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Ellen Vaarby Laursen



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Abstract

This report contains statistics on visibility, ceiling and wind observed at selected Danish and Faroe Islands 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 danske og færøske lufthavne, 1. februar 2003 - 31. januar 2012. Den primære målgruppe er luftfartsmeteorologer.



Introduction

The present 9 years of airport weather statistics, 2003-2012, for the 14 airports listed in Table 1, is answering the growing 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.

The statistics should be read as the average weather conditions experienced during the operation hours of the airport in the 9 years period 1 February 2003 – 31 January 2012. This means that when comparing airports, the reader should always have the differences in operation hours in mind, and confer with the airport total availability and the information on the observation's yearly, monthly and hourly distribution supplied in the availability section for each airport.

Airport	Availability ^{*)}	Remarks	Start AUTO METAR
Denmark and the North Sea			
EKAH Århus Lufthavn	91,1 %	Lack of night obs. during first years of period	31 March 2005
EKBI Billund Lufthavn	97,2 %		24 December 2008
EKCH København/Kastrup	98,9 %		only manual
EKEB Esbjerg Lufthavn	84,5 %	Lack of night obs. during first years of period	16 March 2005
EKGF Tyra Øst	49,7 %	Mostly hourly during daytime	only manual
EKKA Karup - mil	98,3 %		only manual
EKOD Odense/Beldringe	29,2 %	Mostly hourly during daytime	only manual
EKRR København/Roskilde	95,6 %		13 August 2009
EKRN Bornholm/Rønne	79,0 %	Lack of night obs. during first years of period	17 December 2007
EKSB Sønderborg Lufthavn	36,5 %	Mostly hourly during daytime	only manual
EKSP Vojens/Skrydstrup - mil	98,8 %		only manual
EKVD Kolding/Vamdrup	19,2 %	Mostly hourly during daytime, working days	29 December 2005
EKYT Aalborg	98,3 %		only manual
Faroe Islands			
EKVG Vaga-Floghavn	44,0 %	Lack of night obs. during first many years of period	26 November 2009
*) Availability when expecting half hourly observations around the clock 1 February 2003 – 31 January 2012 (total 157.776 observations)			

Table 1

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 half 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 half hourly observation was selected among quality assured observations as the one METAR or SPECI with lowest visibility during that half hour 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.



Denmark, seasonal and annual statistics

1 February 2003 – 31 January 2012



EKAH Århus Lufthavn

Århus Airport – Tirstrup

Location: 56,308°N 10,625°E (56°18'30''N, 10°37'32''E)

H: 20 m above msl

EKAH observations in statistics: 143.648 half hourly METAR¹ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 91,1%.

The EKAH METAR are all manual until 31 March 2005, and partly AUTO METAR since then.

The availability is mainly lowered by lack of night observations during the first years of the period.

Cross tables Visibility – Ceiling

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

No. Obs = 35.212	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,034	1,77	2,40	2,52	2,54	0,85	3,39
<1 km	0,034	1,95	2,86	3,06	3,09	0,96	4,05
<1,5 km	0,034	2,25	3,70	4,17	4,27	1,16	5,44
<3,0 km	0,034	2,79	6,68	8,55	8,97	2,38	11,35
< 5,0 km	0,034	3,00	8,57	12,92	14,14	4,53	18,68
>= 5,0 km or CAVOK	0	0,057	1,77	10,52	19,40	61,92	81,32
Total	0,034	3,05	10,35	23,44	33,54	66,46	100

Table 2

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

No. Obs = 36.373	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,0027	0,37	0,47	0,48	0,48	0,58	1,06
<1 km	0,0027	0,38	0,51	0,52	0,52	0,68	1,20
<1,5 km	0,0027	0,42	0,60	0,63	0,64	0,88	1,51
<3,0 km	0,0027	0,51	1,13	1,40	1,47	1,83	3,29
< 5,0 km	0,0027	0,55	1,67	2,55	2,84	3,53	6,37
>= 5,0 km or CAVOK	0	0,025	0,60	3,37	6,50	87,13	93,63
Total	0,0027	0,57	2,27	5,92	9,34	90,66	100

Table 3

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

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

No. Obs = 36.093	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,0055	0,46	0,52	0,53	0,54	0,91	1,45
<1 km	0,0055	0,48	0,55	0,57	0,58	1,10	1,68
<1,5 km	0,0055	0,50	0,59	0,62	0,63	1,32	1,95
<3,0 km	0,0055	0,58	0,94	1,06	1,11	2,30	3,41
< 5,0 km	0,0055	0,62	1,33	1,84	2,08	3,83	5,90
>= 5,0 km or CAVOK	0	0,039	0,81	3,22	6,10	88,00	94,10
Total	0,0055	0,66	2,14	5,06	8,18	91,82	100

Table 4

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

No. Obs = 35.970	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,0083	1,01	1,29	1,39	1,40	1,56	2,97
<1 km	0,0083	1,17	1,55	1,65	1,67	1,86	3,53
<1,5 km	0,0083	1,35	1,92	2,10	2,15	2,22	4,38
<3,0 km	0,0083	1,80	3,87	5,18	5,48	3,76	9,24
< 5,0 km	0,0083	1,93	5,90	10,36	11,45	6,37	17,82
>= 5,0 km or CAVOK	0	0,058	1,48	8,78	17,38	64,80	82,18
Total	0,0083	1,99	7,38	19,14	28,83	71,17	100

Table 5

Annual: EKAH – Frequencies (%) Visibility - Ceiling

No. Obs = 143.648	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,013	0,90	1,16	1,22	1,23	0,98	2,21
<1 km	0,013	0,99	1,36	1,44	1,45	1,15	2,60
<1,5 km	0,013	1,12	1,69	1,86	1,91	1,40	3,30
<3,0 km	0,013	1,41	3,13	4,01	4,22	2,56	6,79
< 5,0 km	0,013	1,51	4,34	6,87	7,57	4,56	12,14
>= 5,0 km or CAVOK	0	0,045	1,16	6,44	12,29	75,58	87,86
Total	0,013	1,56	5,50	13,31	19,86	80,14	100

Table 6



Wind direction histograms

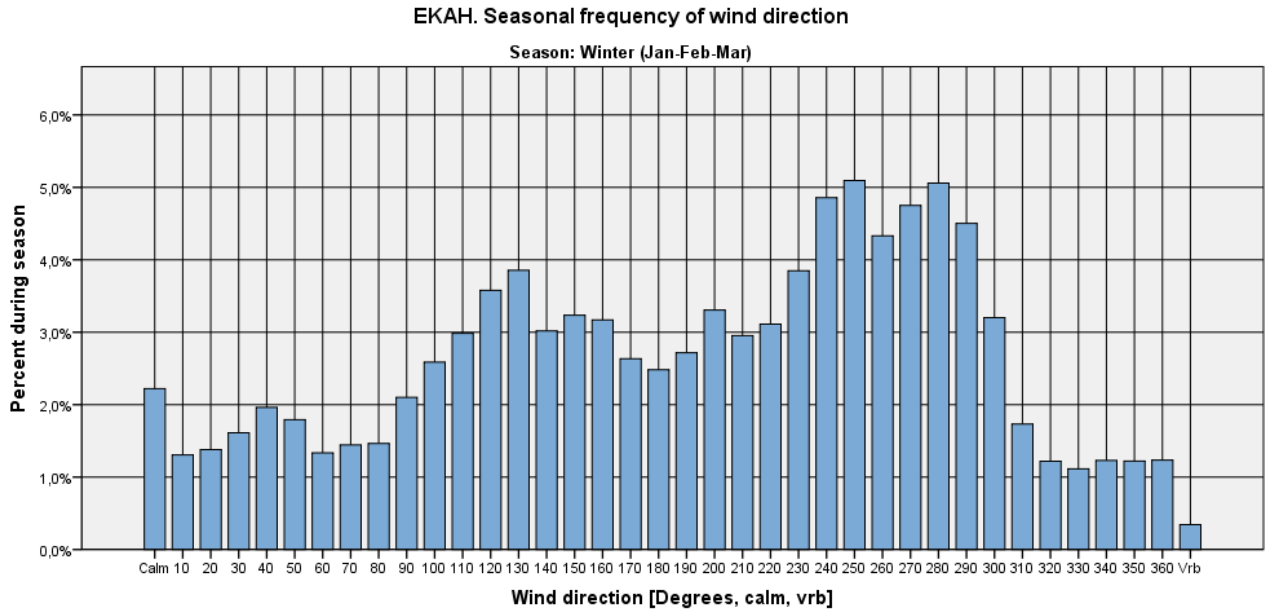


Figure 1

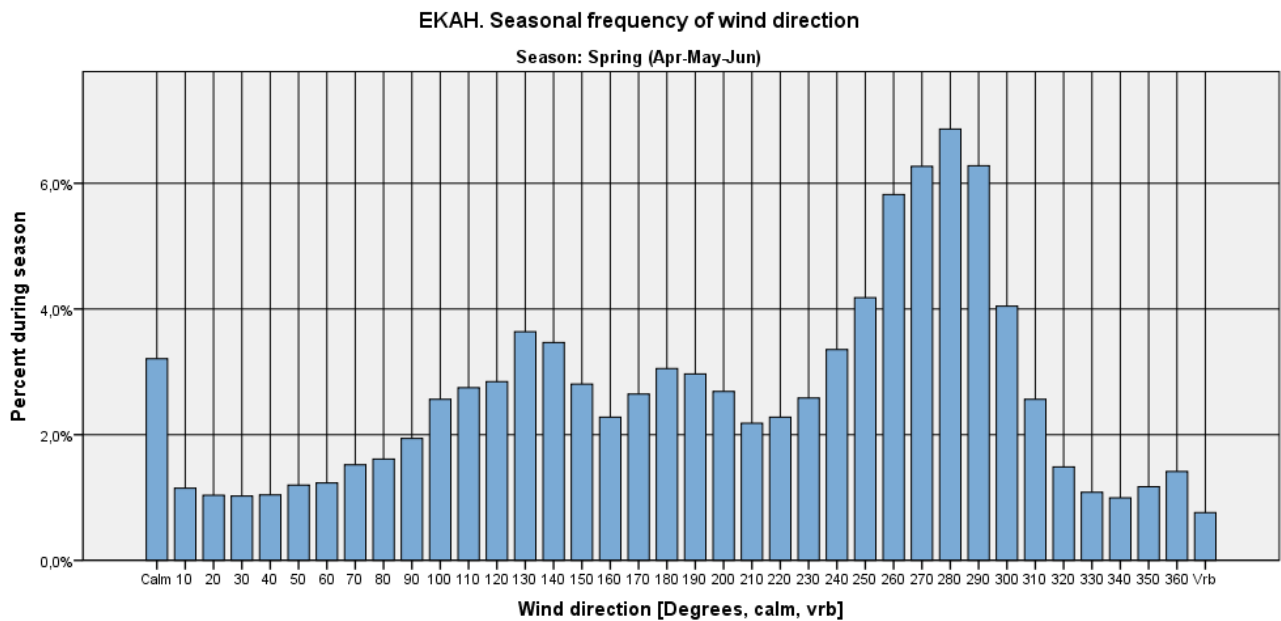


Figure 2

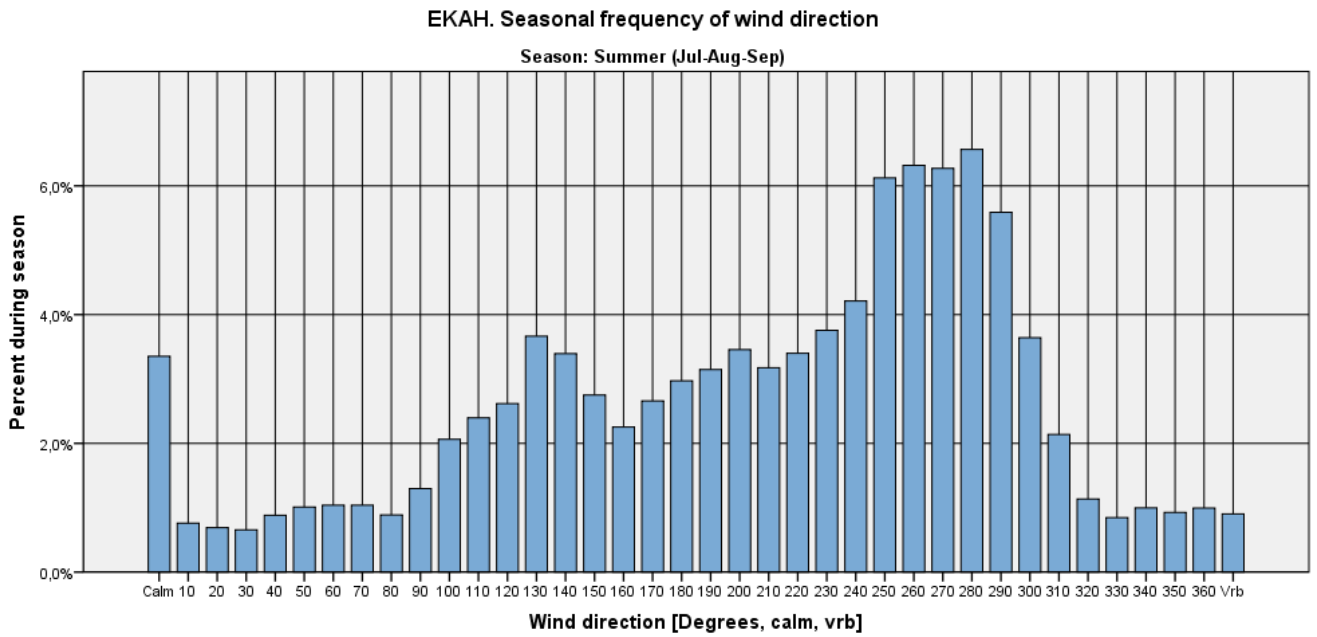


Figure 3

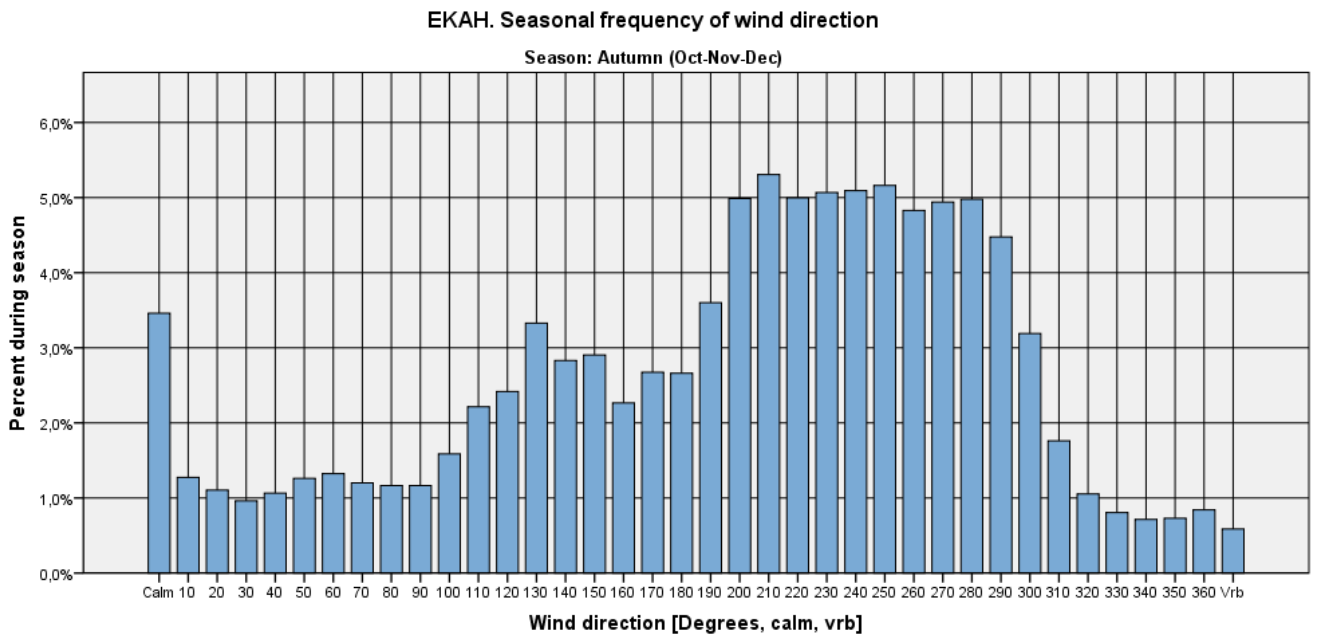


Figure 4

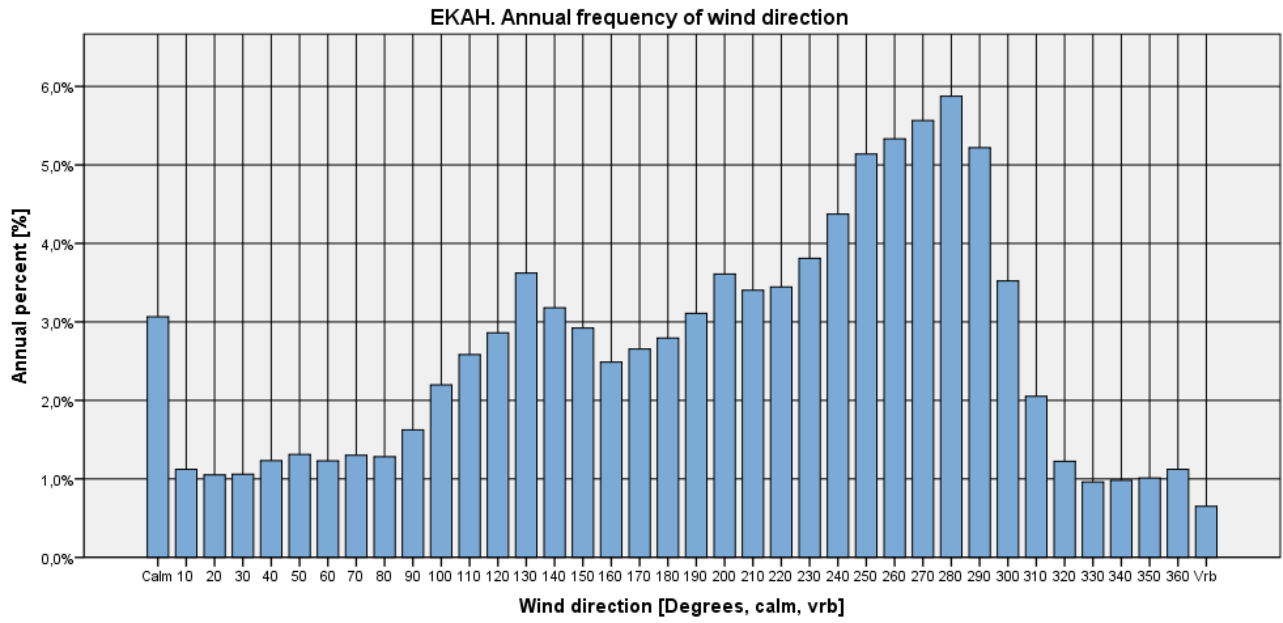


Figure 5



Visibility criteria on wind direction histograms

Visibility < 1000 m

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

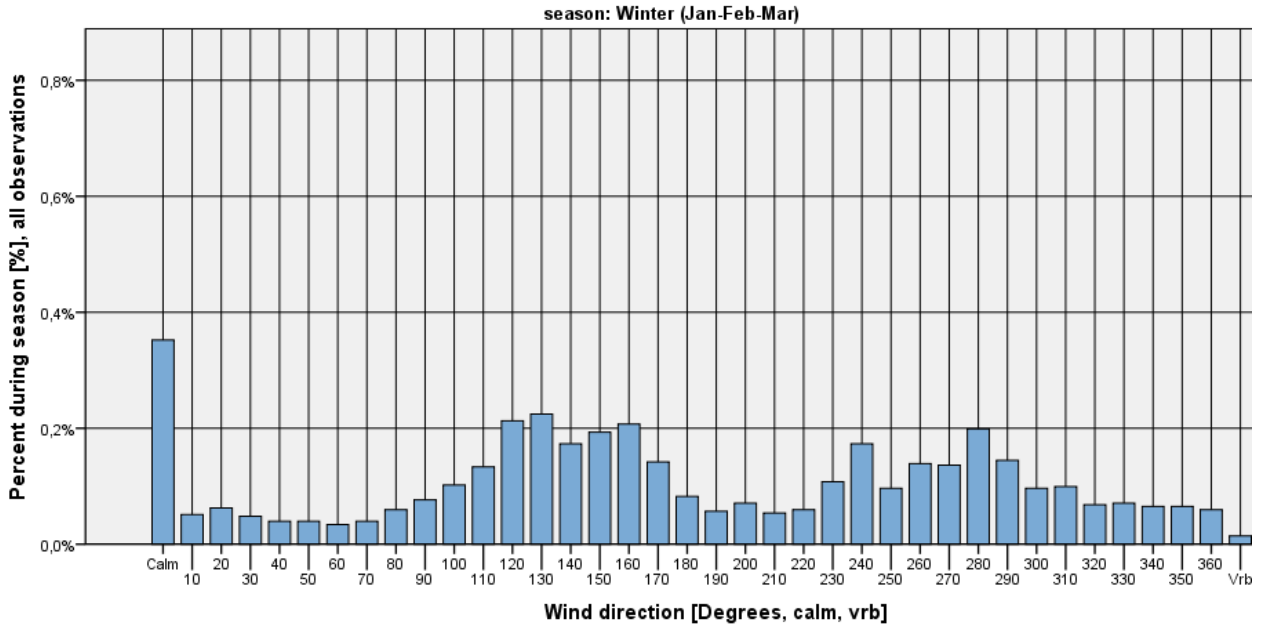


Figure 6.

