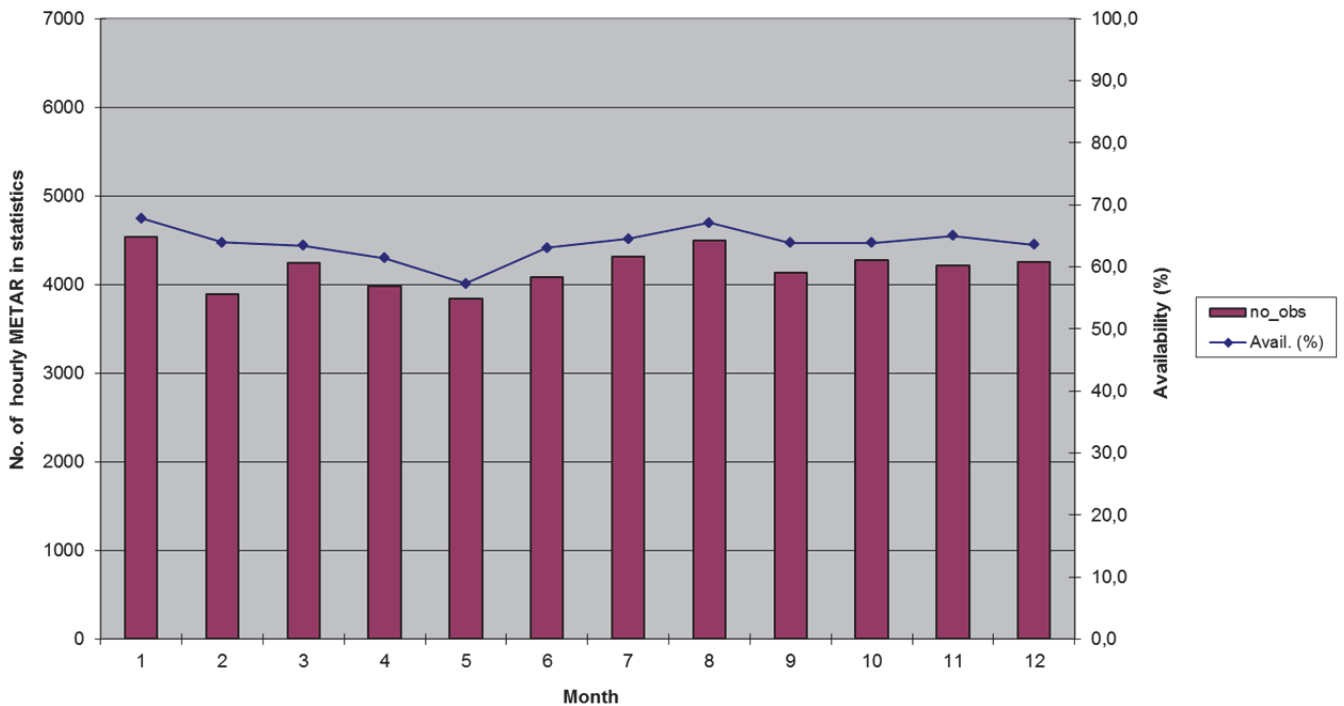


Figure 68

Hourly distribution of observations. BGBW 01-Feb-2003 - 31-Jan-2012

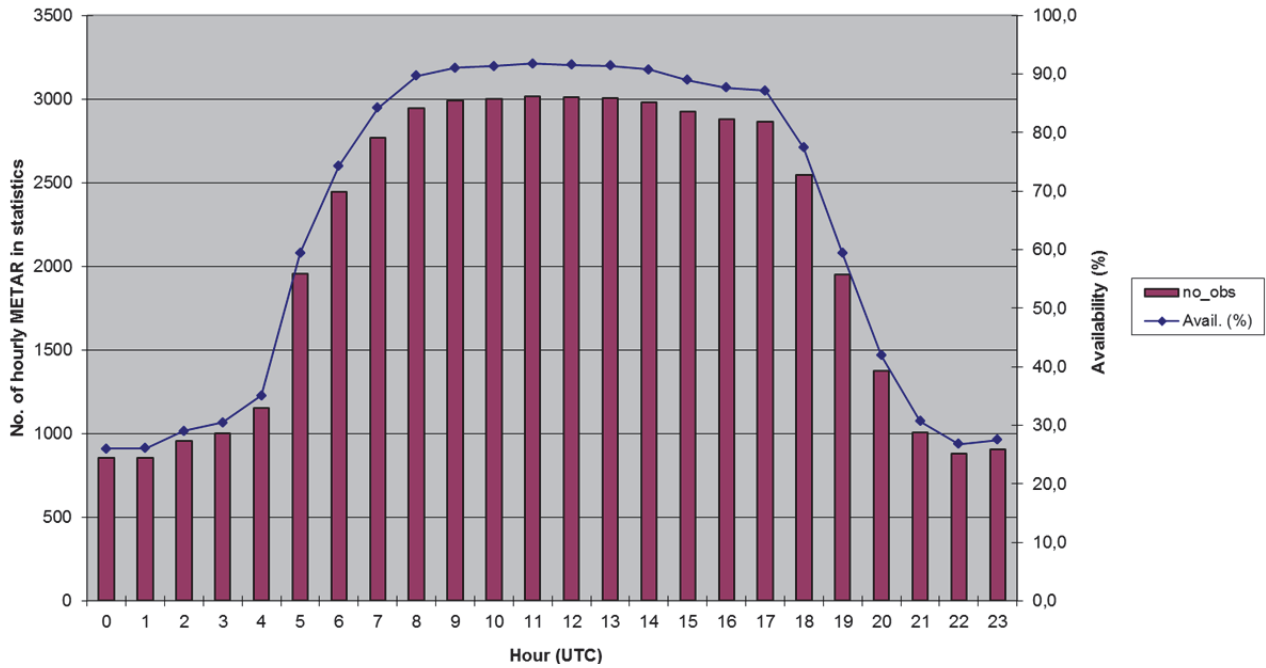


Figure 69

BGBW. Average no. of hourly observations in statistics, 1 February 2003 - 31 January 2012

		year									
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Hour (UTC)	0	,1	,1	,2	,2	,2	,2	,2	,4	,7	0,8
	1	,1	,1	,2	,2	,2	,2	,2	,4	,7	0,9
	2	,1	,1	,2	,2	,3	,3	,2	,4	,7	0,8
	3	,1	,1	,2	,2	,3	,3	,2	,4	,9	0,9
	4	,2	,2	,2	,3	,3	,3	,2	,4	,9	1,0
	5	,5	,5	,6	,6	,6	,6	,4	,6	,9	1,0
	6	,7	,7	,7	0,8	0,7	,7	,7	,7	1,0	1,0
	7	,8	,8	,8	,8	,8	,8	,8	,8	1,0	,9
	8	,9	,8	,9	,9	,9	0,9	,9	,9	1,0	1,0
	9	,9	,9	,9	,9	,9	,9	,9	,9	1,0	1,0
	10	,9	,9	,9	0,9	,9	0,9	,9	0,9	1,0	1,0
	11	,9	,9	,9	,9	,9	,9	,9	,9	,9	1,0
	12	,9	,9	,9	,9	,9	,9	,9	,9	1,0	1,0
	13	,9	,9	,9	,9	,9	0,9	,9	,9	1,0	1,0
	14	,9	,9	,9	,9	,9	,9	,9	,9	1,0	1,0
	15	,8	,9	,9	,9	,9	,9	,9	,9	,9	,9
	16	,8	,9	,8	,9	0,9	,9	,9	,9	,9	1,0
	17	,8	,8	,8	,9	,9	,9	,9	,9	,9	0,9
	18	,6	,7	,7	,8	,8	,8	,8	,8	,9	1,0
	19	,3	,5	,5	,6	,6	,6	,6	,7	,9	0,9
	20	,2	,2	,3	,4	0,4	,5	,4	,5	,8	0,8
	21	,1	,1	,2	,3	,2	,3	,3	,4	,7	,7
	22	,1	,1	,1	,3	,2	,3	,2	,4	,7	0,7
	23	,1	,1	,2	,3	0,2	,3	,2	,4	,7	,9

Table 19



BGJN Ilulissat/Jakobshavn

Mittarfik Ilulissat

Location: 69,233°N 51,067°W

H: 29 m above msl

BGJN observations in statistics: 67.346 hourly METAR⁴ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 85,4%.

The availability is lowered by lack of observations during night-time and Sundays in the years 2003-2004. More details are shown in the Availability section.

The BGJN METAR are all manual until 31 March 2004, and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

Winter (Jan-Feb-Mar): BGJN - Frequencies (%) Visibility - Ceiling

No. Obs = 16.315	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,074	0,17	0,57	0,85	0,91	0,36	1,26
<1 km	0,074	0,18	0,67	1,12	1,27	0,51	1,78
<1.5 km	0,074	0,18	0,77	1,67	1,93	0,95	2,88
<3.0 km	0,074	0,18	0,81	2,40	3,32	2,88	6,20
< 5.0 km	0,074	0,18	0,84	2,66	4,15	5,85	10,00
>= 5,0 km or CAVOK	0	0	0,14	0,86	2,41	87,59	90,00
Total	0,074	0,18	0,98	3,52	6,56	93,44	100

Table 20

Spring (Apr-May-Jun): BGJN - Frequencies (%) Visibility - Ceiling

No. Obs = 16.763	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,10	0,67	1,25	1,32	1,33	0,17	1,50
<1 km	0,10	0,71	1,59	1,71	1,74	0,26	2,00
<1.5 km	0,10	0,72	1,79	2,14	2,23	0,45	2,68
<3.0 km	0,10	0,77	2,12	3,01	3,53	1,09	4,62
< 5.0 km	0,10	0,79	2,39	3,75	4,87	2,56	7,43
>= 5,0 km or CAVOK	0	0,030	0,77	3,94	6,85	85,72	92,57
Total	0,10	0,82	3,16	7,70	11,72	88,28	100

Table 21

⁴ For every hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.



Summer (Jul-Aug-Sep): BGJN - Frequencies (%) Visibility - Ceiling

No. Obs = 17.270	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,10	0,47	0,86	0,90	0,90	0,15	1,05
<1 km	0,11	0,50	1,02	1,11	1,11	0,29	1,40
<1.5 km	0,11	0,52	1,15	1,30	1,33	0,42	1,75
<3.0 km	0,11	0,56	1,44	1,88	1,98	0,72	2,70
< 5.0 km	0,11	0,57	1,57	2,68	3,02	1,19	4,20
>= 5,0 km or CAVOK	0	0,035	0,41	2,60	5,01	90,78	95,80
Total	0,11	0,60	1,98	5,28	8,03	91,97	100

Table 22

Autumn (Oct-Nov-Dec): BGJN - Frequencies (%) Visibility - Ceiling

No. Obs = 16.998	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,029	0,059	0,34	0,45	0,48	0,19	0,67
<1 km	0,029	0,065	0,45	0,70	0,73	0,32	1,05
<1.5 km	0,029	0,065	0,53	1,11	1,22	0,62	1,85
<3.0 km	0,029	0,065	0,56	1,74	2,40	2,05	4,45
< 5.0 km	0,029	0,071	0,59	2,04	3,15	4,33	7,48
>= 5,0 km or CAVOK	0	0	0,047	0,36	0,97	91,55	92,52
Total	0,029	0,071	0,64	2,39	4,12	95,88	100

Table 23

Annual: BGJN - Frequencies (%) Visibility - Ceiling

No. Obs = 67.346	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,077	0,35	0,76	0,88	0,90	0,22	1,12
<1 km	0,079	0,36	0,94	1,16	1,21	0,34	1,55
<1.5 km	0,079	0,37	1,06	1,55	1,67	0,61	2,28
<3.0 km	0,079	0,39	1,23	2,25	2,80	1,67	4,47
< 5.0 km	0,079	0,40	1,35	2,78	3,79	3,45	7,24
>= 5,0 km or CAVOK	0	0,016	0,34	1,95	3,82	88,94	92,76
Total	0,079	0,42	1,69	4,72	7,61	92,39	100

Table 24



Wind direction histograms

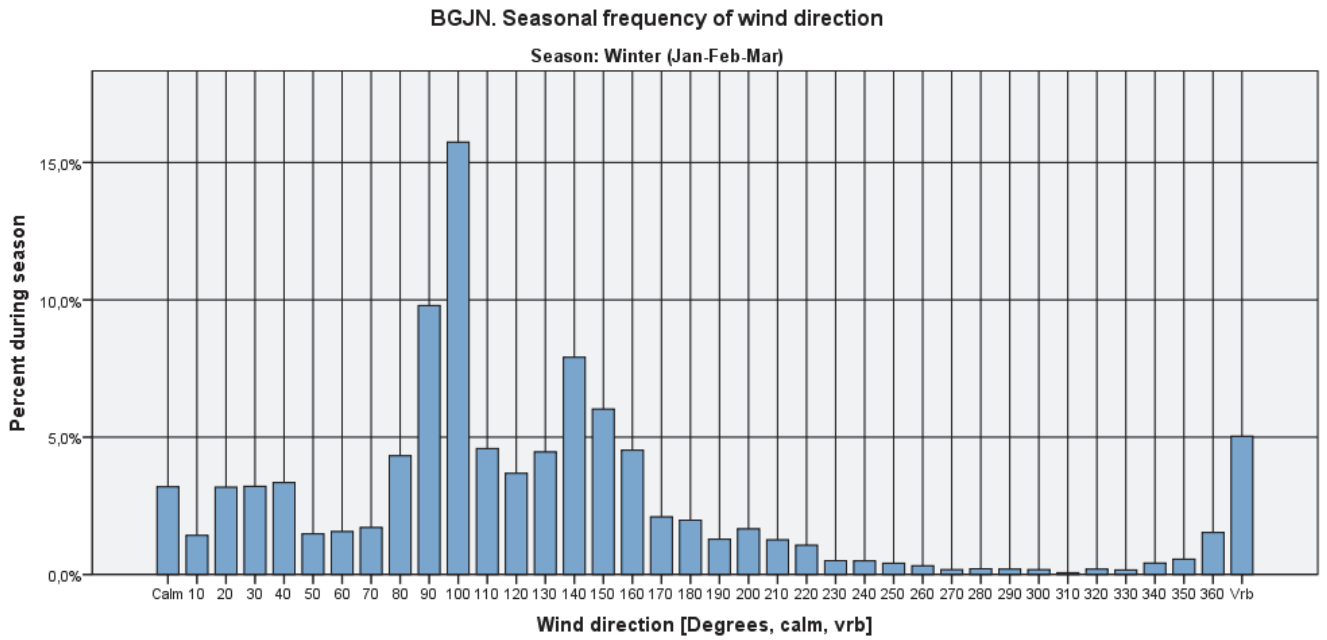


Figure 70

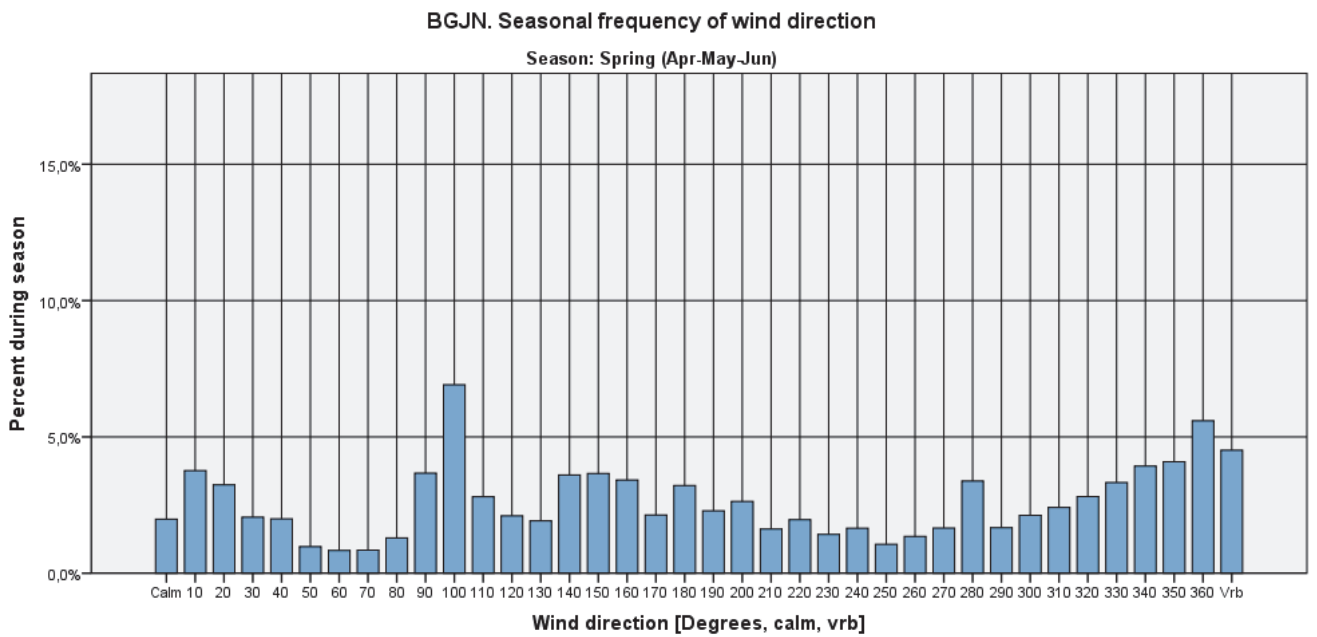


Figure 71

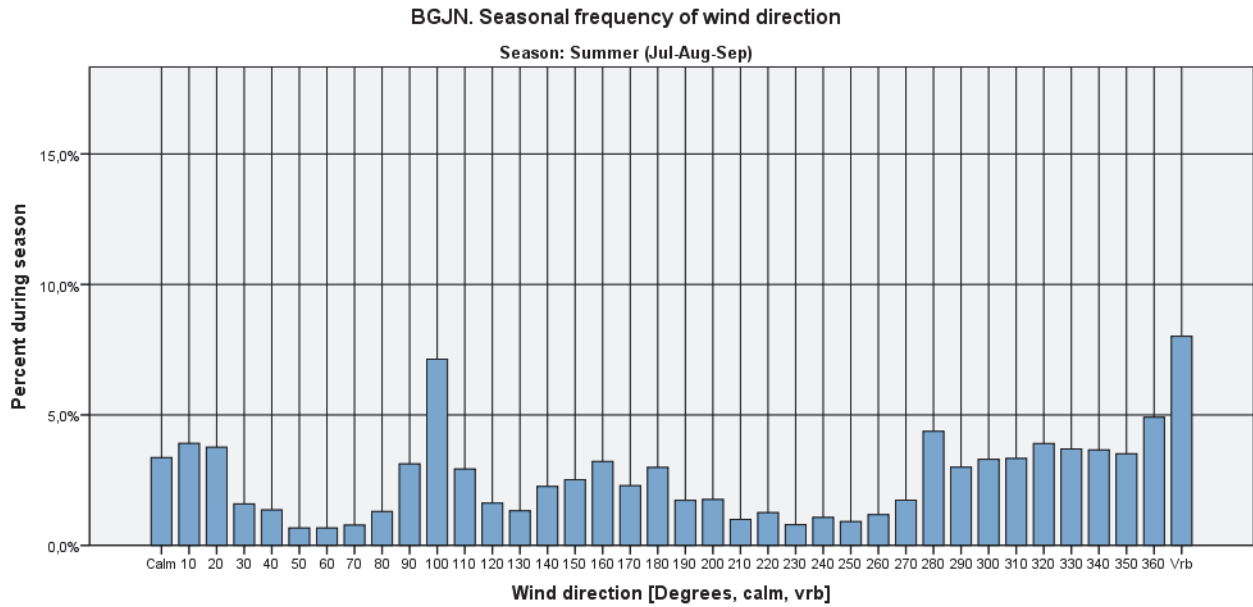


Figure 72

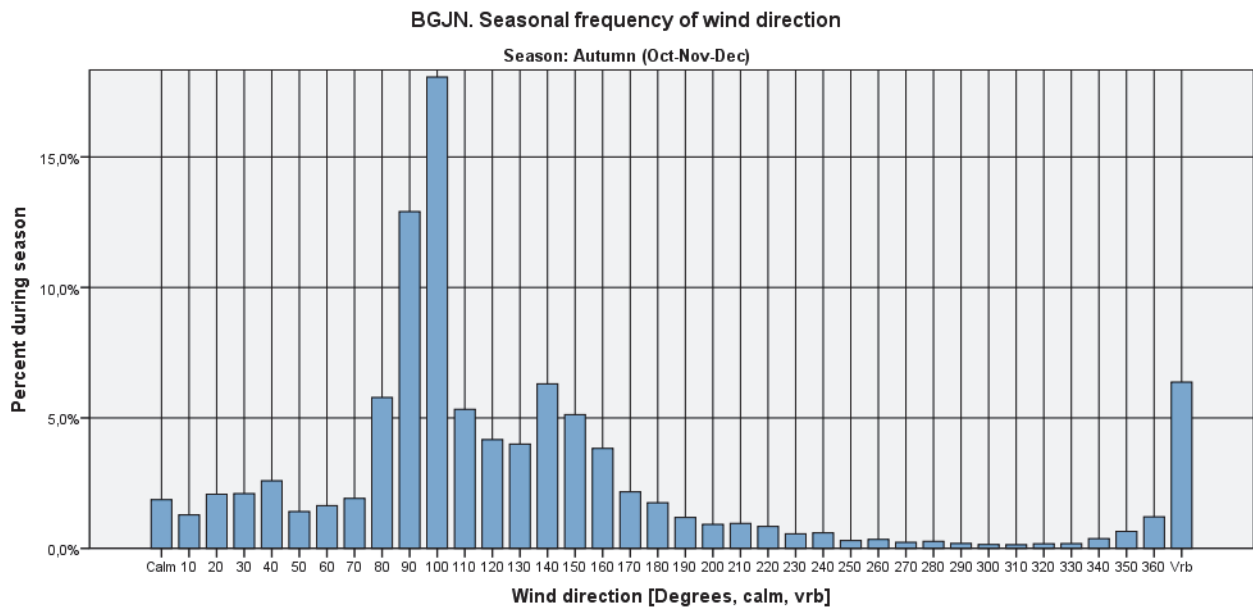


Figure 73

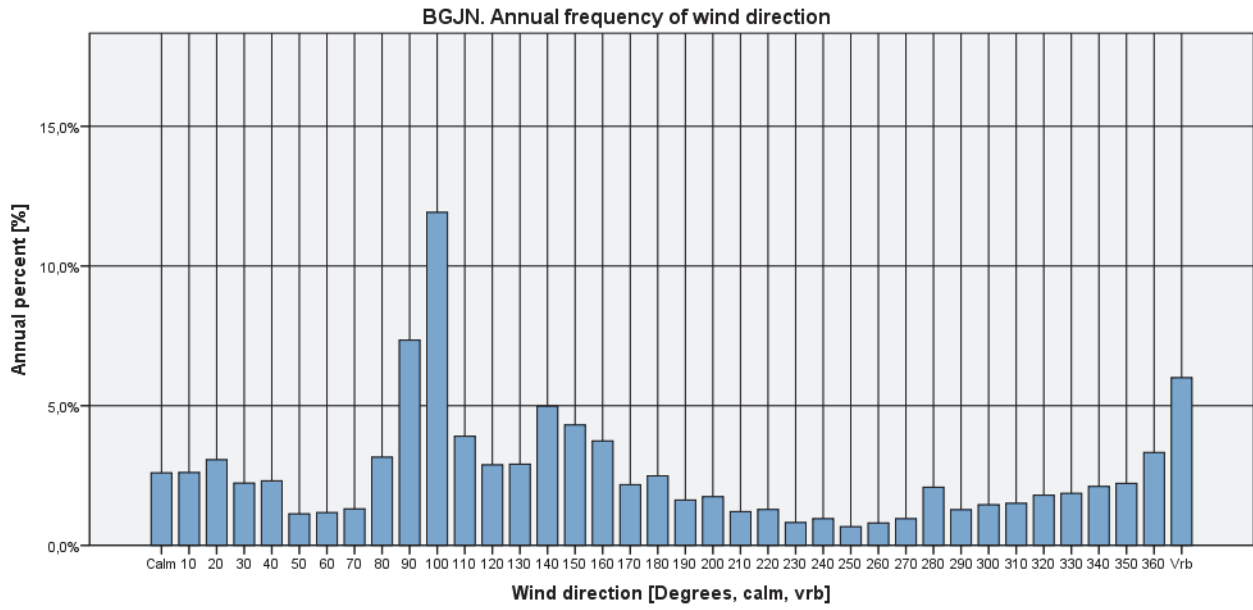


Figure 74



Visibility criteria on wind direction histograms

Visibility < 1000 m

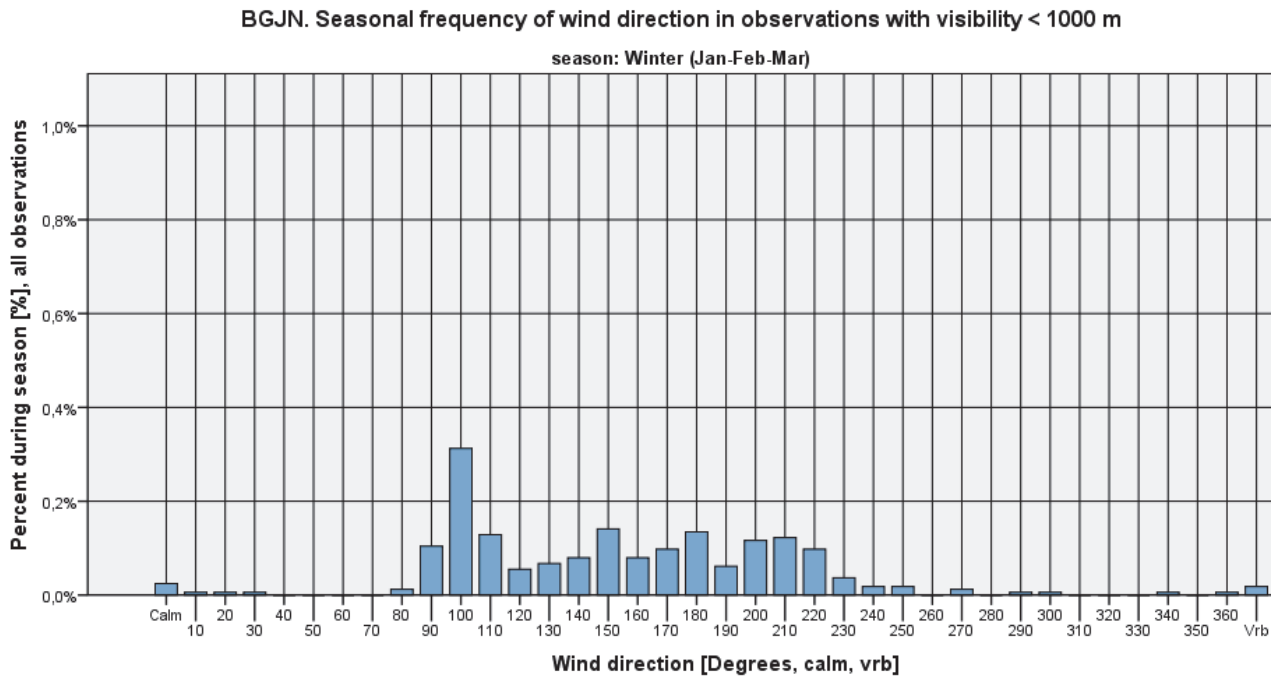


Figure 75

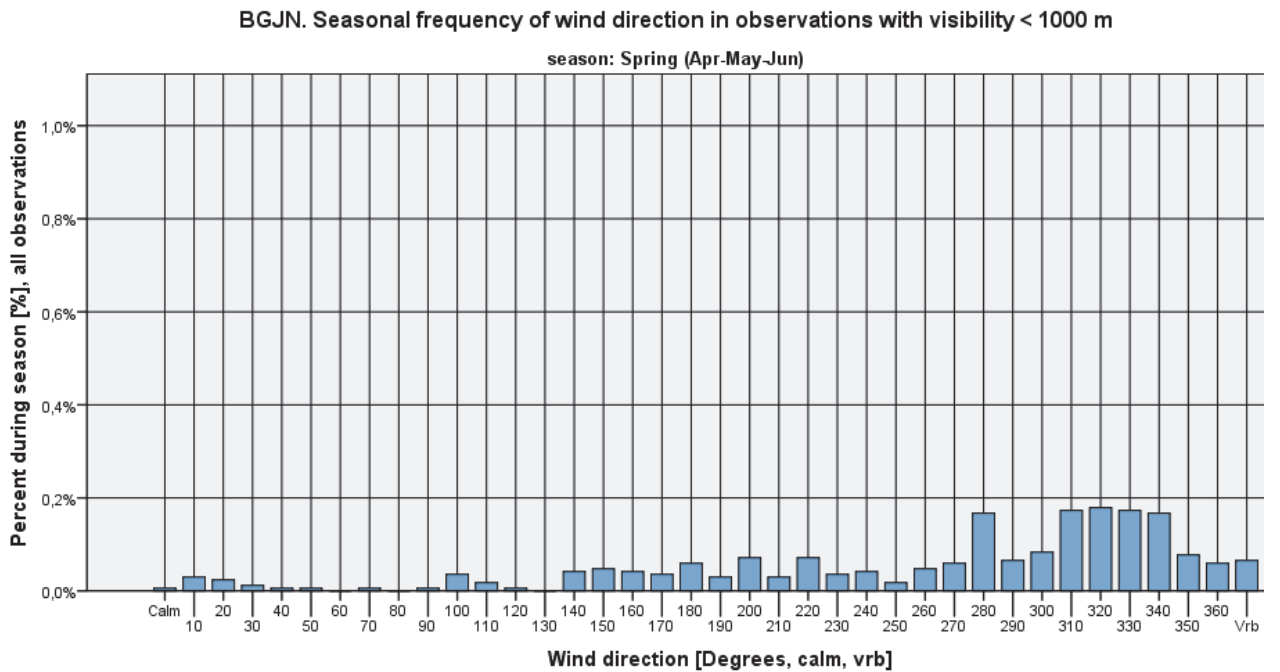


Figure 76

BGJN. Seasonal frequency of wind direction in observations with visibility < 1000 m

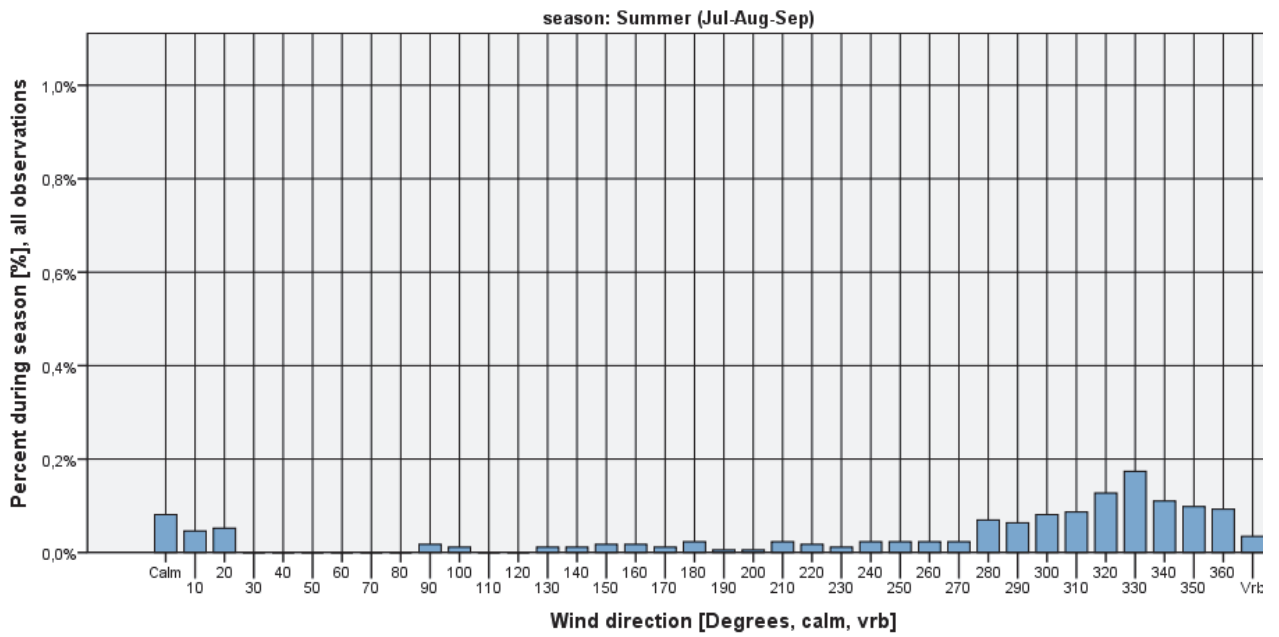


Figure 77

BGJN. Seasonal frequency of wind direction in observations with visibility < 1000 m