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

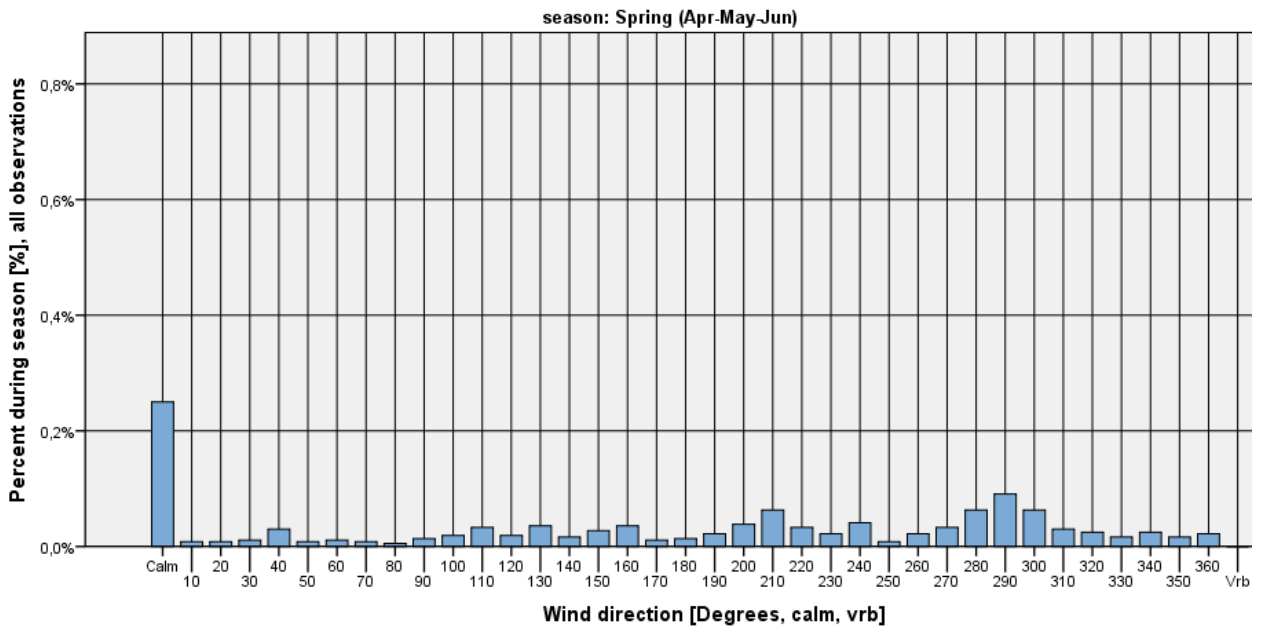


Figure 7

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

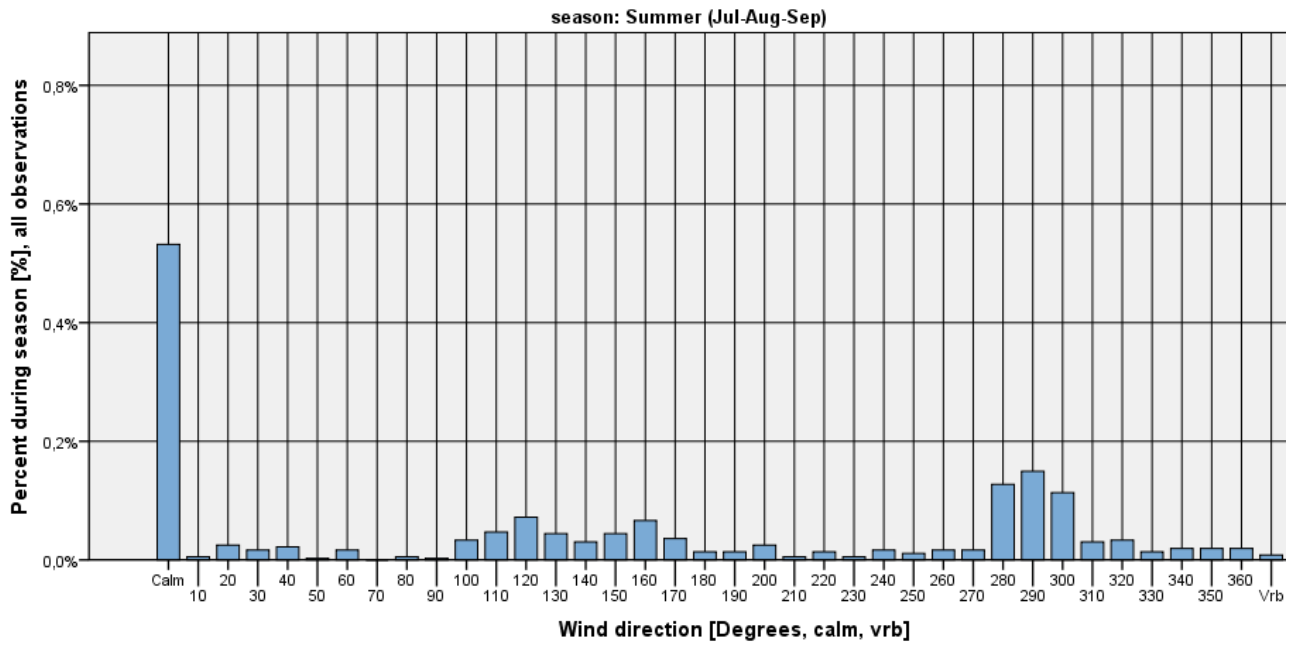


Figure 8

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

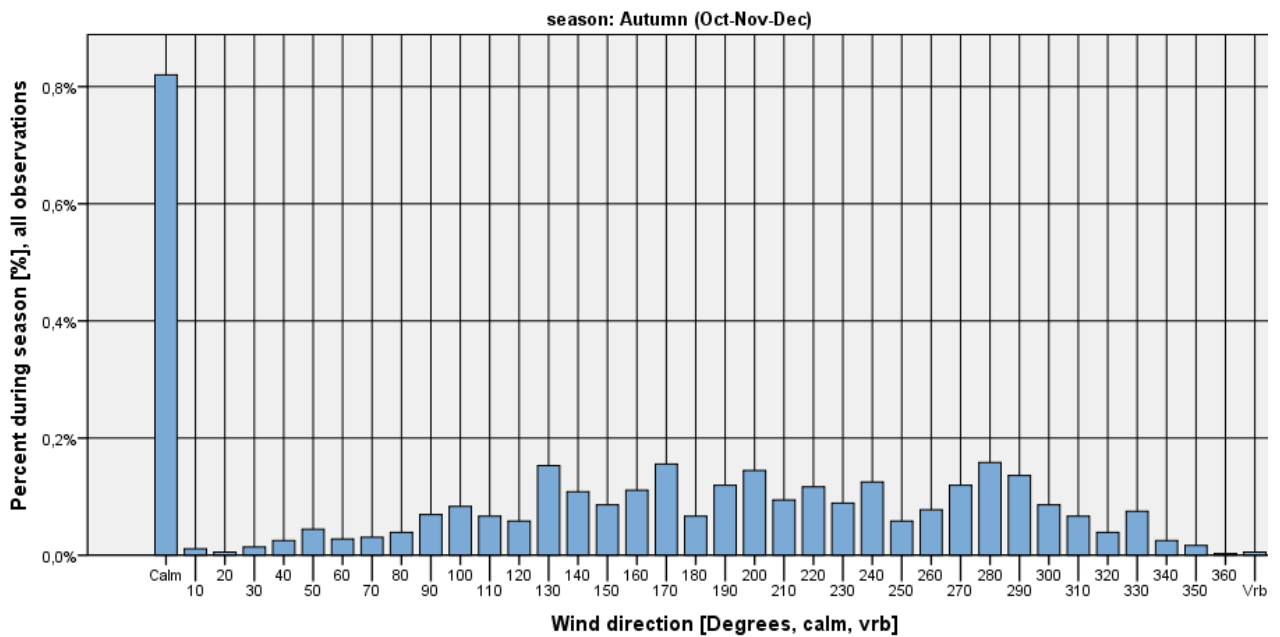


Figure 9

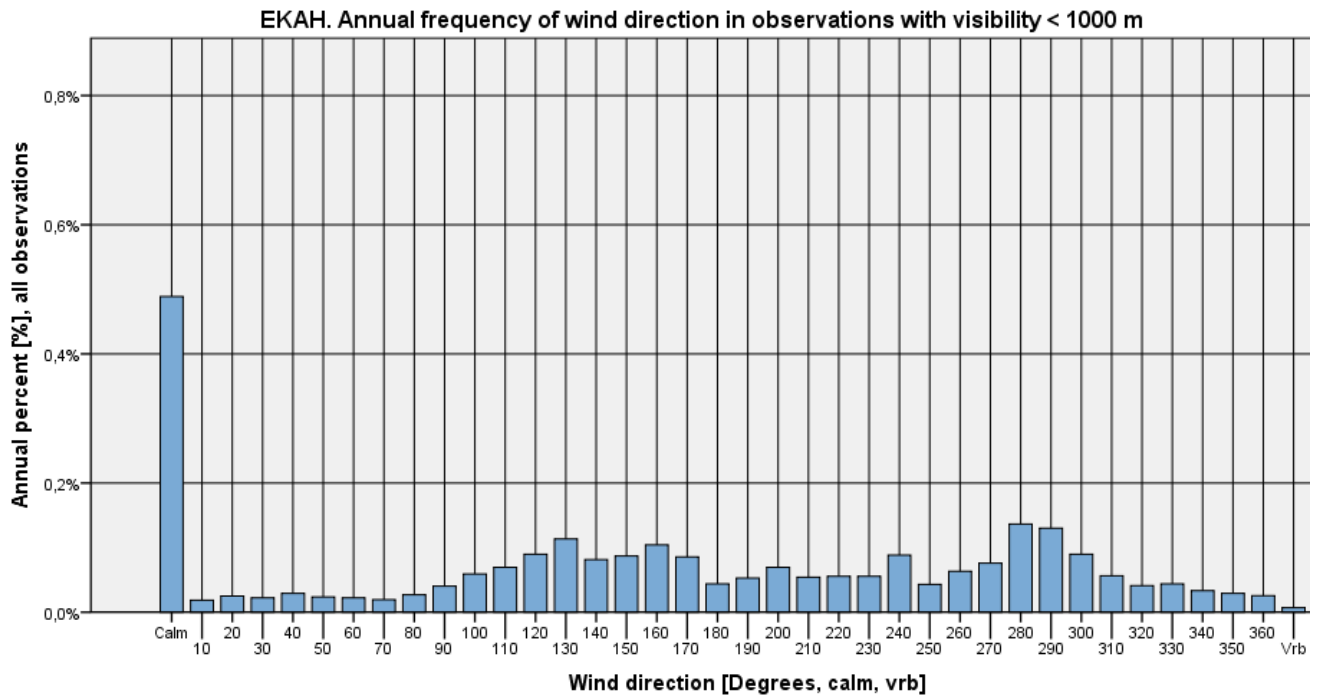


Figure 10



Visibility < 1000 m and wind speed <= 5 kts

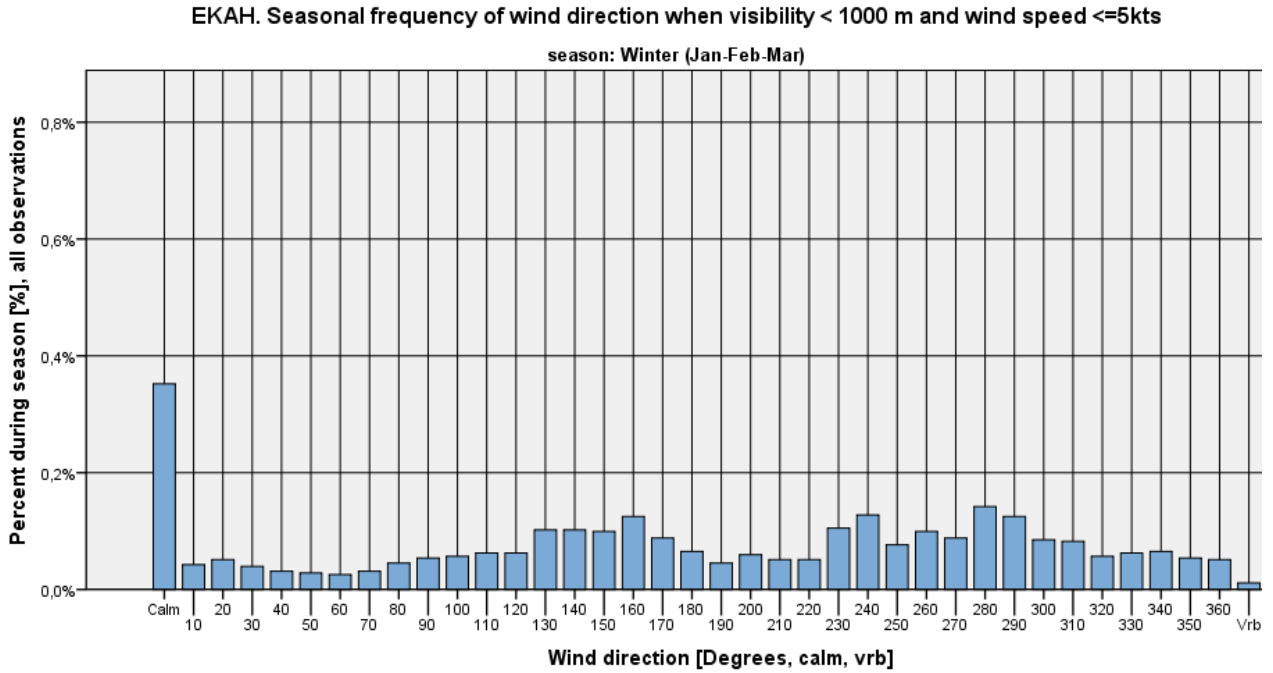


Figure 11

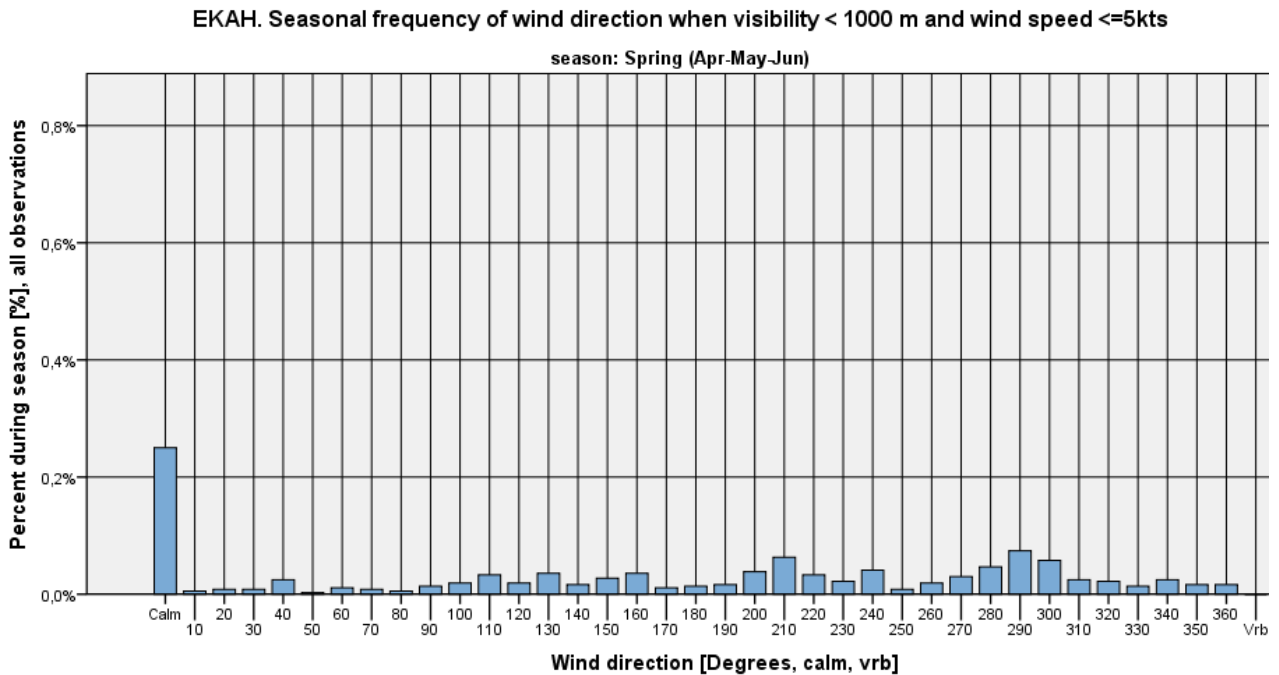


Figure 12

EKAH. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

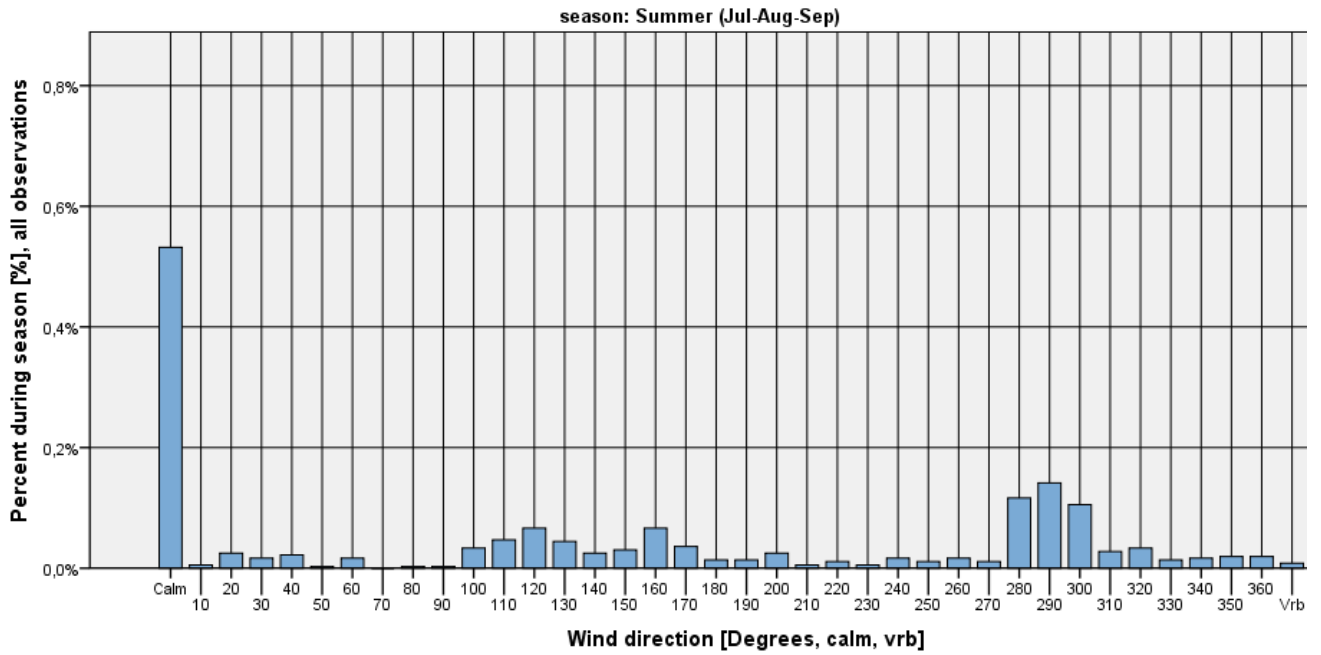


Figure 13

EKAH. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

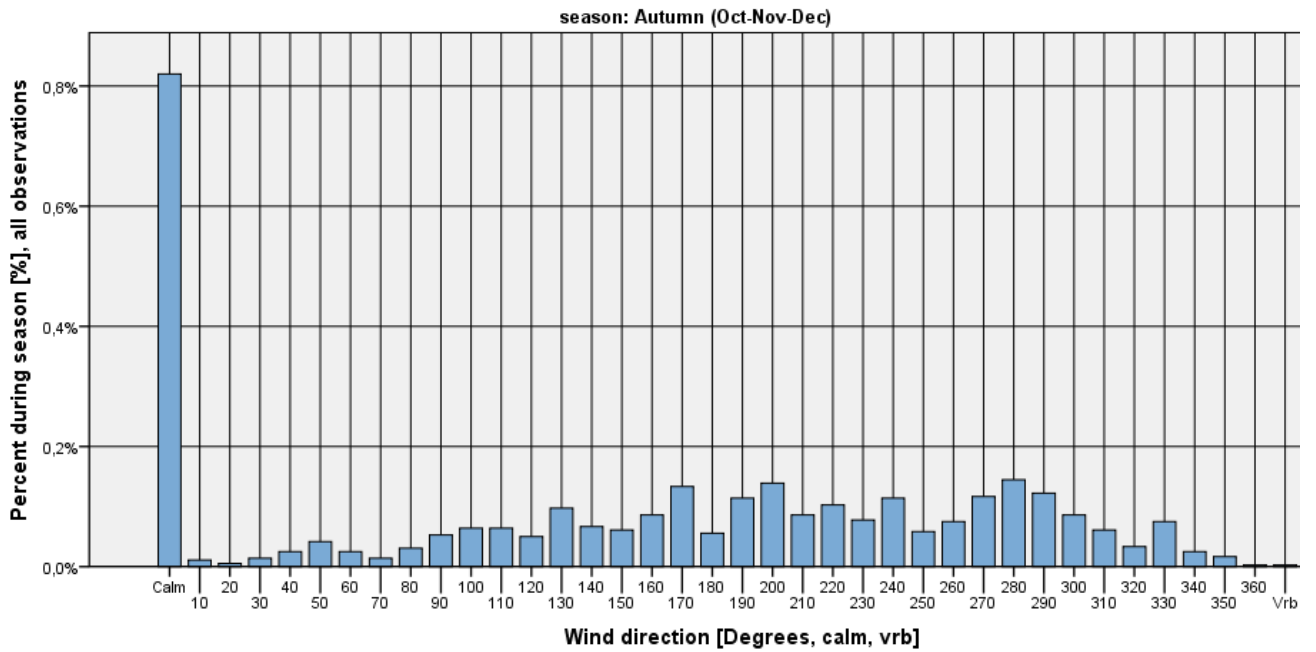


Figure 14

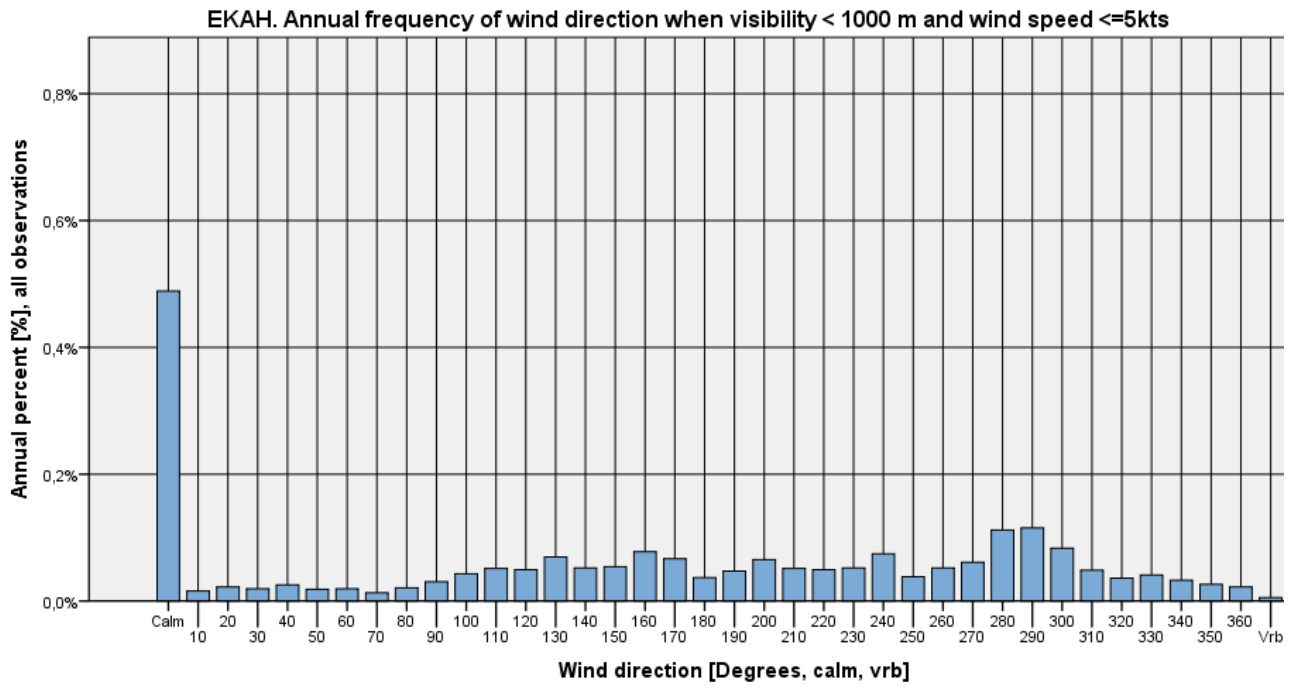


Figure 15



Visibility < 1000 m and wind speed > 5 kts

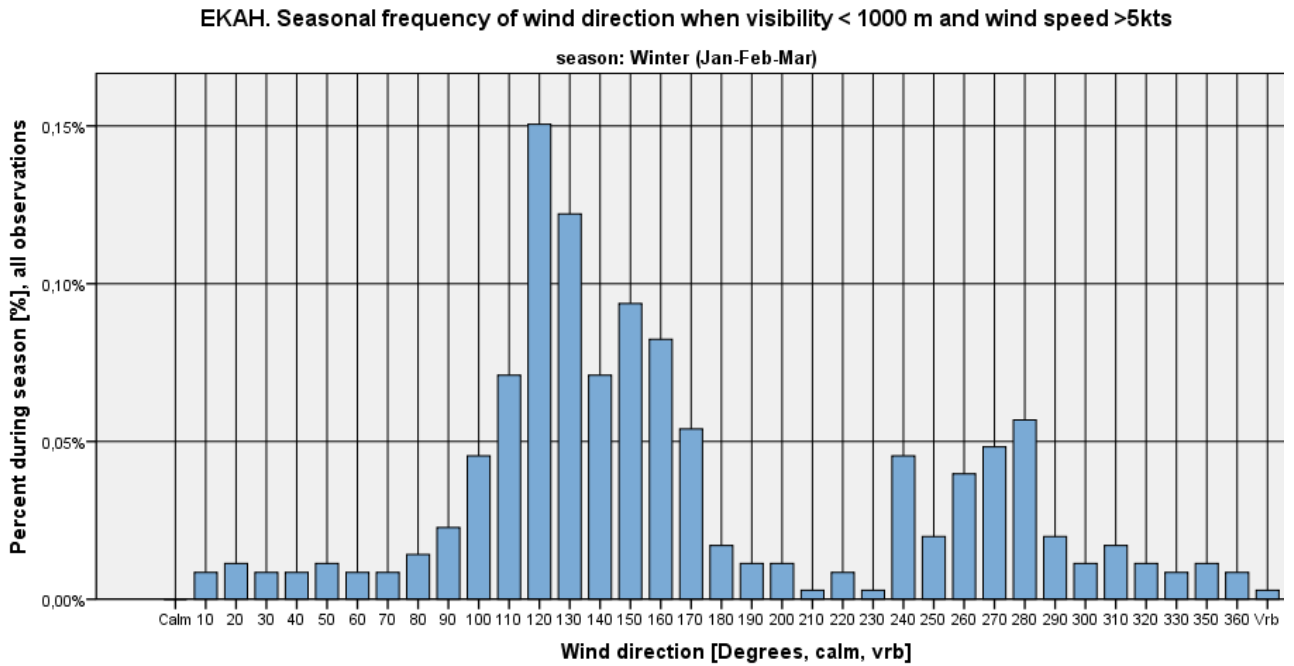


Figure 16

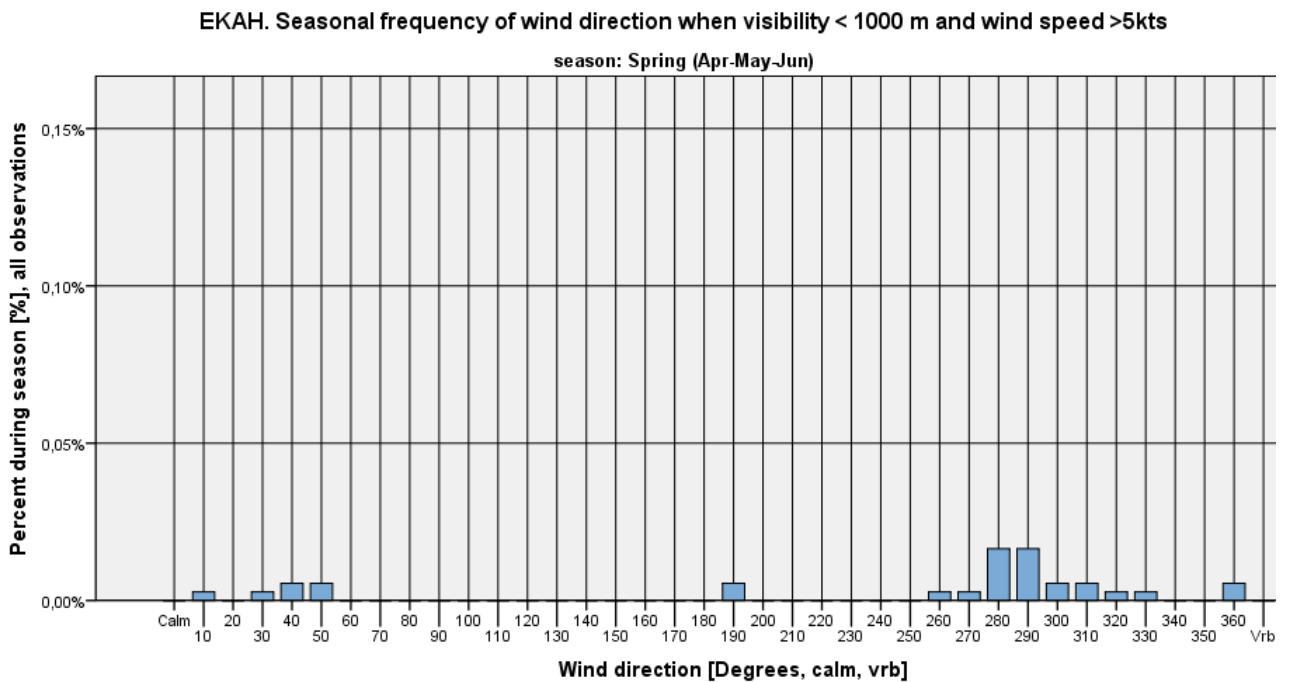


Figure 17



EKAH. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

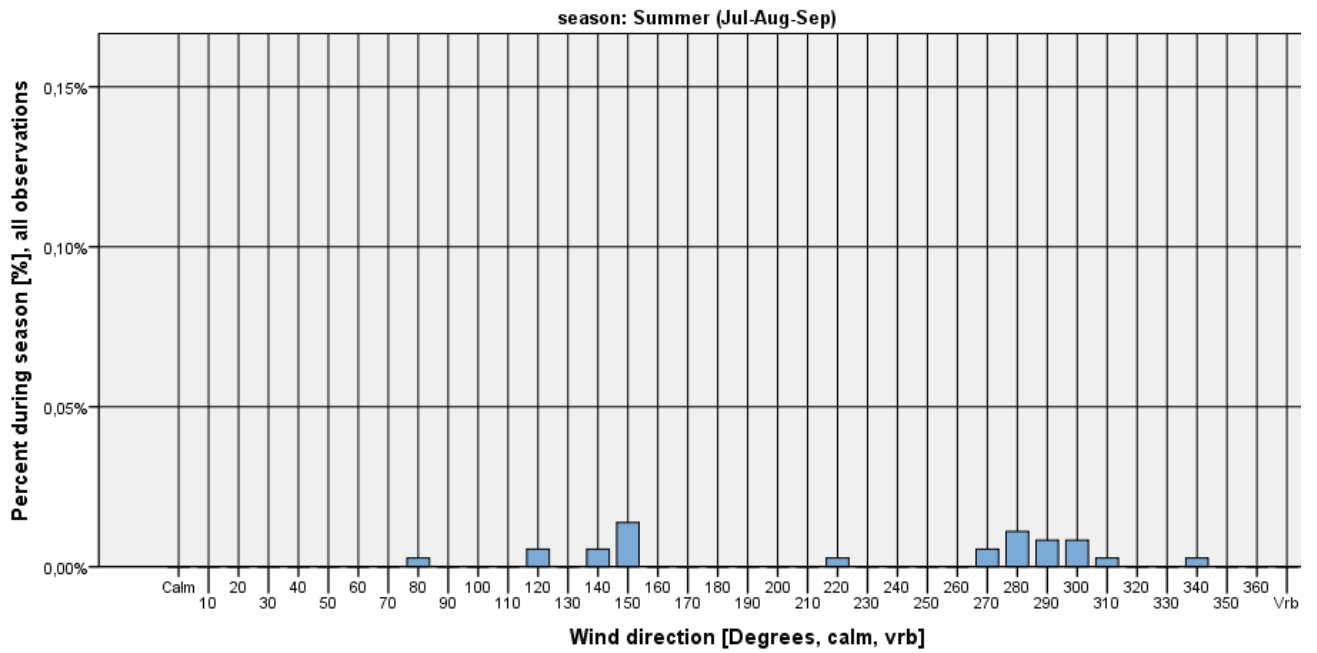


Figure 18

EKAH. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

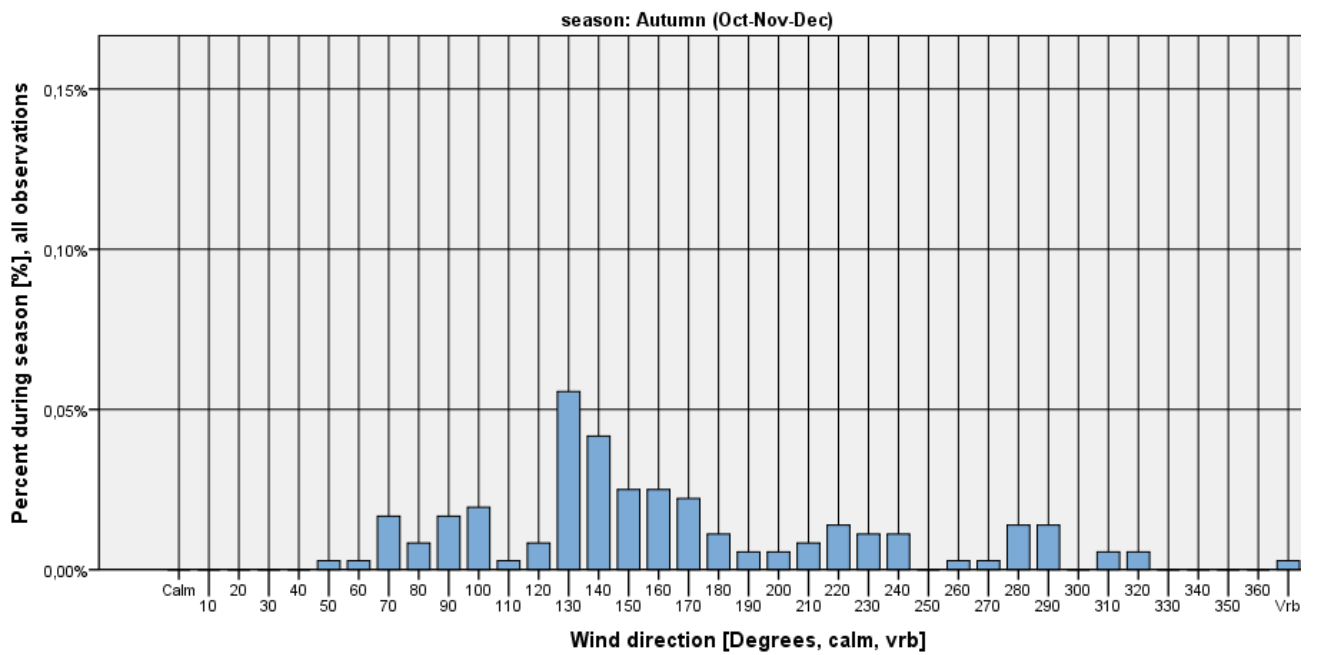


Figure 19

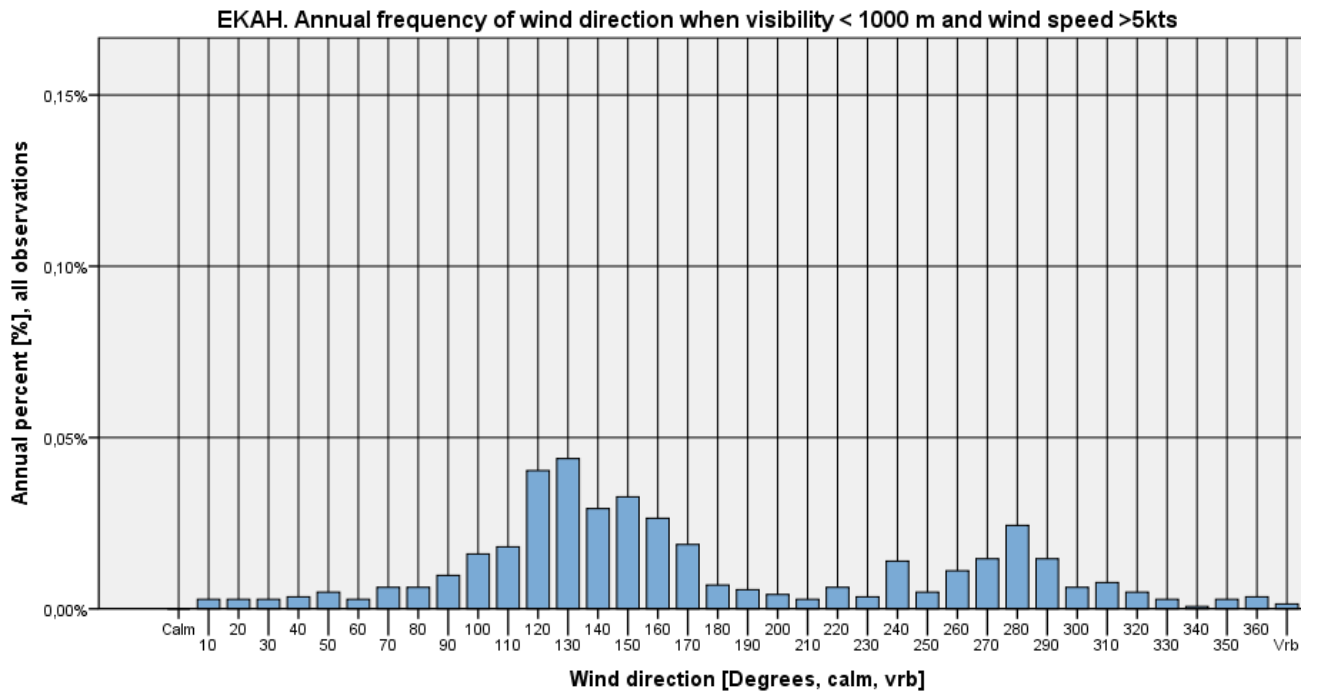


Figure 20



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

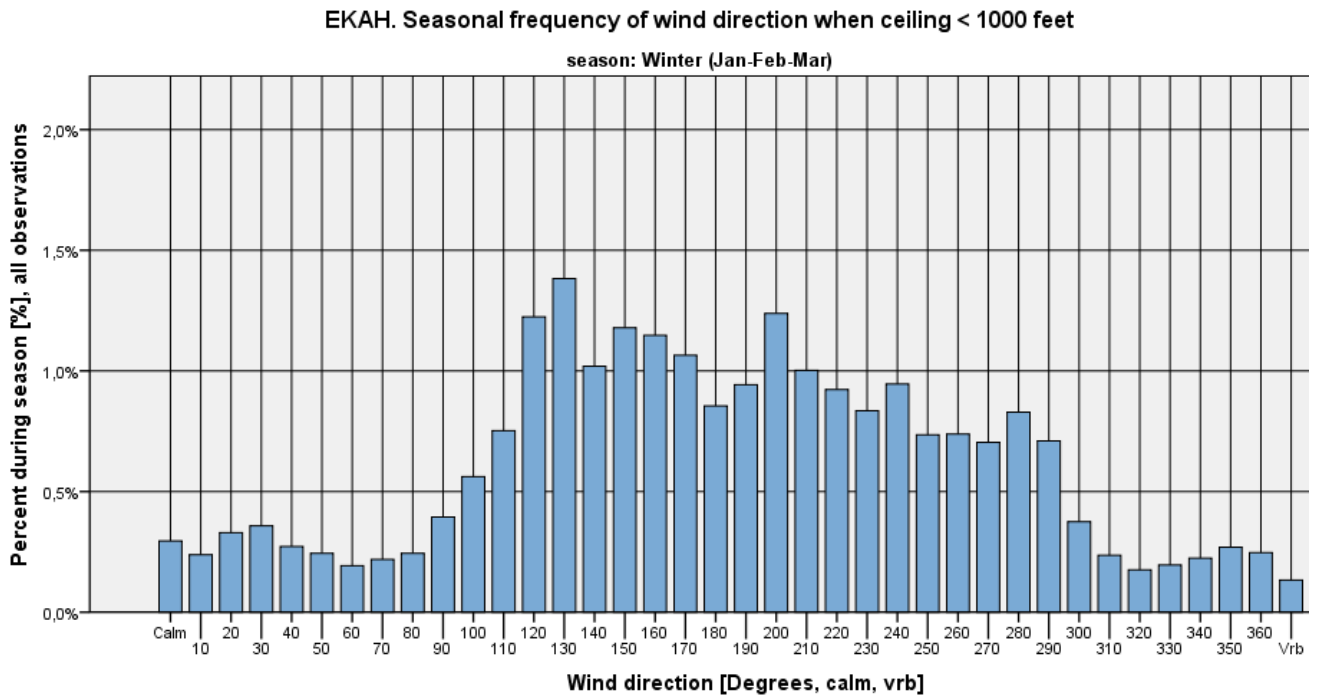


Figure 21

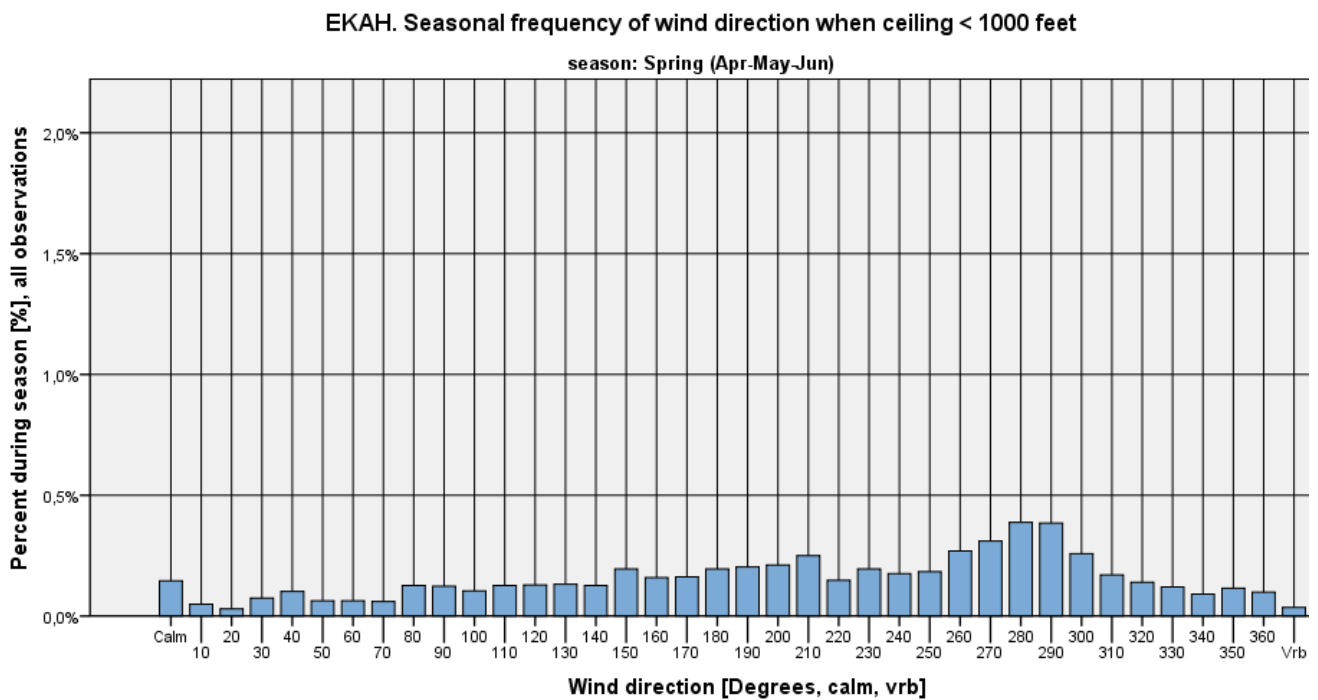


Figure 22



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

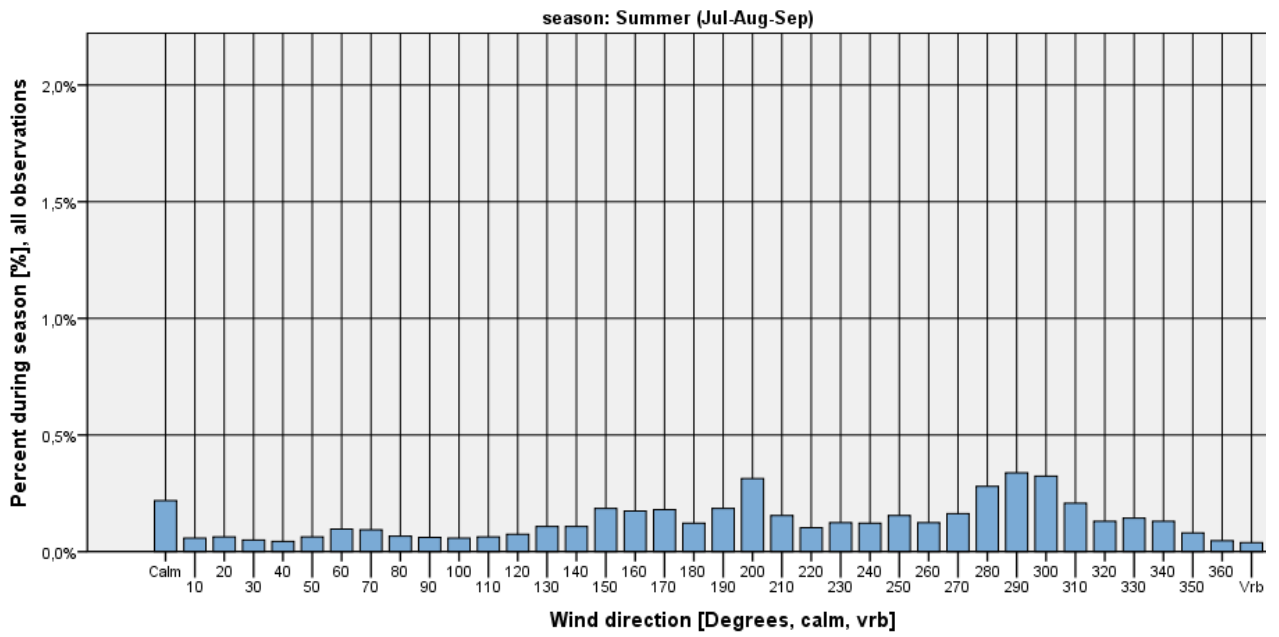


Figure 23

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

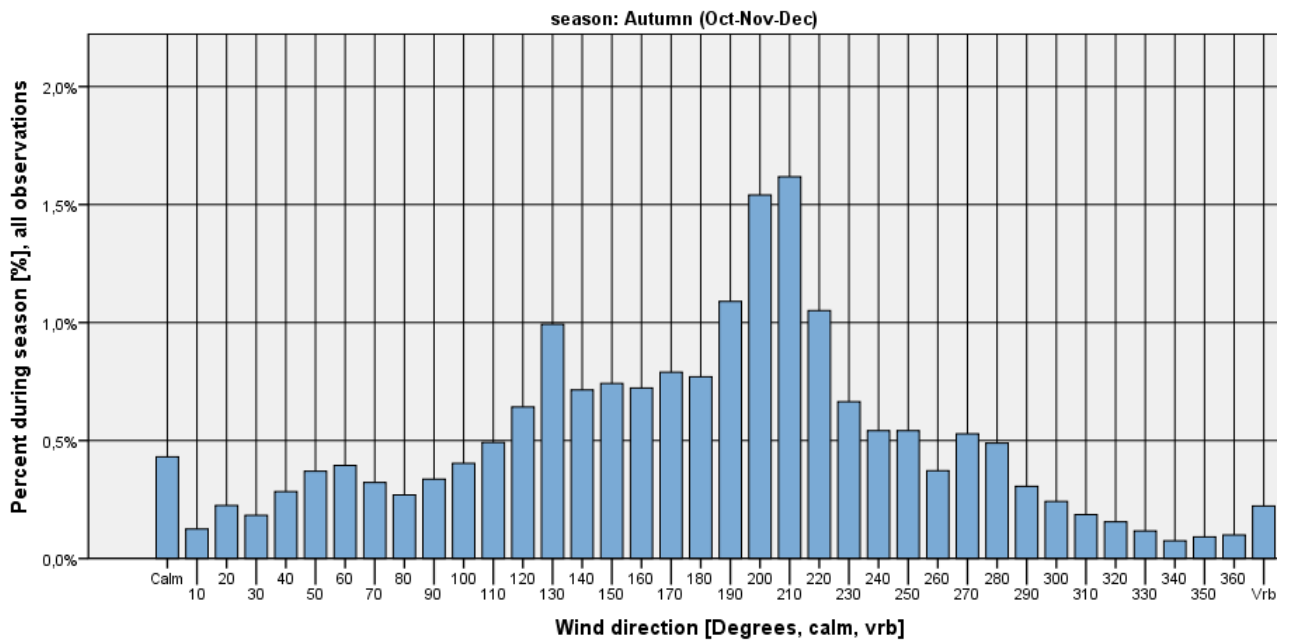


Figure 24

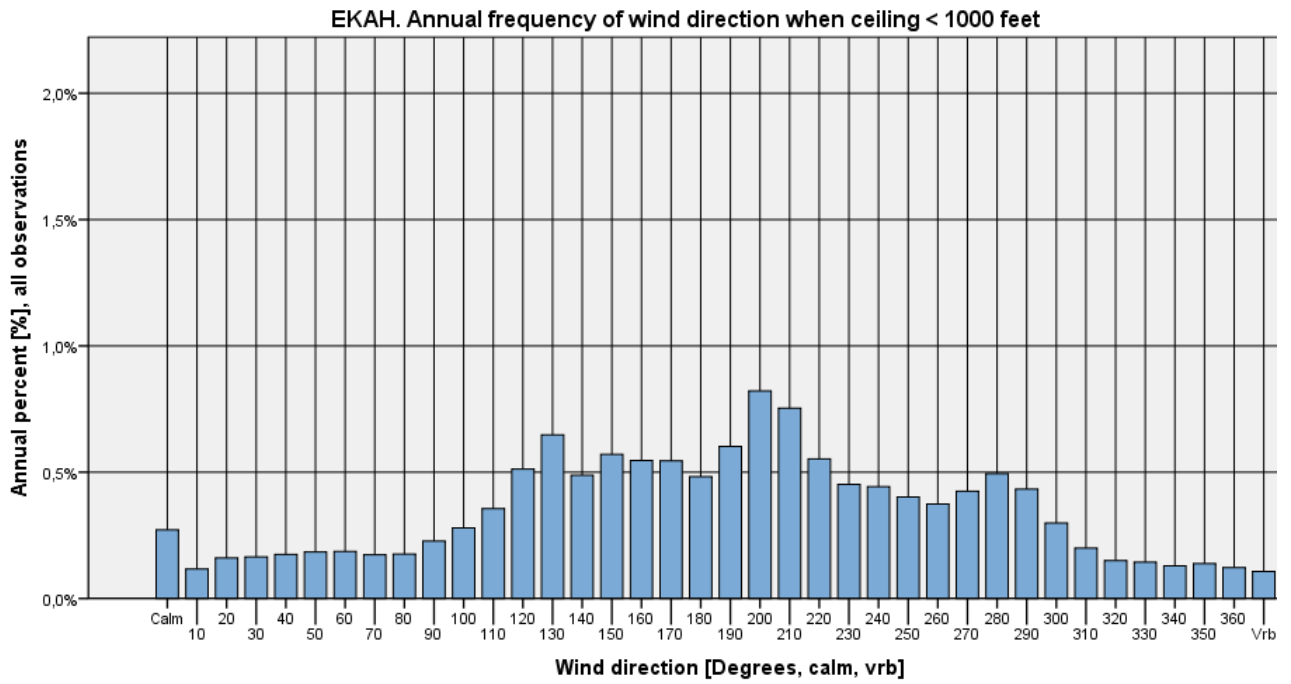


Figure 25



Ceiling < 1000 feet and wind speed ≤ 5 kts

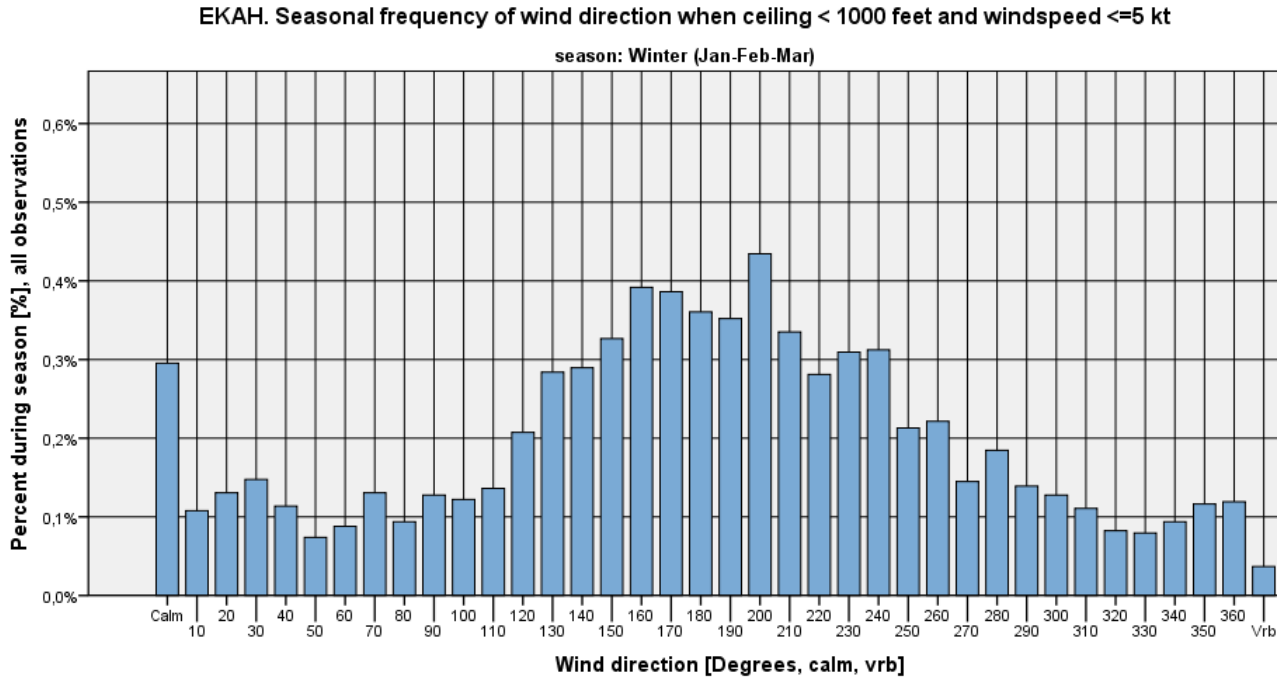


Figure 26

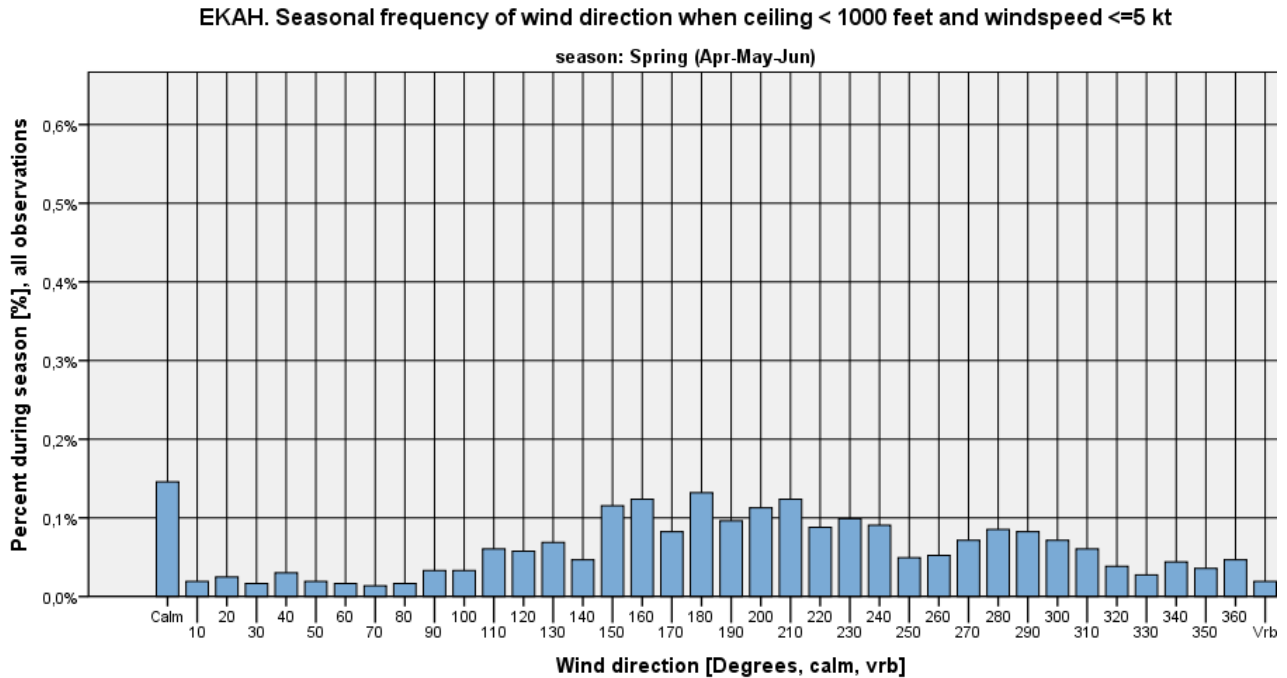


Figure 27



EKAH. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

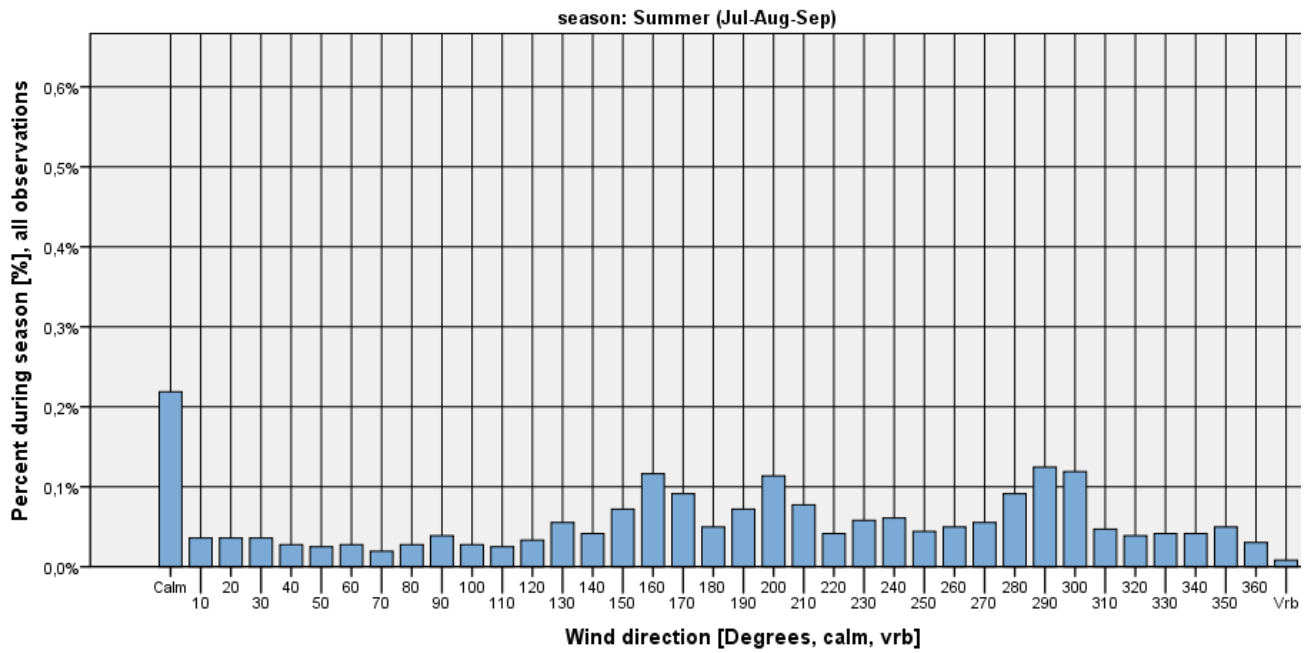


Figure 28

EKAH. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

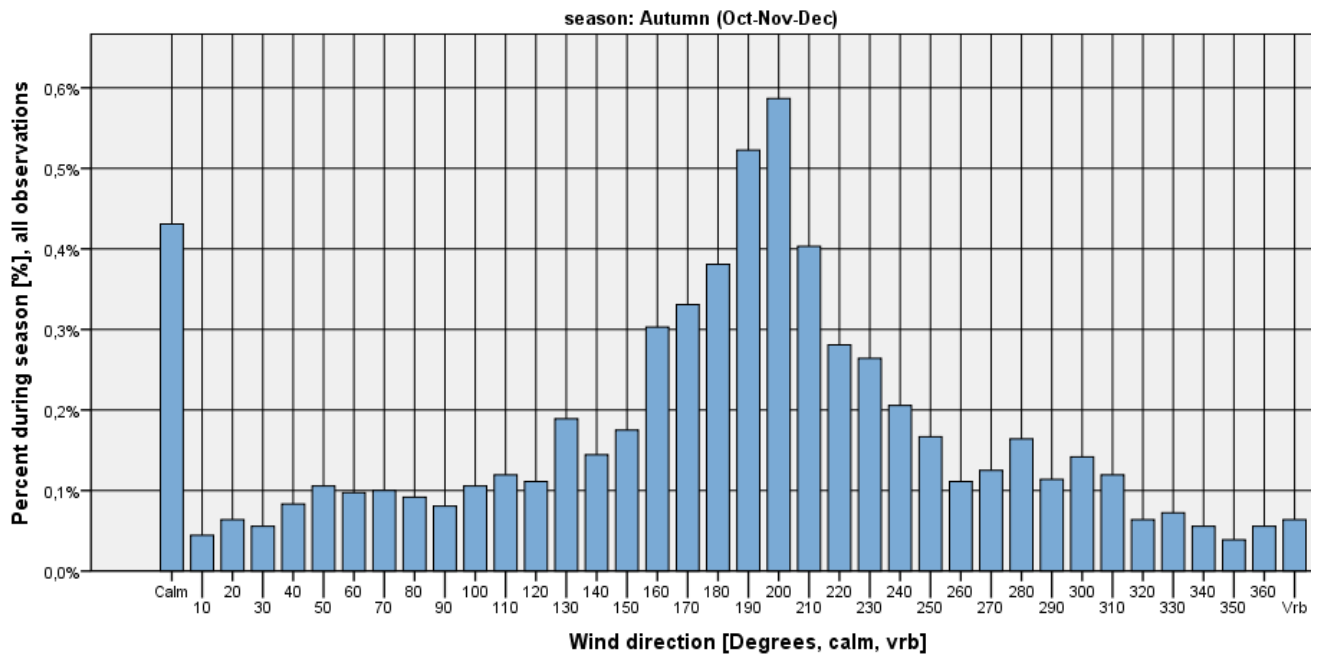


Figure 29

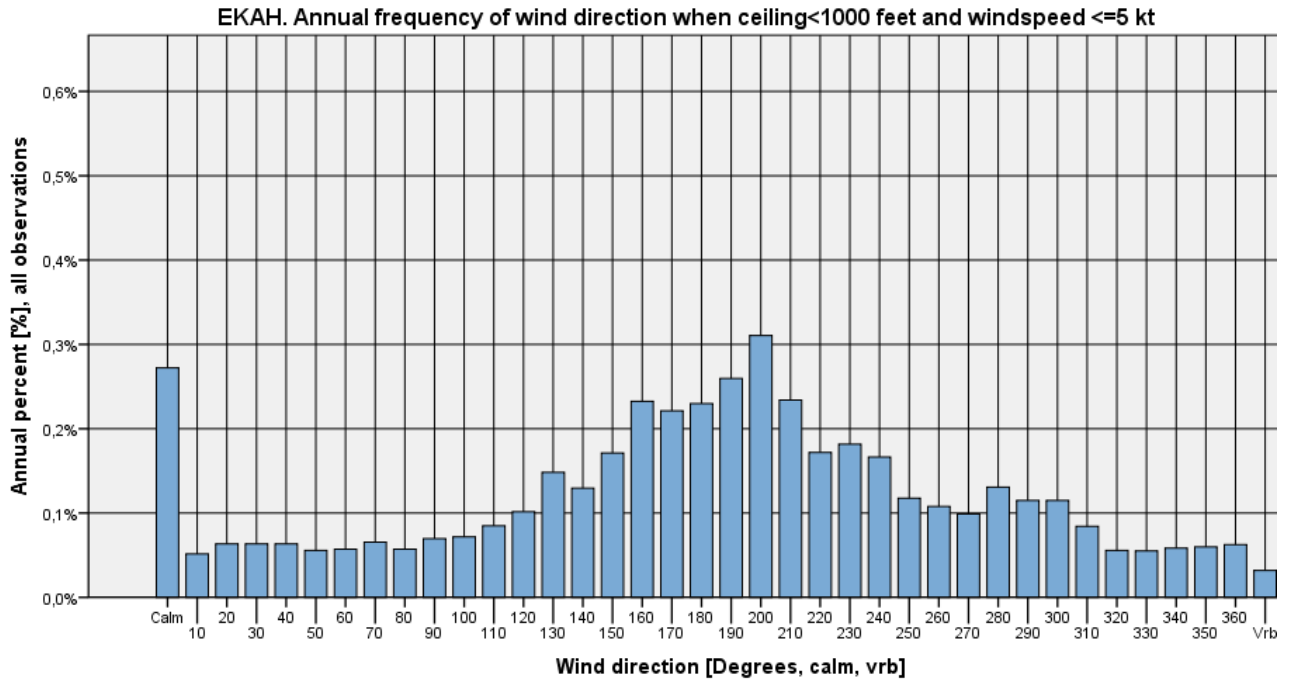


Figure 30



Ceiling < 1000 feet and wind speed > 5 kts

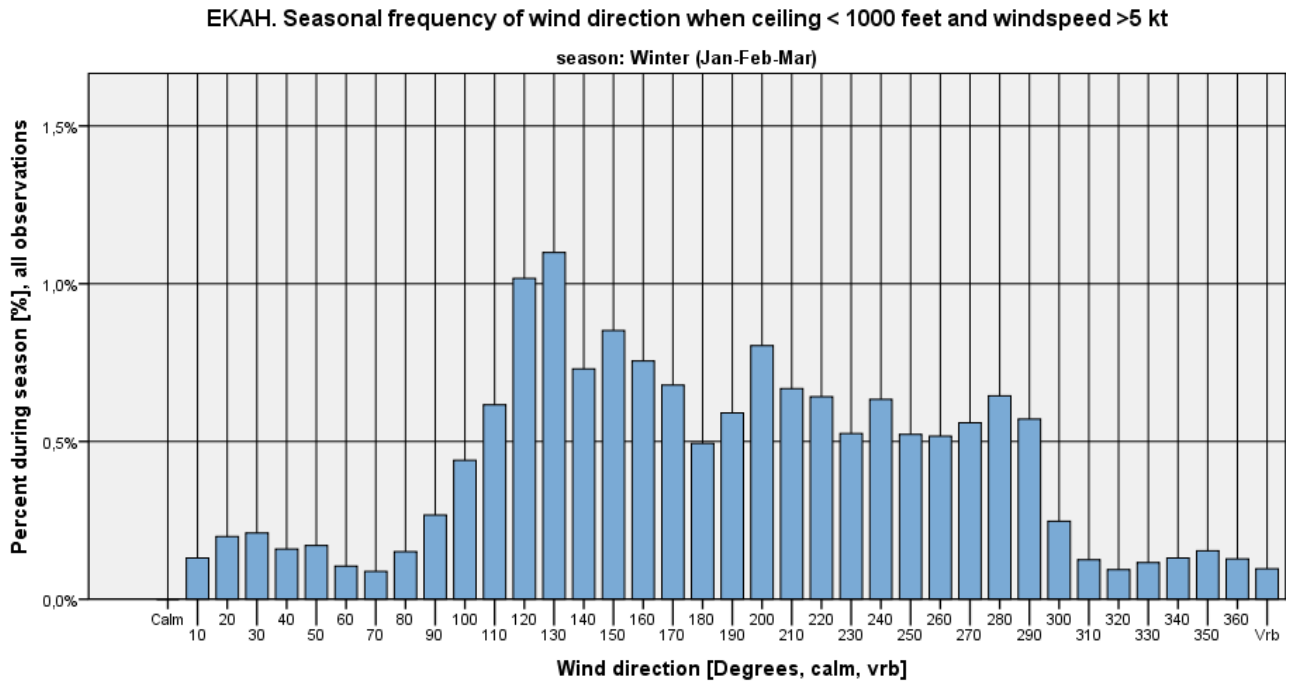


Figure 31

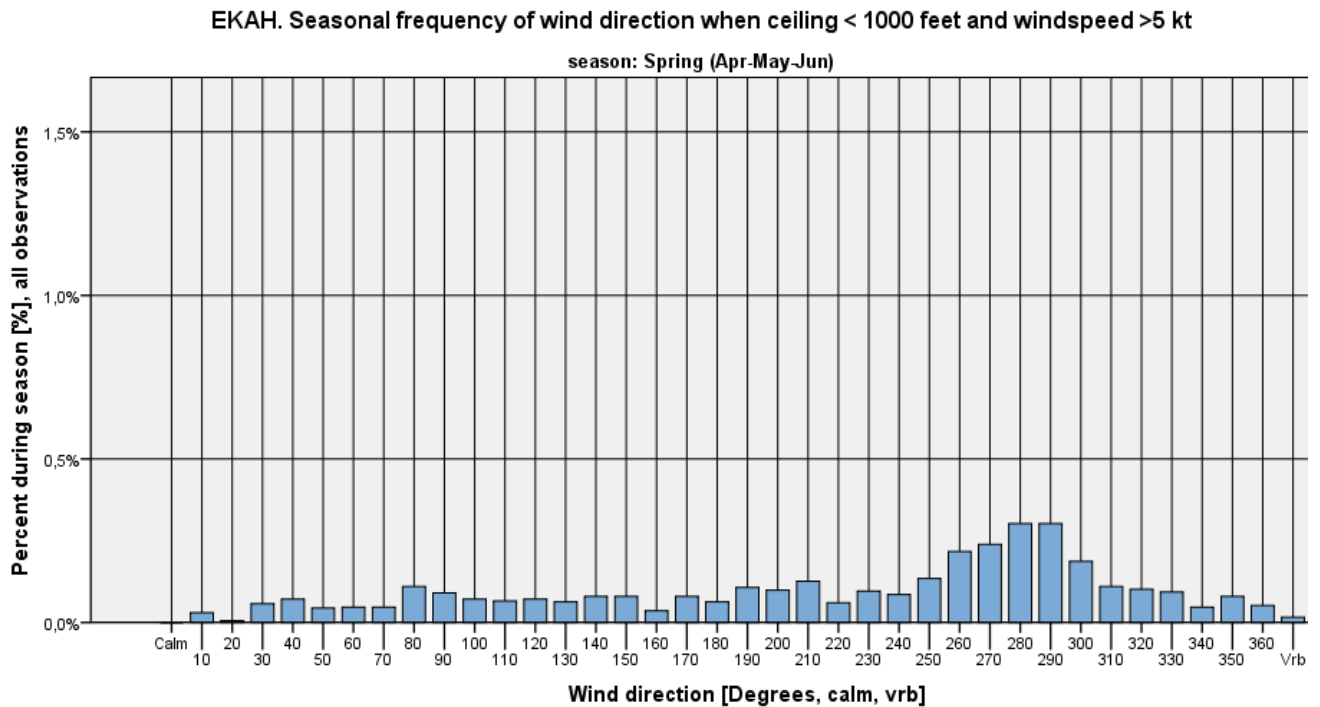


Figure 32



EKAH. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

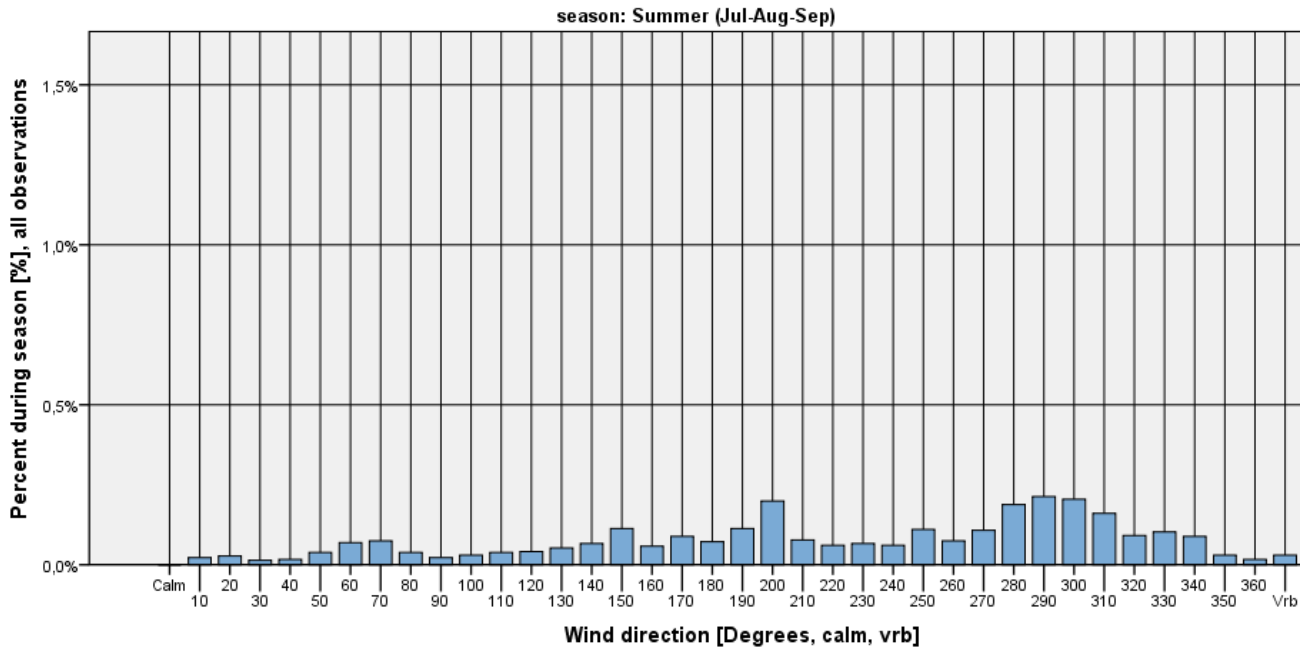


Figure 33

EKAH. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

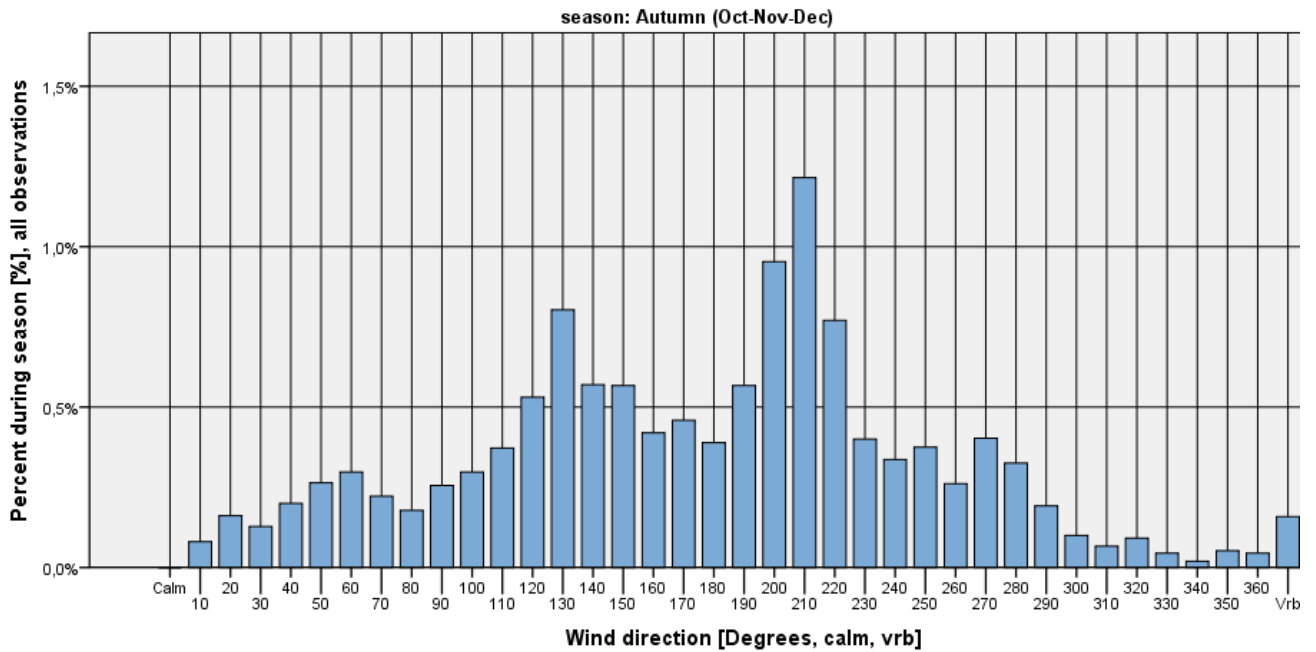


Figure 34

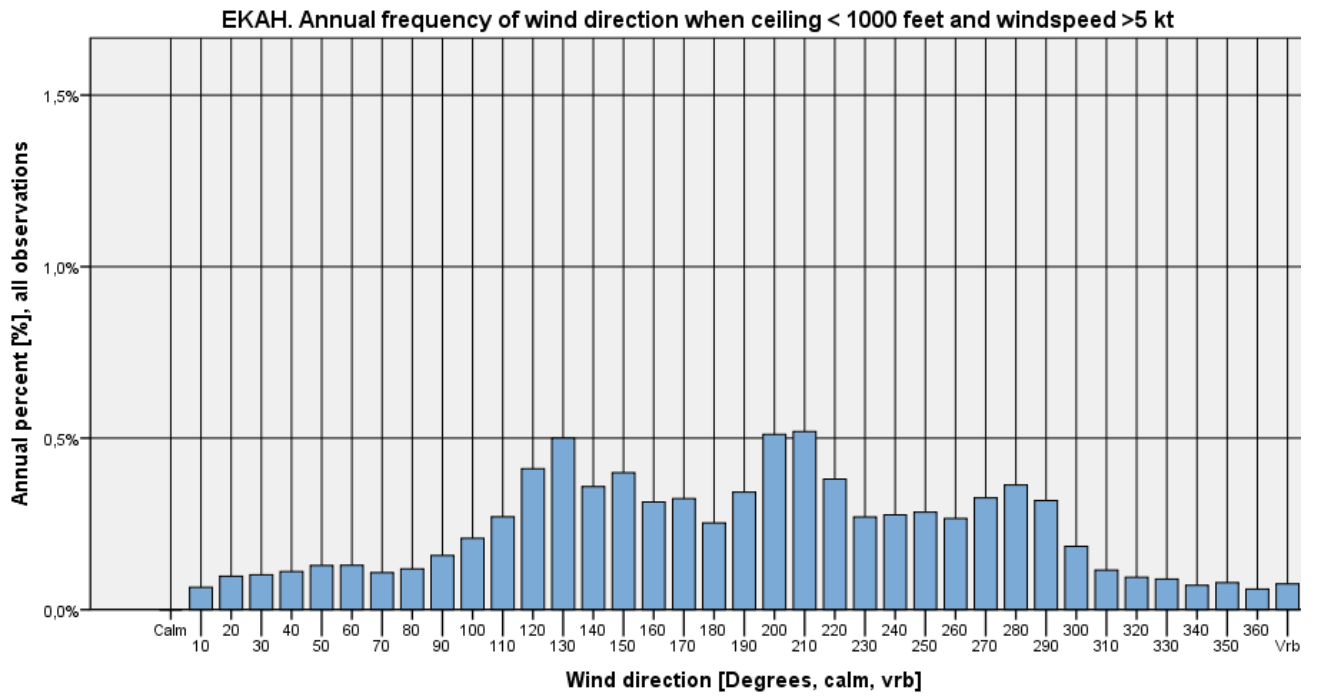


Figure 35



Ceiling < 500 feet

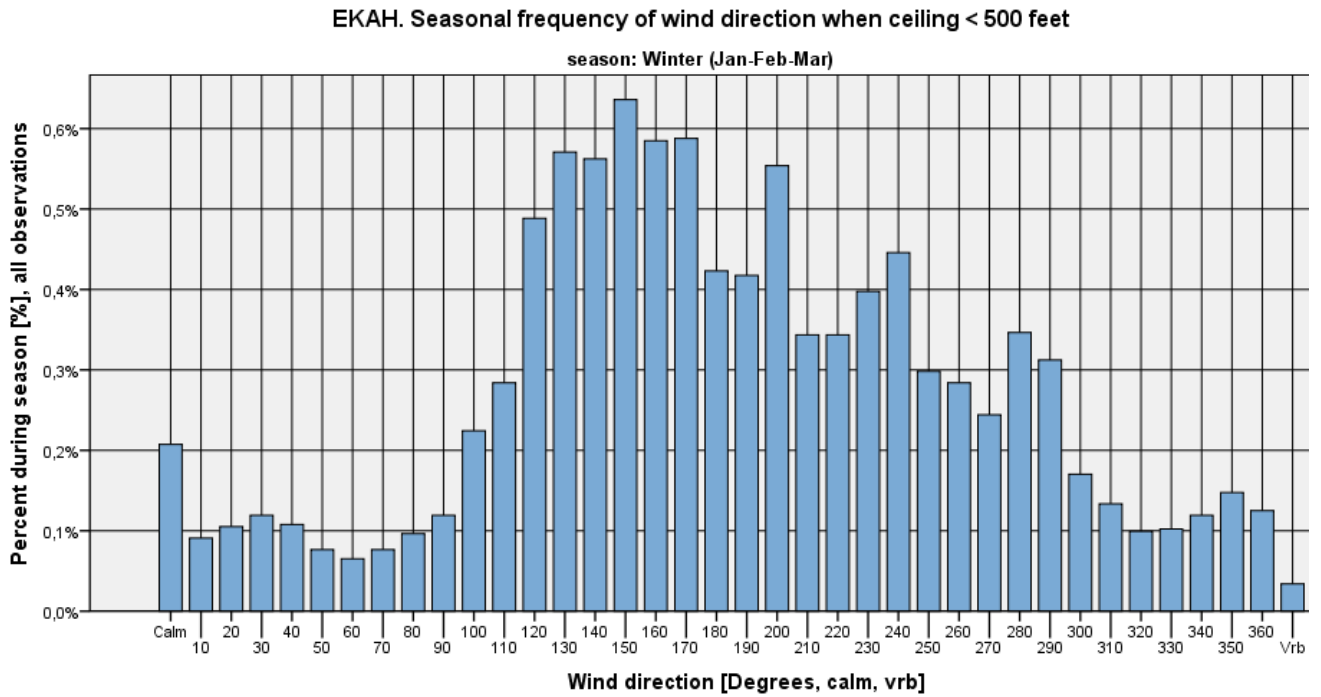


Figure 36

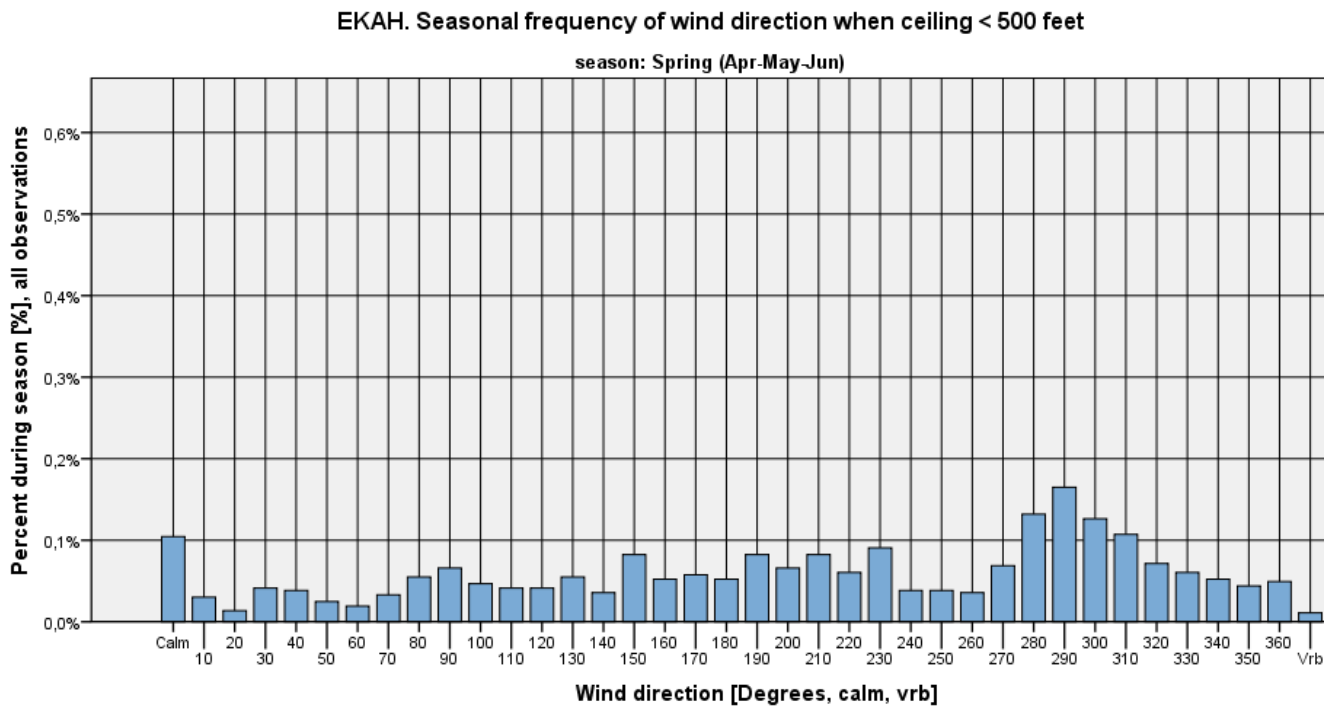


Figure 37



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

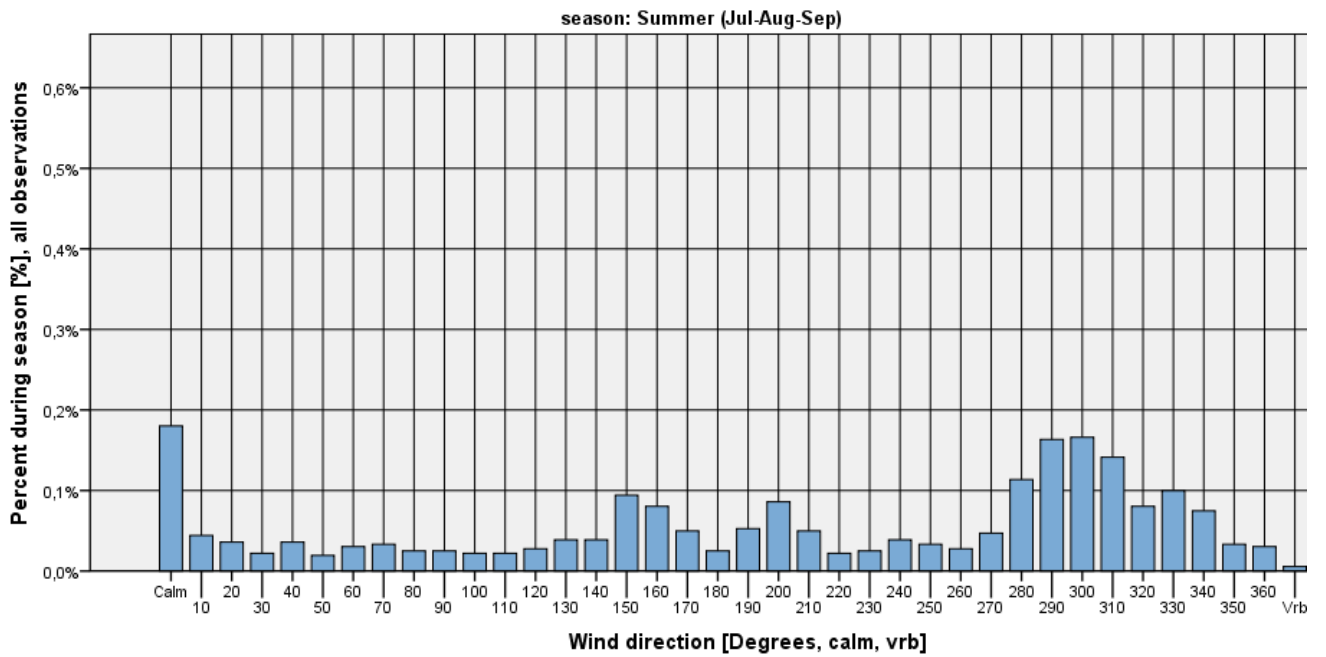


Figure 38

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

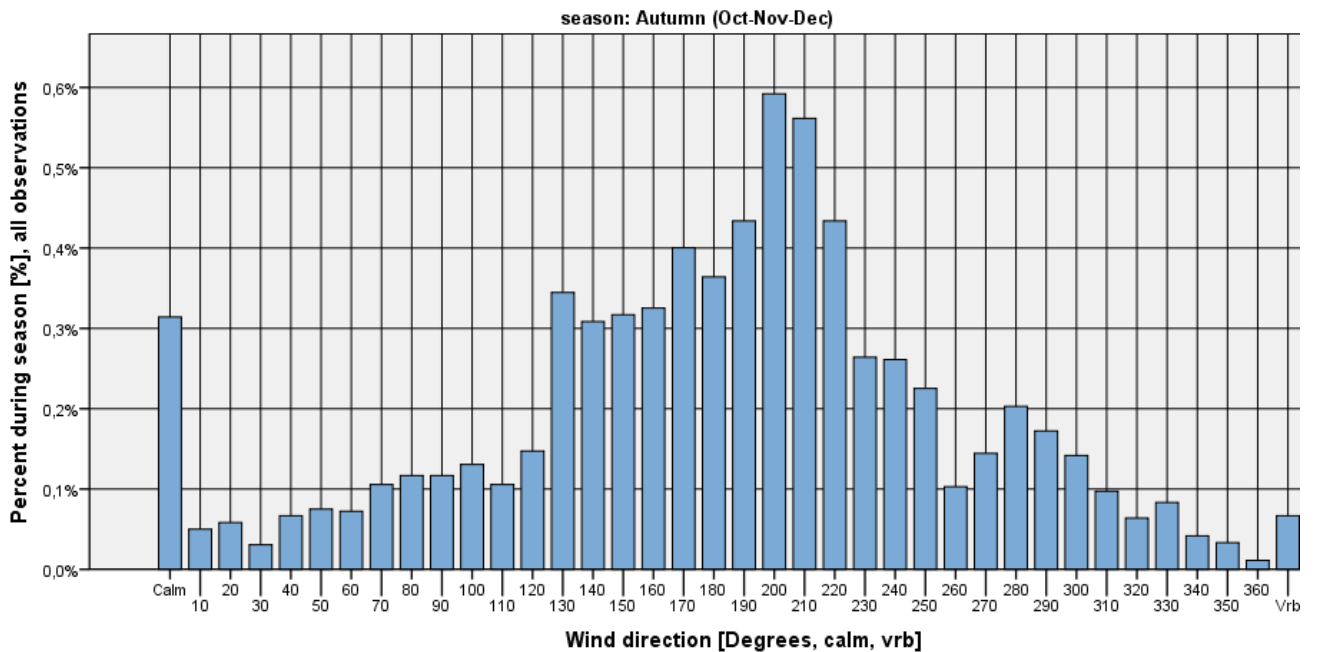


Figure 39

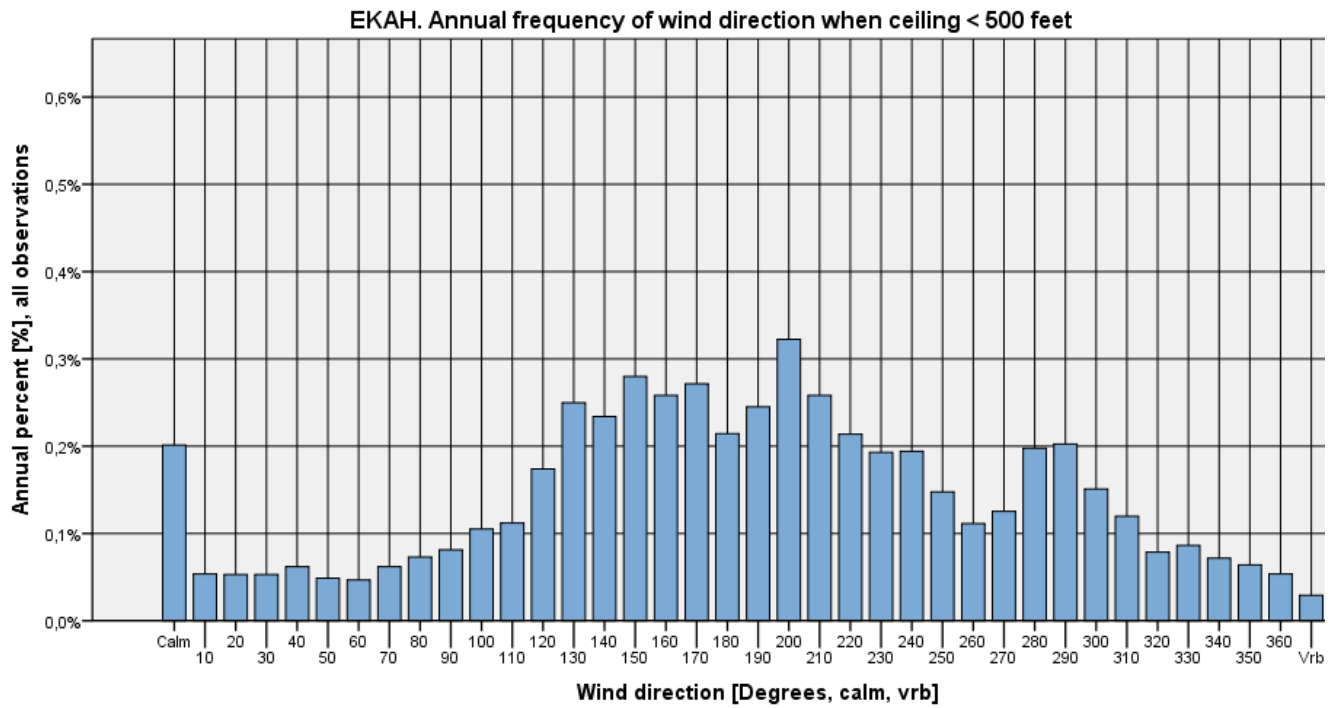


Figure 40



Ceiling < 500 feet and wind speed ≤ 5 kts

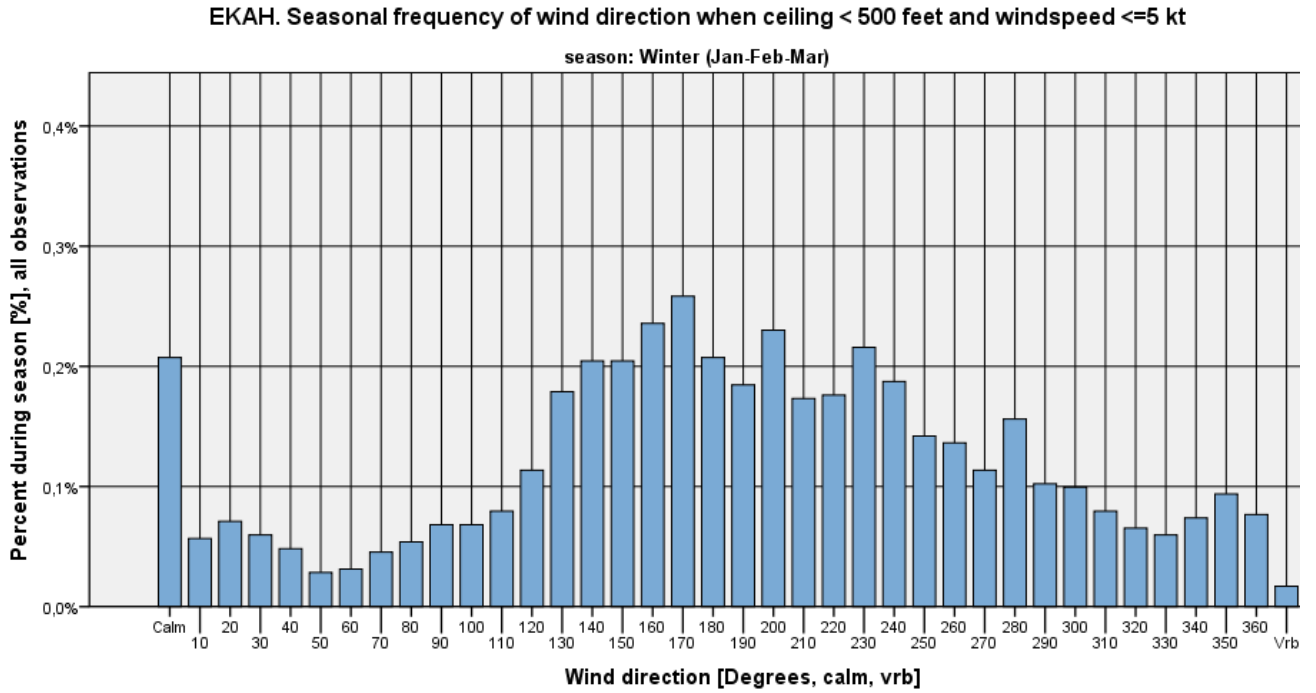


Figure 41

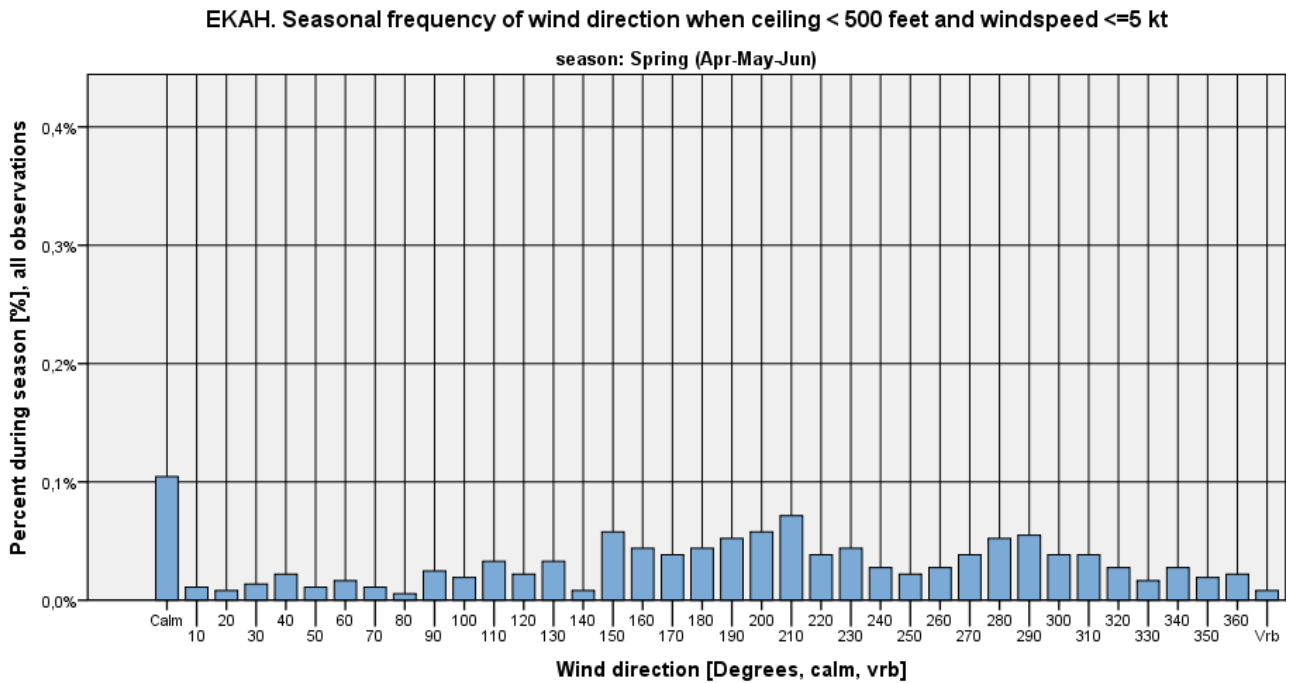


Figure 42



EKAH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

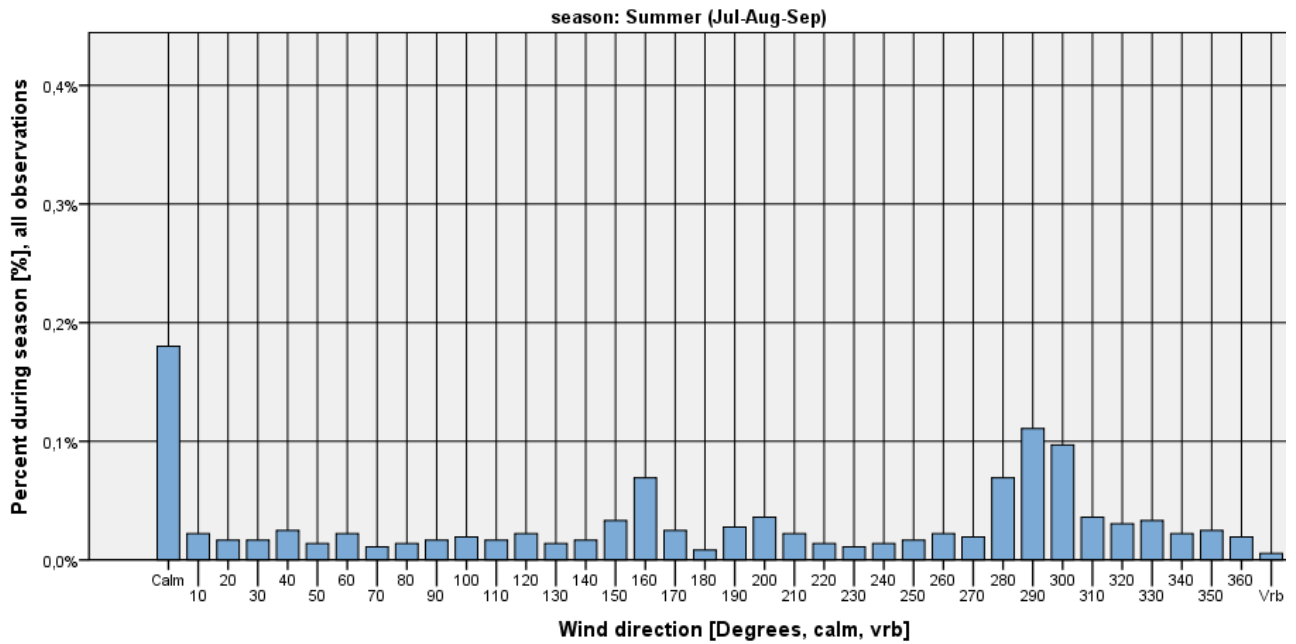


Figure 43

EKAH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

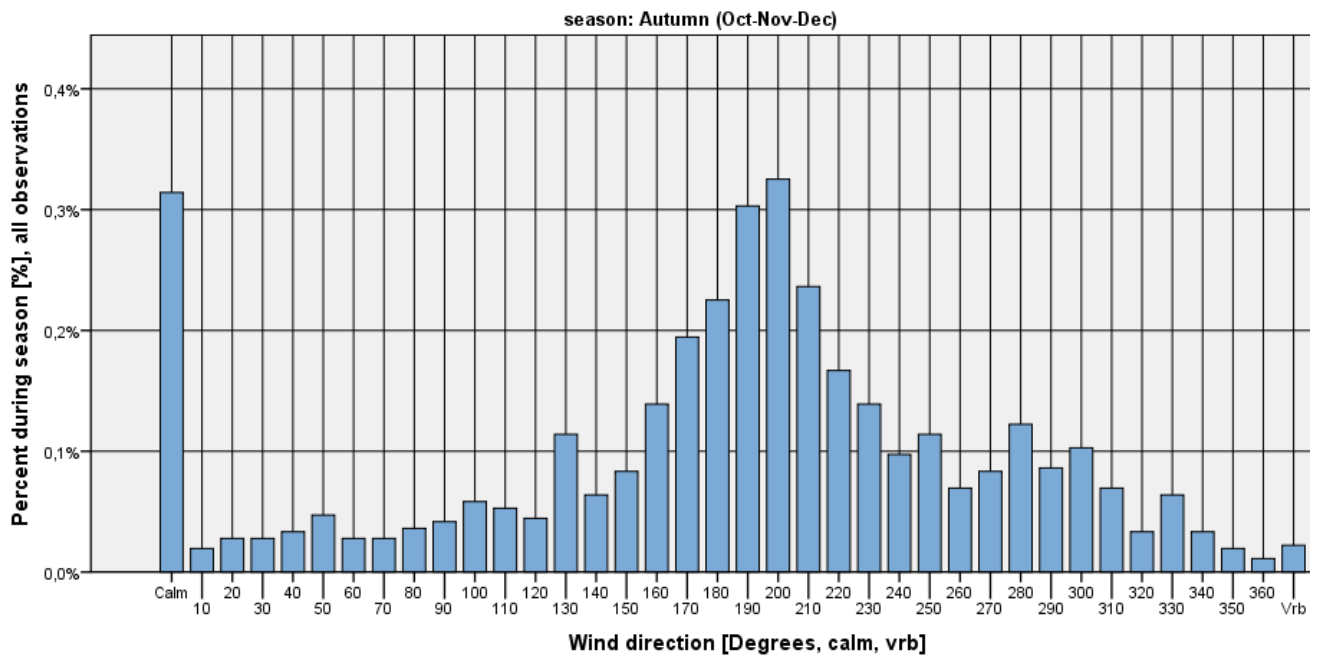


Figure 44

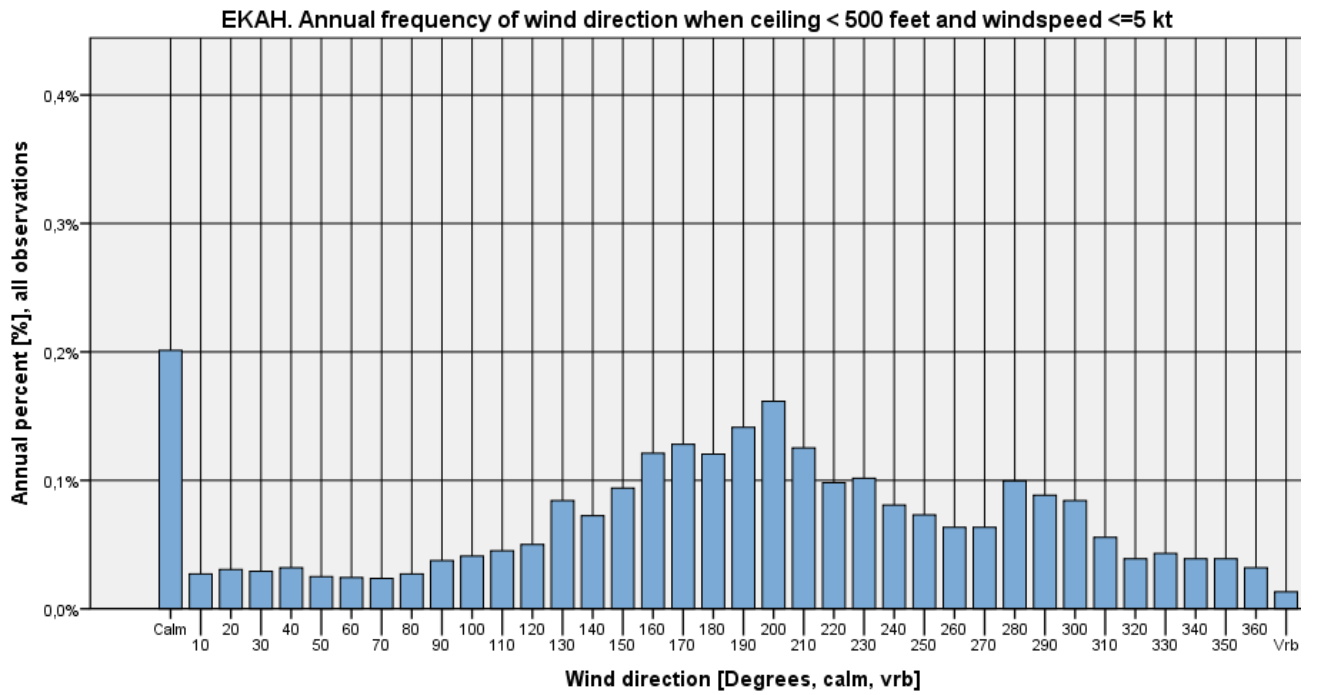


Figure 45



Ceiling < 500 feet and wind speed > 5 kts

EKAH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

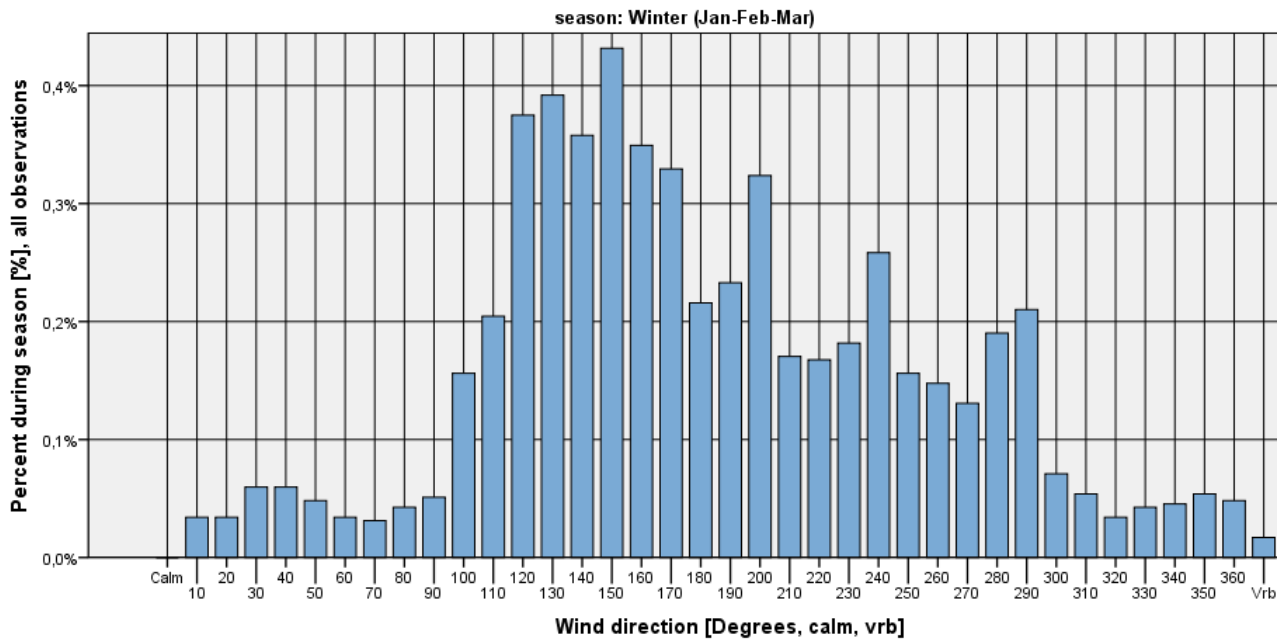


Figure 46

EKAH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

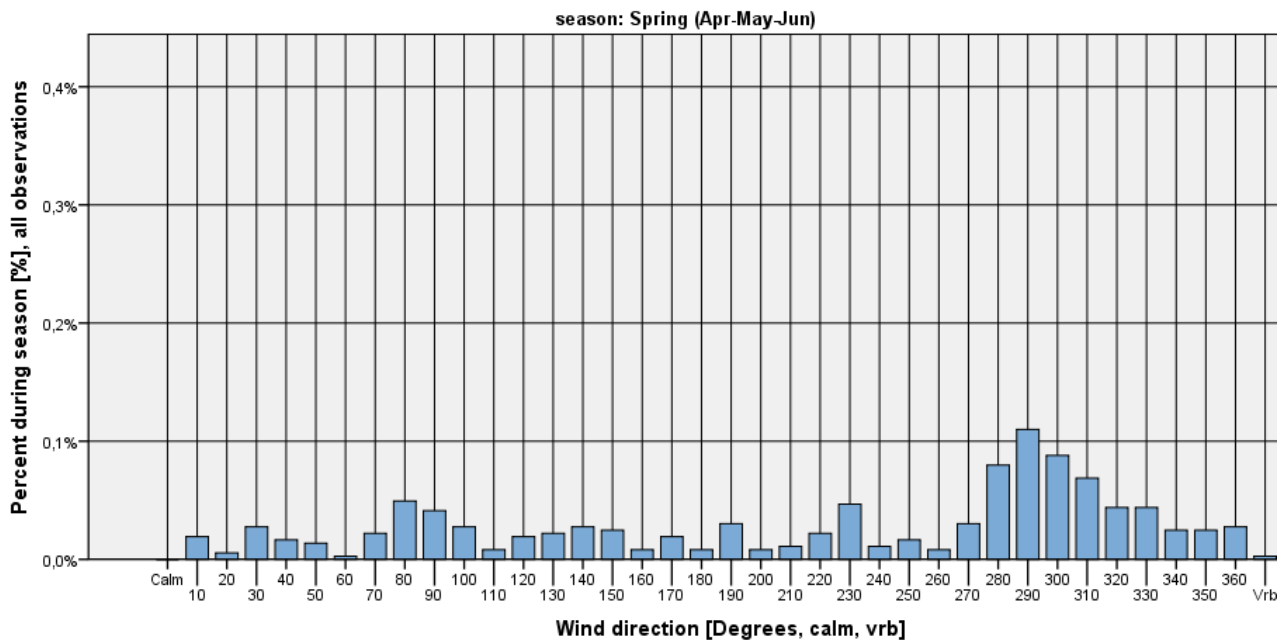


Figure 47

EKAH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

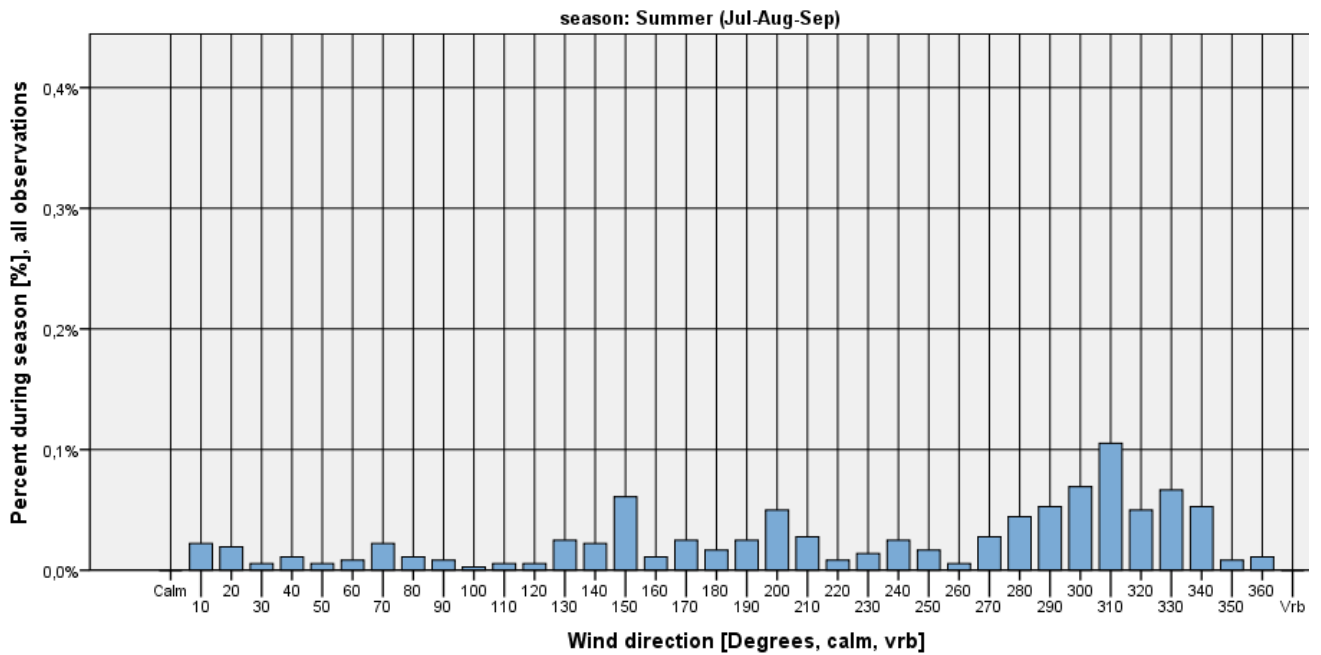


Figure 48

EKAH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

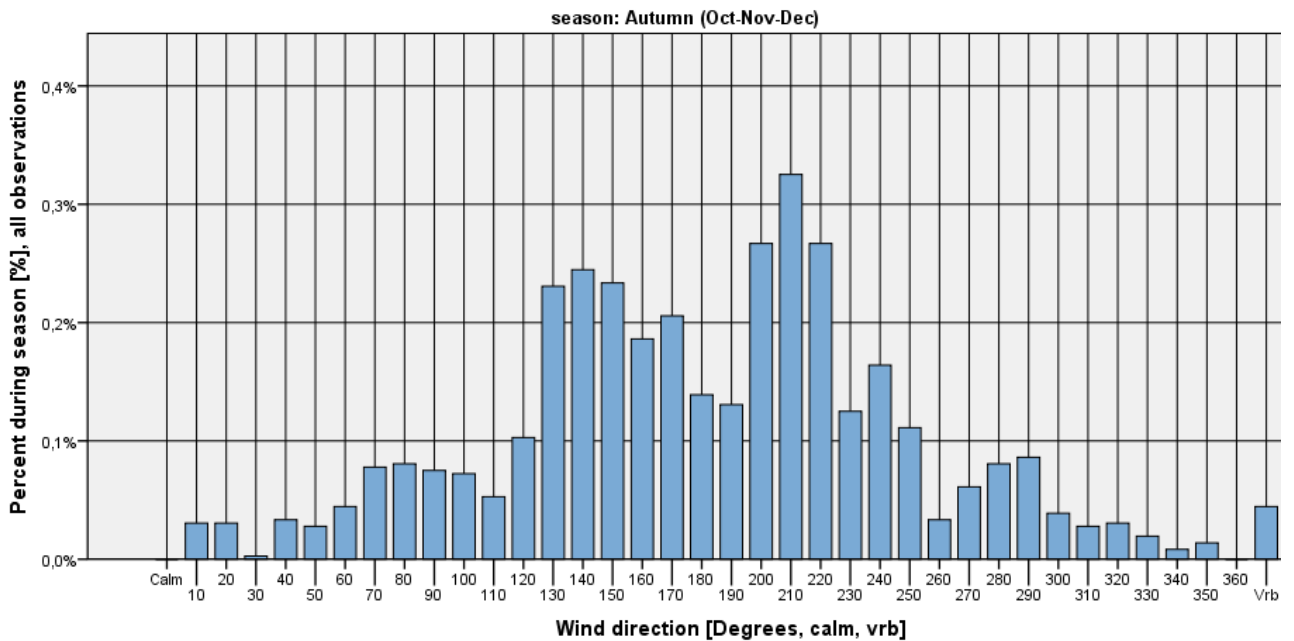


Figure 49

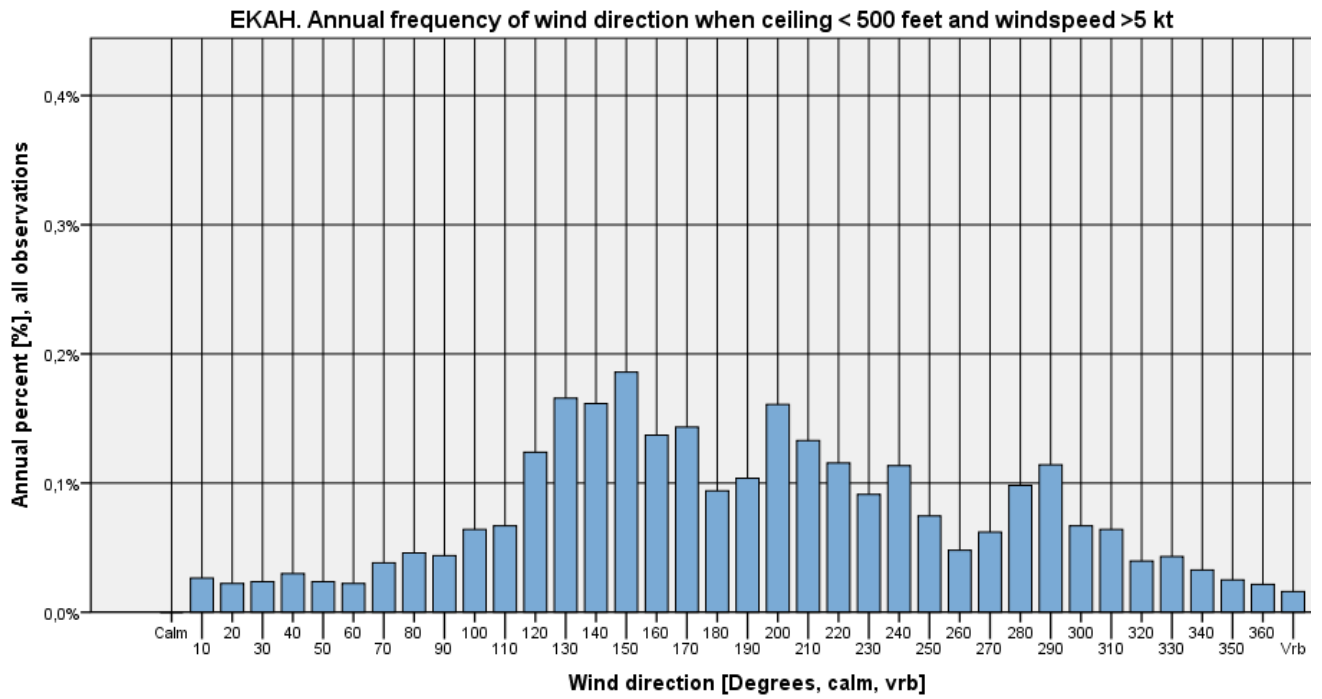


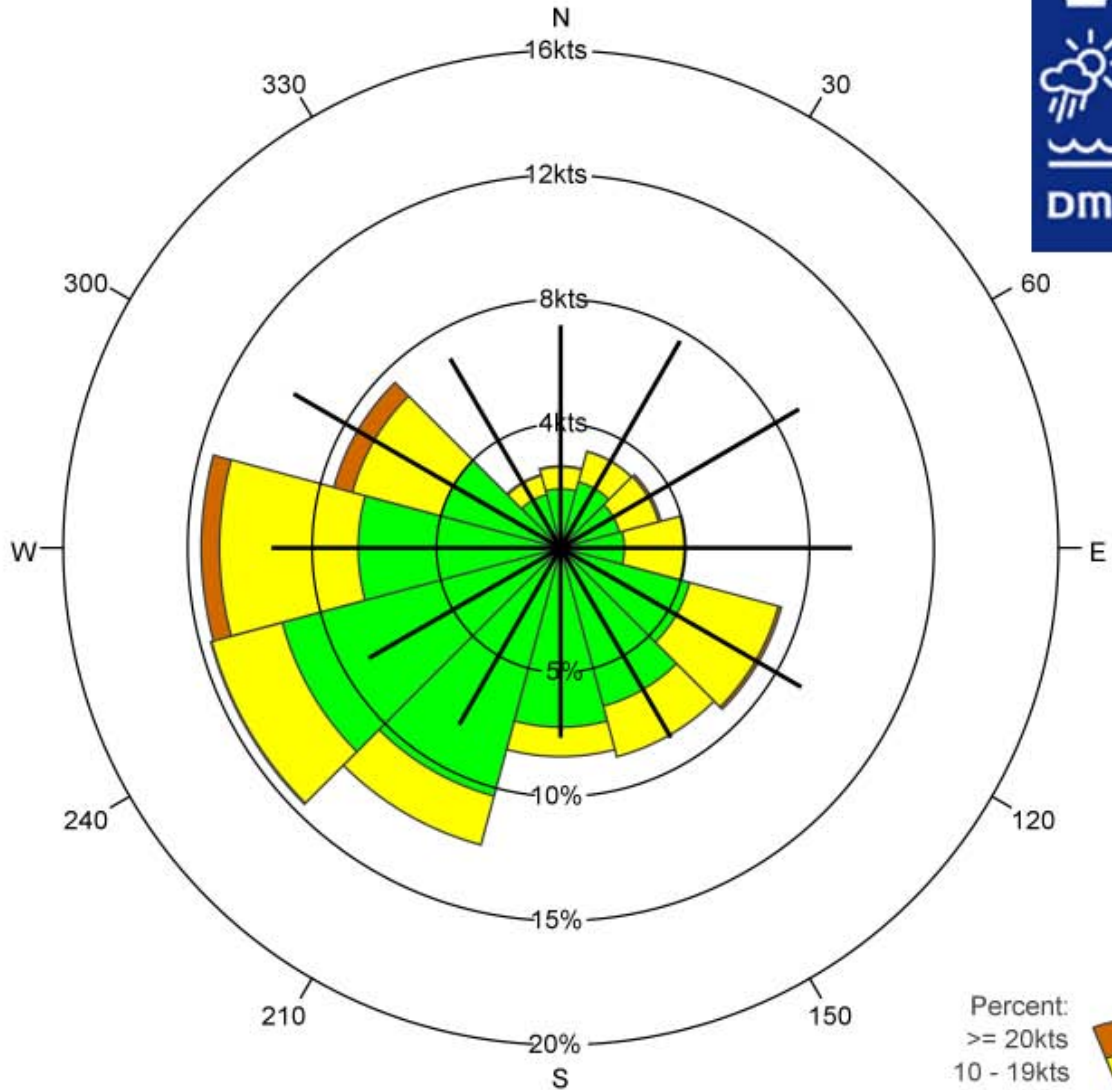
Figure 50



Wind roses

EKAH - Århus Lufthavn AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.3	4.0	4.2	5.0	9.2	8.7	8.4	12.4	14.6	14.4	9.4	3.1	96.7
% 1 - 9kts	2.4	2.7	2.4	2.5	5.4	6.6	7.2	10.3	11.6	8.1	5.0	2.2	66.6
% 10 - 19kts	0.9	1.3	1.6	2.4	3.7	2.1	1.2	2.0	2.9	5.6	3.7	0.8	28.2
% >= 20kts	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.7	0.8	0.1	2.0
Mean wind speed	7.2	7.7	8.9	9.3	8.9	7.1	6.1	6.5	7.1	9.3	9.9	7.1	7.9
Max wind speed	24.0	22.0	26.0	25.0	25.0	19.0	20.0	19.0	26.0	39.0	38.0	28.0	39.0