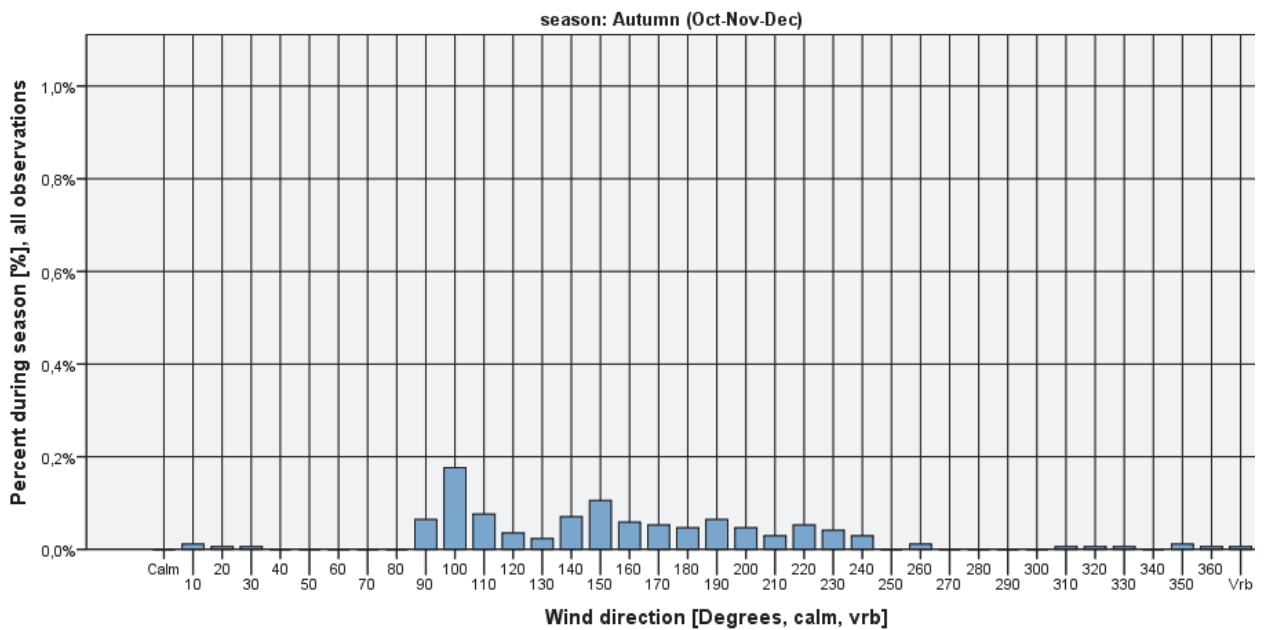


Figure 78

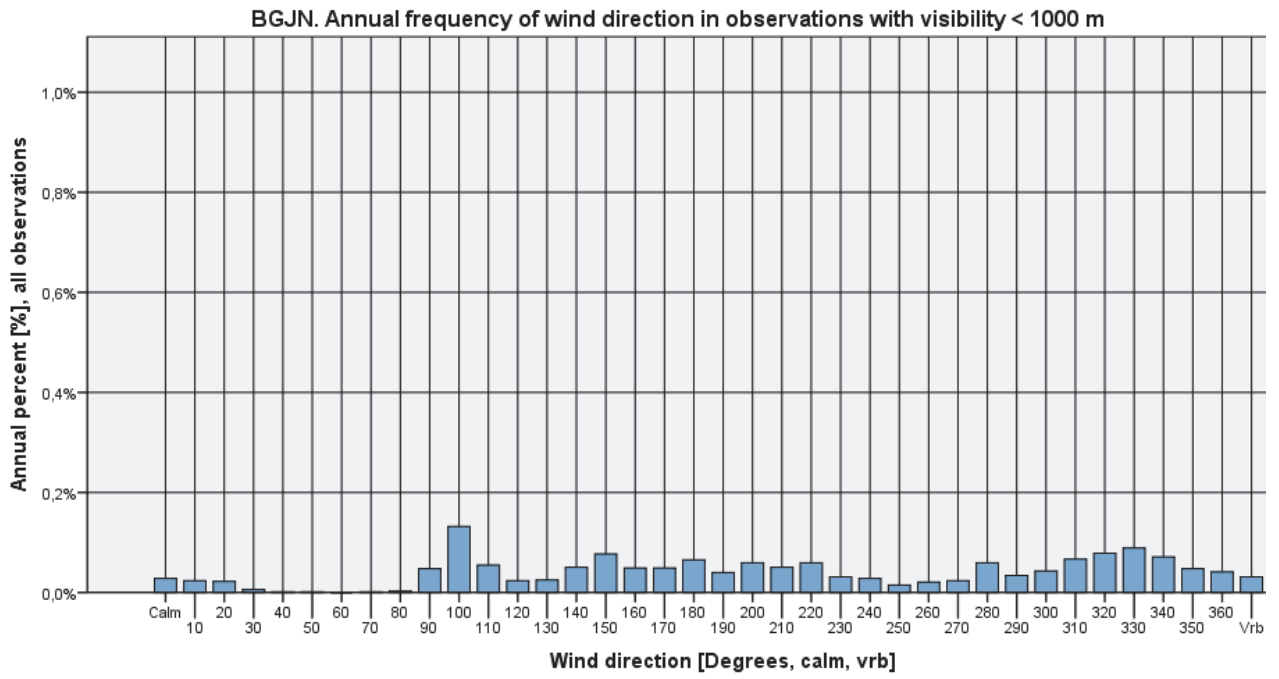


Figure 79



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

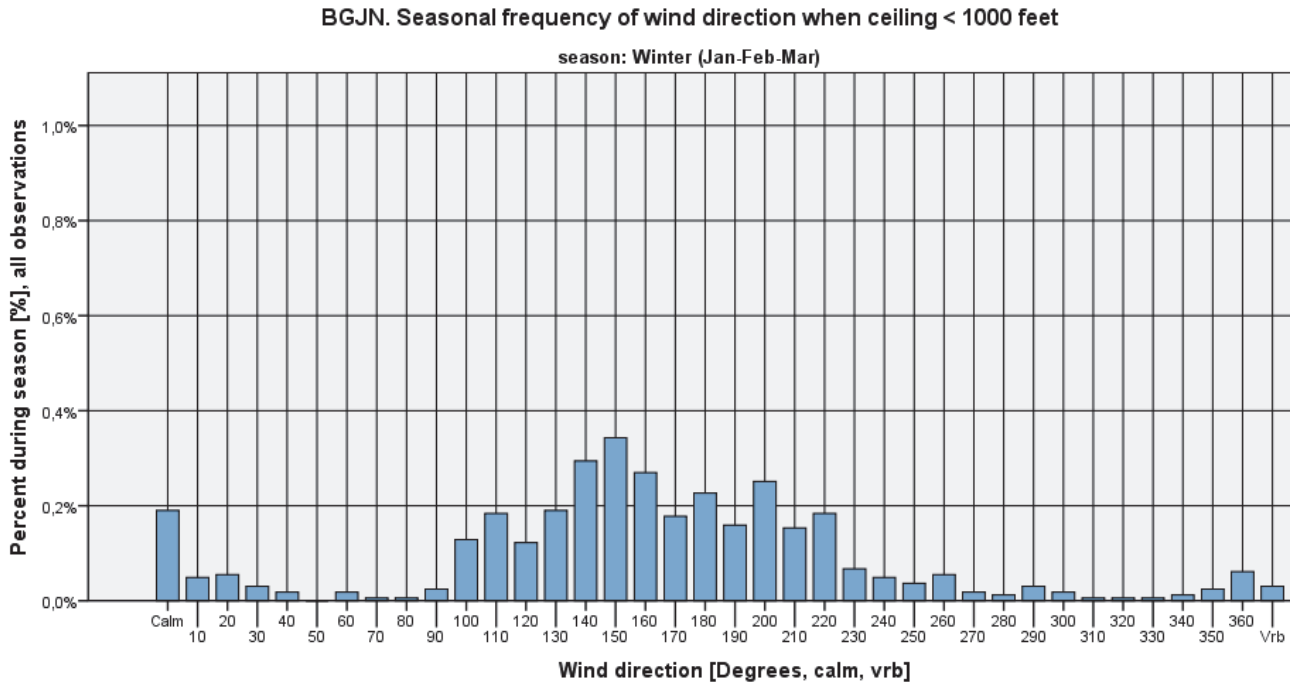


Figure 80

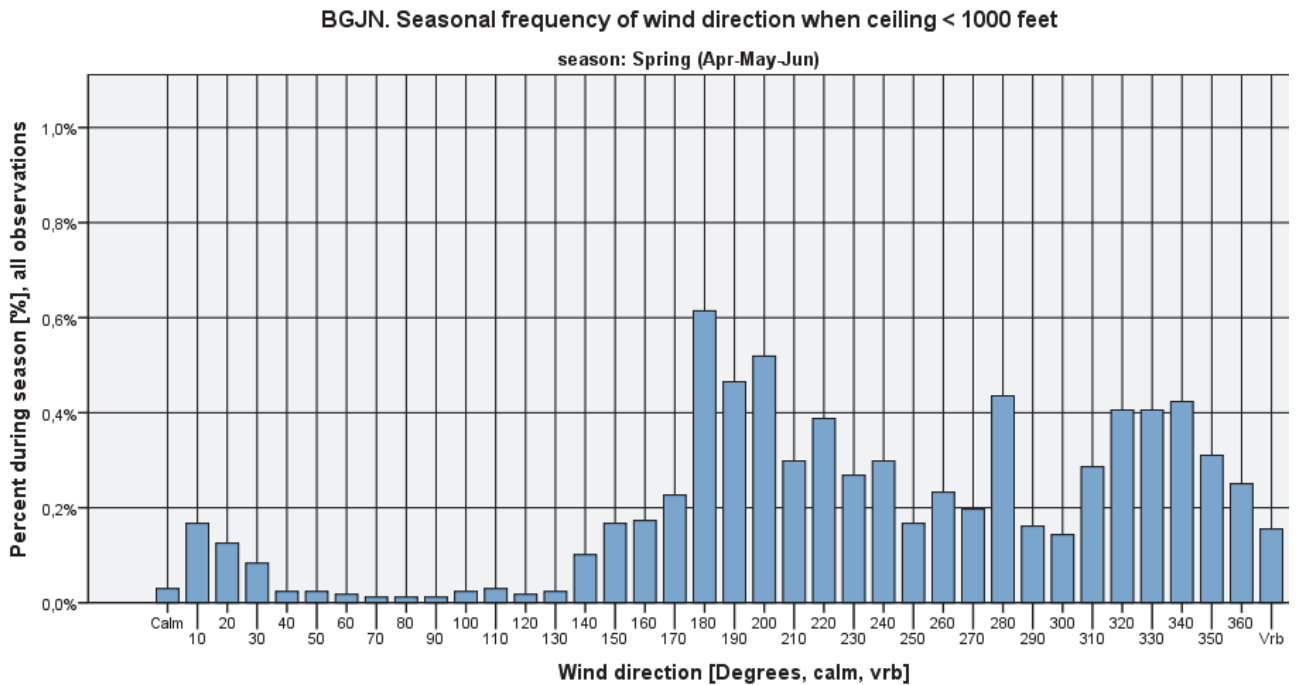


Figure 81



BGJN. Seasonal frequency of wind direction when ceiling < 1000 feet

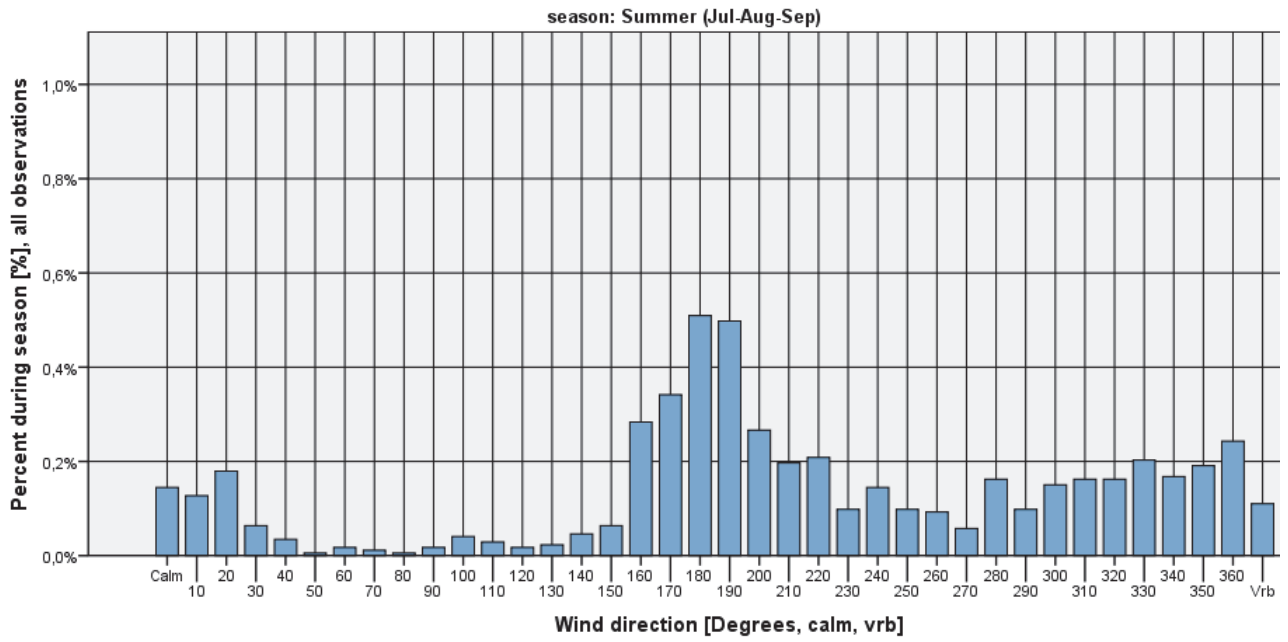


Figure 82

BGJN. Seasonal frequency of wind direction when ceiling < 1000 feet

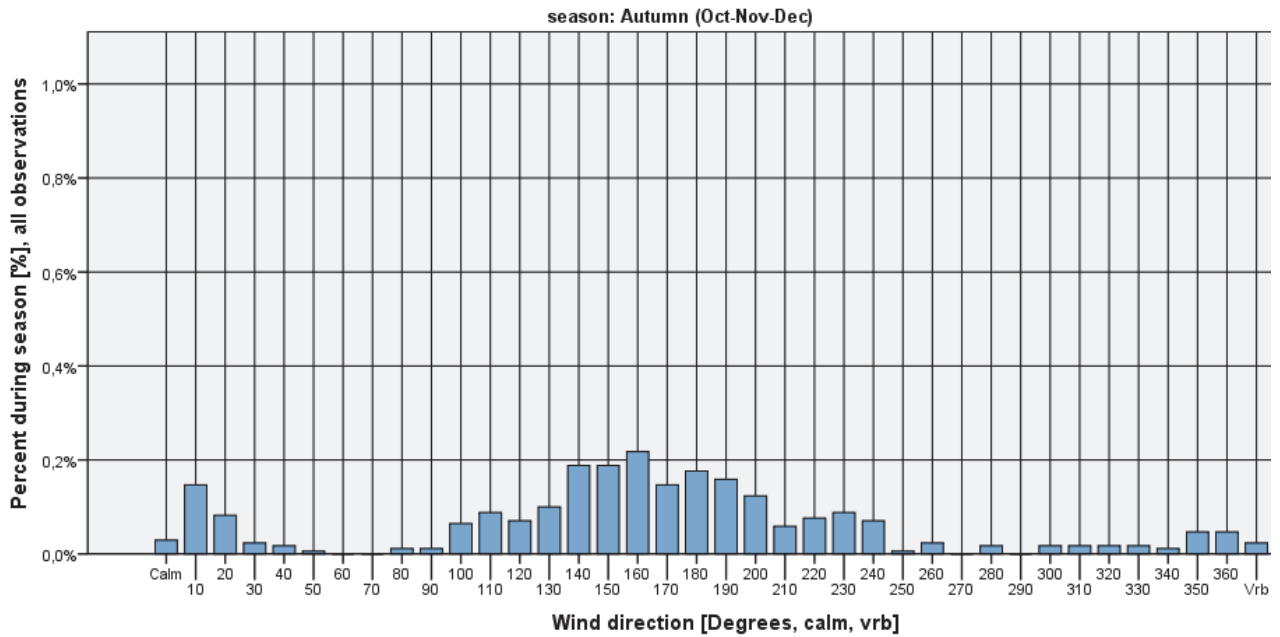


Figure 83

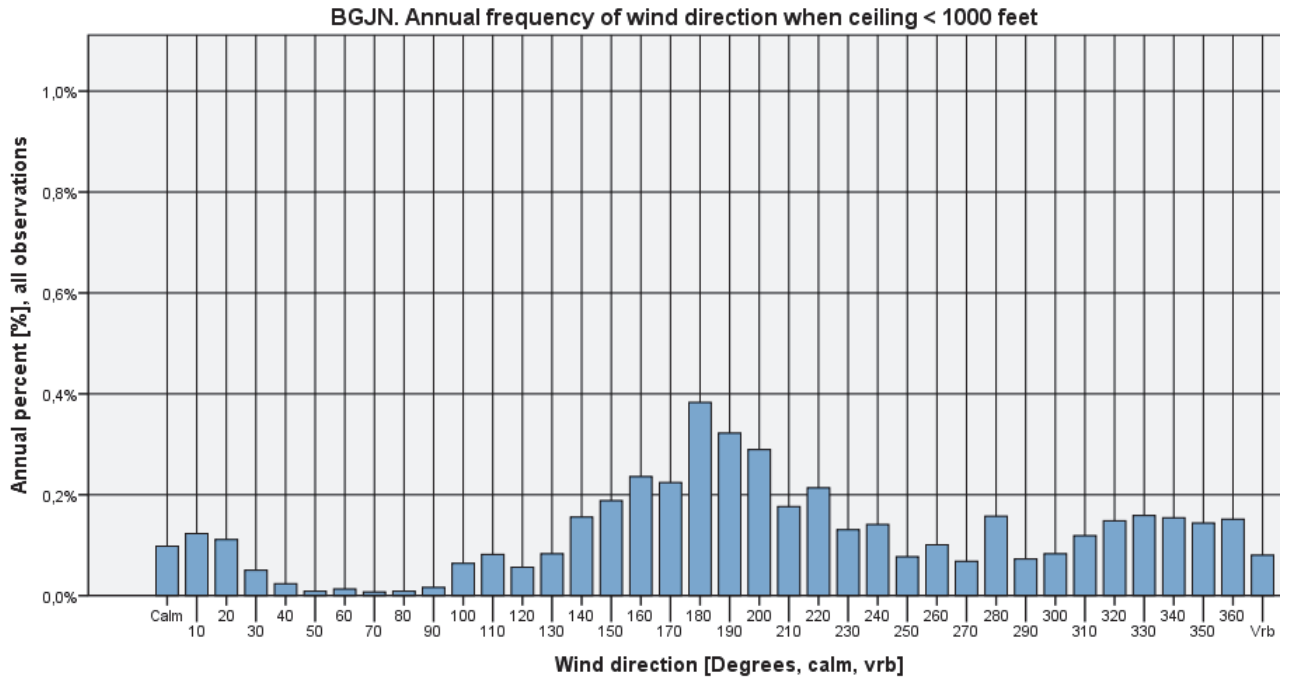


Figure 84



Ceiling < 500 feet

BGJN. Seasonal frequency of wind direction when ceiling < 500 feet

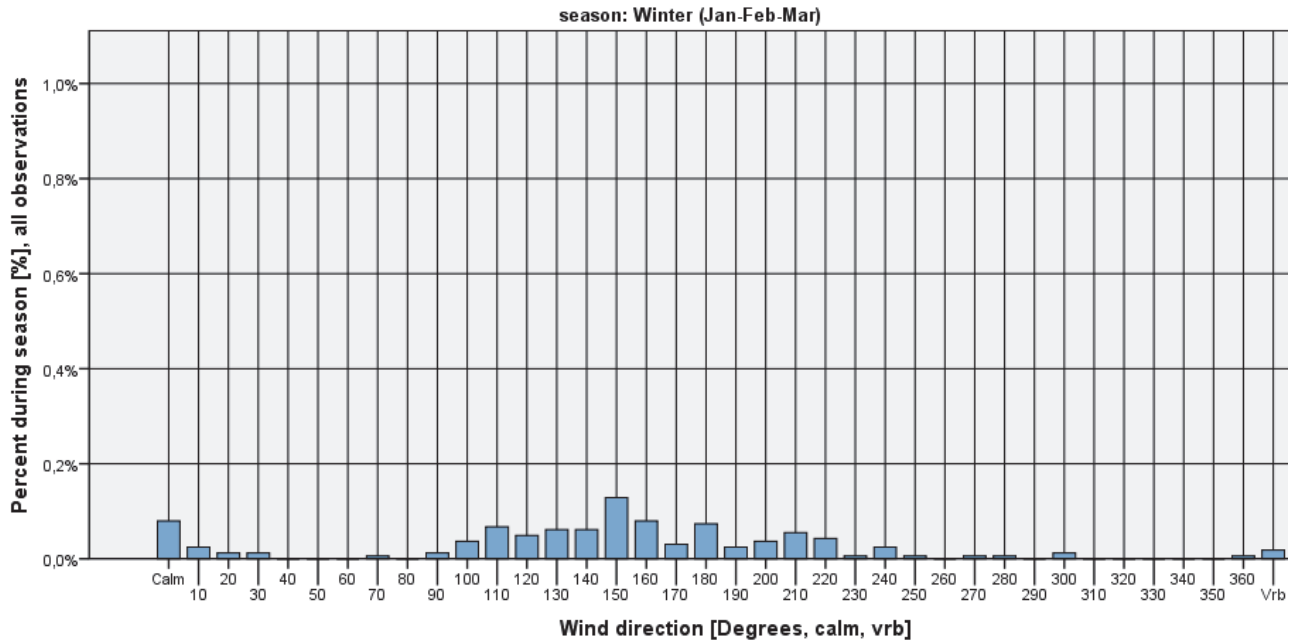


Figure 85

BGJN. Seasonal frequency of wind direction when ceiling < 500 feet

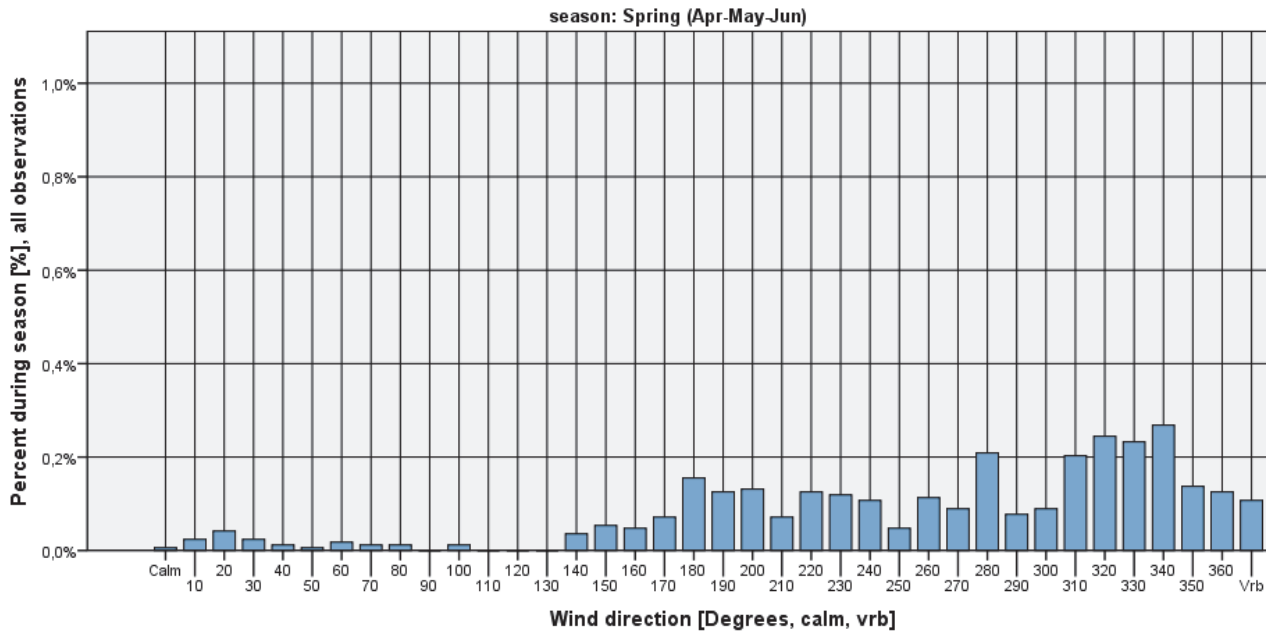


Figure 86



BGJN. Seasonal frequency of wind direction when ceiling < 500 feet

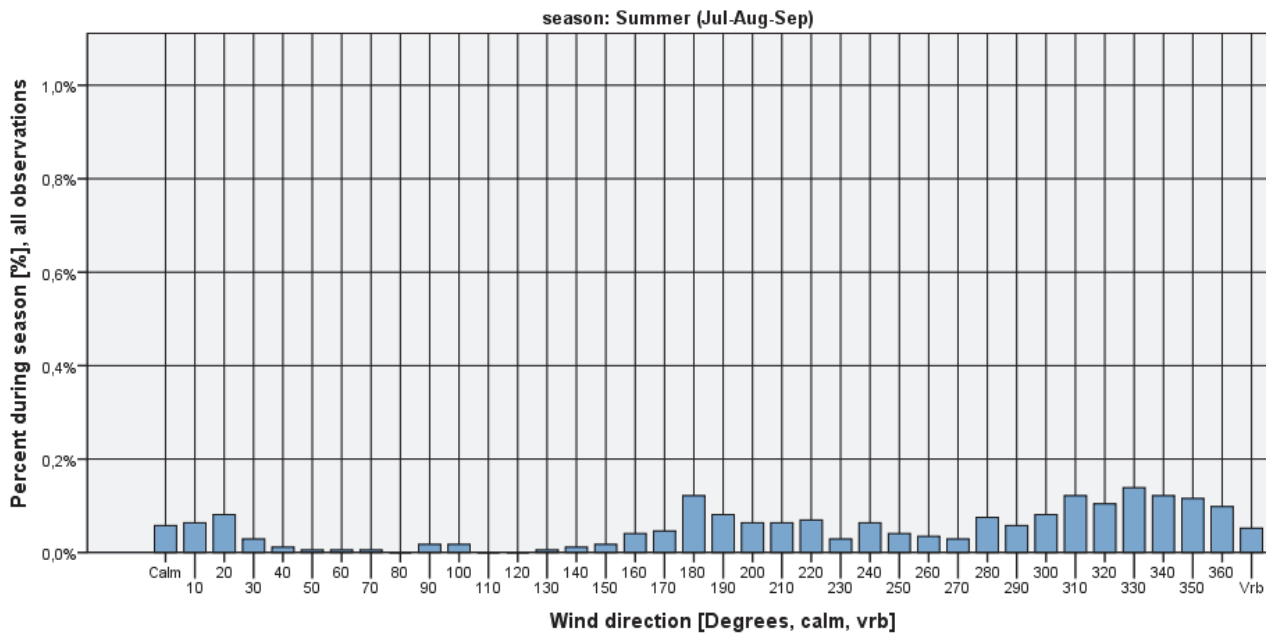


Figure 87

BGJN. Seasonal frequency of wind direction when ceiling < 500 feet

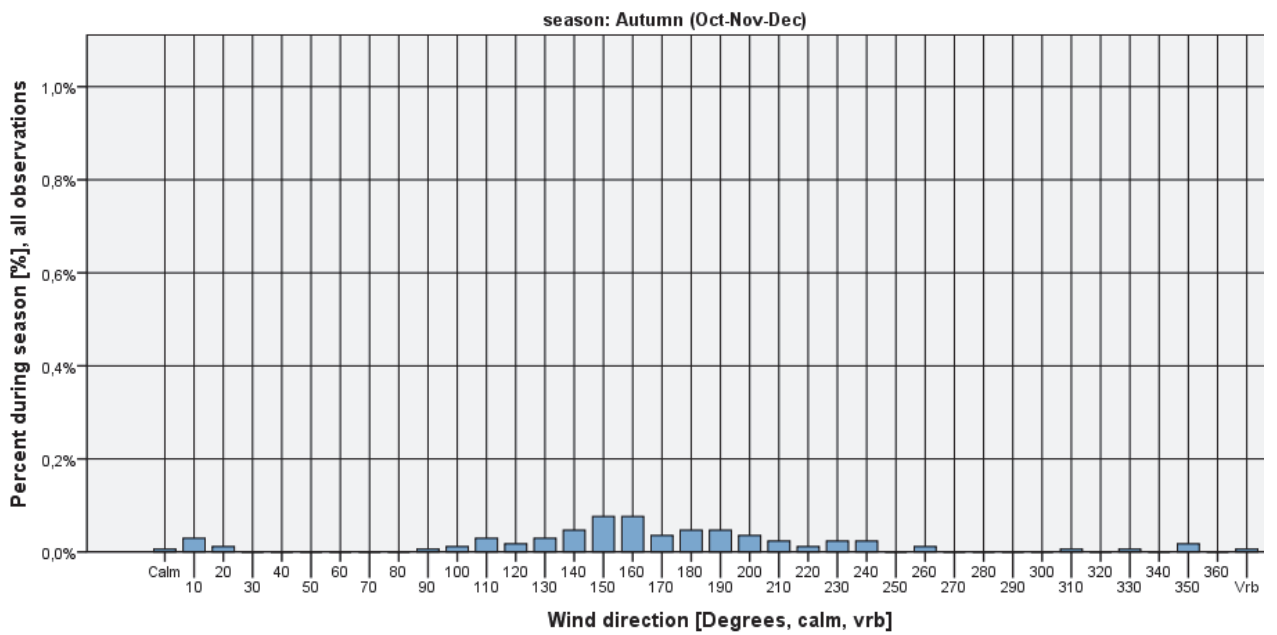


Figure 88

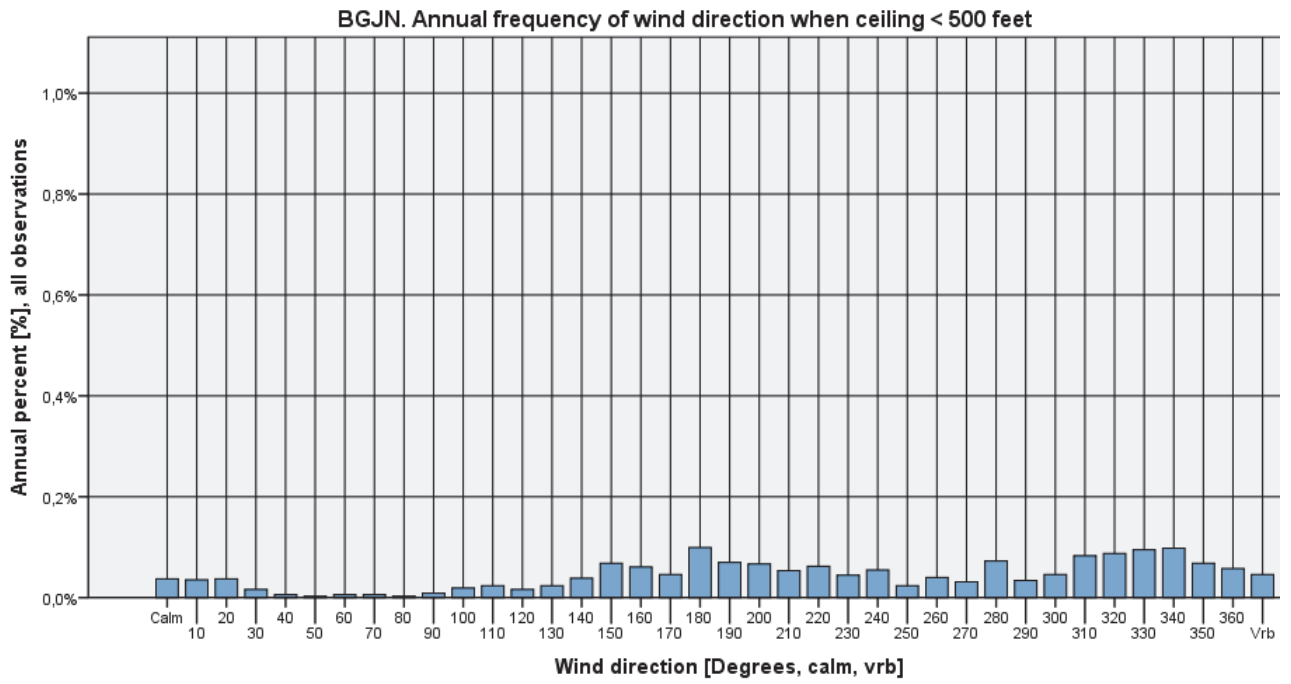
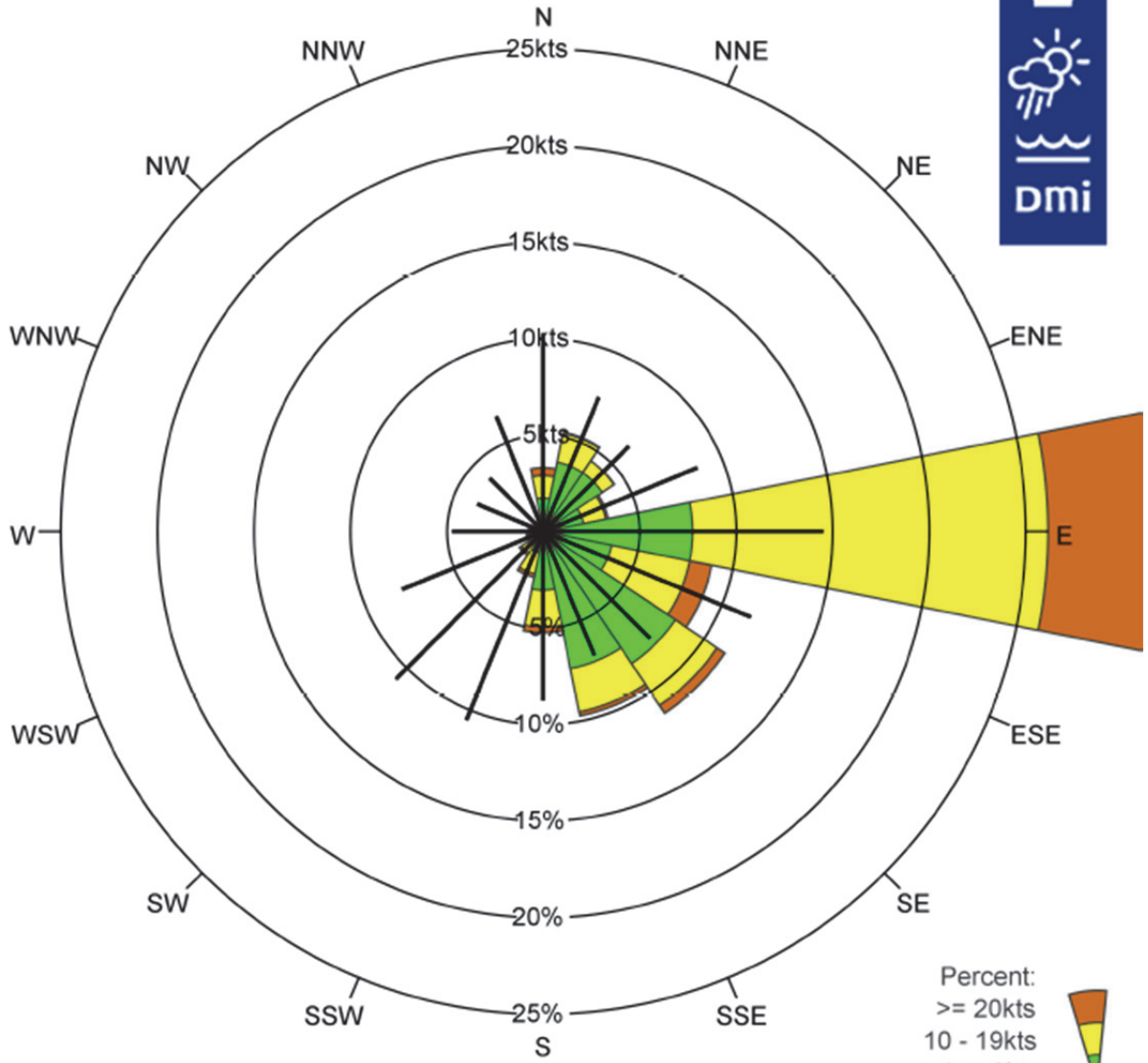


Figure 89



Wind roses

BGJN ILULISSAT - JAKOBHAVN AUTUMN & WINTER: OCTOBER - MARCH 01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

Percent:
 >= 20kts
 10 - 19kts
 1 - 9kts

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	3.3	5.3	4.4	3.4	33.4	8.9	11.3	9.7	5.2	2.4	1.5	0.9	0.8	0.4	0.3	0.6	91.8
% 1 - 9kts	1.8	3.7	3.7	2.1	7.7	3.6	8.2	7.2	3.0	1.1	0.6	0.6	0.7	0.4	0.3	0.4	45.1
% 10 - 19kts	1.2	1.5	0.7	1.2	18.4	4.1	2.6	2.3	1.9	1.1	0.7	0.3	0.1	0.0	0.0	0.1	36.3
% >= 20kts	0.4	0.1	0.0	0.1	7.2	1.2	0.5	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	10.4
Mean wind speed	10.4	7.6	6.3	8.7	14.5	11.7	7.8	6.9	8.7	10.6	10.8	7.9	4.8	3.7	3.9	6.4	10.7
Max wind speed	33.0	25.0	24.0	30.0	46.0	37.0	40.0	34.0	36.0	30.0	29.0	28.0	17.0	14.0	12.0	21.0	46.0

Number of observations = 33313

Source: DMI

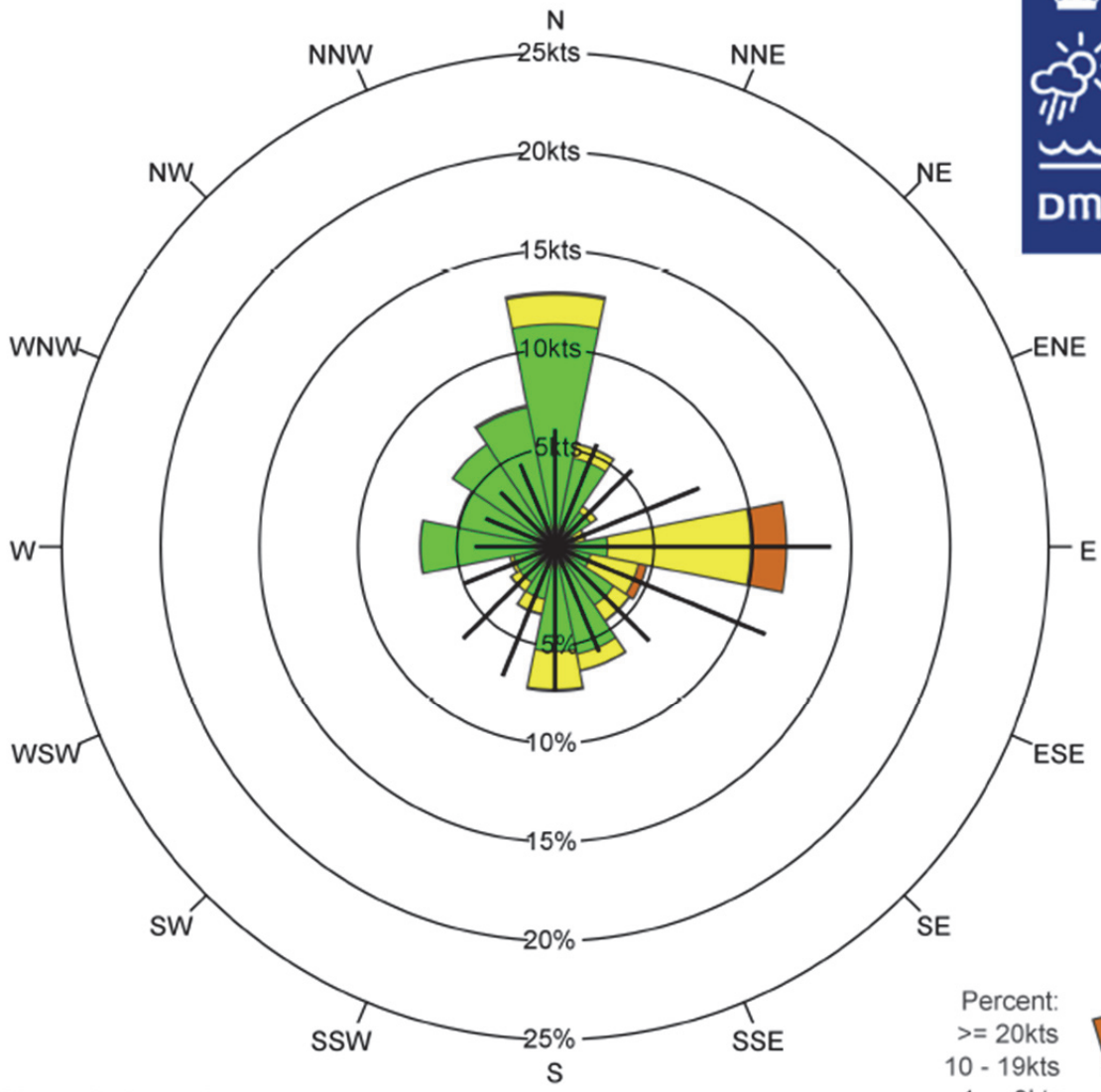
Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 2742=8.2%

Observations with calm/varying wind direction are not used in the statistics



BGJN ILULISSAT - JAKOBHAVN SPRING & SUMMER: APRIL - SEPTEMBER 01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

Percent:
 >= 20kts (orange)
 10 - 19kts (green)
 1 - 9kts (yellow)

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	12.9	5.3	2.5	1.6	11.7	4.7	4.5	6.4	7.3	3.5	2.7	2.3	6.8	5.1	6.3	7.3	91.0
% 1 - 9kts	11.3	4.6	2.1	1.0	2.6	1.8	3.5	5.5	5.3	2.7	2.2	2.2	6.8	5.1	6.2	7.2	70.0
% 10 - 19kts	1.5	0.7	0.4	0.6	7.3	2.4	0.9	0.9	2.0	0.8	0.5	0.2	0.0	0.0	0.0	0.1	18.3
% >= 20kts	0.1	0.0	0.0	0.0	1.8	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
Mean wind speed	6.0	5.6	5.5	7.9	13.9	11.5	6.8	5.7	7.4	7.1	6.6	5.0	4.1	3.8	3.9	4.5	6.9
Max wind speed	24.0	24.0	18.0	22.0	39.0	38.0	29.0	24.0	28.0	25.0	26.0	19.0	19.0	10.0	17.0	17.0	39.0

Number of observations = 34033
 Calm defined a wind speed = 0kts
 Number of observations with calm/varying wind direction: 3055=9.0%
 Observations with calm/varying wind direction are not used in the statistics