Number of observations = 71182

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 2359=3.3%

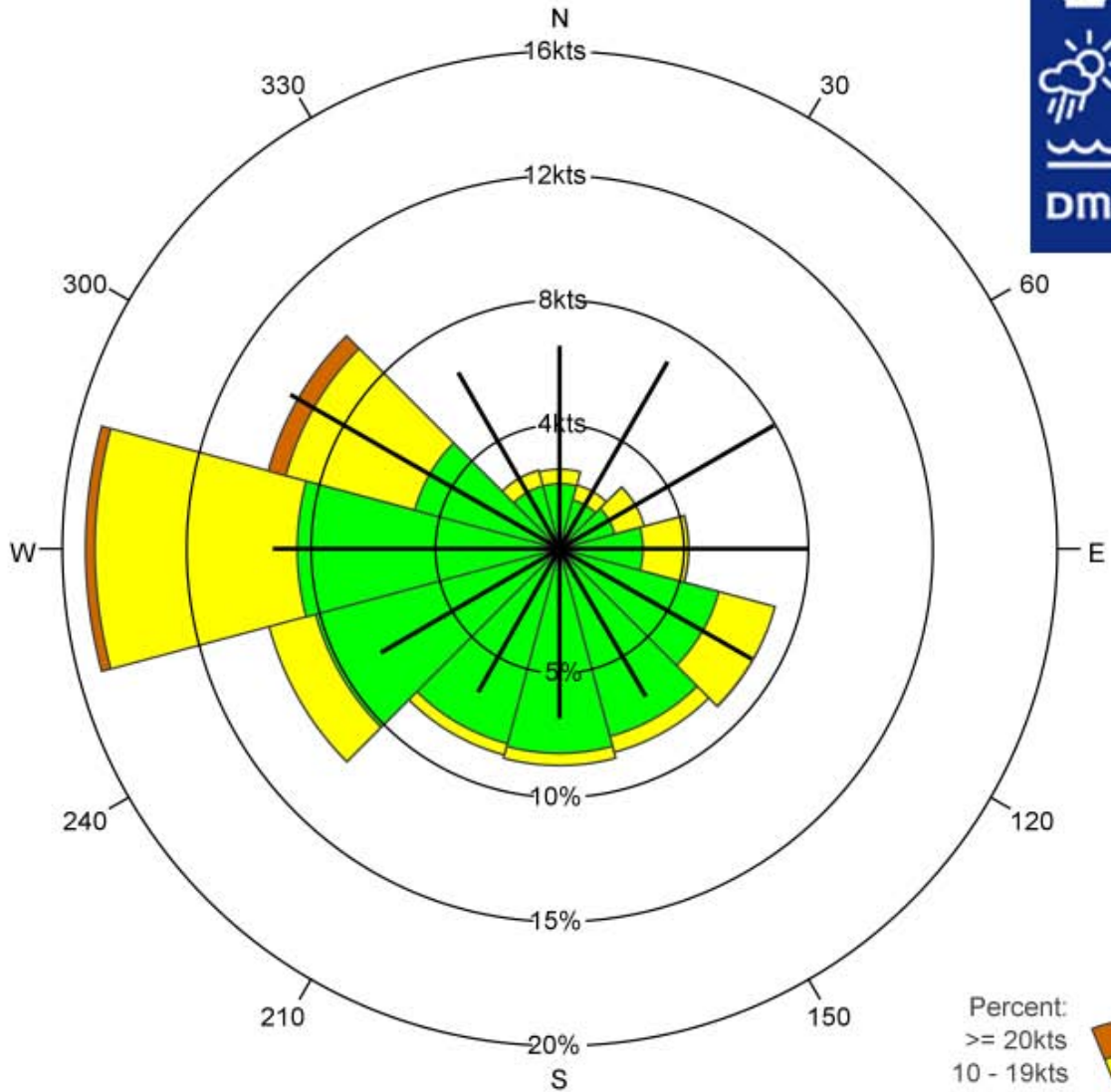
Observations with calm/varying wind direction are not used in the statistics



EKAH - Århus Lufthavn

SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.2	2.7	3.5	5.2	9.0	8.5	8.7	8.6	12.1	19.1	12.1	3.3	95.9
% 1 - 9kts	2.6	2.0	2.3	3.3	6.6	7.8	8.2	8.1	10.2	10.6	6.0	2.6	70.5
% 10 - 19kts	0.6	0.6	1.2	1.8	2.3	0.7	0.5	0.5	1.9	8.1	5.4	0.6	24.3
% >= 20kts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.7	0.0	1.2
Mean wind speed	6.5	6.9	8.0	8.0	7.1	5.5	5.5	5.3	6.6	9.2	10.0	6.5	7.4
Max wind speed	23.0	20.0	21.0	24.0	23.0	16.0	14.0	15.0	20.0	30.0	36.0	21.0	36.0

Number of observations = 72466

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 2980=4.1%

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

Availability

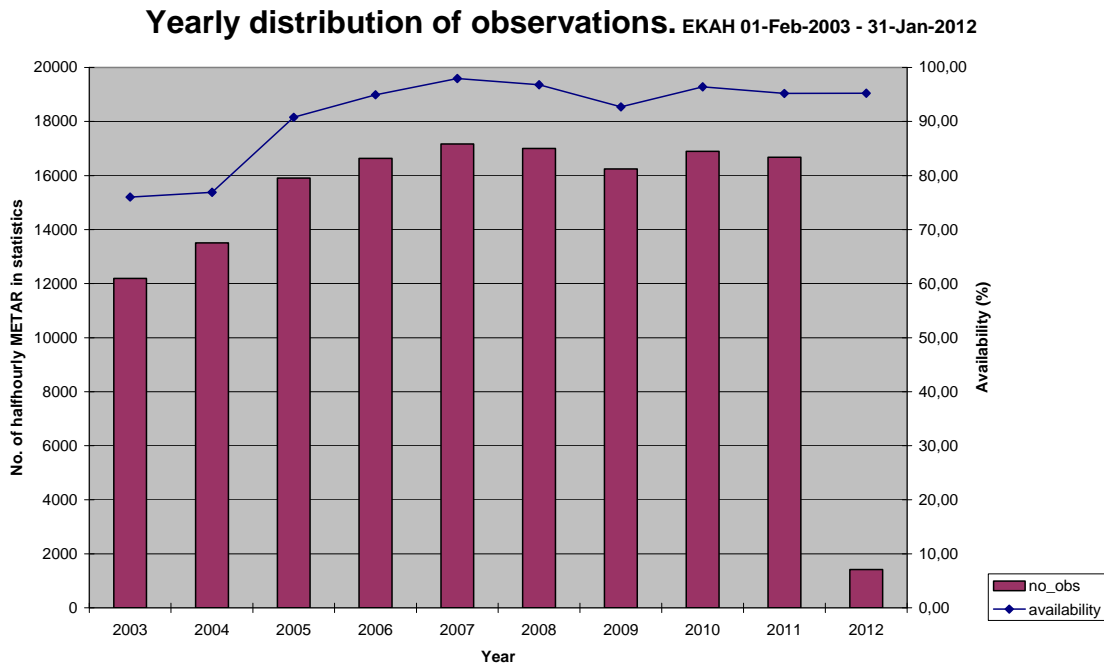


Figure 51

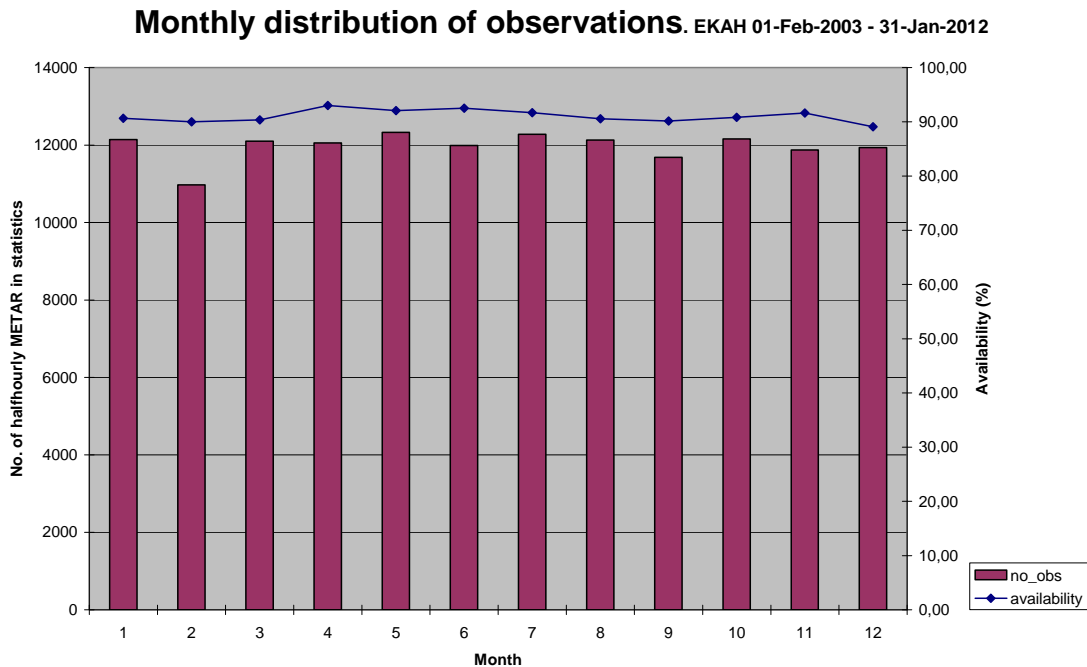


Figure 52



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

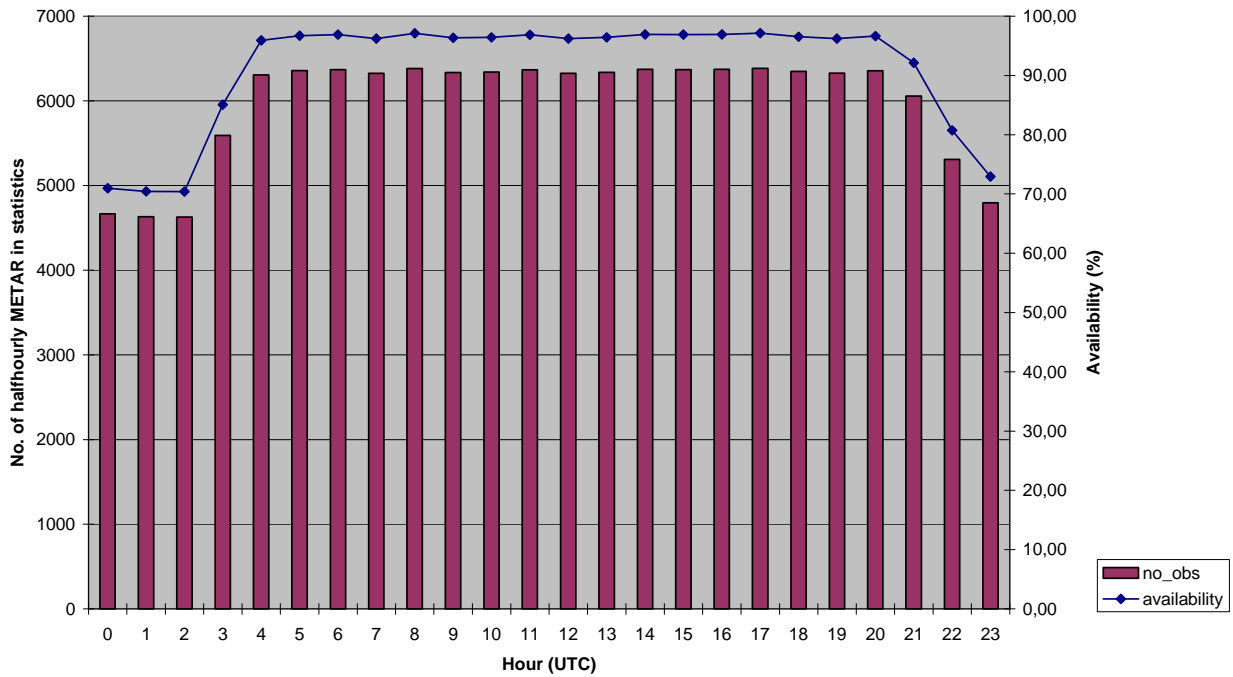


Figure 53

EKAH. Average no. of half 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	1,5	1,7	1,9	1,9	1,7	1,9	1,8	1,8	
1	,0	,0	1,5	1,7	1,9	1,9	1,7	1,9	1,9	1,9	
2	,0	,0	1,4	1,7	1,9	1,9	1,8	1,9	1,9	1,8	
3	,5	,6	1,4	1,8	1,9	1,9	1,8	1,9	1,9	1,8	
4	1,5	1,6	1,7	1,9	2,0	1,9	1,9	1,9	1,9	1,9	
5	1,9	1,9	1,9	1,9	2,0	2,0	1,9	1,9	1,9	2,0	
6	1,9	1,9	2,0	1,9	2,0	1,9	1,9	1,9	1,9	1,9	
7	1,9	1,9	1,9	2,0	2,0	1,9	1,9	1,9	1,9	2,0	
8	1,9	1,9	1,9	1,9	2,0	1,9	1,9	1,9	1,9	1,9	
9	1,9	1,9	1,9	2,0	2,0	2,0	1,9	1,9	1,9	2,0	
10	1,9	1,9	1,9	1,9	1,9	2,0	1,9	1,9	1,9	1,9	
11	1,9	1,9	1,9	2,0	2,0	2,0	1,9	1,9	1,9	1,9	
12	1,9	1,9	1,9	1,9	2,0	1,9	1,9	1,9	1,9	1,8	
13	1,9	1,9	1,9	2,0	2,0	1,9	1,9	1,9	1,9	1,9	
14	1,9	1,9	1,9	1,9	2,0	2,0	1,9	1,9	1,9	1,9	
15	1,9	1,9	1,9	1,9	2,0	2,0	1,9	1,9	1,9	2,0	
16	1,9	1,9	1,9	2,0	2,0	2,0	1,9	1,9	1,9	1,8	
17	1,9	1,9	1,9	2,0	2,0	2,0	1,9	1,9	1,9	1,9	
18	1,9	1,9	1,9	1,9	2,0	1,9	1,9	2,0	1,9	2,0	
19	1,9	1,9	1,9	2,0	2,0	2,0	1,9	2,0	1,9	1,9	
20	1,9	1,9	1,9	1,9	2,0	2,0	1,9	1,9	1,9	1,8	
21	1,9	1,9	1,9	1,9	2,0	1,9	1,9	1,9	1,9	1,9	
22	1,2	1,2	1,8	1,8	1,9	1,9	1,8	1,9	1,9	1,9	
23	,4	,5	1,5	1,7	1,9	1,9	1,8	1,9	1,9	1,9	

Table 7



EKBI Billund Lufthavn

Billund Airport

Airport location: 55,733°N 9,167°E Elevation: 75 m above msl

EKBI observations in statistics: 153.330 half hourly METAR² covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 97,2 %.

The EKBI METAR are all manual until 24 December 2008 and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

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

No. Obs = 37.836	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,045	2,66	5,62	5,69	5,70	0,52	6,21
<1 km	0,045	2,94	6,60	6,72	6,75	0,65	7,40
<1.5 km	0,048	3,22	8,59	9,11	9,20	0,86	10,06
<3.0 km	0,056	3,39	12,74	15,72	16,19	2,09	18,27
< 5.0 km	0,056	3,43	15,47	23,28	24,67	4,97	29,63
>= 5,0 km or CAVOK	0	0	1,13	10,86	19,13	51,24	70,37
Total	0,056	3,43	16,60	34,14	43,80	56,20	100

Table 8

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

No. Obs = 38.255	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,59	1,11	1,13	1,14	0,29	1,43
<1 km	0	0,64	1,29	1,31	1,32	0,40	1,72
<1.5 km	0,0026	0,70	1,55	1,61	1,63	0,53	2,16
<3.0 km	0,0026	0,73	2,53	3,03	3,10	1,15	4,26
< 5.0 km	0,0026	0,73	3,60	5,66	6,01	2,64	8,65
>= 5,0 km or CAVOK	0	0	0,56	5,11	9,18	82,17	91,35
Total	0,0026	0,73	4,17	10,77	15,19	84,81	100

Table 9

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



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

No. Obs = 38.761	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,003	0,34	0,71	0,72	0,72	0,71	1,43
<1 km	0,003	0,37	0,81	0,82	0,83	0,96	1,79
<1.5 km	0,010	0,42	0,98	1,03	1,04	1,23	2,27
<3.0 km	0,010	0,46	1,65	2,12	2,22	2,11	4,33
< 5.0 km	0,010	0,46	2,36	4,15	4,58	4,09	8,67
>= 5,0 km or CAVOK	0	0,0026	0,43	4,31	7,95	83,38	91,33
Total	0,010	0,47	2,79	8,46	12,54	87,46	100

Table 10

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

No. Obs = 38.478	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,060	1,36	2,82	2,85	2,86	1,03	3,89
<1 km	0,060	1,54	3,43	3,48	3,50	1,30	4,80
<1.5 km	0,060	1,71	4,71	4,98	5,02	1,67	6,69
<3.0 km	0,060	1,85	8,52	10,87	11,22	3,30	14,52
< 5.0 km	0,060	1,86	11,11	18,65	19,89	6,19	26,09
>= 5,0 km or CAVOK	0,0052	0,010	0,77	8,86	16,21	57,70	73,91
Total	0,065	1,87	11,88	27,52	36,11	63,89	100

Table 11

Annual: EKBI - Frequencies (%) Visibility - Ceiling

No. Obs = 153.330	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,027	1,23	2,56	2,58	2,59	0,64	3,23
<1 km	0,027	1,37	3,01	3,07	3,08	0,83	3,91
<1.5 km	0,030	1,51	3,94	4,16	4,20	1,07	5,27
<3.0 km	0,032	1,60	6,33	7,90	8,14	2,16	10,31
< 5.0 km	0,032	1,61	8,10	12,88	13,74	4,47	18,21
>= 5,0 km or CAVOK	0,0013	0,0033	0,72	7,27	13,09	68,70	81,79
Total	0,033	1,61	8,82	20,15	26,83	73,17	100