Source: DMI



Availability

Yearly distribution of observations. BGJN 01-Feb-2003 - 31-Jan-2012

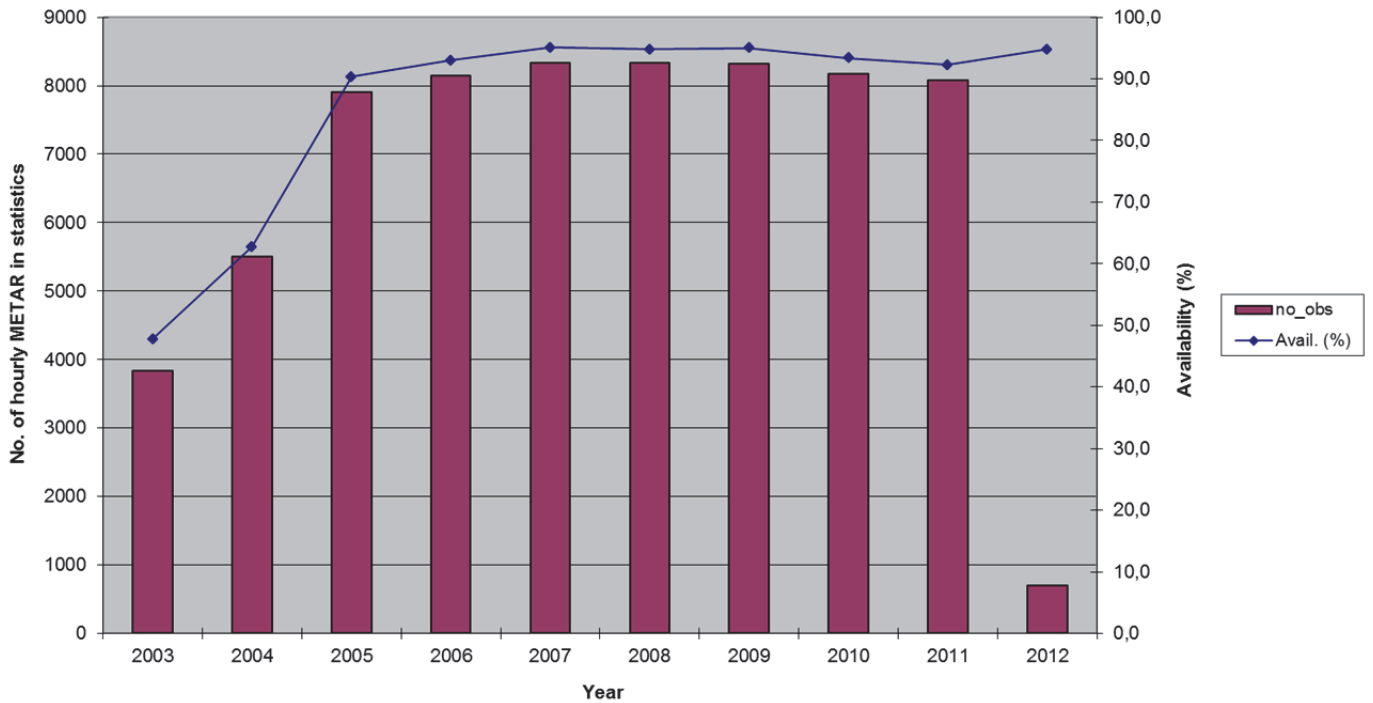


Figure 90

Monthly distribution of observations. BGJN 01-Feb-2003 - 31-Jan-2012

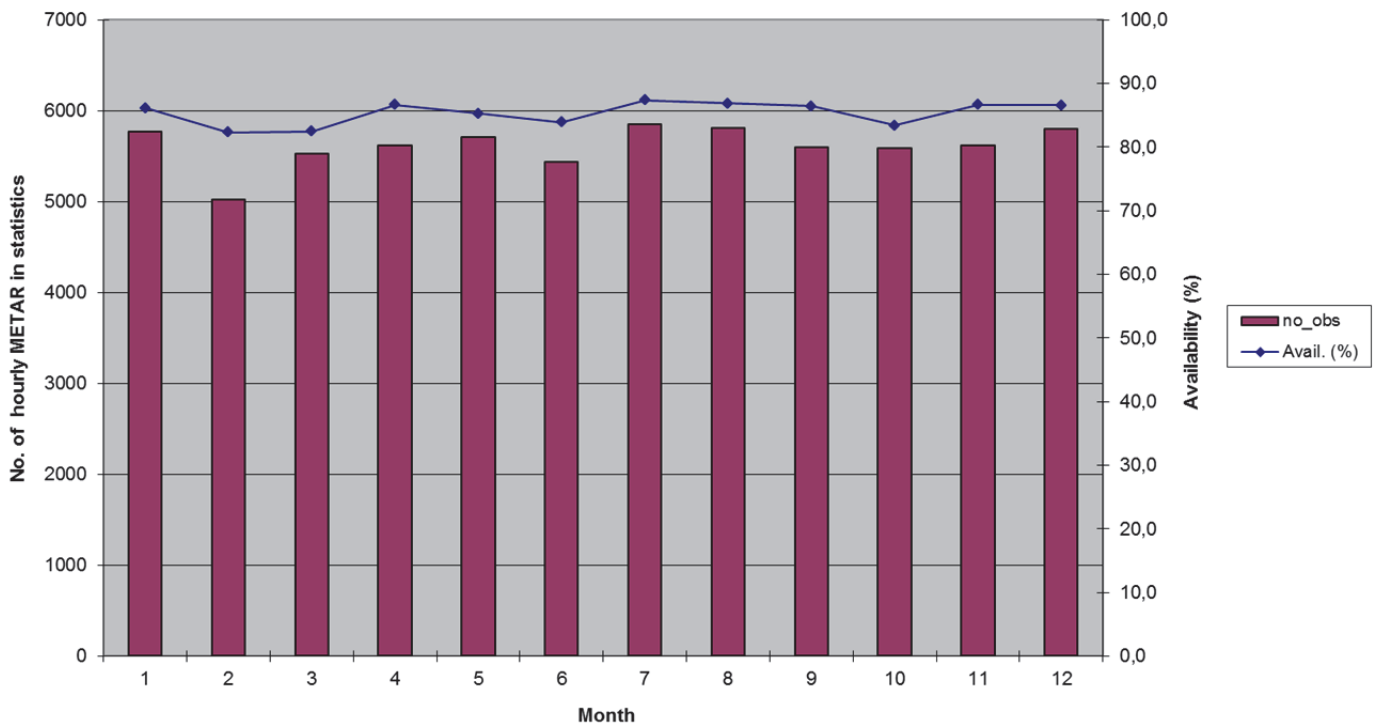


Figure 91

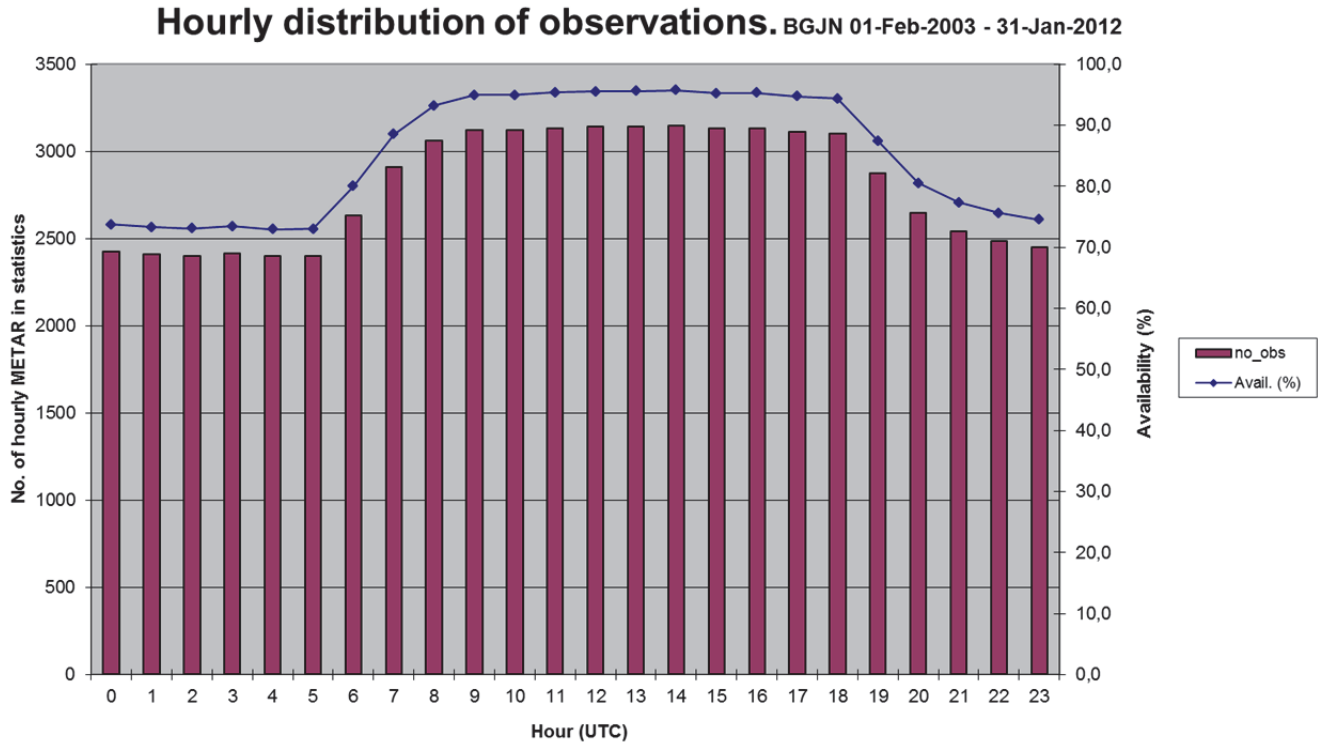


Figure 92

BGJN. Average no. of hourly observations in statistics, 1 February 2003 - 31 January 2012

Hour (UTC)	year									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
0	,0	,3	,9	,9	,9	,9	,9	,9	,9	,9
1	,0	,3	,8	,9	,9	,9	,9	,9	,9	1,0
2	,0	,3	,9	,9	,9	,9	,9	,9	,9	,9
3	,0	,3	,8	,9	,9	,9	,9	,9	,9	,9
4	,0	,3	,8	,9	,9	,9	,9	,9	,9	1,0
5	,0	,3	,8	,9	,9	,9	,9	,9	,9	,9
6	,4	,6	,8	,9	,9	,9	,9	,9	,9	,9
7	,8	,8	,9	,9	,9	,9	,9	,9	,9	,9
8	,8	,9	,9	1,0	1,0	1,0	1,0	,9	,9	,9
9	,8	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0	,9
10	,8	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0	,9
11	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
12	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
13	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
14	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
15	,9	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0
16	,9	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0
17	,8	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0
18	,8	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0	1,0
19	,5	,7	,9	,9	1,0	1,0	1,0	1,0	1,0	1,0
20	,2	,5	,9	,9	,9	1,0	,9	,9	,9	1,0
21	,1	,4	,9	,9	,9	,9	,9	,9	,9	,9
22	,1	,3	,9	,9	,9	,9	,9	,9	,9	,9
23	,0	,3	,9	,9	,9	,9	,9	,9	,9	,9

Table 25



BGSS Sisimiut/Holsteinsborg

Mittarfik Sisimiut

Location: 66,950°N 53,717°W

H: 29 m above msl

BGSS observations in statistics: 59.482 hourly METAR⁵ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 75,4%.

Please note the low availability and take care accordingly when using the current BGSS weather statistics since the low availability, besides the usual lack of manned night-time observations and lower observations frequency on Sundays, is resulting from exclusion of an unusual large number of erroneous or missing automated measurements of visibility and/or cloud cover, indicating what might be a data quality that overall is lower than usual. Other details are found in the Availability Section.

The BGSS METAR are all manual until 30 January 2004, and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

Winter (Jan-Feb-Mar): BGSS - Frequencies (%) Visibility - Ceiling

No. Obs = 14.070	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,014	0,37	0,68	0,77	0,20	0,97
<1 km	0	0,014	0,43	0,90	1,04	0,28	1,32
<1.5 km	0	0,014	0,50	1,39	1,86	0,72	2,57
<3.0 km	0	0,014	0,58	2,16	3,44	3,32	6,76
< 5.0 km	0	0,014	0,61	2,44	4,43	6,77	11,19
>= 5,0 km or CAVOK	0	0	0,043	0,60	2,24	86,57	88,81
Total	0	0,014	0,65	3,04	6,67	93,33	100

Table 26

Spring (Apr-May-Jun): BGSS - Frequencies (%) Visibility - Ceiling

No. Obs = 14.131	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,014	0,13	0,46	0,54	0,54	0,05	0,59
<1 km	0,014	0,17	0,71	0,82	0,83	0,07	0,90
<1.5 km	0,014	0,19	0,92	1,20	1,32	0,11	1,43
<3.0 km	0,014	0,20	1,64	2,50	3,16	0,83	3,98
< 5.0 km	0,014	0,20	2,29	3,64	4,67	2,14	6,81
>= 5,0 km or CAVOK	0	0,014	1,819	7,51	11,96	81,23	93,19
Total	0,014	0,21	4,10	11,15	16,63	83,37	100

Table 27

⁵ For every hourly period max one observation (METAR *or* SPECI) is included, selected as the available METAR *or* SPECI with lowest visibility.



Summer (Jul-Aug-Sep): BGSS - Frequencies (%) Visibility - Ceiling

No. Obs = 16.175	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,012	0,15	0,63	0,64	0,64	0,04	0,68
<1 km	0,012	0,19	0,94	0,95	0,95	0,13	1,08
<1.5 km	0,012	0,20	1,27	1,30	1,31	0,21	1,52
<3.0 km	0,012	0,27	2,10	2,36	2,42	0,62	3,04
< 5.0 km	0,012	0,28	2,72	3,50	3,70	0,96	4,67
>= 5,0 km or CAVOK	0	0,031	2,32	8,58	13,43	81,90	95,33
Total	0,012	0,31	5,04	12,08	17,13	82,87	100

Table 28

Autumn (Oct-Nov-Dec): BGSS - Frequencies (%) Visibility - Ceiling

No. Obs = 15.106	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,026	0,34	0,59	0,61	0,03	0,64
<1 km	0	0,026	0,45	0,95	1,01	0,07	1,09
<1.5 km	0	0,026	0,57	1,59	1,88	0,32	2,20
<3.0 km	0	0,026	0,68	2,61	3,83	2,20	6,03
< 5.0 km	0	0,026	0,71	3,26	5,31	4,84	10,15
>= 5,0 km or CAVOK	0	0	0,040	1,21	2,89	86,96	89,85
Total	0	0,026	0,75	4,48	8,20	91,80	100

Table 29

Annual: BGSS - Frequencies (%) Visibility - Ceiling

No. Obs = 59.482	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,0067	0,08	0,45	0,61	0,64	0,08	0,71
<1 km	0,0067	0,10	0,64	0,91	0,96	0,14	1,10
<1.5 km	0,0067	0,11	0,83	1,37	1,59	0,34	1,92
<3.0 km	0,0067	0,13	1,27	2,41	3,19	1,71	4,90
< 5.0 km	0,0067	0,13	1,61	3,22	4,51	3,60	8,11
>= 5,0 km or CAVOK	0	0,012	1,08	4,57	7,76	84,13	91,89
Total	0,0067	0,14	2,69	7,79	12,27	87,73	100

Table 30



Wind direction histograms

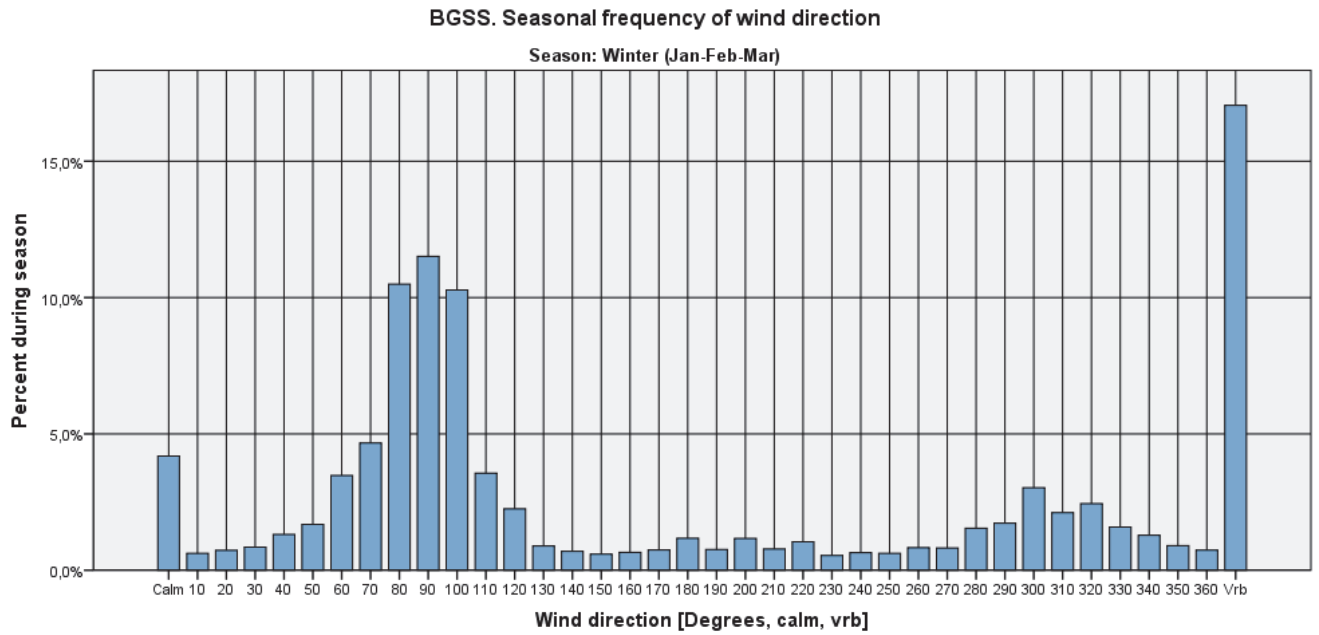


Figure 93

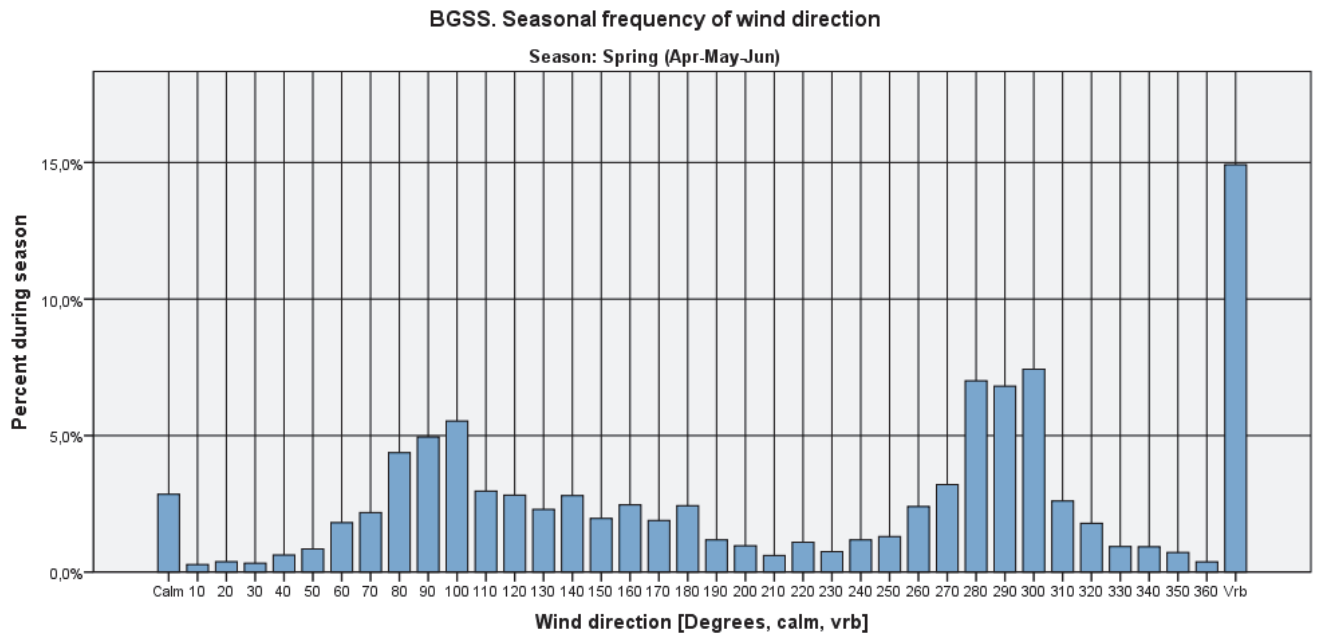


Figure 94

BGSS. Seasonal frequency of wind direction

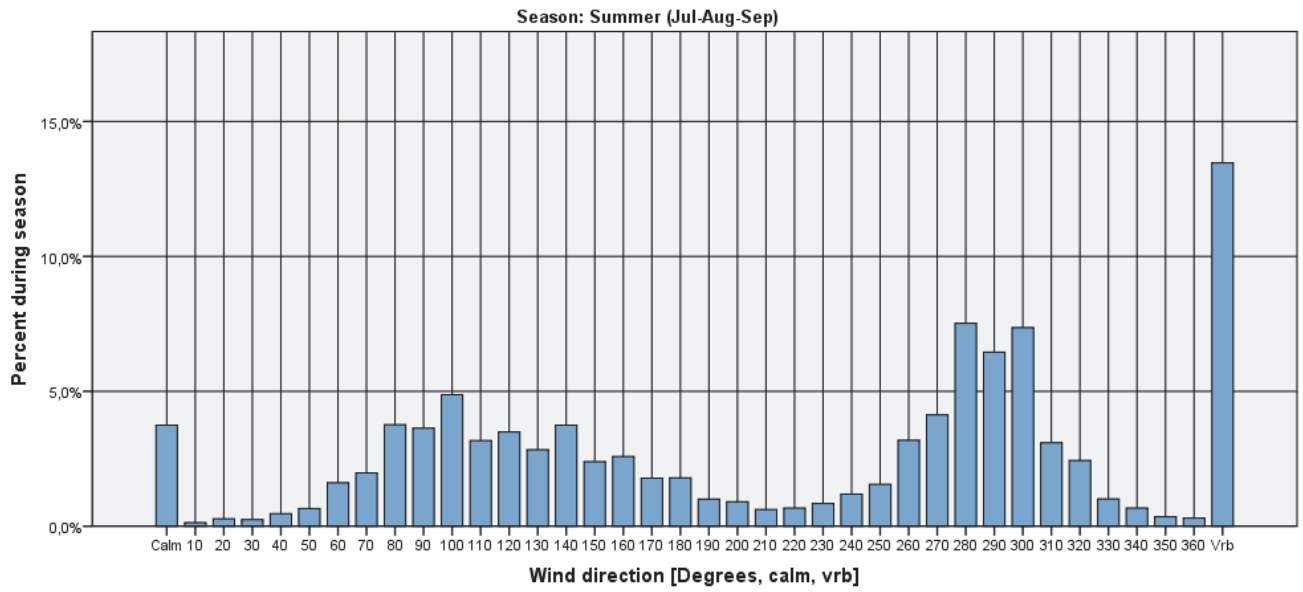


Figure 95

BGSS. Seasonal frequency of wind direction

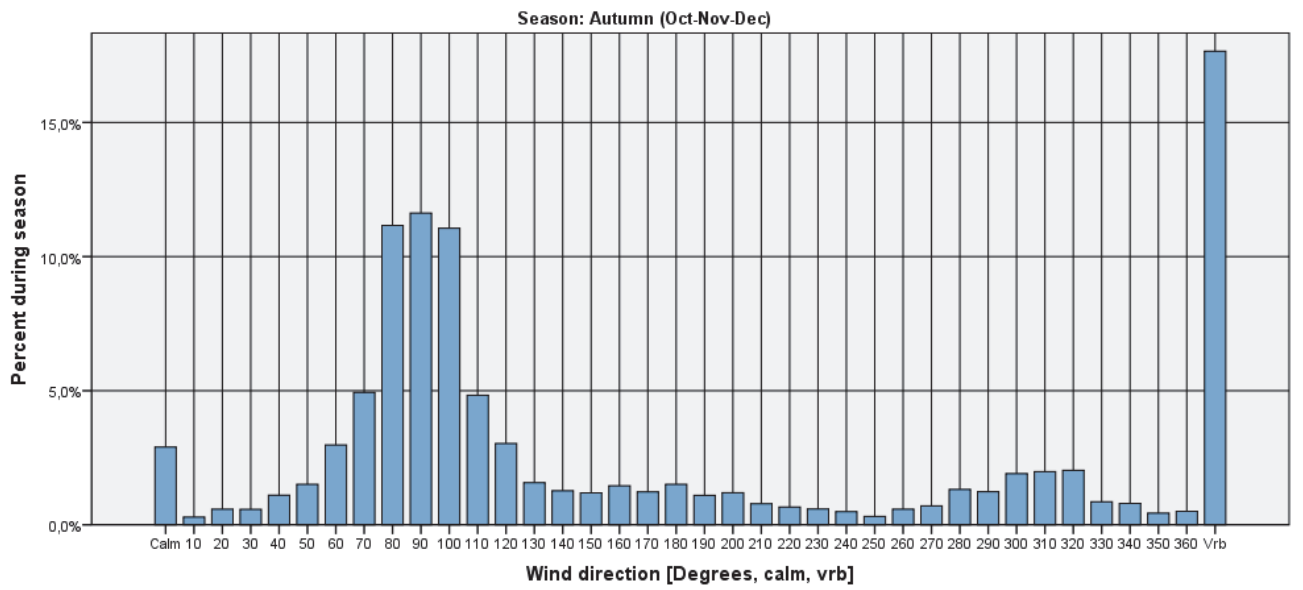


Figure 96

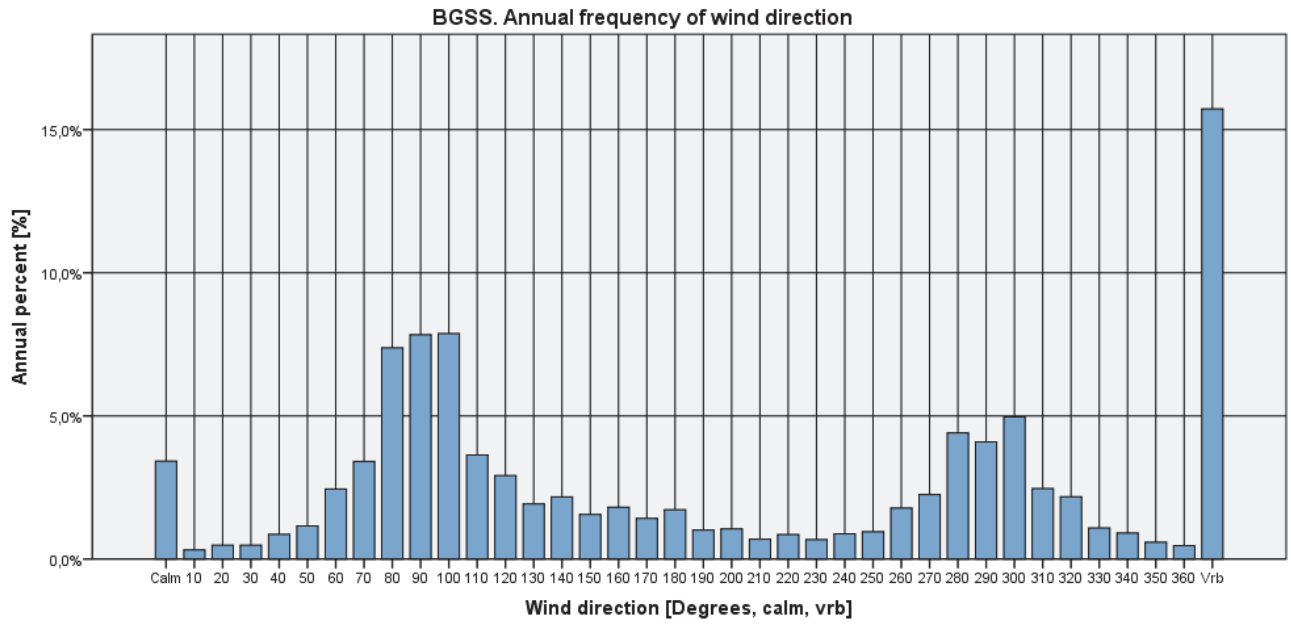


Figure 97



Visibility criteria on wind direction histograms

Visibility < 1000 m

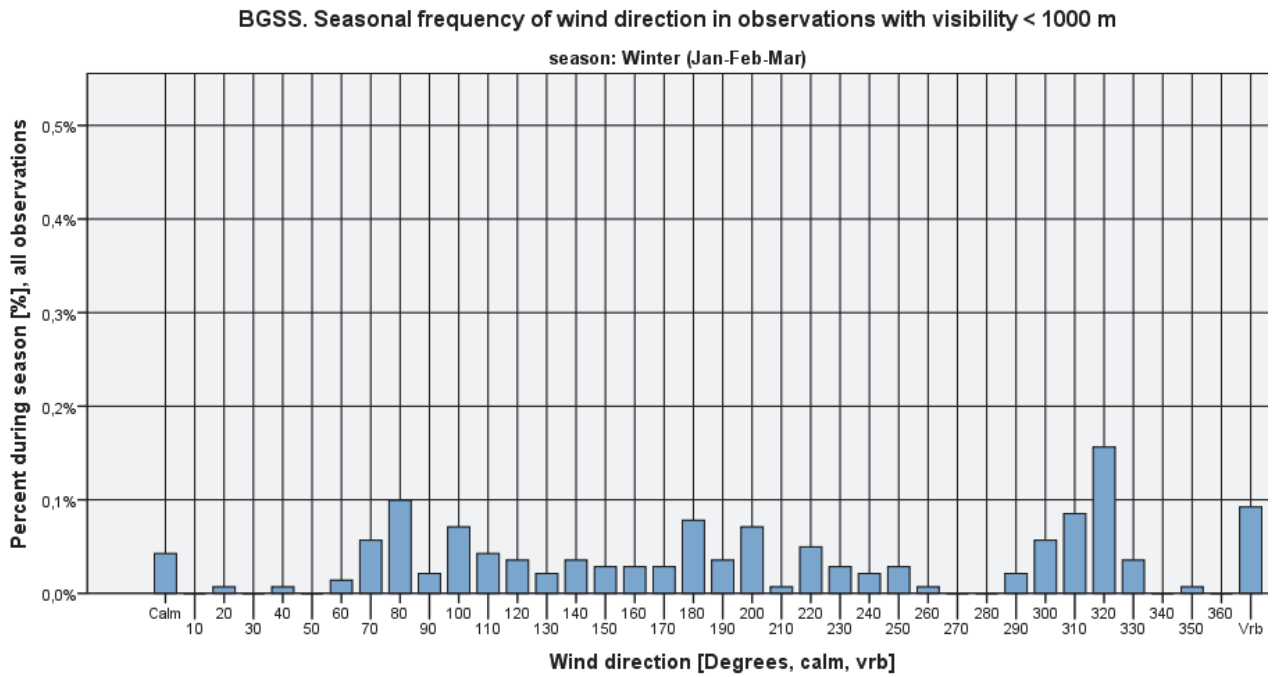


Figure 98

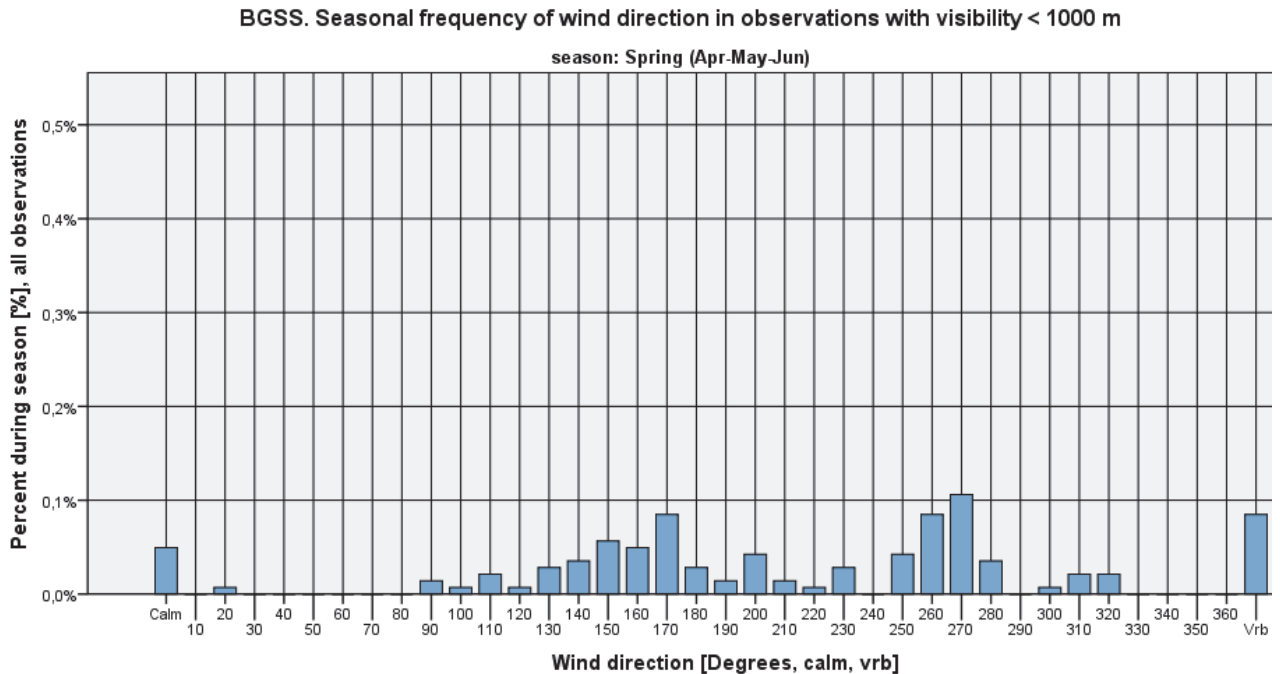


Figure 99

BGSS. Seasonal frequency of wind direction in observations with visibility < 1000 m

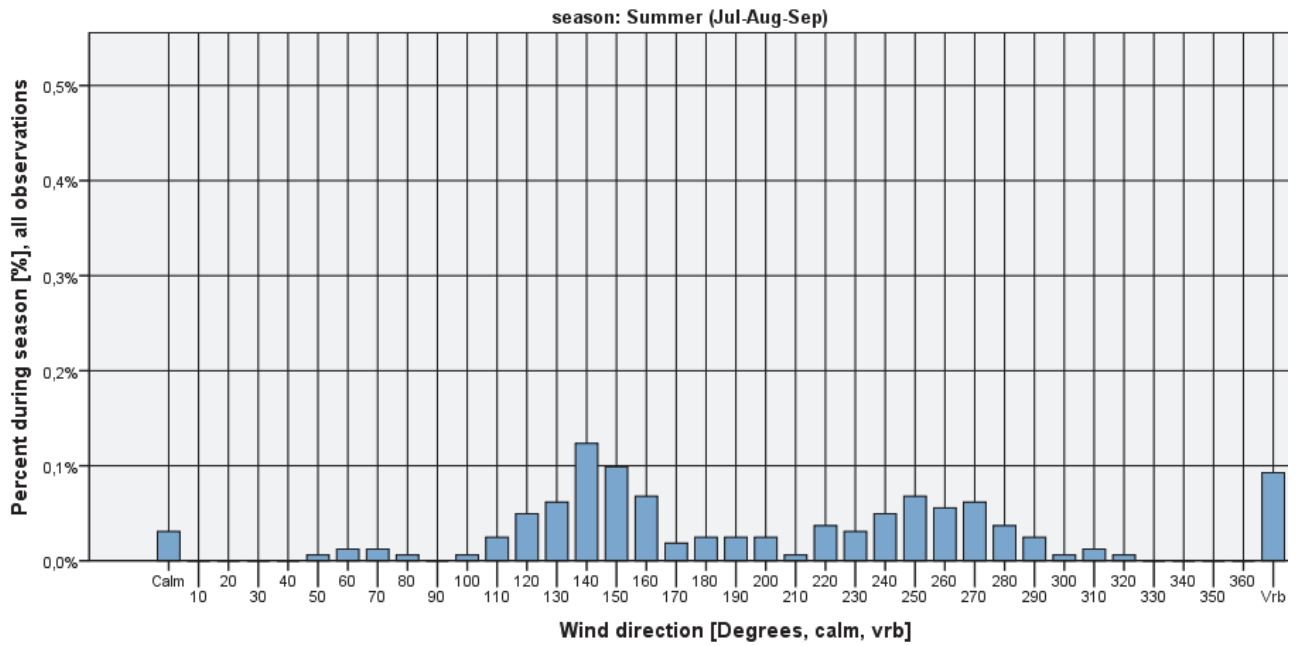


Figure 100

BGSS. Seasonal frequency of wind direction in observations with visibility < 1000 m