Table 12

Wind direction histograms

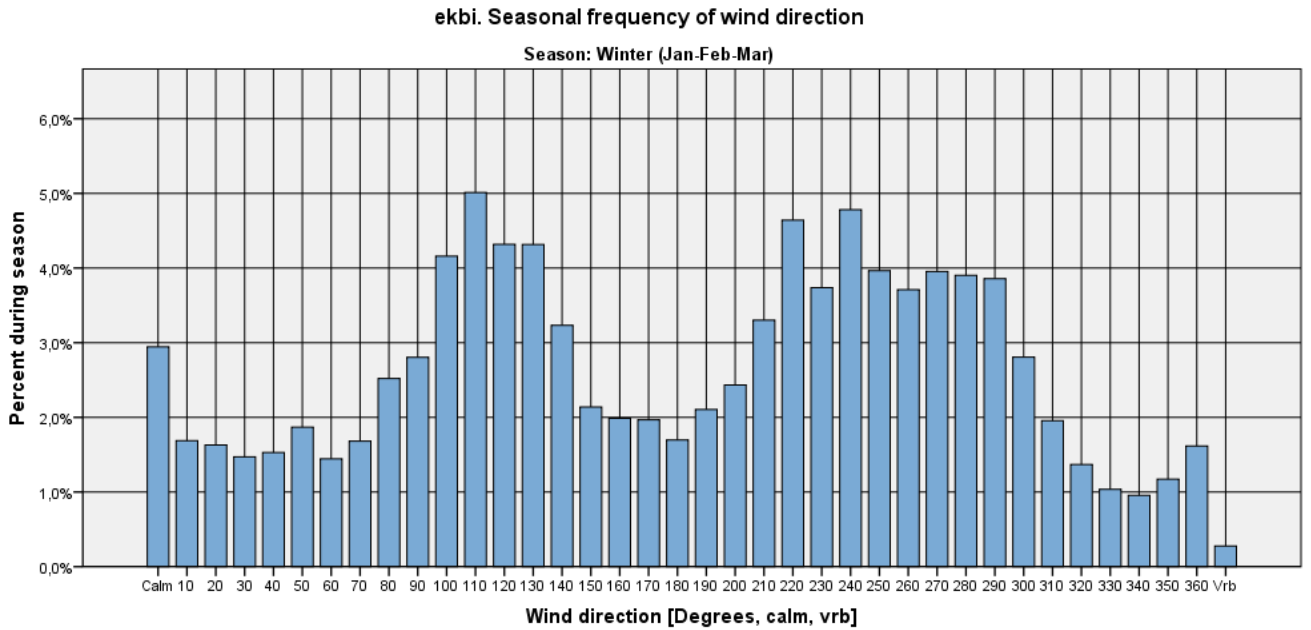


Figure 54

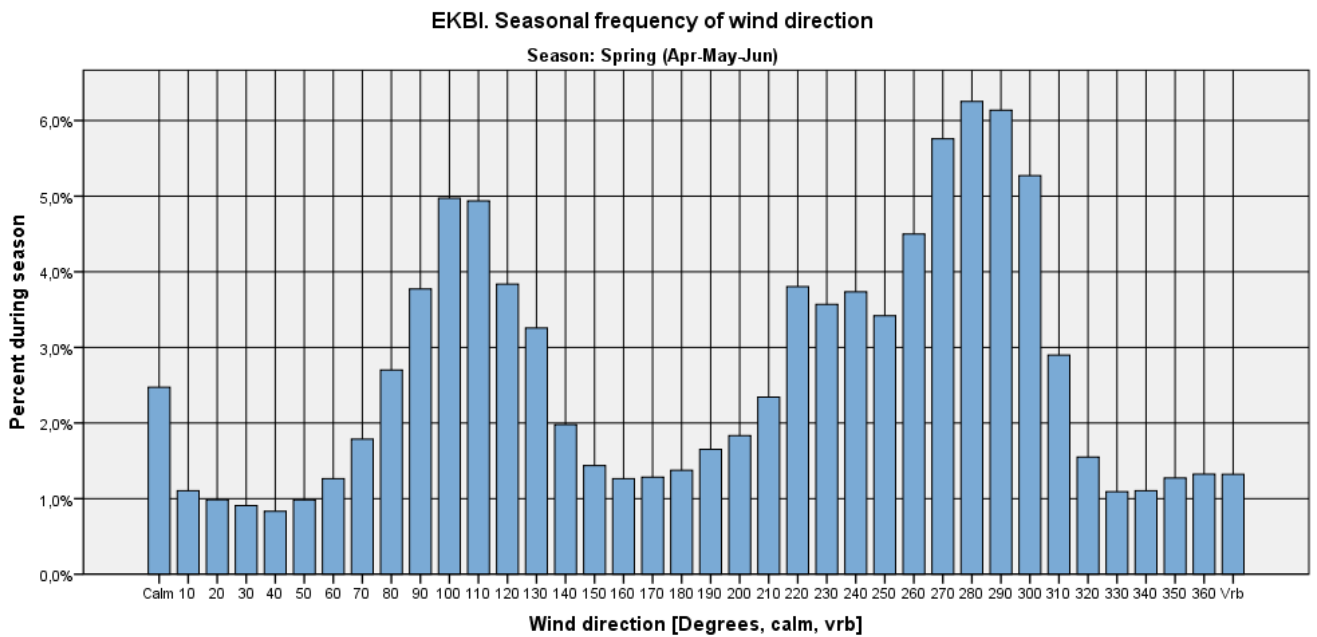


Figure 55

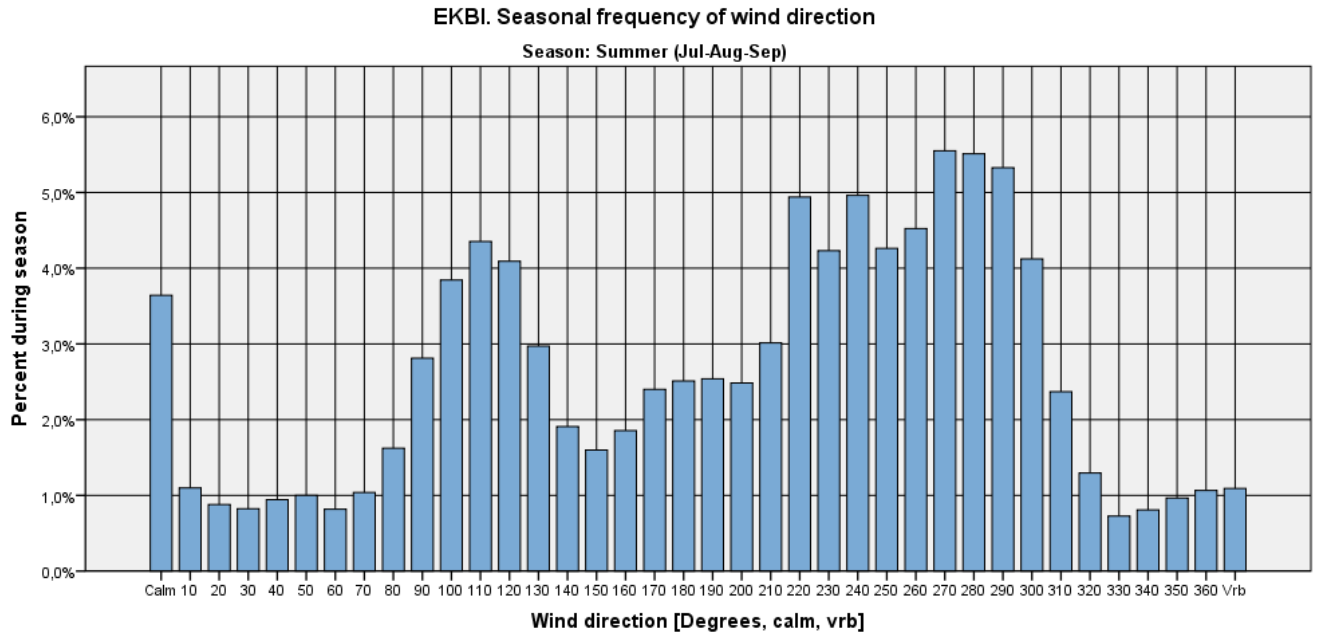


Figure 56

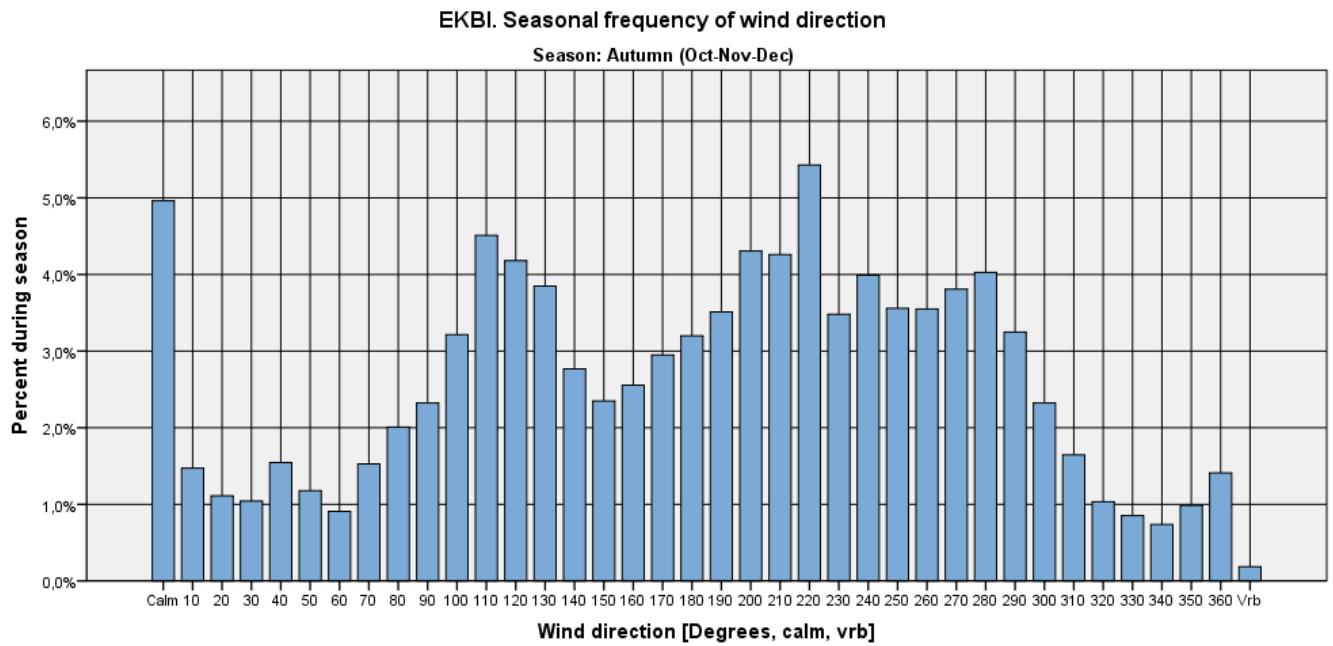


Figure 57

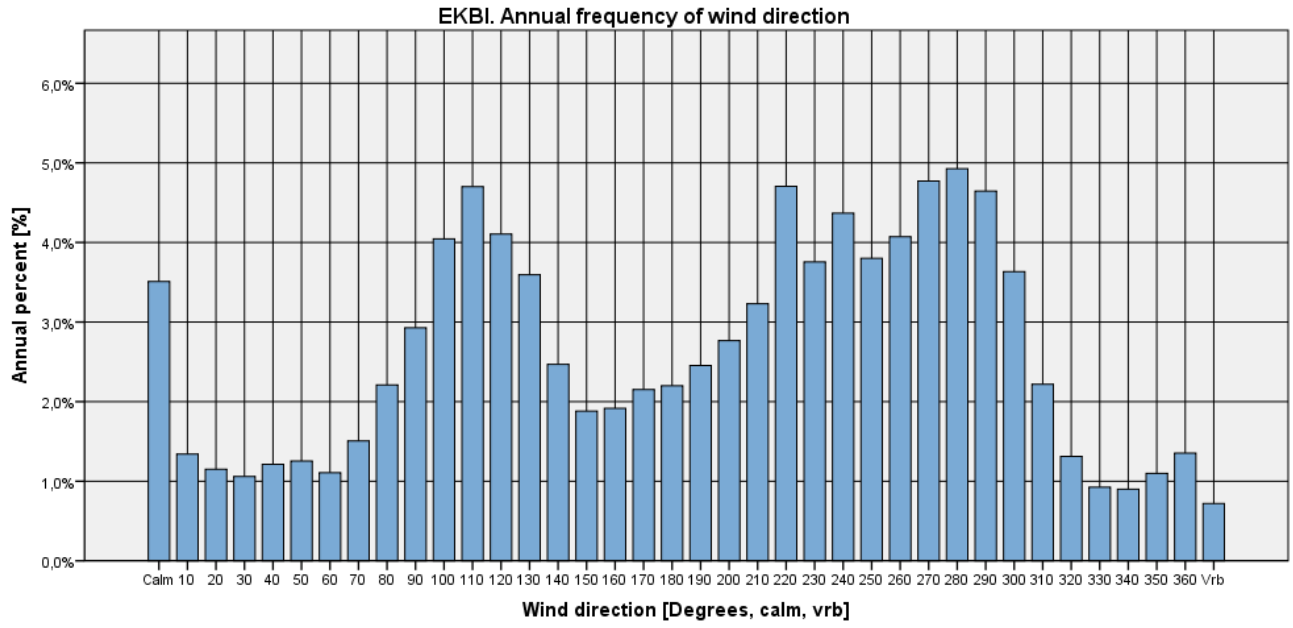


Figure 58

Visibility criteria on wind direction histograms

Visibility < 1000 m

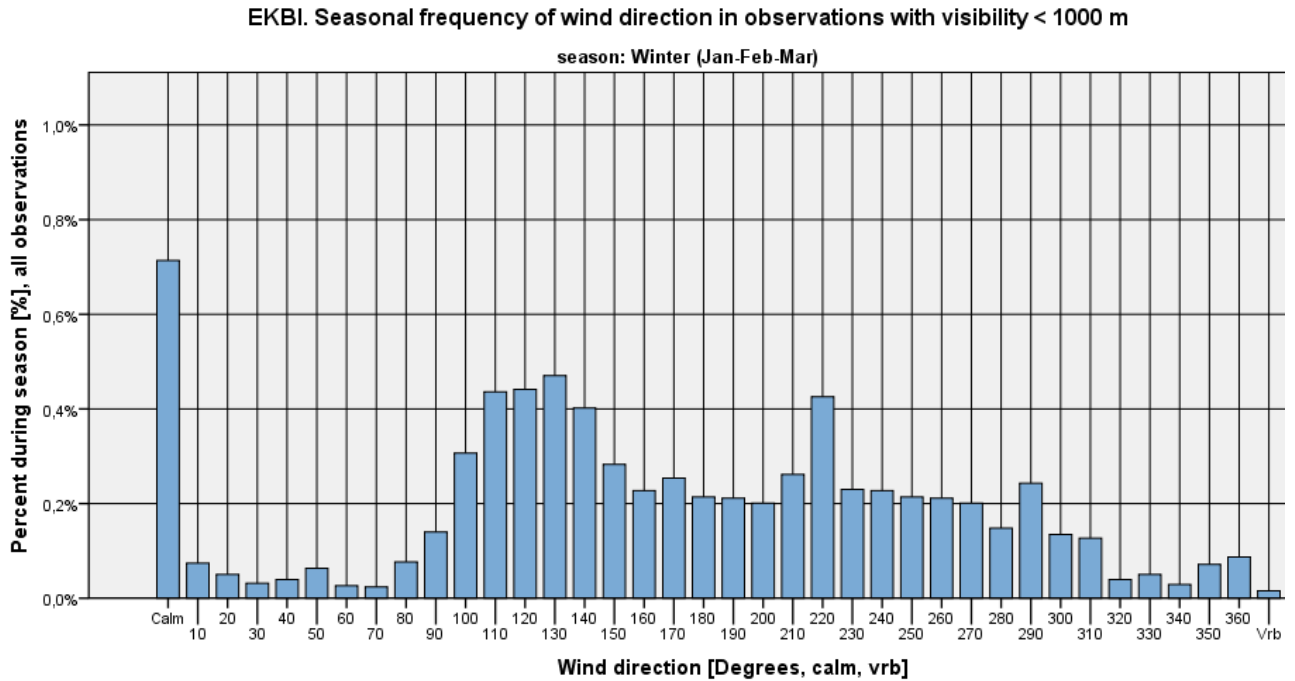


Figure 59

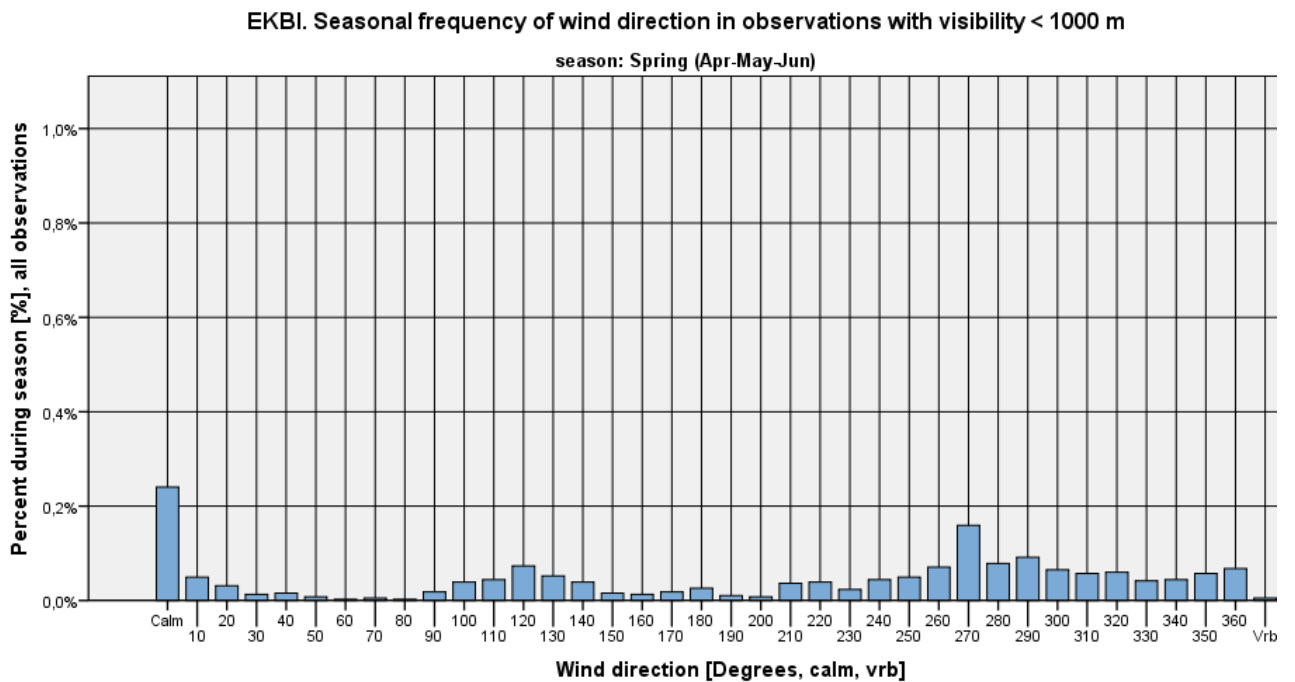


Figure 60

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

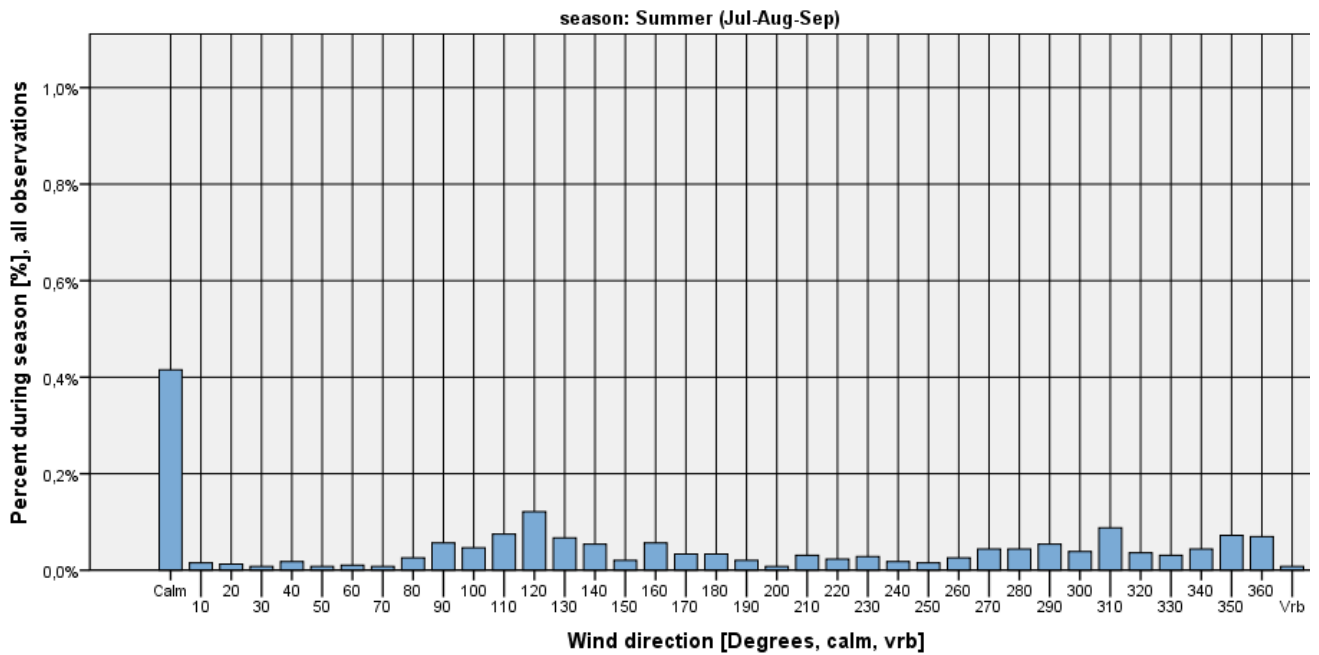


Figure 61

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

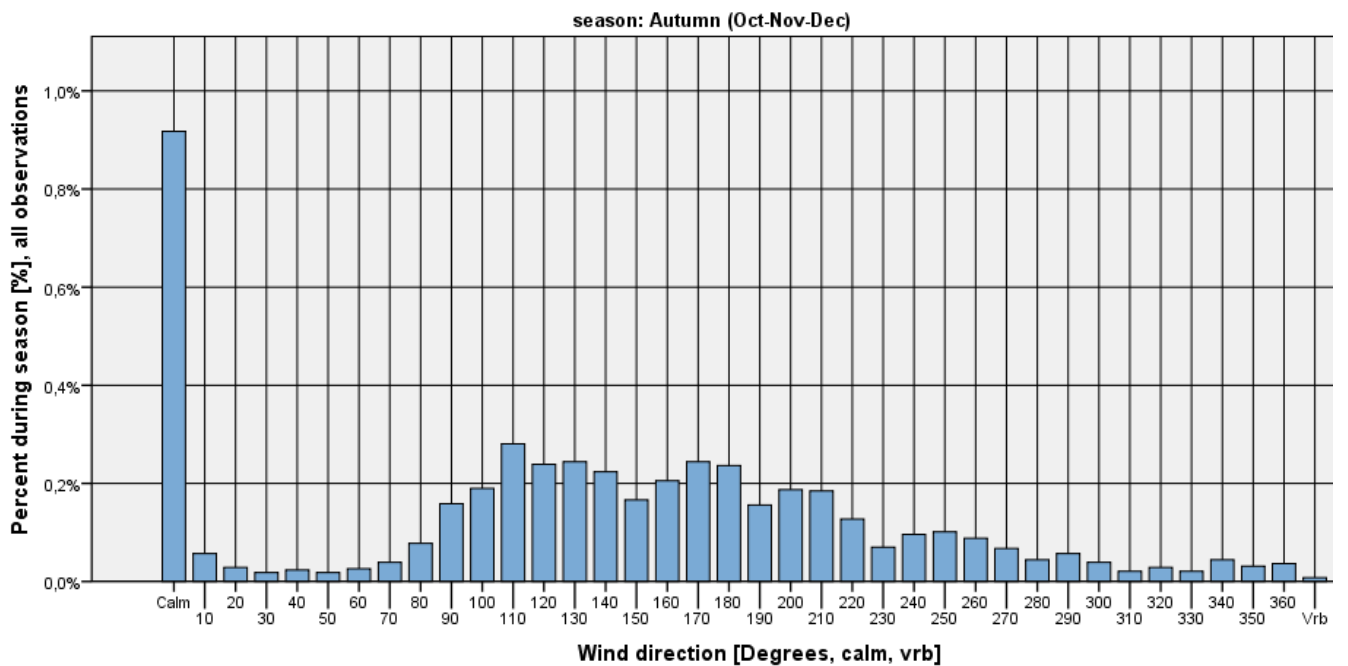


Figure 62

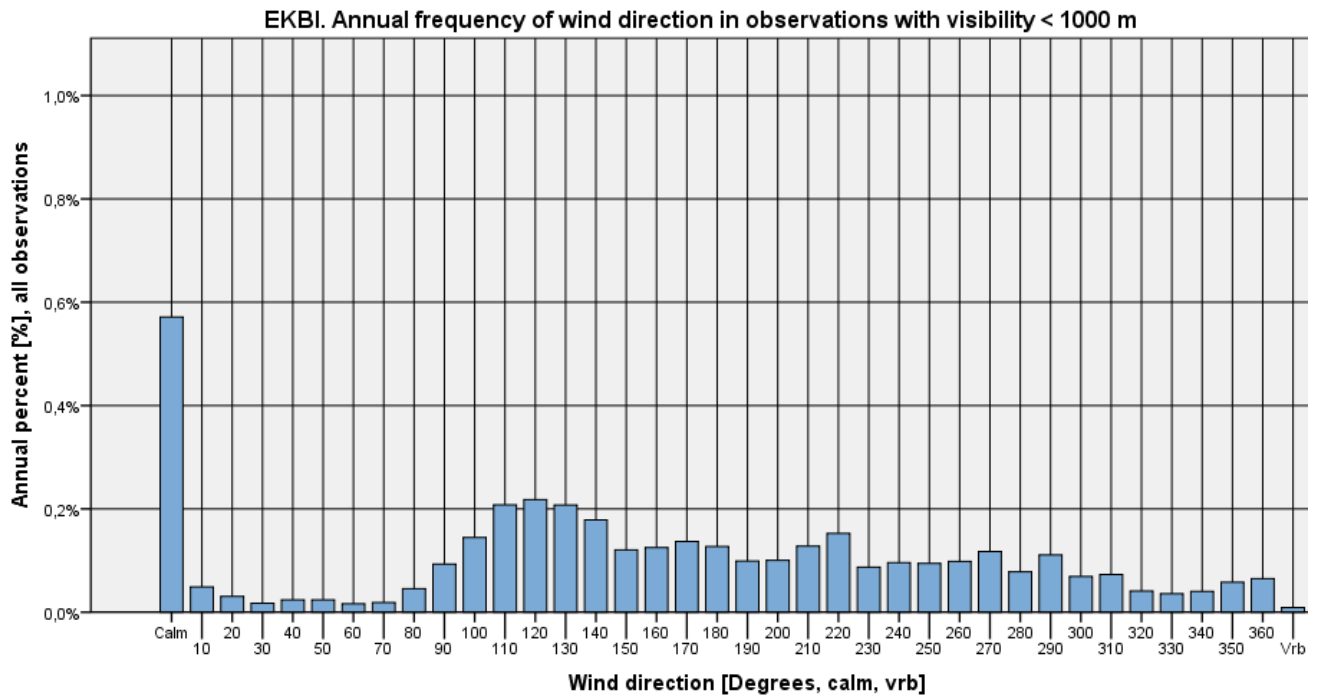


Figure 63



Visibility < 1000 m and wind speed <= 5 kts

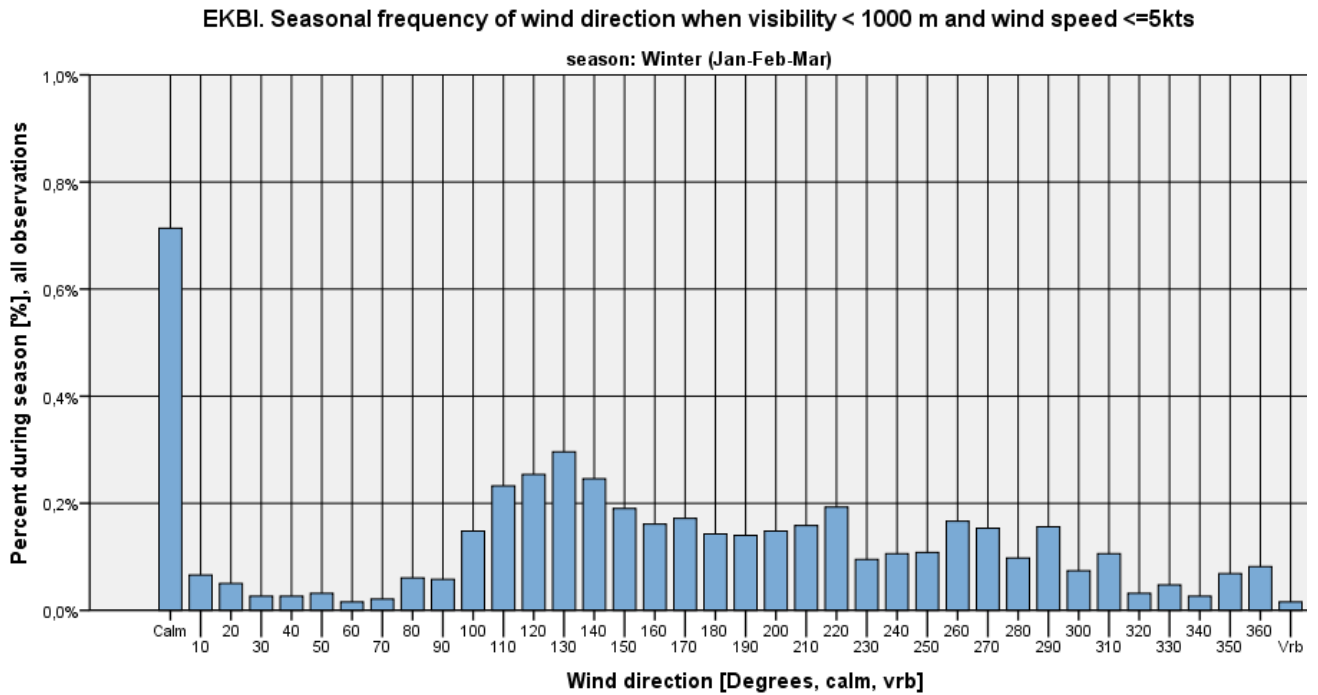


Figure 64

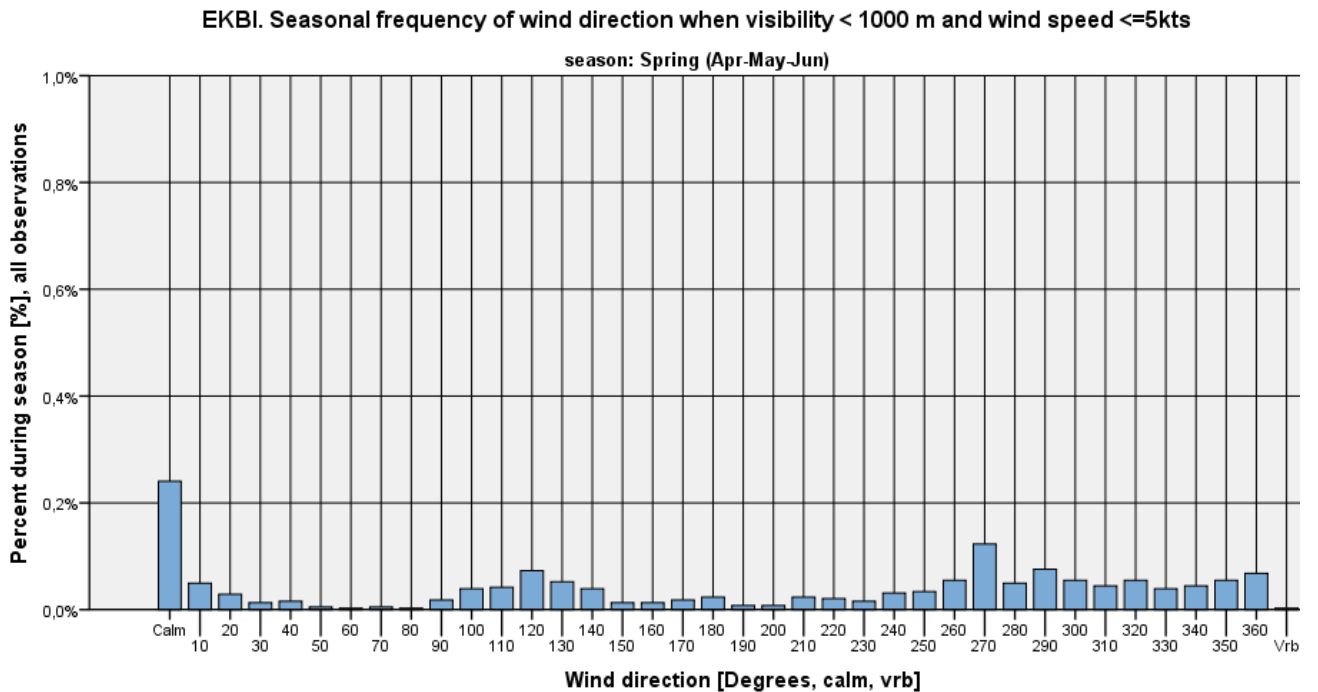


Figure 65

EKBI. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

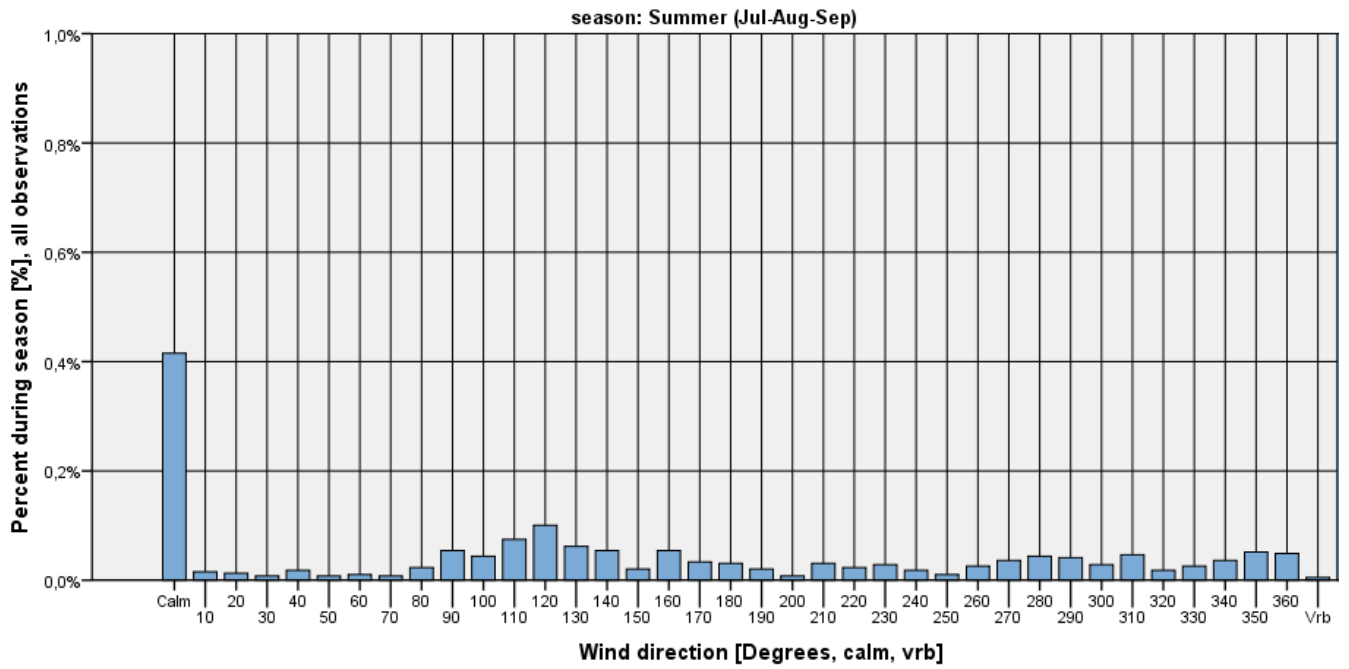


Figure 66

EKBI. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

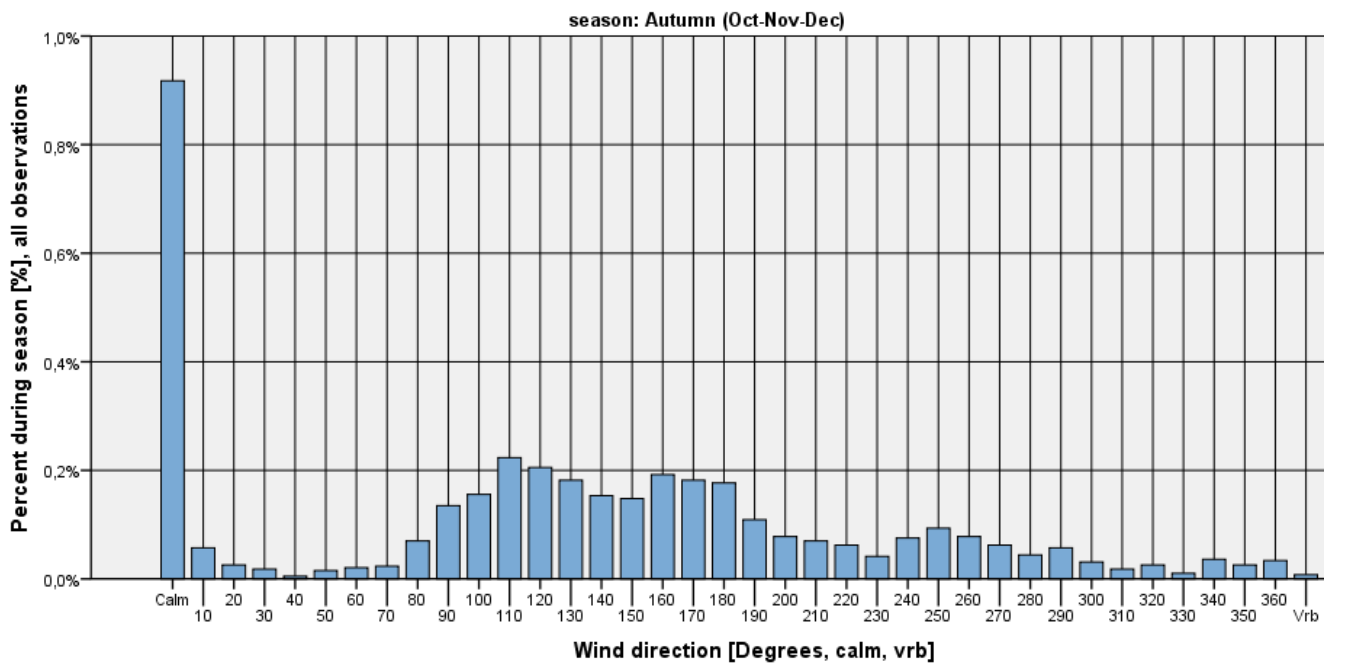


Figure 67

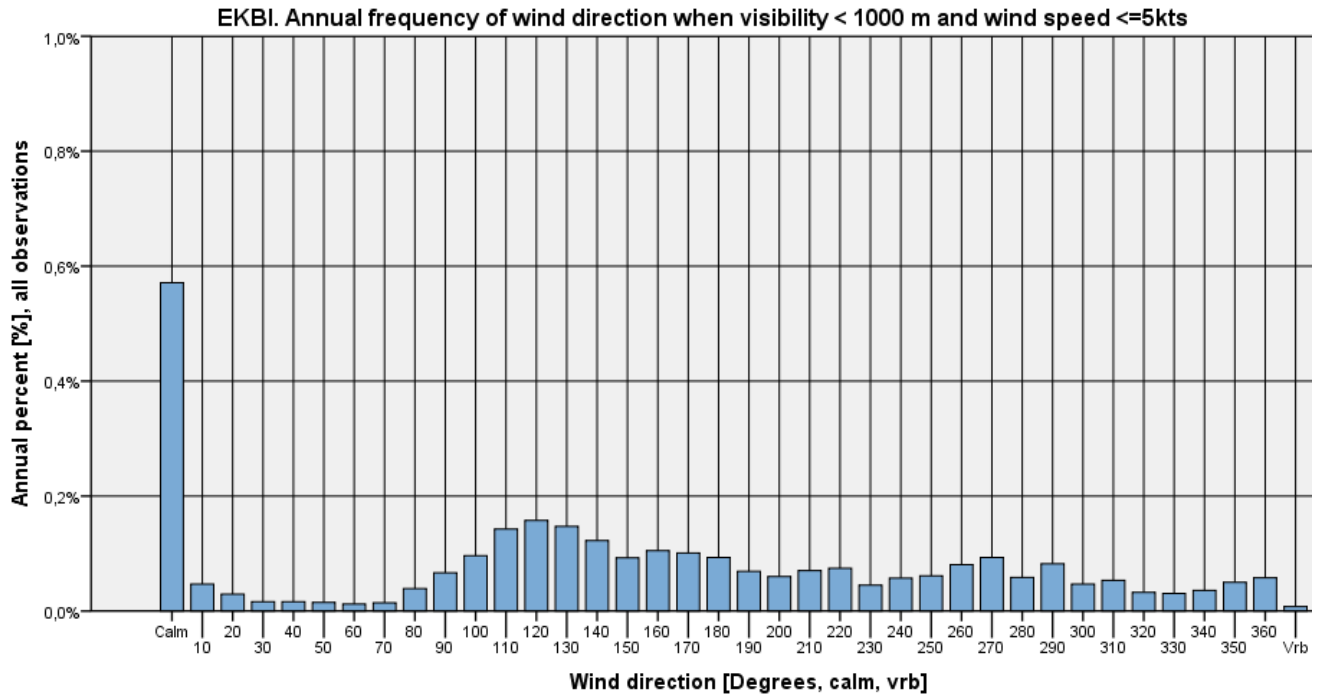


Figure 68



Visibility < 1000 m and wind speed > 5 kts

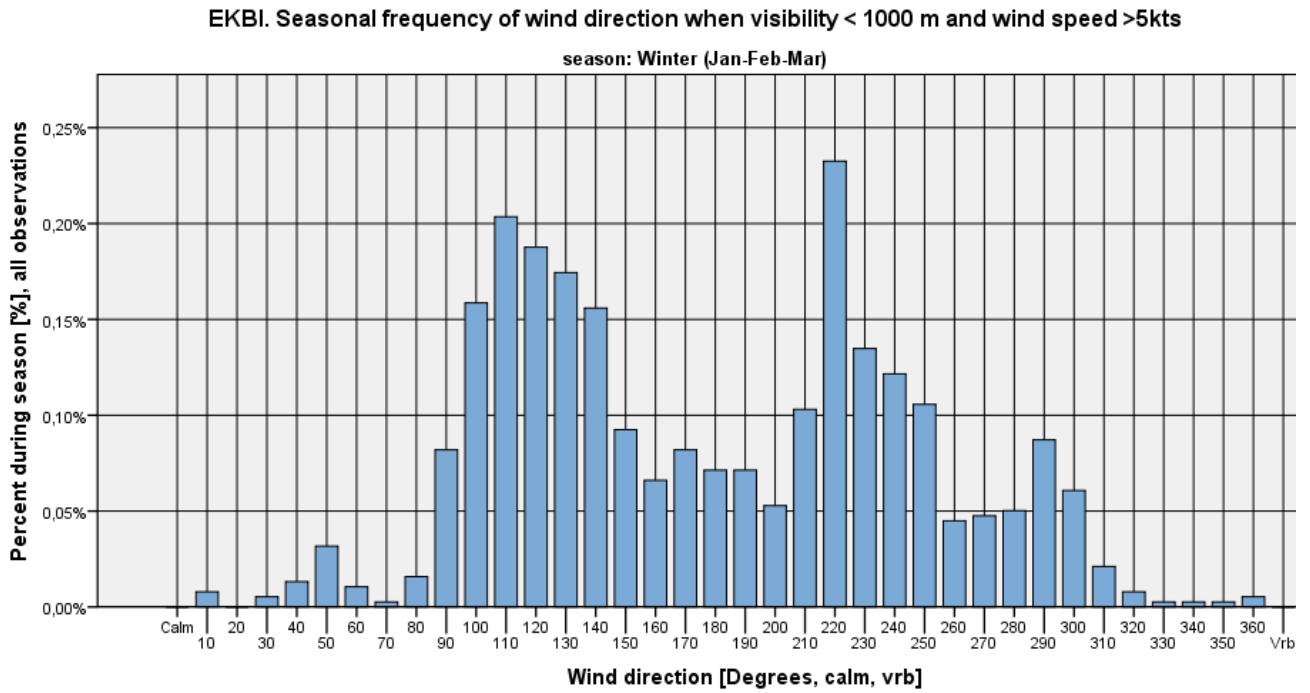


Figure 69

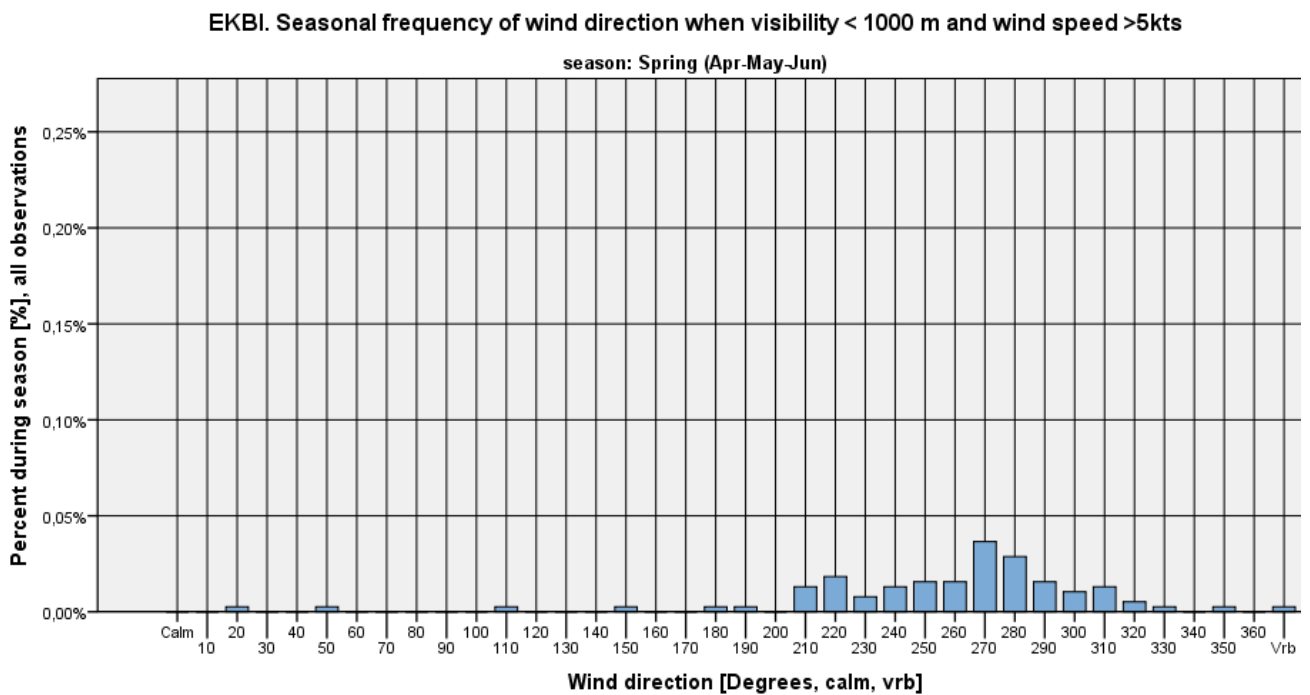


Figure 70



EKBI. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

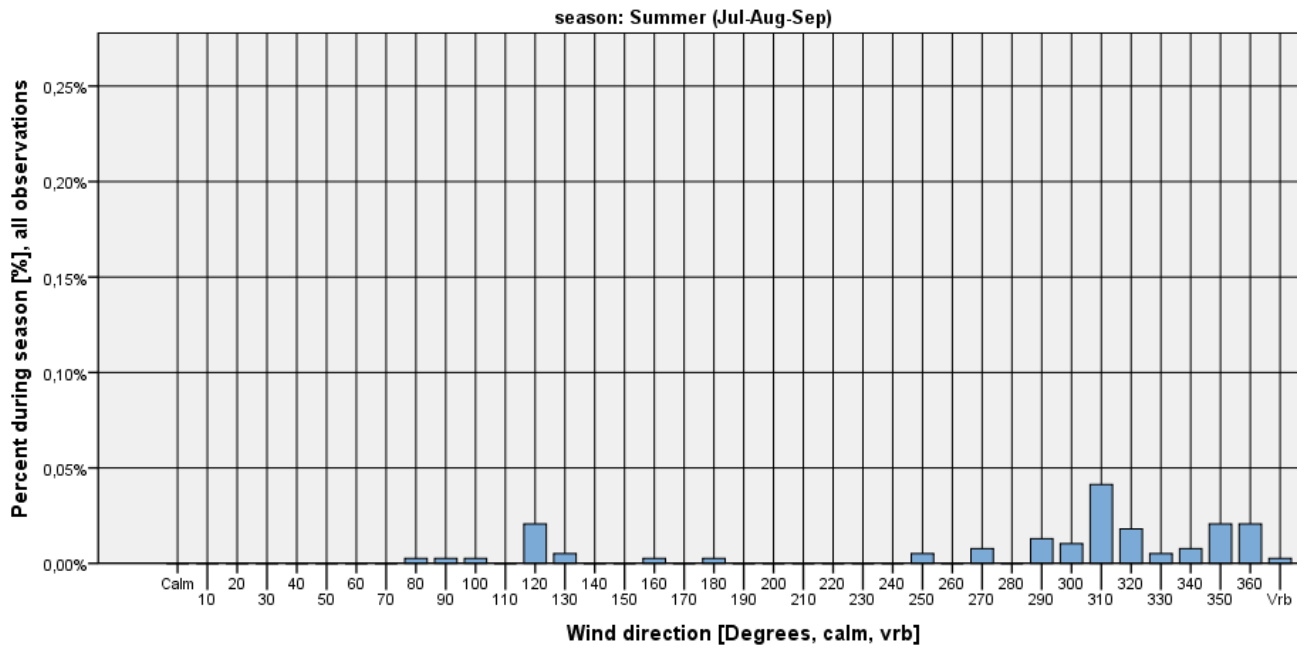


Figure 71

EKBI. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

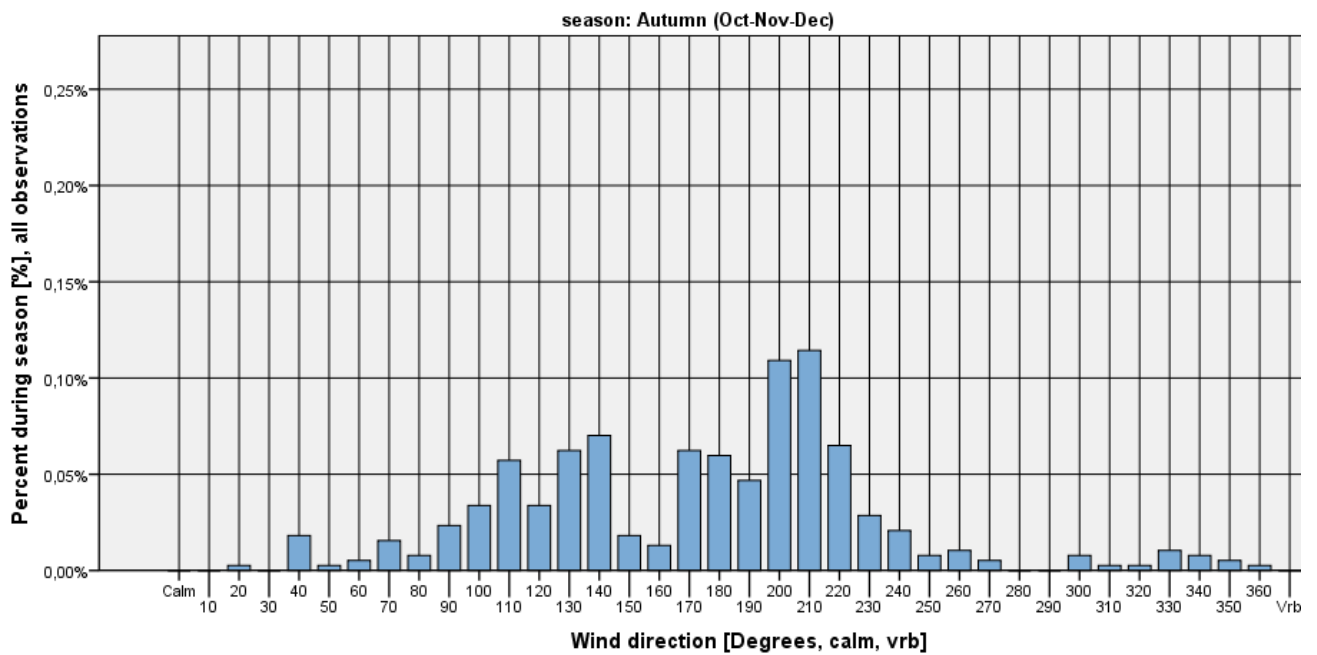


Figure 72

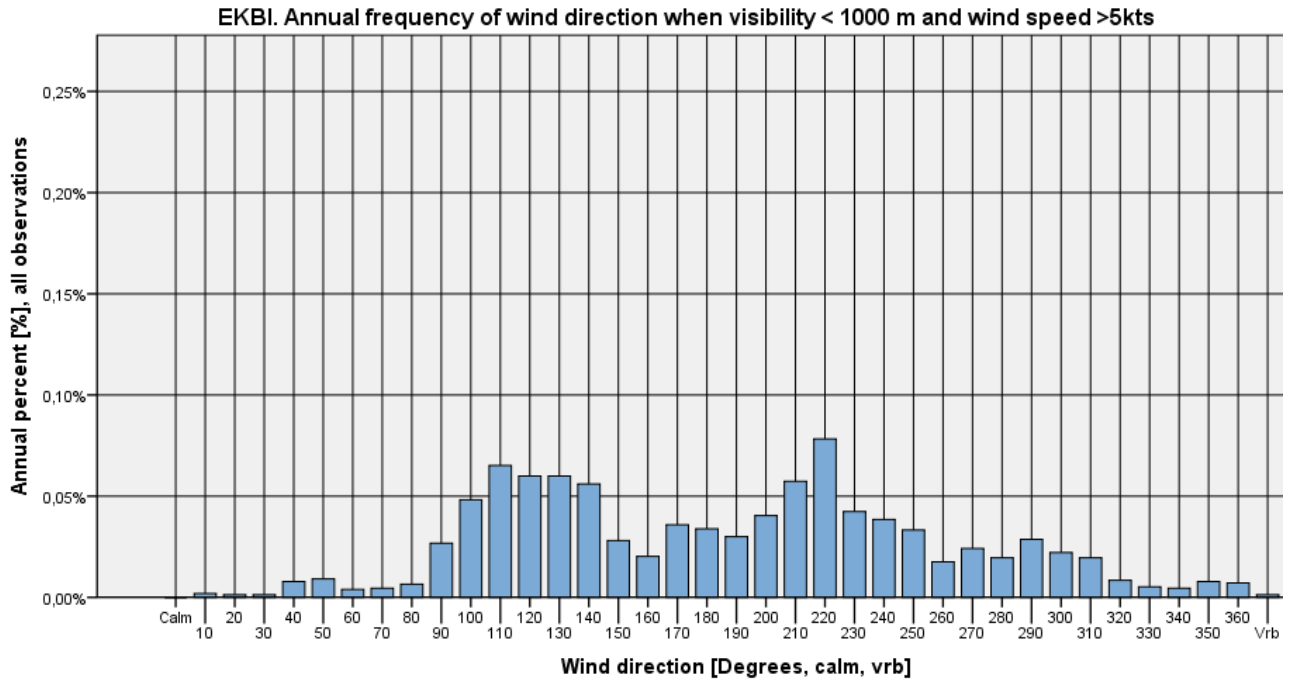


Figure 73



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

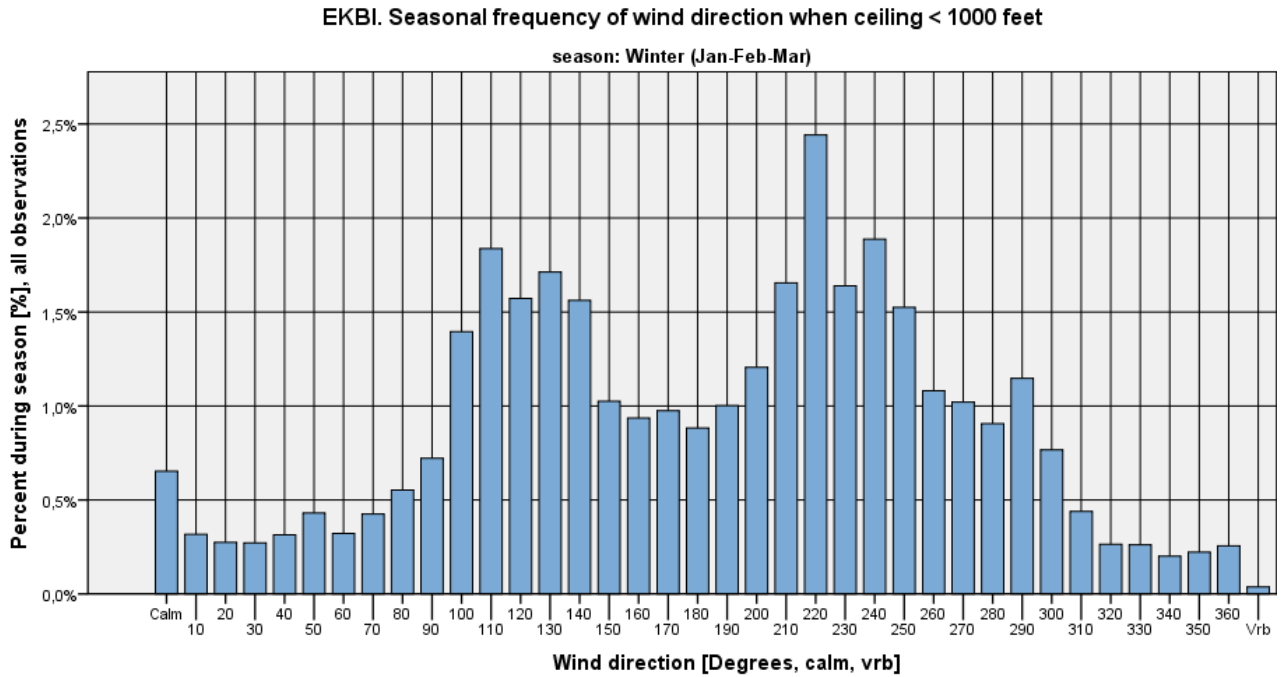


Figure 74

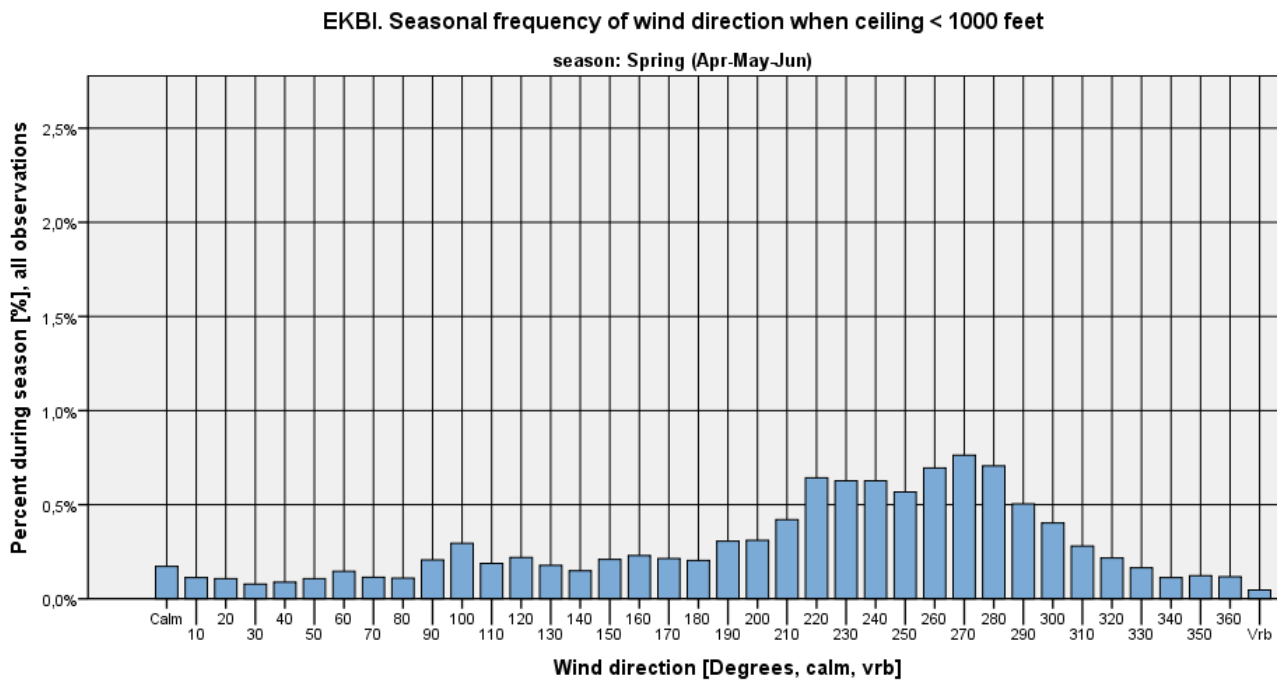


Figure 75



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

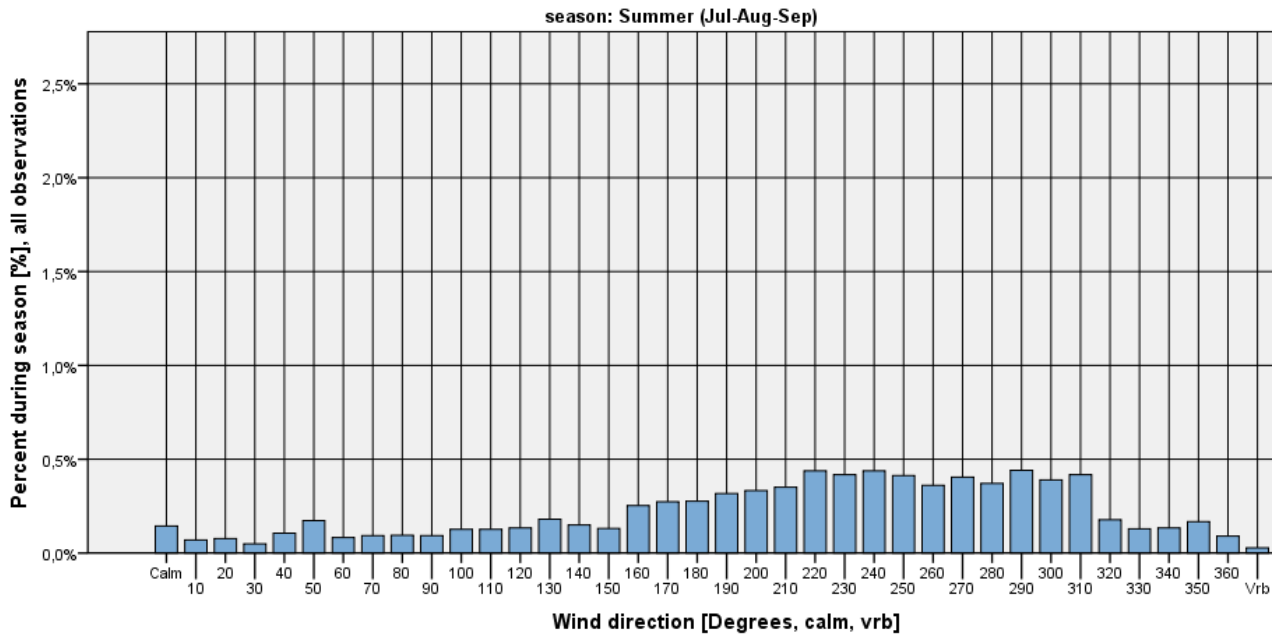


Figure 76

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

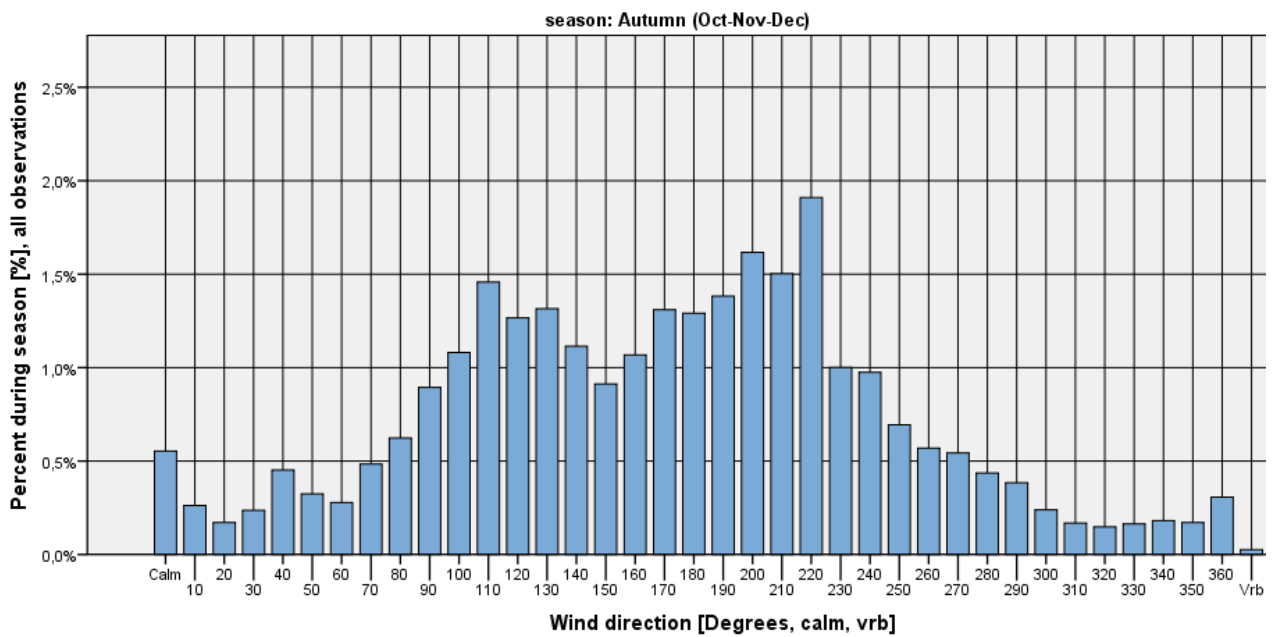


Figure 77

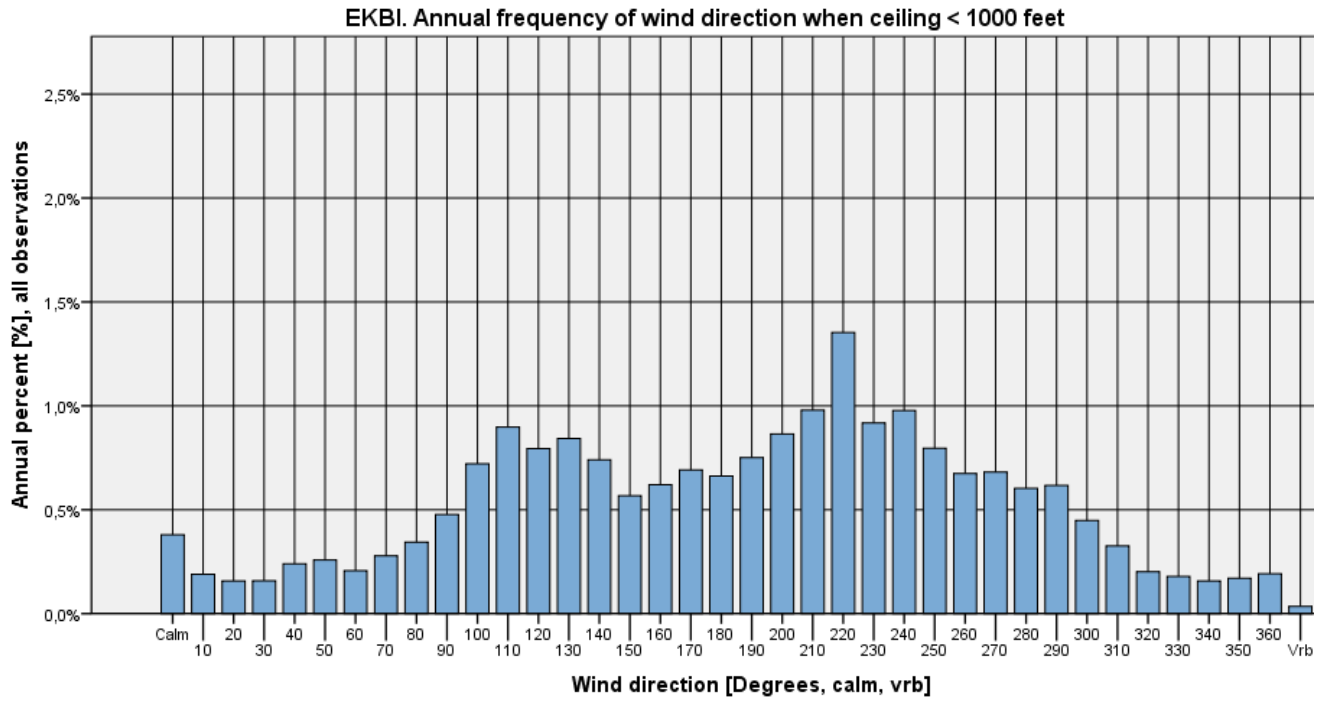


Figure 78



Ceiling < 1000 feet and wind speed <= 5 kts

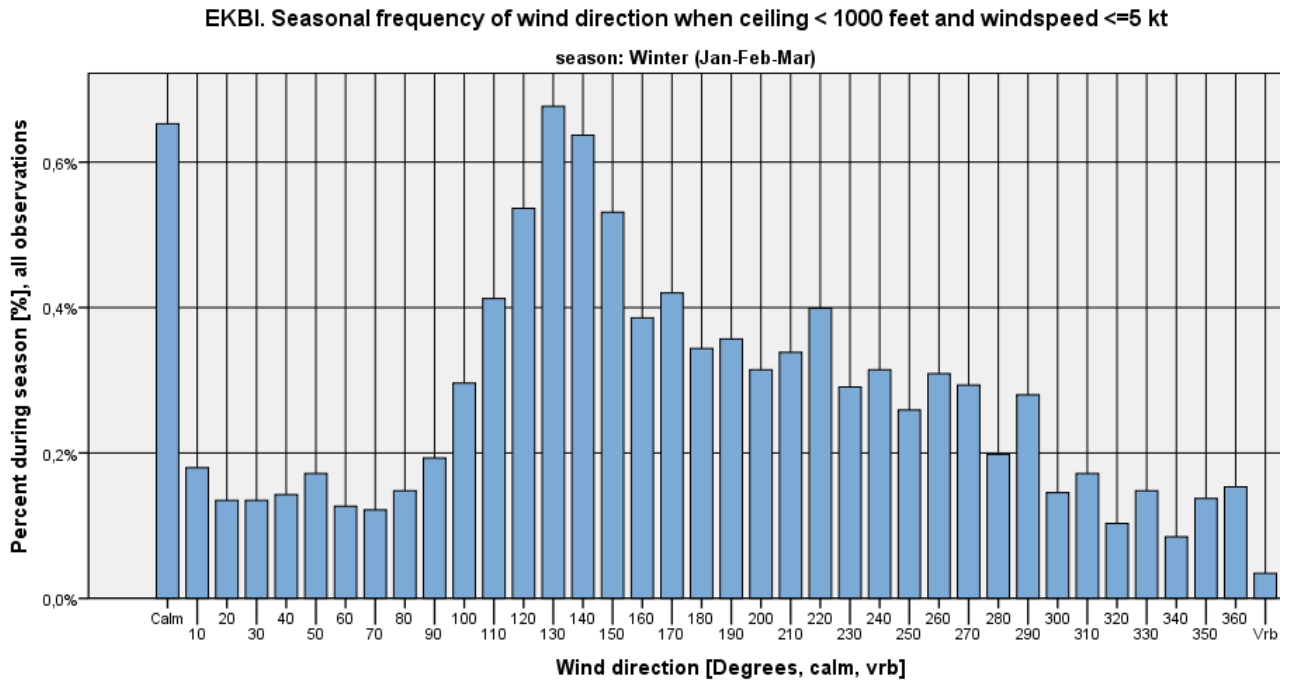


Figure 79

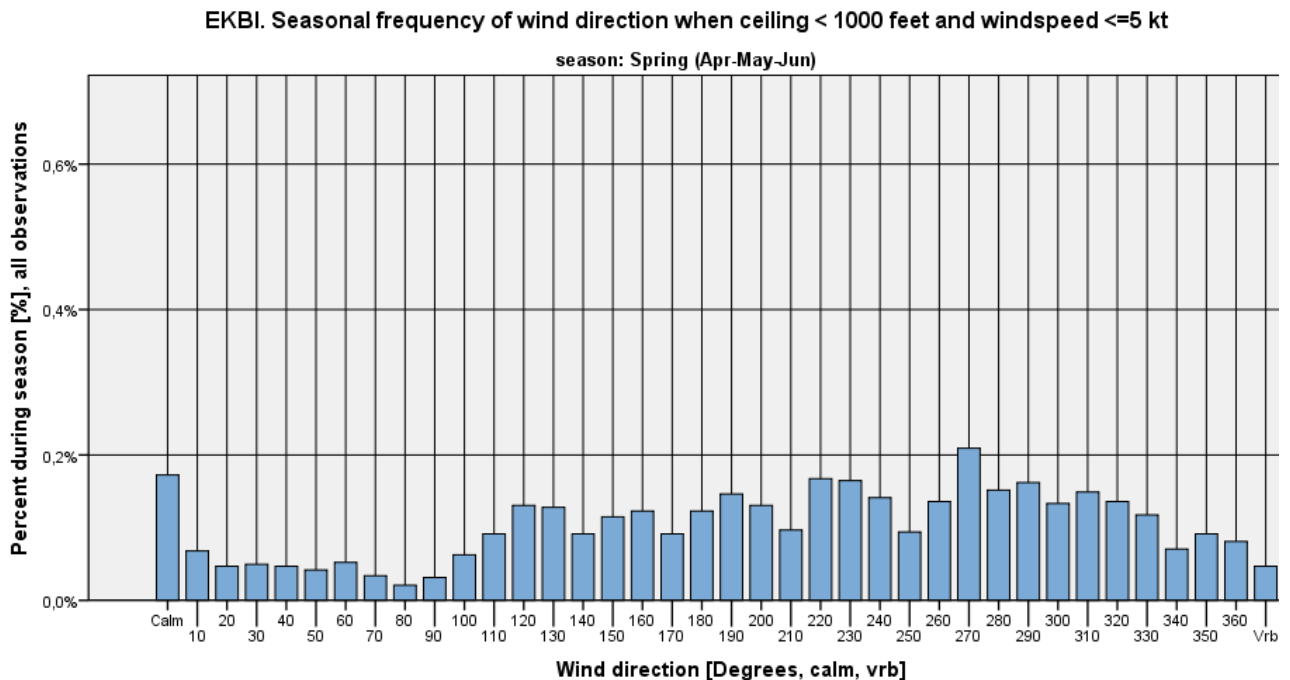


Figure 80



EKBI. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

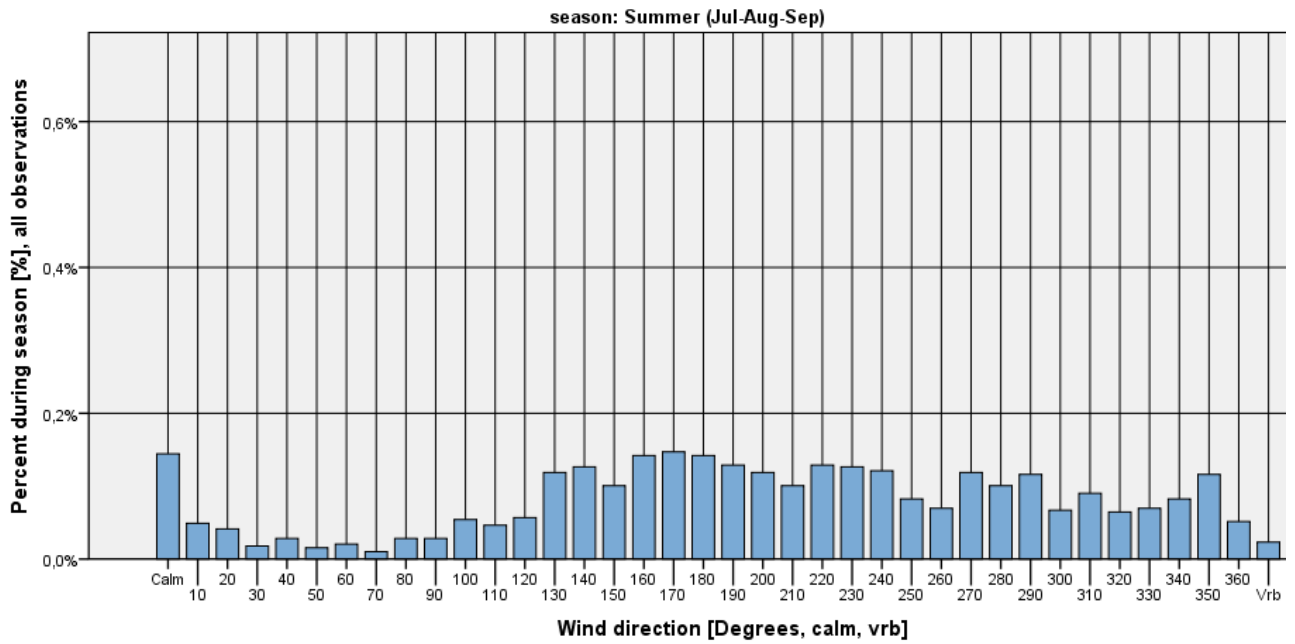


Figure 81

EKBI. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

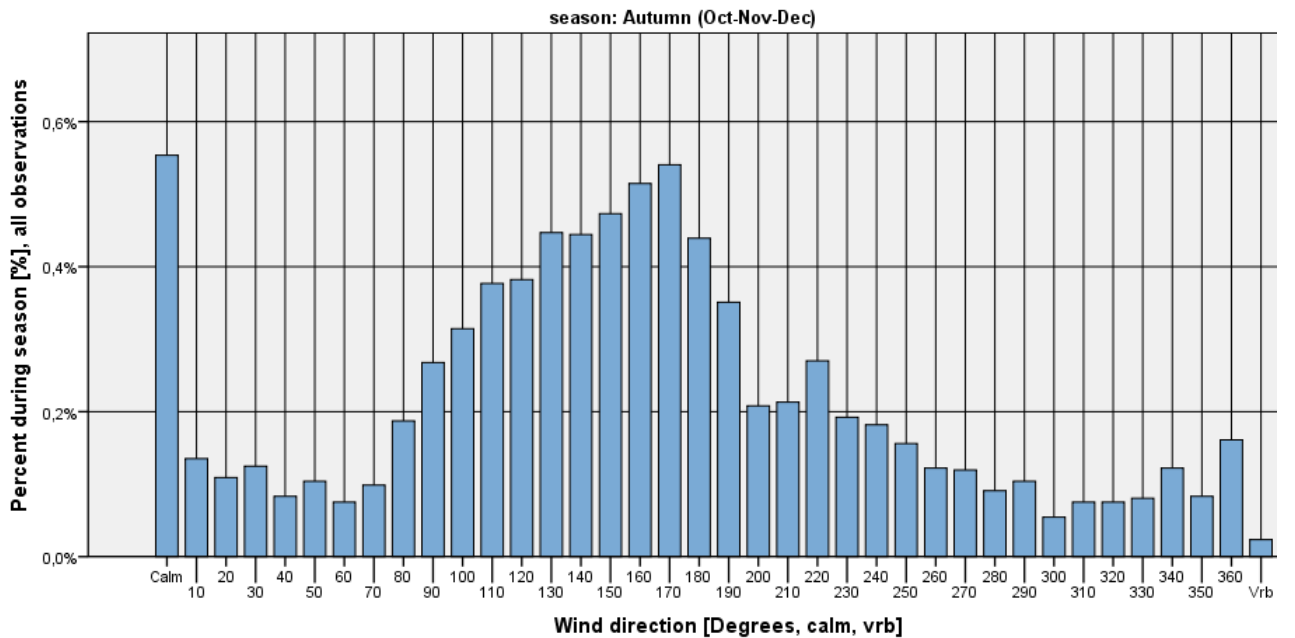


Figure 82

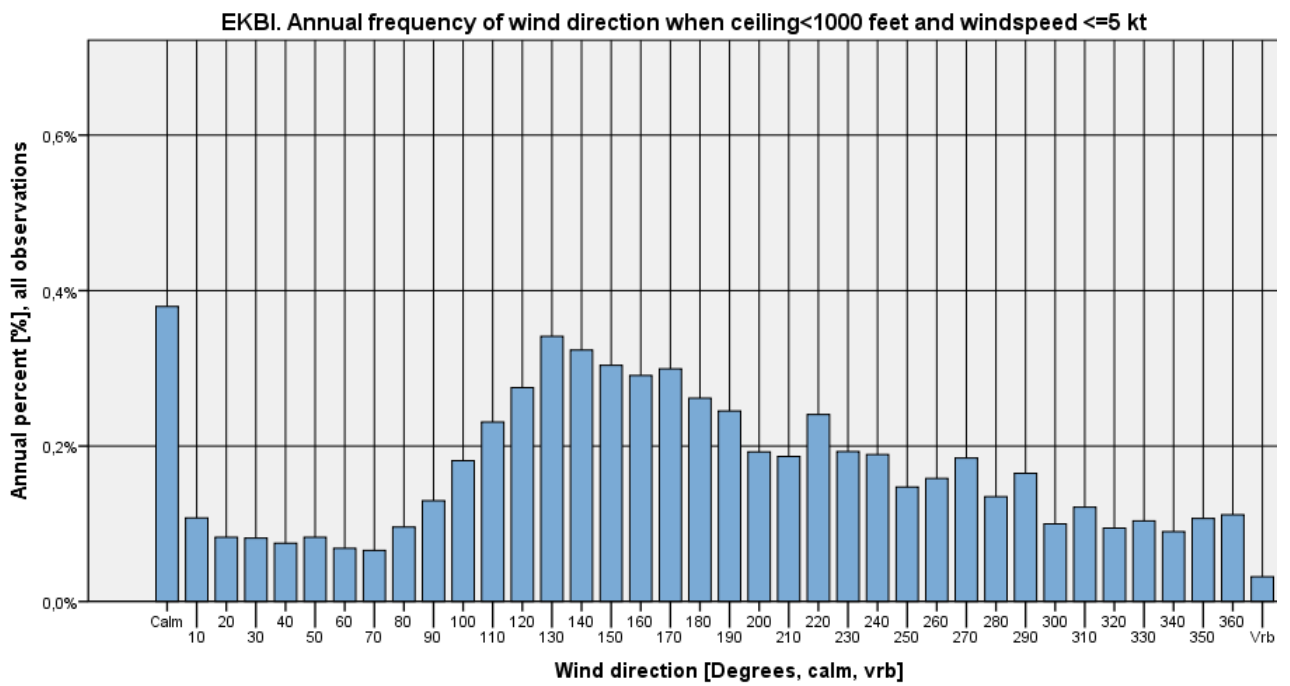


Figure 83



Ceiling < 1000 feet and wind speed > 5 kts

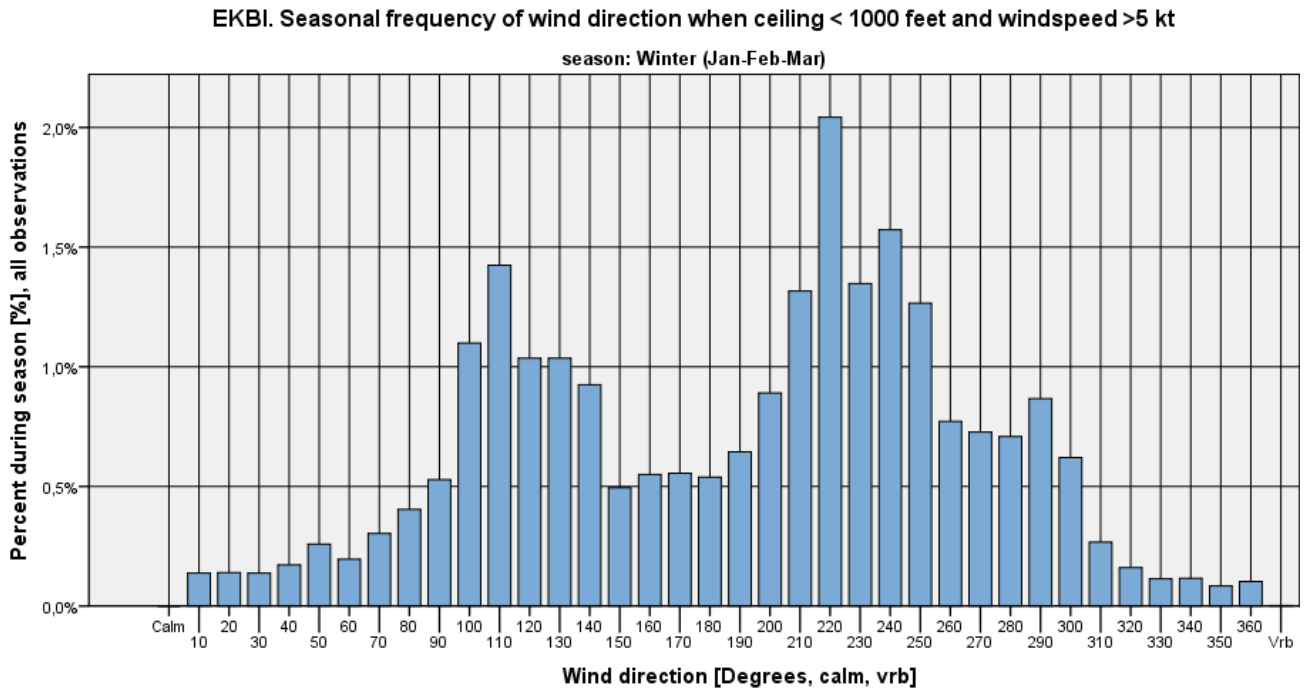


Figure 84

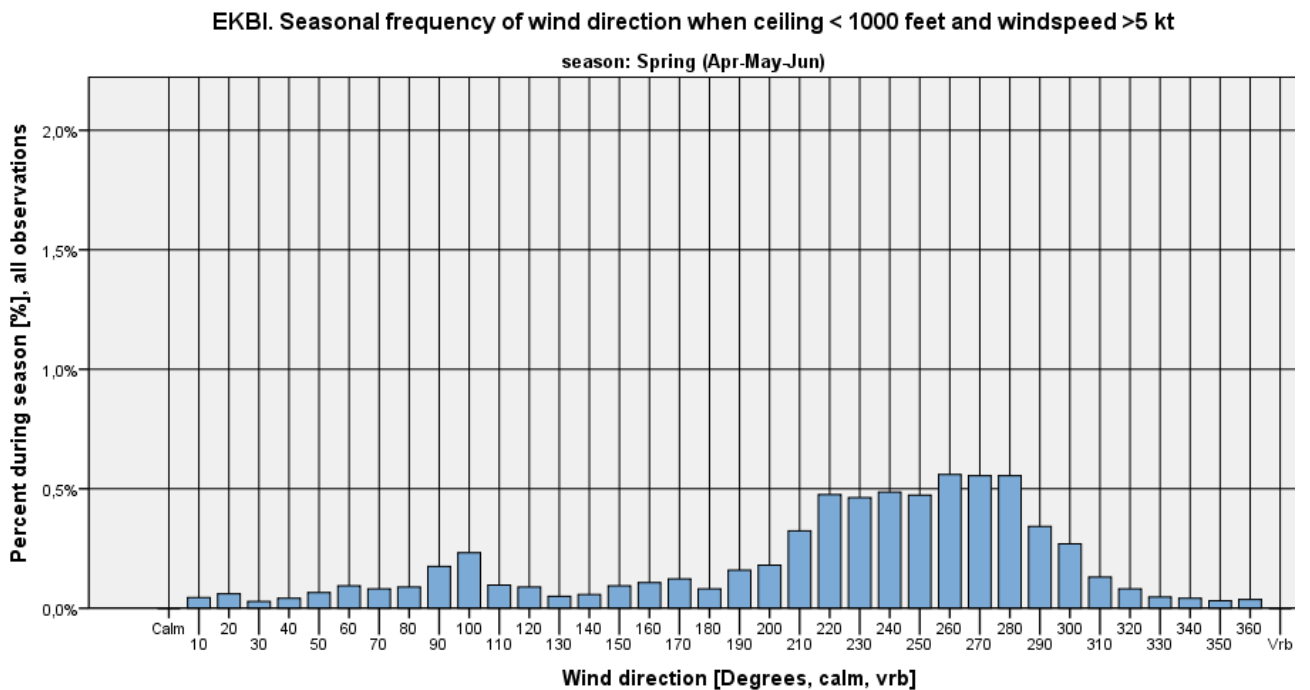


Figure 85



EKBI. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

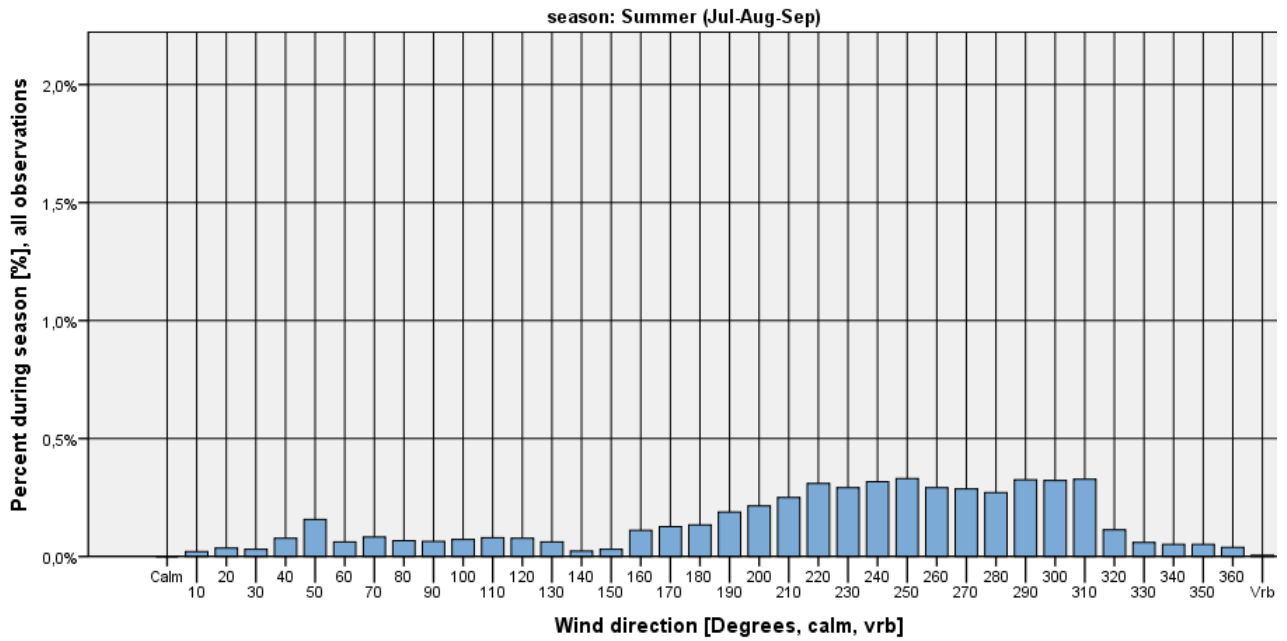


Figure 86

EKBI. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

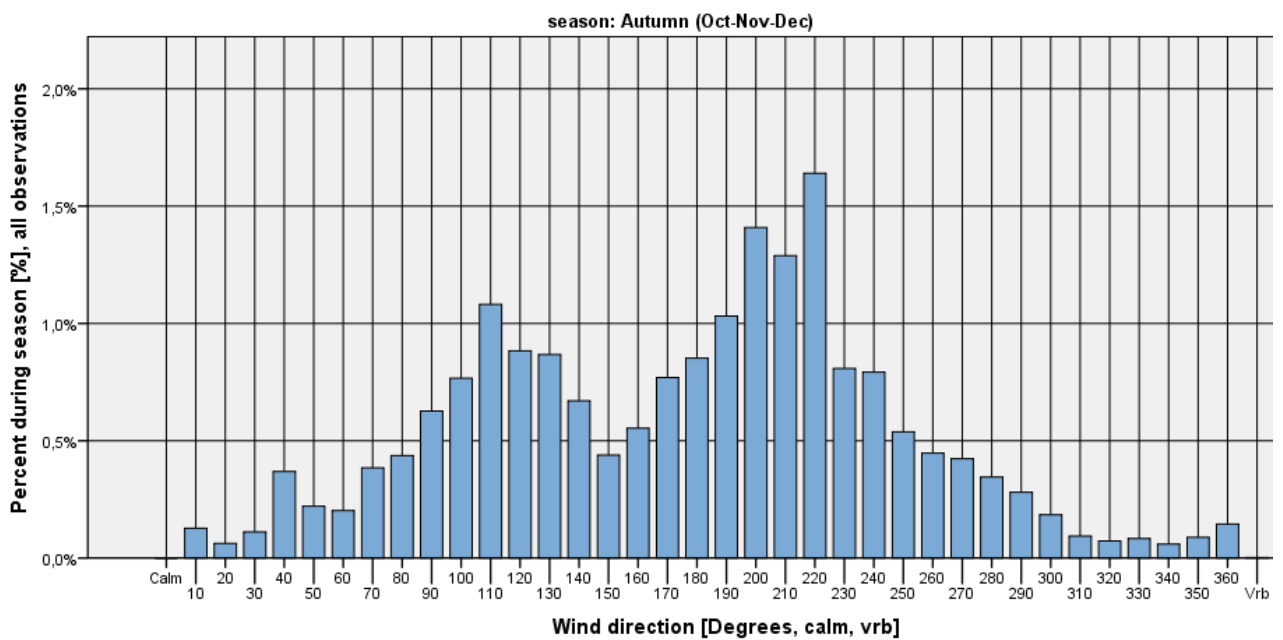


Figure 87

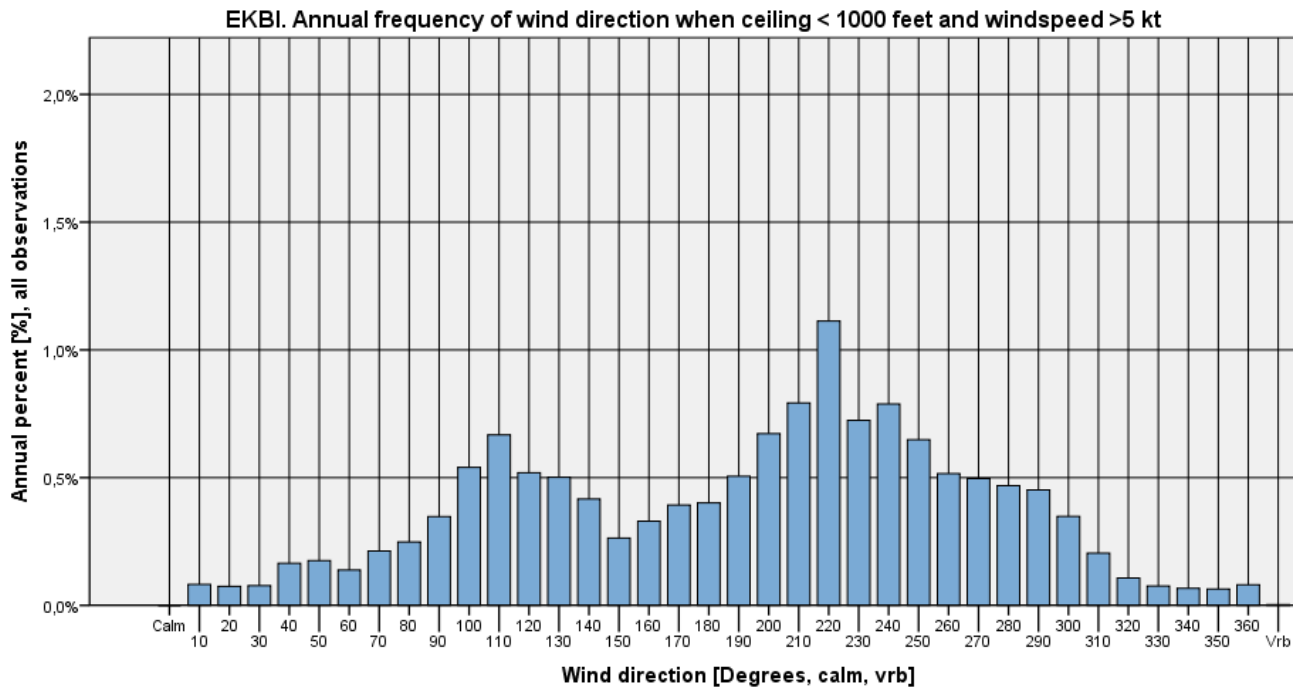


Figure 88



Ceiling < 500 feet

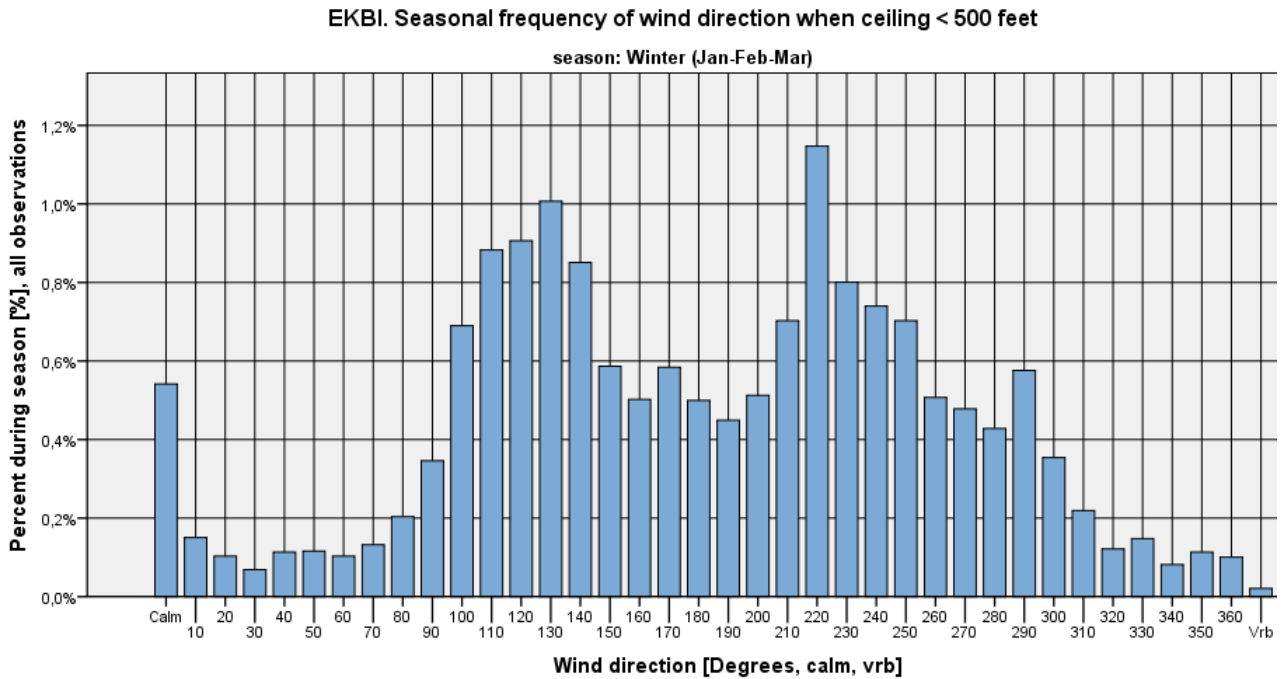


Figure 89

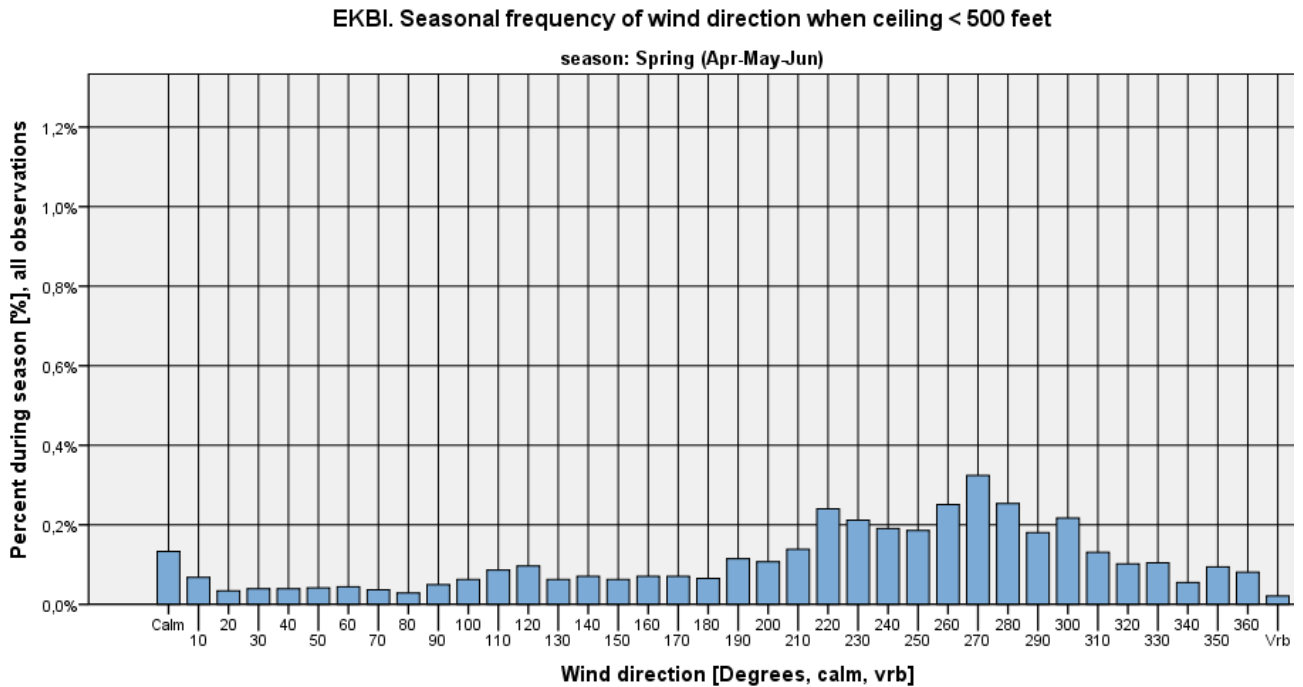


Figure 90



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

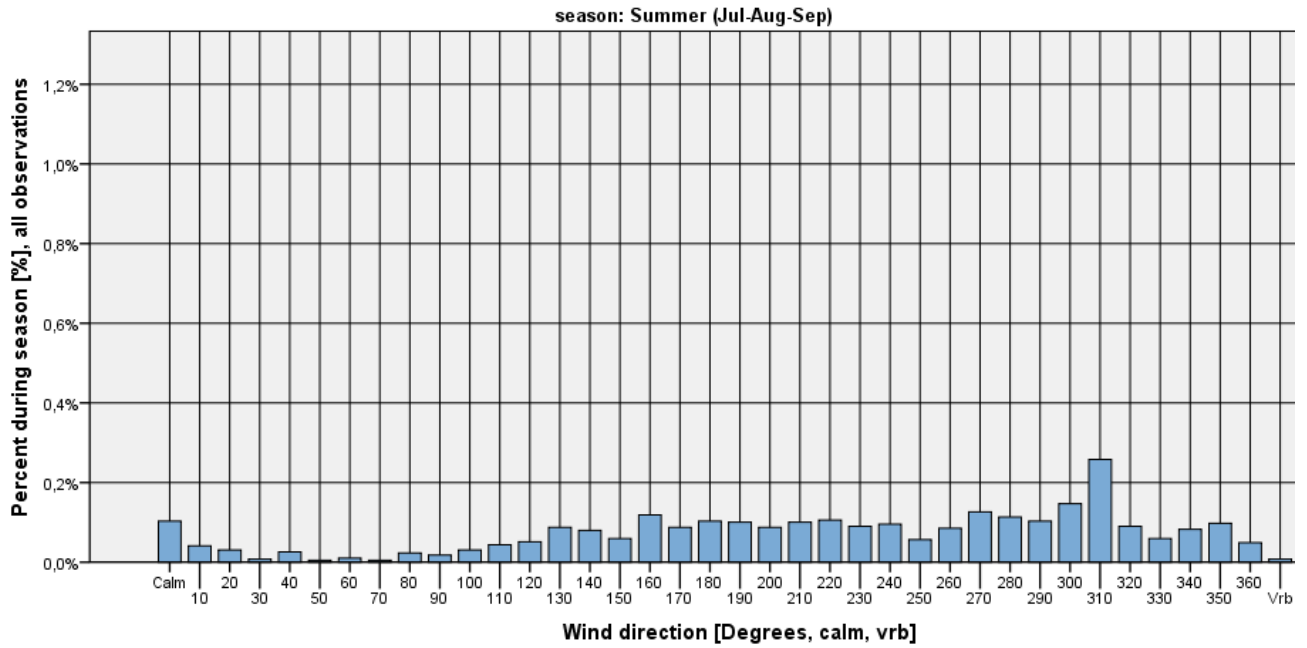


Figure 91

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

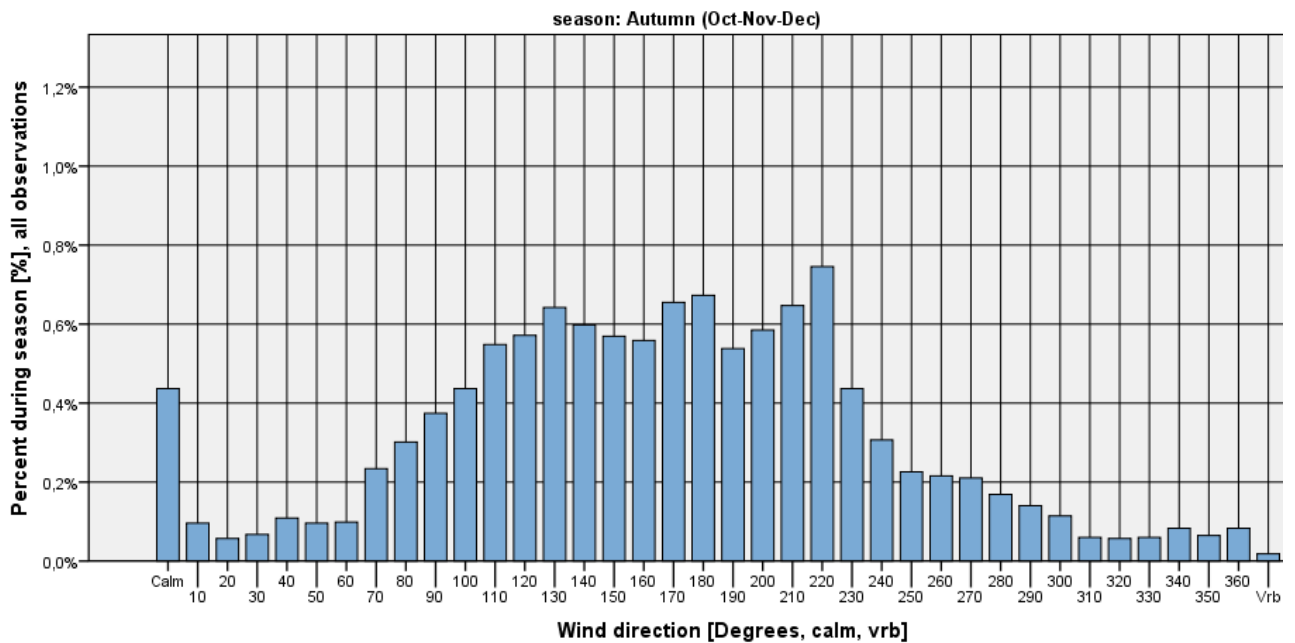


Figure 92

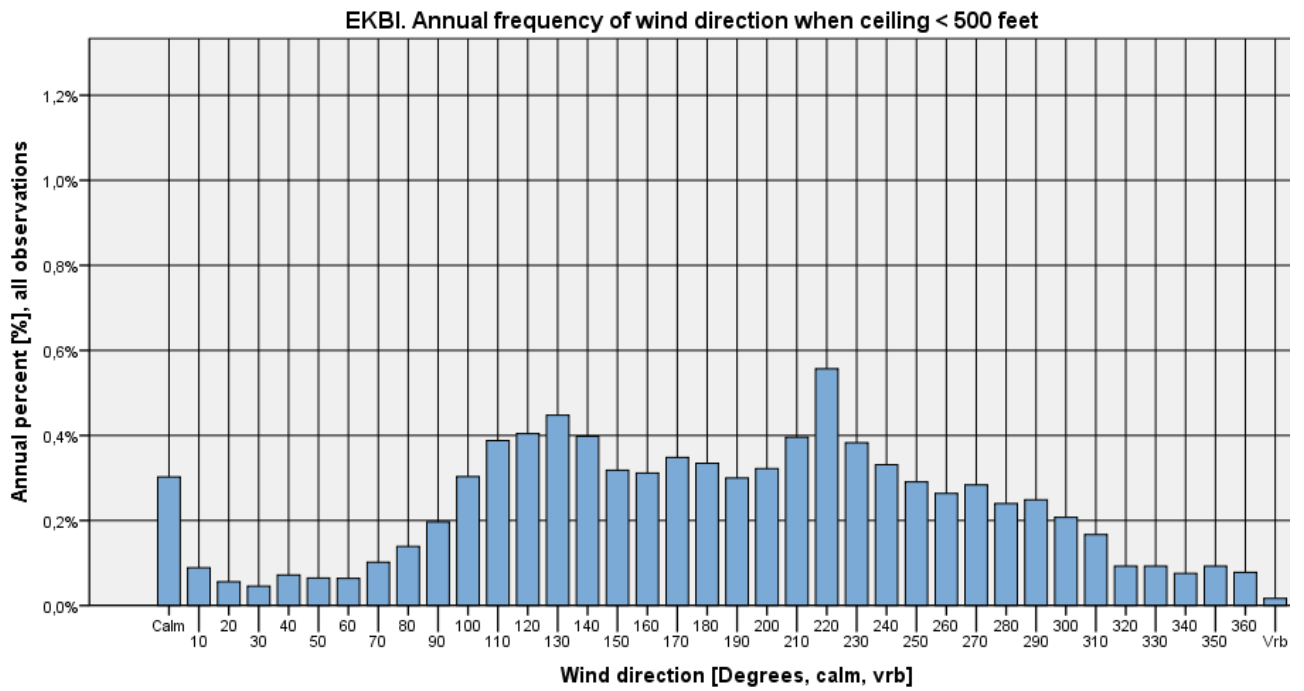


Figure 93



Ceiling < 500 feet and wind speed ≤ 5 kts

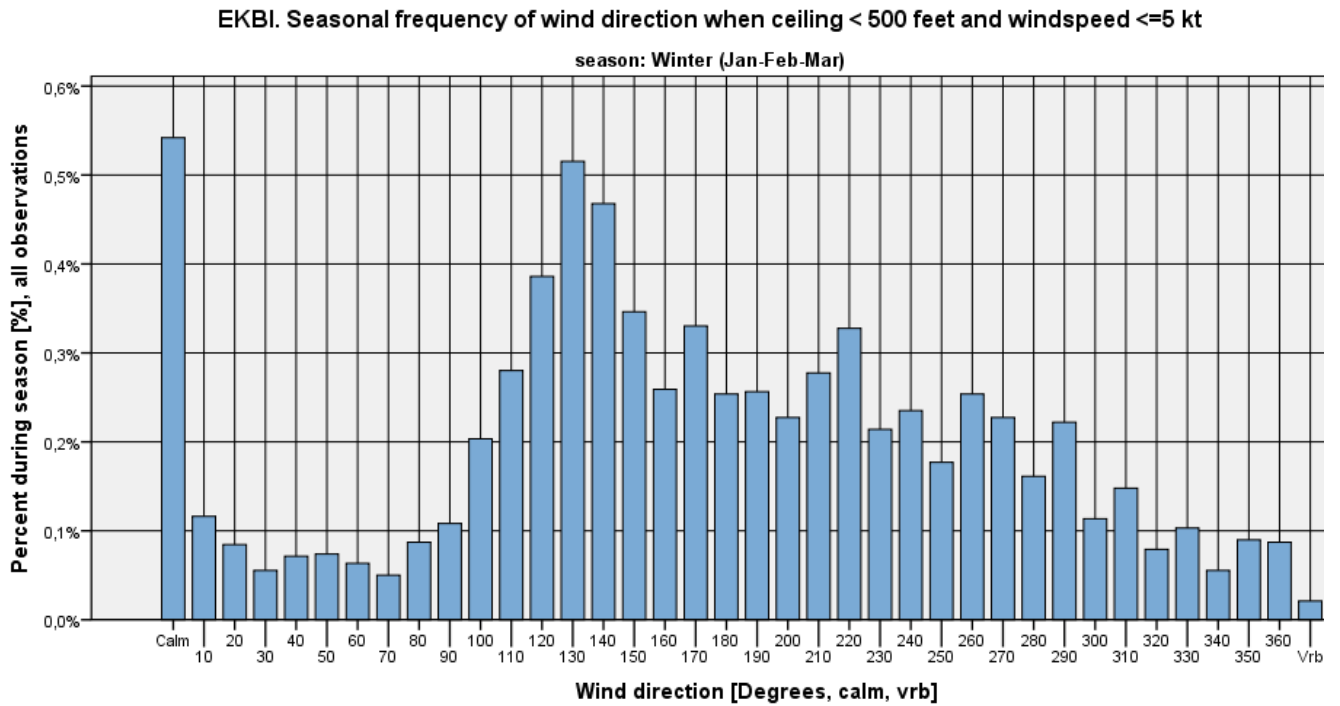


Figure 94

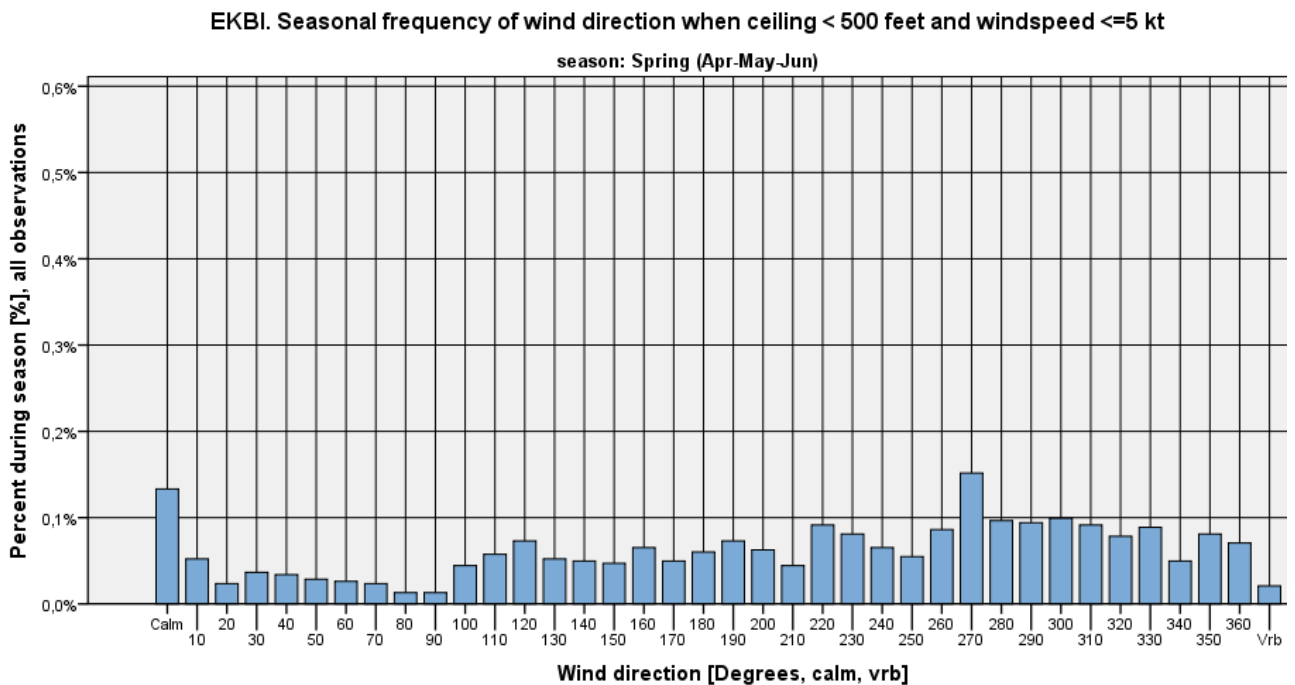


Figure 95



EKBI. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

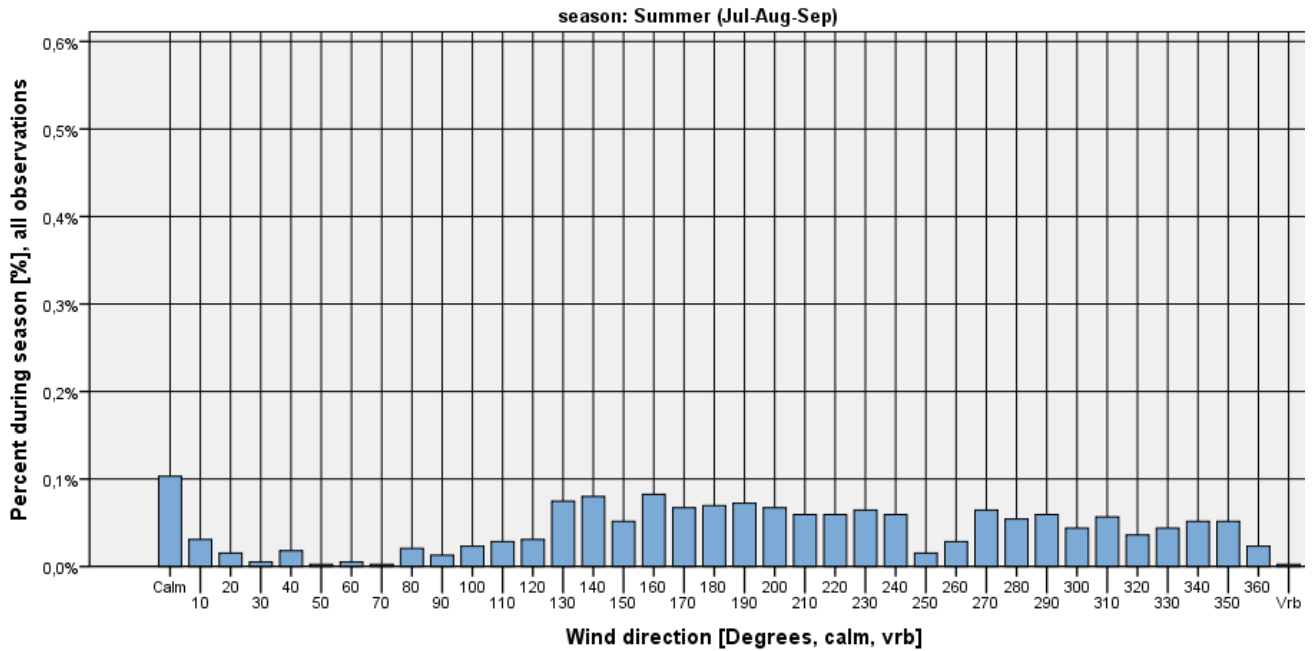


Figure 96

EKBI. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

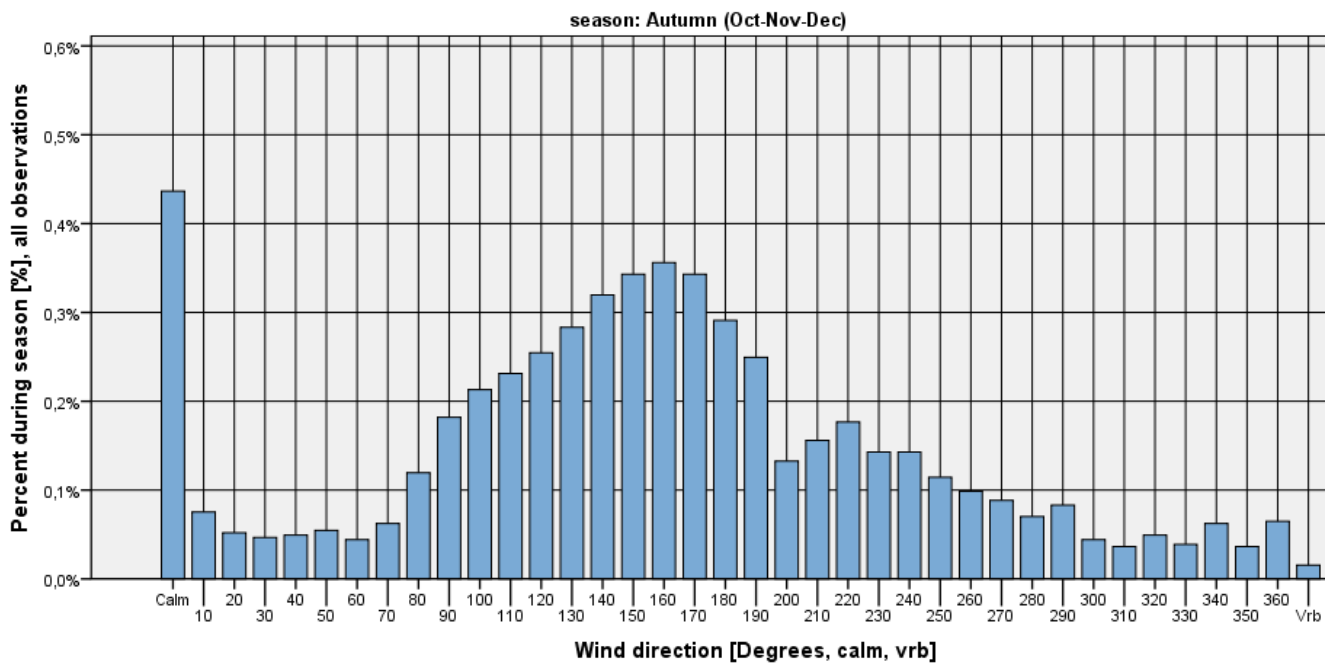


Figure 97

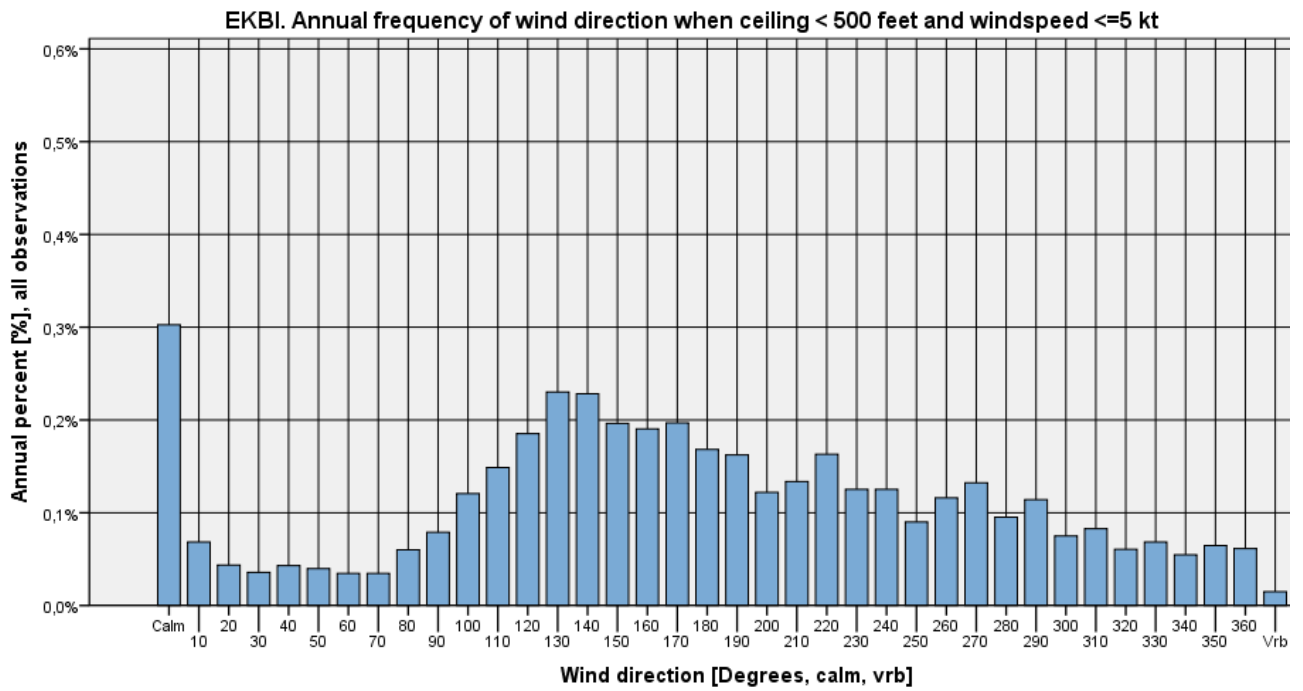


Figure 98



Ceiling < 500 feet and wind speed > 5 kts

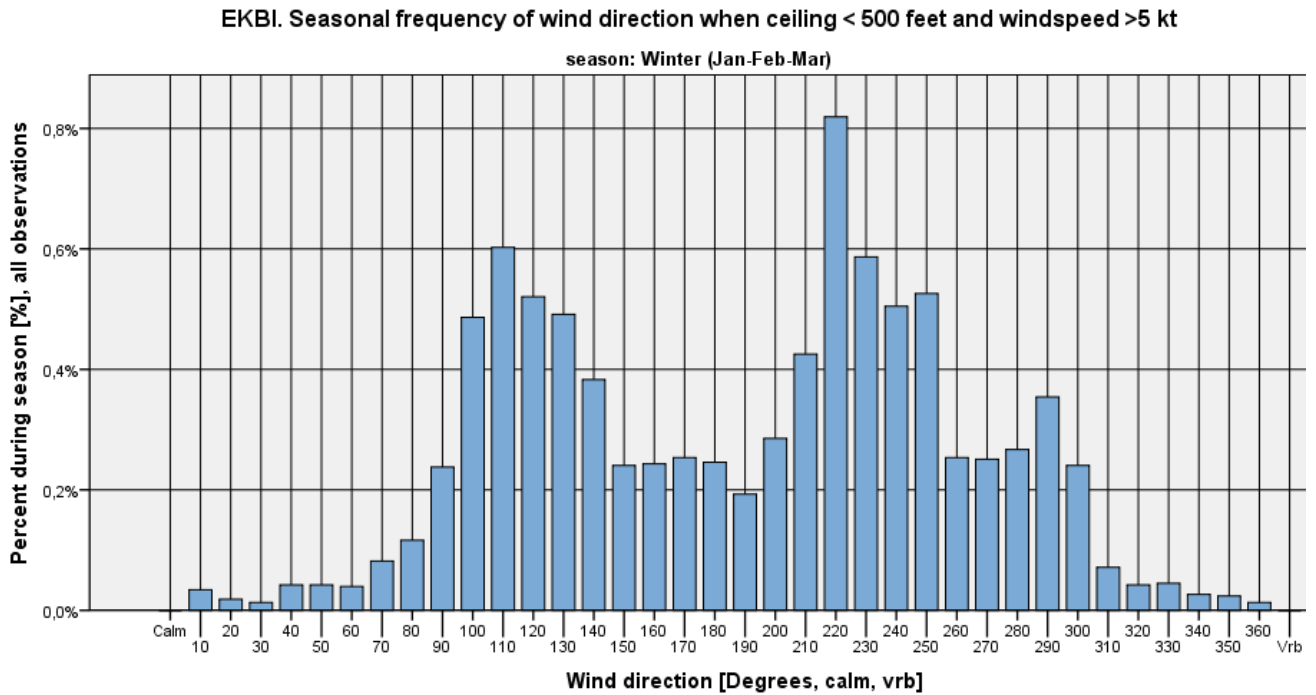


Figure 99

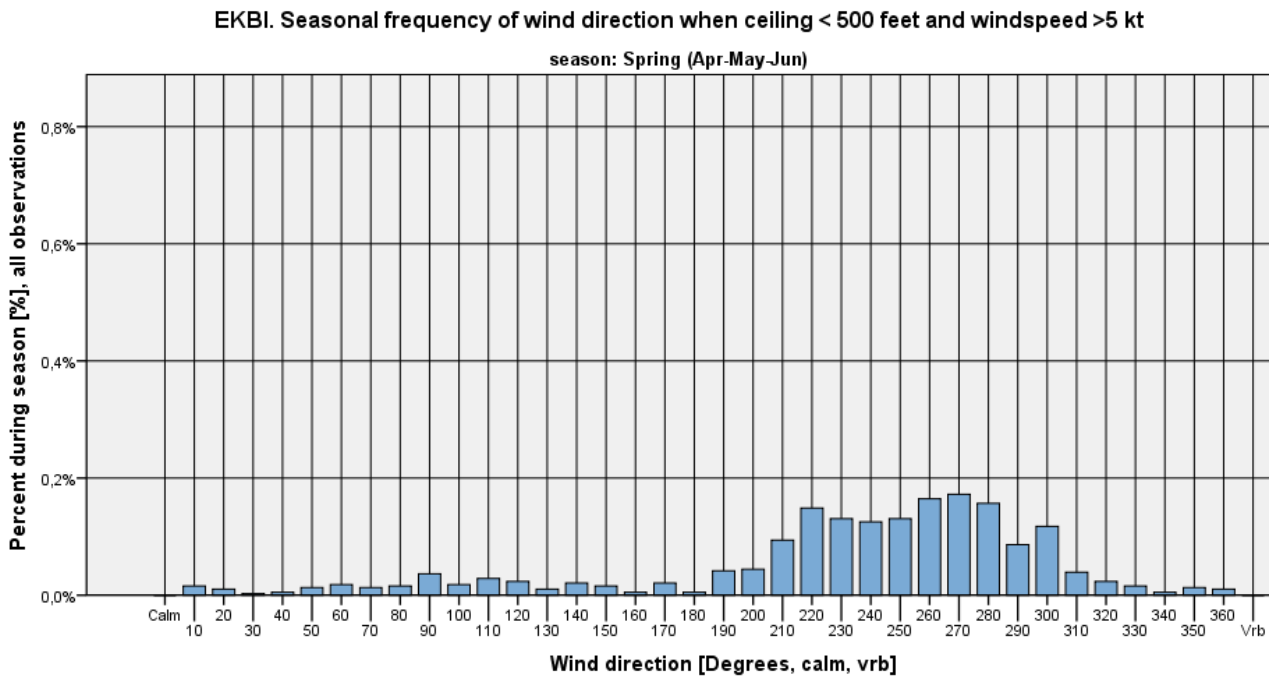


Figure 100



EKBI. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

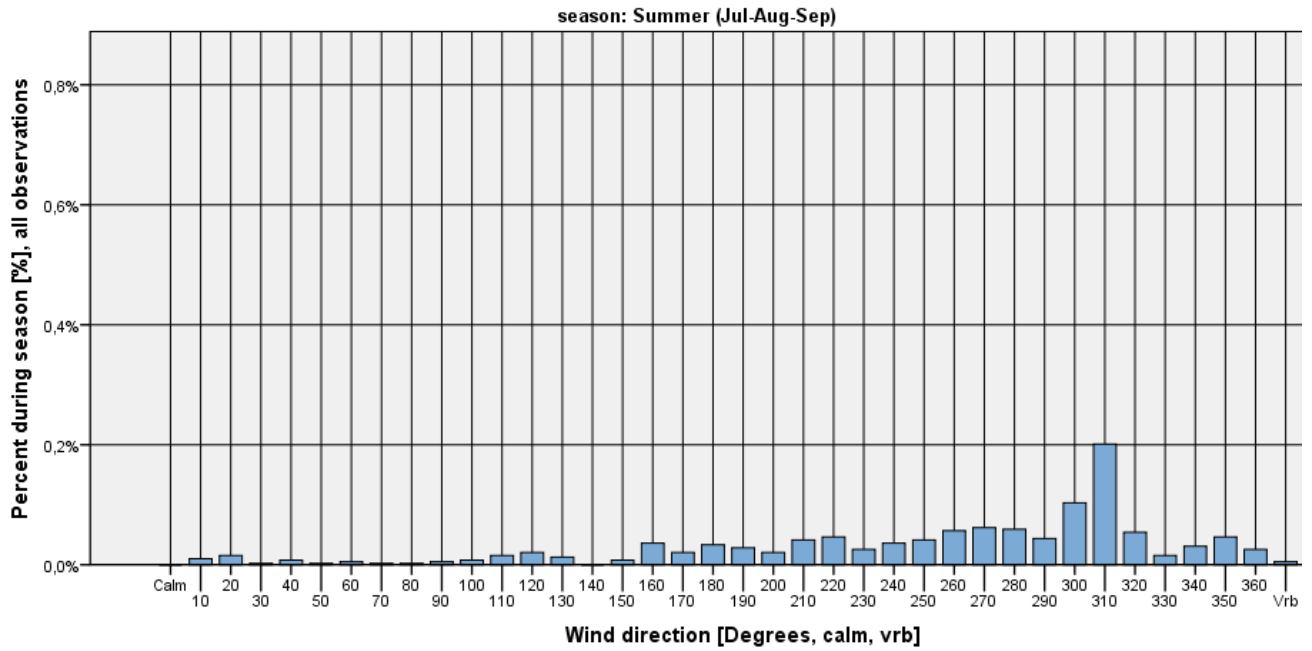


Figure 101

EKBI. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

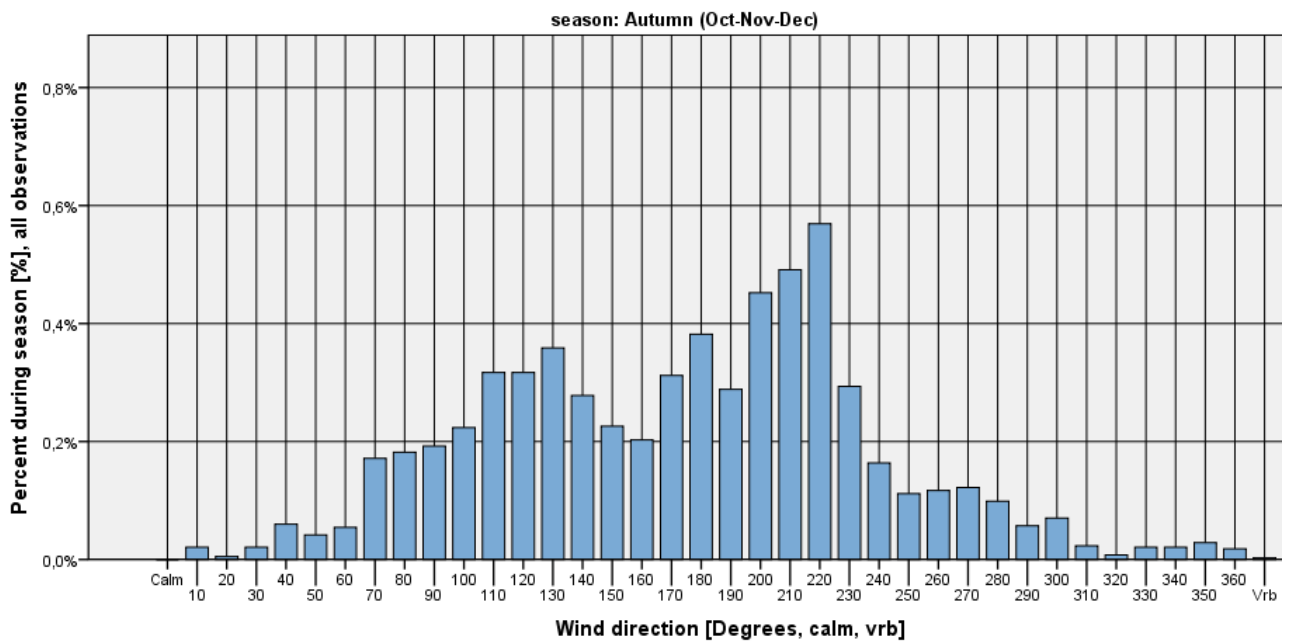


Figure 102

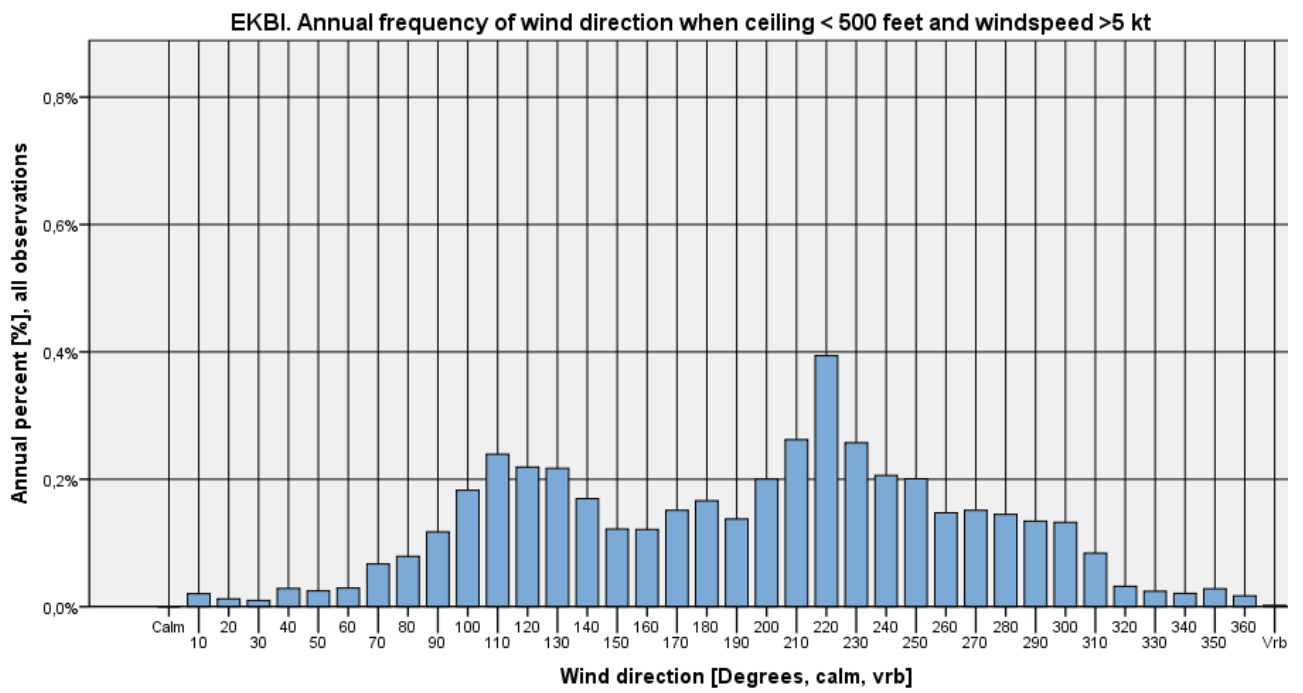


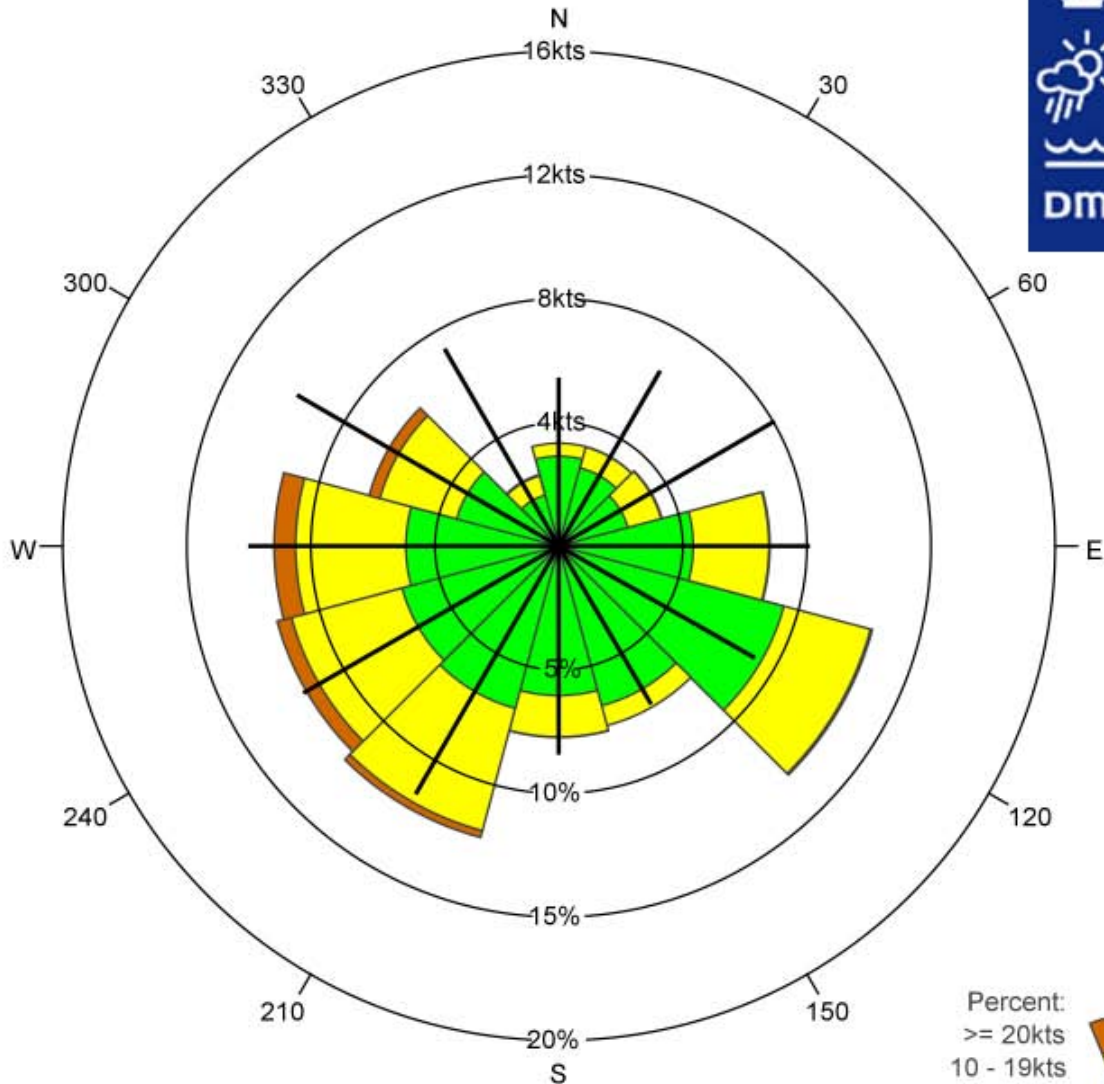
Figure 103



Wind roses

EKBI - Billund Lufthavn AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	4.2	4.2	4.3	8.5	13.1	7.5	7.7	12.2	11.7	11.5	7.9	3.0	95.8
% 1 - 9kts	3.6	3.3	2.9	5.4	9.4	6.7	6.0	6.8	6.5	6.2	4.3	2.1	63.2
% 10 - 19kts	0.5	0.9	1.4	3.0	3.6	0.8	1.7	5.1	4.6	4.4	3.2	0.8	30.2
% >= 20kts	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.6	0.9	0.4	0.0	2.4
Mean wind speed	5.5	6.5	8.1	8.1	7.3	5.9	6.8	9.3	9.5	10.0	9.8	7.4	8.2
Max wind speed	23.0	21.0	22.0	23.0	25.0	19.0	24.0	34.0	39.0	42.0	34.0	24.0	42.0

Number of observations = 76314

Source: DMI

Calm defined a wind speed = 0kts