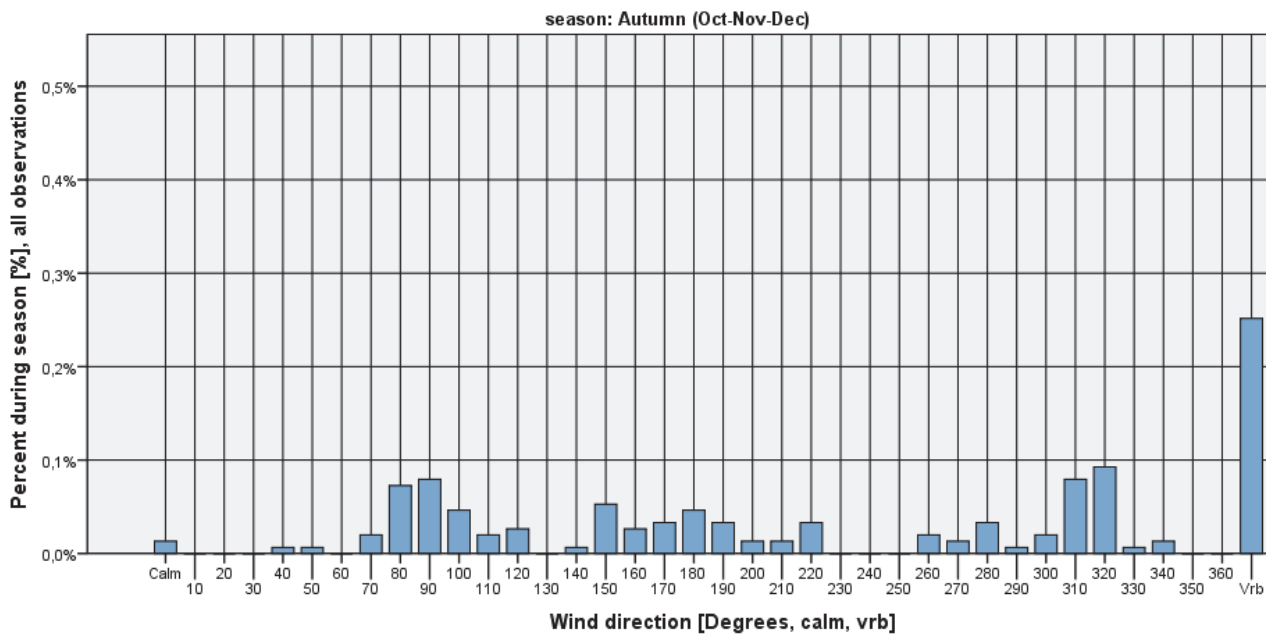


Figure 101

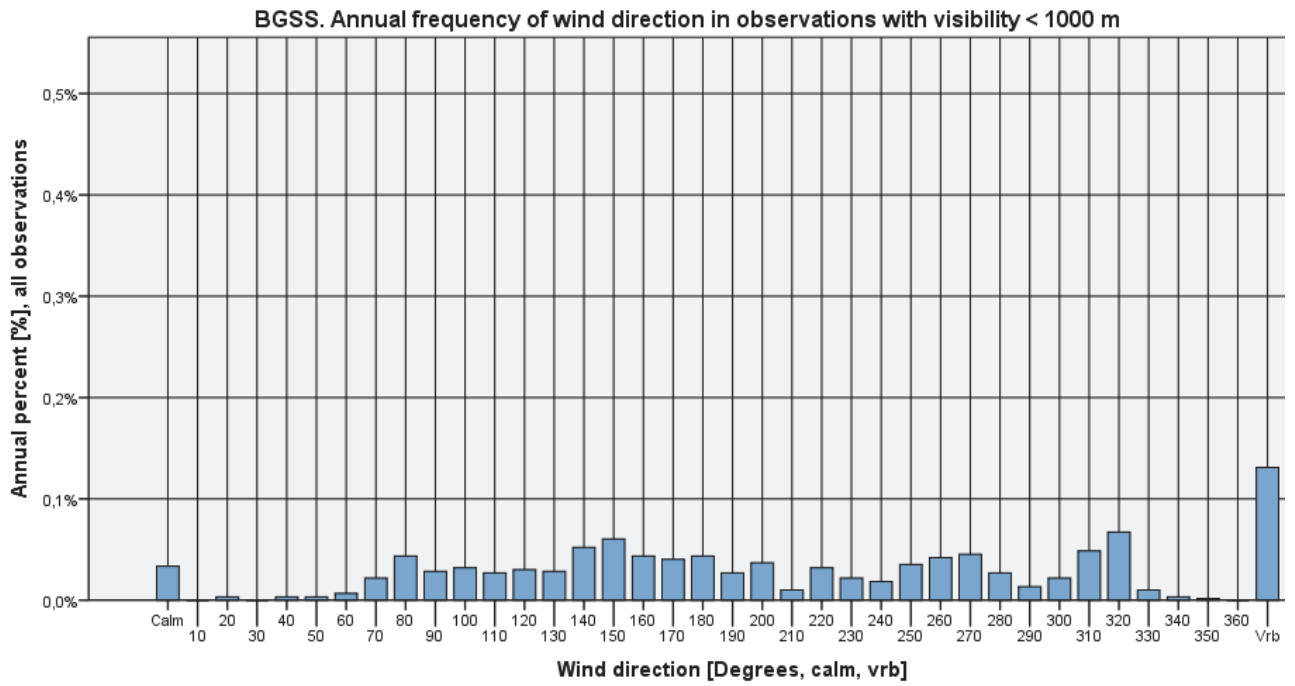


Figure 102



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

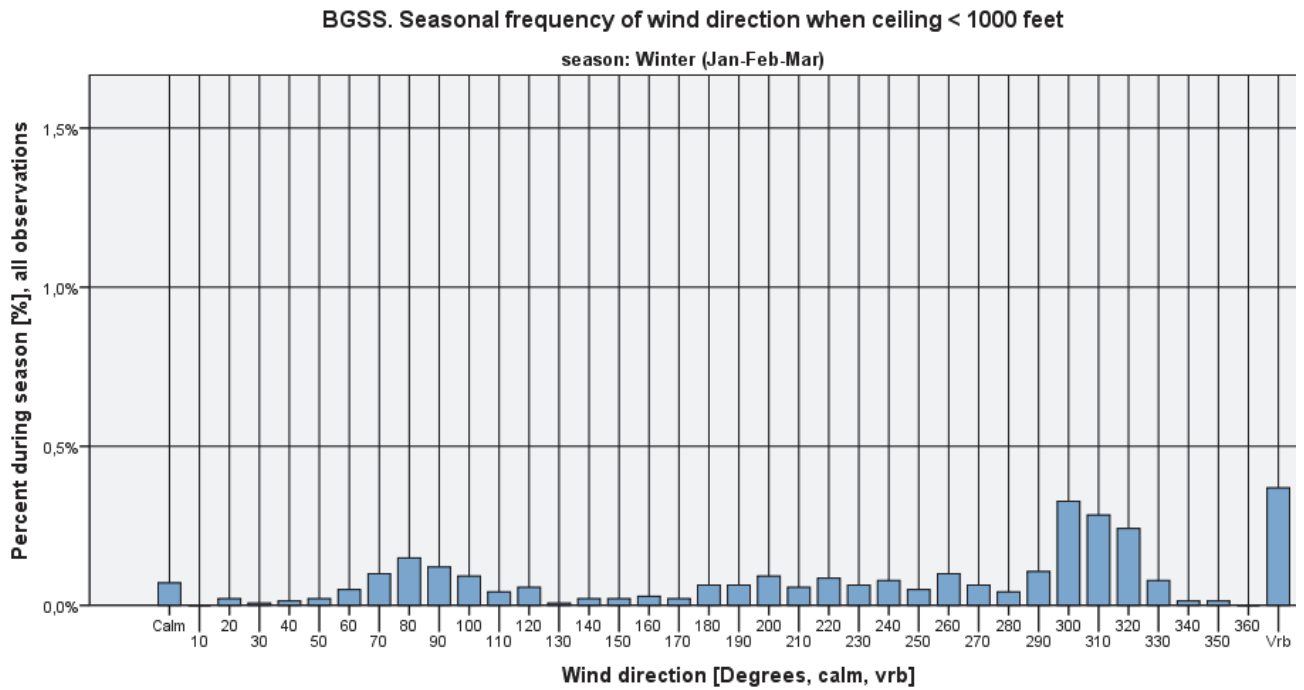


Figure 103

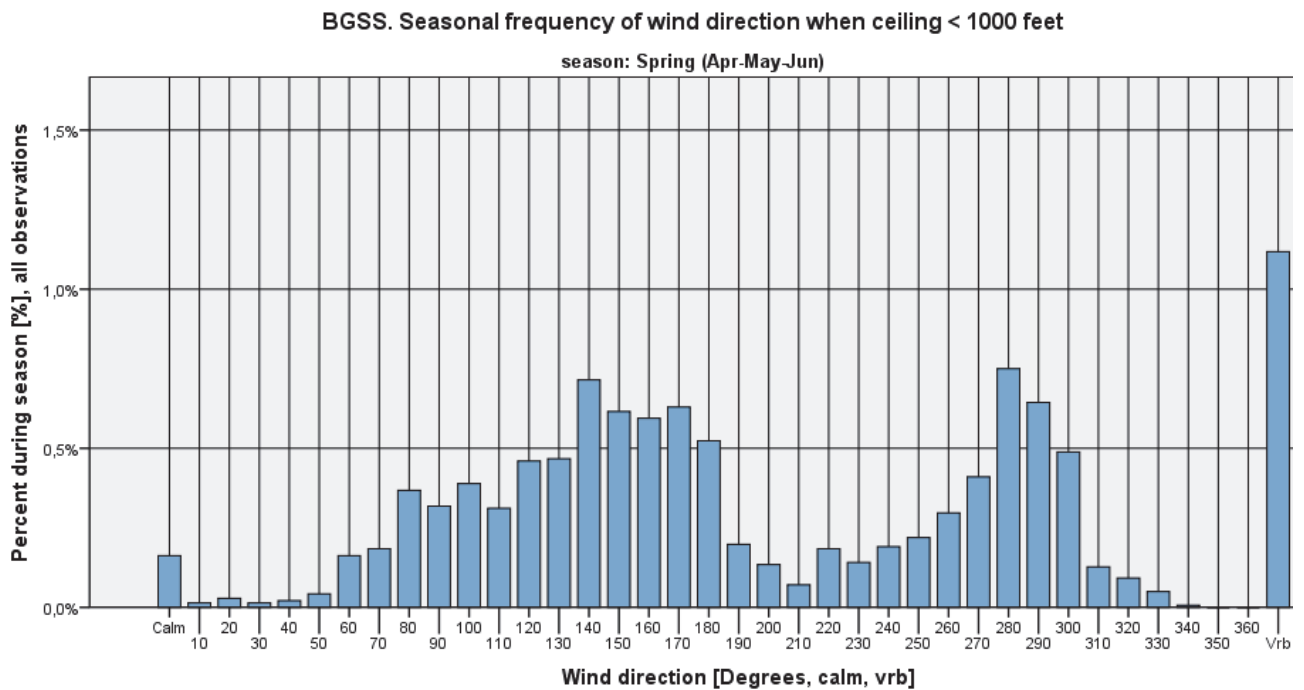


Figure 104



BGSS. Seasonal frequency of wind direction when ceiling < 1000 feet

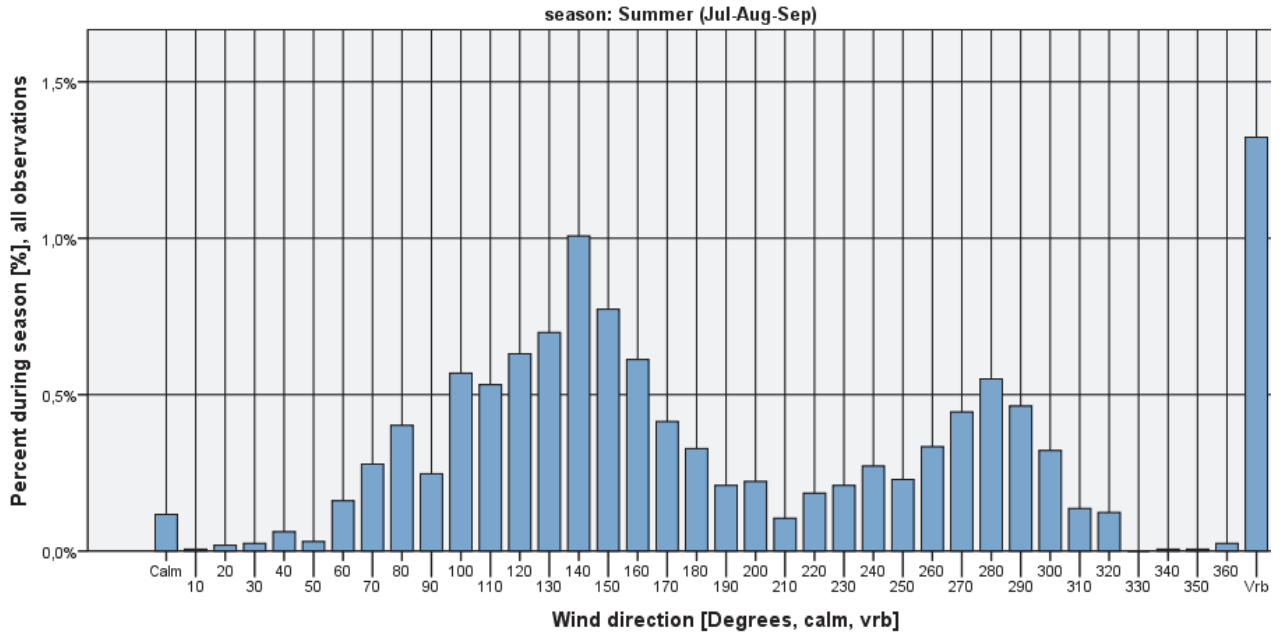


Figure 105

BGSS. Seasonal frequency of wind direction when ceiling < 1000 feet

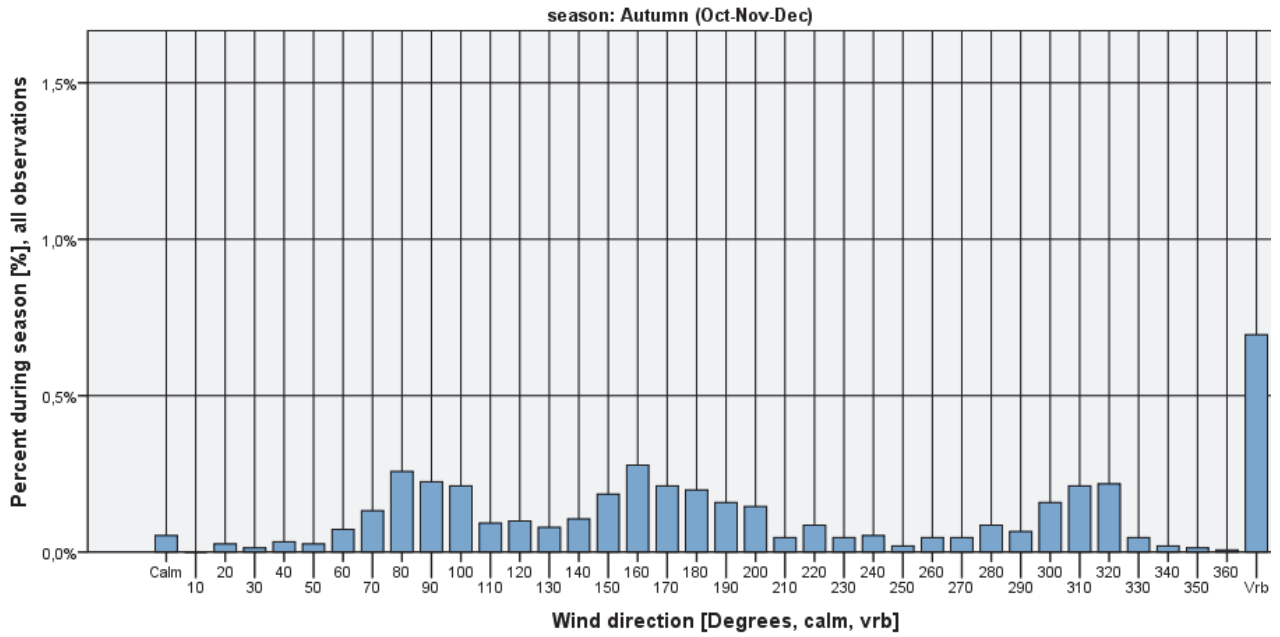


Figure 106

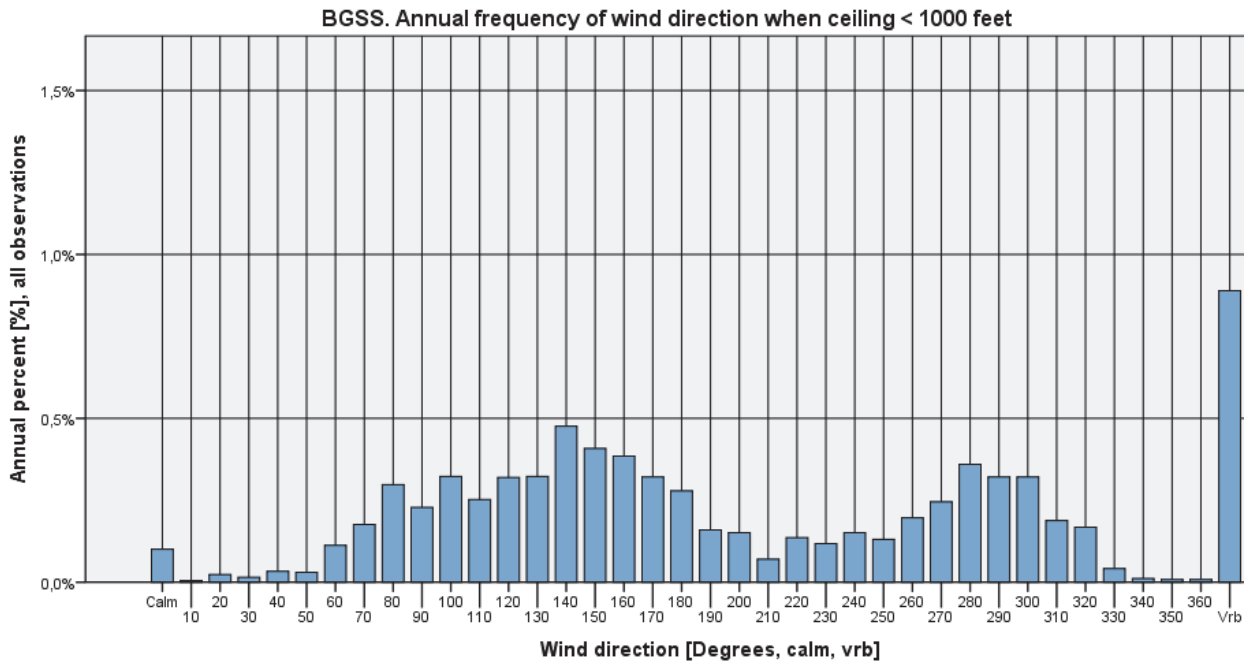


Figure 107



Ceiling < 500 feet

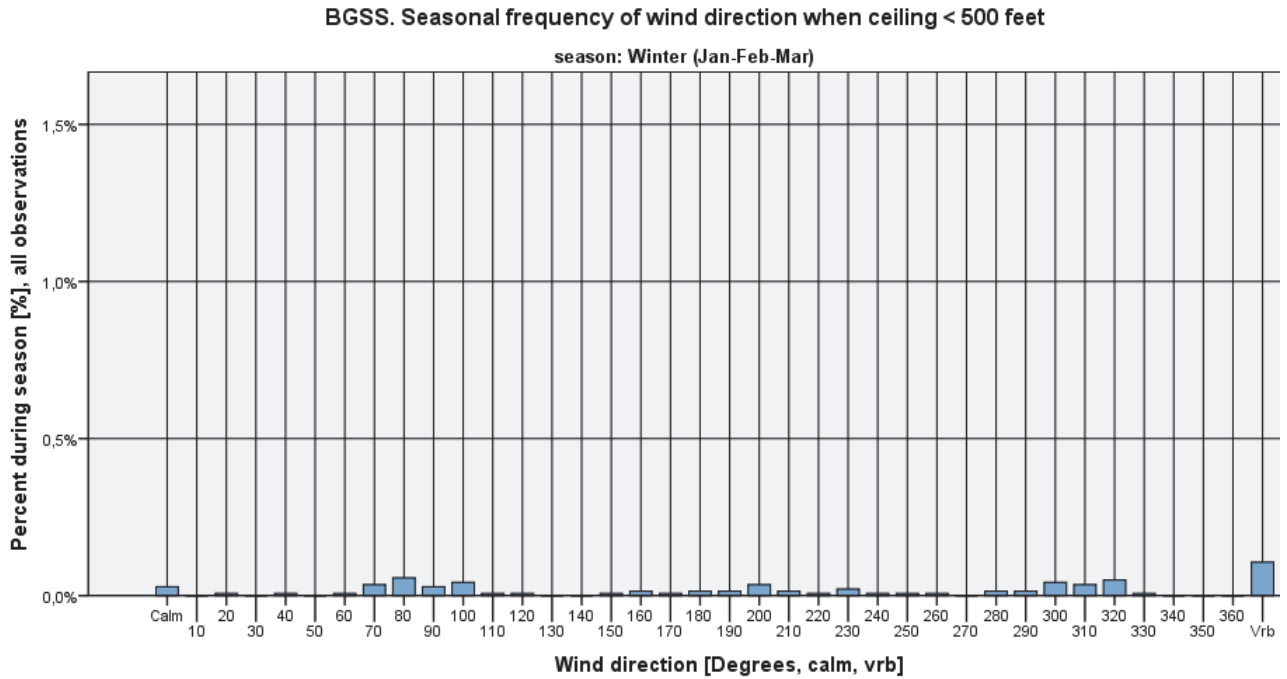


Figure 108

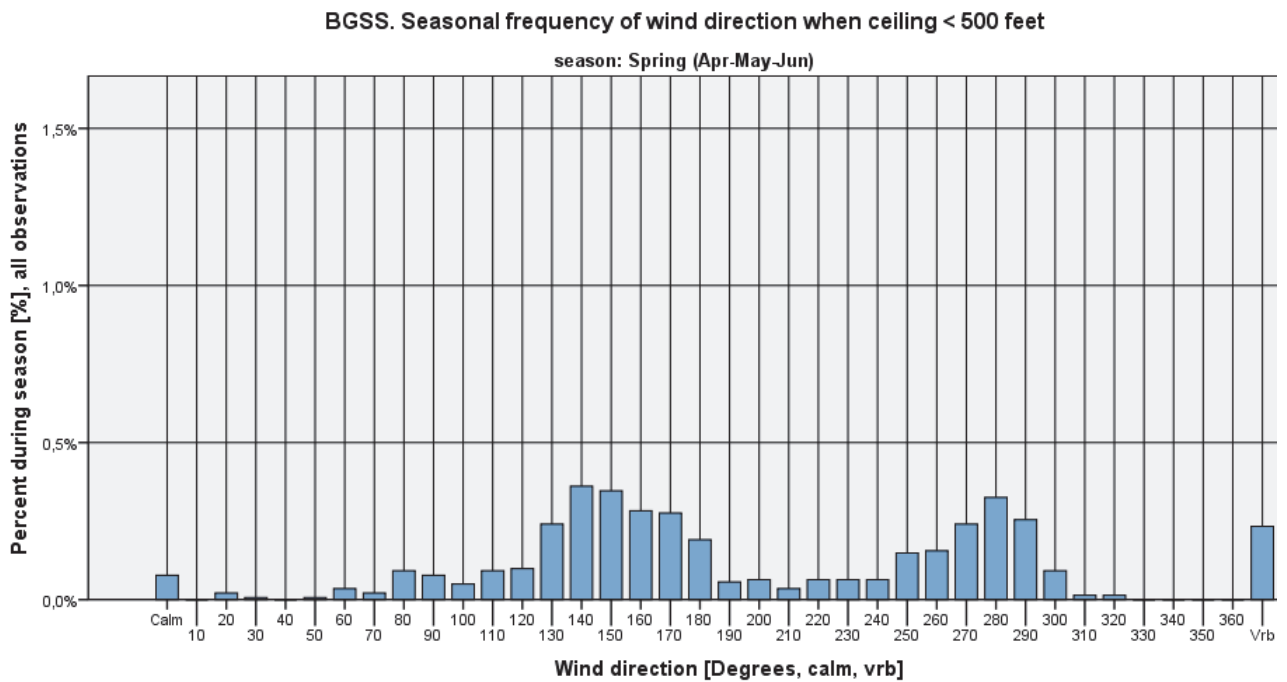


Figure 109



BGSS. Seasonal frequency of wind direction when ceiling < 500 feet

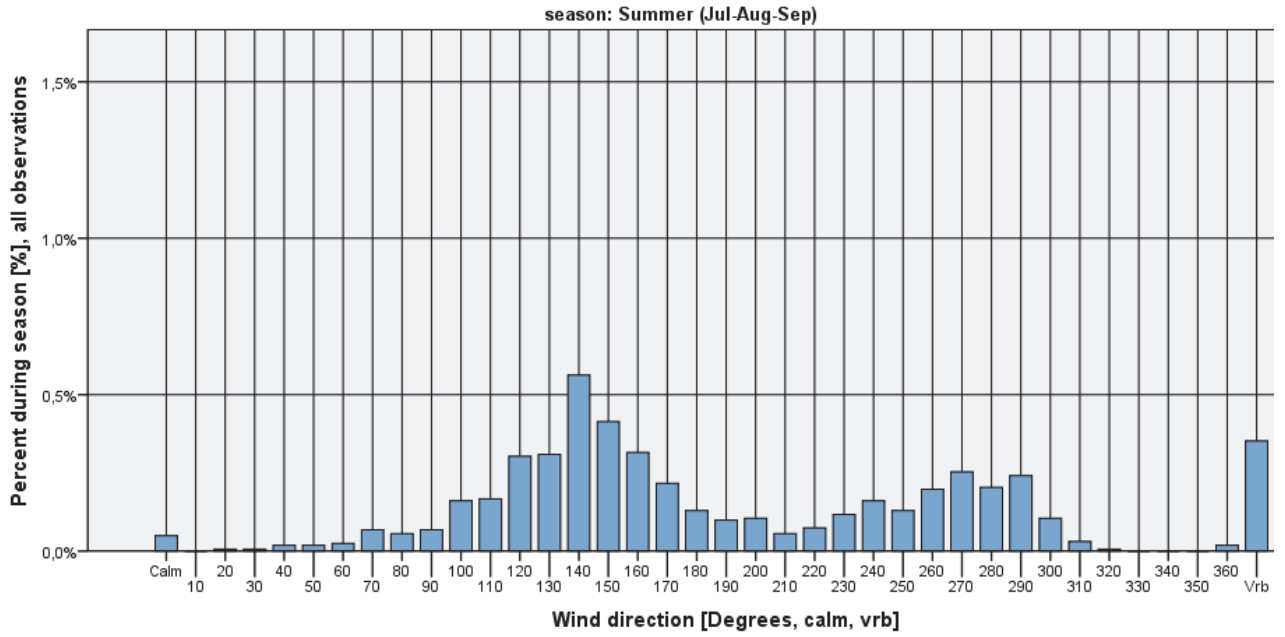


Figure 110

BGSS. Seasonal frequency of wind direction when ceiling < 500 feet

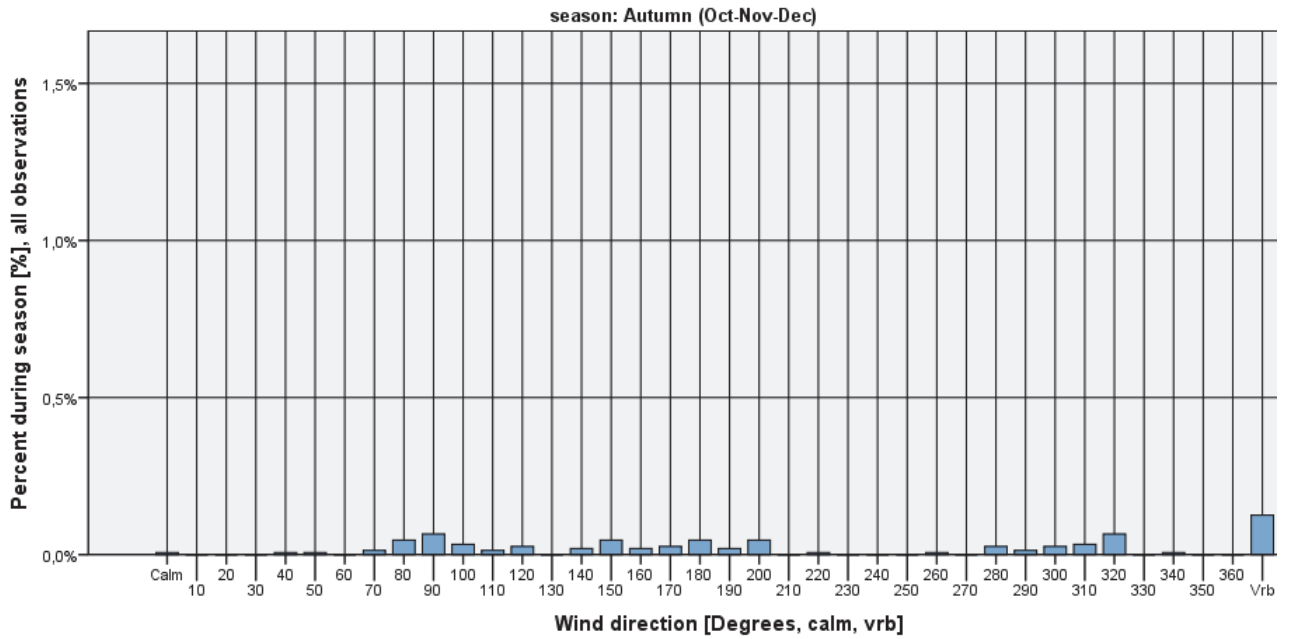


Figure 111

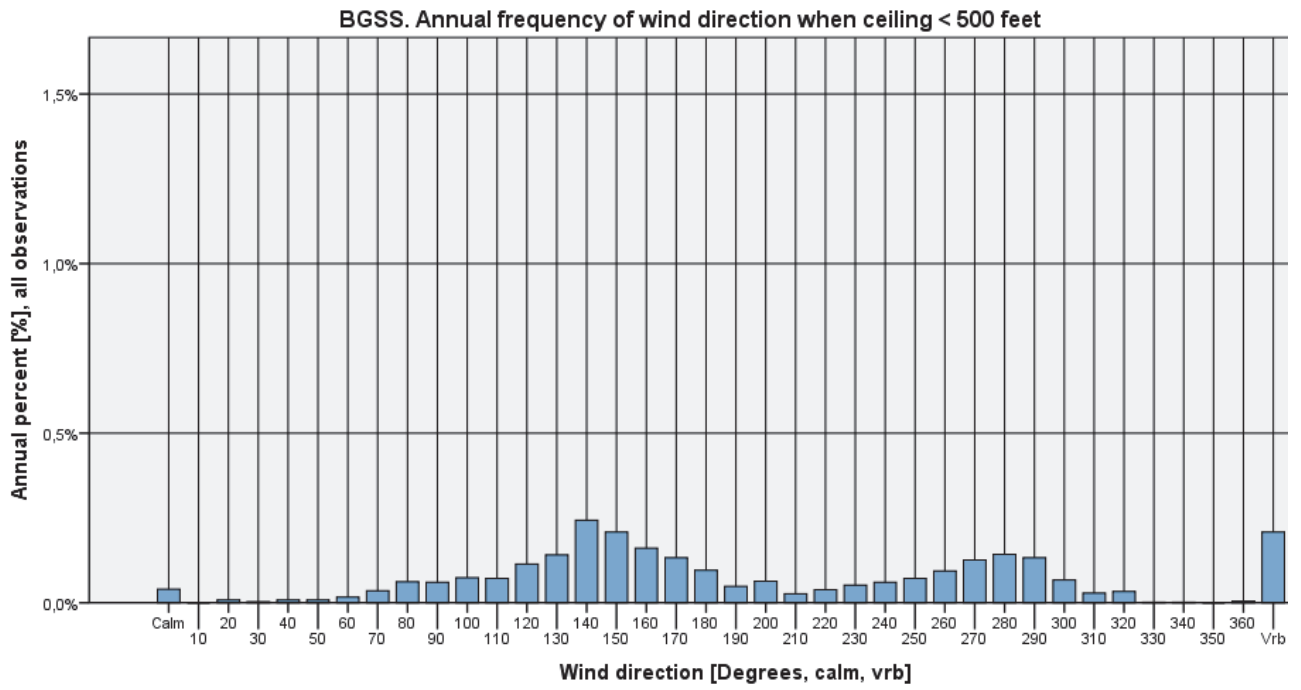
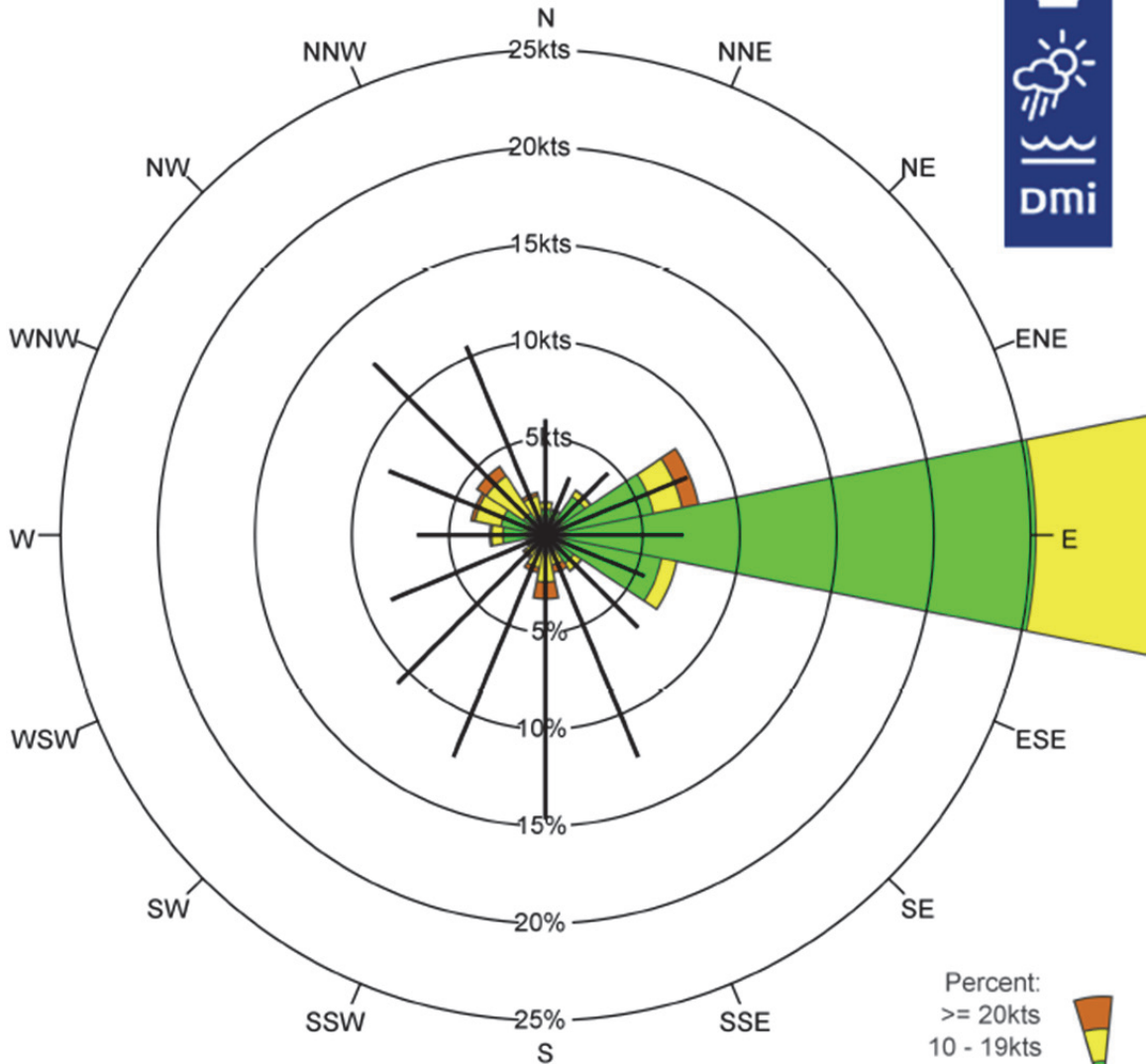


Figure 112



Wind roses

BGSS SISIMIUT - HOLSTEINSBORG AUTUMN & WINTER: OCTOBER - MARCH 01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

Percent:
 >= 20kts
 10 - 19kts
 1 - 9kts

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	1.7	1.4	2.8	8.0	33.1	6.9	2.2	2.0	3.3	2.0	1.4	1.0	2.9	3.9	4.3	2.2	79.1
% 1 - 9kts	1.3	1.3	2.4	5.7	25.3	6.1	1.7	0.8	0.9	0.7	0.6	0.6	2.2	2.4	1.4	1.0	54.3
% 10 - 19kts	0.4	0.1	0.3	1.5	6.6	0.8	0.5	0.8	1.5	1.0	0.7	0.4	0.6	1.4	2.3	1.1	19.8
% >= 20kts	0.0	0.0	0.0	0.9	1.2	0.0	0.0	0.4	0.9	0.3	0.1	0.1	0.1	0.2	0.6	0.2	5.0
Mean wind speed	6.0	3.3	4.5	7.9	7.1	5.5	6.7	12.4	14.7	12.3	10.9	8.6	6.7	8.8	12.5	10.6	8.0
Max wind speed	24.0	18.0	28.0	46.0	46.0	19.0	31.0	39.0	42.0	32.0	27.0	39.0	37.0	37.0	37.0	30.0	46.0

Number of observations = 29176

Source: DMI

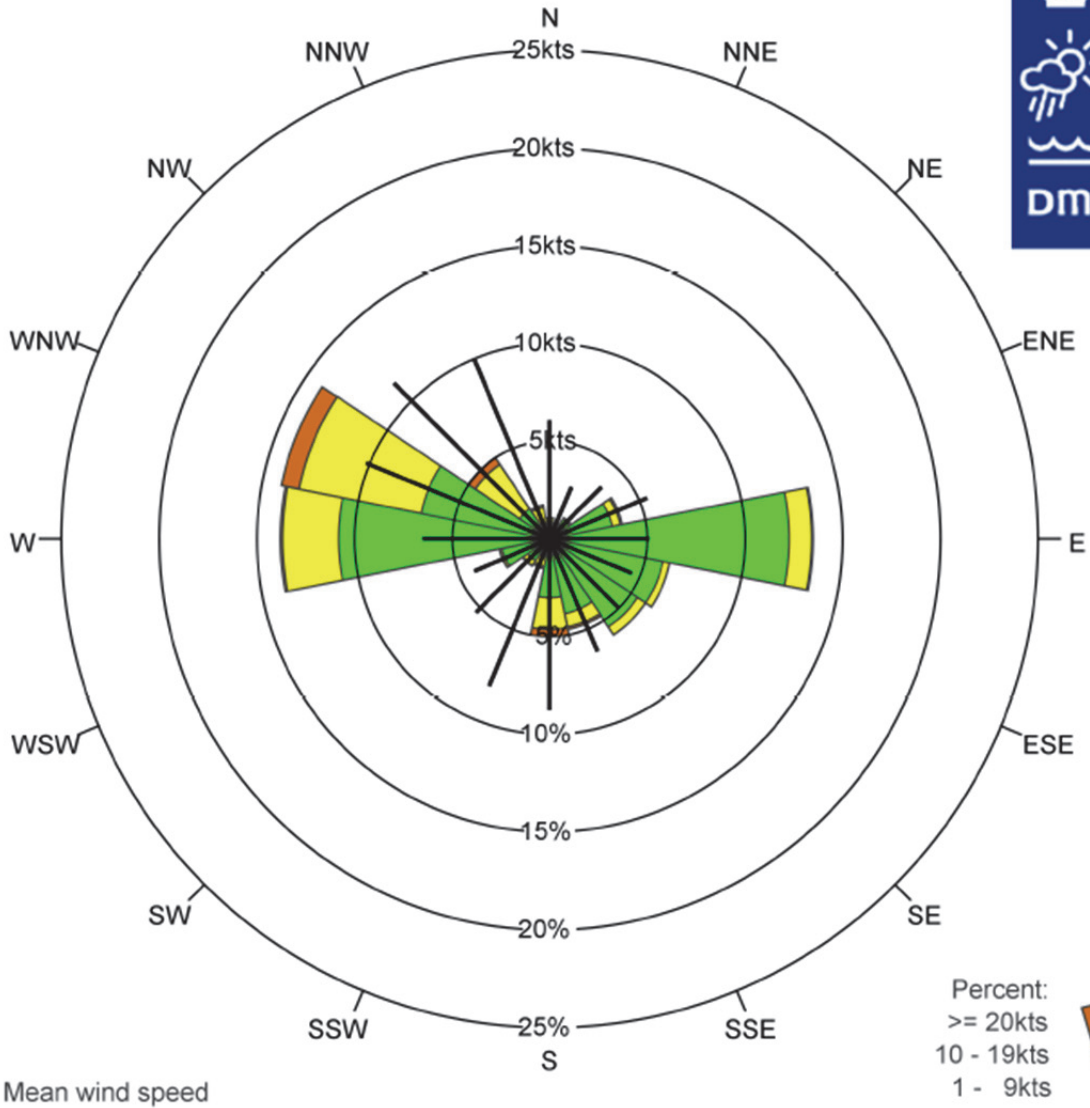
Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 6093=20.9%

Observations with calm/varying wind direction are not used in the statistics



BGSS SISIMIUT - HOLSTEINSBORG
SPRING & SUMMER: APRIL - SEPTEMBER
01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

Percent:
 >= 20kts
 10 - 19kts
 1 - 9kts

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	1.1	0.6	1.3	3.8	13.5	6.3	5.9	4.7	5.0	1.5	1.7	2.6	13.8	14.0	5.0	1.8	82.5
% 1 - 9kts	0.8	0.6	1.2	3.3	12.2	5.9	5.4	3.9	3.0	1.0	1.3	2.5	10.8	6.7	1.9	0.8	61.2
% 10 - 19kts	0.3	0.0	0.1	0.4	1.2	0.4	0.5	0.7	1.6	0.5	0.3	0.1	2.9	6.4	2.7	0.9	18.9
% >= 20kts	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.4	0.1	0.0	0.0	0.1	0.9	0.4	0.1	2.4
Mean wind speed	6.1	2.8	3.8	5.4	5.1	4.6	5.1	6.2	8.8	8.2	5.4	4.3	6.5	10.2	11.3	10.0	7.0
Max wind speed	19.0	12.0	26.0	28.0	36.0	18.0	20.0	29.0	31.0	32.0	25.0	29.0	23.0	33.0	33.0	26.0	36.0

Number of observations = 30306

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 5295=17.5%

Observations with calm/varying wind direction are not used in the statistics



Availability

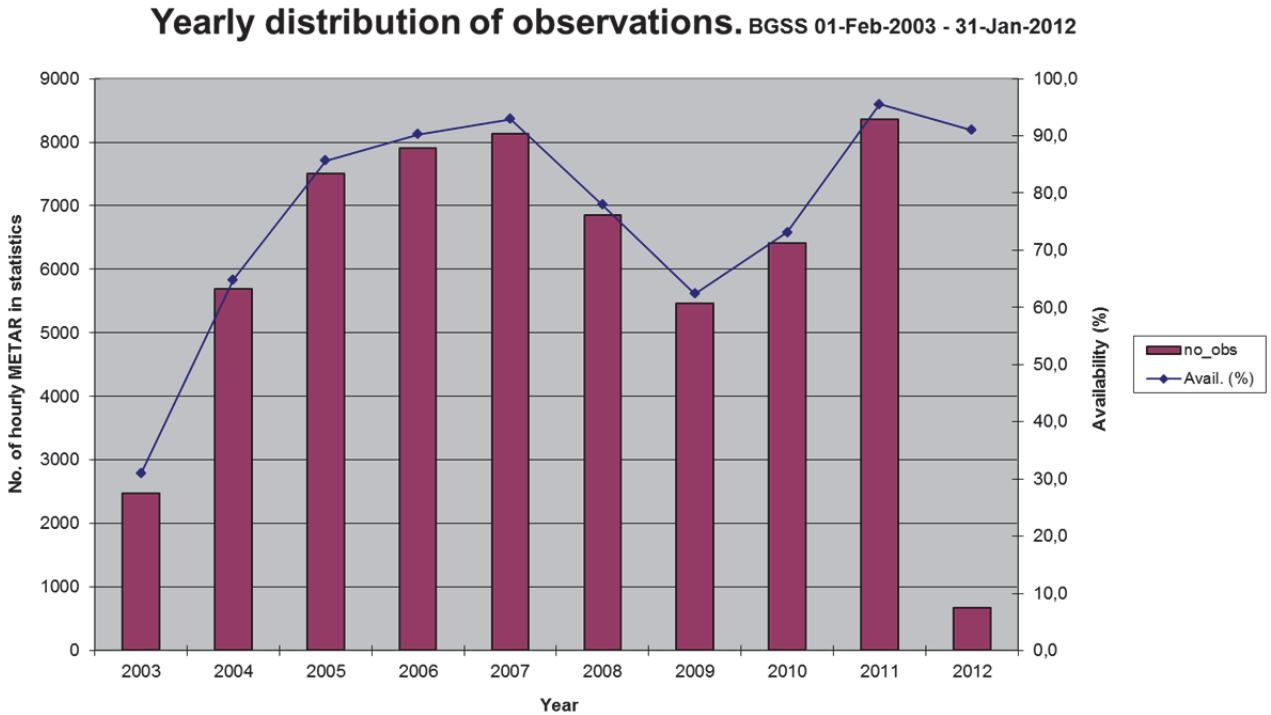


Figure 113

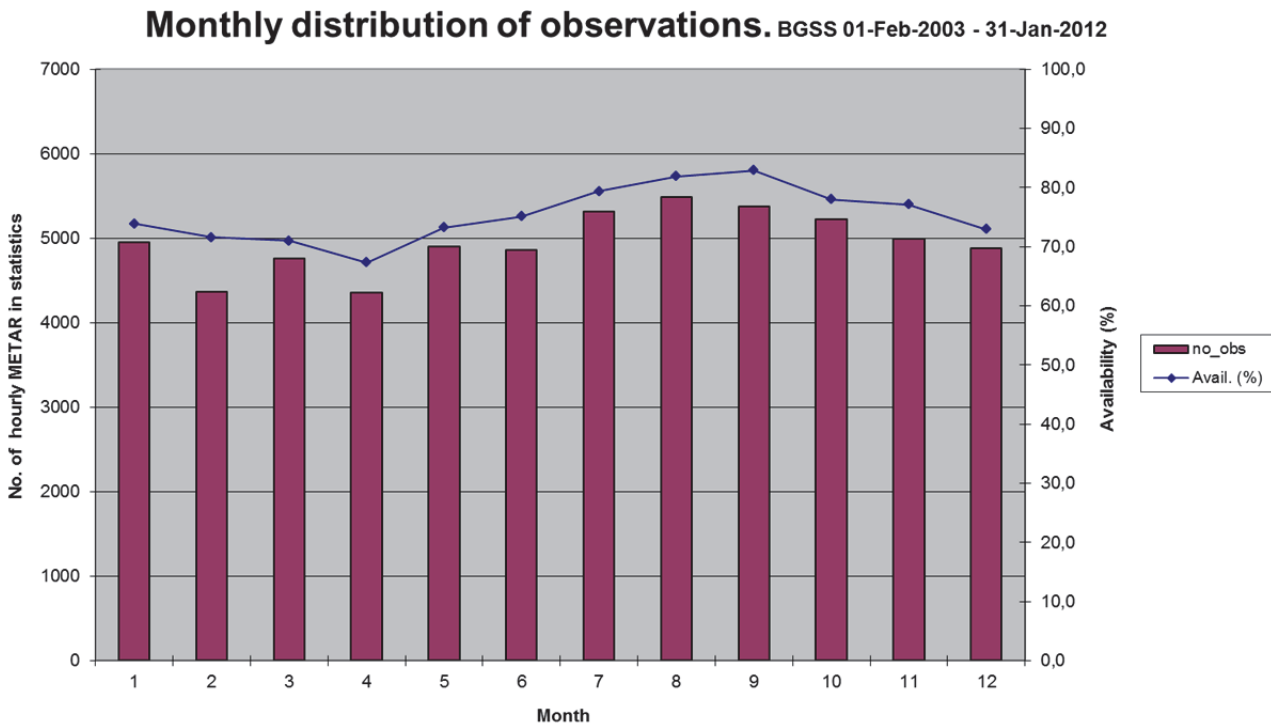


Figure 114

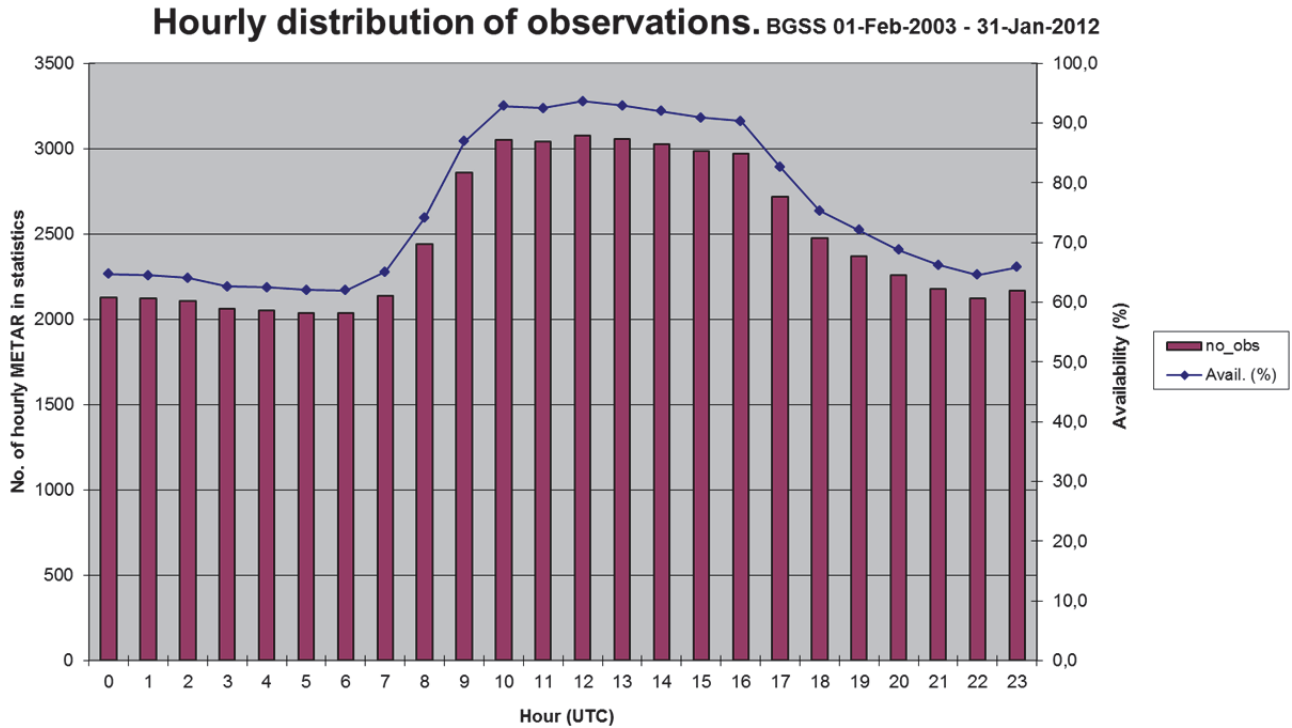


Figure 115

BGSS. Average no. of hourly observations in statistics, 1 February 2003 - 31 January 2012

Hour (UTC)	year									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
0	,0	,5	,8	,9	,9	,7	,4	,6	1,0	,9
1	,0	,5	,8	,9	,9	,7	,4	,6	1,0	,9
2	,0	,5	,8	,9	,9	,7	,4	,6	,9	,9
3	,0	,5	,8	,9	,9	,7	,4	,5	,9	,9
4	,0	,5	,8	,9	,9	,7	,4	,5	,9	,9
5	,0	,5	,8	,9	,9	,7	,4	,5	1,0	,9
6	,0	,5	,8	,9	,9	,6	,4	,5	,9	,9
7	,1	,5	,8	,9	,9	,6	,4	,7	,9	,9
8	,5	,6	,8	,9	,9	,7	,5	,7	1,0	,9
9	,8	,9	,9	,9	1,0	,8	,7	,8	1,0	,9
10	,8	,9	1,0	1,0	1,0	,9	,9	,9	1,0	,9
11	,8	,9	,9	1,0	1,0	,9	,9	1,0	,9	1,0
12	,8	,9	,9	1,0	1,0	1,0	,9	1,0	1,0	,8
13	,8	,9	,9	,9	1,0	,9	,9	,9	1,0	0,9
14	,8	,9	,9	1,0	1,0	,9	,9	,9	1,0	0,9
15	,7	,8	,9	1,0	1,0	,9	,9	,9	1,0	1,0
16	,7	,9	,9	,9	1,0	,9	,9	,9	1,0	0,9
17	,4	,7	,9	,9	,9	,9	,9	,8	,9	,9
18	,1	,6	,9	,9	,9	,8	,8	,8	1,0	0,9
19	,1	,6	,9	,9	,9	,8	,7	,8	1,0	,9
20	,0	,5	,8	,9	,9	,7	,6	,7	,9	,9
21	,0	,5	,8	,9	,8	,7	,5	,6	1,0	,9
22	,0	,5	,8	,8	,8	,7	,5	,6	1,0	,9
23	,0	,5	,8	,9	,9	,7	,4	,6	1,0	,9

Table 31

BGAA Aasiaat/Egedesminde

Mittarfik Aasiaat

Location: 68,717°N 52,783°W

H: 23 m above msl

BGAA observations in statistics: 25.849 hourly METAR⁶ during daytime only (hours 08-17 UTC), covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall daytime availability of 78,6%.

Please note the low availability and take care accordingly when using the current BGAA weather statistics since the low availability, besides a lower observations frequency on Sundays, is resulting from exclusion of an unusual large number of erroneous or missing automated measurements of visibility and/or cloud cover, indicating what might be a data quality that overall is lower than usual. More details are found in the Availability Section.

The BGAA METAR are all manual until 12 April 2004, and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

Winter (Jan-Feb-Mar): BGAA - Frequencies (%) Visibility - Ceiling

No. Obs = 6.469	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,015	0,14	0,88	1,28	1,38	0,12	1,50
<1 km	0,015	0,14	1,25	1,73	1,87	0,26	2,13
<1.5 km	0,015	0,14	1,51	2,16	2,49	0,51	3,00
<3.0 km	0,015	0,14	2,09	3,15	3,85	1,31	5,16
< 5.0 km	0,015	0,14	2,33	4,02	5,67	2,97	8,64
>= 5,0 km or CAVOK	0	0	0,97	4,76	9,77	81,59	91,36
Total	0,015	0,14	3,31	8,78	15,44	84,56	100

Table 32

Spring (Apr-May-Jun): BGAA - Frequencies (%) Visibility - Ceiling

No. Obs = 6.311	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,27	1,33	2,06	2,08	2,09	0,05	2,14
<1 km	0,27	1,46	2,73	2,74	2,77	0,06	2,84
<1.5 km	0,27	1,52	3,52	3,58	3,66	0,16	3,82
<3.0 km	0,27	1,52	4,77	5,05	5,39	0,38	5,77
< 5.0 km	0,27	1,52	5,42	6,18	6,91	1,43	8,33
>= 5,0 km or CAVOK	0	0,016	2,52	9,94	17,49	74,17	91,67
Total	0,27	1,54	7,94	16,11	24,40	75,60	100

Table 33

⁶ For every hourly period max one observation (METAR *or* SPECI) is included, selected as the available METAR *or* SPECI with lowest visibility.



Summer (Jul-Aug-Sep): BGAA - Frequencies (%) Visibility - Ceiling

No. Obs = 6.478	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,46	1,39	2,66	2,66	2,66	0,09	2,75
<1 km	0,46	1,59	3,55	3,57	3,58	0,12	3,70
<1.5 km	0,46	1,64	4,34	4,37	4,38	0,28	4,66
<3.0 km	0,46	1,65	5,39	5,50	5,65	0,49	6,14
< 5.0 km	0,46	1,65	6,14	6,42	6,65	0,68	7,33
>= 5,0 km or CAVOK	0,015	0,031	2,24	9,96	14,71	77,96	92,67
Total	0,48	1,68	8,38	16,38	21,36	78,64	100

Table 34

Autumn (Oct-Nov-Dec): BGAA - Frequencies (%) Visibility - Ceiling

No. Obs = 6.591	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,20	0,35	1,14	1,24	1,29	0,11	1,40
<1 km	0,20	0,35	1,64	1,87	1,99	0,15	2,14
<1.5 km	0,20	0,35	1,97	2,55	2,79	0,39	3,19
<3.0 km	0,20	0,35	2,52	3,66	4,34	1,40	5,74
< 5.0 km	0,20	0,35	2,94	4,51	5,75	2,88	8,63
>= 5,0 km or CAVOK	0	0	0,33	2,18	5,39	85,98	91,37
Total	0,20	0,35	3,28	6,69	11,14	88,86	100

Table 35

Annual: BG - Frequencies (%) Visibility - Ceiling

No. Obs = 25.849	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,24	0,80	1,68	1,81	1,85	0,09	1,94
<1 km	0,24	0,88	2,29	2,47	2,55	0,15	2,70
<1.5 km	0,24	0,91	2,83	3,16	3,33	0,34	3,66
<3.0 km	0,24	0,91	3,68	4,33	4,80	0,90	5,70
< 5.0 km	0,24	0,91	4,20	5,27	6,24	2,00	8,24
>= 5,0 km or CAVOK	0,0039	0,012	1,50	6,67	11,78	79,99	91,76
Total	0,24	0,92	5,70	11,94	18,02	81,98	100

Table 36



Wind direction histograms

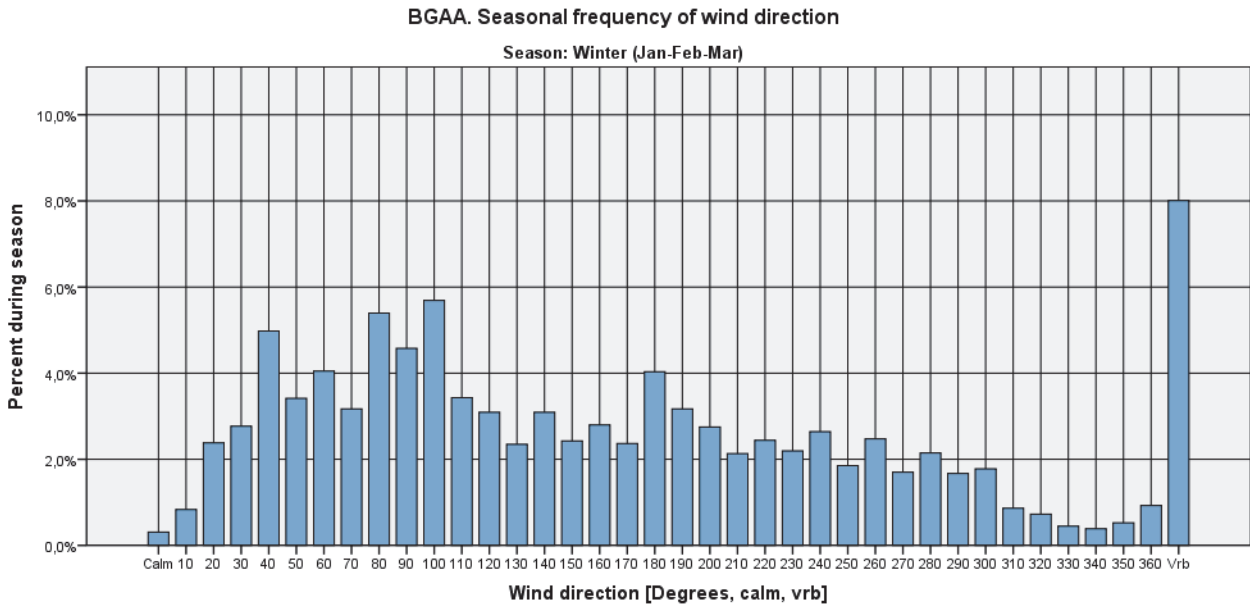


Figure 116

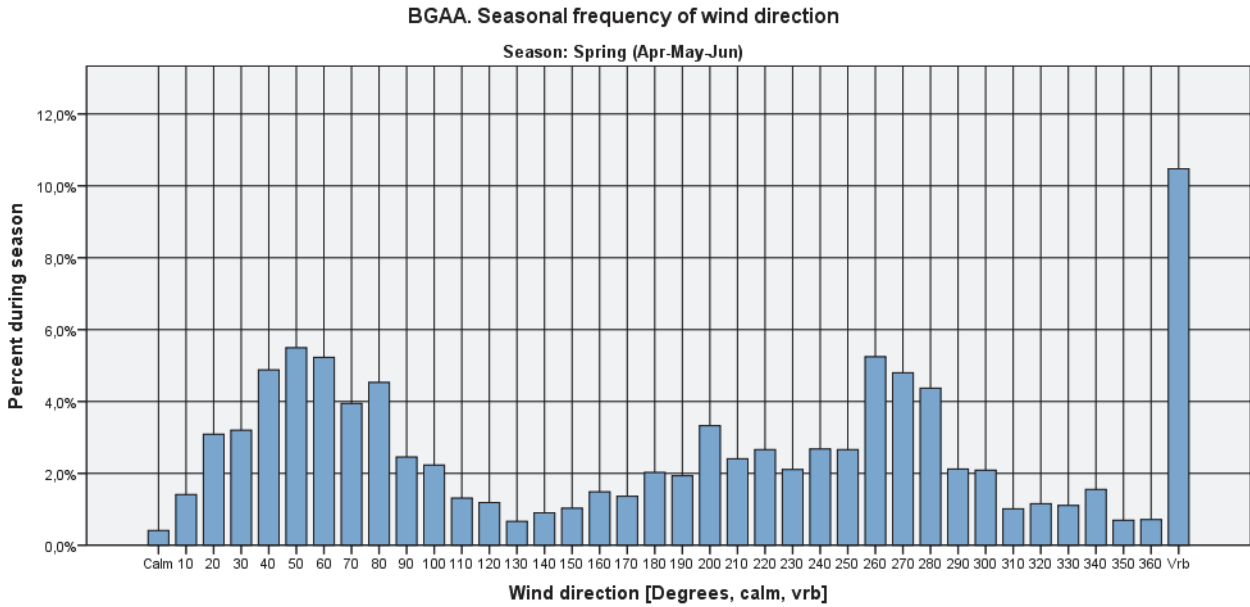


Figure 117

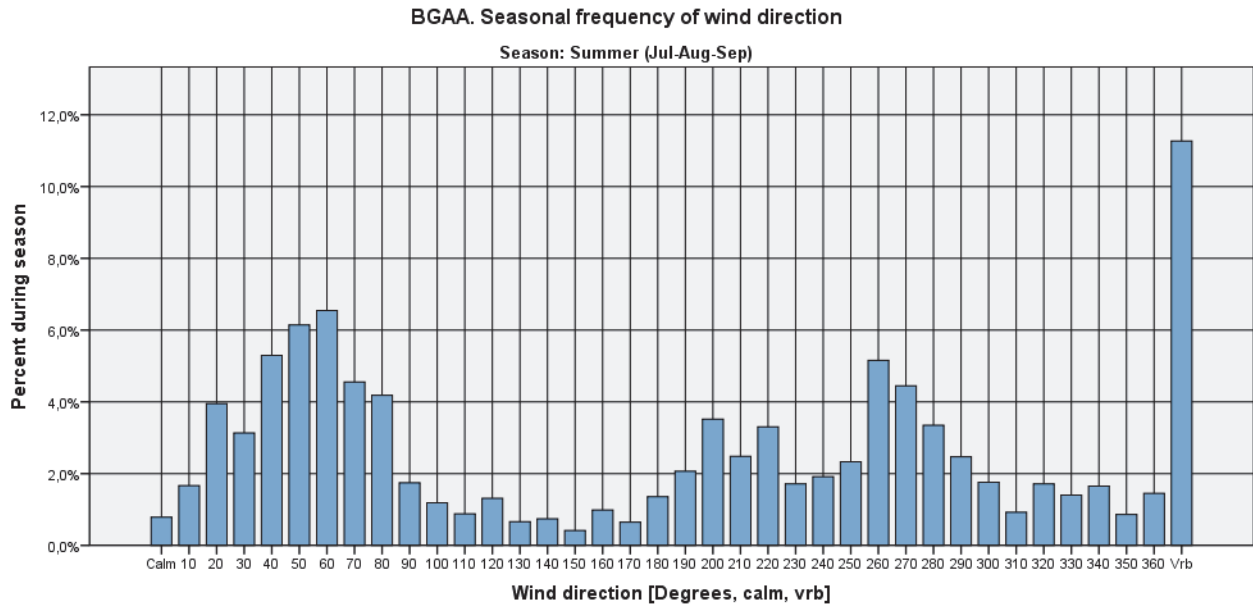


Figure 118

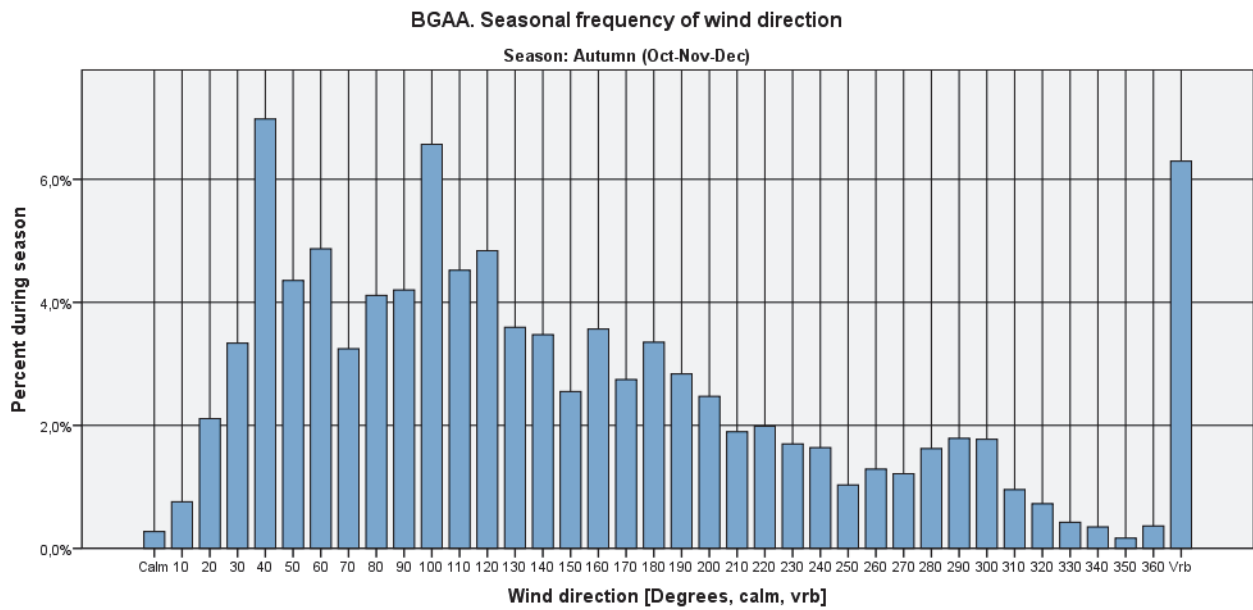


Figure 119

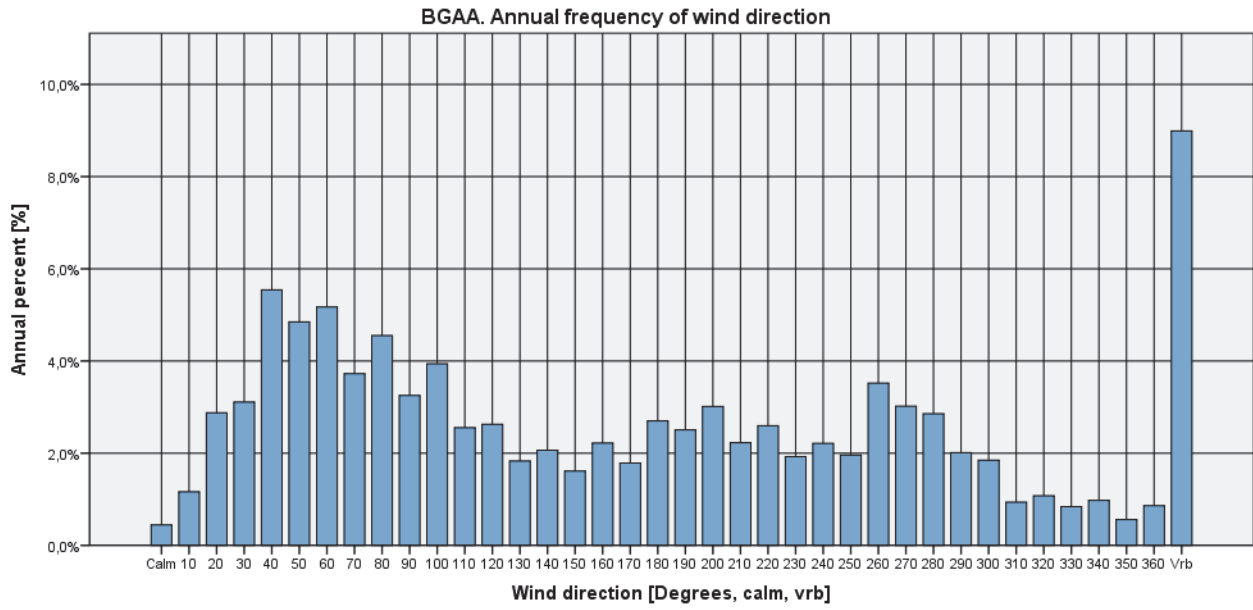


Figure 120



Visibility criteria on wind direction histograms

Visibility < 1000 m

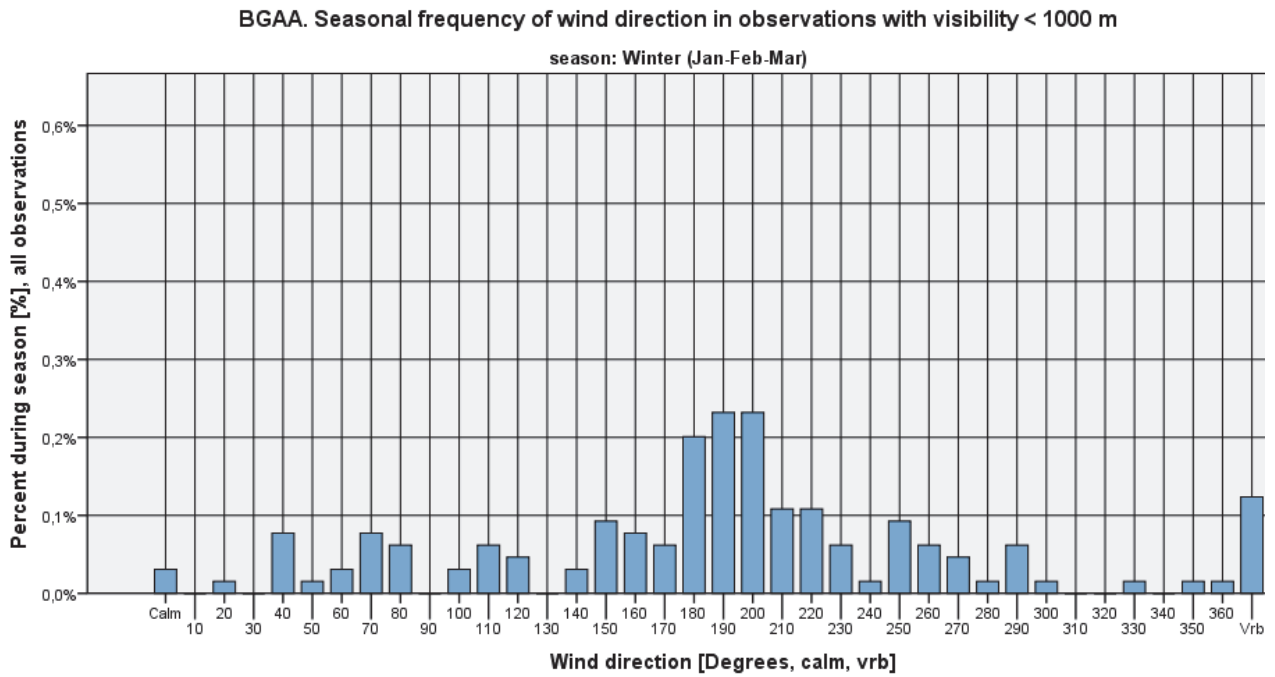


Figure 121

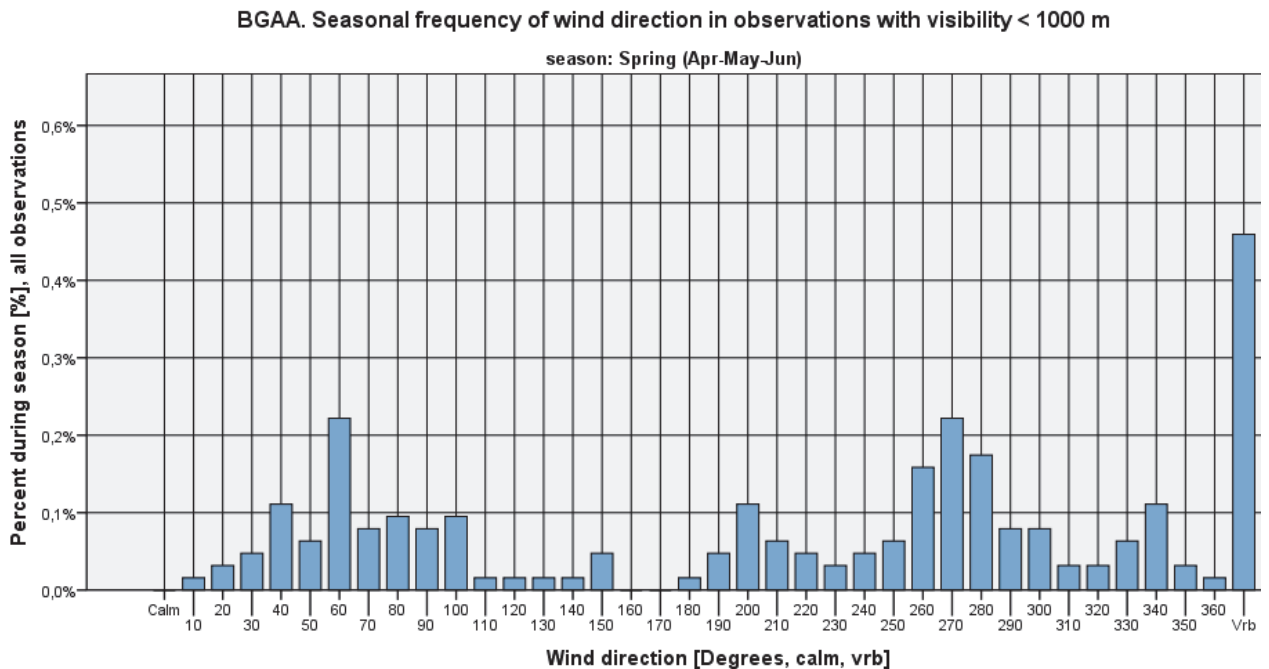


Figure 122



BGAA. Seasonal frequency of wind direction in observations with visibility < 1000 m

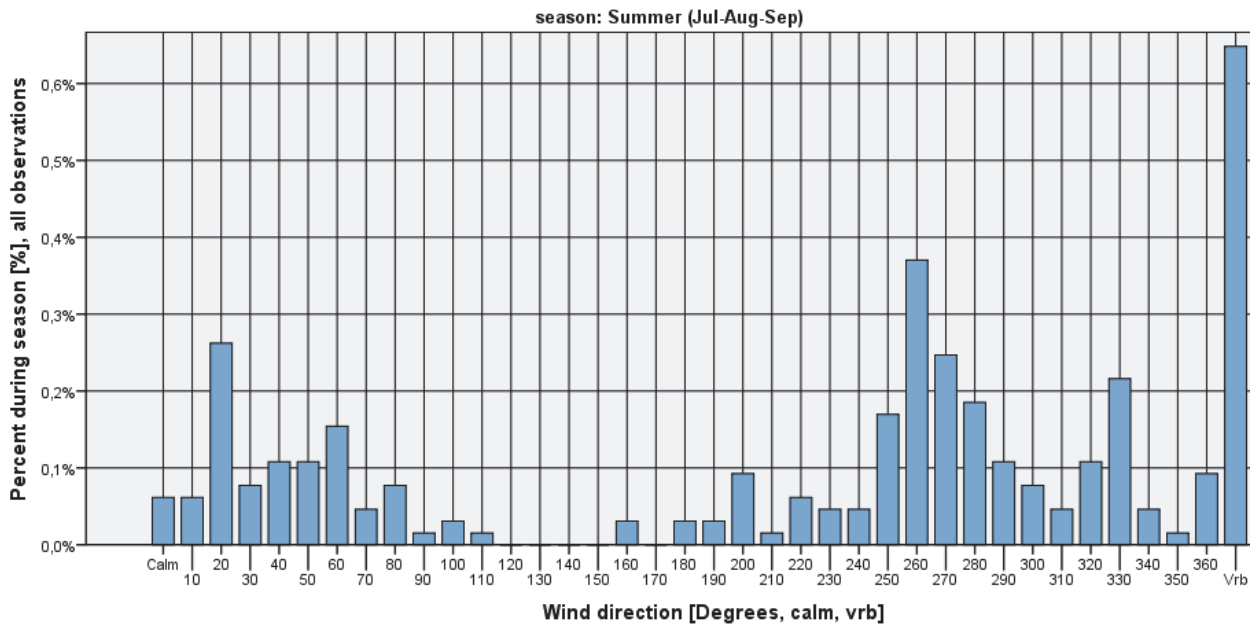


Figure 123

BGAA. Seasonal frequency of wind direction in observations with visibility < 1000 m