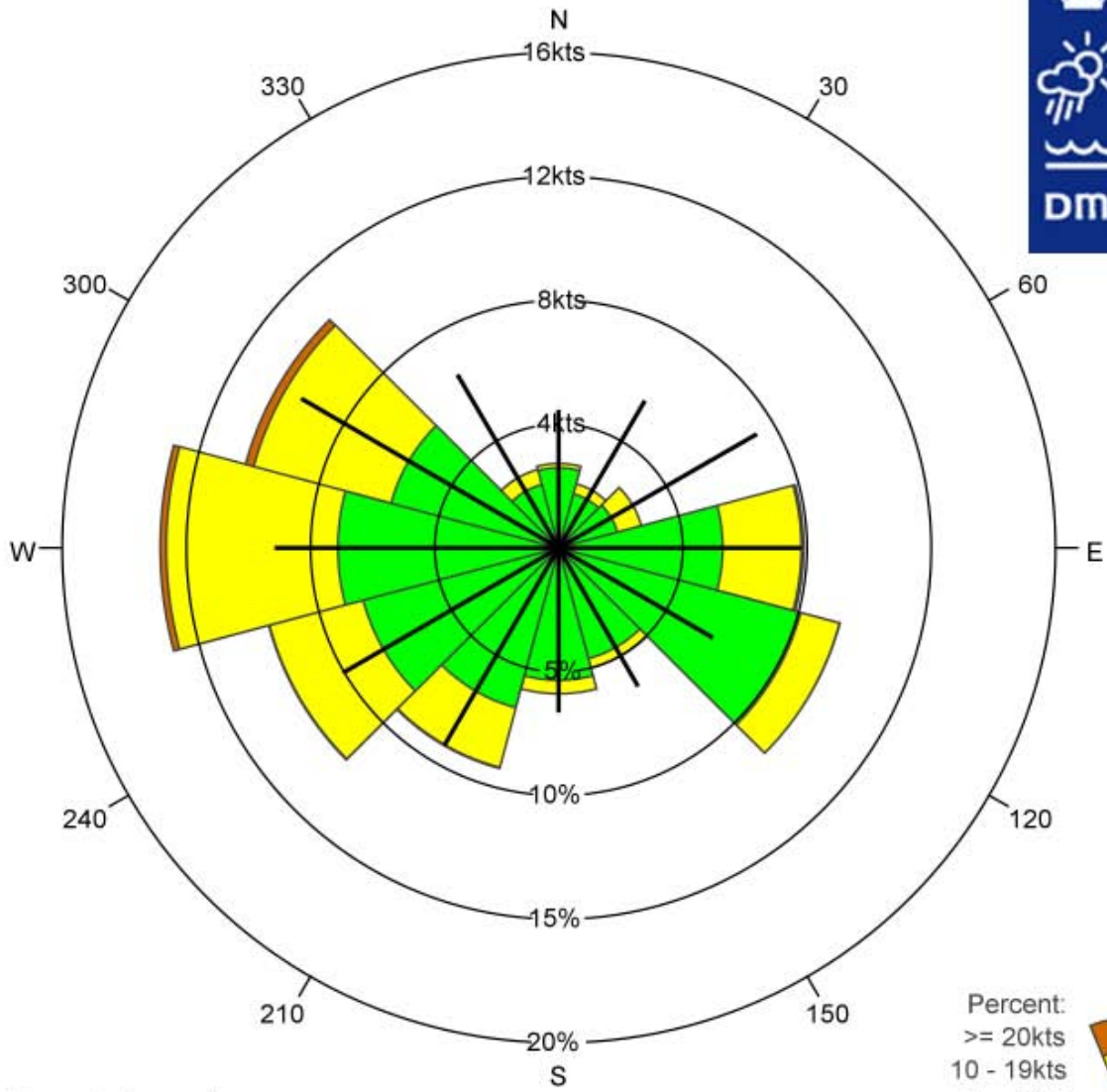
Number of observations with calm/varying wind direction: 3200=4.2%

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



EKBI - Billund Lufthavn SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.4	2.7	3.4	9.9	11.7	5.0	5.9	9.2	12.1	16.0	13.1	3.3	95.7
% 1 - 9kts	3.2	2.3	2.4	6.6	10.1	4.6	5.3	6.7	8.2	8.9	7.0	2.7	68.0
% 10 - 19kts	0.2	0.4	1.0	3.1	1.6	0.4	0.5	2.5	3.9	6.9	5.7	0.6	27.0
% >= 20kts	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.7
Mean wind speed	4.5	5.5	7.3	7.8	5.8	5.1	5.3	7.3	8.1	9.1	9.6	6.5	7.5
Max wind speed	20.0	20.0	20.0	24.0	23.0	18.0	21.0	24.0	23.0	29.0	30.0	20.0	30.0

Number of observations = 77016

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 3287=4.3%

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

Availability

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

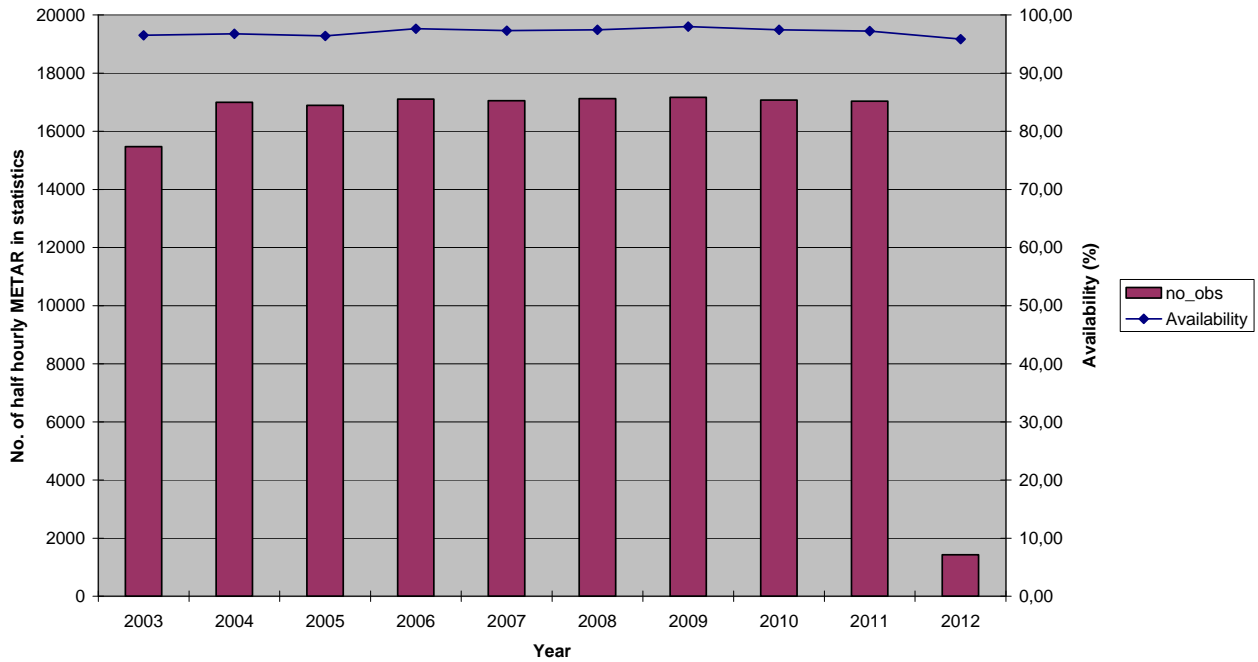


Figure 104

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

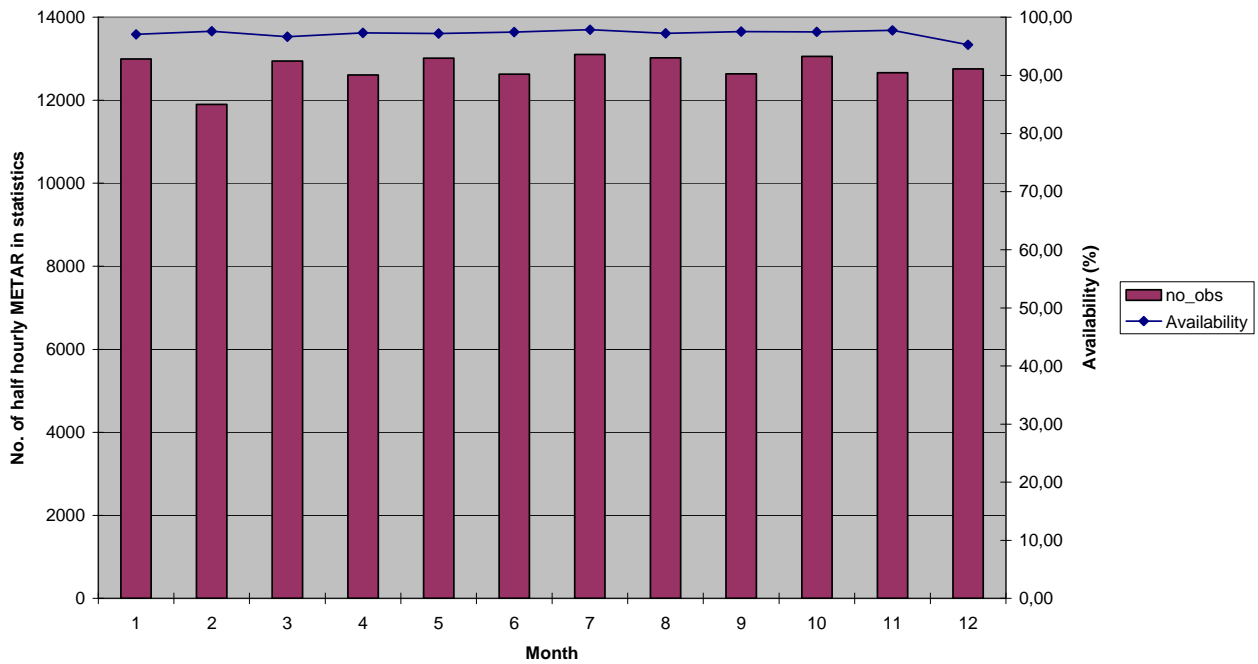


Figure 105

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

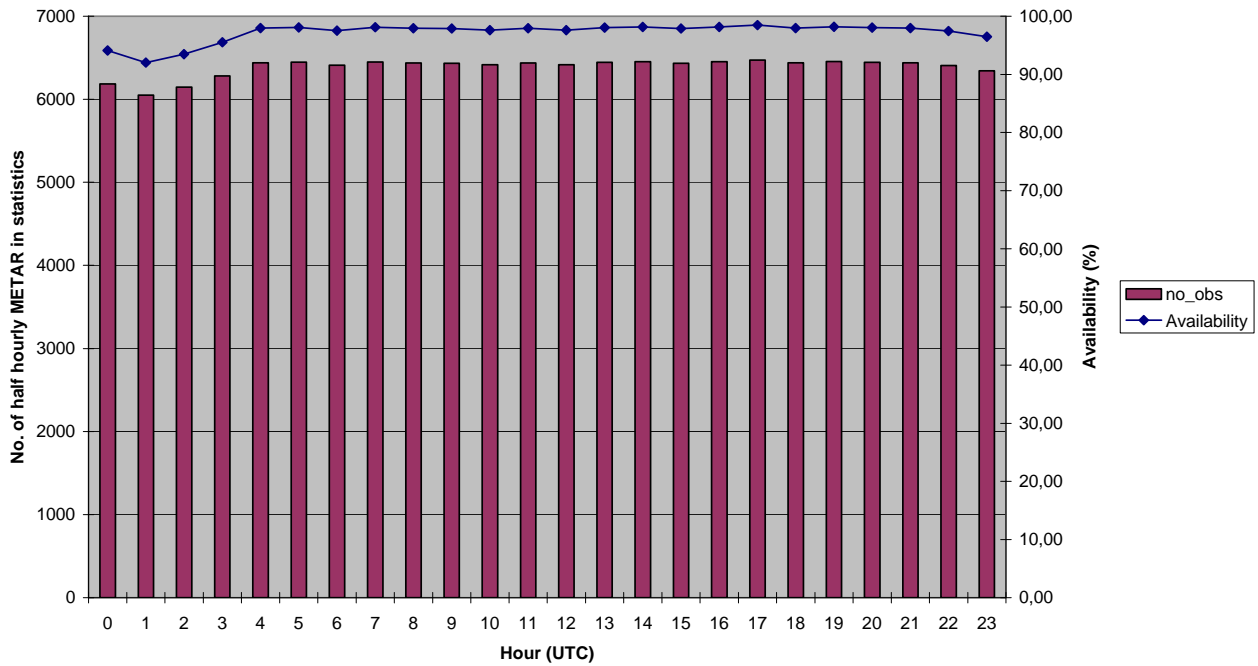


Figure 106

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

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

Table 13



EKCH København/Kastrup

Copenhagen Airport

Airport location: 55,617°N 12,650°E Elevation: 5 m above msl

EKCH observations in statistics: 156.037 half hourly METAR³ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 98,9 %.

The EKCH METAR are all manual.

Cross tables Visibility – Ceiling

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

No. Obs = 38.454	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,0026	1,41	2,61	2,70	2,74	0,30	3,04
<1 km	0,0026	1,47	3,02	3,19	3,23	0,38	3,61
<1.5 km	0,0026	1,54	3,92	4,33	4,43	0,61	5,04
<3.0 km	0,0052	1,59	6,15	7,82	8,31	1,65	9,95
< 5.0 km	0,0052	1,59	7,91	12,02	13,45	4,00	17,45
>= 5,0 km or CAVOK	0	0	0,87	7,34	15,82	66,72	82,55
Total	0,0052	1,59	8,77	19,36	29,28	70,72	100

Table 14

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

No. Obs = 38.909	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,23	0,40	0,40	0,40	0,16	0,57
<1 km	0	0,23	0,45	0,46	0,46	0,20	0,66
<1.5 km	0	0,24	0,58	0,61	0,62	0,35	0,97
<3.0 km	0	0,25	0,85	1,05	1,08	0,97	2,06
< 5.0 km	0	0,26	1,19	1,92	2,16	2,47	4,63
>= 5,0 km or CAVOK	0	0	0,18	1,56	3,77	91,60	95,37
Total	0	0,26	1,37	3,48	5,93	94,07	100

Table 15

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



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

No. Obs = 39.343	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,16	0,32	0,32	0,32	0,19	0,51
<1 km	0	0,17	0,35	0,35	0,35	0,26	0,62
<1.5 km	0	0,17	0,43	0,46	0,46	0,36	0,83
<3.0 km	0	0,18	0,62	0,77	0,82	0,83	1,65
< 5.0 km	0	0,18	0,80	1,30	1,56	2,06	3,62
>= 5,0 km or CAVOK	0	0	0,14	1,49	3,74	92,64	96,38
Total	0	0,18	0,94	2,79	5,29	94,71	100

Table 16

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

No. Obs = 39.331	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,49	1,25	1,31	1,32	0,53	1,85
<1 km	0	0,52	1,41	1,49	1,51	0,63	2,14
<1.5 km	0	0,55	1,76	1,95	2,03	0,81	2,84
<3.0 km	0	0,59	3,18	4,20	4,54	1,78	6,32
< 5.0 km	0	0,60	4,81	8,16	9,43	4,08	13,51
>= 5,0 km or CAVOK	0	0	1,02	8,28	17,83	68,66	86,49
Total	0	0,60	5,84	16,45	27,26	72,74	100

Table 17

Annual: EKCH – Frequencies (%) Visibility - Ceiling

No. Obs = 156.037	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,00064	0,57	1,14	1,18	1,19	0,30	1,49
<1 km	0,00064	0,59	1,30	1,37	1,38	0,37	1,75
<1.5 km	0,00064	0,62	1,66	1,83	1,88	0,53	2,41
<3.0 km	0,0013	0,65	2,68	3,44	3,67	1,31	4,98
< 5.0 km	0,0013	0,65	3,66	5,83	6,62	3,15	9,78
>= 5,0 km or CAVOK	0	0	0,55	4,66	10,28	79,95	90,22
Total	0,0013	0,65	4,21	10,49	16,90	83,10	100

Table 18

Wind direction histograms

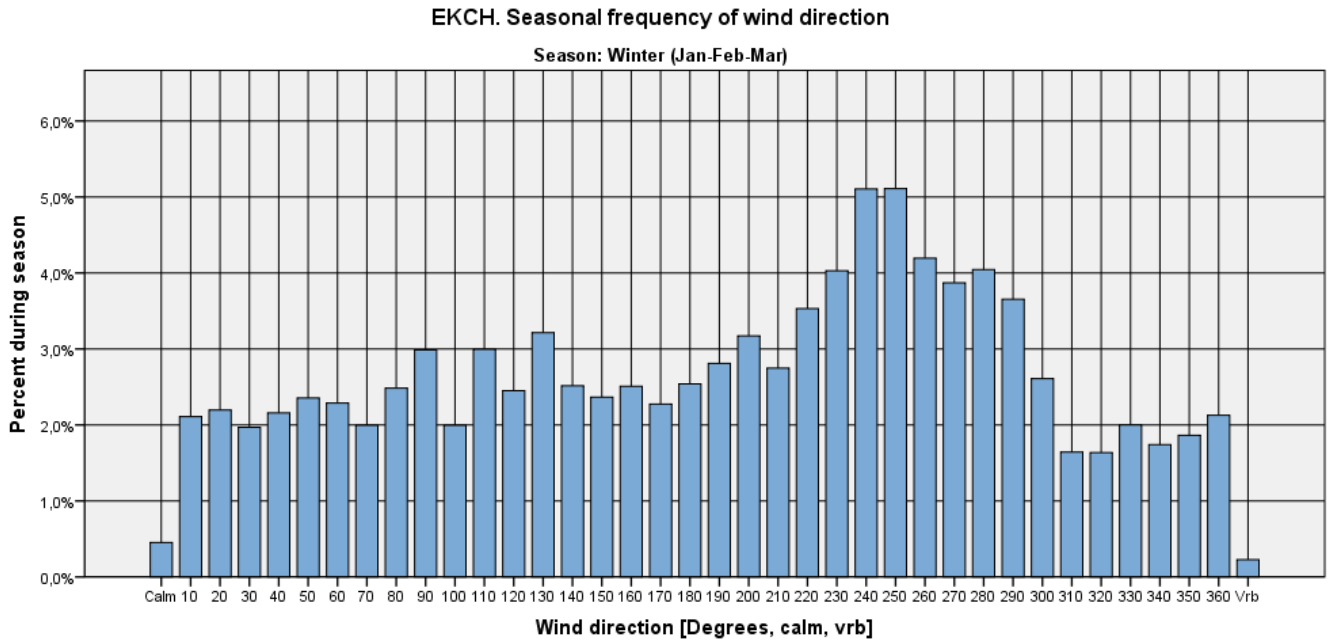


Figure 107

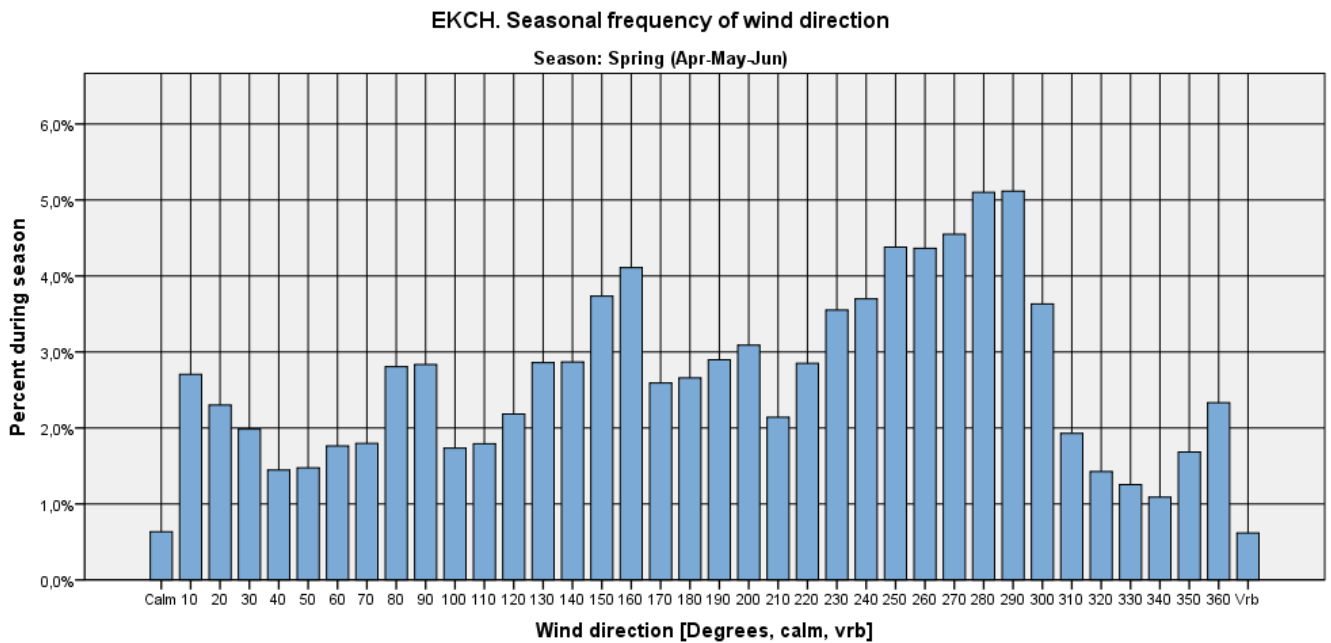


Figure 108



EKCH. Seasonal frequency of wind direction

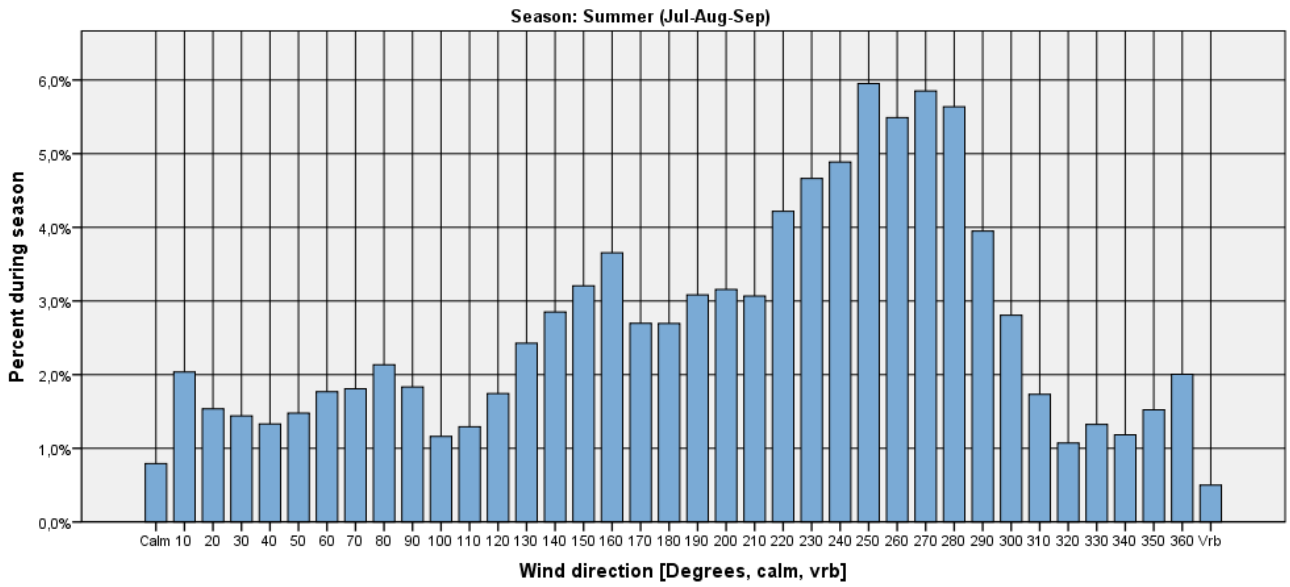


Figure 109

EKCH. Seasonal frequency of wind direction

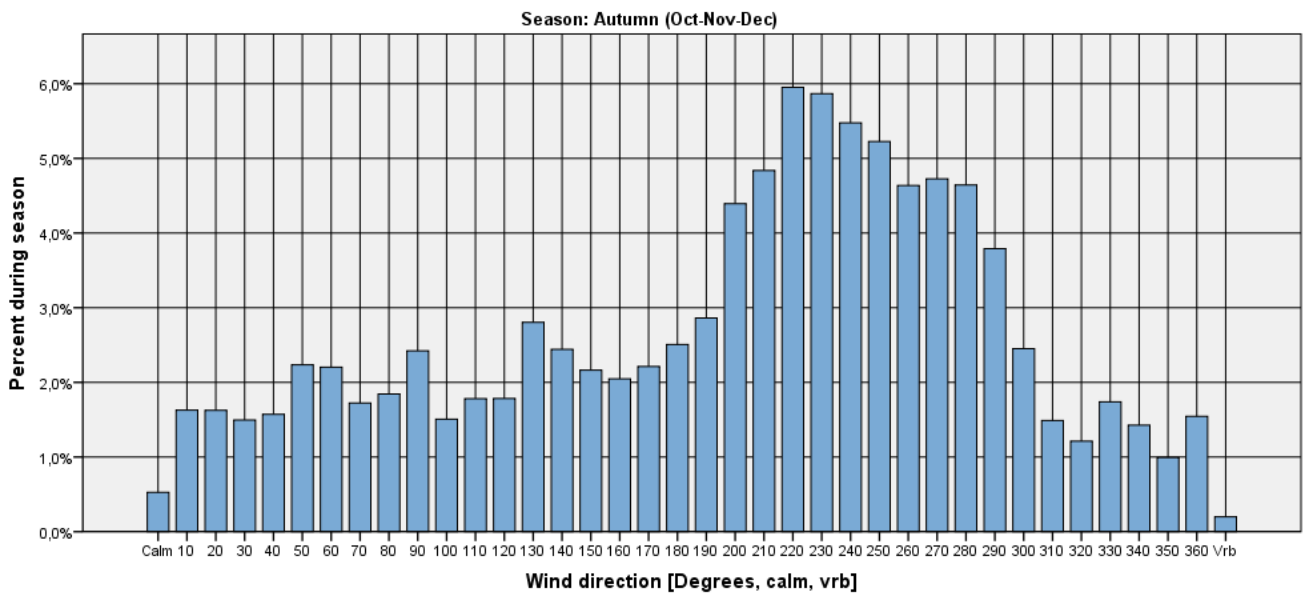


Figure 110

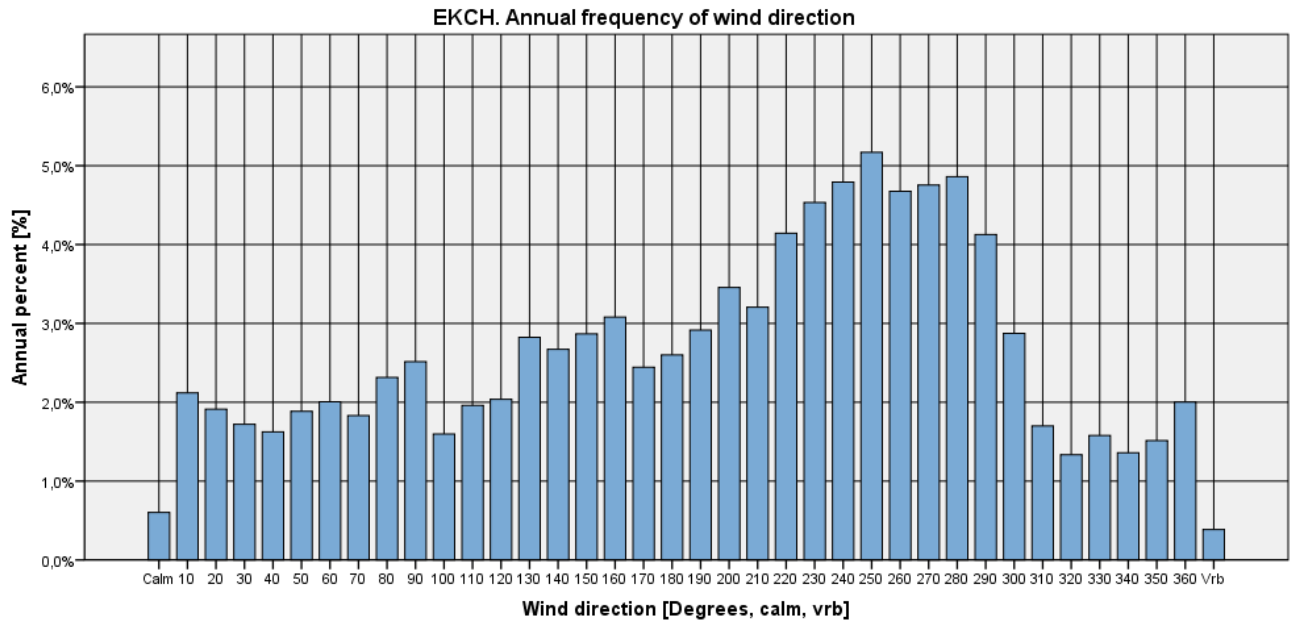


Figure 111

Visibility criteria on wind direction histograms

Visibility < 1000 m

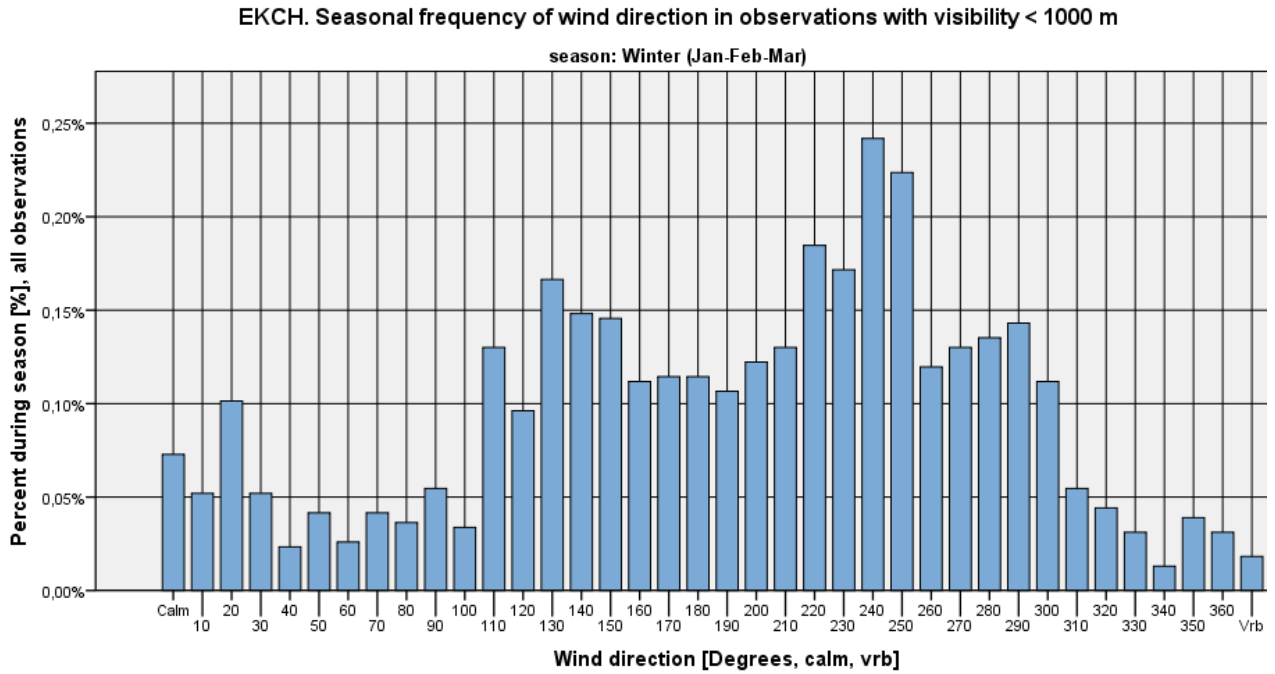


Figure 112

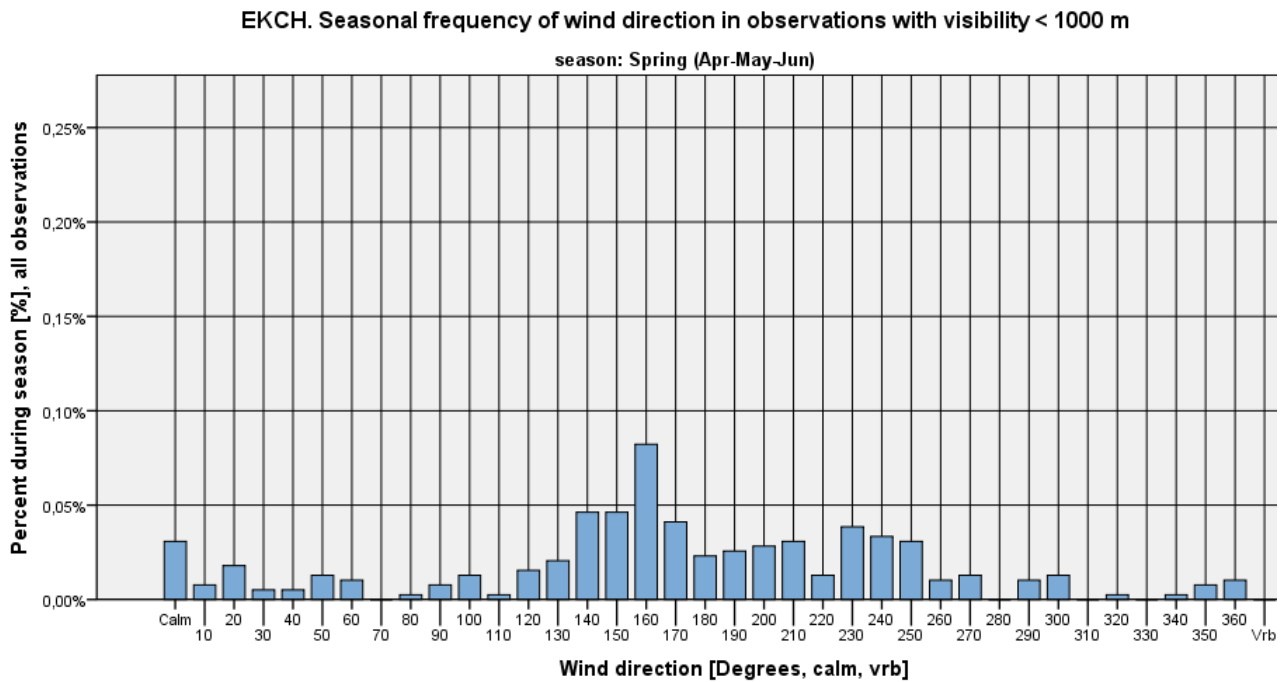


Figure 113

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

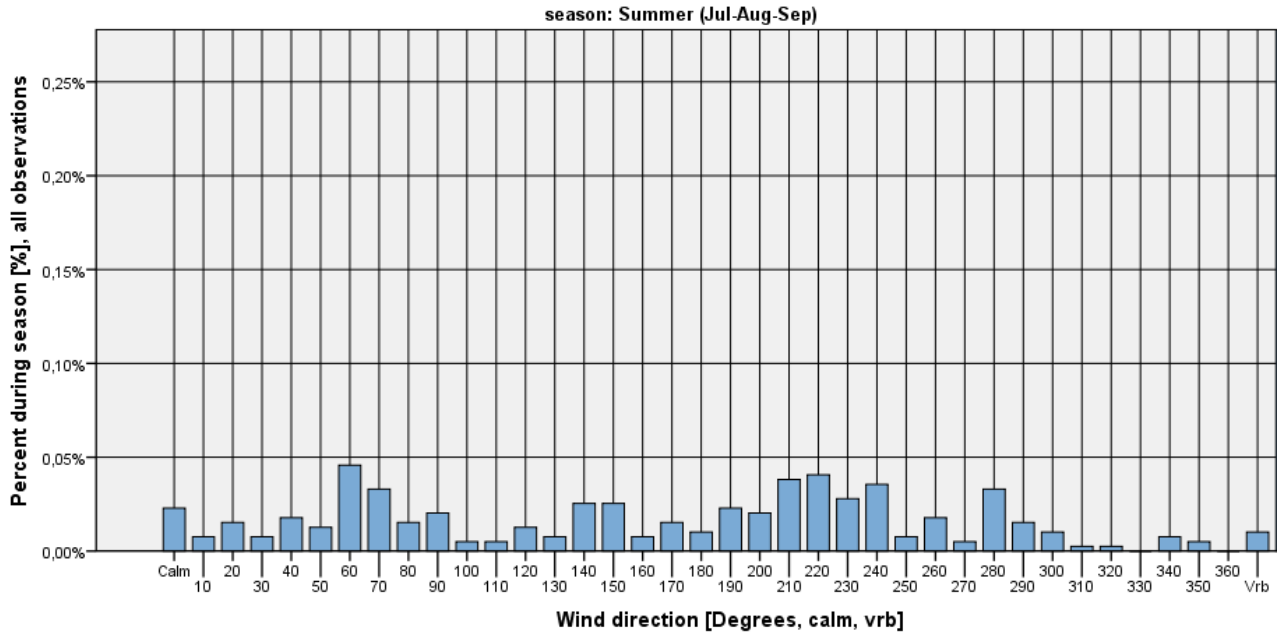


Figure 114

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

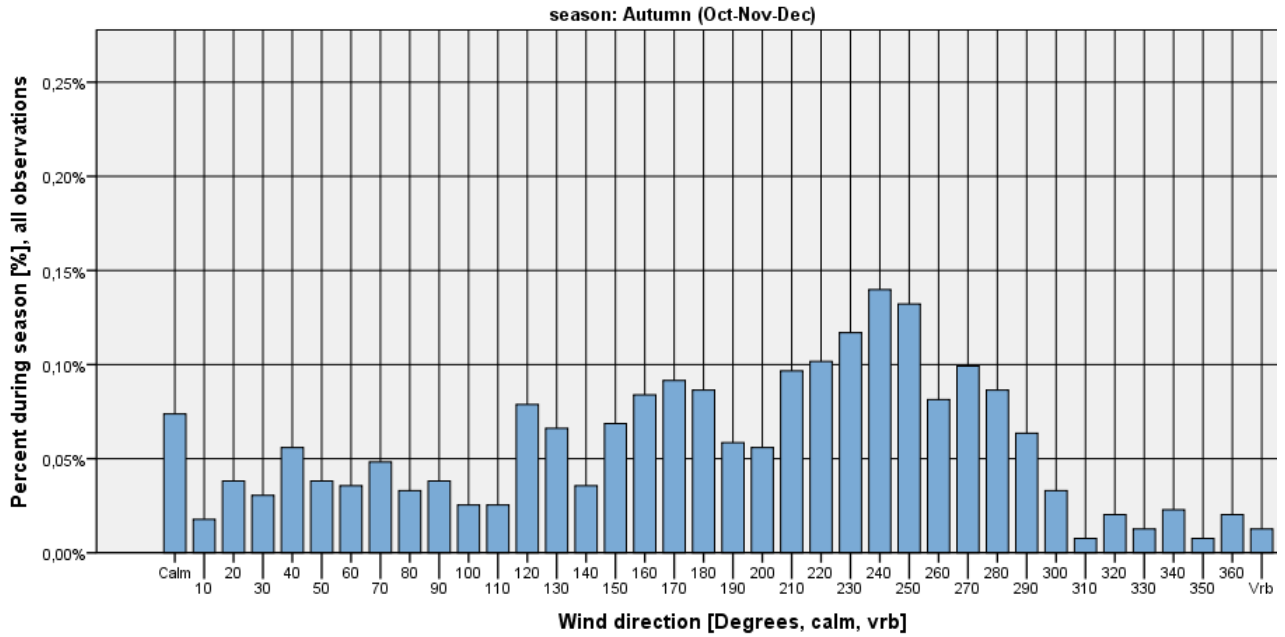


Figure 115

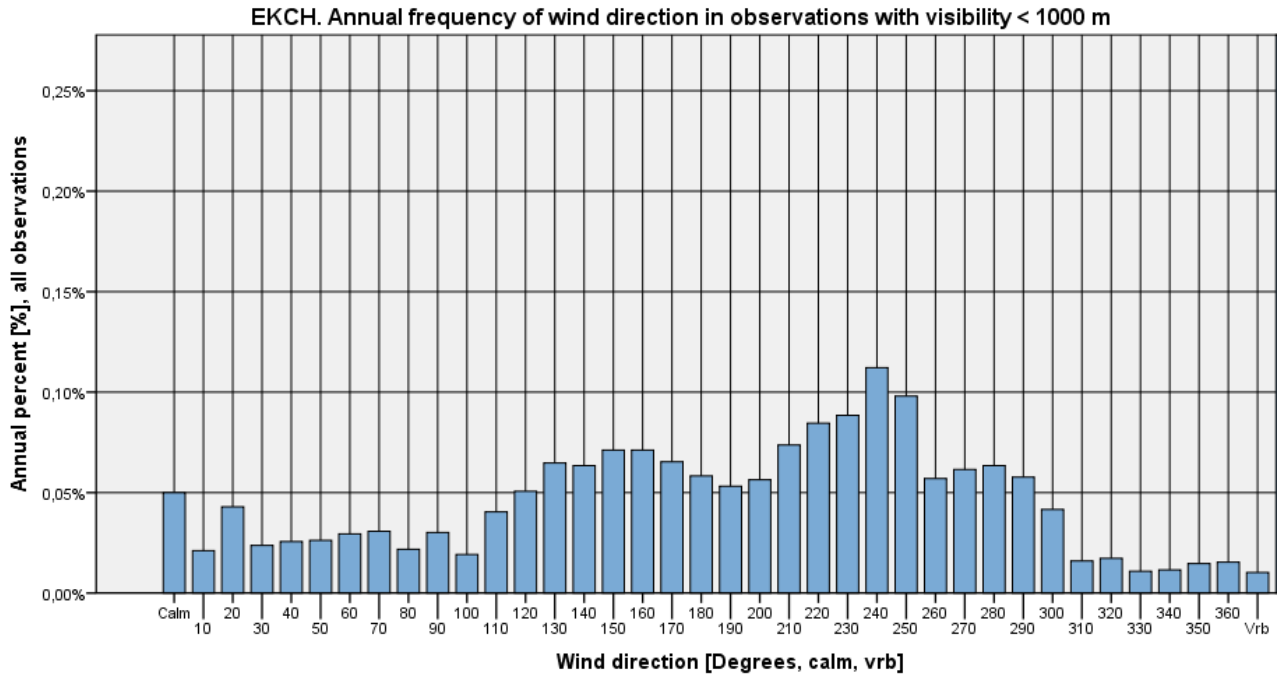


Figure 116

Visibility < 1000 m and wind speed ≤ 5 kts

EKCH. Seasonal frequency of wind direction when visibility < 1000 m and wind speed ≤ 5kts

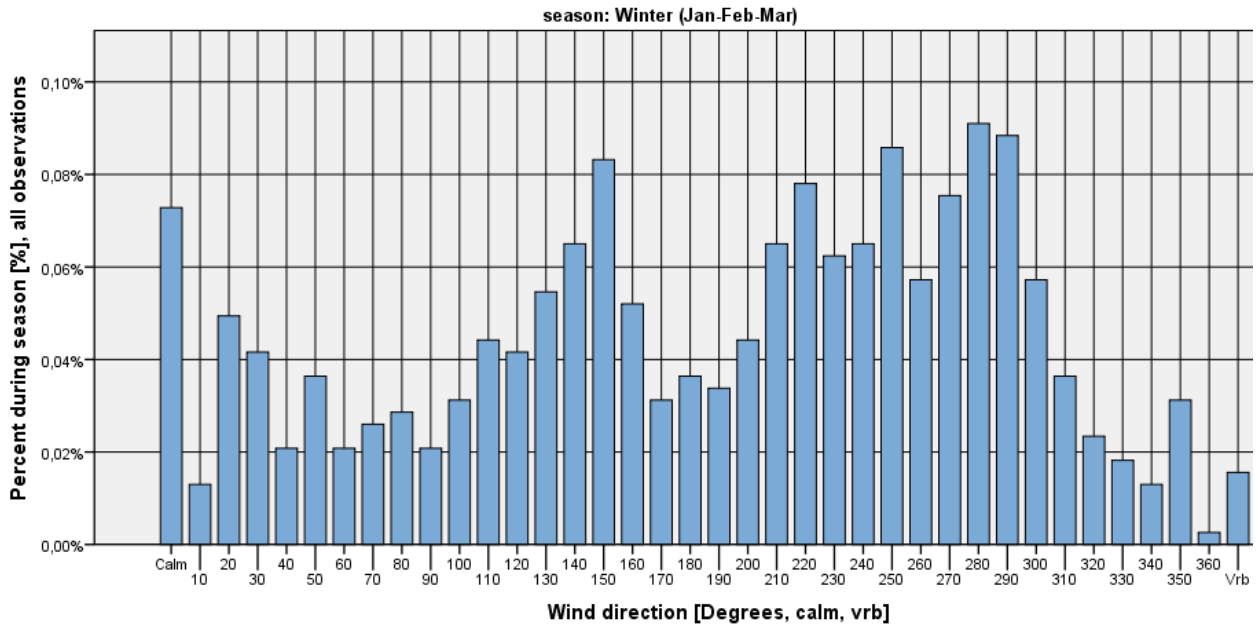


Figure 117

EKCH. Seasonal frequency of wind direction when visibility < 1000 m and wind speed ≤ 5kts