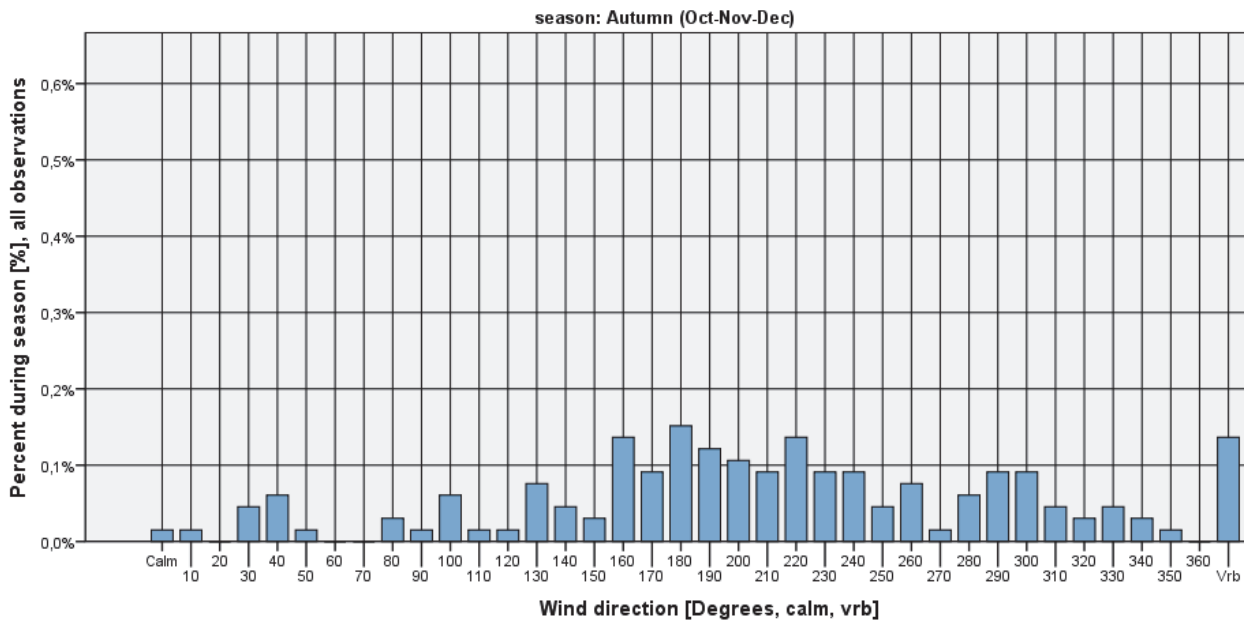


Figure 124

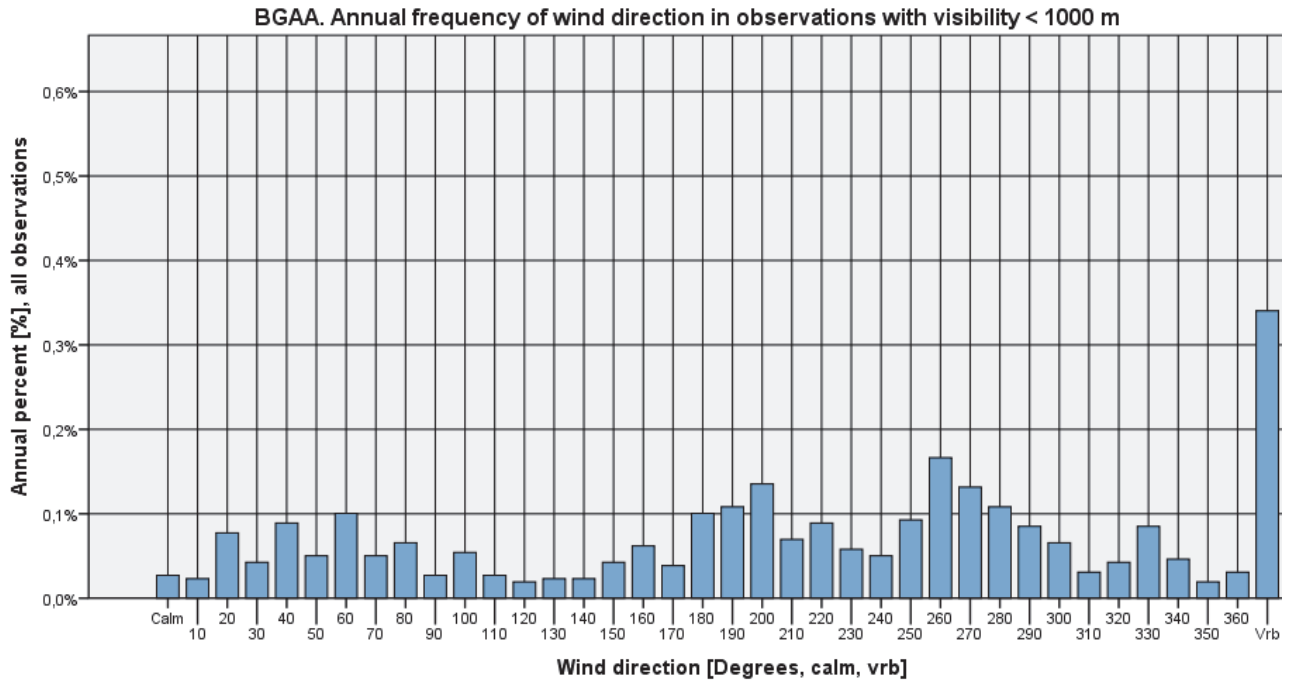


Figure 125



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

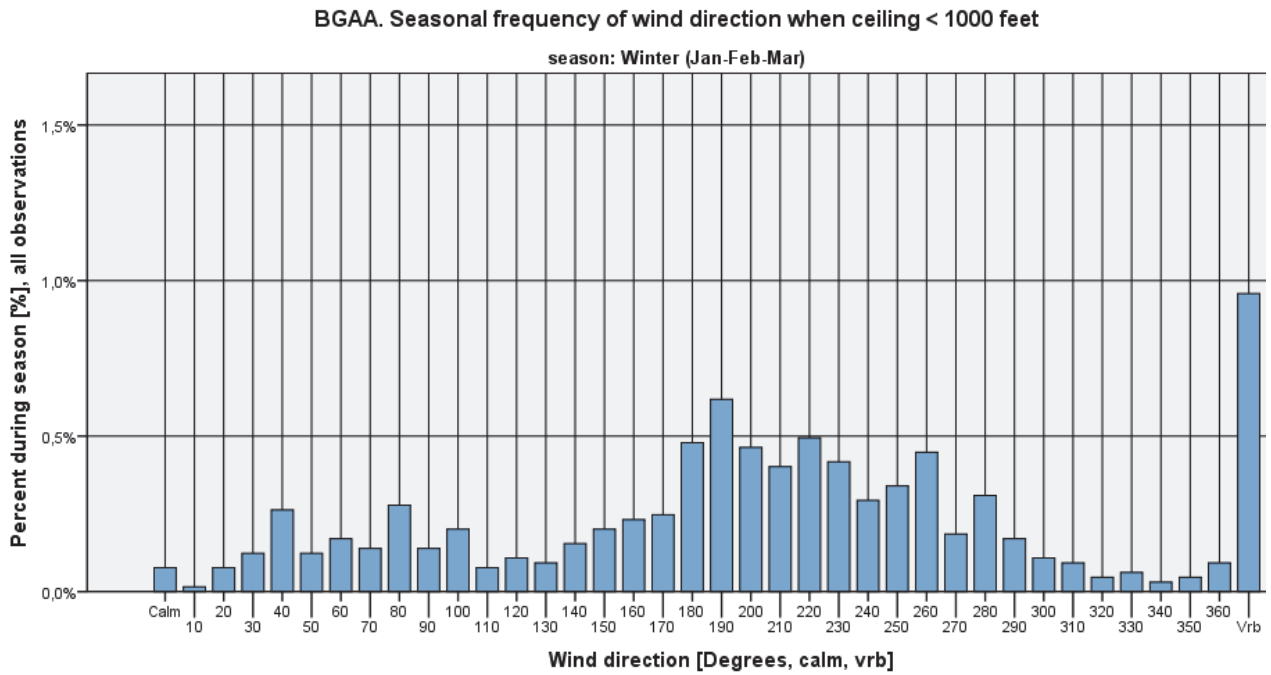


Figure 126

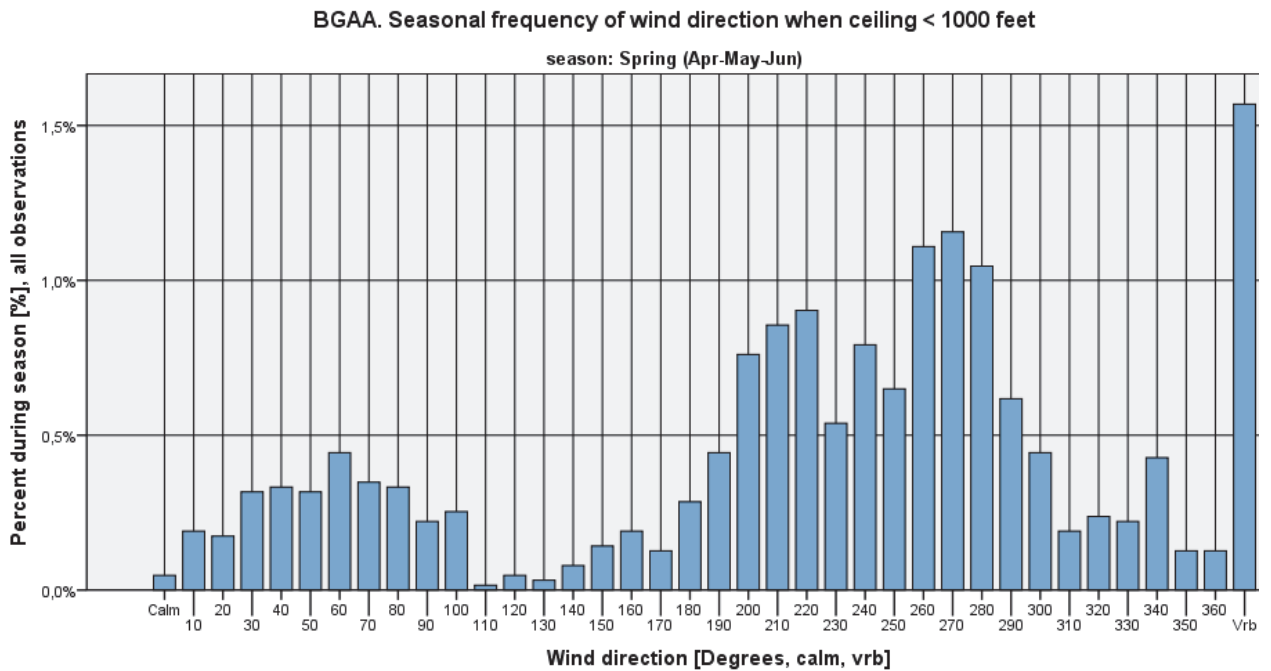


Figure 127

BGAA. Seasonal frequency of wind direction when ceiling < 1000 feet

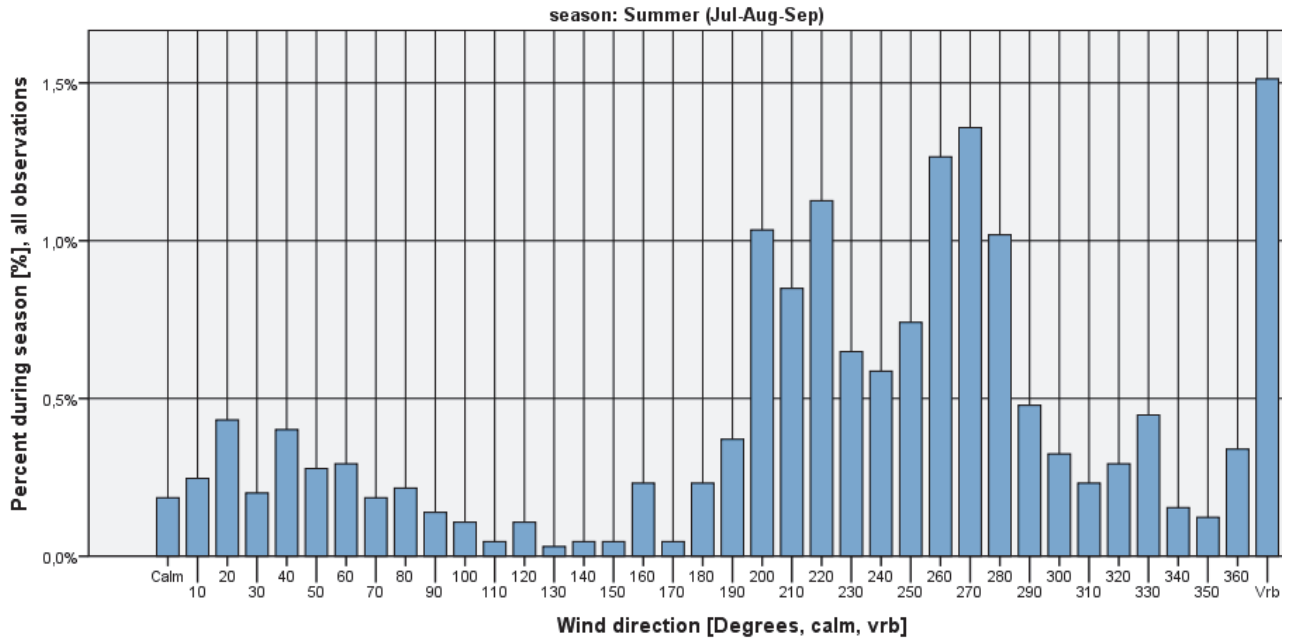


Figure 128

BGAA. Seasonal frequency of wind direction when ceiling < 1000 feet

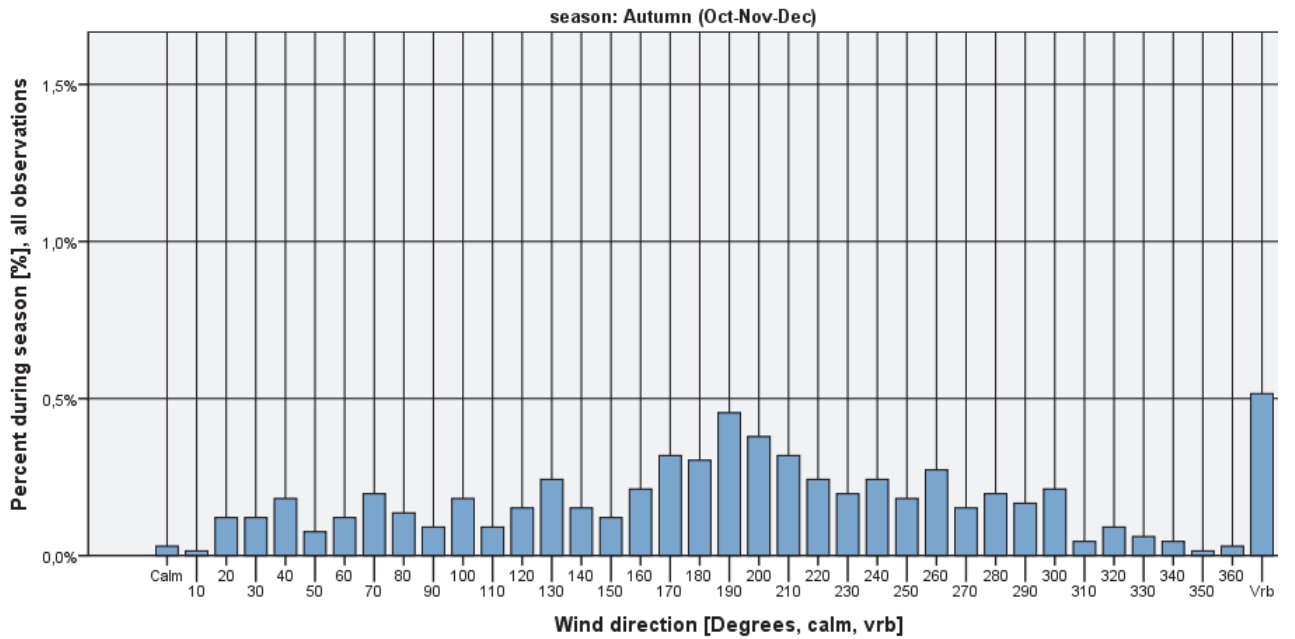


Figure 129

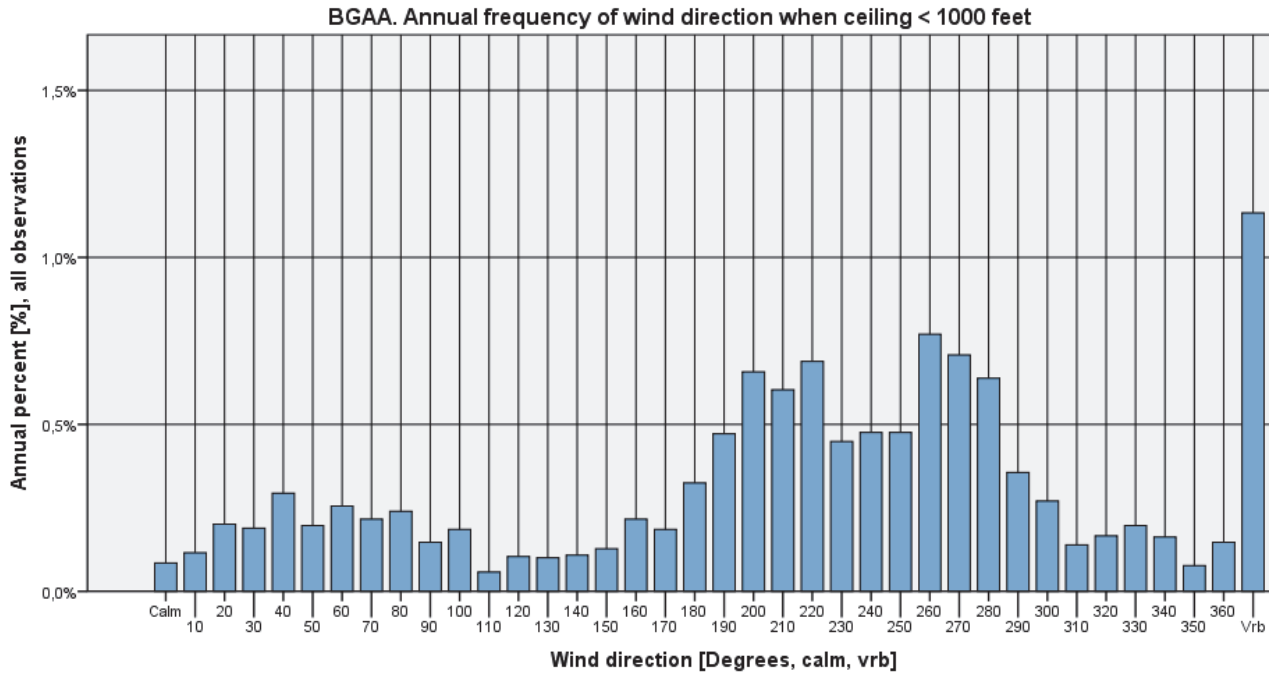


Figure 130



Ceiling < 500 feet

BGAA. Seasonal frequency of wind direction when ceiling < 500 feet

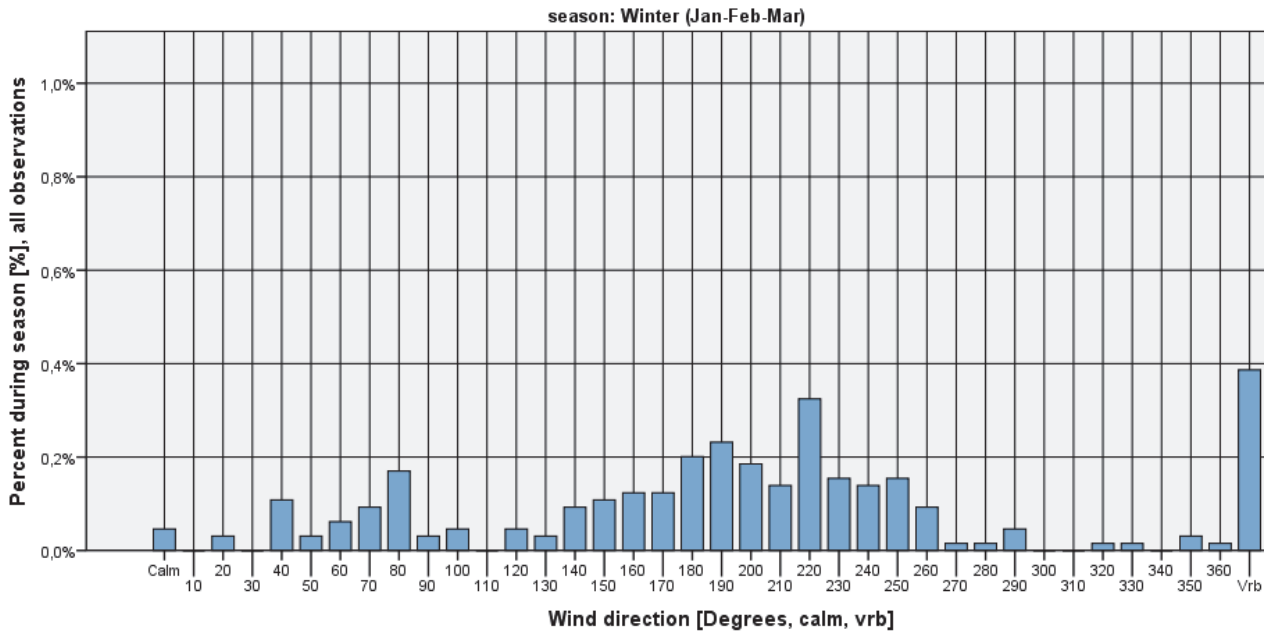


Figure 131

BGAA. Seasonal frequency of wind direction when ceiling < 500 feet

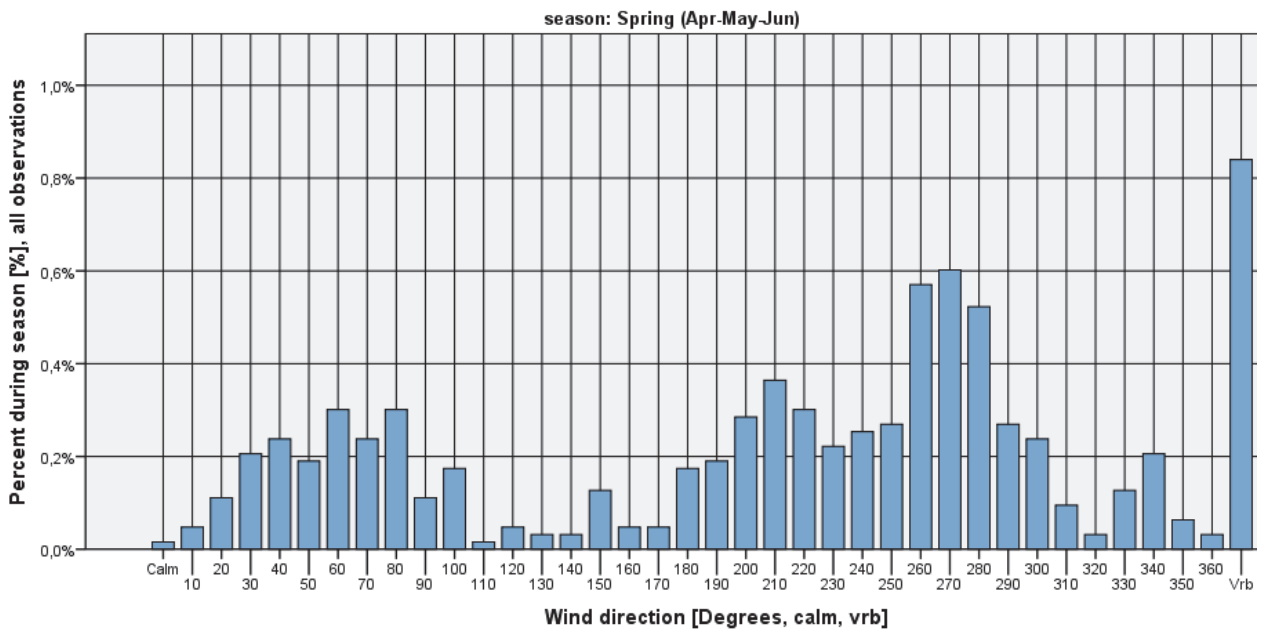


Figure 132



BGAA. Seasonal frequency of wind direction when ceiling < 500 feet

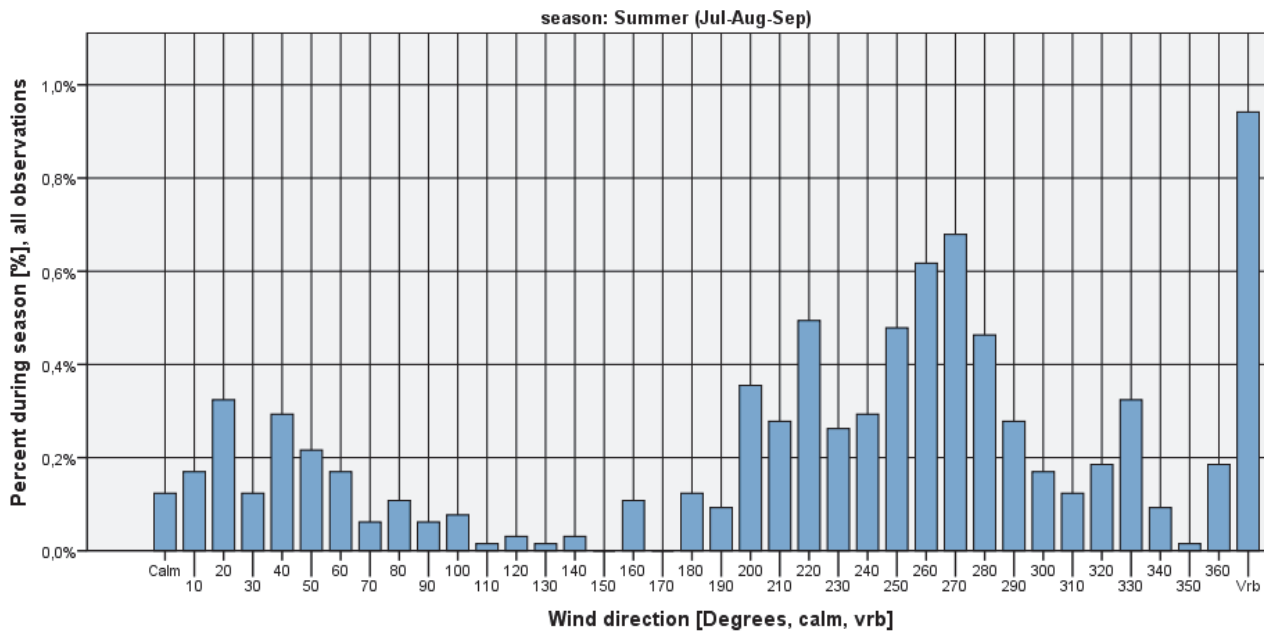


Figure 133

BGAA. Seasonal frequency of wind direction when ceiling < 500 feet

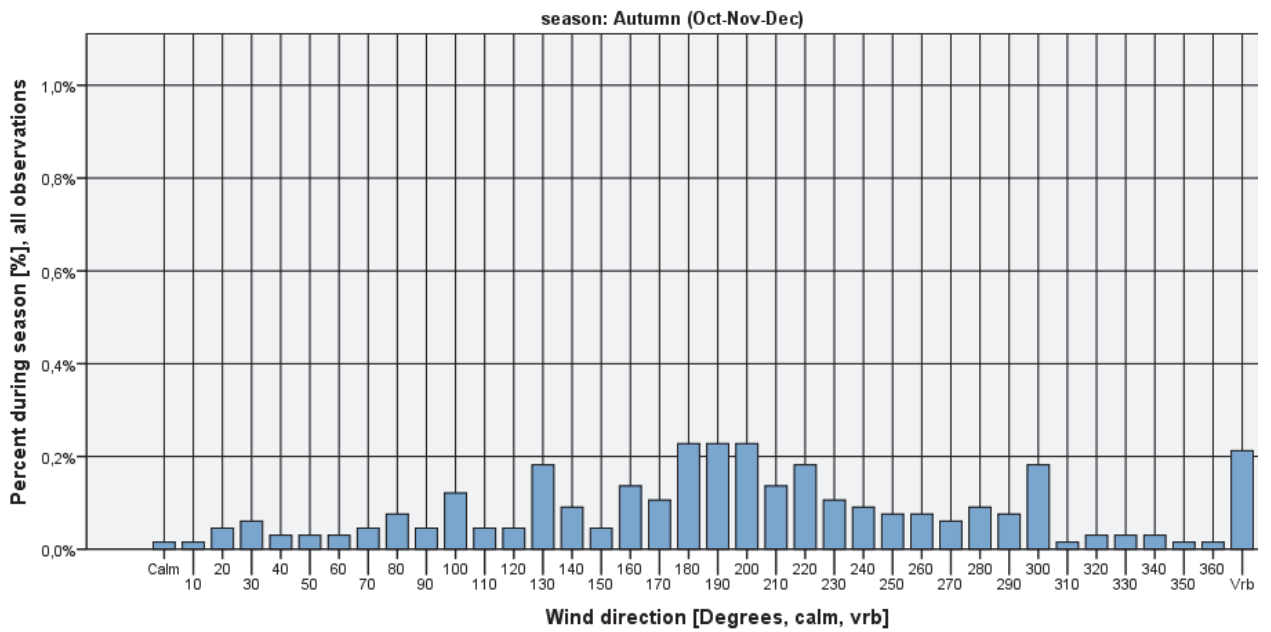


Figure 134

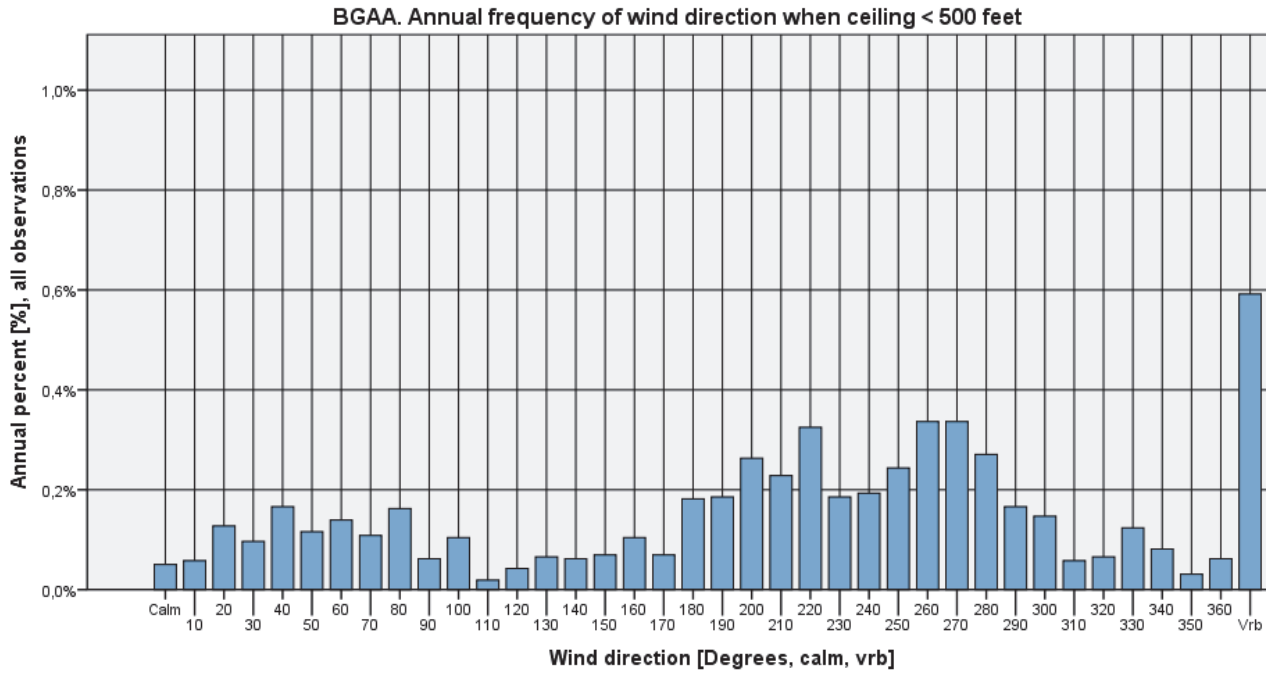


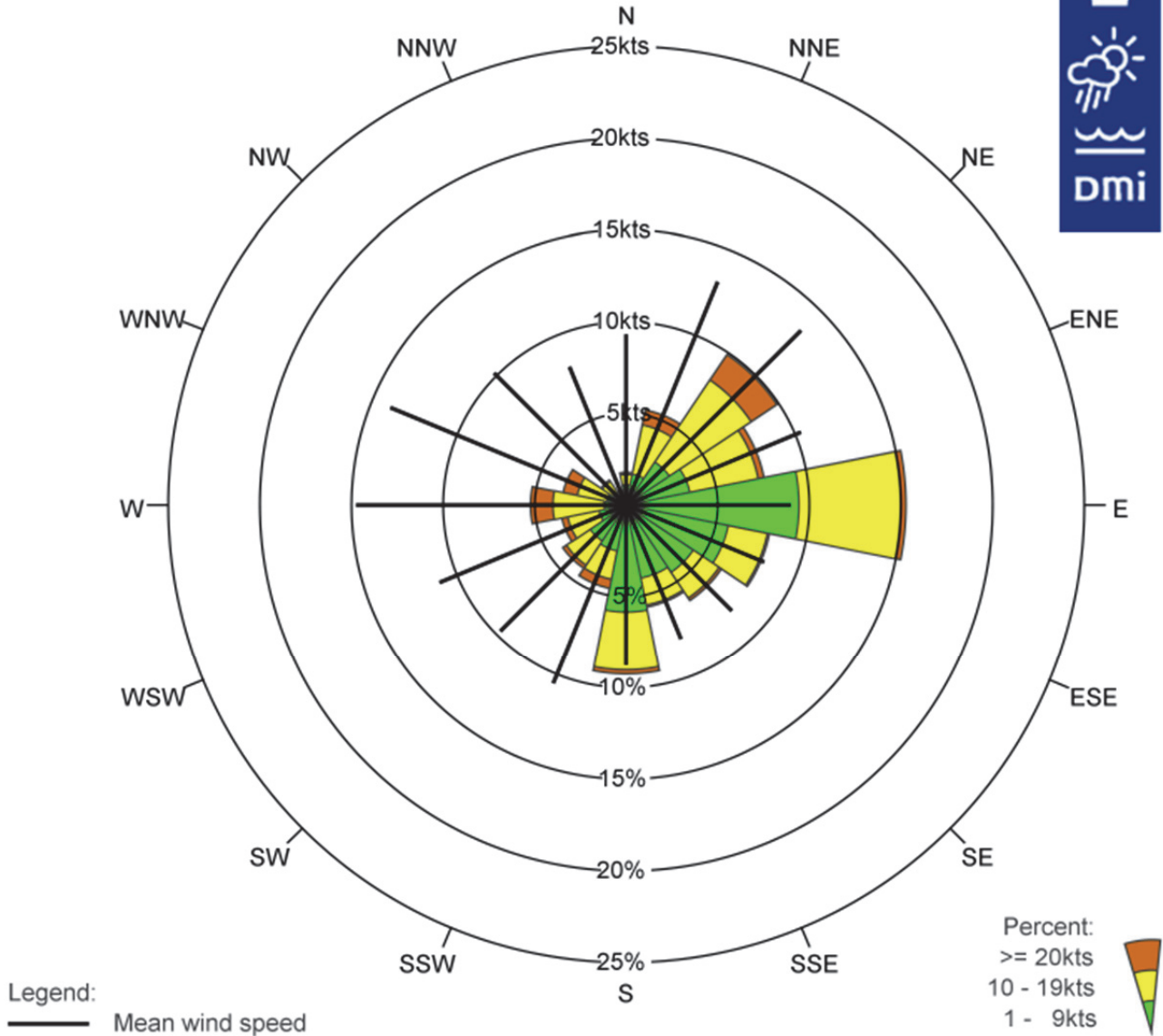
Figure 135



Wind roses

BGAA AASIAAT - EGEDESMINDE AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	1.8	5.3	9.9	7.7	15.3	8.0	6.3	5.7	9.2	4.6	4.2	3.6	5.2	3.5	1.6	0.8	92.6
% 1 - 9kts	1.1	1.7	2.8	3.5	9.4	5.7	4.4	4.1	5.8	2.5	2.4	1.5	1.2	1.1	0.8	0.5	48.6
% 10 - 19kts	0.6	2.7	5.4	3.8	5.6	2.2	1.7	1.5	3.2	1.6	1.6	1.7	2.8	1.7	0.8	0.3	37.0
% >= 20kts	0.1	0.8	1.7	0.3	0.3	0.1	0.2	0.1	0.2	0.5	0.2	0.3	1.2	0.8	0.1	0.0	7.0
Mean wind speed	9.4	13.1	13.4	10.4	9.0	8.2	8.1	7.9	8.7	10.6	9.7	11.1	14.8	13.9	10.2	8.2	10.3
Max wind speed	25.0	38.0	33.0	29.0	33.0	29.0	32.0	27.0	34.0	40.0	35.0	26.0	39.0	35.0	28.0	21.0	40.0

Number of observations = 13060

Source: DMI

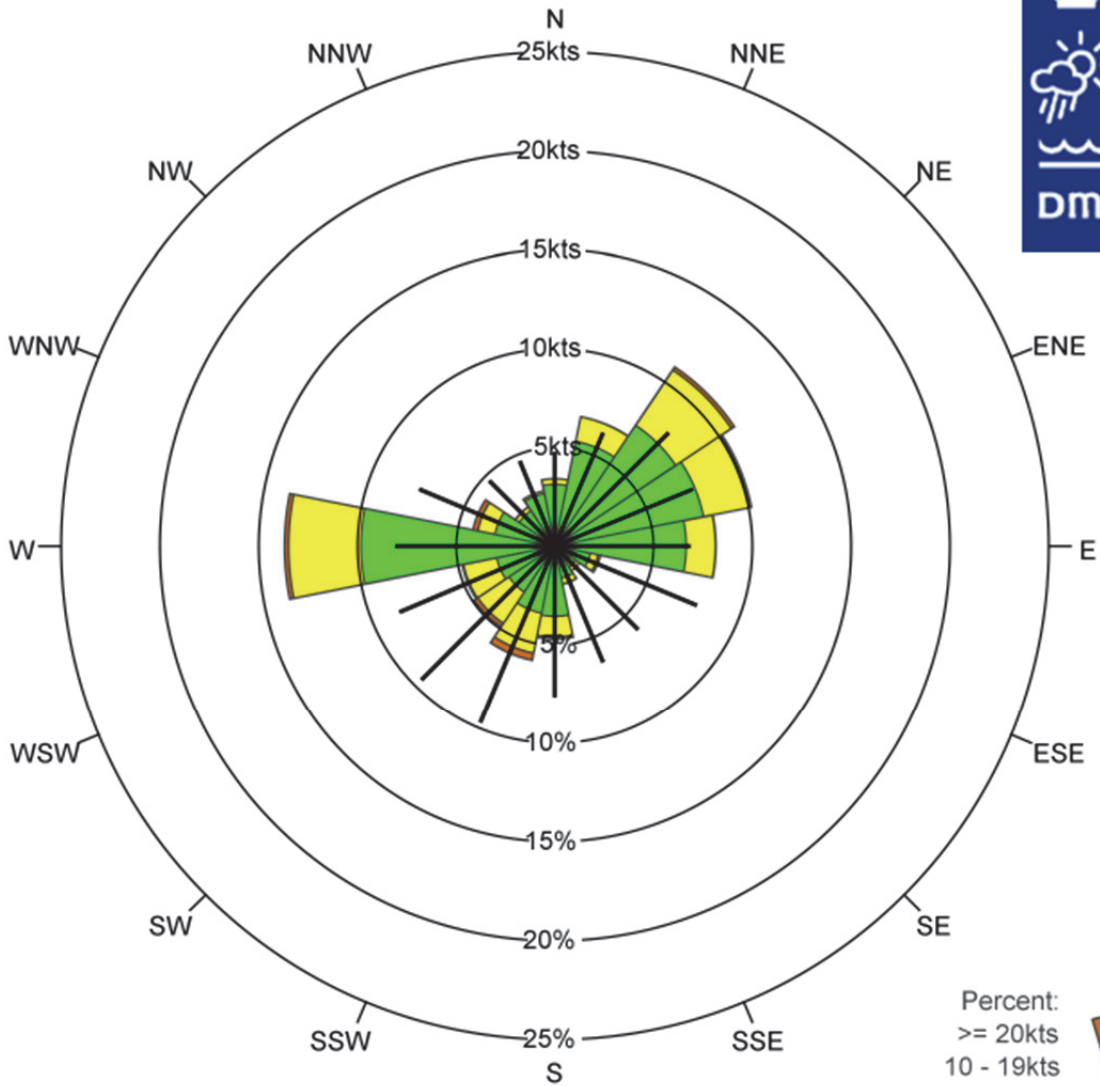
Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 971=7.4%

Observations with calm/varying wind direction are not used in the statistics



BGAA AASIAAT - EGEDESMINDE SPRING & SUMMER: APRIL - SEPTEMBER 01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

Percent:
 >= 20kts
 10 - 19kts
 1 - 9kts

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	3.4	6.7	10.9	10.1	8.2	2.3	1.5	2.0	4.7	5.9	4.9	4.8	13.7	4.2	2.4	2.9	88.5
% 1 - 9kts	3.1	5.4	7.4	7.7	6.7	1.8	1.3	1.6	3.5	3.4	2.8	3.0	9.8	3.1	2.2	2.7	65.5
% 10 - 19kts	0.3	1.3	3.4	2.4	1.5	0.4	0.2	0.3	1.0	2.1	1.9	1.7	3.7	0.9	0.2	0.1	21.4
% >= 20kts	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.4	0.2	0.1	0.2	0.2	0.0	0.0	1.6
Mean wind speed	4.8	6.3	8.2	7.5	6.8	7.8	6.0	6.4	7.6	9.7	9.6	8.6	8.0	7.5	4.7	4.7	7.5
Max wind speed	18.0	23.0	26.0	27.0	35.0	41.0	17.0	27.0	31.0	40.0	34.0	32.0	37.0	30.0	21.0	17.0	41.0

Number of observations = 12789
 Calm defined a wind speed = 0kts
 Number of observations with calm/varying wind direction: 1468=11.5%
 Observations with calm/varying wind direction are not used in the statistics

Source: DMI

Availability

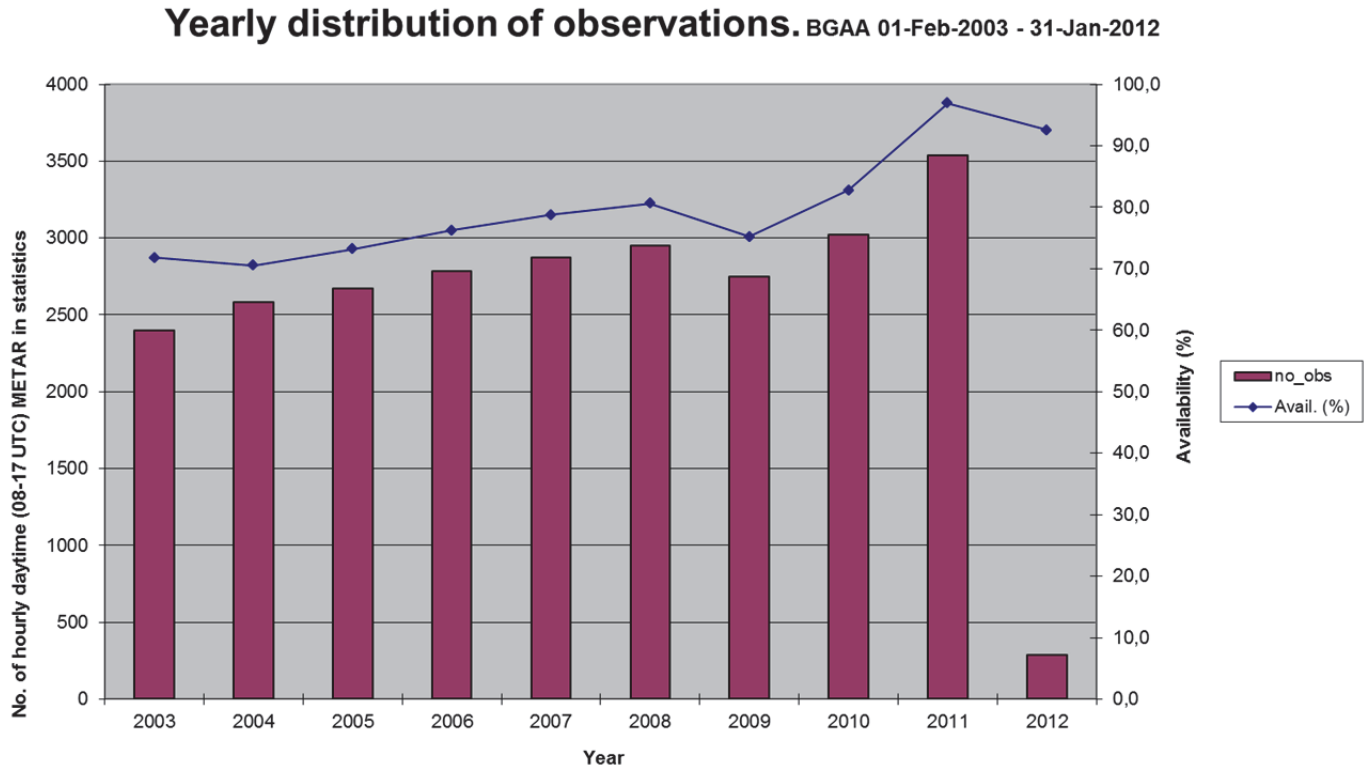


Figure 136. The BGAA observations during the hours 08-17 UTC used in the statistics.

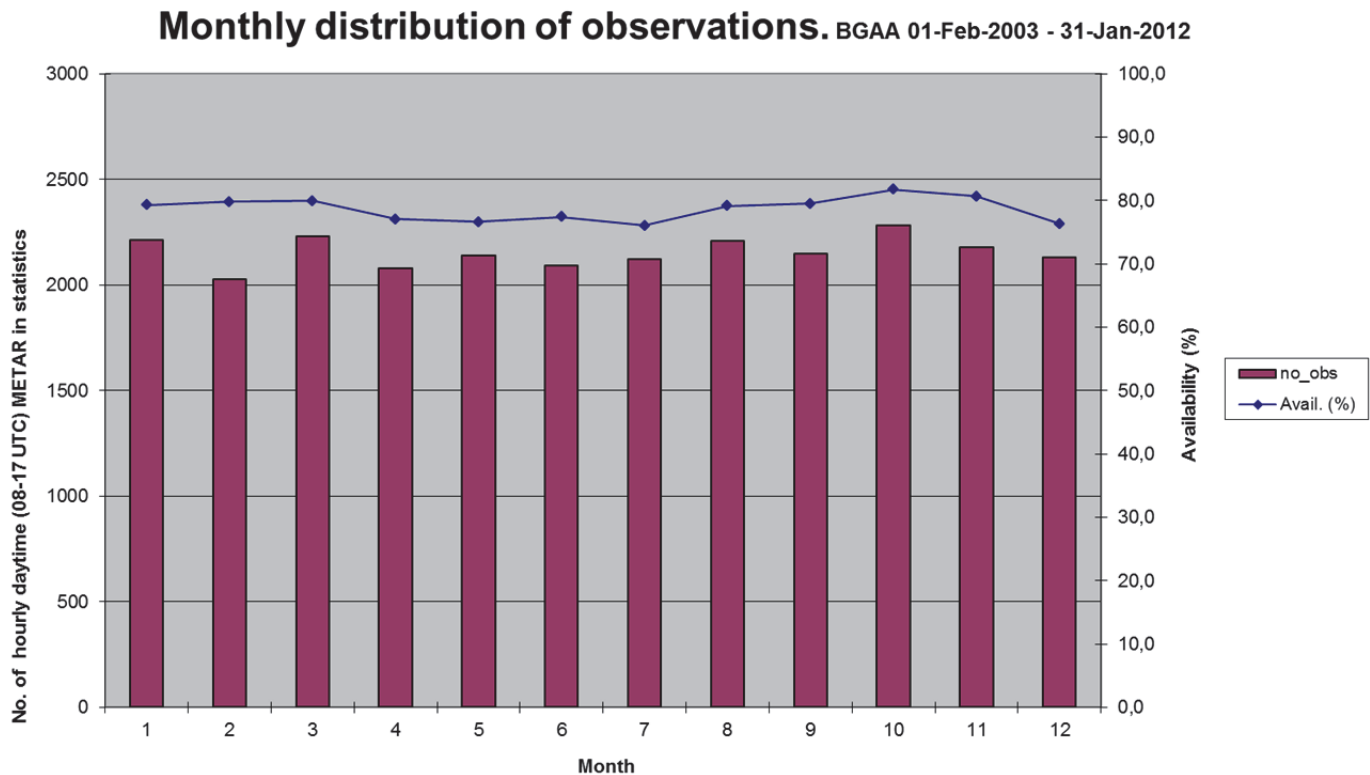


Figure 137. The BGAA observations during the hours 08-17 UTC used in the statistics.

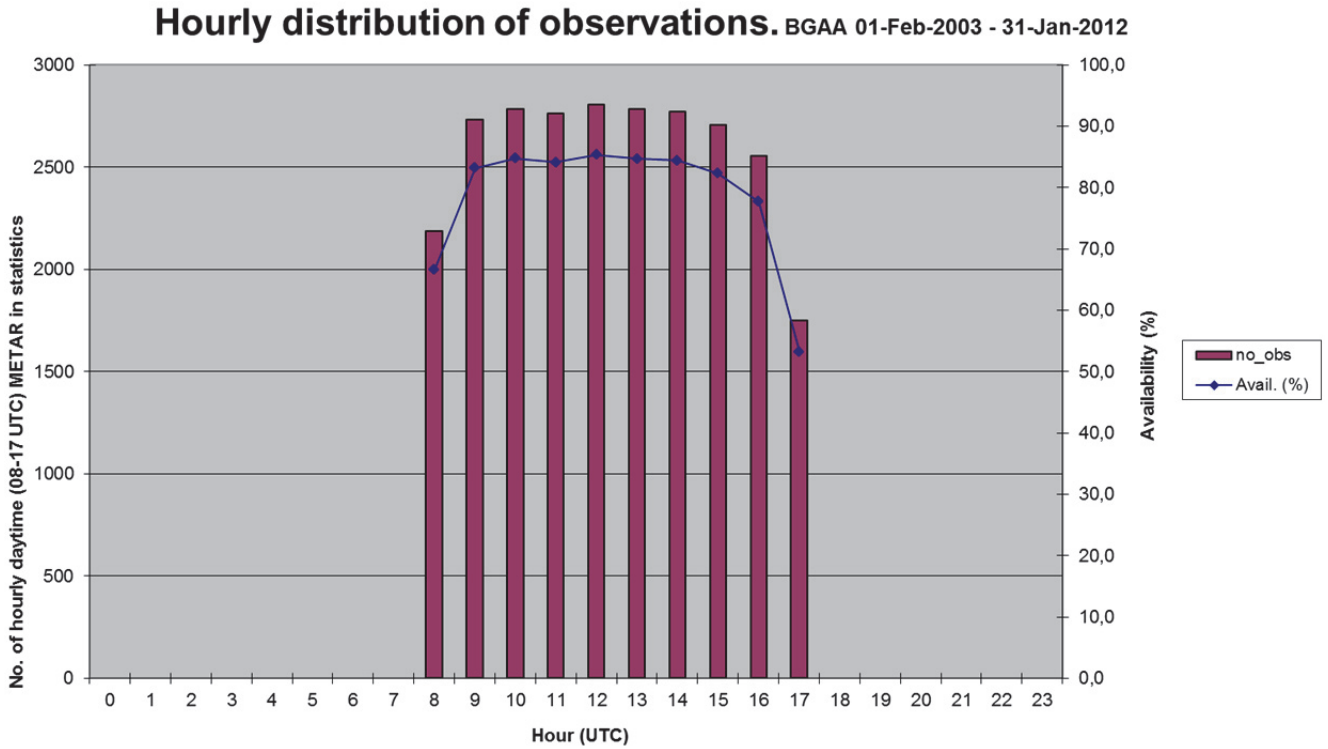


Figure 138. The BGAA observations during the hours 08-17 UTC used in the statistics.

BGAA. Average no. of hourly observations in statistics, 1 February 2003 - 31 January 2012

Hour (UTC)	year									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
6	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
8	,6	,7	,7	,6	,6	,7	,6	,5	1,0	,9
9	,8	,8	,8	,8	,8	,8	,8	,8	1,0	,9
10	,8	,8	,8	,8	,8	,8	,8	,9	1,0	1,0
11	,8	,8	,8	,8	,8	,8	,8	,9	,9	,9
12	,8	,8	,8	,8	,8	,9	,8	,9	1,0	,9
13	,8	,8	,8	,8	,9	,8	,8	,9	1,0	,9
14	,8	,8	,8	,8	,8	,9	,8	,9	1,0	,9
15	,8	,7	,8	,8	,8	,8	,8	,9	1,0	,9
16	,7	,6	,7	,8	,8	,8	,7	,8	1,0	,9
17	,3	,3	,3	,5	,5	,6	,5	,8	,9	1,0
18	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
19	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
20	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
21	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
22	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
23	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Table 37. Please note: The BGAA Aasiaat/Egedesminde statistics are daytime only, 08-17 UTC



BGKK Kulusuk

Mittarfik Kulusuk

Location: 65,583°N 37,150°W

H: 35 m above msl

BGKK observations in statistics: 24.872 hourly METAR⁷ during the hours 08-17 UTC, only, covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an day-time availability of 75,7%.

Please note the low availability and take care accordingly when using the current BGKK weather statistics since the low availability partly results from exclusion of an unusual large number of erroneous or missing automated measurements of visibility and/or cloud cover, indicating what might be a data quality that overall is lower than usual. Also note a lower observations frequency on Sundays and Mondays. E.g. availability of 08-16 UTC BGKK observations Tuesday – Saturday 2003-2011 was 89,7%. Other details are found in the Availability Section.

The BGKK METAR are all manual until 11 June 2005, and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

Winter (Jan-Feb-Mar): BGKK - Frequencies (%) Visibility - Ceiling

No. Obs = 5.381	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,28	1,13	2,68	3,16	3,27	0,28	3,55
<1 km	0,28	1,13	3,10	3,92	4,13	0,43	4,55
<1.5 km	0,28	1,15	3,44	5,15	6,08	0,87	6,95
<3.0 km	0,28	1,17	3,66	6,65	9,40	2,90	12,30
< 5.0 km	0,28	1,19	3,75	7,14	10,96	5,78	16,74
>= 5,0 km or CAVOK	0	0	0,019	0,65	1,88	81,38	83,26
Total	0,28	1,19	3,77	7,79	12,84	87,16	100

Table 38

Spring (Apr-May-Jun): BGKK - Frequencies (%) Visibility - Ceiling

No. Obs = 6.668	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,30	0,66	1,99	2,35	2,46	0,015	2,47
<1 km	0,33	0,72	2,58	3,31	3,43	0,090	3,52
<1.5 km	0,33	0,73	2,82	4,03	4,59	0,19	4,78
<3.0 km	0,33	0,73	3,43	5,19	6,40	1,09	7,50
< 5.0 km	0,33	0,73	3,78	6,24	8,04	2,97	11,01
>= 5,0 km or CAVOK	0	0	0,43	2,46	4,99	84,00	88,99
Total	0,33	0,73	4,21	8,70	13,03	86,97	100

Table 39

⁷ For every hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.



Summer (Jul-Aug-Sep): BGKK - Frequencies (%) Visibility - Ceiling

No. Obs = 7.154	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,25	0,53	1,50	1,57	1,59	0,18	1,78
<1 km	0,25	0,57	1,93	2,08	2,15	0,29	2,45
<1.5 km	0,25	0,57	2,10	2,35	2,49	0,38	2,87
<3.0 km	0,25	0,60	2,78	3,30	3,59	0,80	4,39
< 5.0 km	0,25	0,62	3,15	4,18	5,05	1,98	7,03
>= 5,0 km or CAVOK	0	0	0,42	2,24	5,20	87,77	92,97
Total	0,25	0,62	3,56	6,42	10,25	89,75	100

Table 40

Autumn (Oct-Nov-Dec): BGKK - Frequencies (%) Visibility - Ceiling

No. Obs = 5.669	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,51	1,50	2,43	2,68	2,68	0	2,68
<1 km	0,51	1,55	2,79	3,35	3,40	0,018	3,42
<1.5 km	0,51	1,57	3,09	4,23	4,55	0,23	4,78
<3.0 km	0,51	1,57	3,26	5,26	6,70	1,36	8,06
< 5.0 km	0,51	1,57	3,44	5,80	8,77	3,86	12,63
>= 5,0 km or CAVOK	0	0	0,088	0,71	2,43	84,94	87,37
Total	0,51	1,57	3,53	6,51	11,20	88,80	100

Table 41

Annual: BGKK - Frequencies (%) Visibility - Ceiling

No. Obs = 24.872	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,33	0,92	2,10	2,38	2,44	0,12	2,55
<1 km	0,34	0,96	2,55	3,10	3,21	0,21	3,41
<1.5 km	0,34	0,97	2,81	3,84	4,30	0,40	4,70
<3.0 km	0,34	0,98	3,26	4,98	6,31	1,46	7,77
< 5.0 km	0,34	0,99	3,51	5,74	7,98	3,50	11,47
>= 5,0 km or CAVOK	0	0	0,26	1,60	3,80	84,73	88,53
Total	0,34	0,99	3,78	7,35	11,77	88,23	100

Table 42



Wind direction histograms

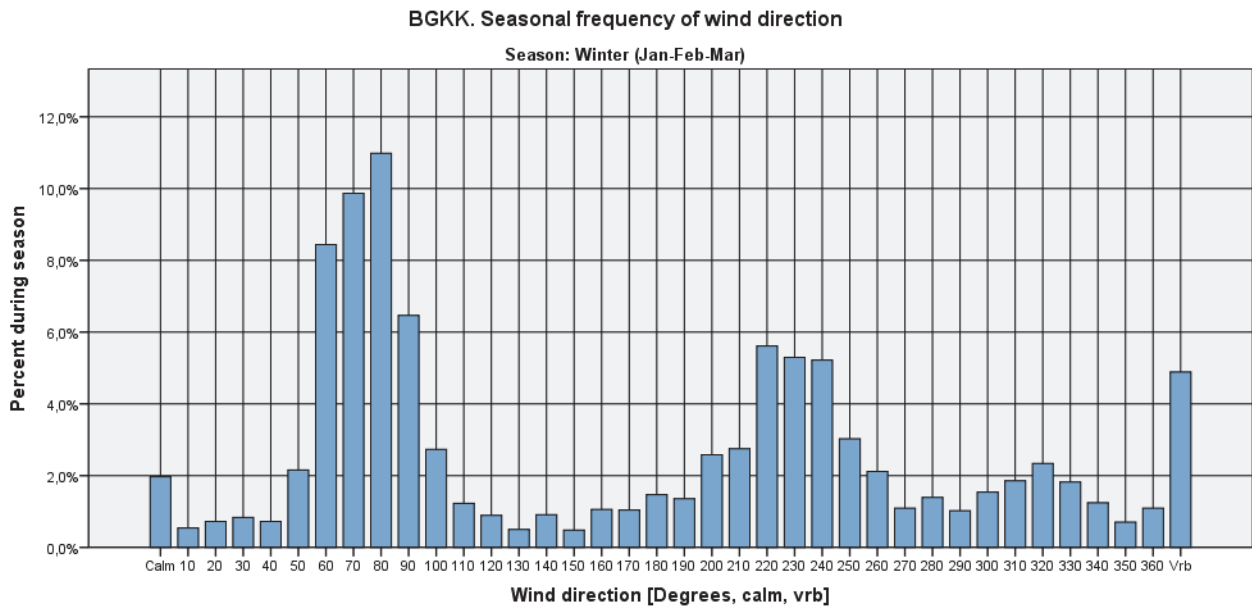


Figure 139

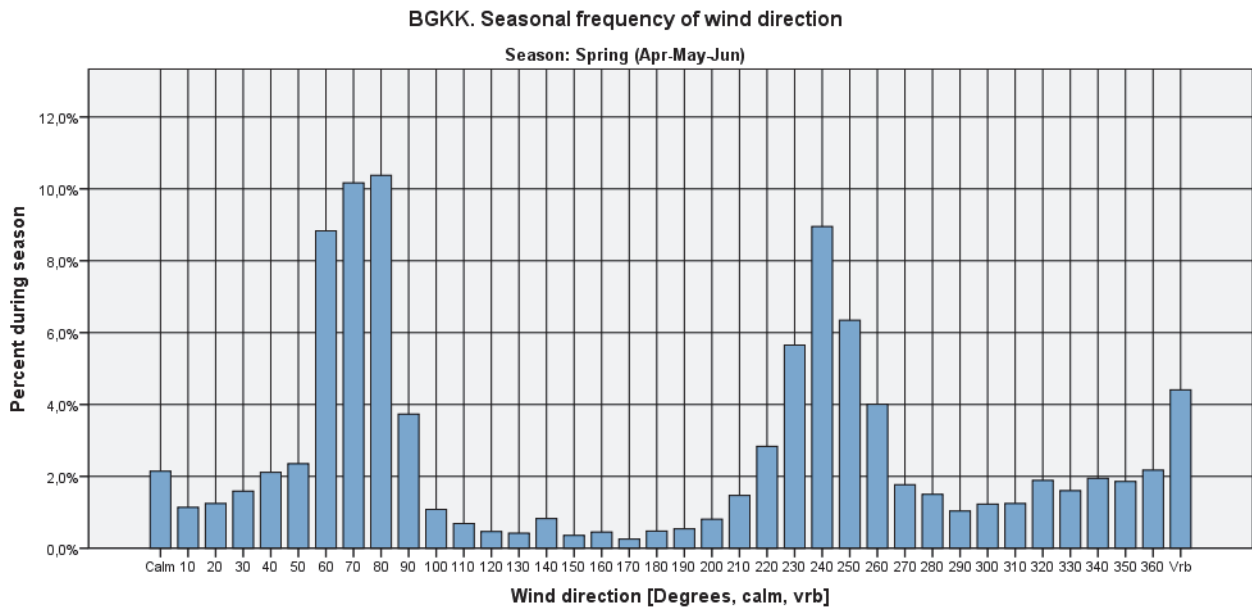


Figure 140

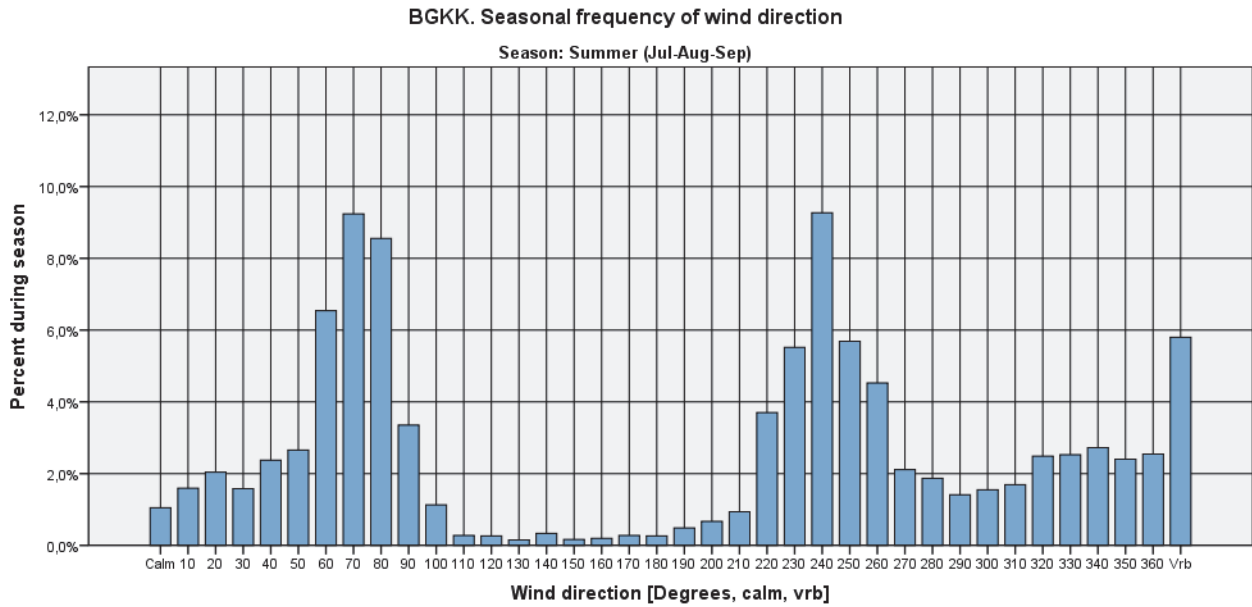


Figure 141

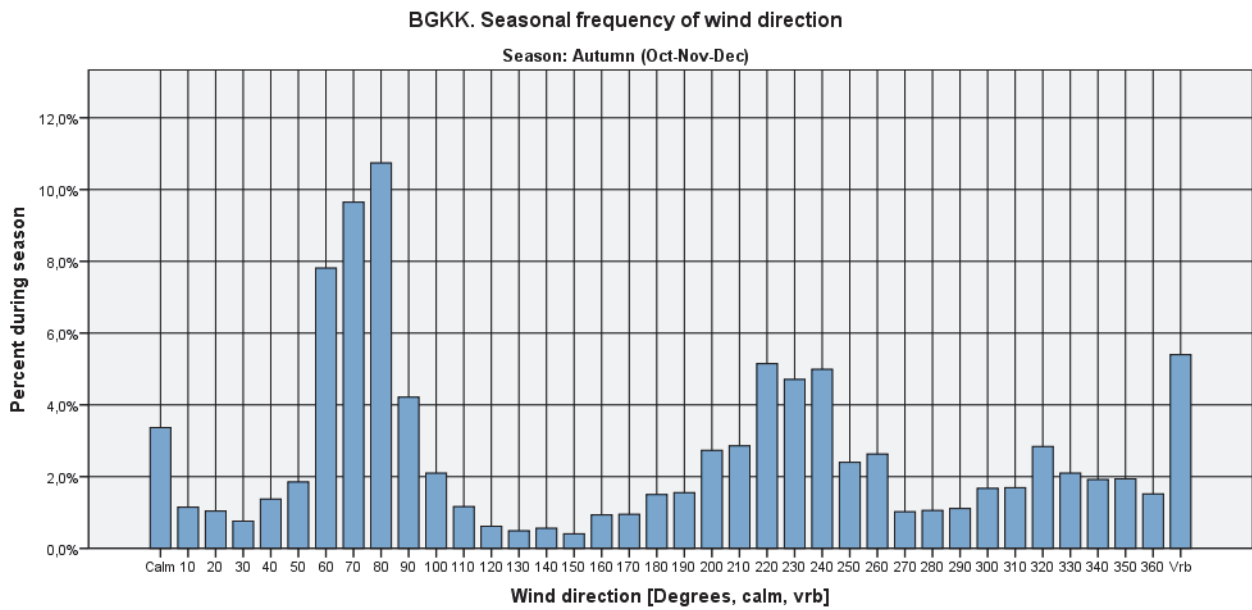


Figure 142

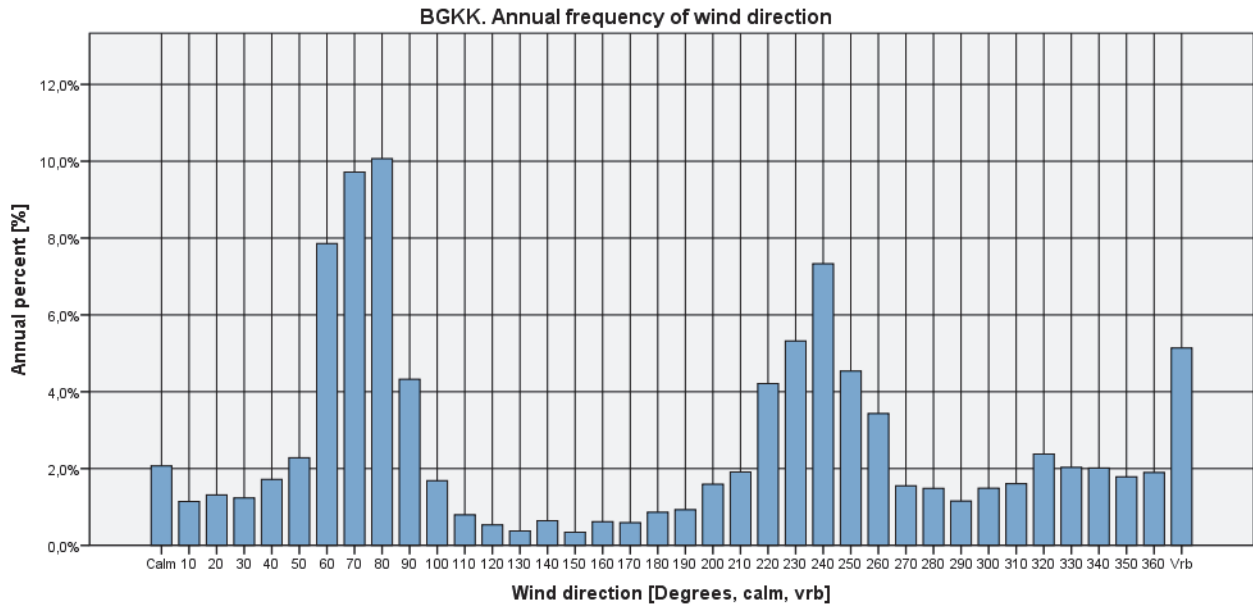


Figure 143



Visibility criteria on wind direction histograms

Visibility < 1000 m

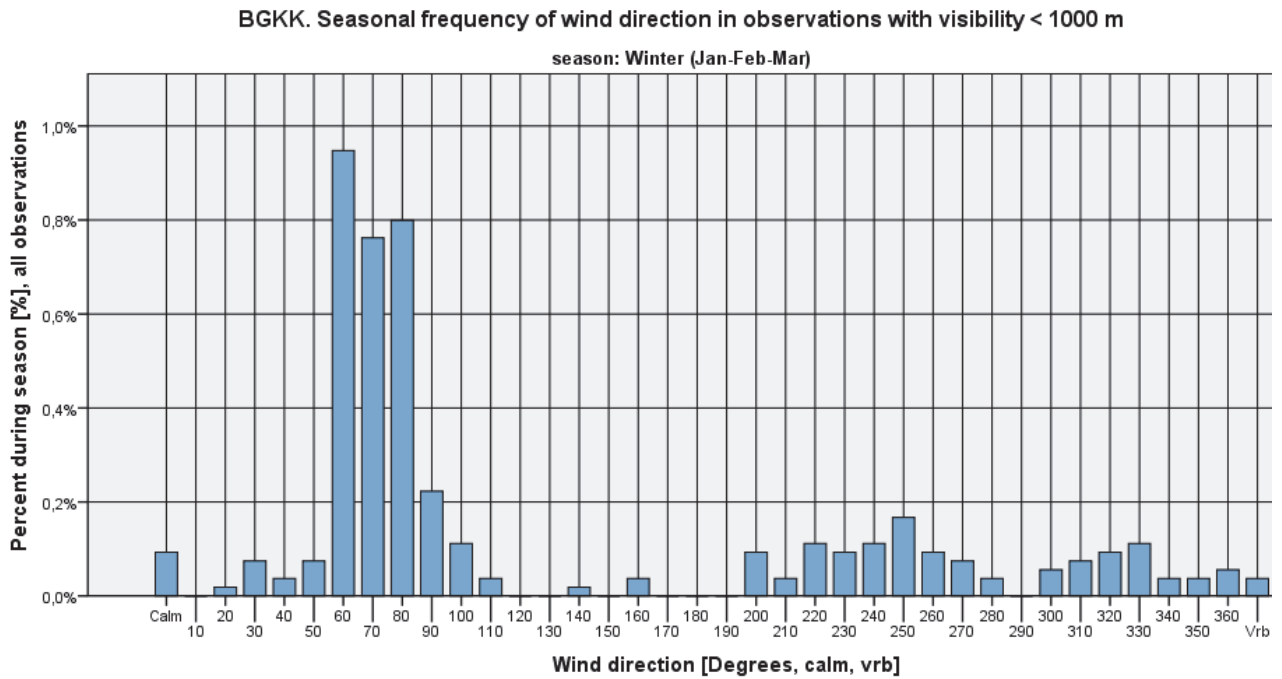


Figure 144

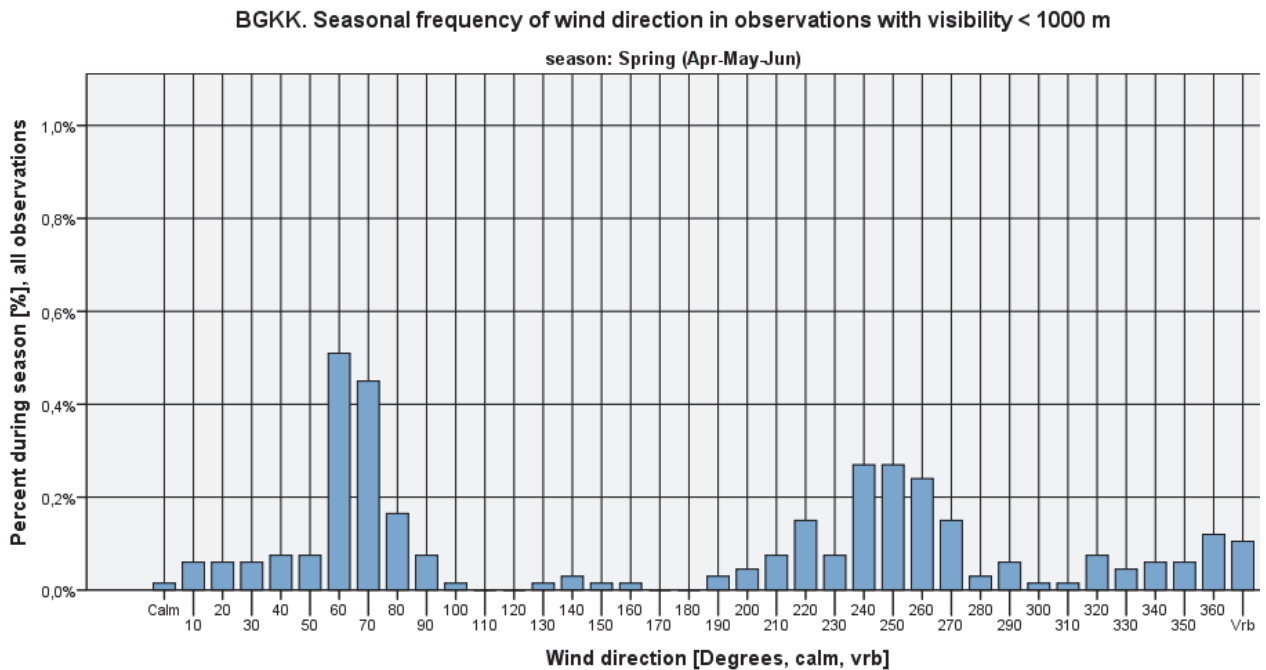


Figure 145

BGKK. Seasonal frequency of wind direction in observations with visibility < 1000 m

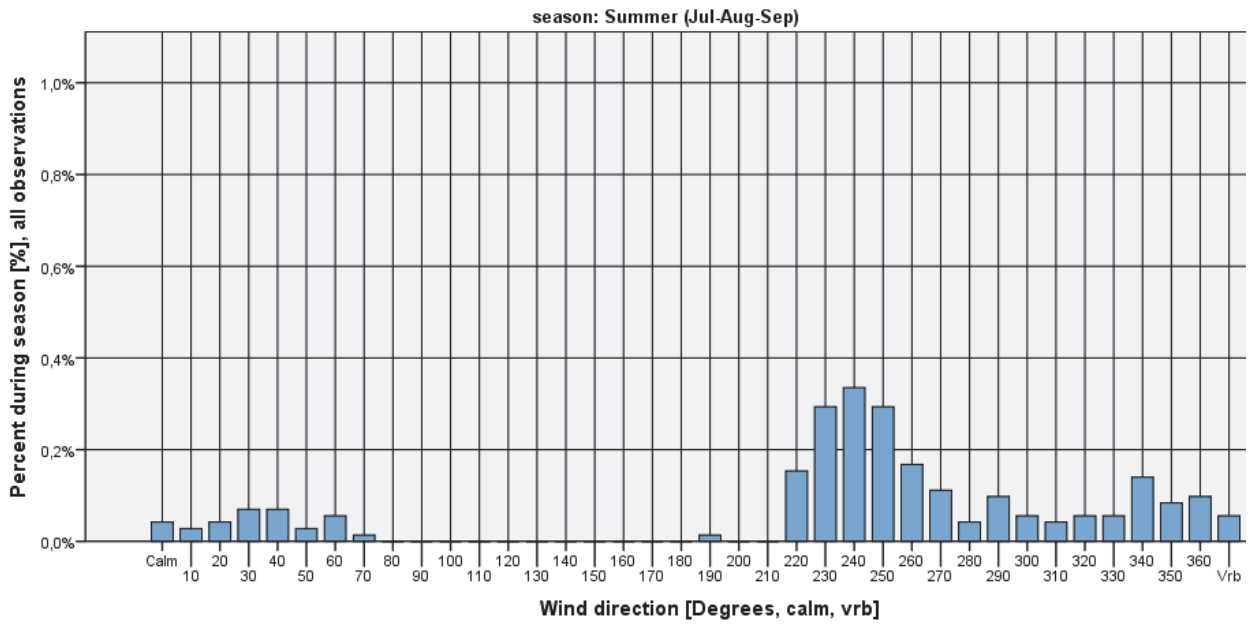


Figure 146

BGKK. Seasonal frequency of wind direction in observations with visibility < 1000 m