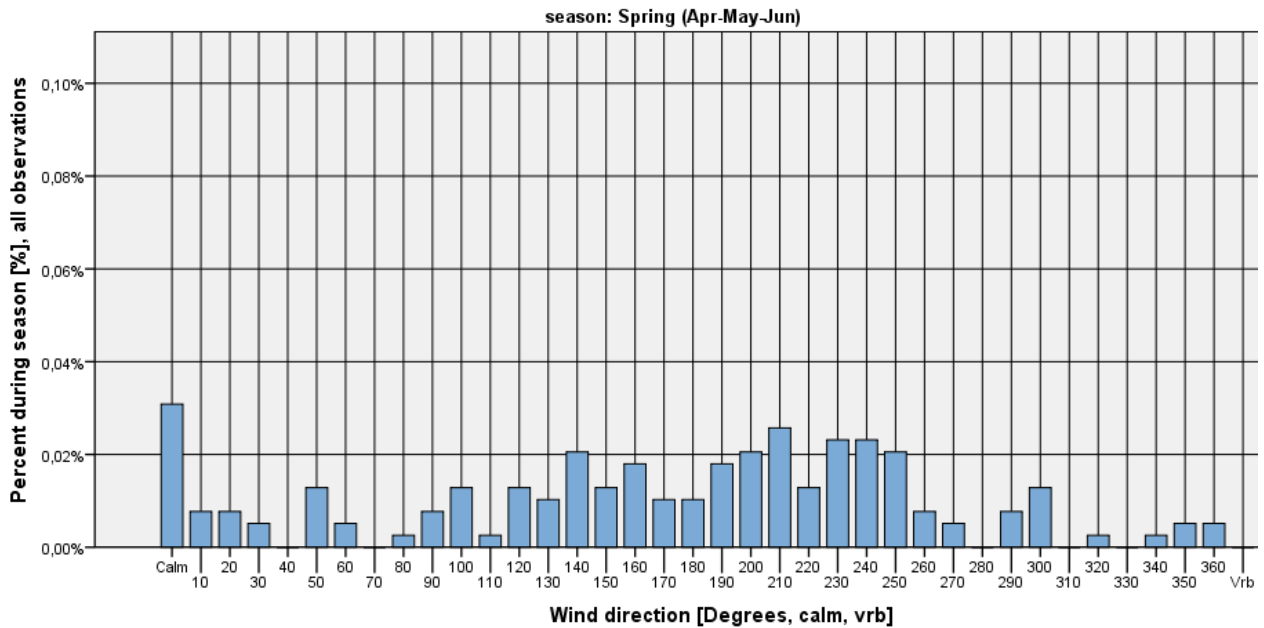


Figure 118

EKCH. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

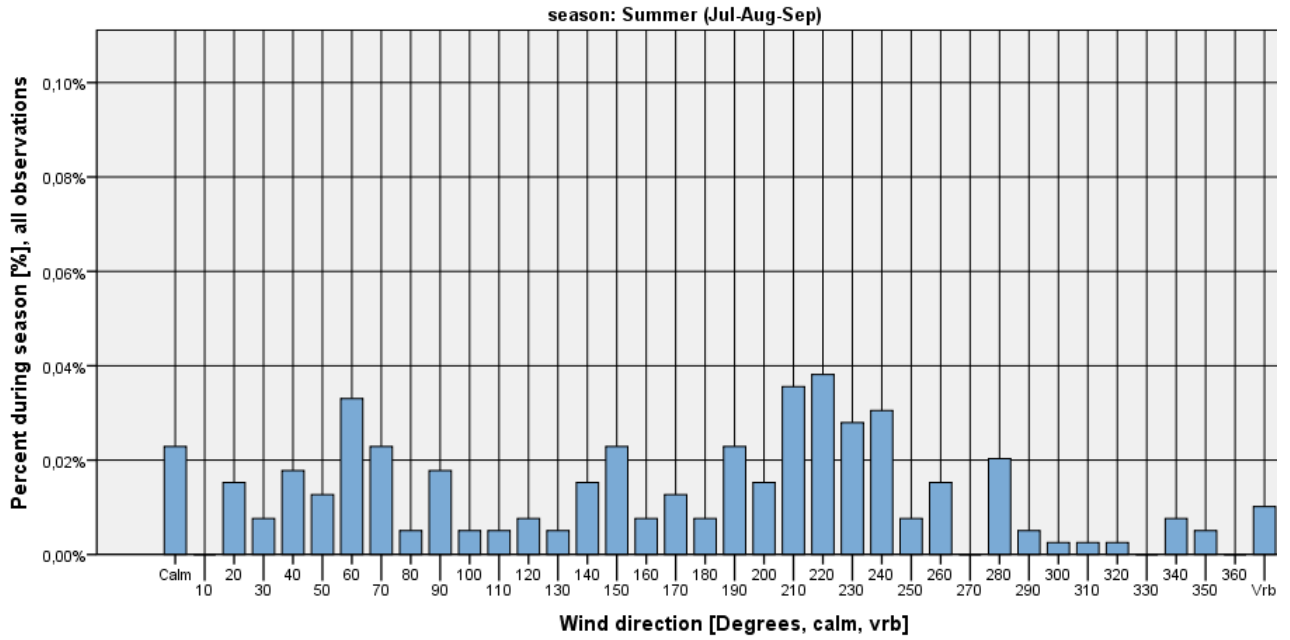


Figure 119

EKCH. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

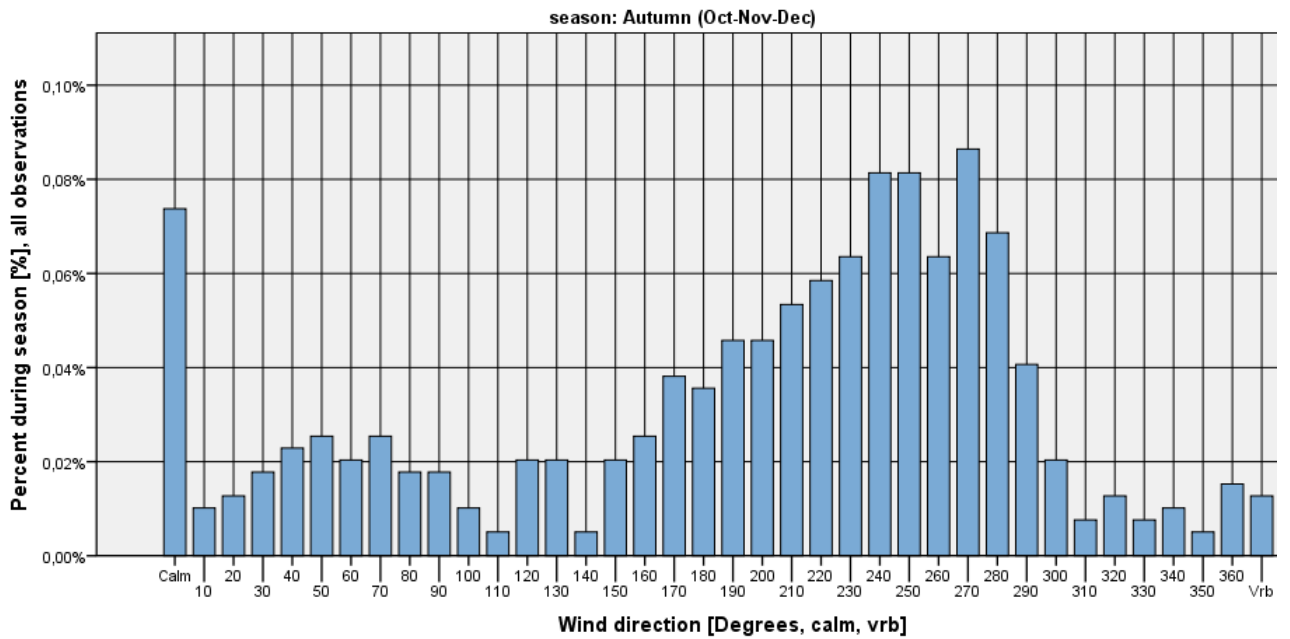


Figure 120

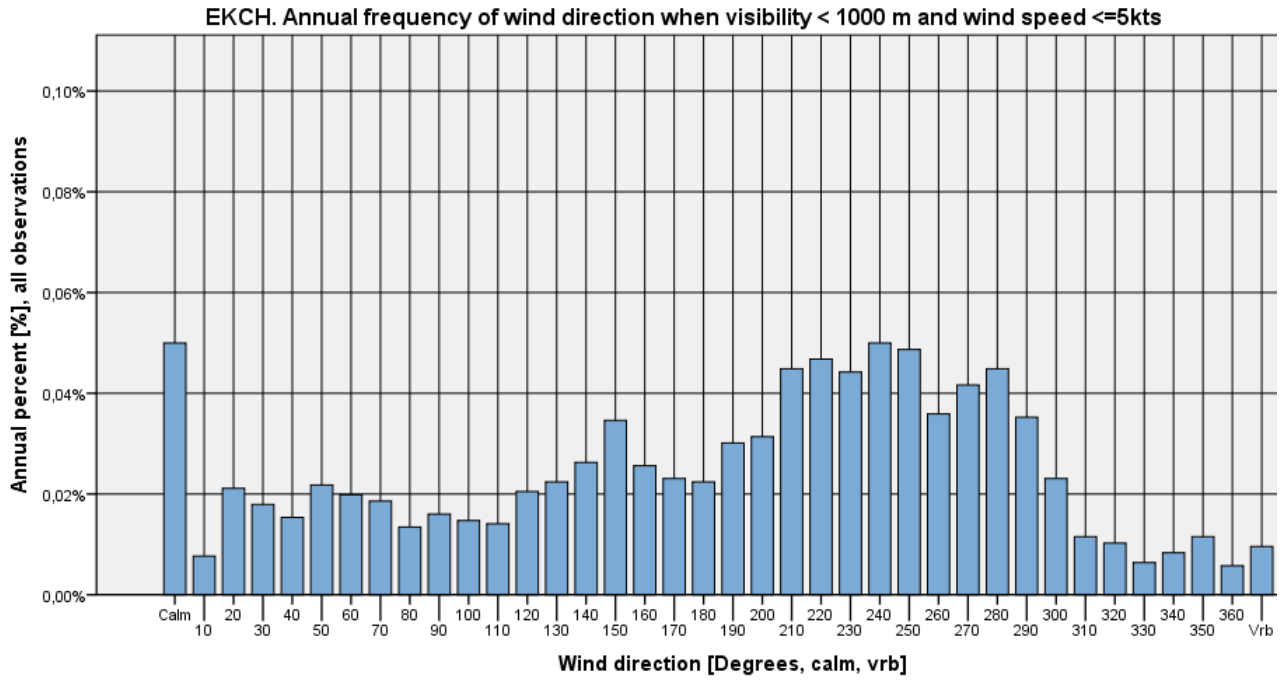


Figure 121

Visibility < 1000 m and wind speed > 5 kts

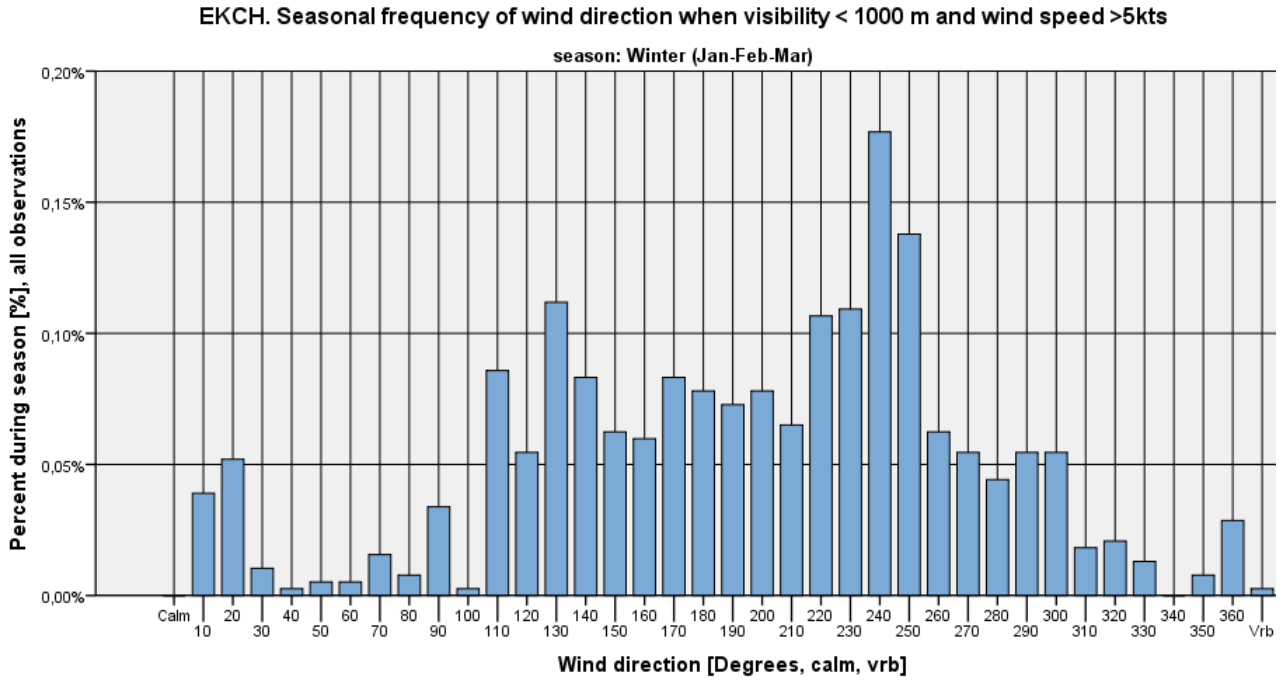


Figure 122

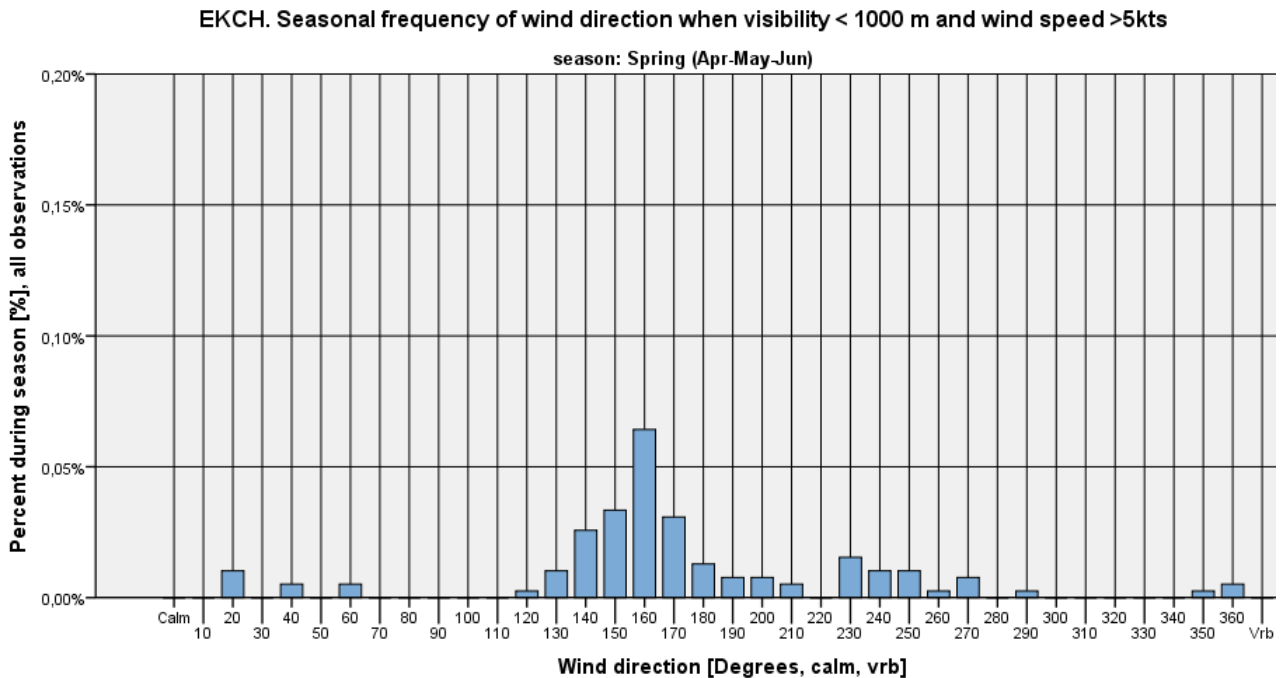


Figure 123



EKCH. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

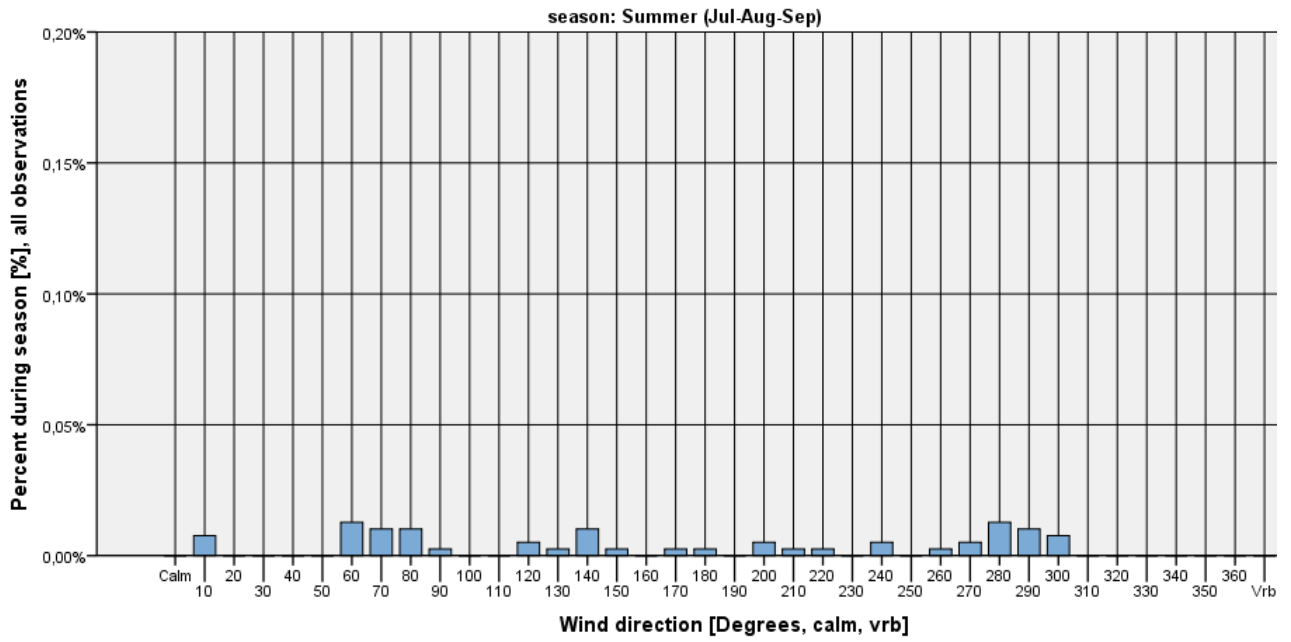


Figure 124

EKCH. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

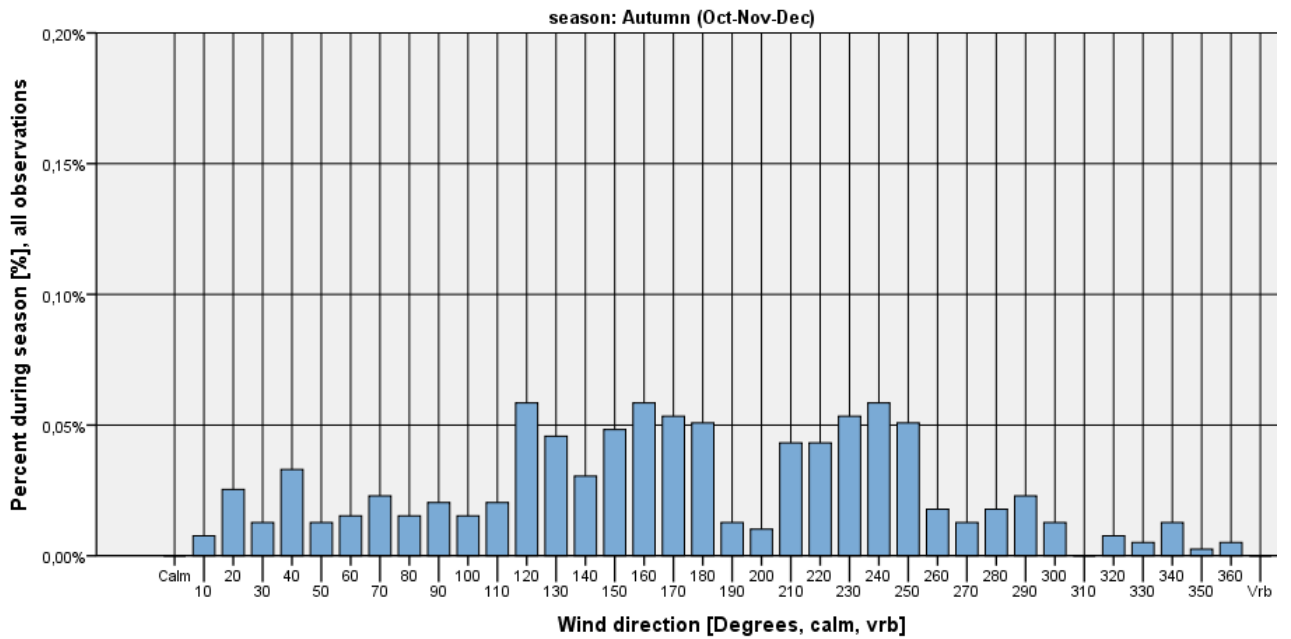


Figure 125

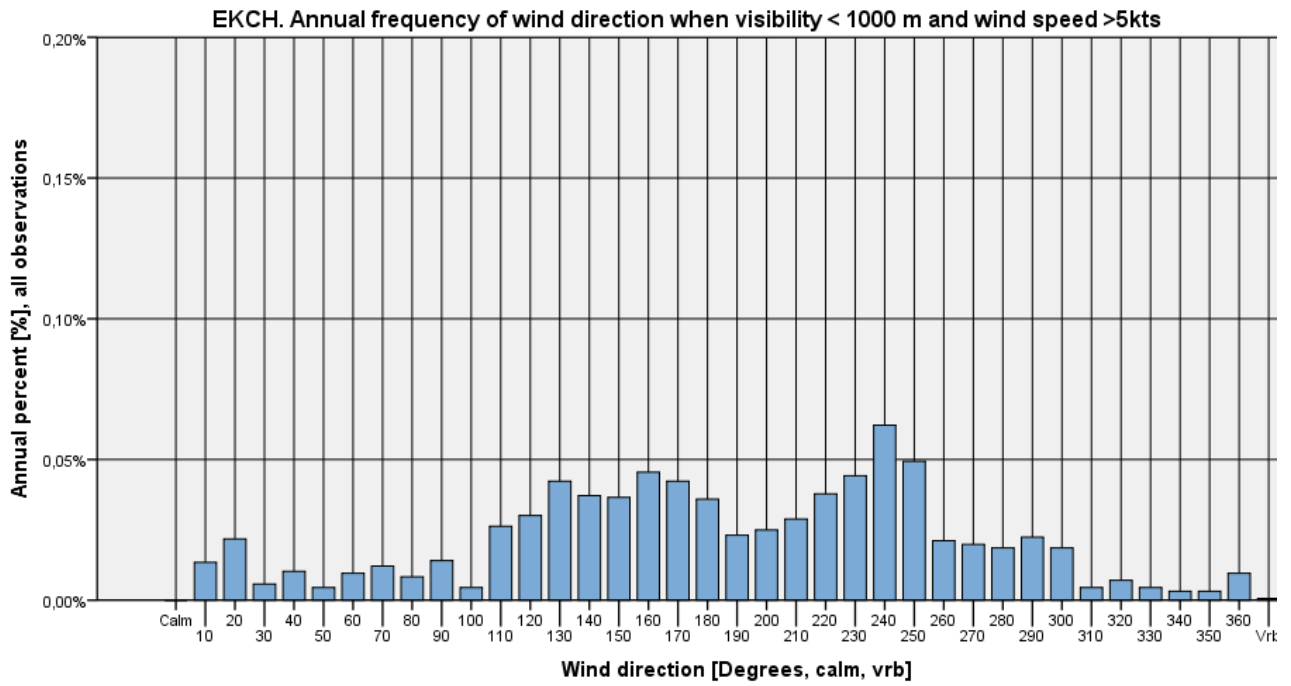


Figure 126



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

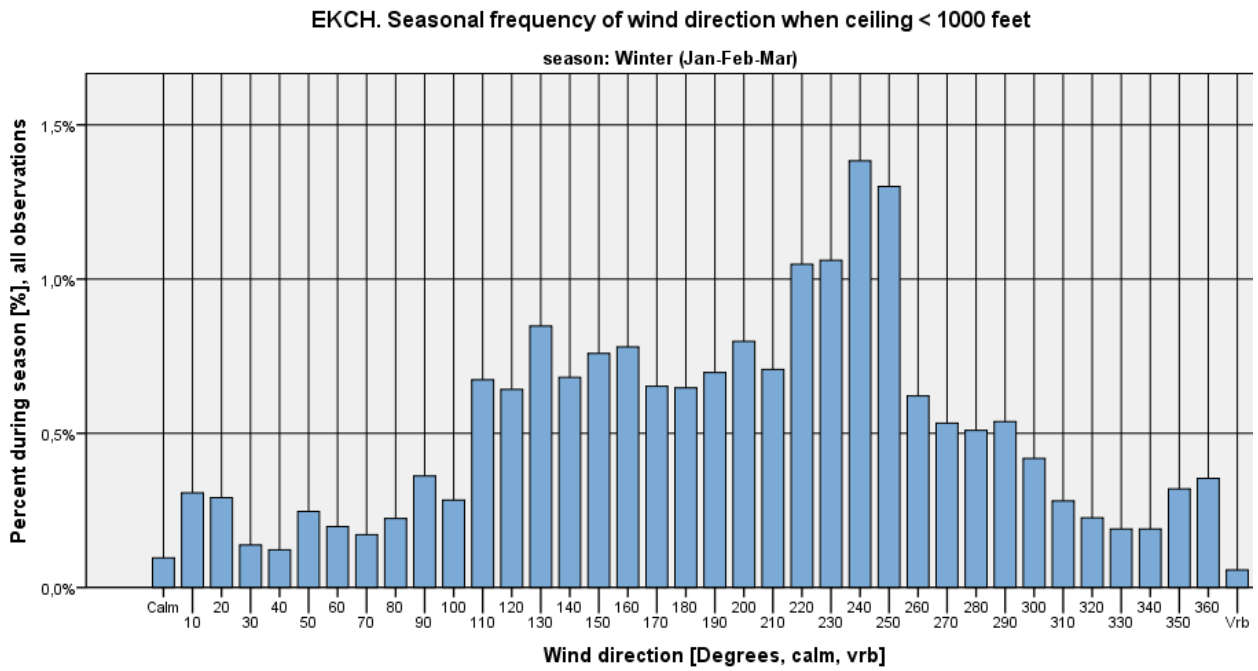


Figure 127

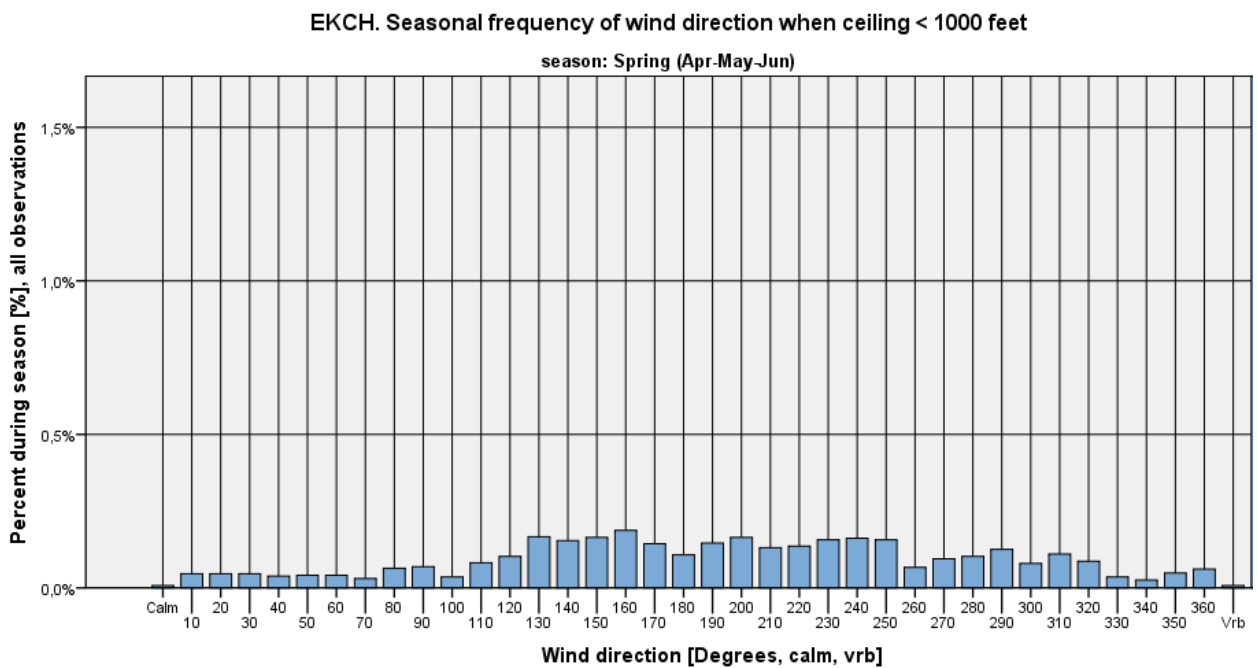


Figure 128



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

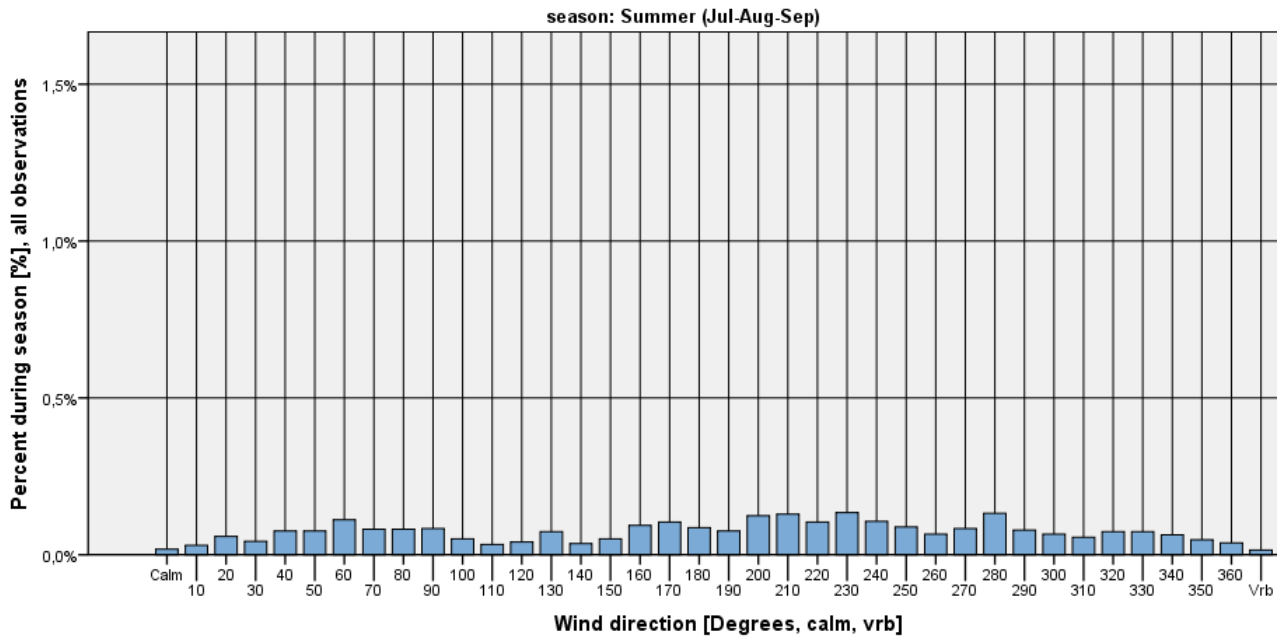


Figure 129

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

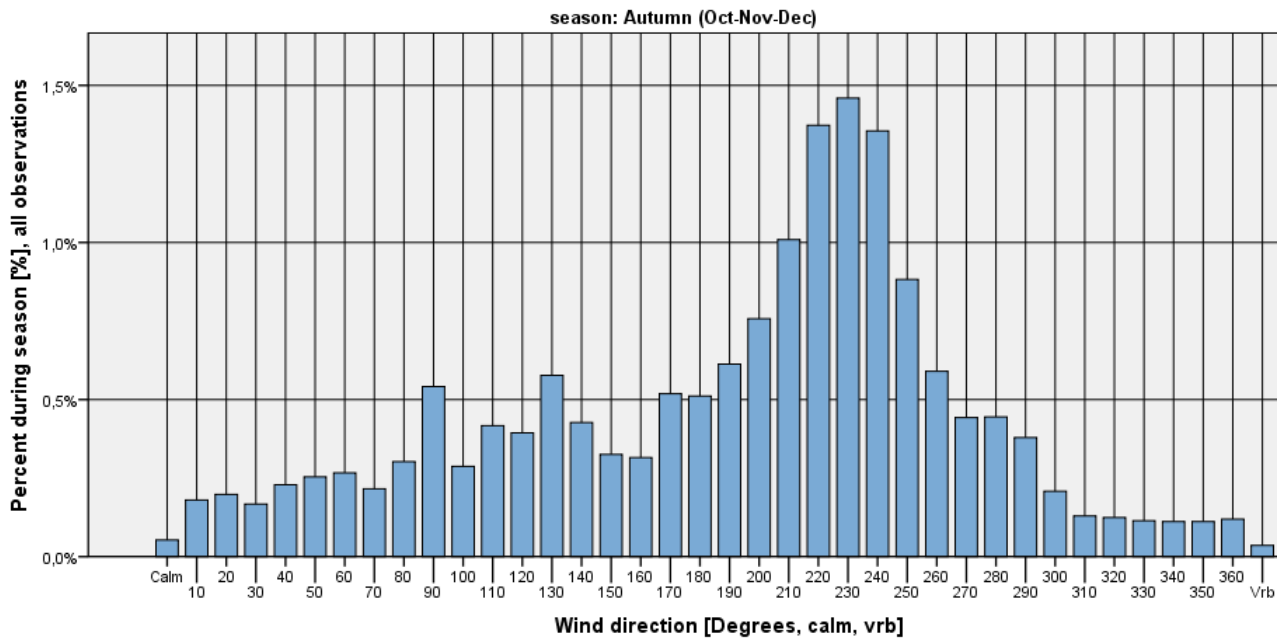


Figure 130

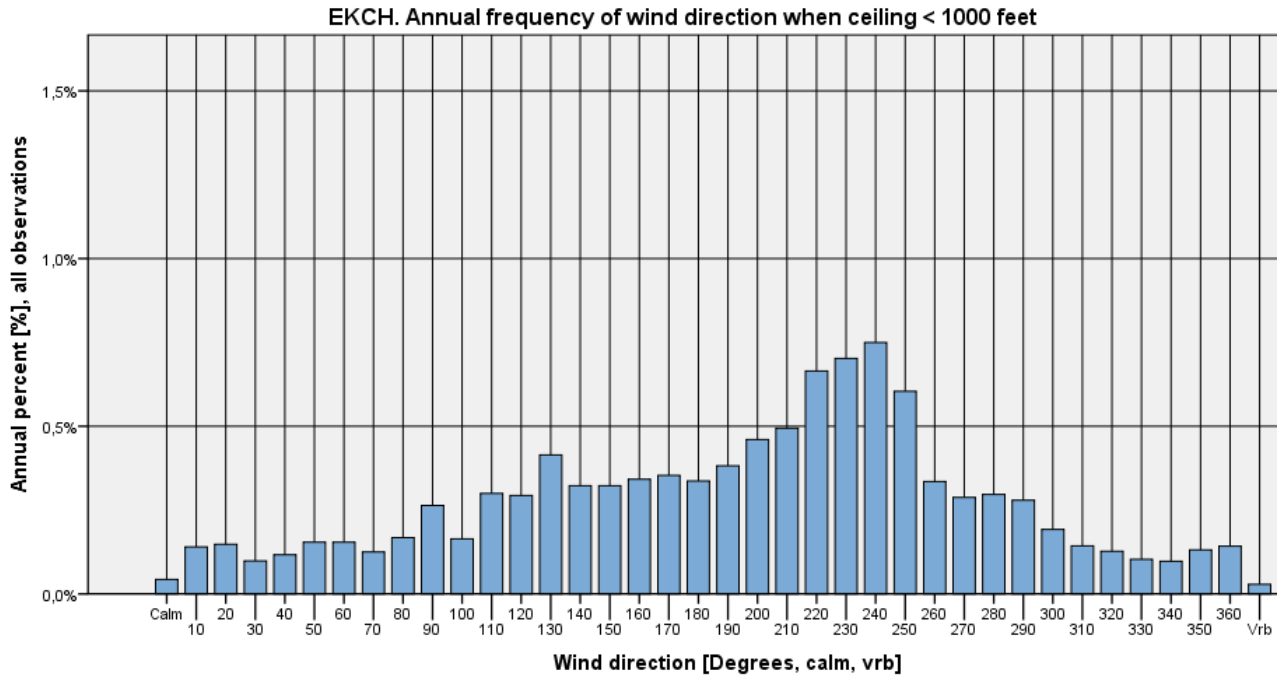


Figure 131



Ceiling < 1000 feet and wind speed <= 5 kts

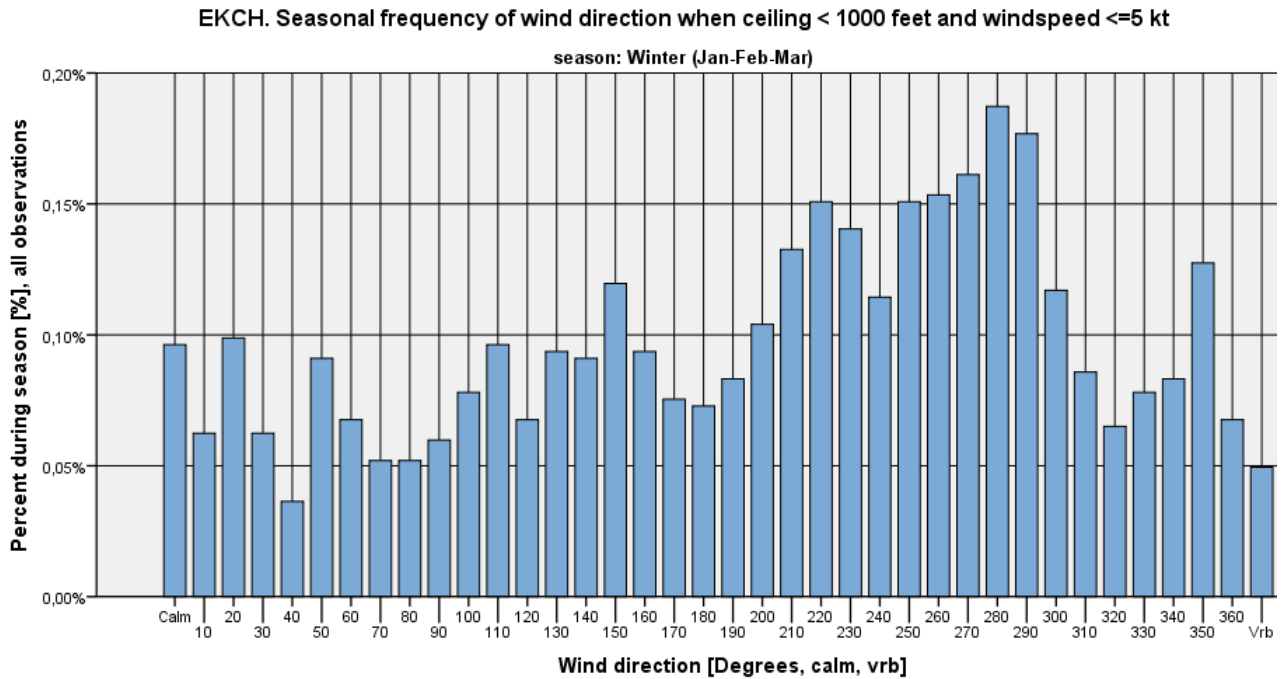


Figure 132

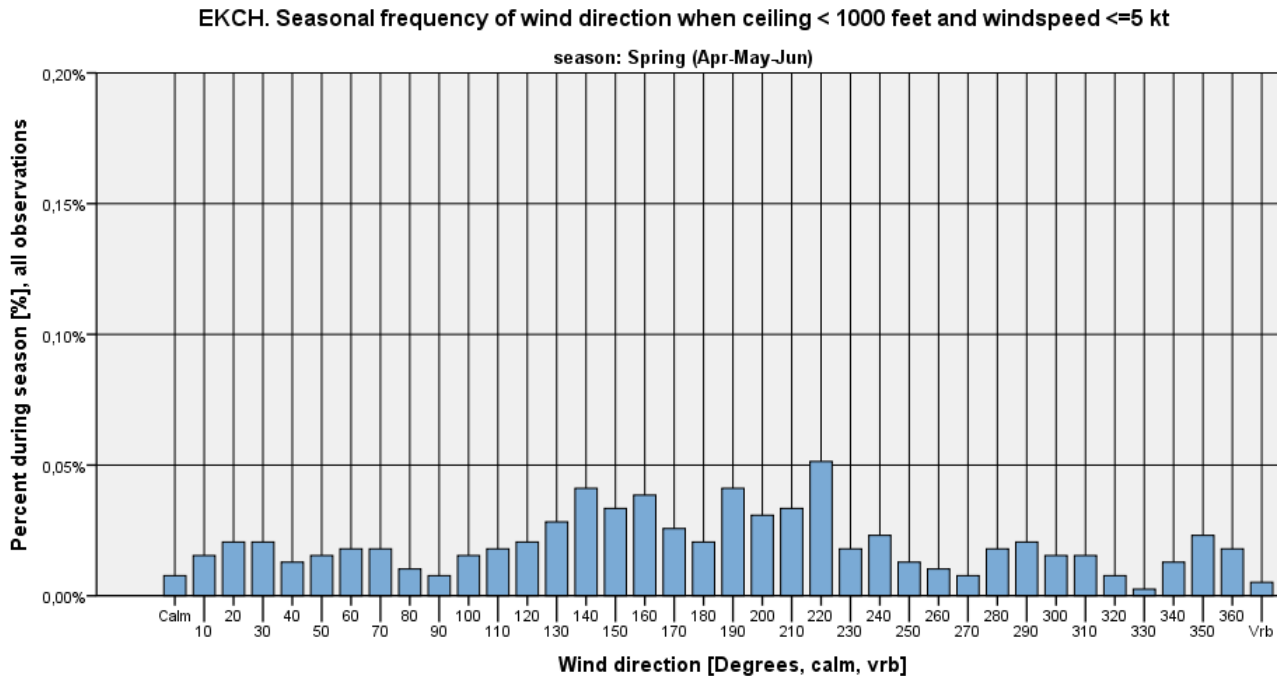


Figure 133



EKCH. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

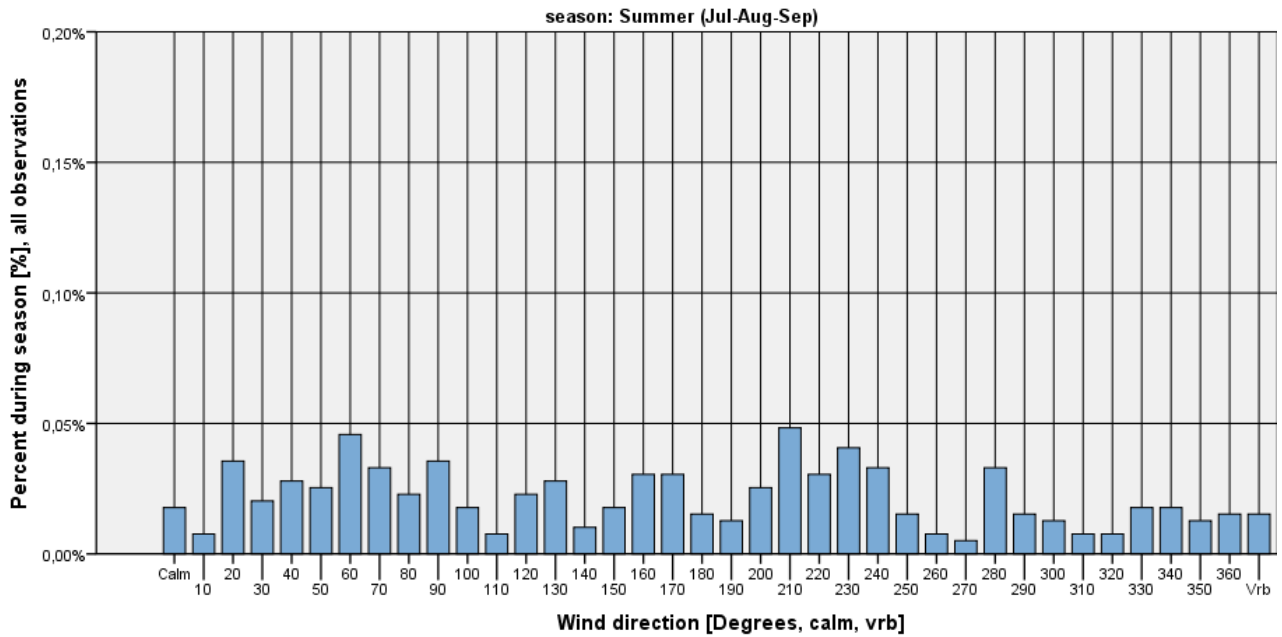


Figure 134

EKCH. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

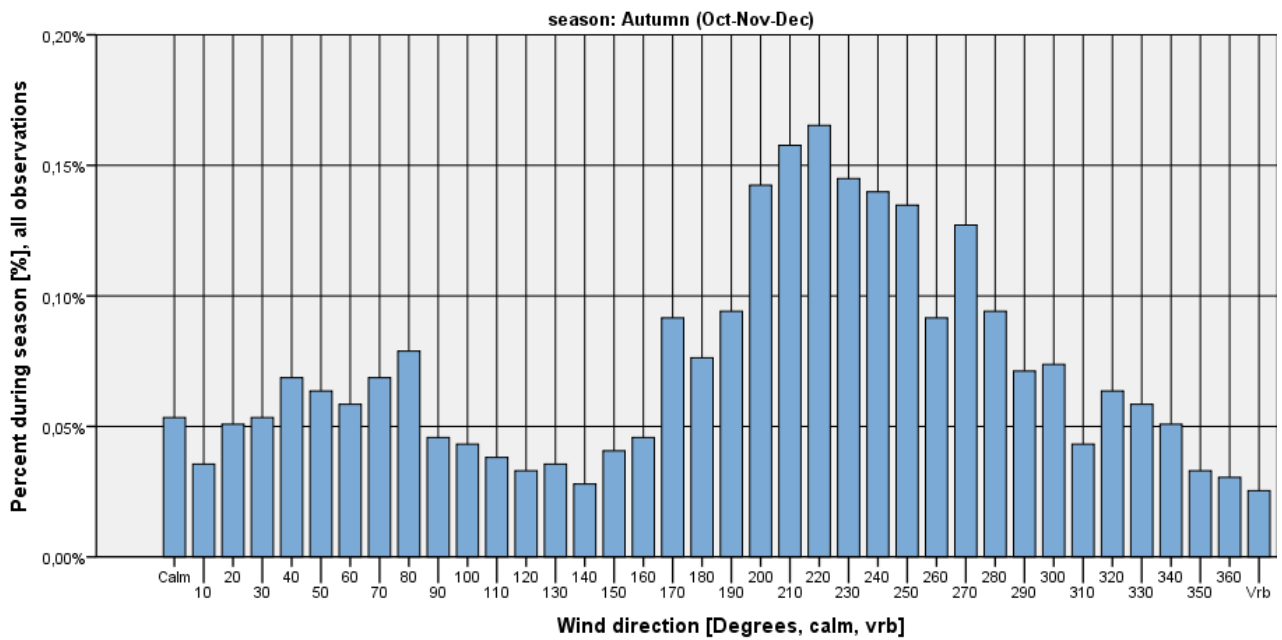


Figure 135

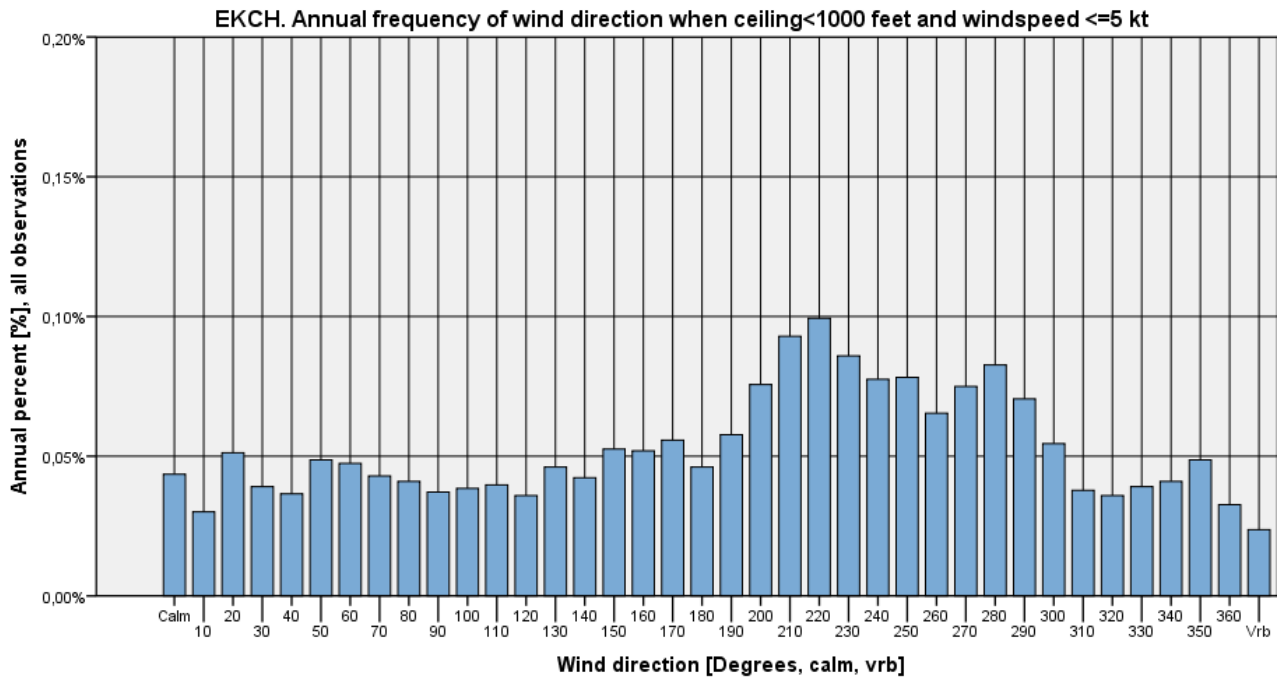


Figure 136



Ceiling < 1000 feet and wind speed > 5 kts

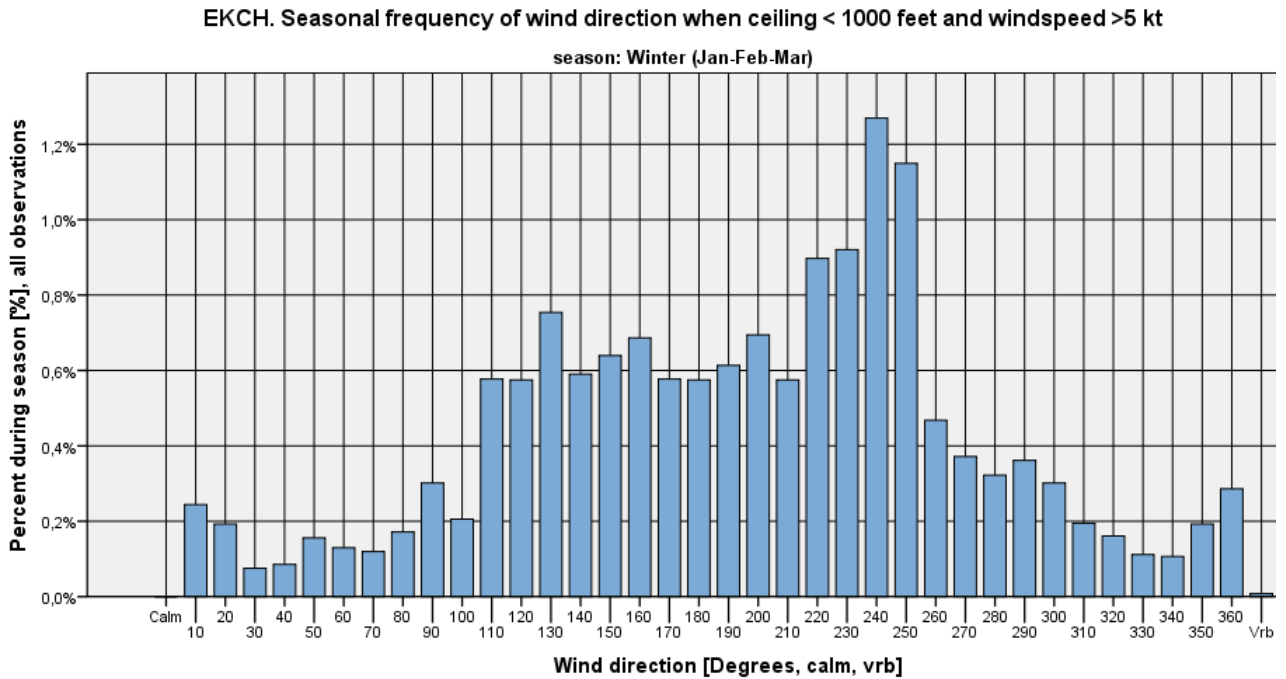


Figure 137

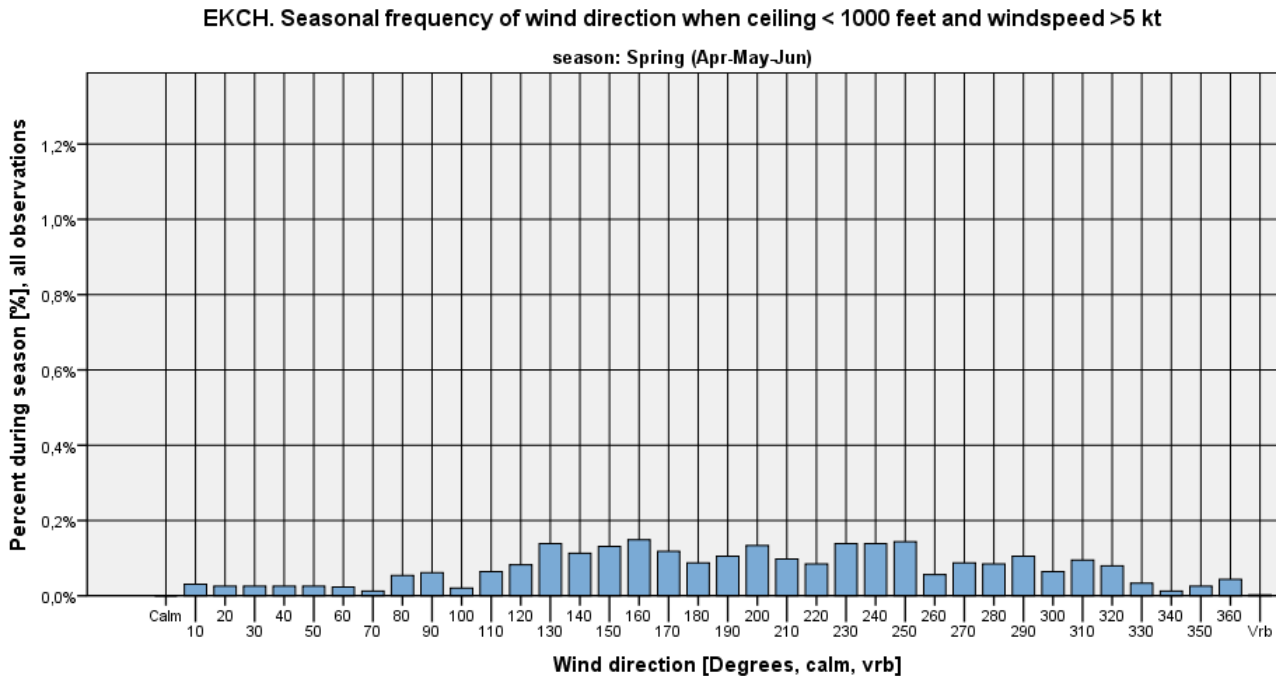


Figure 138



EKCH. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

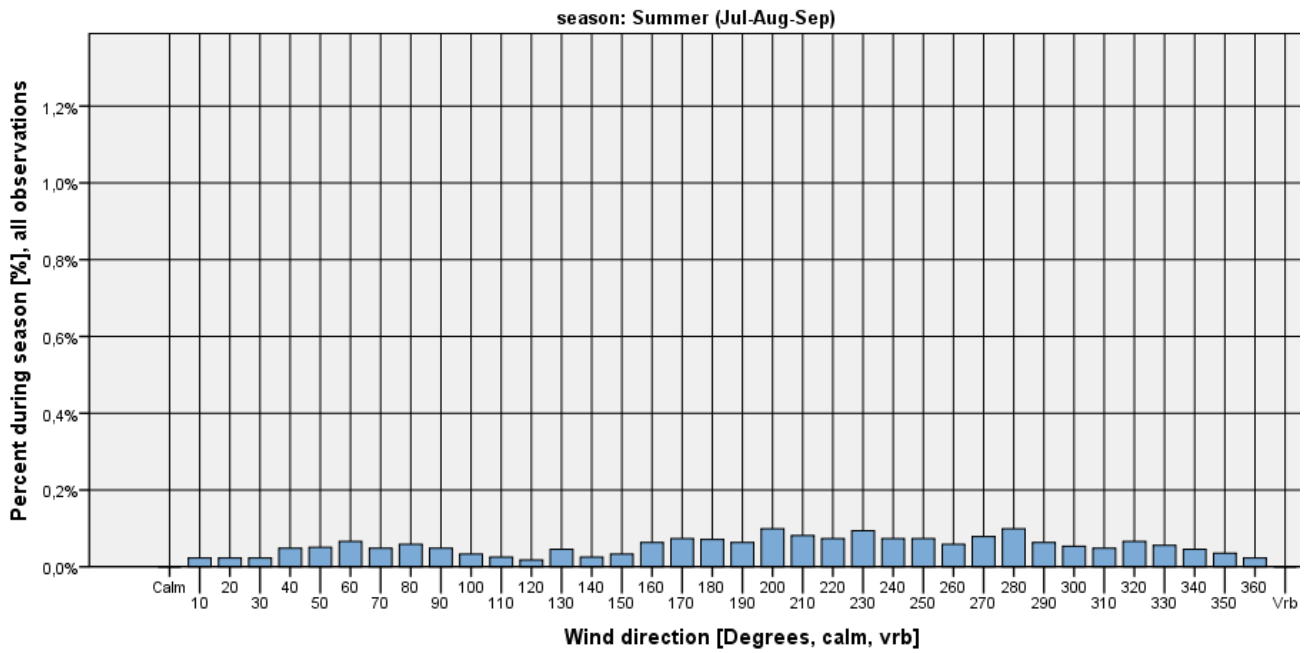


Figure 139

EKCH. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

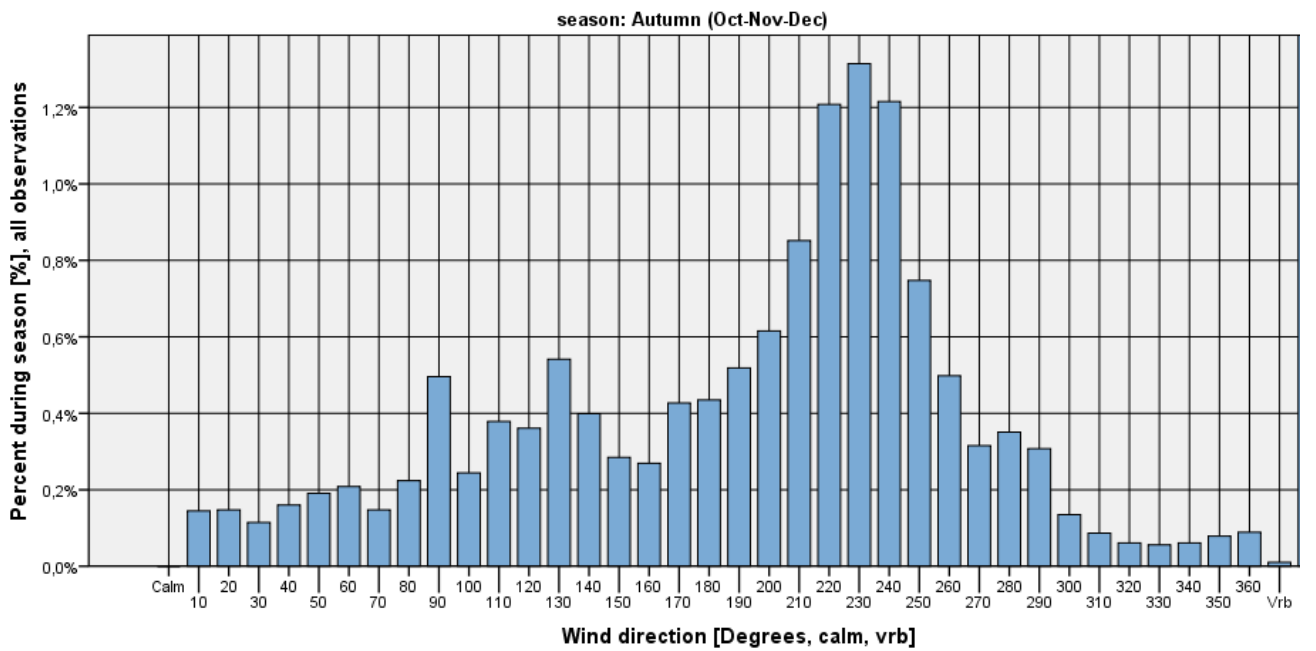


Figure 140

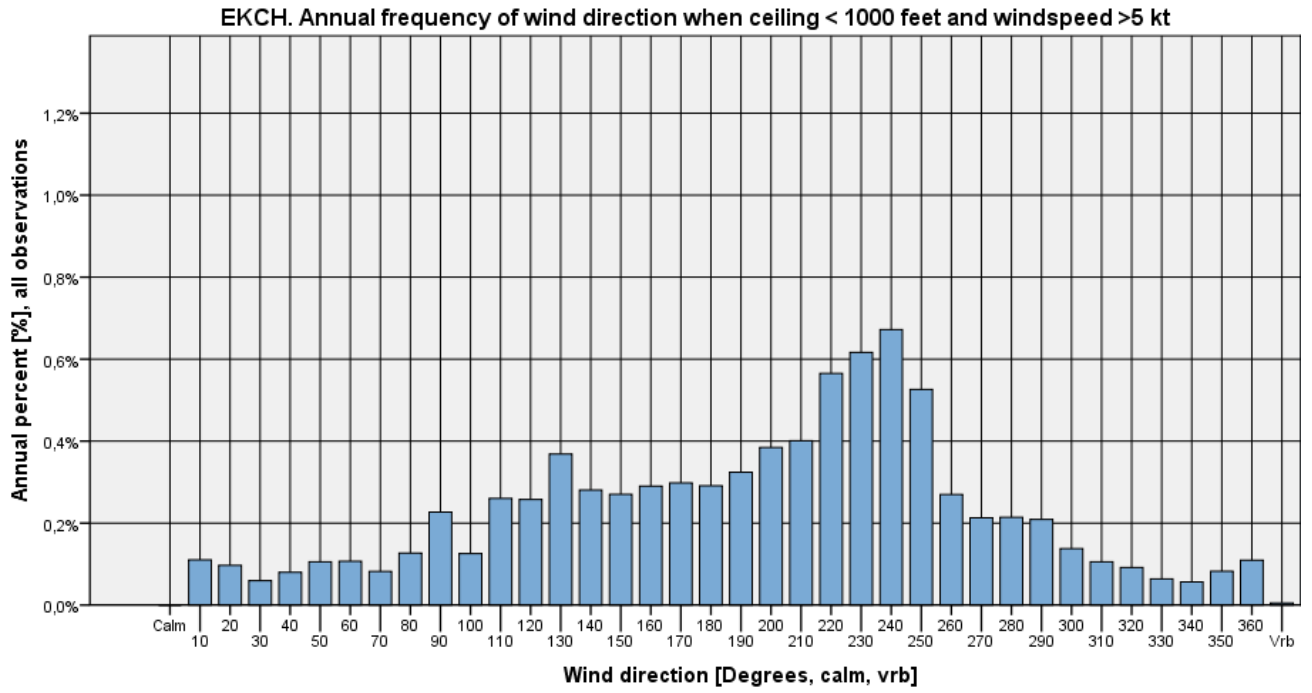


Figure 141



Ceiling < 500 feet

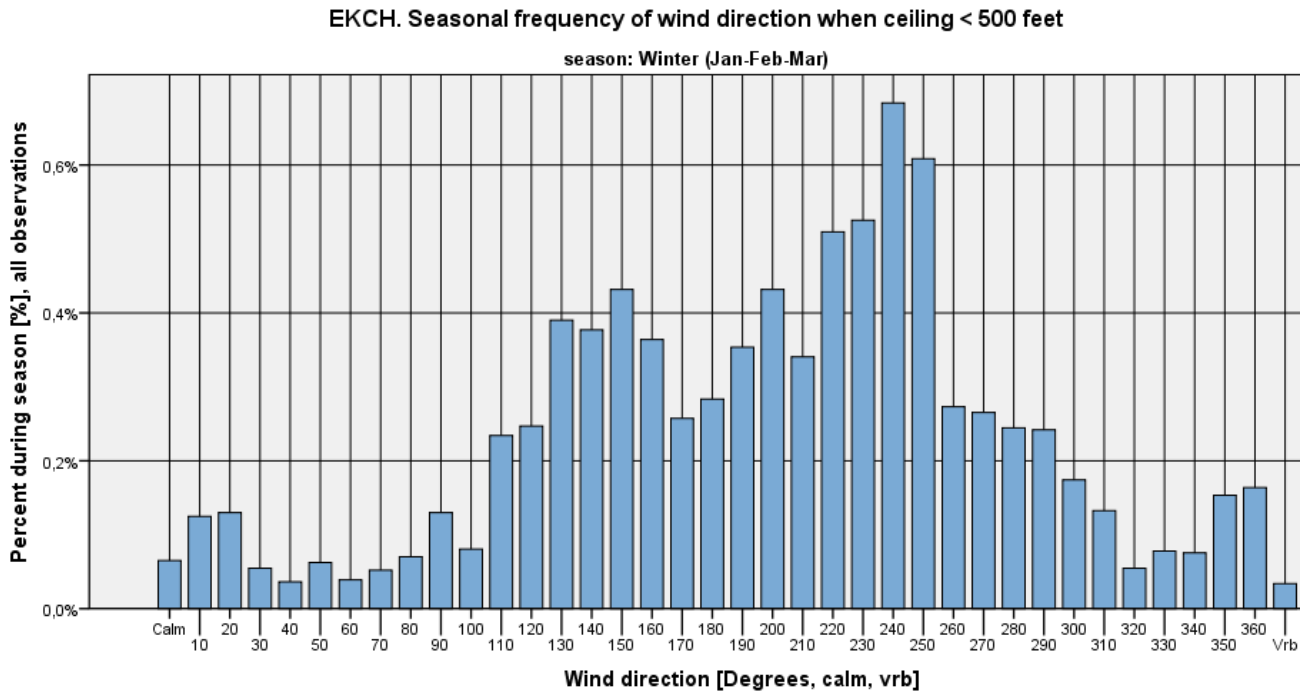


Figure 142

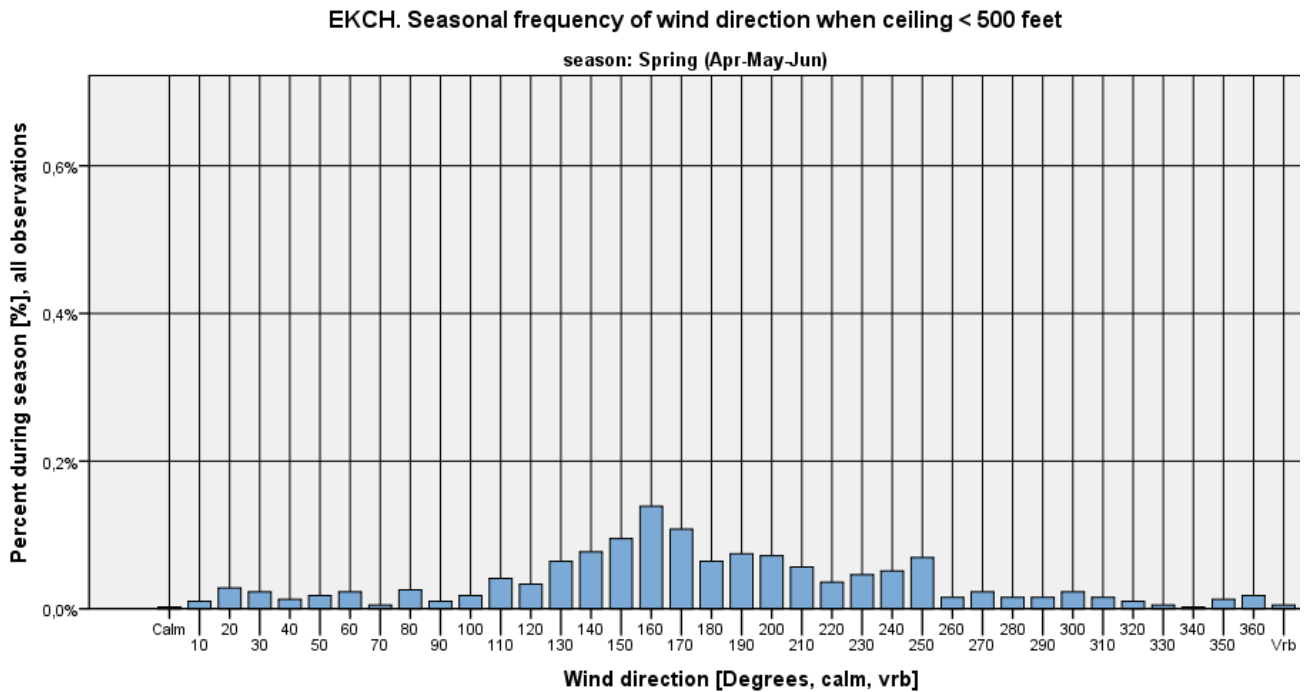


Figure 143



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

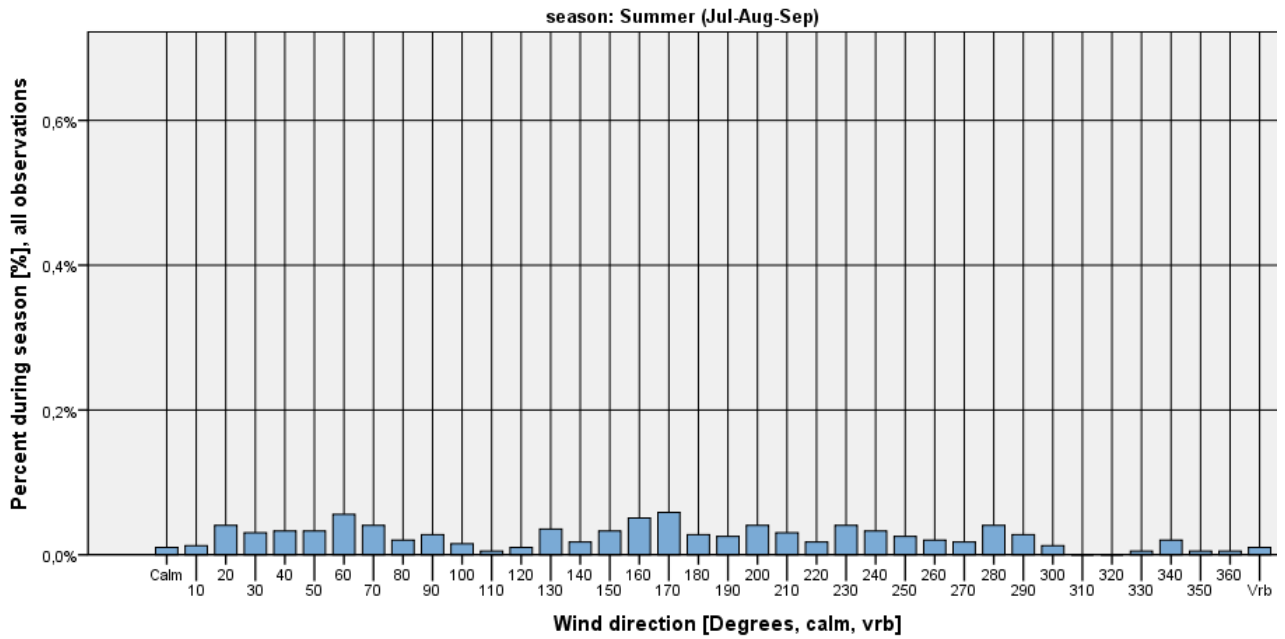


Figure 144

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

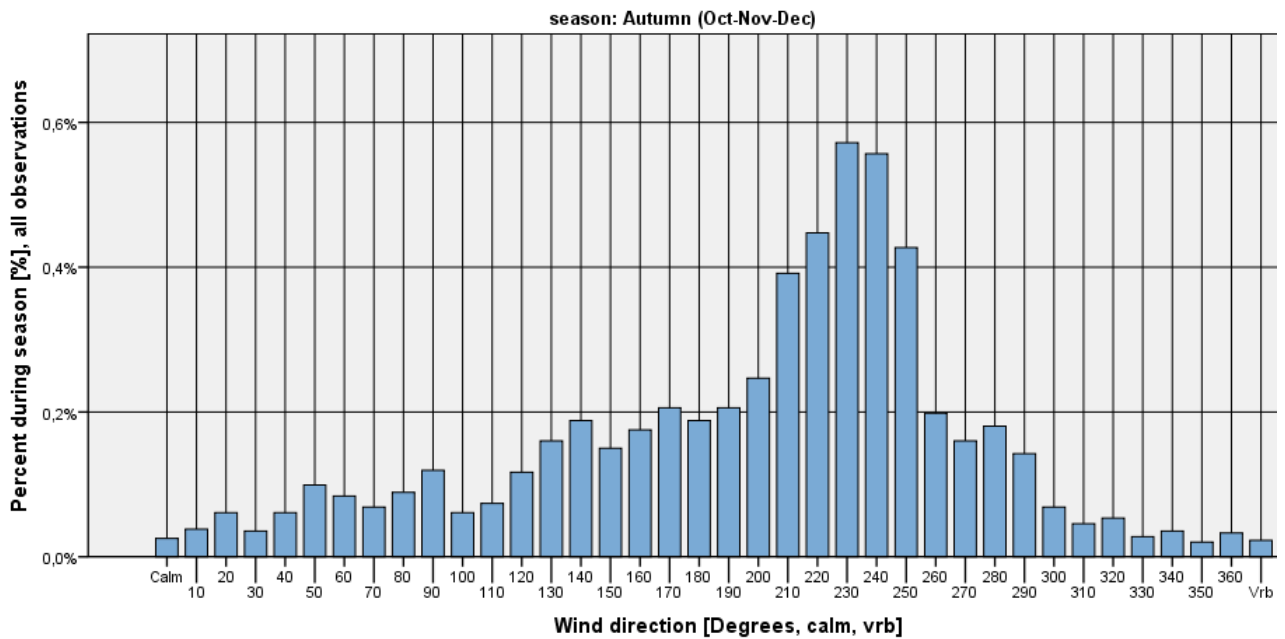


Figure 145

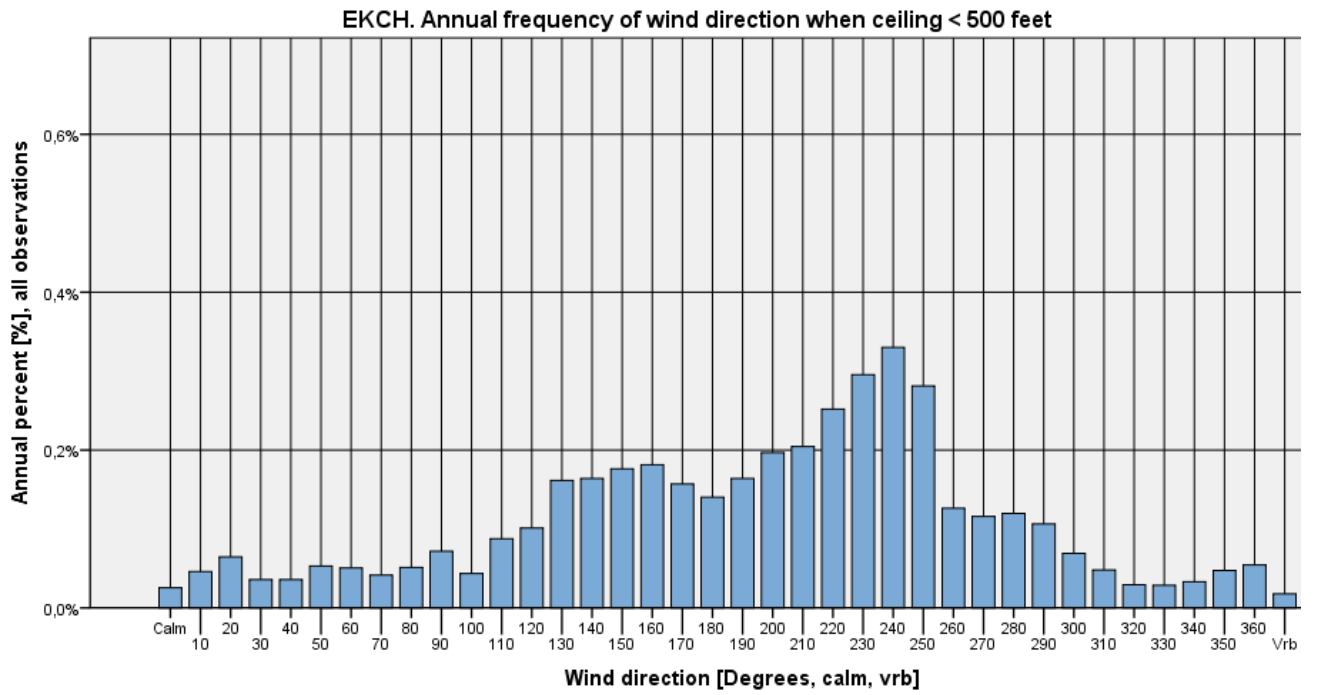


Figure 146



Ceiling < 500 feet and wind speed ≤ 5 kts

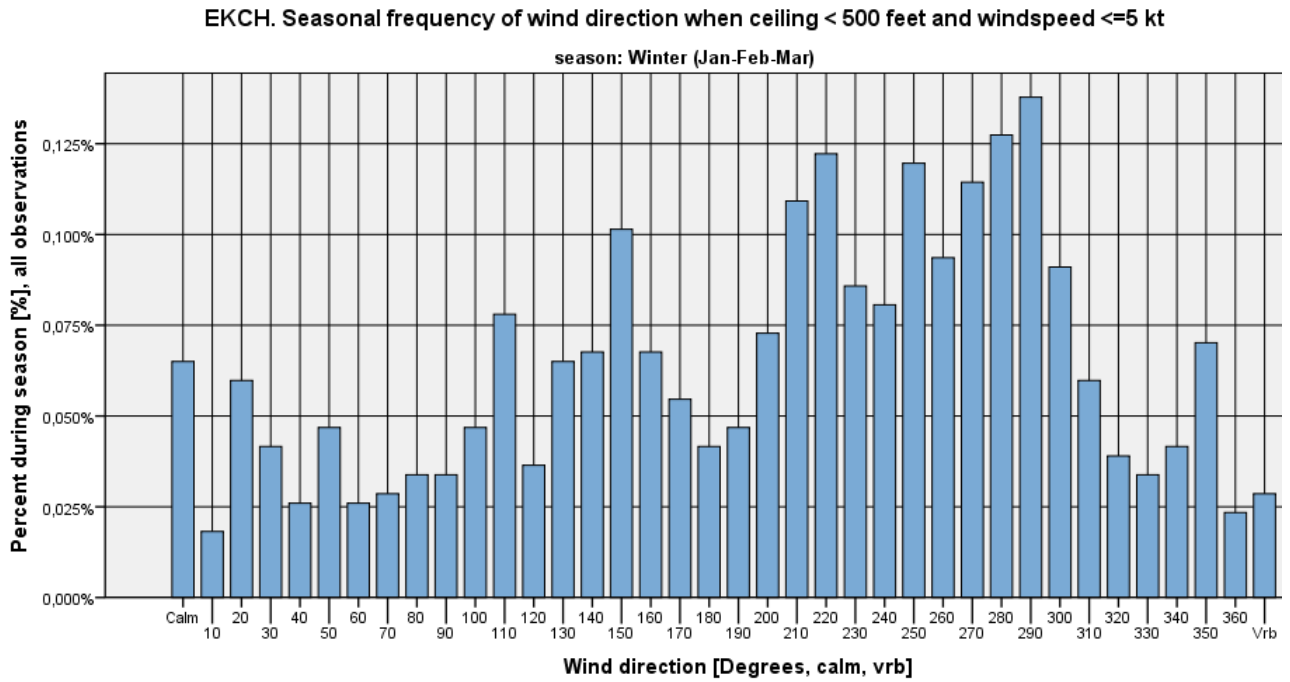


Figure 147

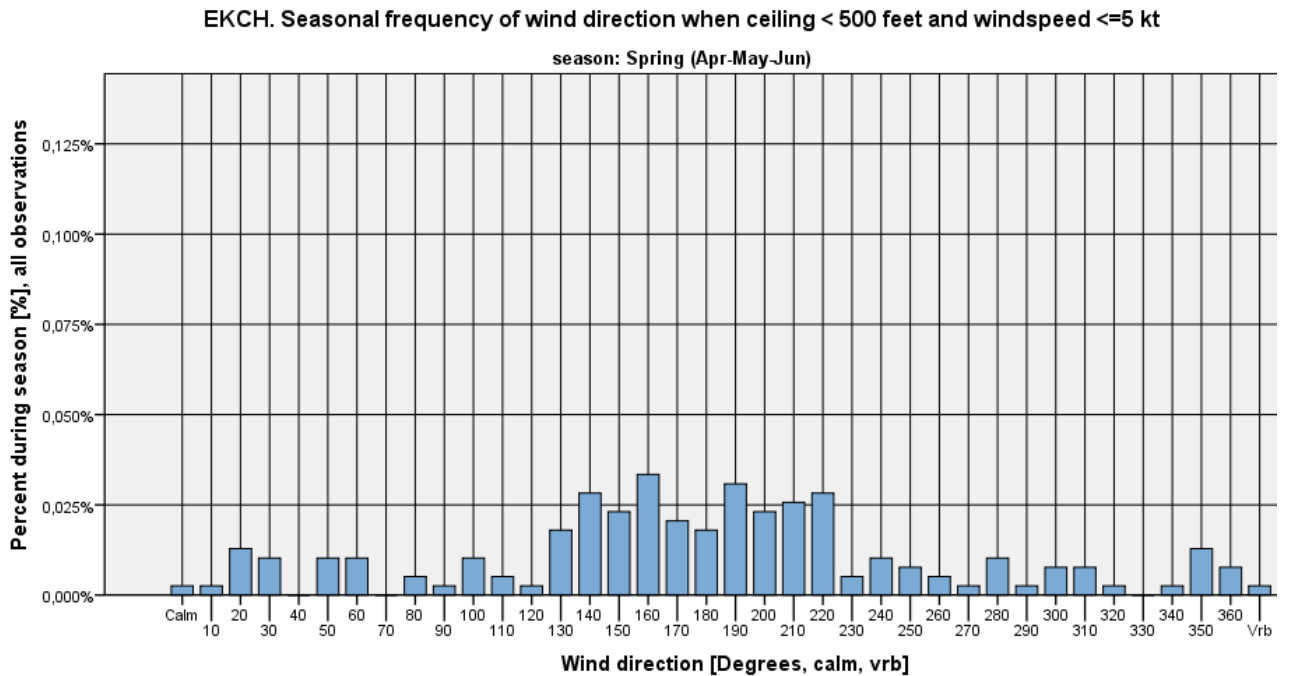


Figure 148



EKCH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

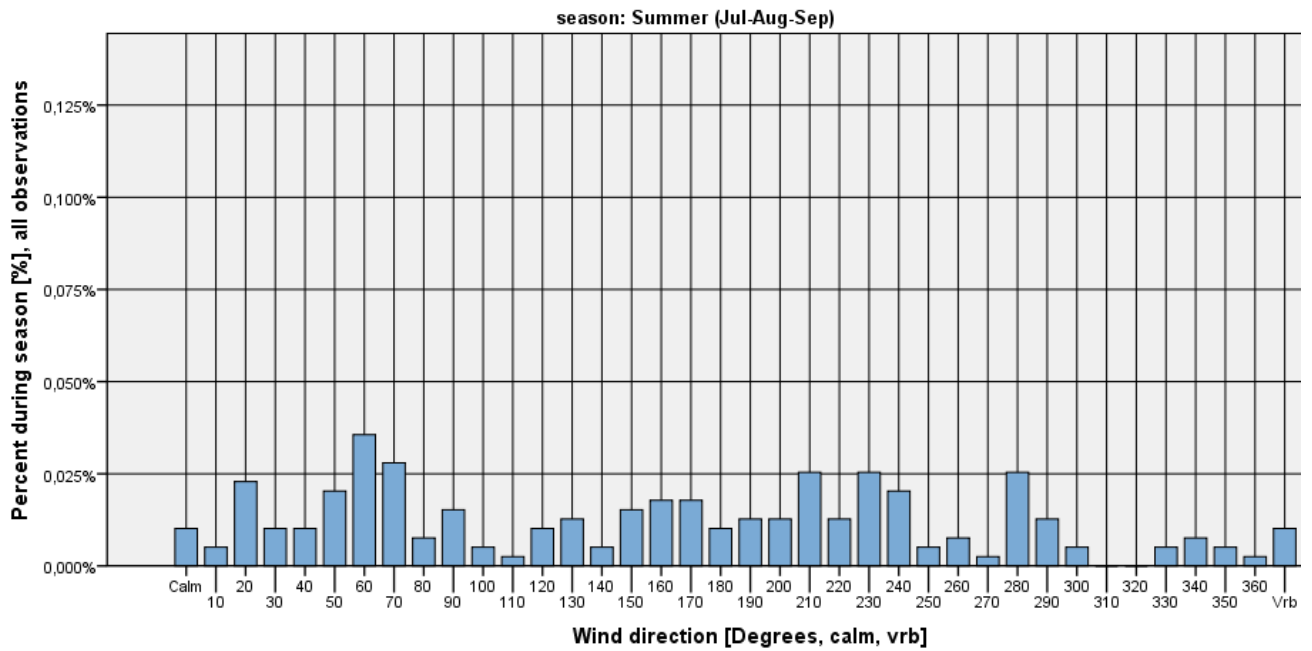


Figure 149

EKCH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

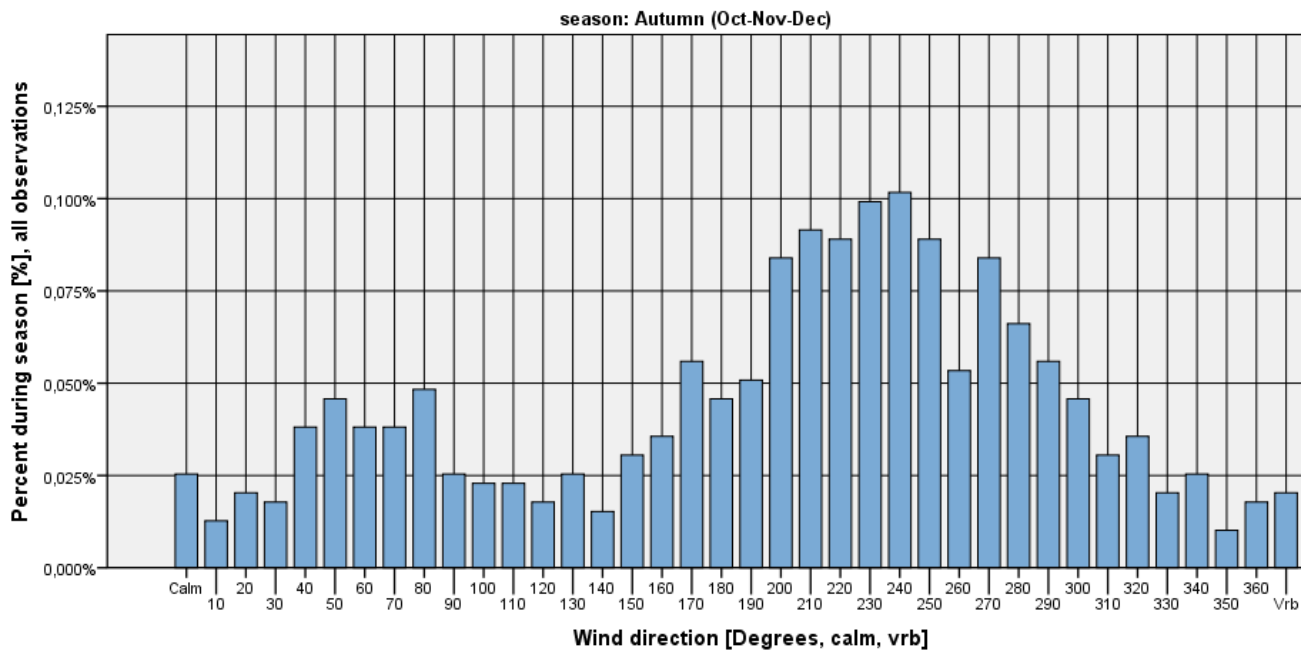


Figure 150

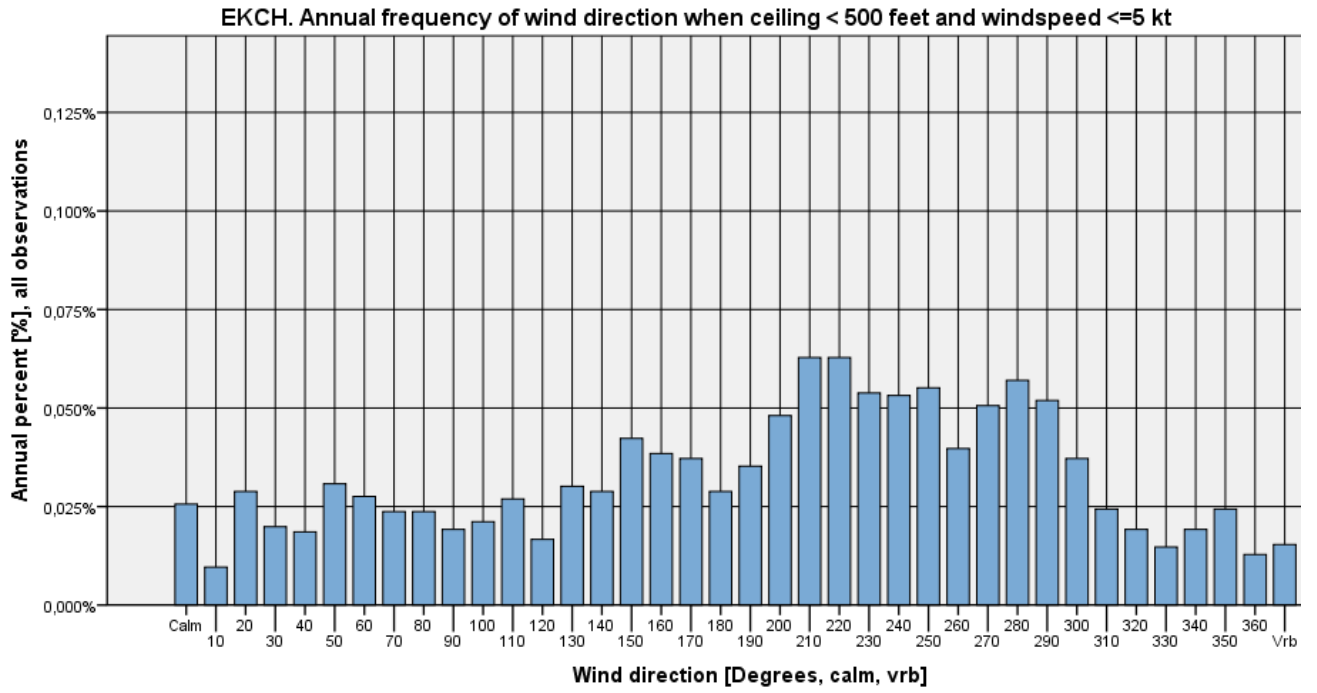


Figure 151



Ceiling < 500 feet and wind speed > 5 kts

EKCH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

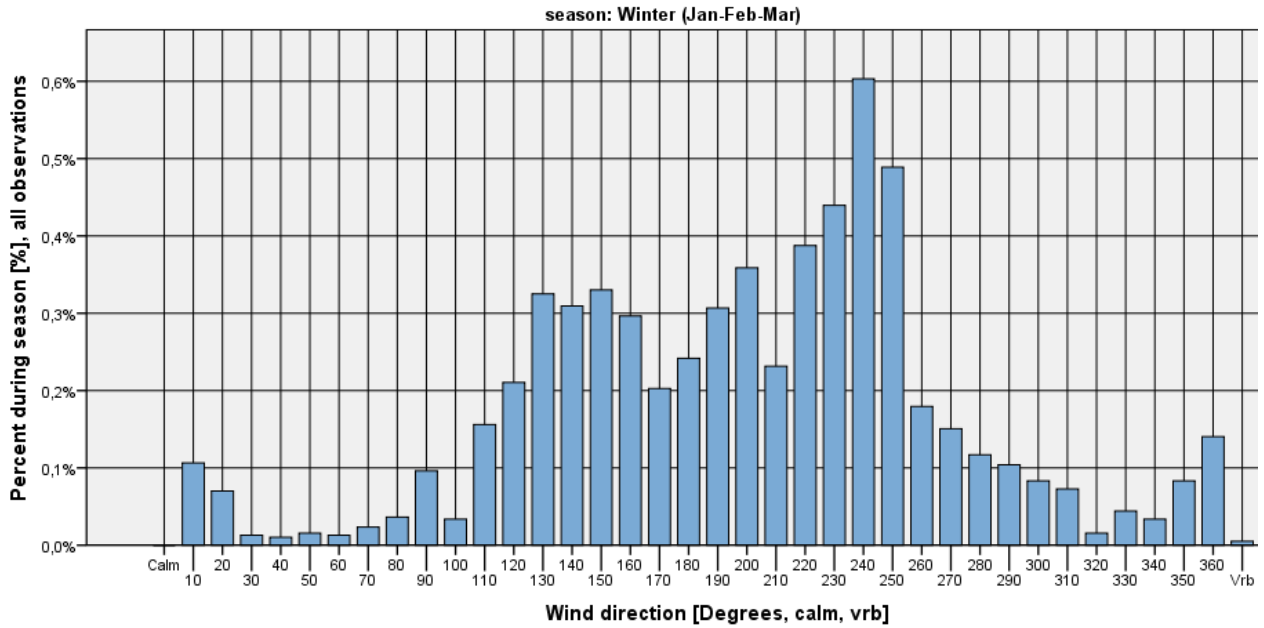


Figure 152

EKCH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

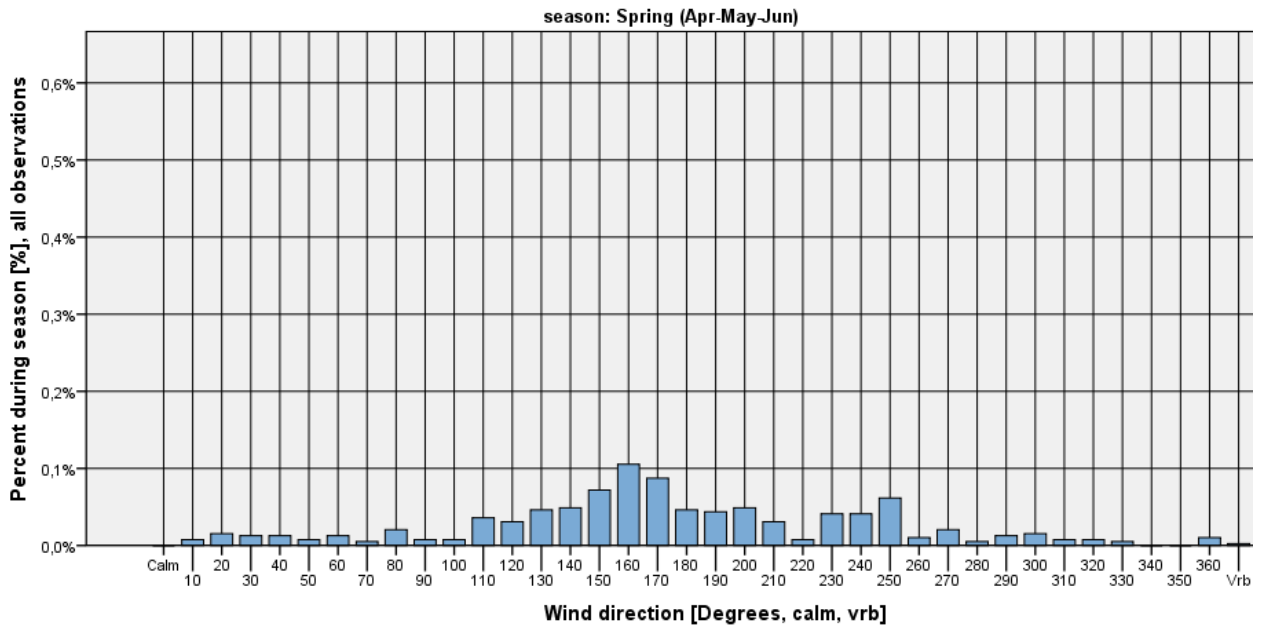


Figure 153



EKCH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

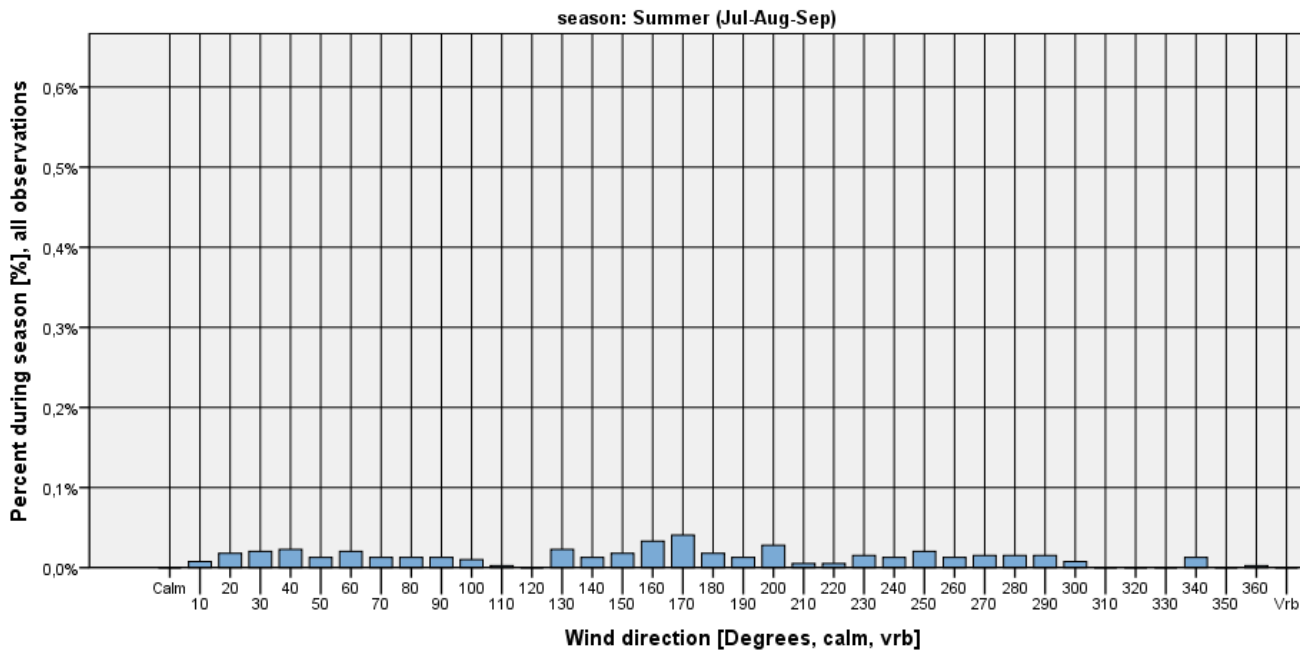


Figure 154

EKCH. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

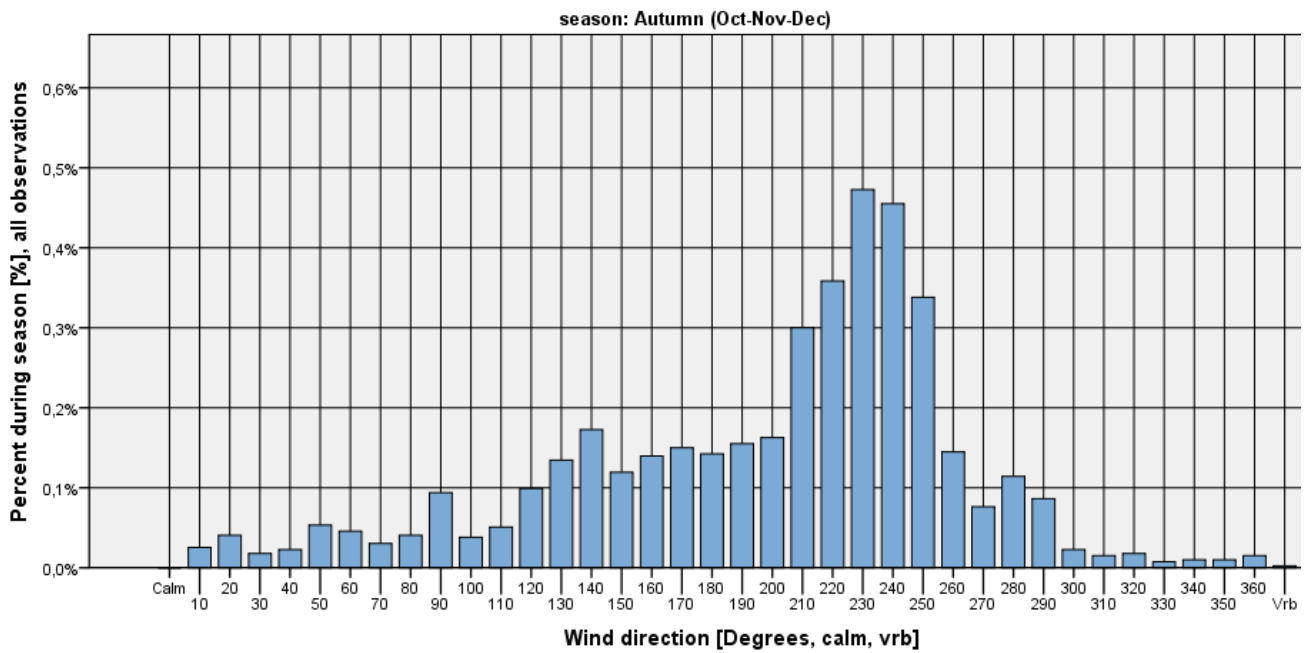


Figure 155

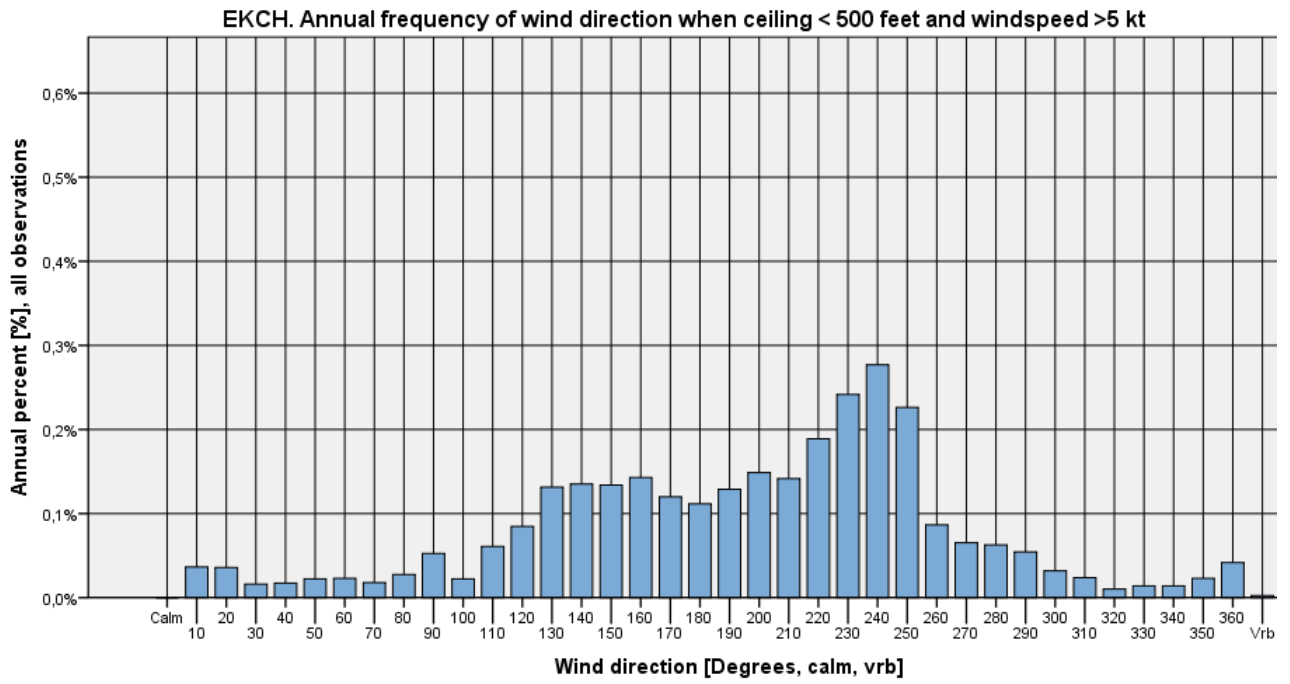


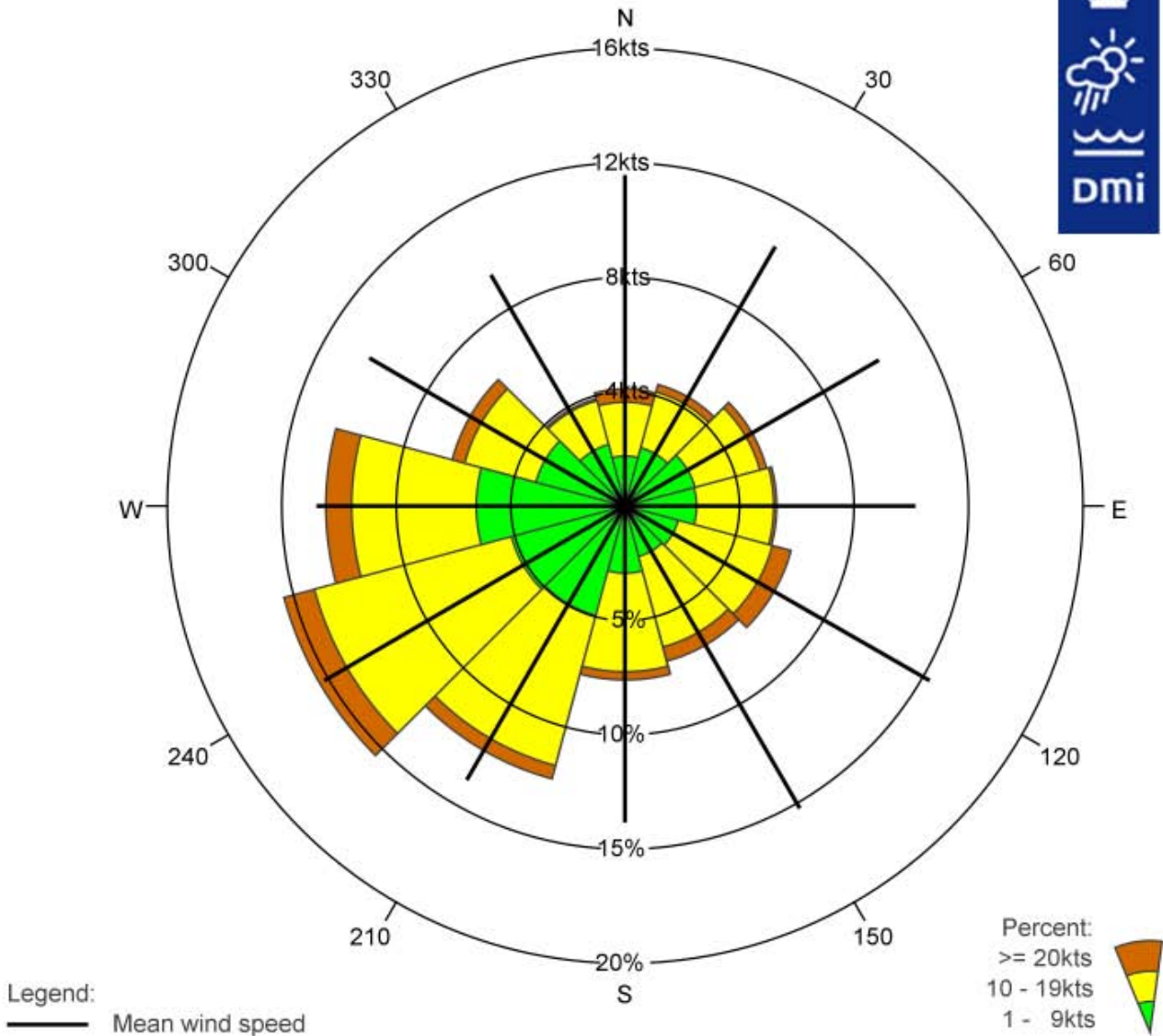
Figure 156



Wind roses

EKCH - København - Kastrup AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	5.1	5.5	6.4	6.6	7.5	7.0	7.6	12.4	15.4	13.1	7.8	4.9	99.3
% 1 - 9kts	2.2	2.6	3.1	3.1	2.4	2.3	2.9	4.9	5.1	6.5	4.0	2.8	42.1
% 10 - 19kts	2.4	2.5	2.9	3.4	4.3	4.1	4.3	6.8	8.9	5.4	3.2	2.0	50.2
% >= 20kts	0.6	0.3	0.3	0.1	0.8	0.6	0.4	0.6	1.4	1.1	0.6	0.1	7.0
Mean wind speed	11.6	10.5	10.3	10.2	12.3	12.2	11.0	11.1	12.1	10.8	10.4	9.3	11.1
Max wind speed	37.0	36.0	25.0	27.0	29.0	32.0	32.0	31.0	43.0	41.0	38.0	31.0	43.0

Number of observations = 77785

Source: DMI

Calm defined a wind speed = 0kts

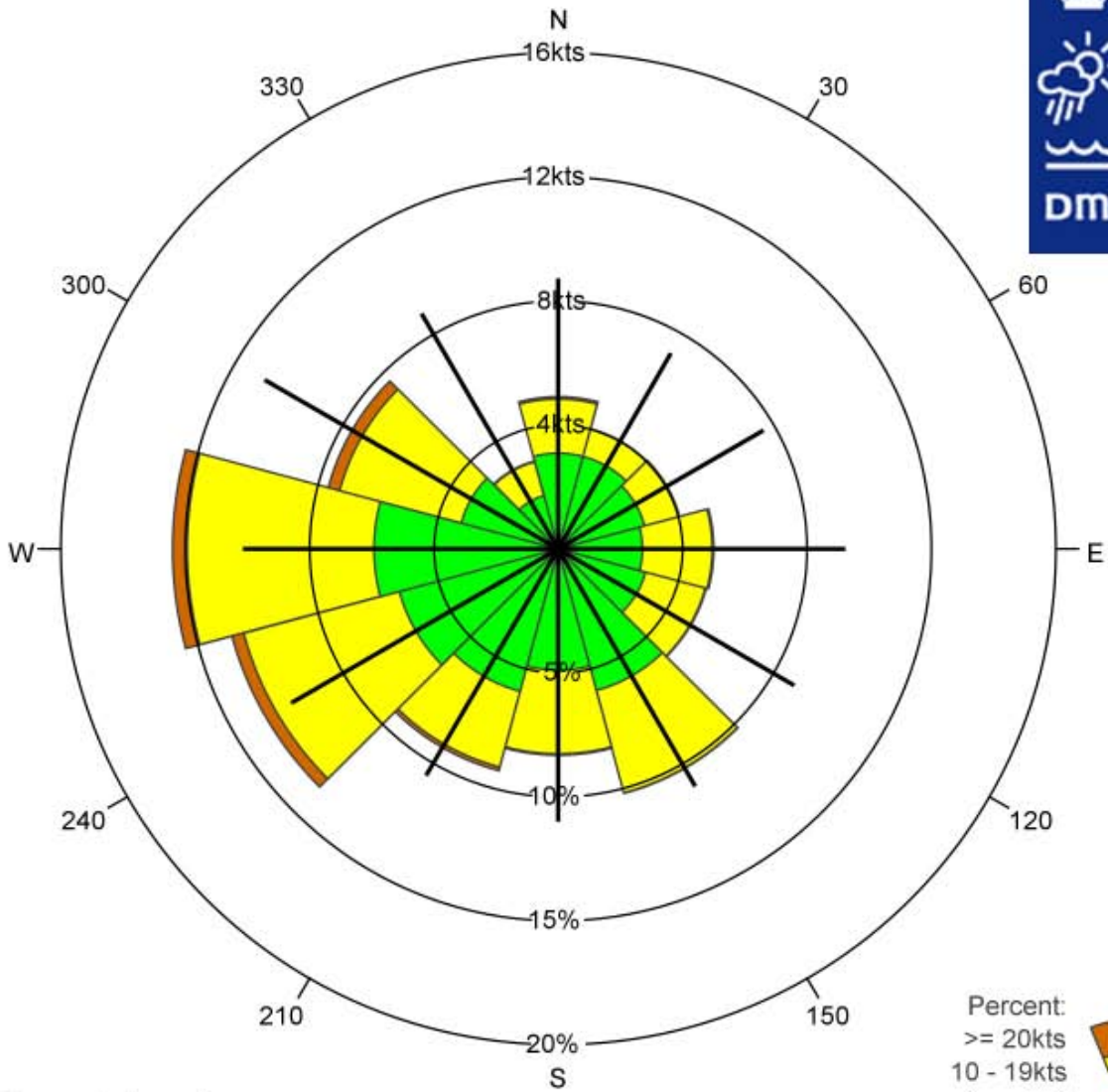
Number of observations with calm/varying wind direction: 547=0.7%

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



EKCH - København - Kastrup SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	6.1	5.0	5.0	6.2	6.1	10.2	8.3	9.3	13.6	15.5	9.6	3.7	98.7
% 1 - 9kts	3.9	3.9	3.6	3.4	3.6	5.9	4.9	5.9	6.6	7.4	4.0	2.2	55.4
% 10 - 19kts	2.2	1.1	1.4	2.8	2.5	4.3	3.4	3.2	6.5	7.5	5.1	1.4	41.3
% >= 20kts	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.5	0.6	0.5	0.0	2.0
Mean wind speed	8.7	7.3	7.6	9.2	8.7	8.8	8.8	8.5	9.9	10.1	10.9	8.8	9.2
Max wind speed	31.0	23.0	25.0	25.0	24.0	22.0	23.0	27.0	27.0	30.0	37.0	23.0	37.0

Number of observations = 78252

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 997=1.3%

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

Availability

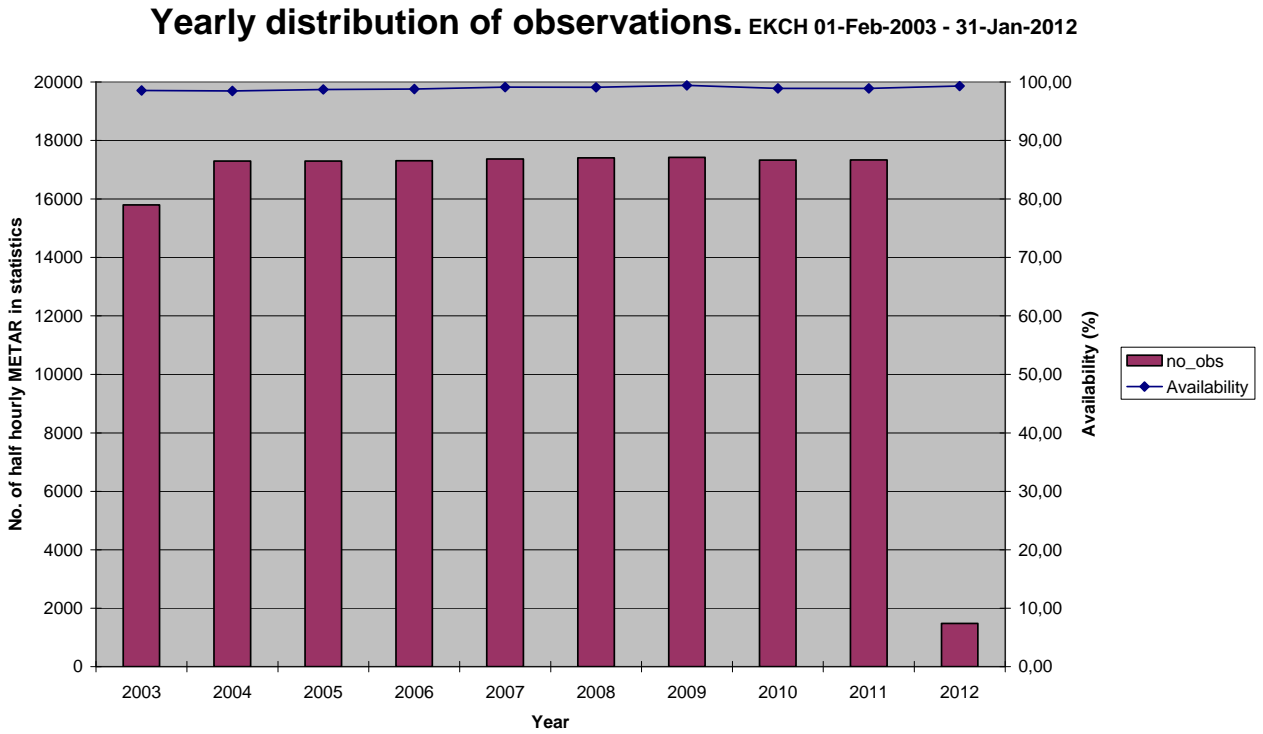


Figure 157

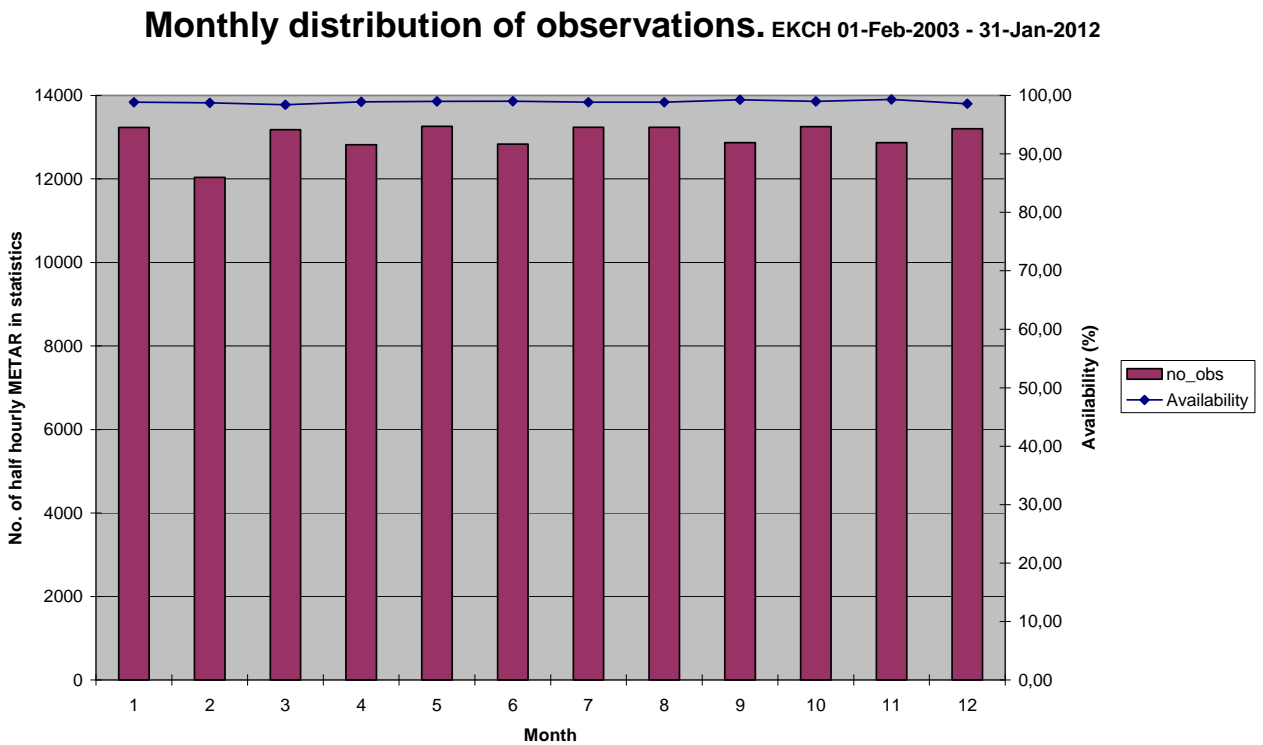


Figure 158

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

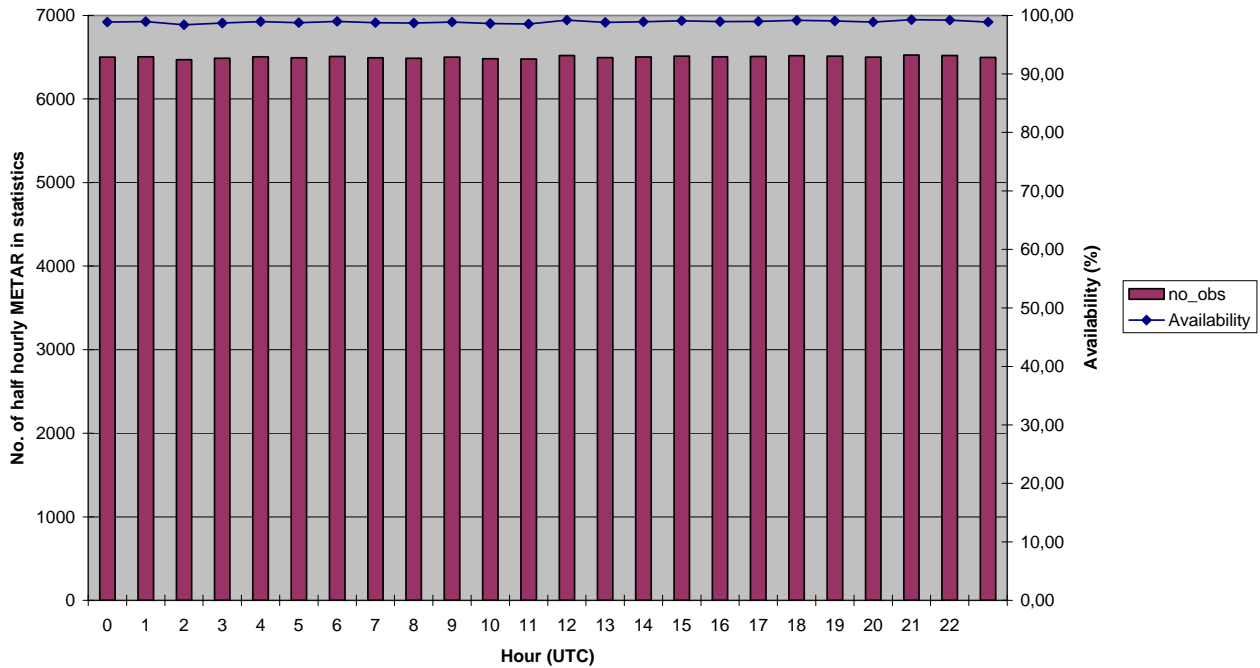


Figure 159

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

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

Table 19



EKEB Esbjerg Lufthavn

Esbjerg Airport

Airport location: 55,533°N 8,567°E Elevation: 30 m above msl

EKEB observations in statistics: 133.342 half hourly METAR⁴ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 84,5%.

The availability is mainly lowered by lack of night observations during the first years of the period.

EKEB METAR are manual until 16 March 2005 and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

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

No. Obs = 32.618	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,52	3,86	3,90	3,91	0,94	4,85
<1 km	0	0,53	4,55	4,61	4,63	1,06	5,69
<1.5 km	0	0,57	5,53	5,76	5,84	1,27	7,11
<3.0 km	0	0,60	9,15	10,55	10,86	2,42	13,28
< 5.0 km	0	0,60	11,73	16,34	17,56	4,91	22,47
>= 5,0 km or CAVOK	0	0,0031	1,52	8,84	16,13	61,40	77,53
Total	0	0,60	13,26	25,18	33,69	66,31	100

Table 20

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

No. Obs = 33.775	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,080	0,61	0,64	0,65	0,58	1,23
<1 km	0	0,083	0,66	0,69	0,70	0,64	1,34
<1.5 km	0	0,089	0,82	0,87	0,89	0,79	1,68
<3.0 km	0	0,11	1,52	1,79	1,85	1,44	3,29
< 5.0 km	0	0,11	2,10	3,24	3,42	2,77	6,20
>= 5,0 km or CAVOK	0	0	0,55	4,80	8,81	84,99	93,80
Total	0	0,11	2,65	8,04	12,23	87,77	100

Table 21

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



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

No. Obs = 33.409	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,084	0,36	0,40	0,41	1,00	1,41
<1 km	0	0,087	0,37	0,42	0,43	1,11	1,54
<1.5 km	0	0,090	0,41	0,46	0,48	1,26	1,74
<3.0 km	0	0,10	0,82	1,09	1,16	2,30	3,46
< 5.0 km	0	0,10	1,32	2,40	2,69	4,00	6,69
>= 5,0 km or CAVOK	0	0	0,35	3,48	6,74	86,57	93,31
Total	0	0,10	1,67	5,88	9,43	90,57	100

Table 22

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

No. Obs = 33.540	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,483	2,40	2,43	2,45	0,68	3,12
<1 km	0	0,486	2,70	2,74	2,76	0,81	3,57
<1.5 km	0	0,528	3,23	3,29	3,32	1,03	4,35
<3.0 km	0	0,57	6,30	7,31	7,58	2,22	9,80
< 5.0 km	0	0,57	8,63	13,08	14,19	4,94	19,13
>= 5,0 km or CAVOK	0	0	1,16	8,04	13,88	66,99	80,87
Total	0	0,57	9,79	21,12	28,06	71,94	100

Table 23

Annual EKEB – Frequencies (%) Visibility - Ceiling

No. Obs = 133.342	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,29	1,79	1,83	1,84	0,80	2,63
<1 km	0	0,29	2,05	2,10	2,11	0,91	3,02
<1.5 km	0	0,32	2,48	2,57	2,61	1,08	3,69
<3.0 km	0	0,34	4,41	5,15	5,32	2,09	7,42
< 5.0 km	0	0,34	5,91	8,71	9,41	4,15	13,55
>= 5,0 km or CAVOK	0	0,0007	0,89	6,27	11,36	75,09	86,45
Total	0	0,34	6,80	14,98	20,76	79,24	100