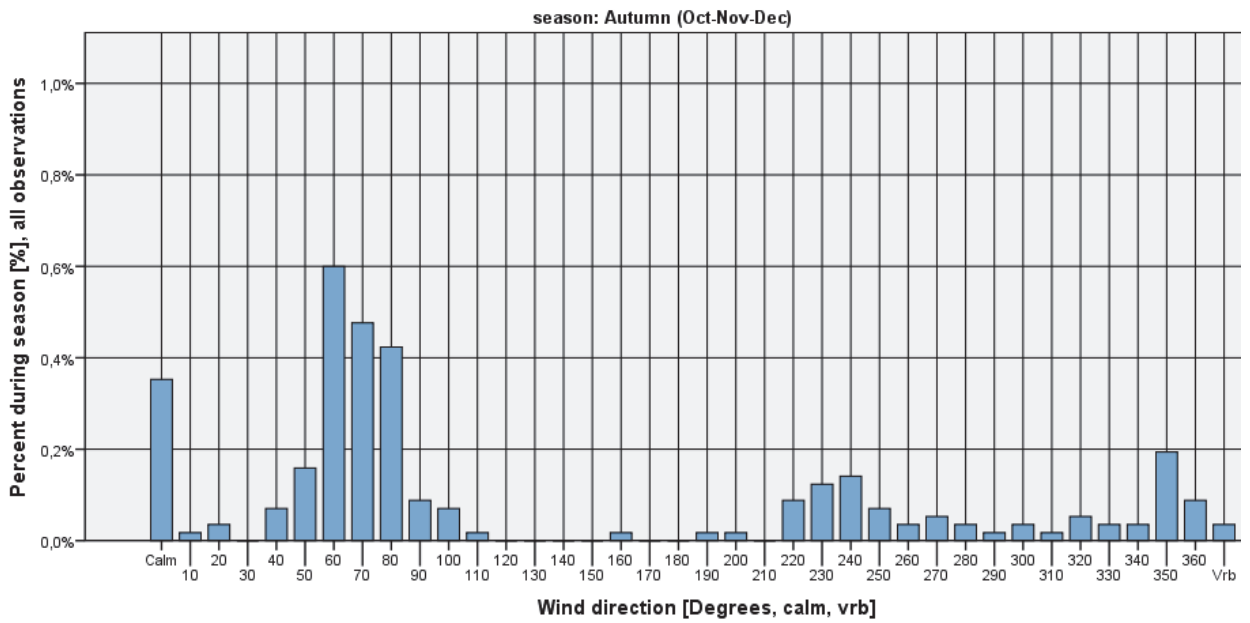


Figure 147

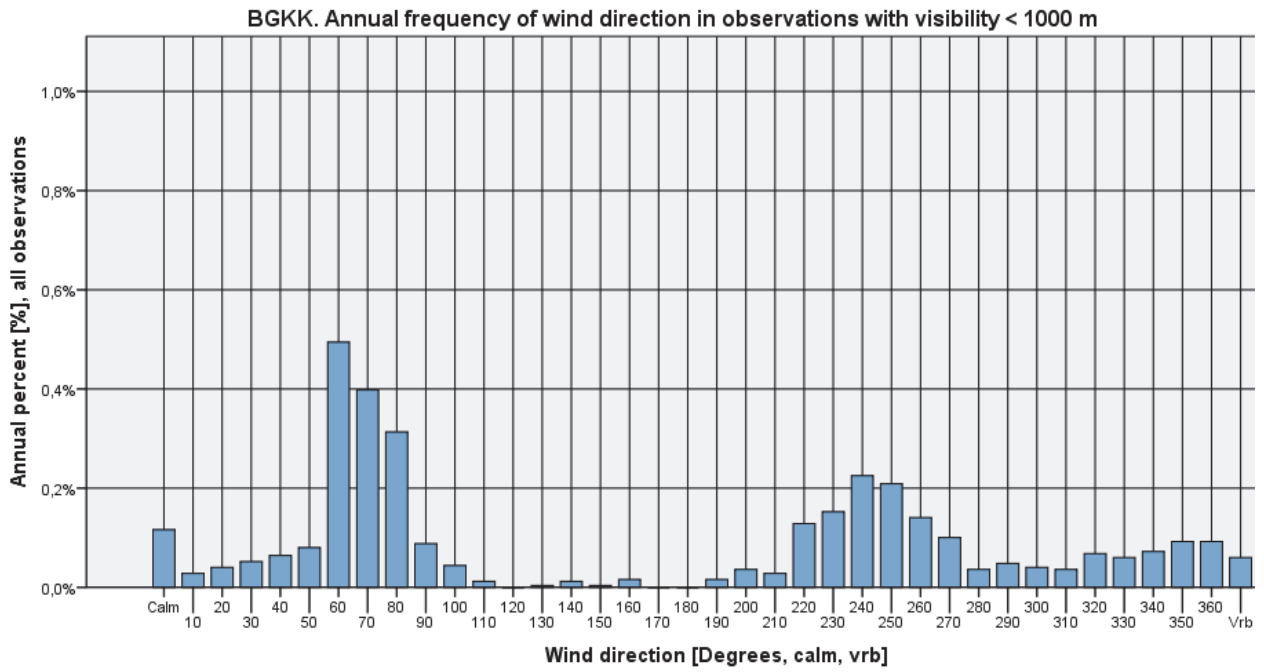


Figure 148



Ceiling criteria on wind direction histograms

Ceiling<1000 feet

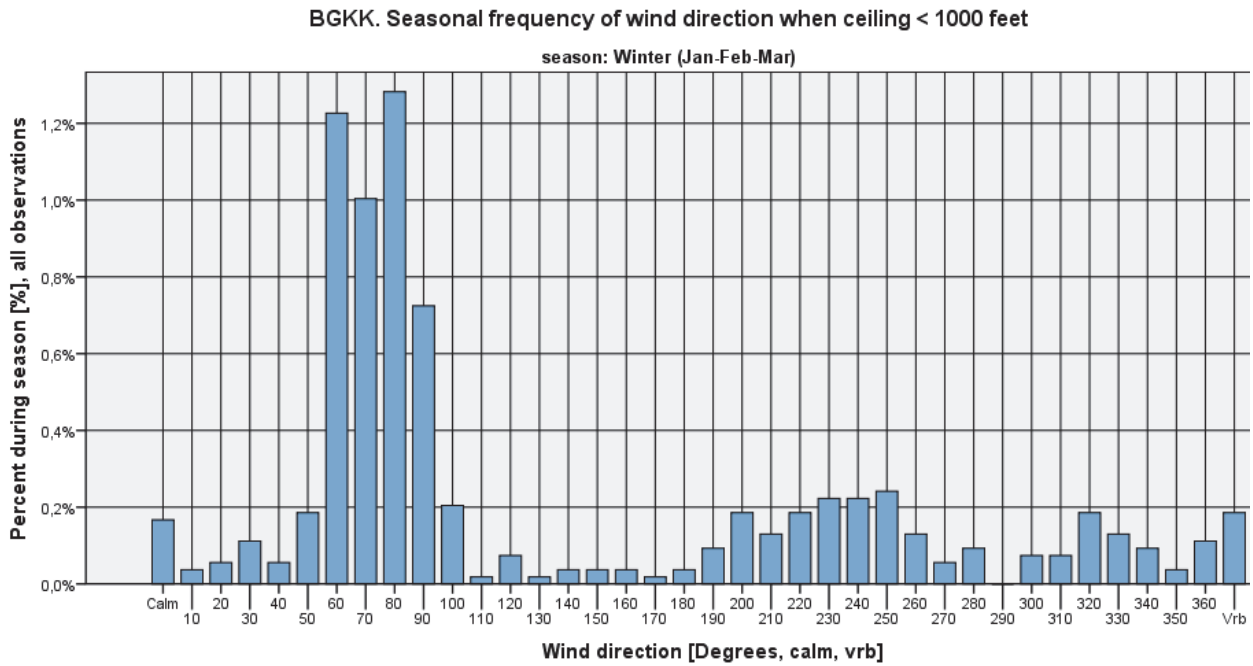


Figure 149

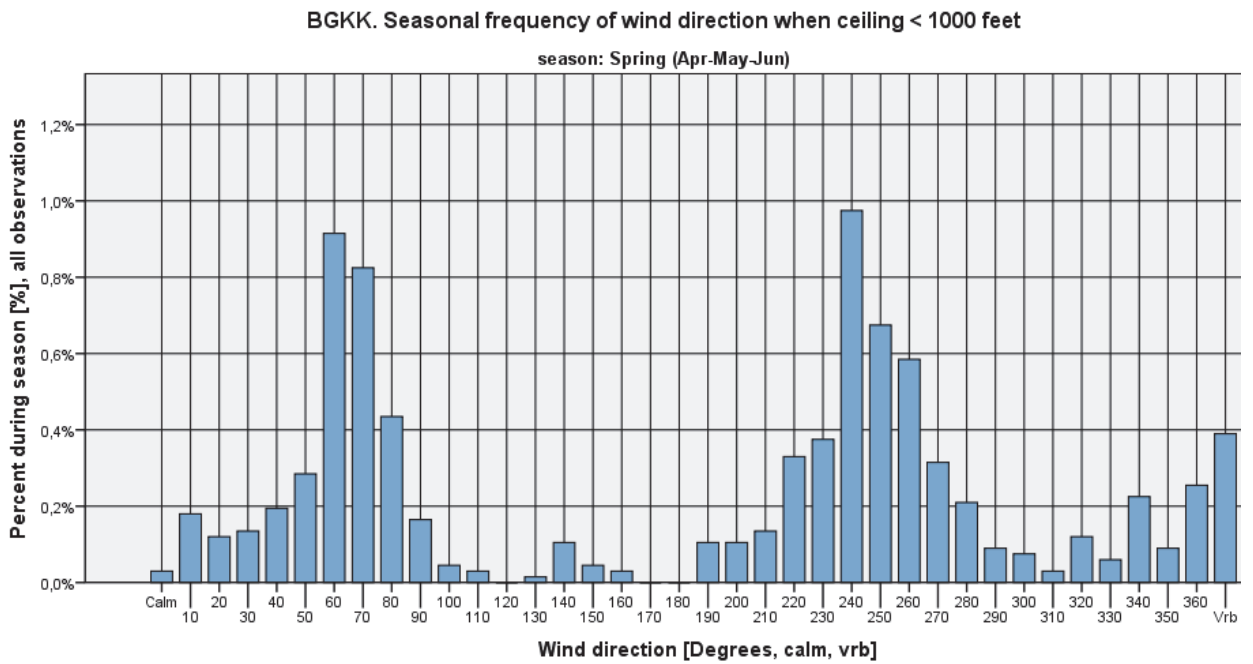


Figure 150

BGKK. Seasonal frequency of wind direction when ceiling < 1000 feet

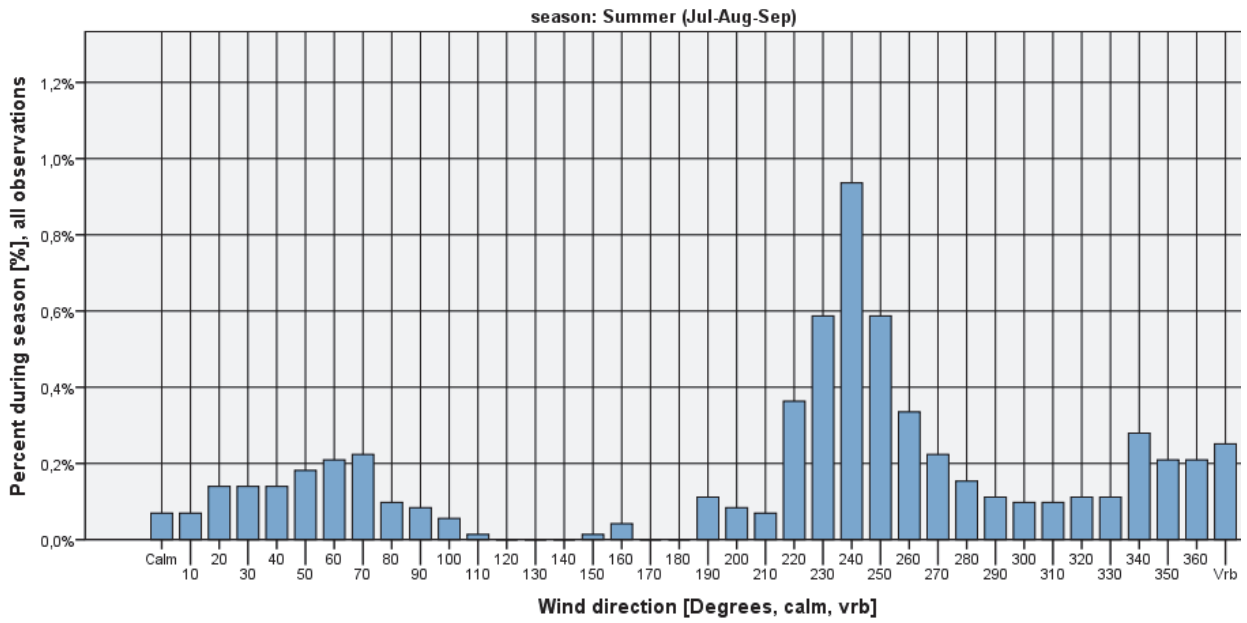


Figure 151

BGKK. Seasonal frequency of wind direction when ceiling < 1000 feet

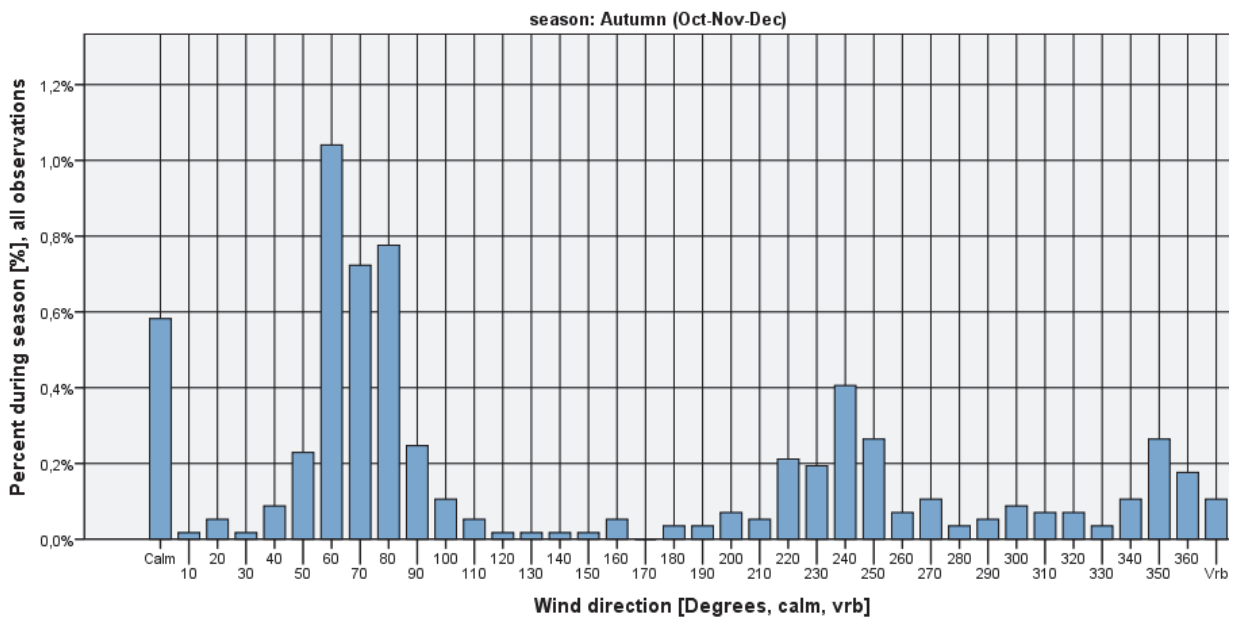


Figure 152

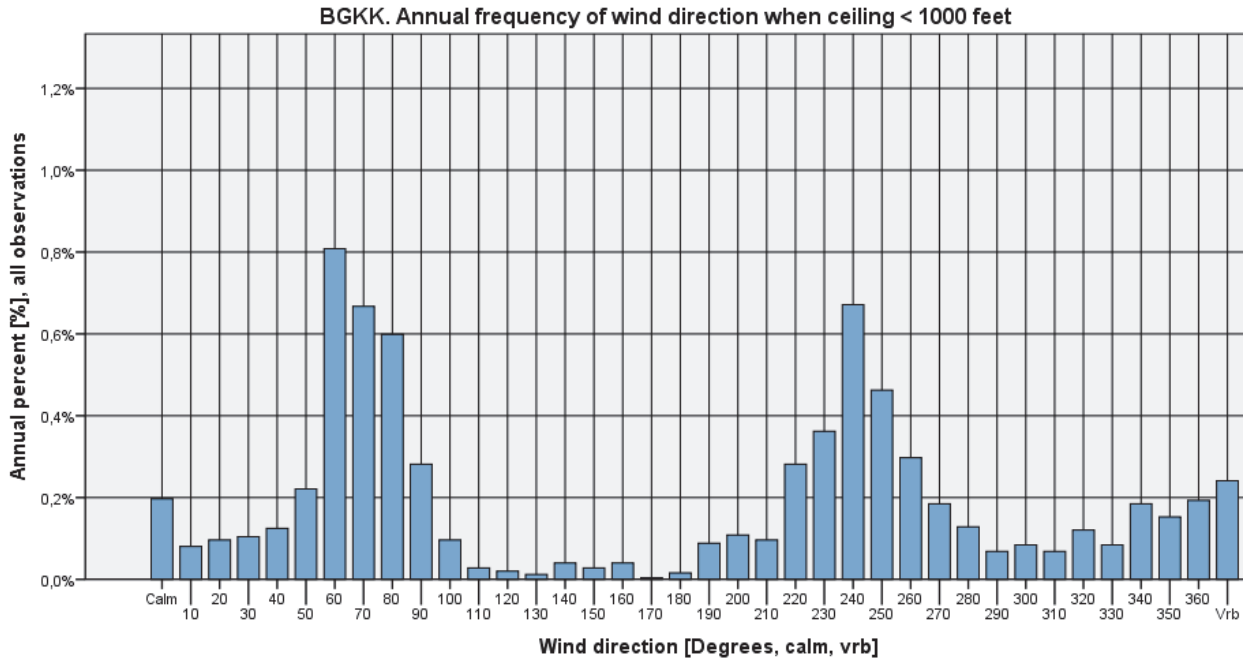


Figure 153



Ceiling < 500 feet

BGKK. Seasonal frequency of wind direction when ceiling < 500 feet

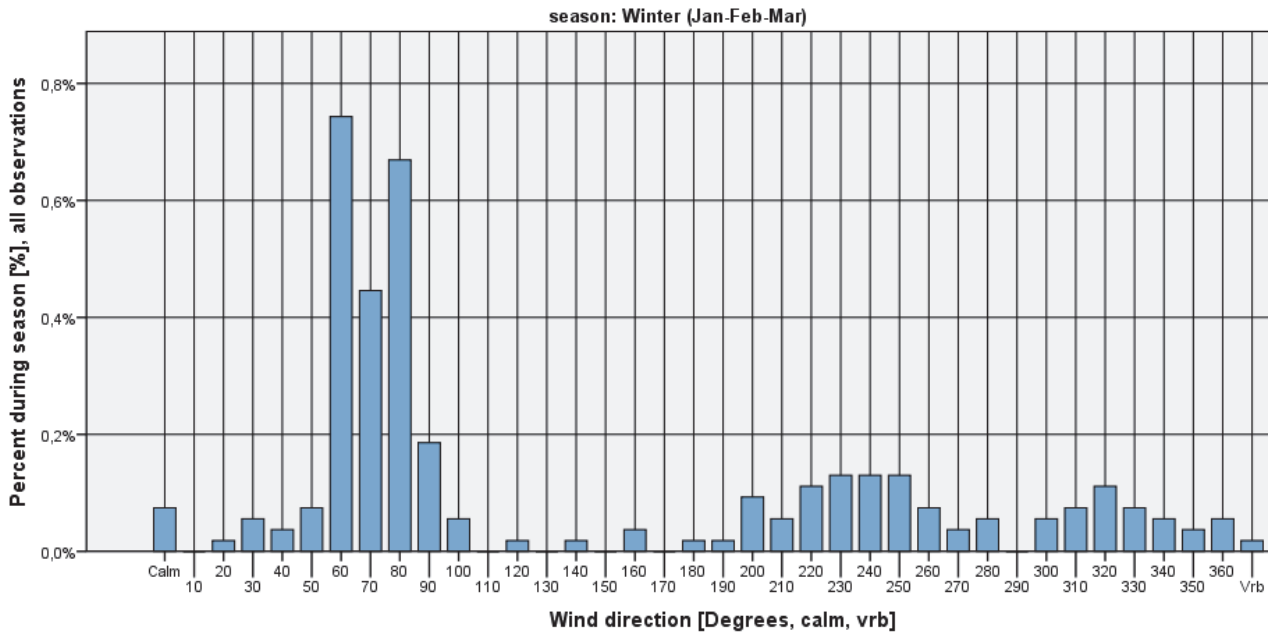


Figure 154

BGKK. Seasonal frequency of wind direction when ceiling < 500 feet

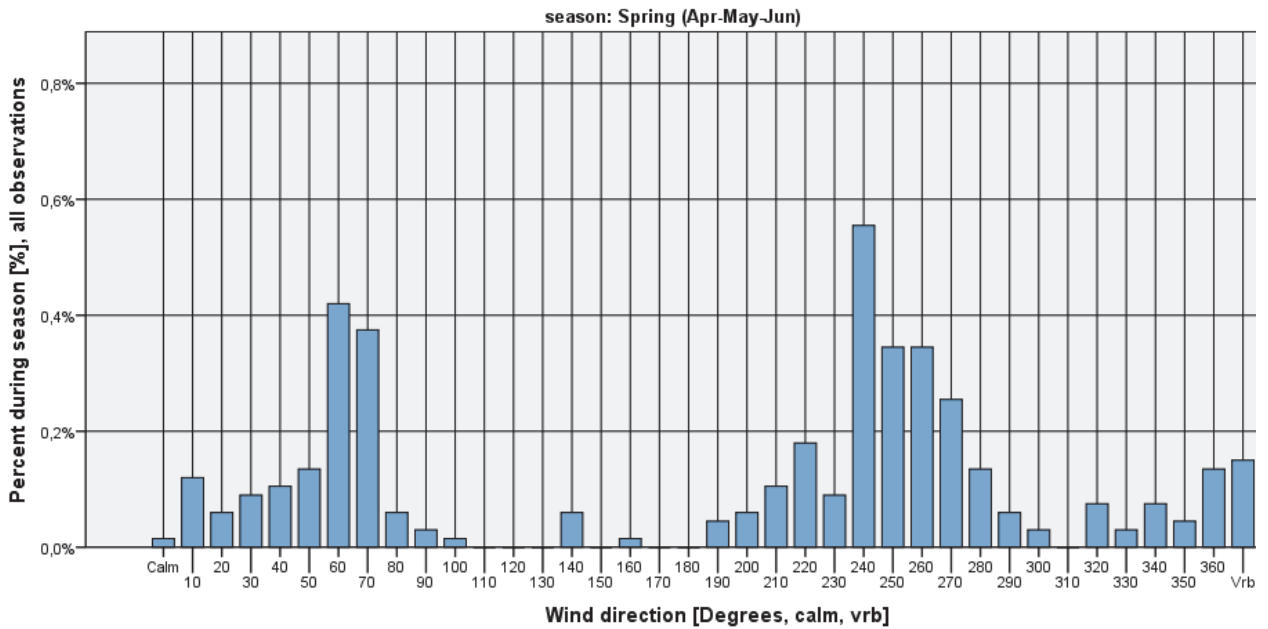


Figure 155

BGKK. Seasonal frequency of wind direction when ceiling < 500 feet

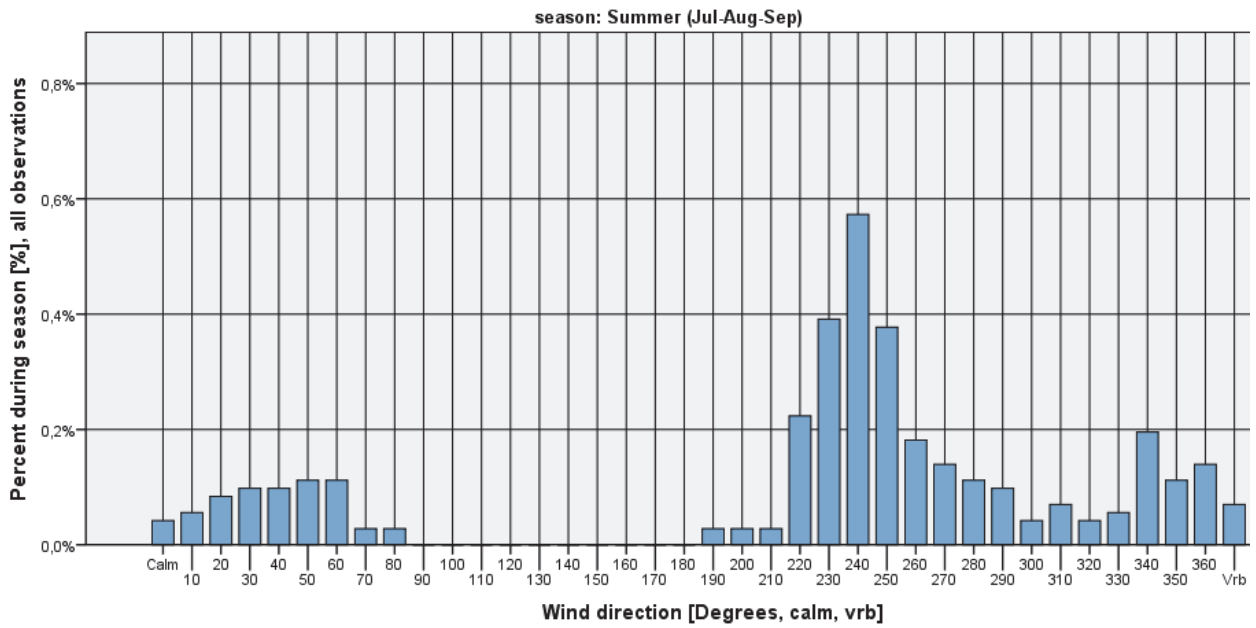


Figure 156

BGKK. Seasonal frequency of wind direction when ceiling < 500 feet

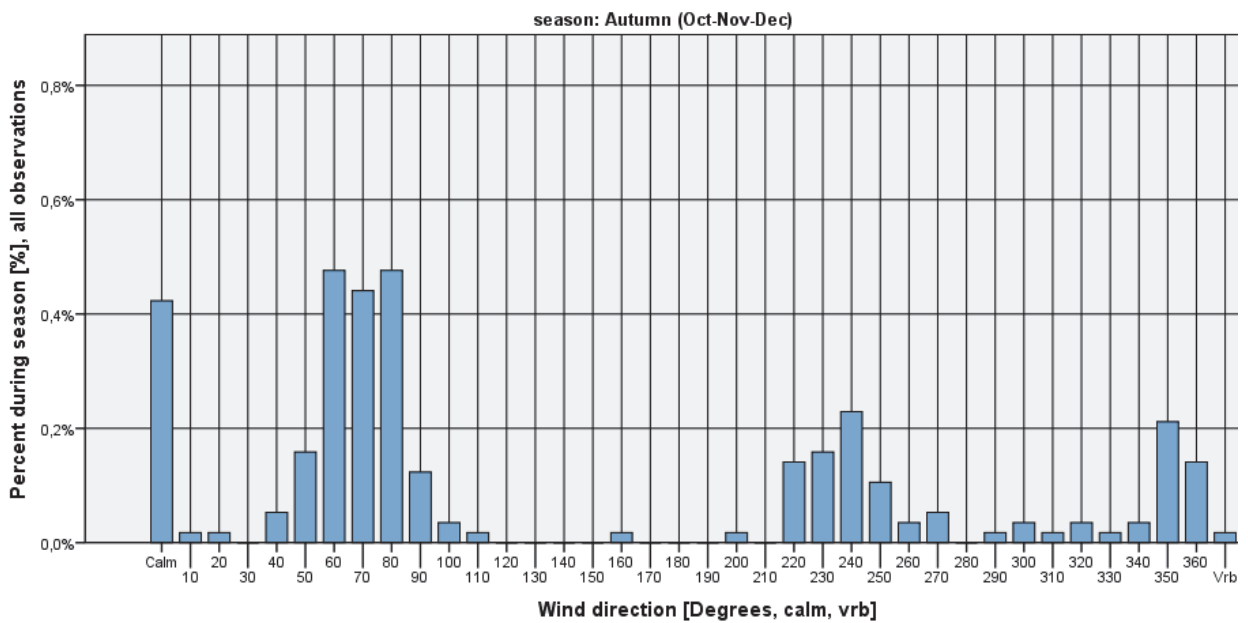


Figure 157

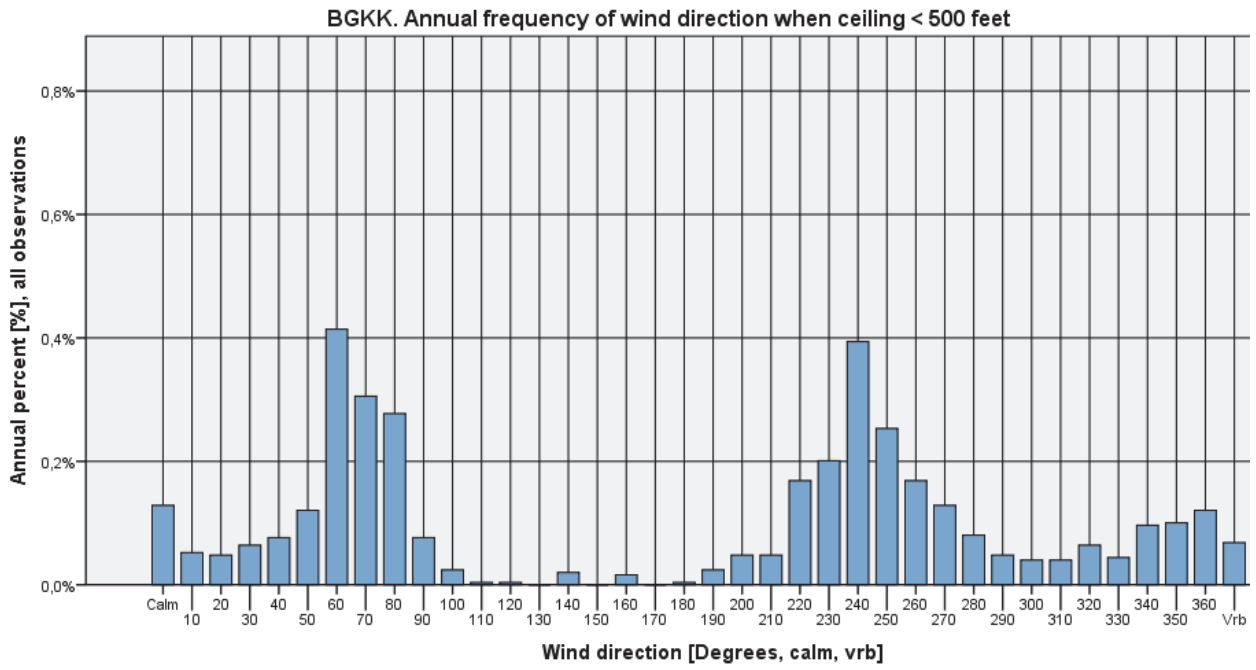
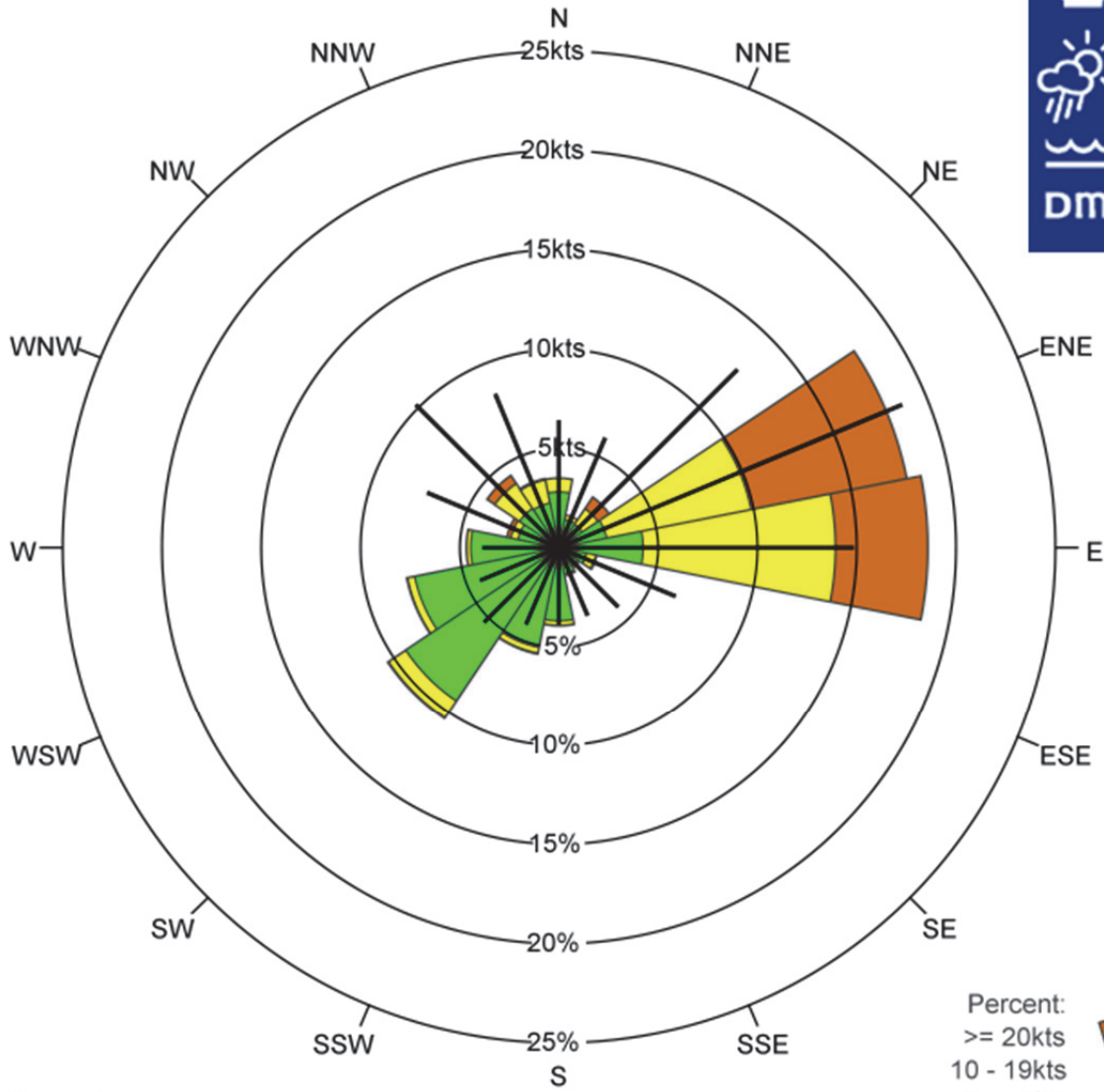


Figure 158



Wind roses

BGKK Kulusuk AUTUMN & WINTER: OCTOBER - MARCH 01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

Percent:
 >= 20kts
 10 - 19kts
 1 - 9kts

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	3.5	1.7	3.1	17.9	18.6	1.9	1.2	1.4	3.9	5.5	10.4	7.8	4.7	2.7	4.4	3.6	92.2
% 1 - 9kts	2.8	1.4	1.4	2.5	4.2	1.4	1.1	1.4	3.7	5.1	9.3	7.4	4.4	2.1	2.4	2.3	53.0
% 10 - 19kts	0.7	0.2	1.0	7.4	9.7	0.5	0.1	0.1	0.2	0.3	1.0	0.4	0.2	0.4	1.5	1.2	24.9
% >= 20kts	0.0	0.0	0.7	8.0	4.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.1	14.3
Mean wind speed	6.5	6.0	12.8	18.7	14.9	6.4	4.2	3.7	3.9	4.3	5.3	4.3	3.9	7.2	10.1	8.4	10.3
Max wind speed	18.0	26.0	37.0	48.0	42.0	25.0	17.0	16.0	24.0	22.0	23.0	21.0	28.0	44.0	37.0	26.0	48.0

Number of observations = 11050

Source: DMI

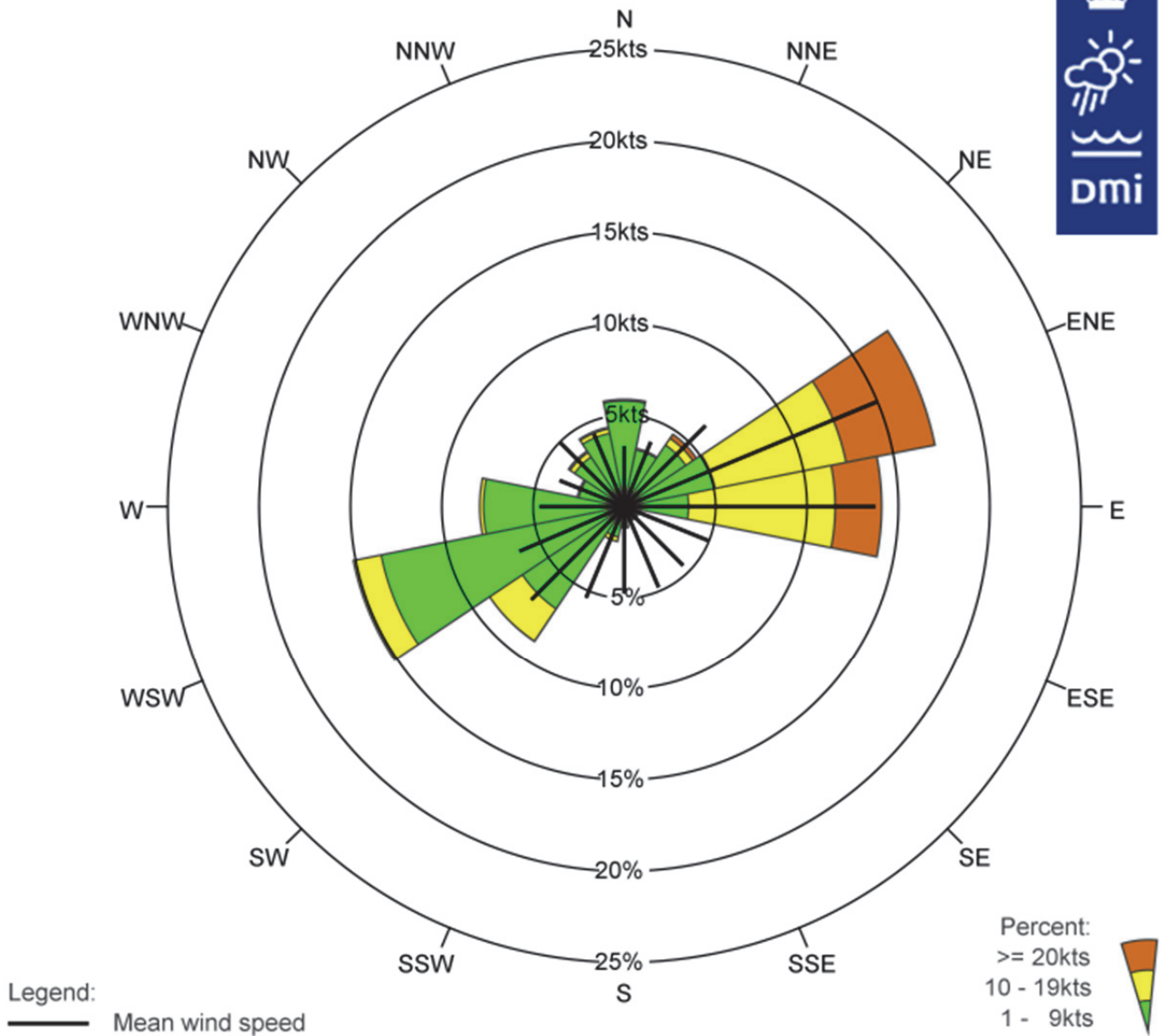
Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 866=7.8%

Observations with calm/varying wind direction are not used in the statistics



BGKK Kulusuk SPRING & SUMMER: APRIL - SEPTEMBER 01-02-2003 - 01-02-2012



	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
%	5.9	3.2	4.8	17.3	14.1	0.8	0.9	0.6	1.2	1.9	8.9	15.1	7.9	2.6	3.7	4.4	93.3
% 1 - 9kts	5.8	3.2	4.0	5.1	3.5	0.7	0.8	0.5	1.0	1.7	6.7	13.6	7.7	2.5	3.3	4.1	64.2
% 10 - 19kts	0.1	0.1	0.4	7.3	8.0	0.1	0.1	0.1	0.1	0.3	2.1	1.5	0.2	0.1	0.3	0.3	21.1
% >= 20kts	0.0	0.0	0.3	5.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	8.0
Mean wind speed	3.3	3.8	6.3	15.0	13.8	5.1	4.5	4.8	4.8	5.4	7.2	6.2	4.6	3.8	5.0	4.3	8.4
Max wind speed	18.0	17.0	45.0	48.0	45.0	35.0	14.0	13.0	15.0	16.0	20.0	20.0	17.0	24.0	31.0	25.0	48.0

Number of observations = 13822
 Calm defined a wind speed = 0kts
 Number of observations with calm/varying wind direction: 927=6.7%
 Observations with calm/varying wind direction are not used in the statistics

Source: DMI



Availability

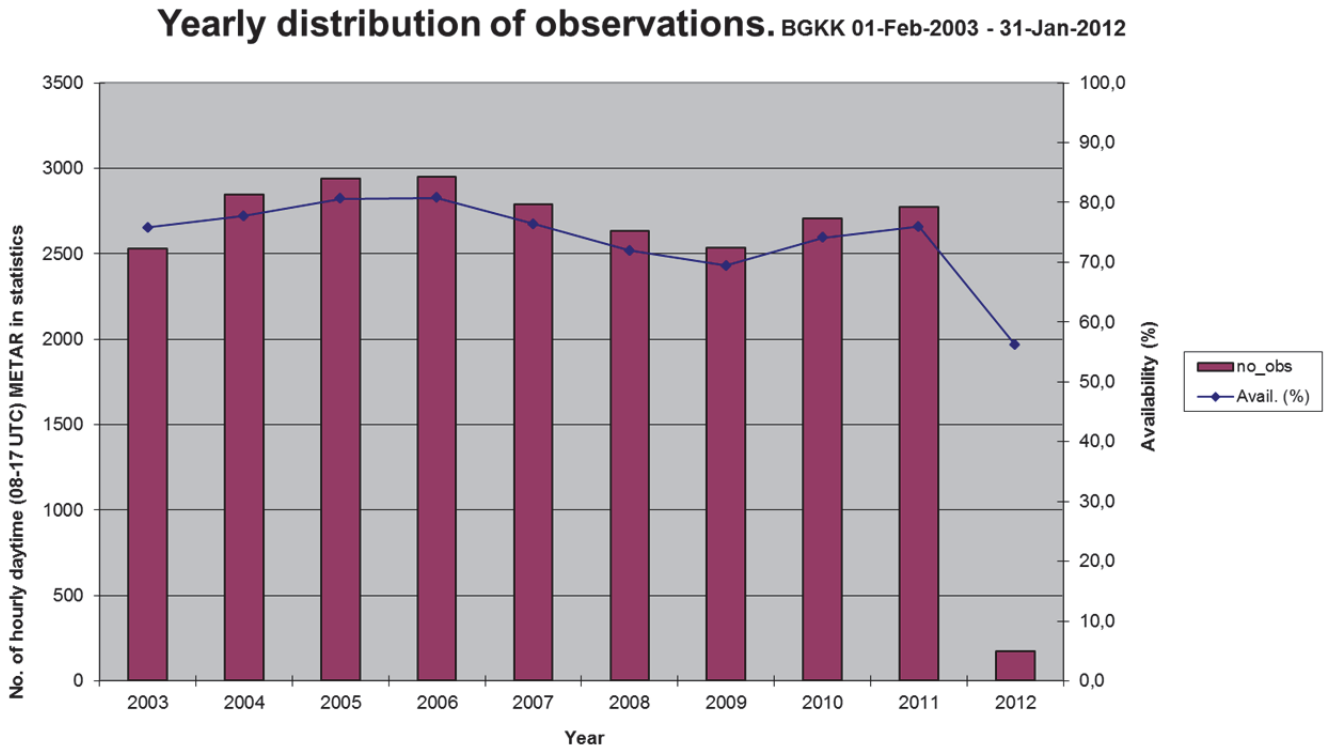


Figure 159

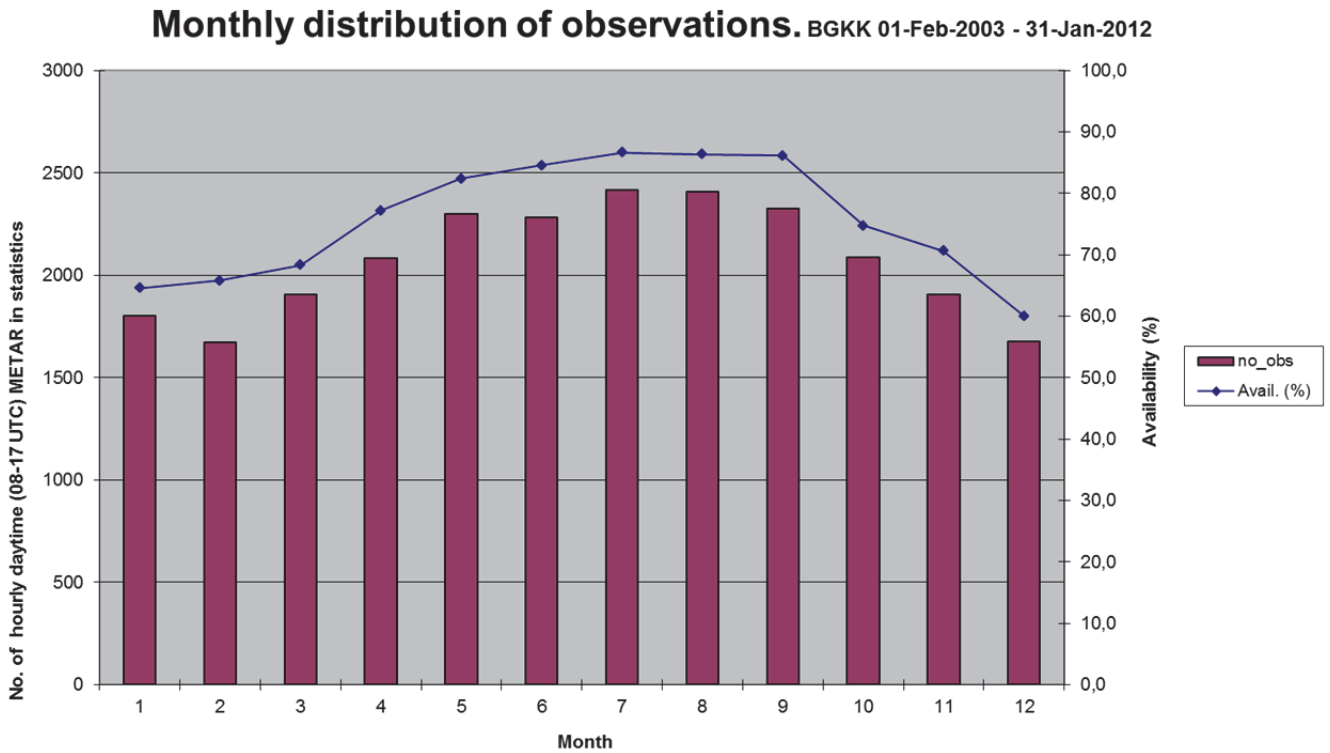


Figure 160

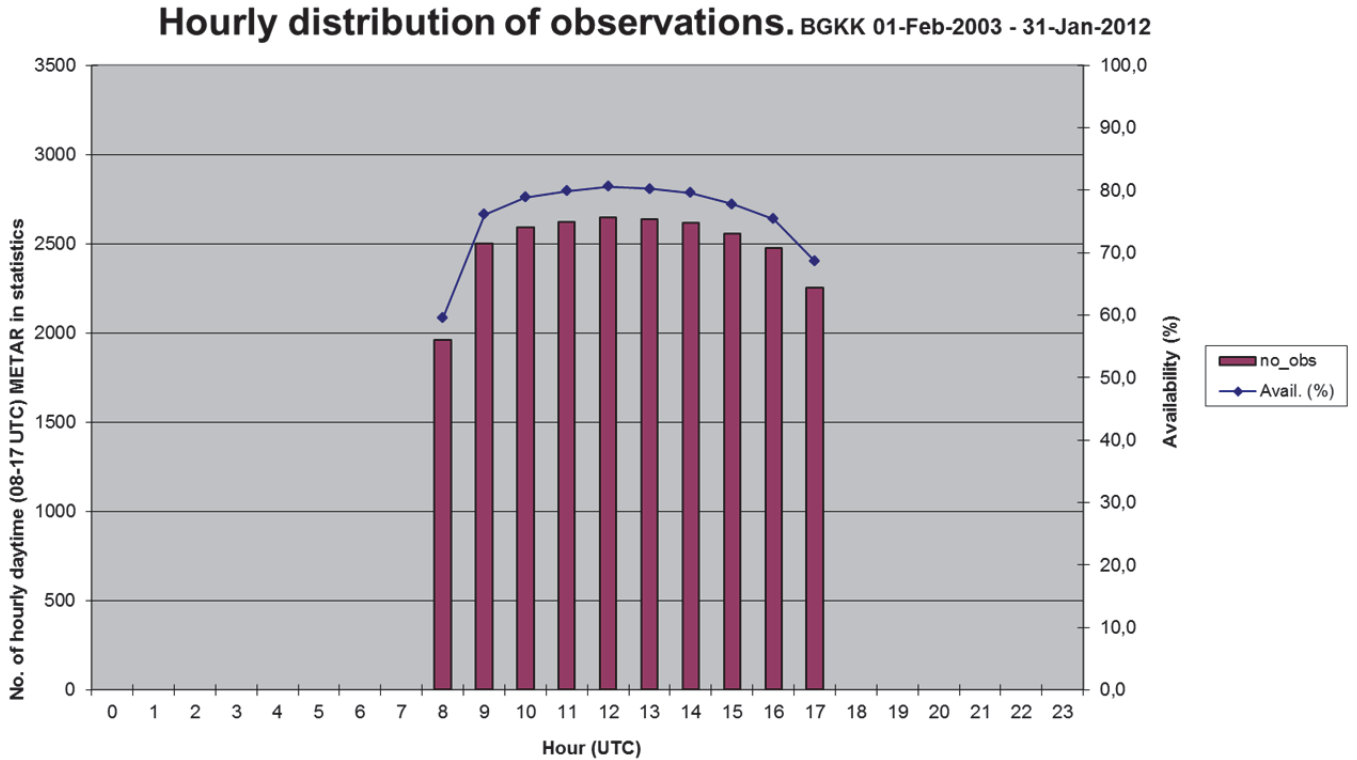


Figure 161

BGKK. Average no. of hourly observations in statistics, 1 February 2003 - 31 January 2012

Hour (UTC)	year										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
6	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
8	,7	,7	,8	,7	,5	,5	,5	,5	,5	,5	0,0
9	,8	,8	,8	,8	,8	,7	,7	,8	,8	,8	,5
10	,8	,8	,8	,8	,8	,8	,7	,8	,8	,8	,7
11	,8	,8	,8	,8	,8	,8	,8	,8	,8	,8	,7
12	,8	,8	,8	,8	,8	,8	,8	,8	,8	,8	,6
13	,8	,8	,8	,9	,8	,8	,7	,8	,8	,8	,6
14	,8	,8	,8	,8	,8	,8	,7	,8	,8	,8	,7
15	,7	,8	,8	,8	,8	,7	,7	,8	,8	,8	,7
16	,7	,8	,8	,8	,8	,7	,7	,7	,8	,8	,6
17	,6	,7	,7	,8	,7	,6	,6	,6	,7	,7	,5
18	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
19	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
20	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
21	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
22	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
23	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Table 43. Please note: The BGKK Kulusuk statistics are daytime only, 08-17 UTC



References

Jørgensen, Peter Viskum: Weather Statistics for Airports 1996-2001. Denmark, Faroe Islands and Greenland, 2. edition. DMI Technical Report 03-03. Copenhagen 2003.

Laursen, Ellen Vaarby: Weather Statistics for Airports, 2003-2012. Denmark and Faroe Islands. DMI Technical Report No. 12-19. Copenhagen 2012.

WMO Manual on Codes. International Codes. Publication No. 306, Volume I.1 Part A - Alphanumeric Codes.

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