Table 24

Wind direction histograms

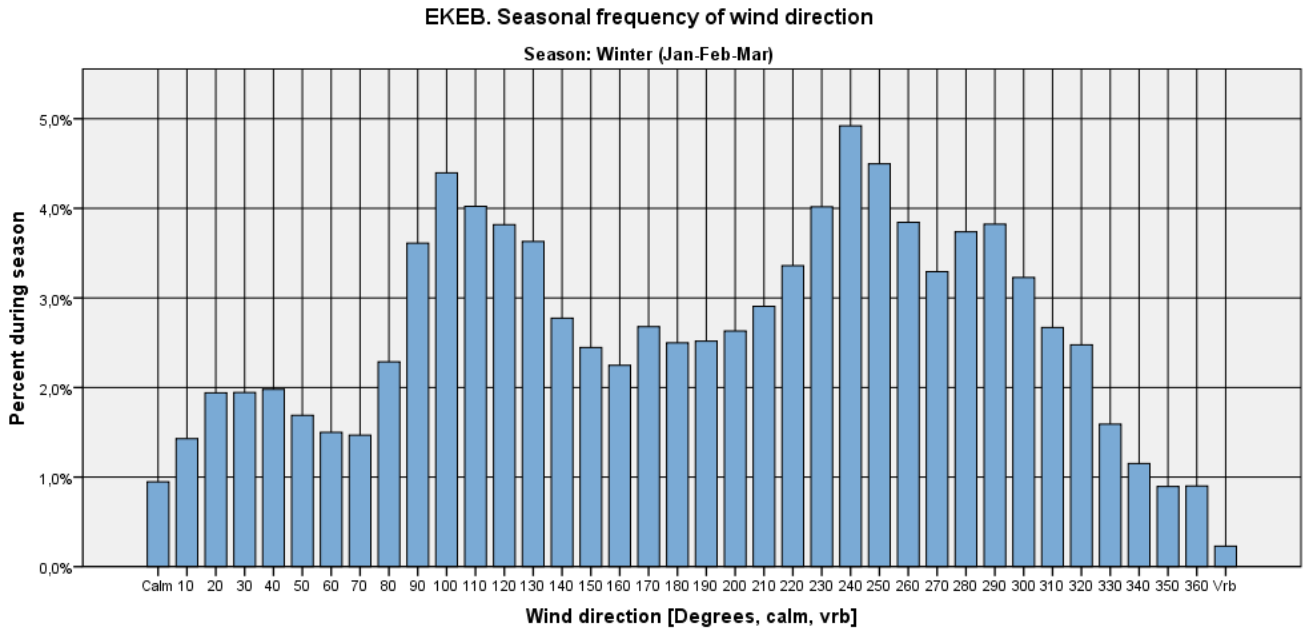


Figure 160

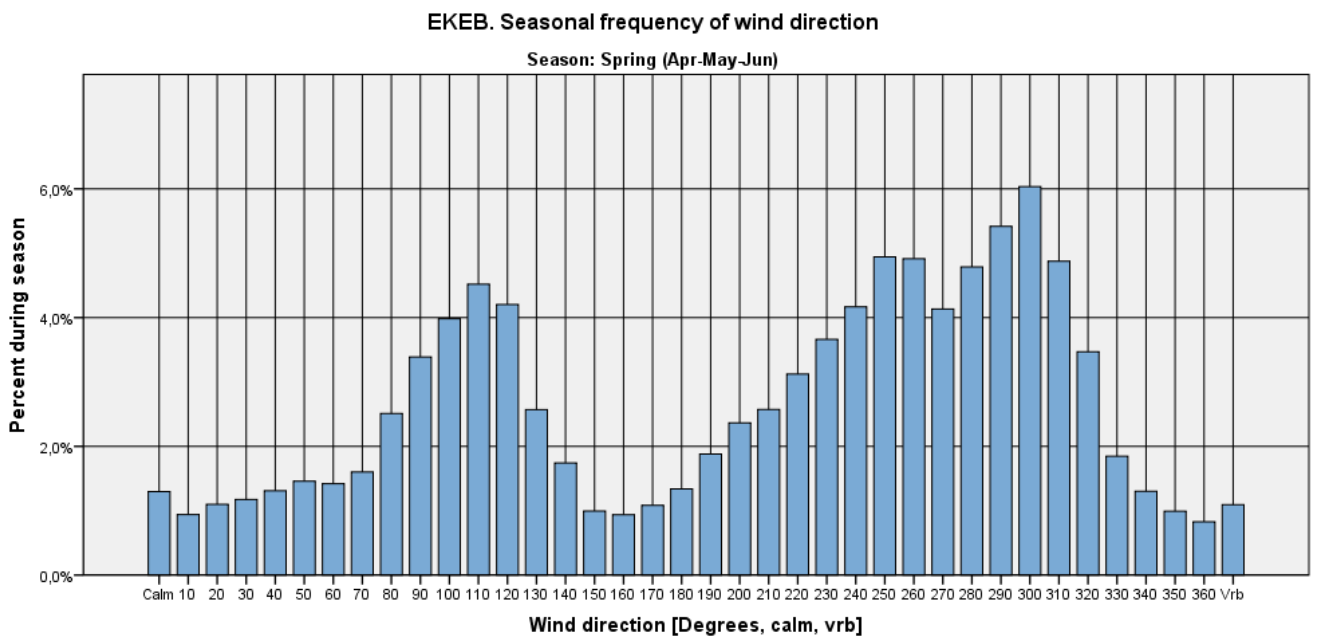


Figure 161



EKEB. Seasonal frequency of wind direction

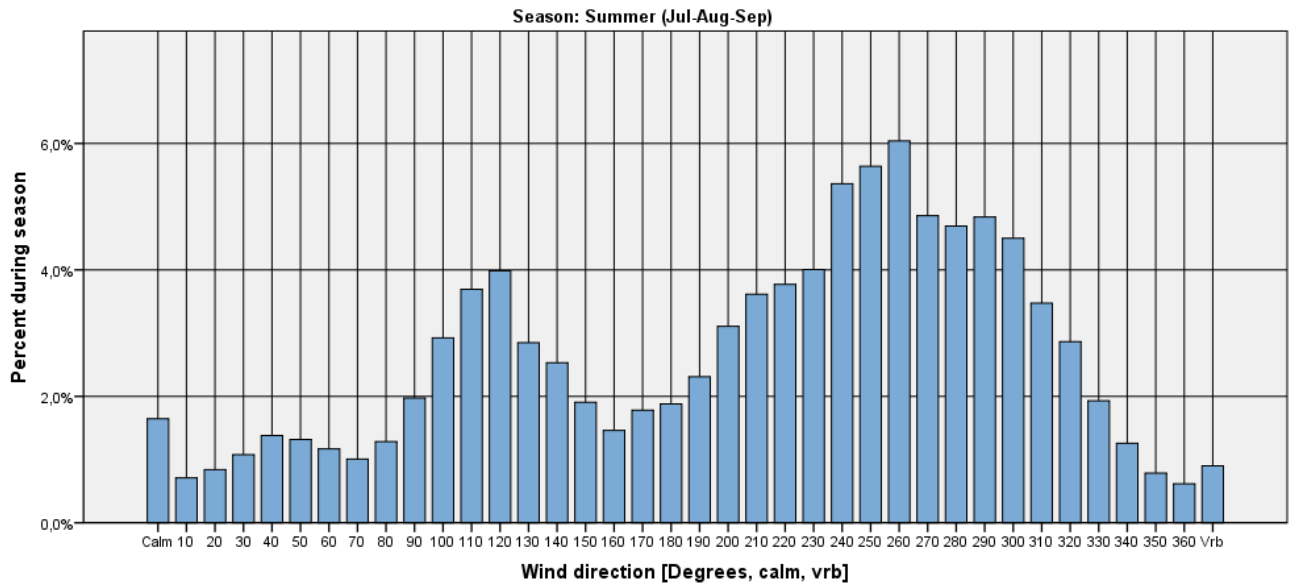


Figure 162

EKEB. Seasonal frequency of wind direction

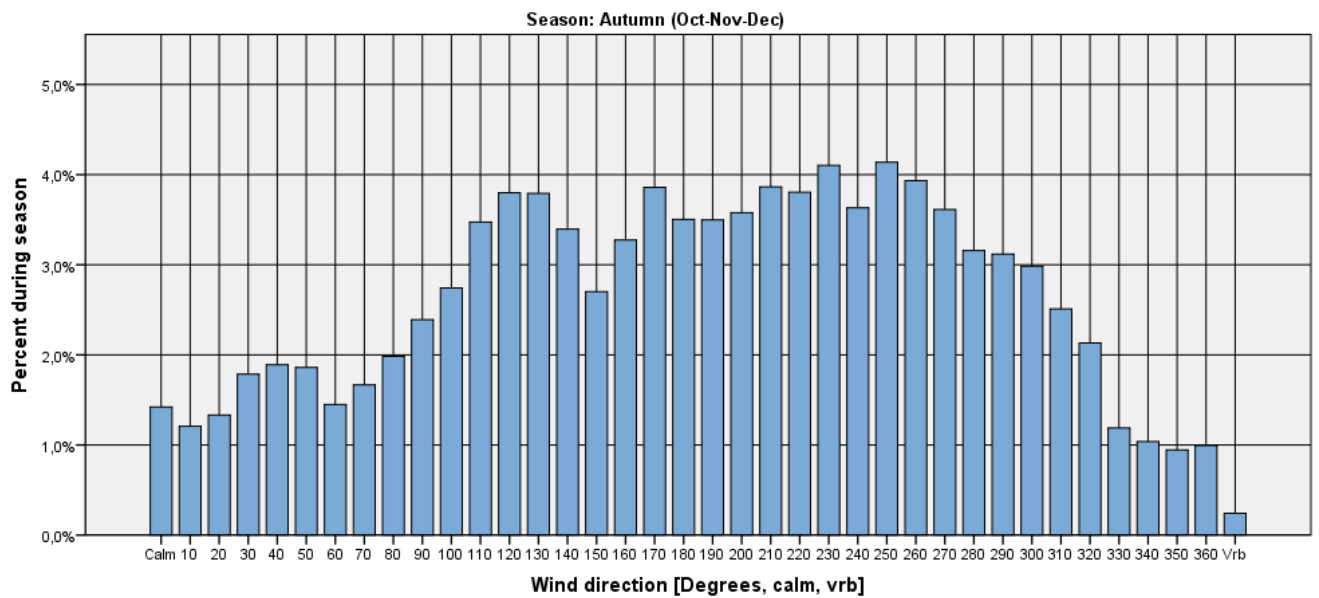


Figure 163

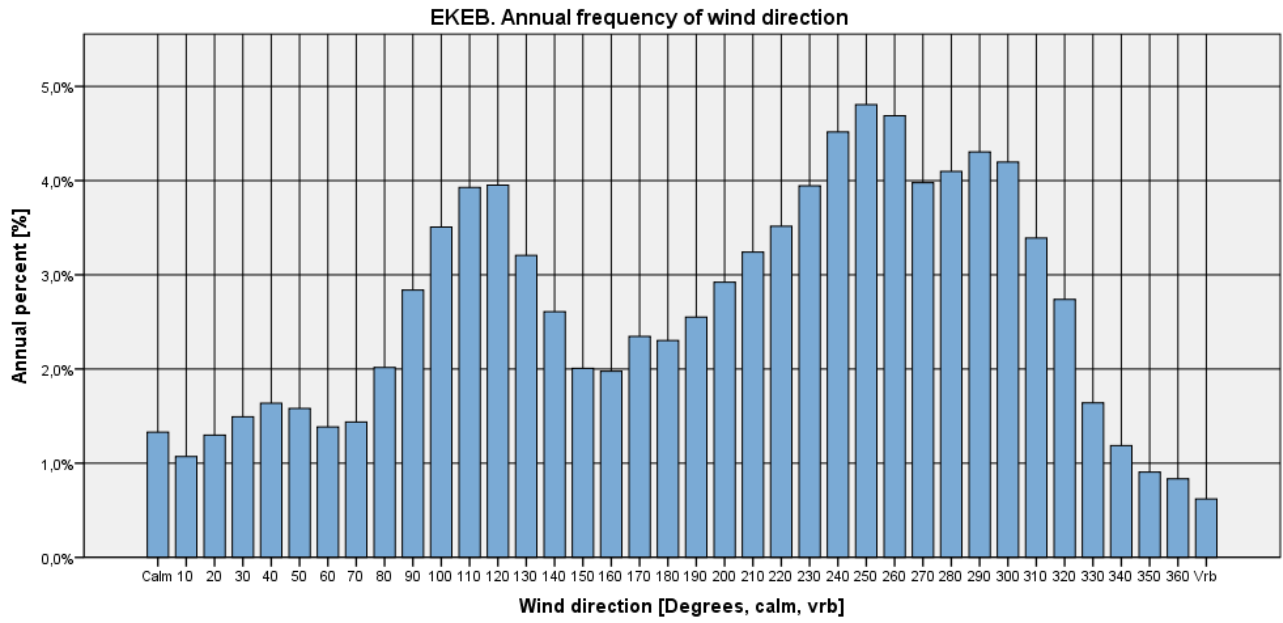


Figure 164



Visibility criteria on wind direction histograms

Visibility < 1000 m

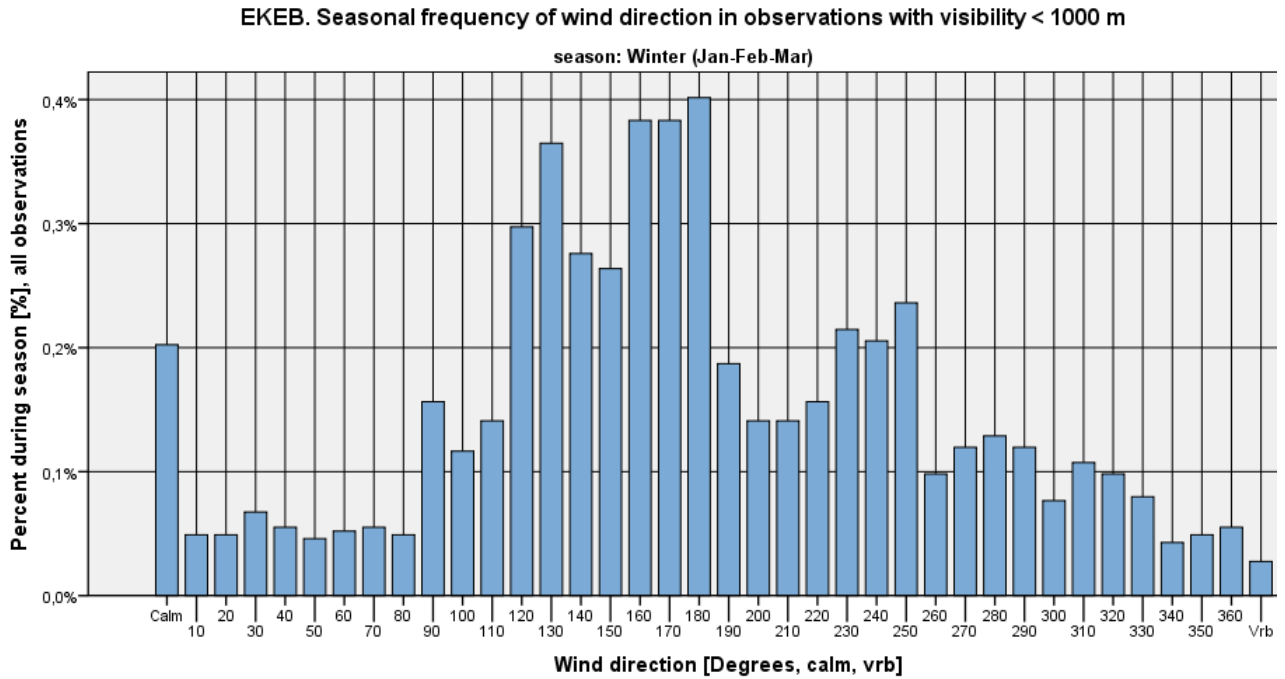


Figure 165

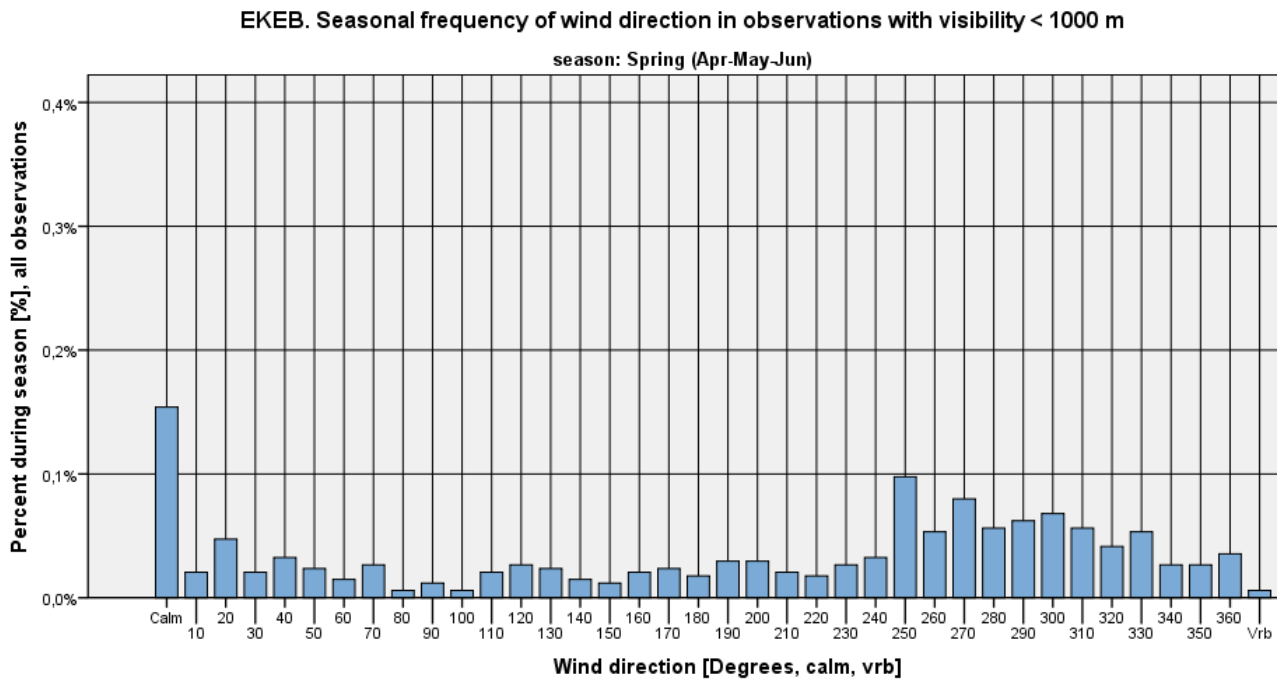


Figure 166

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

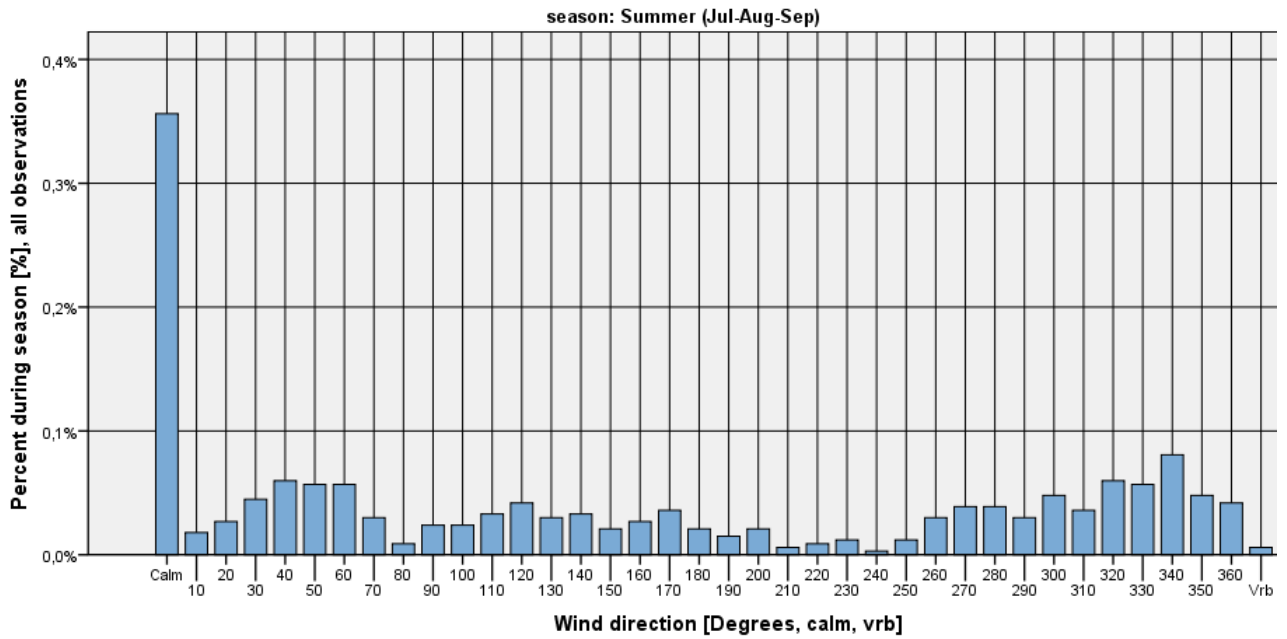


Figure 167

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

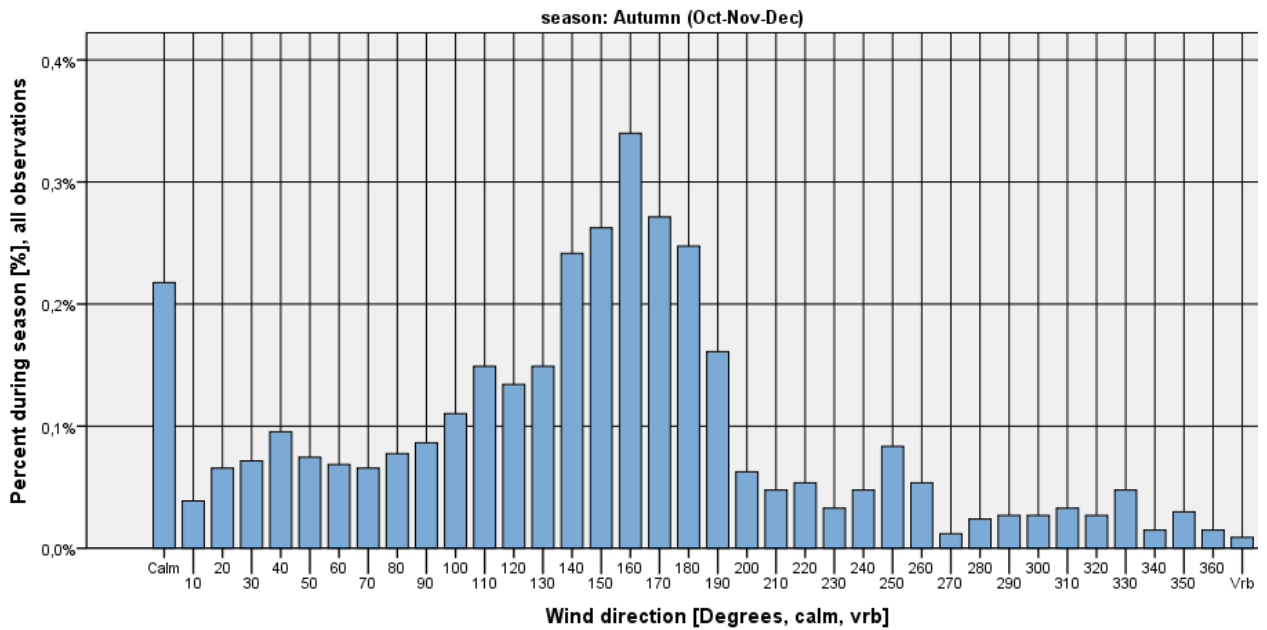


Figure 168

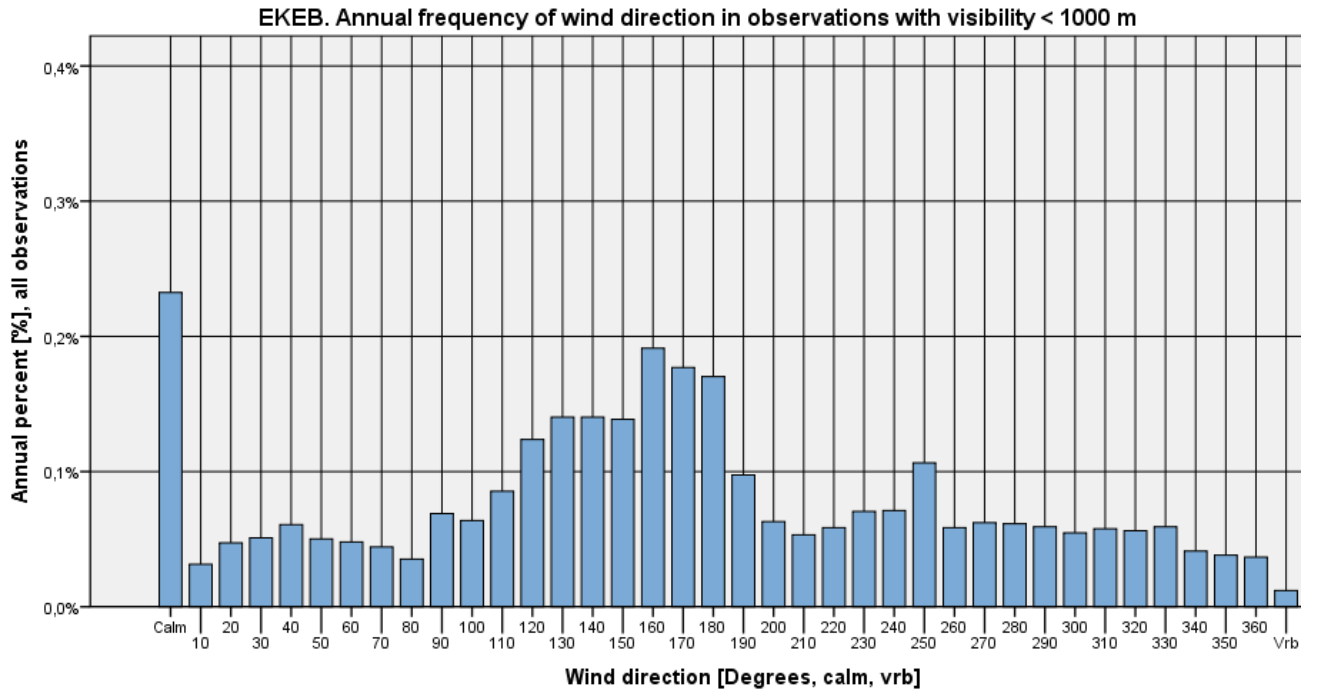


Figure 169



Visibility < 1000 m and wind speed <= 5 kts

EKEB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

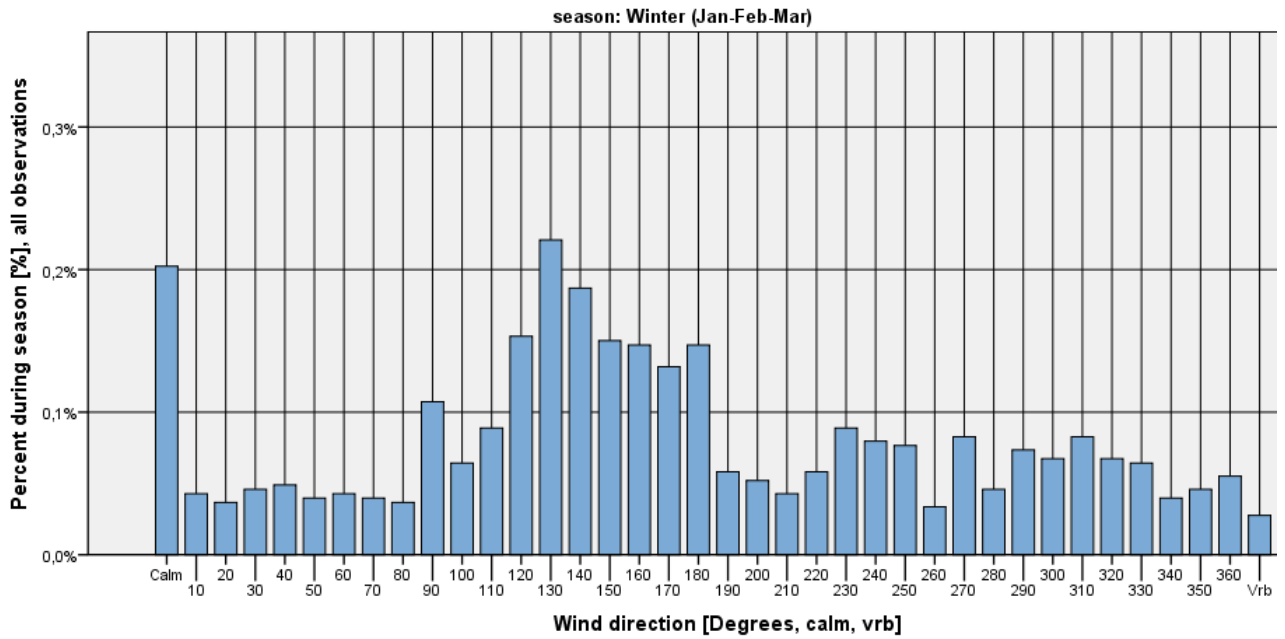


Figure 170

EKEB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

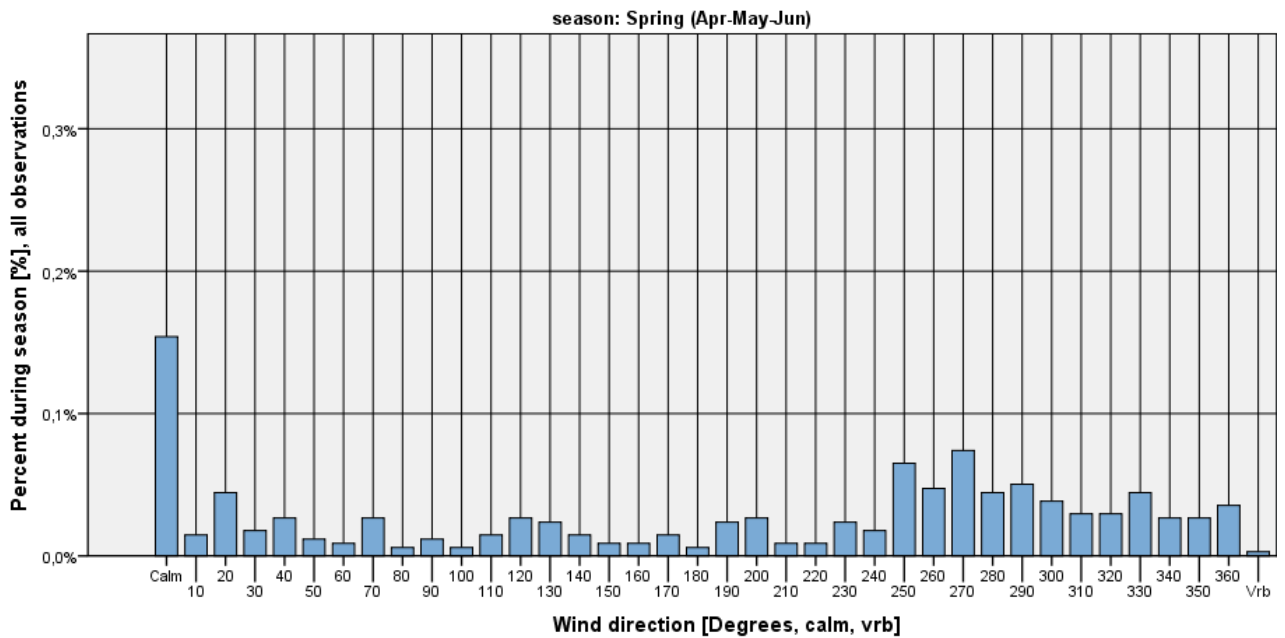


Figure 171

EKEB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

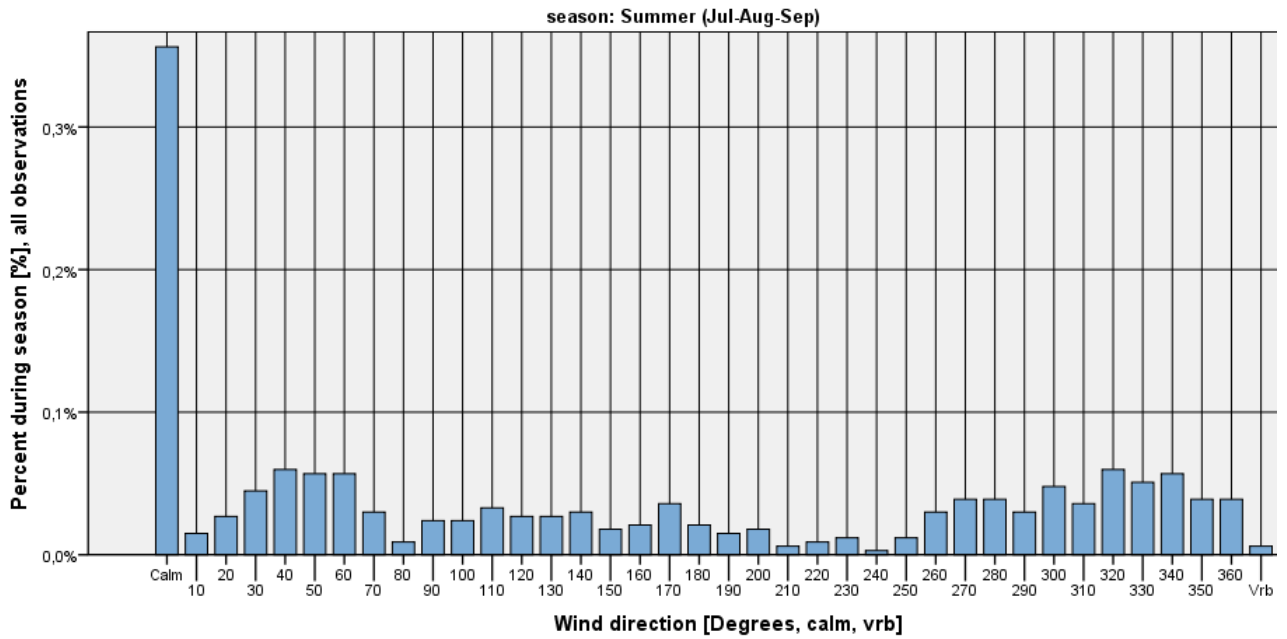


Figure 172

EKEB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

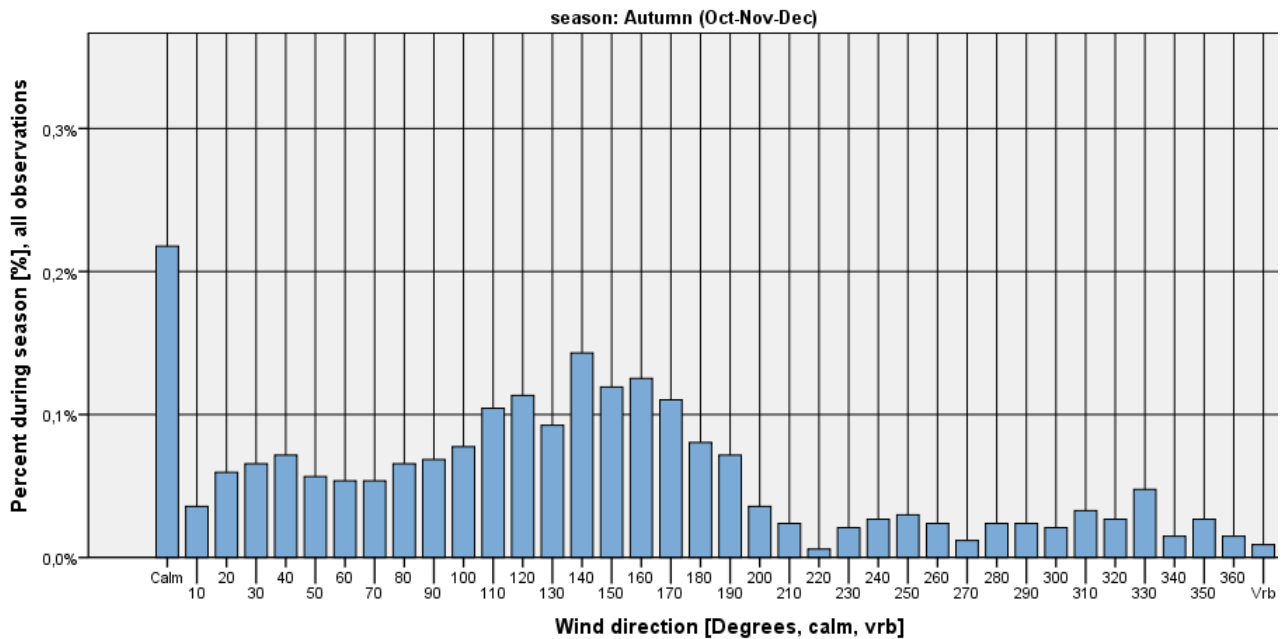


Figure 173

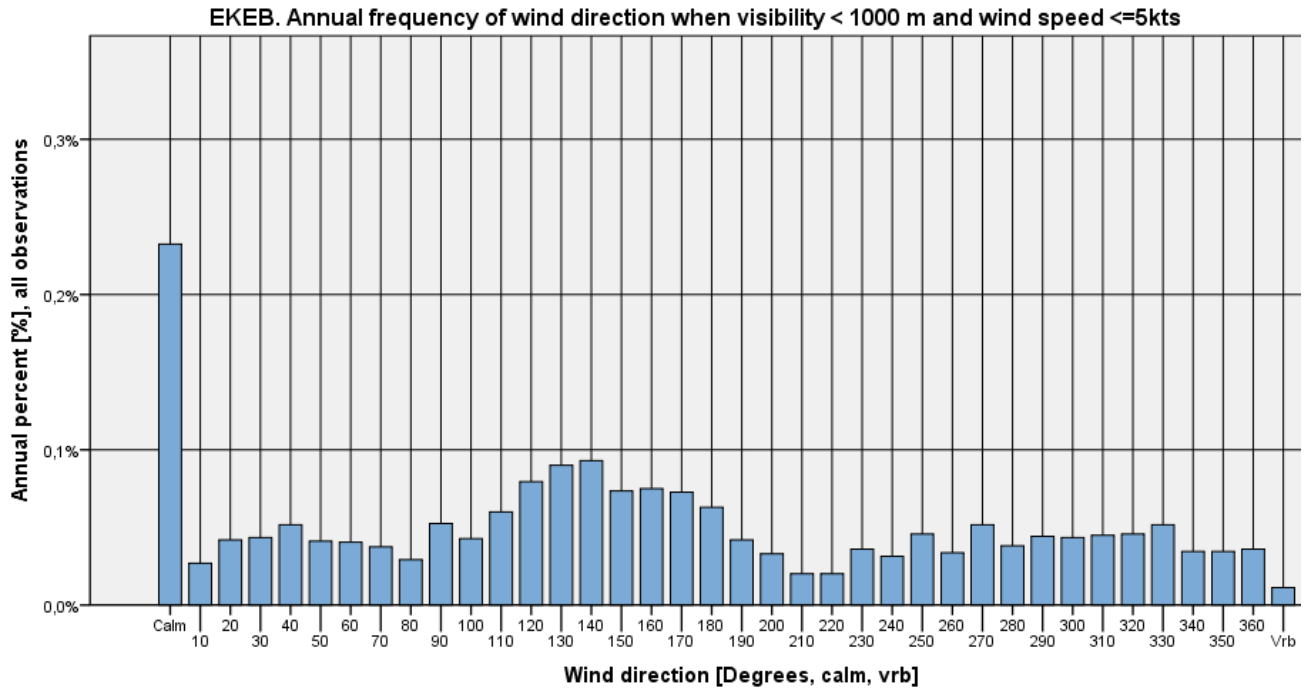


Figure 174



Visibility < 1000 m and wind speed > 5 kts

EKEB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed > 5 kts

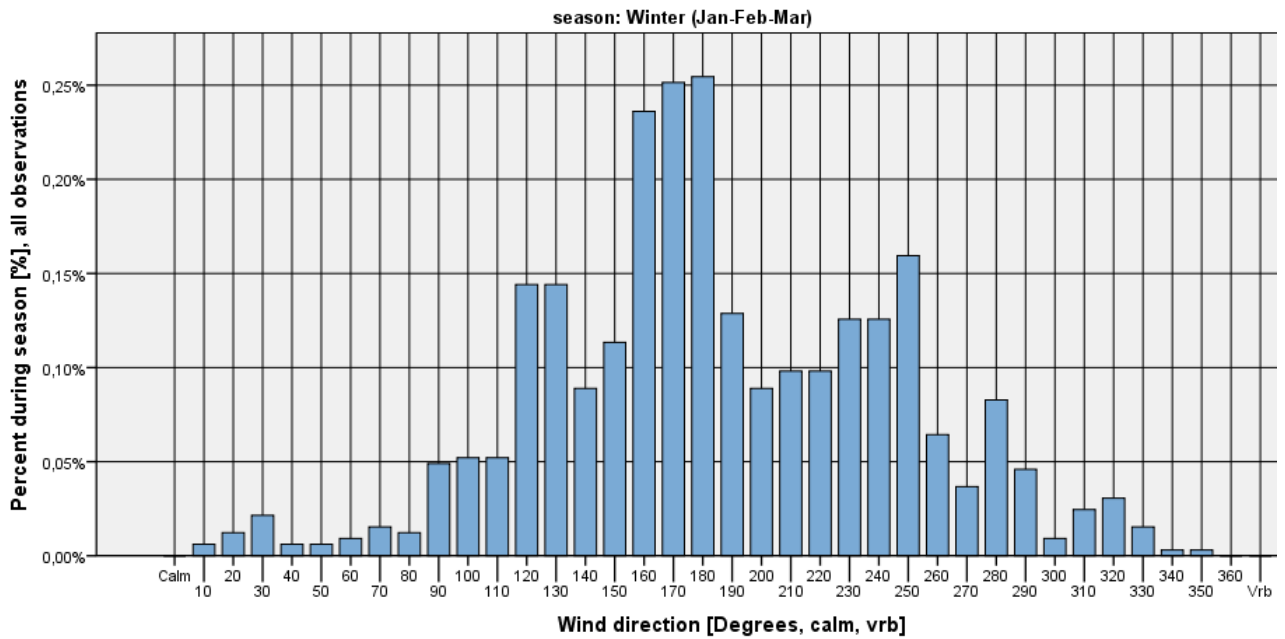


Figure 175

EKEB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed > 5 kts

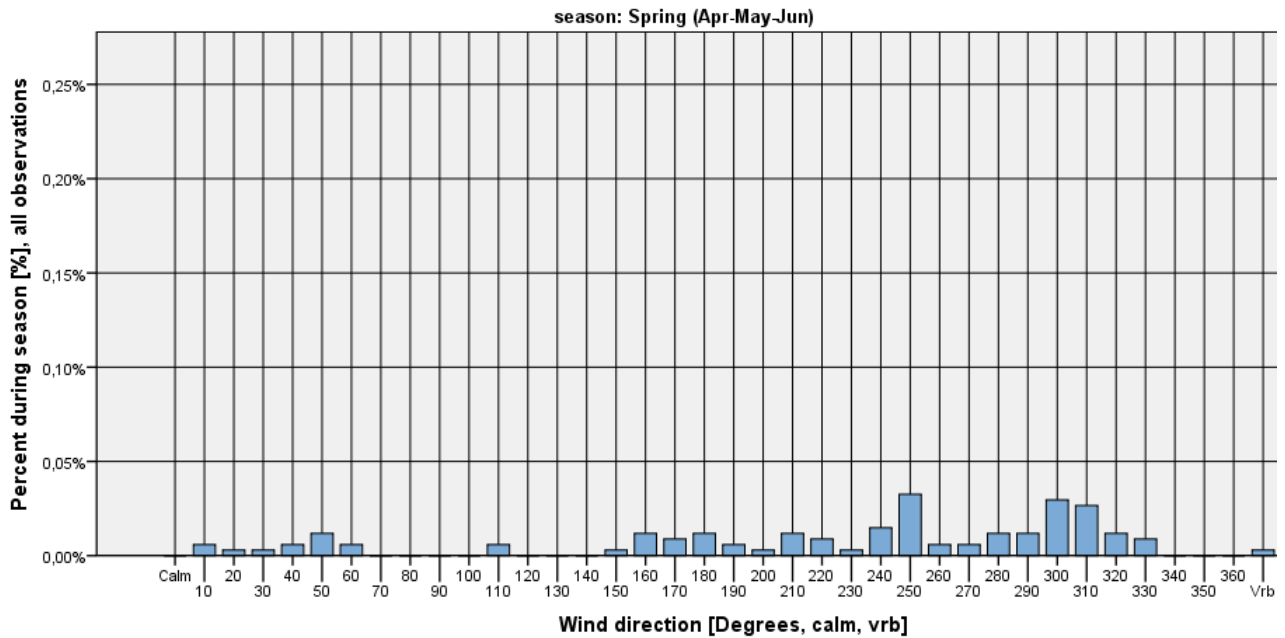


Figure 176

EKEB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

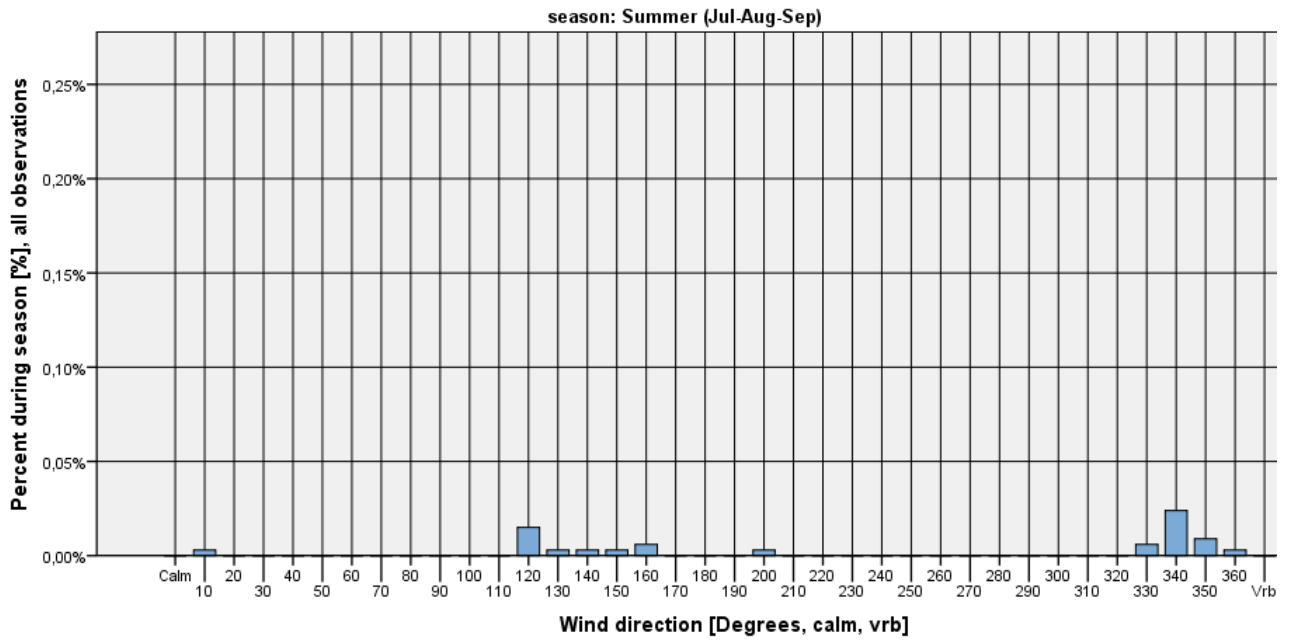


Figure 177

EKEB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

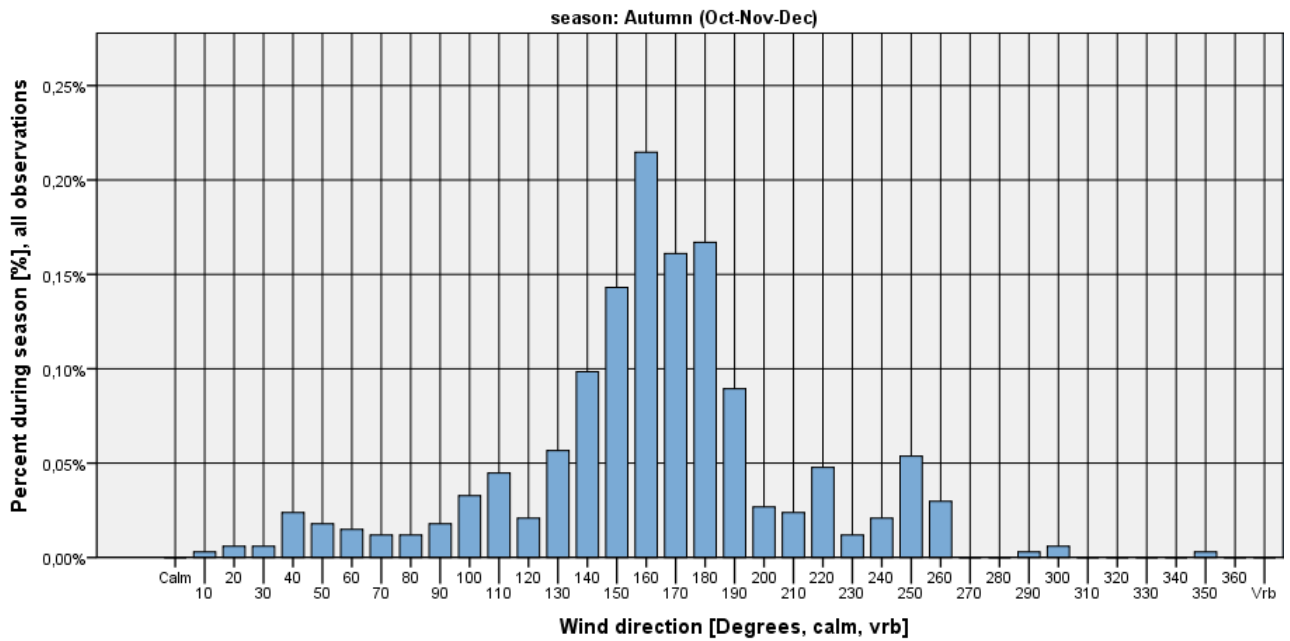


Figure 178

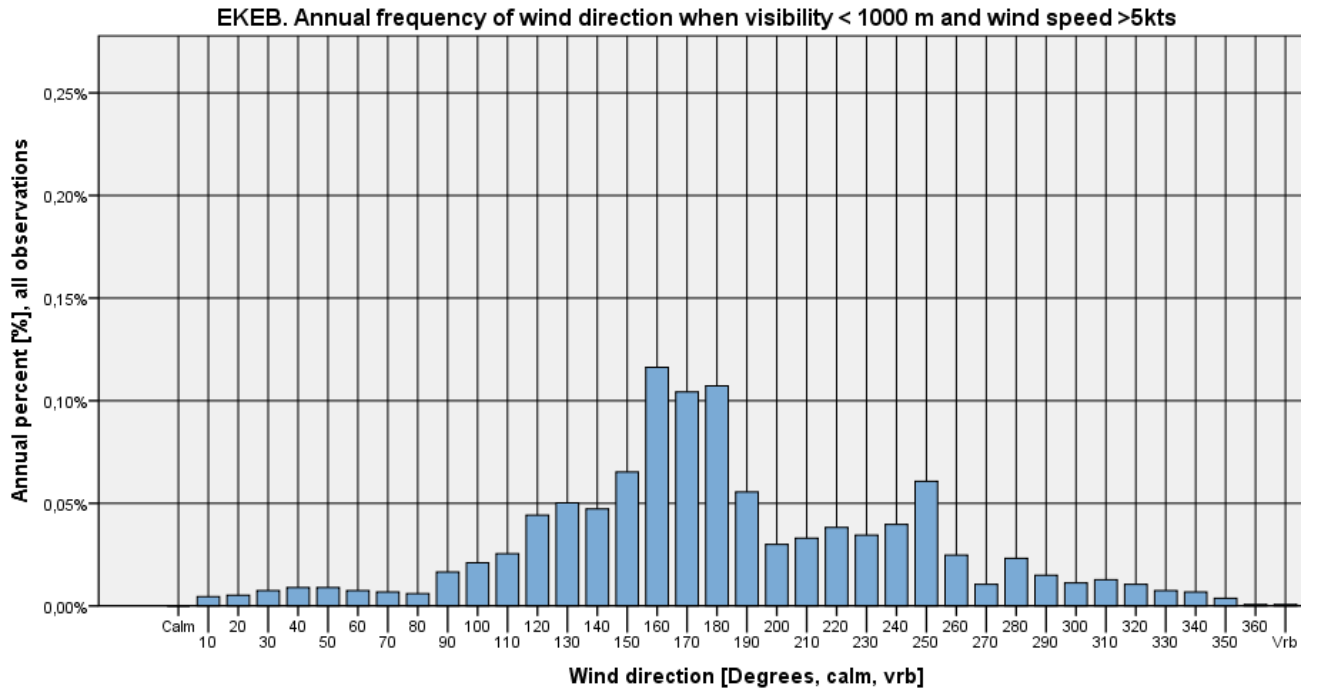


Figure 179



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

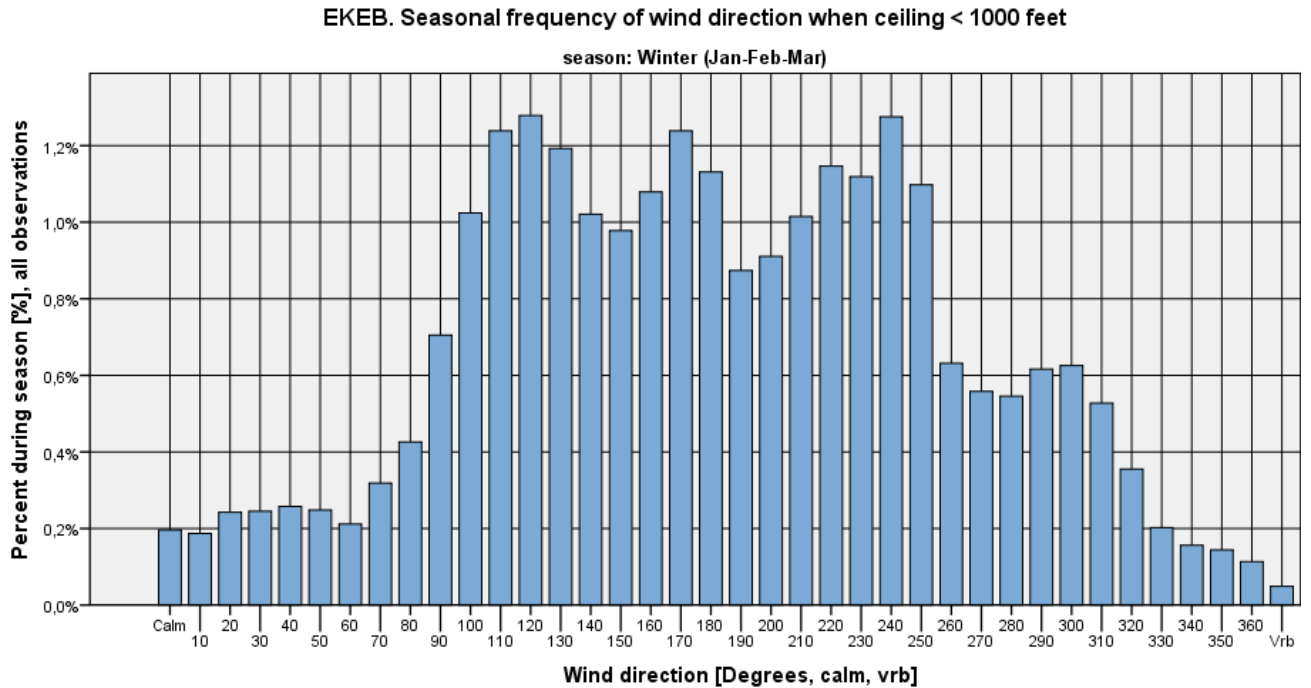


Figure 180

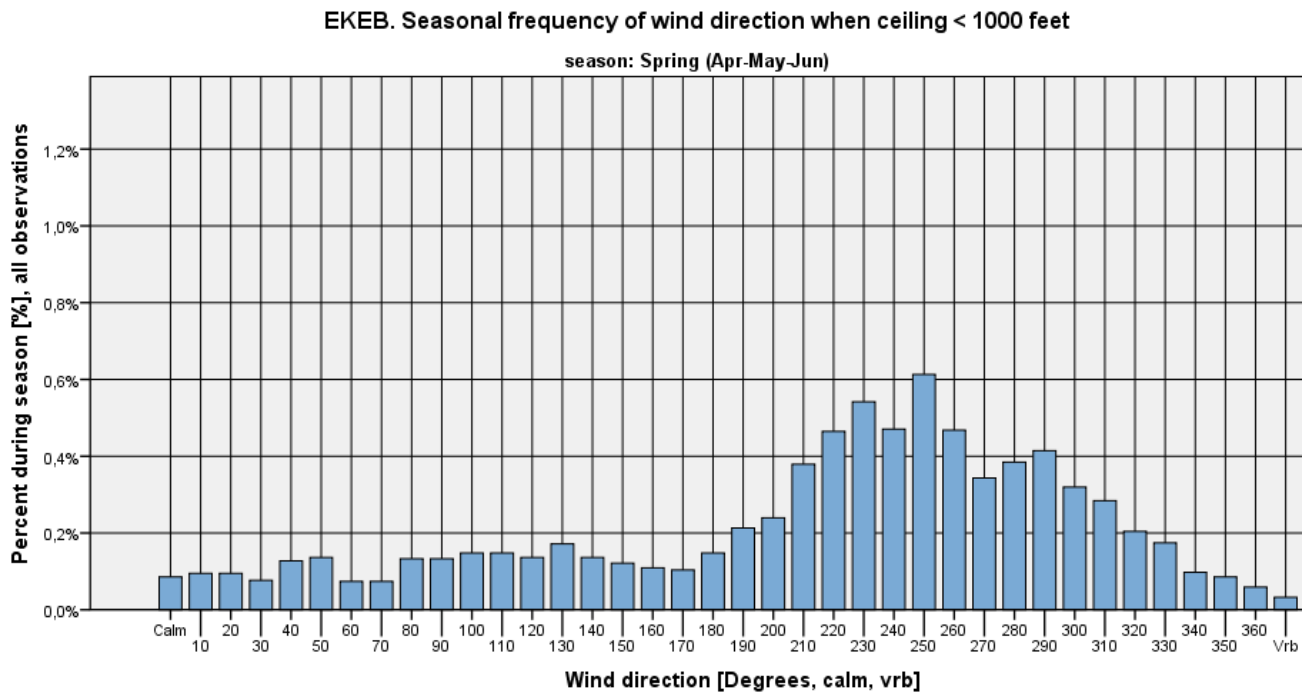


Figure 181



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

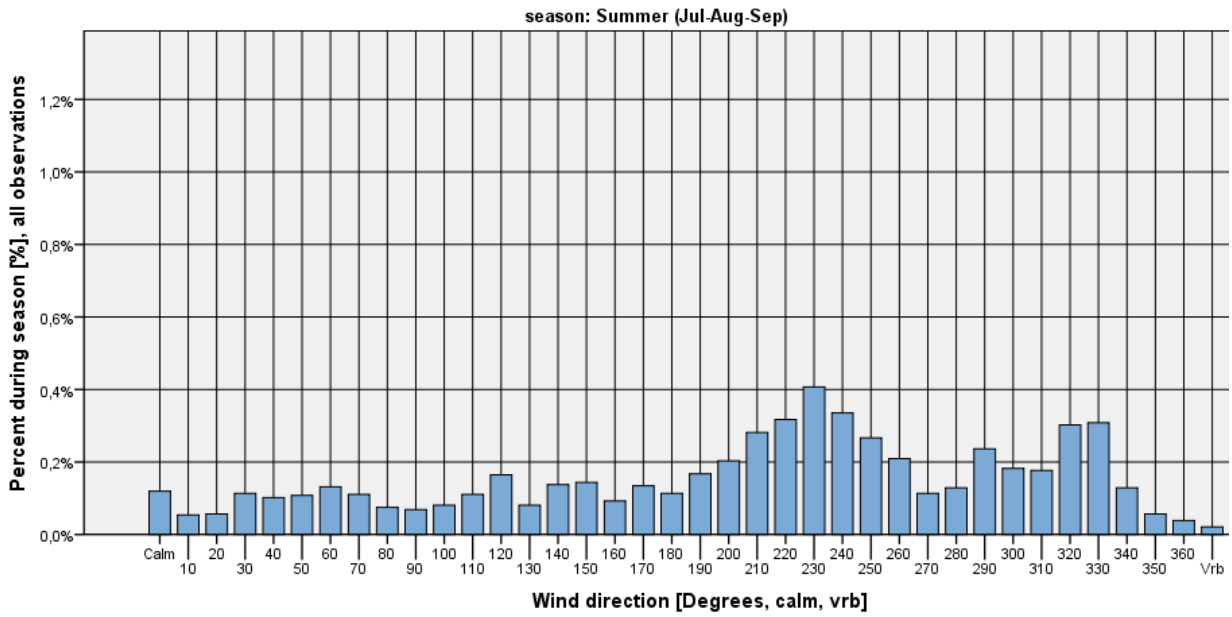


Figure 182

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

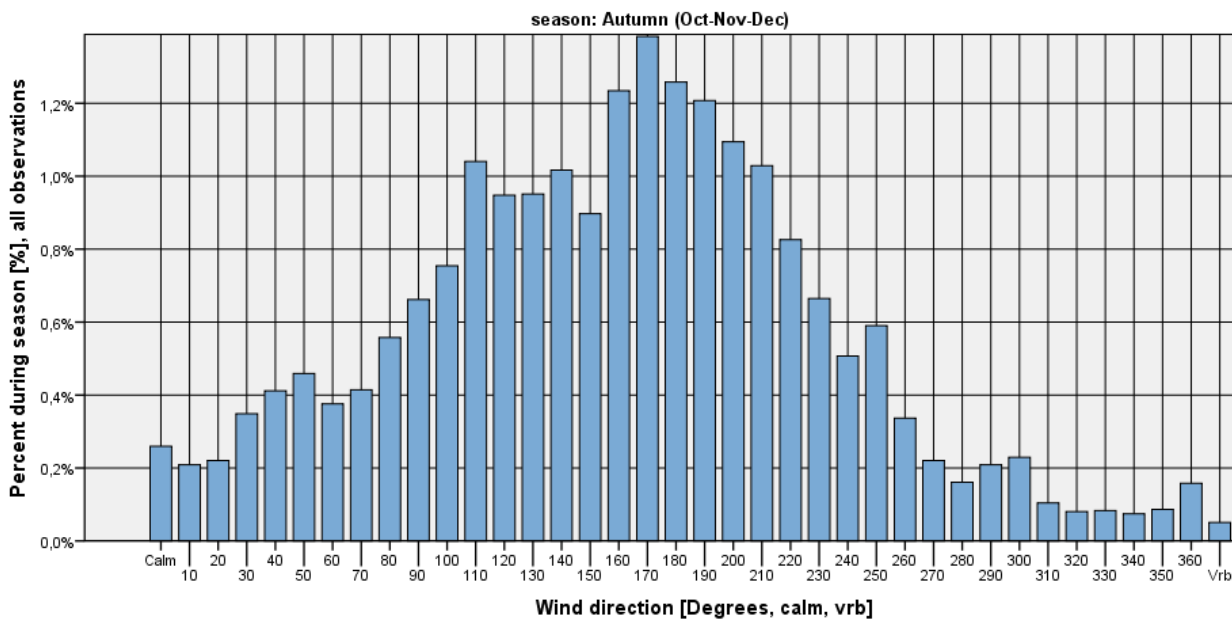


Figure 183

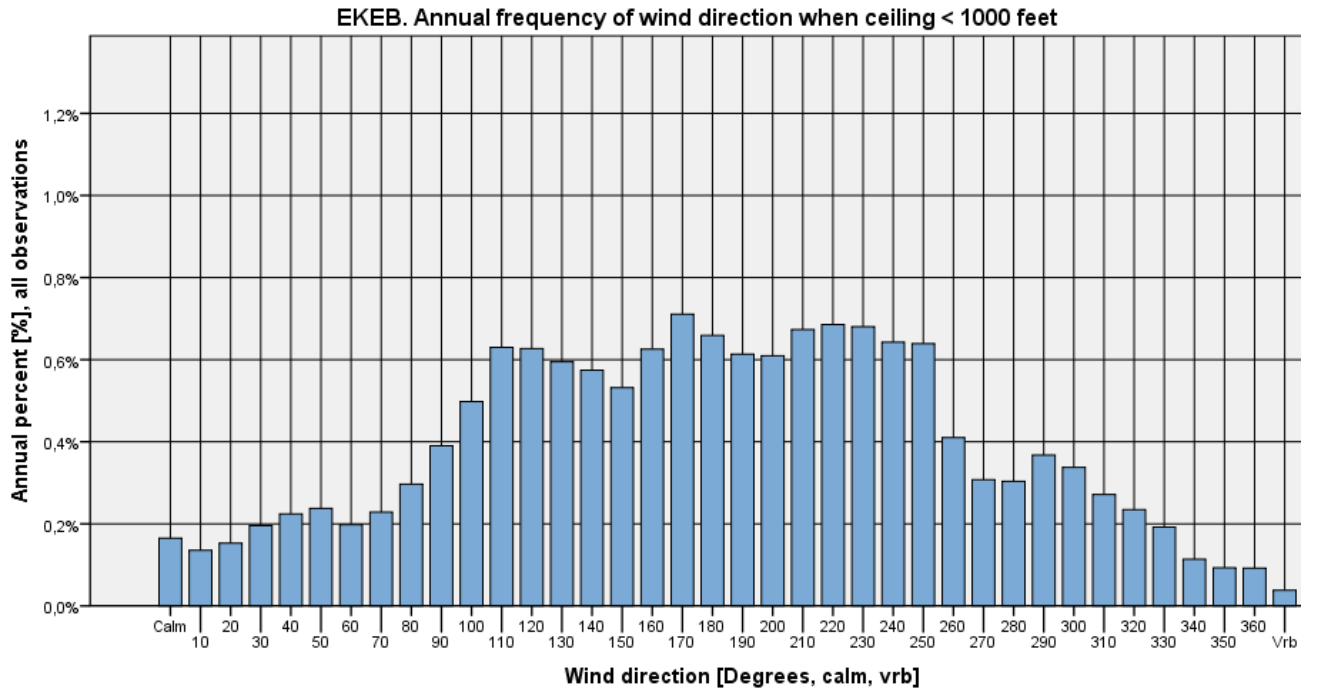


Figure 184



Ceiling < 1000 feet and wind speed <= 5 kts

EKEB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

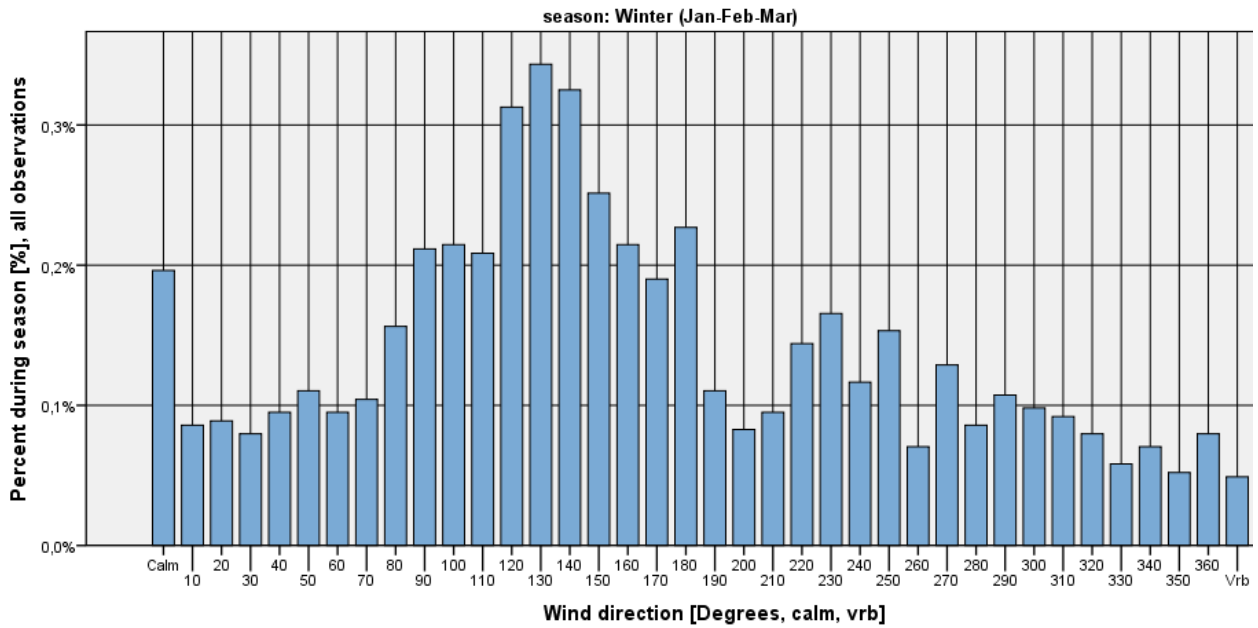


Figure 185

EKEB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

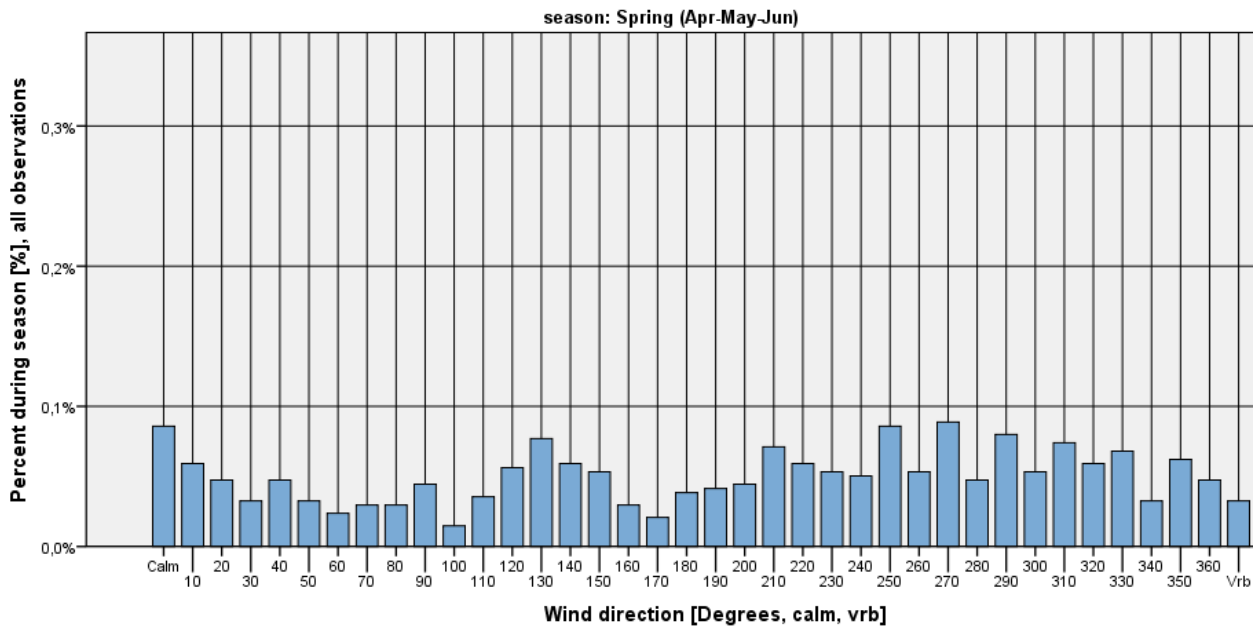


Figure 186



EKEB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

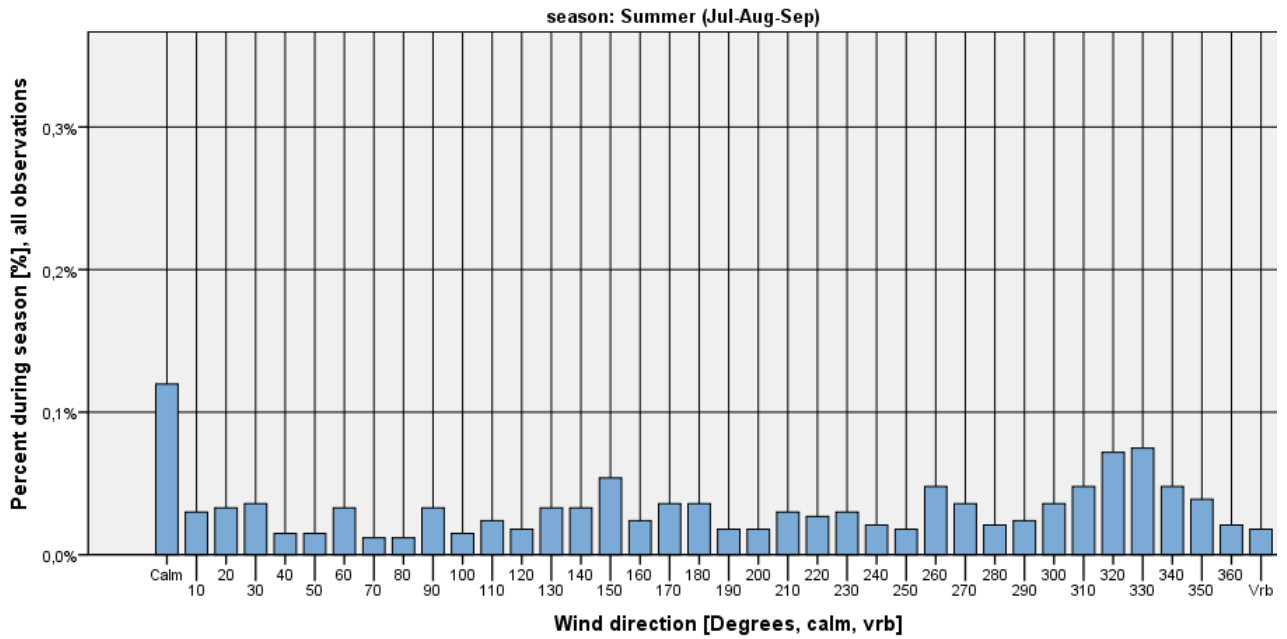


Figure 187

EKEB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

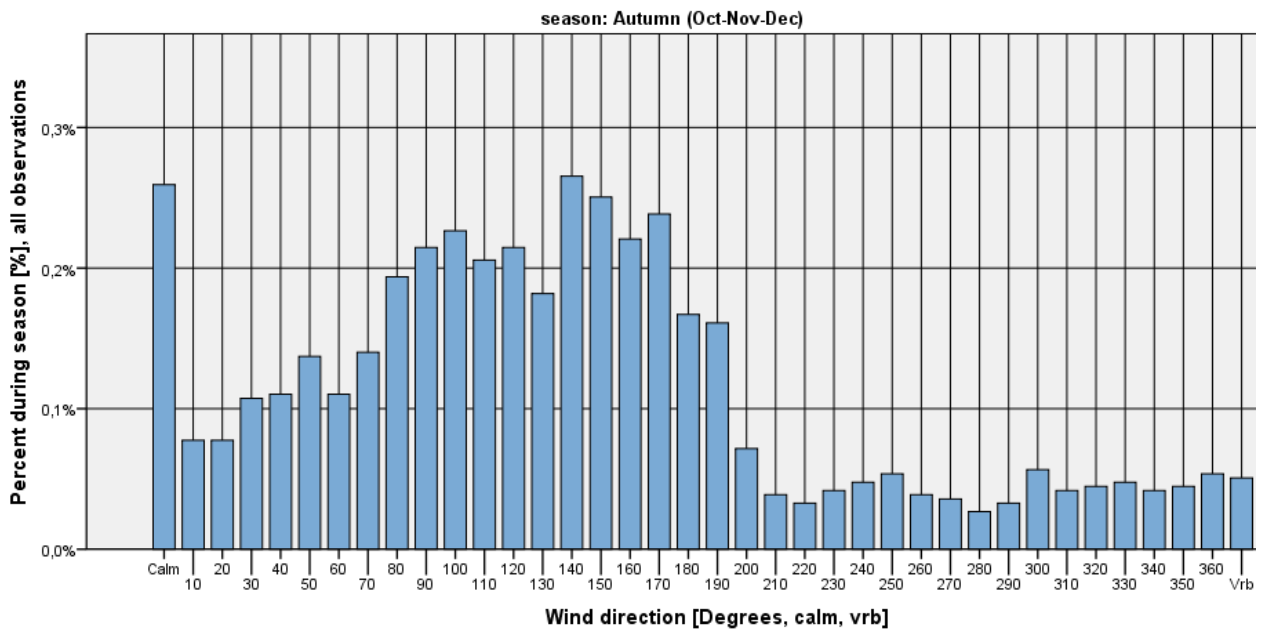


Figure 188

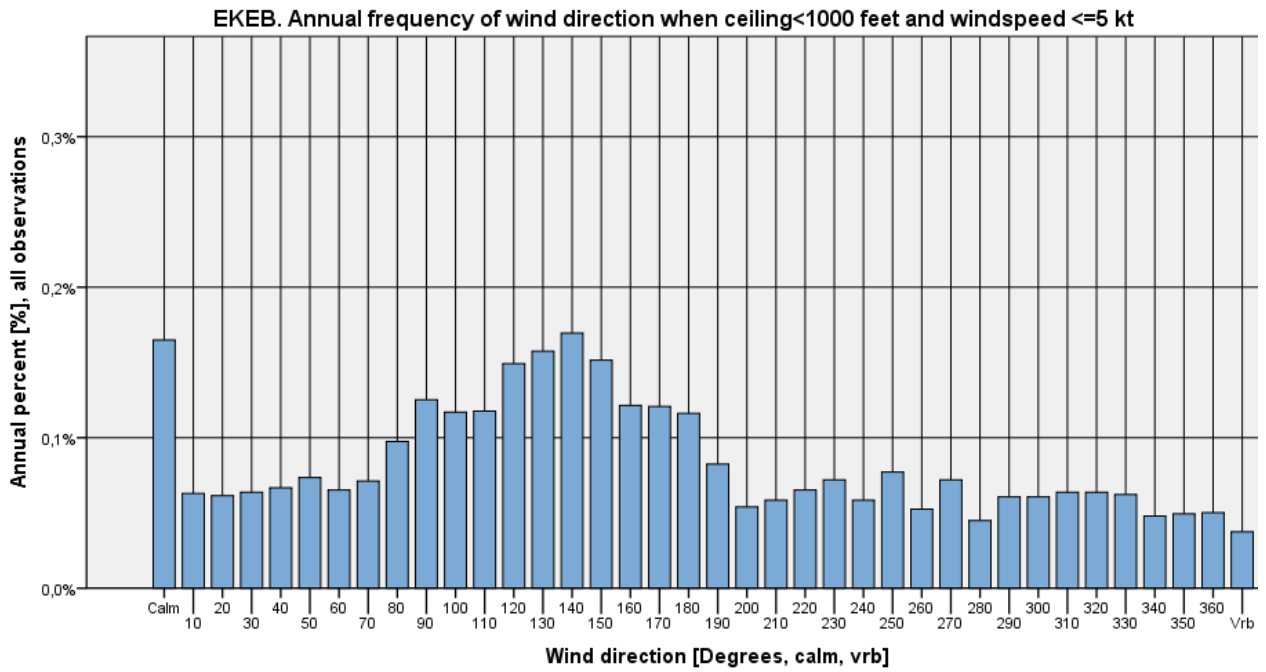


Figure 189



Ceiling < 1000 feet and wind speed > 5 kts

EKEB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed > 5 kt

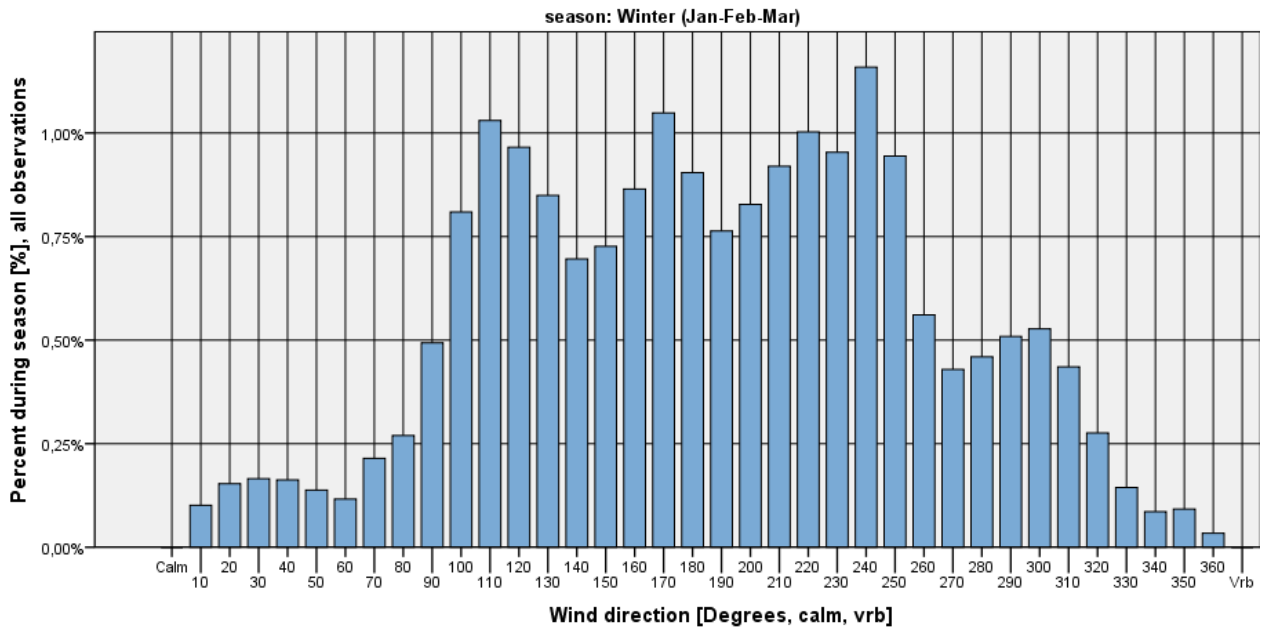


Figure 190

EKEB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed > 5 kt

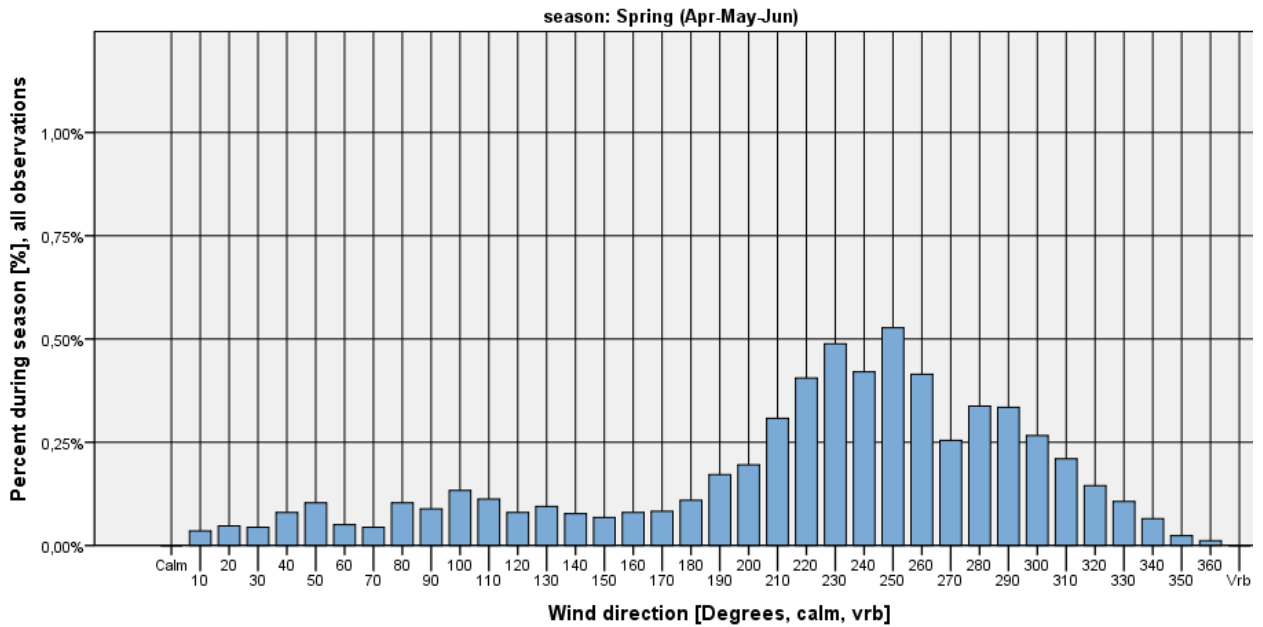


Figure 191



EKEB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

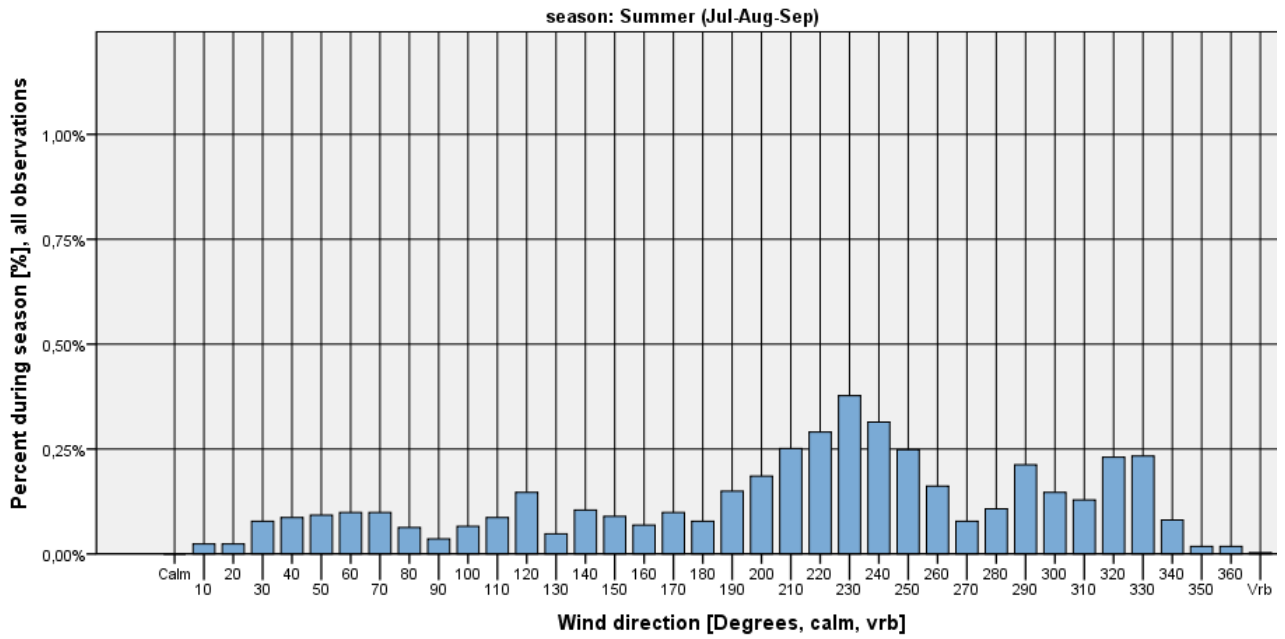


Figure 192

EKEB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

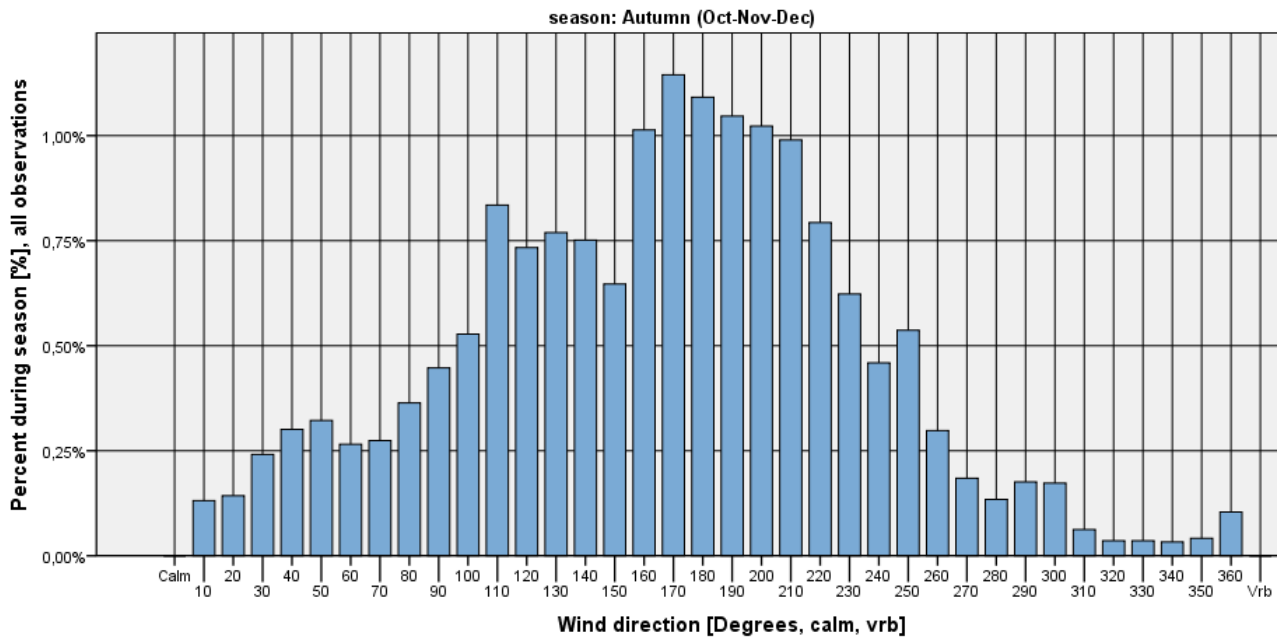


Figure 193

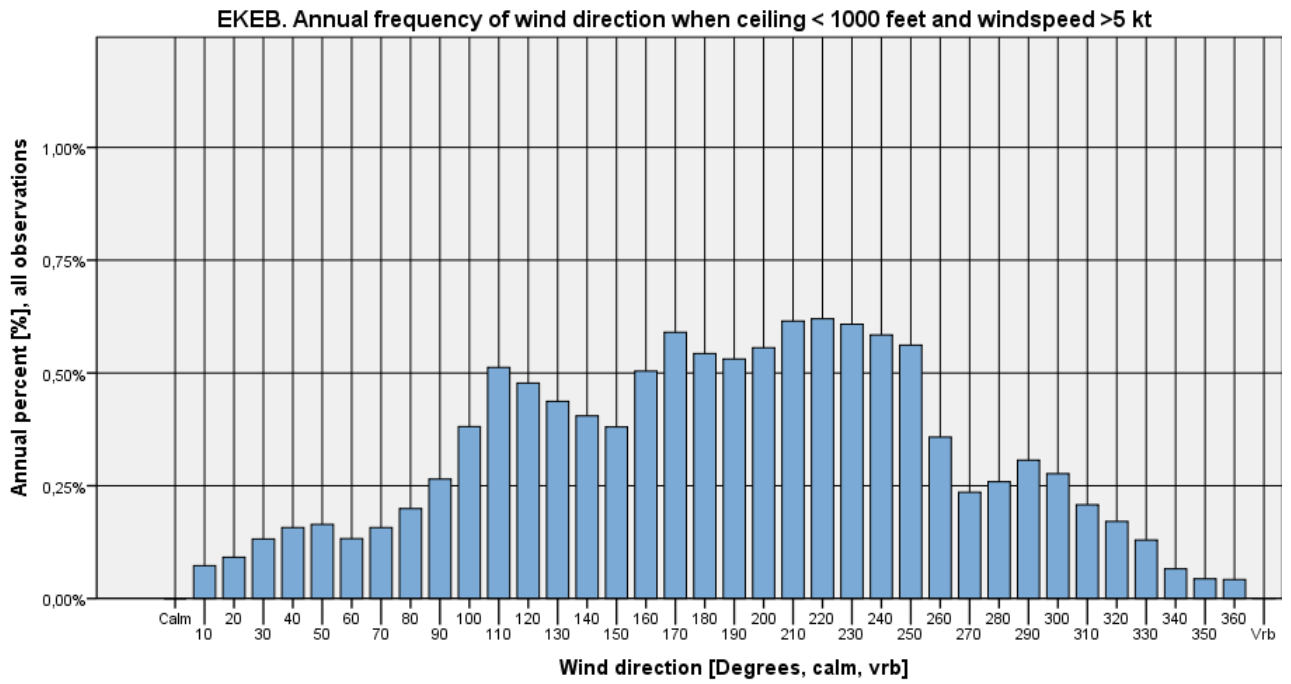


Figure 194



Ceiling < 500 feet

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

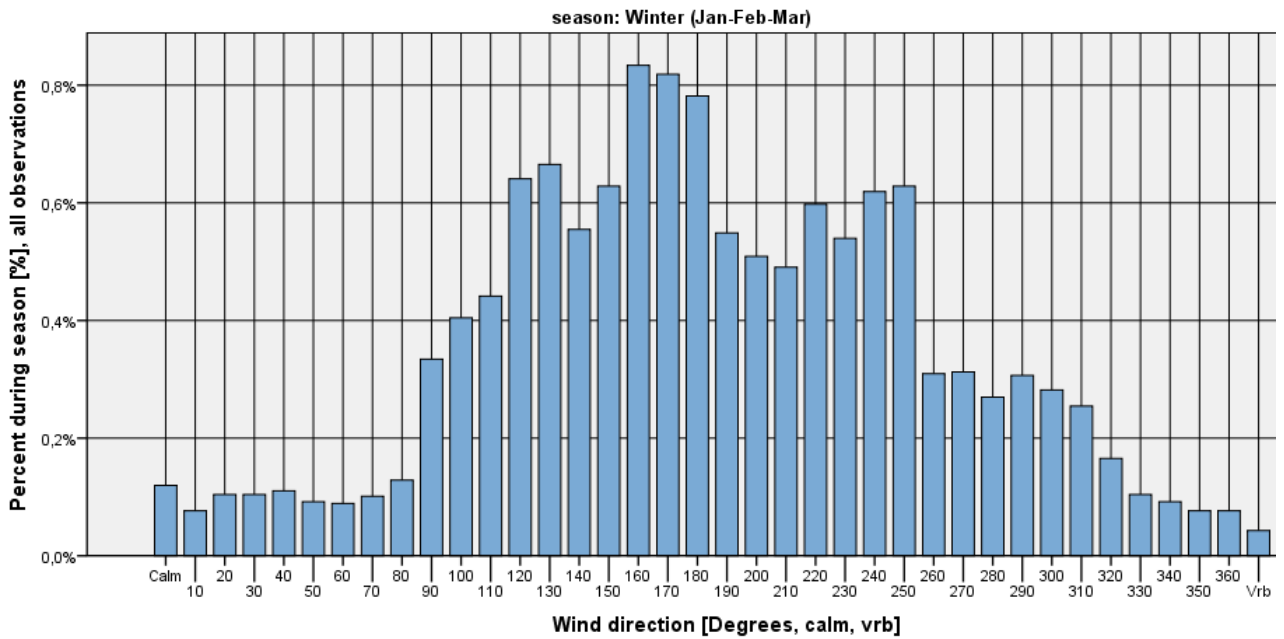


Figure 195

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

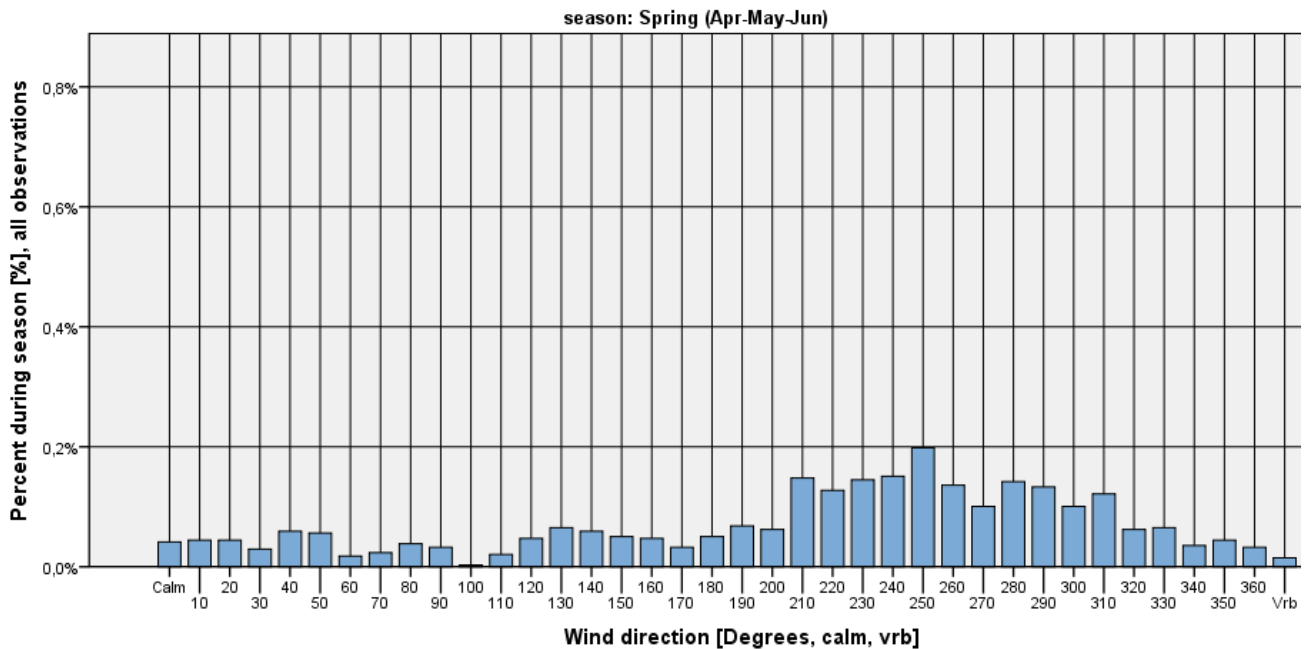


Figure 196

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

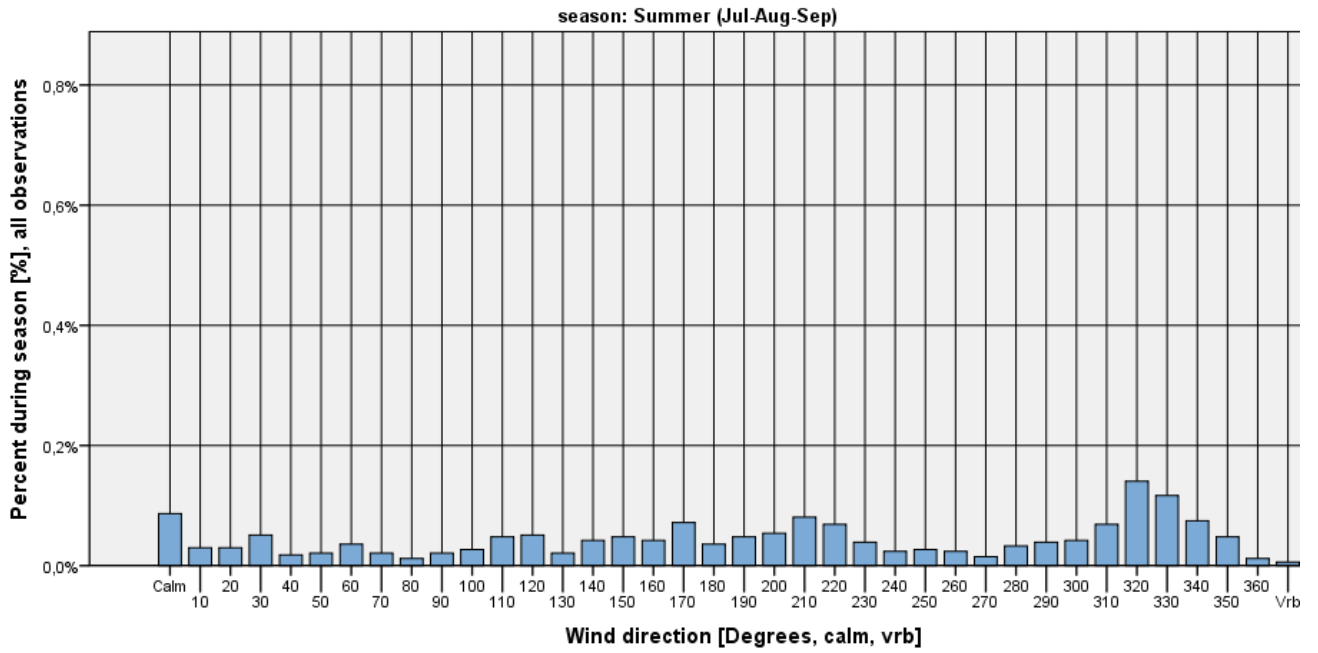


Figure 197

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

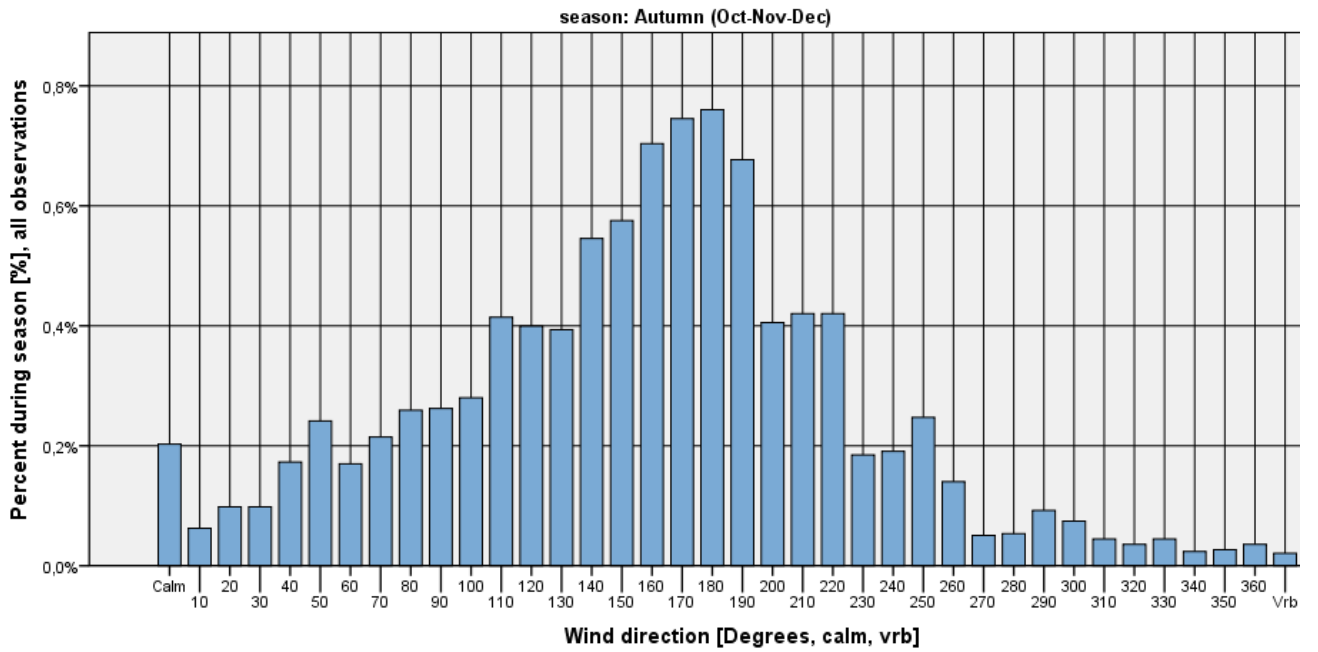


Figure 198

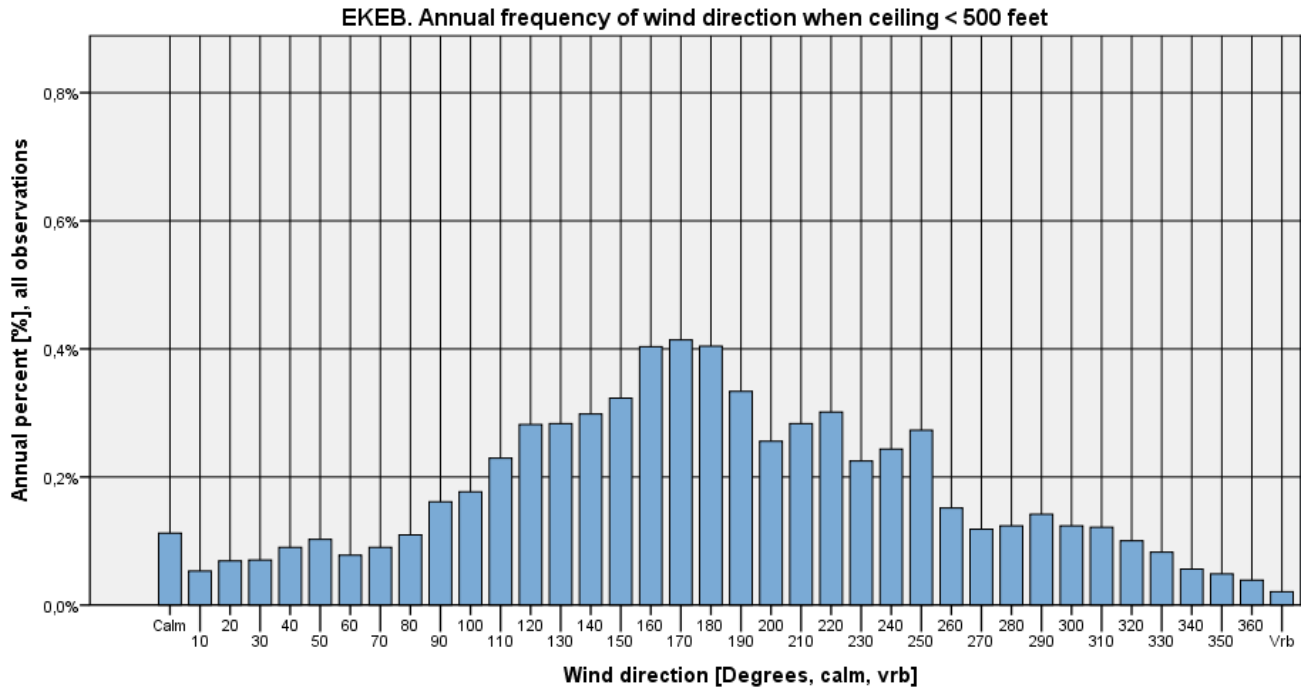


Figure 199



Ceiling < 500 feet and wind speed ≤ 5 kts

EKEB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed ≤ 5 kt

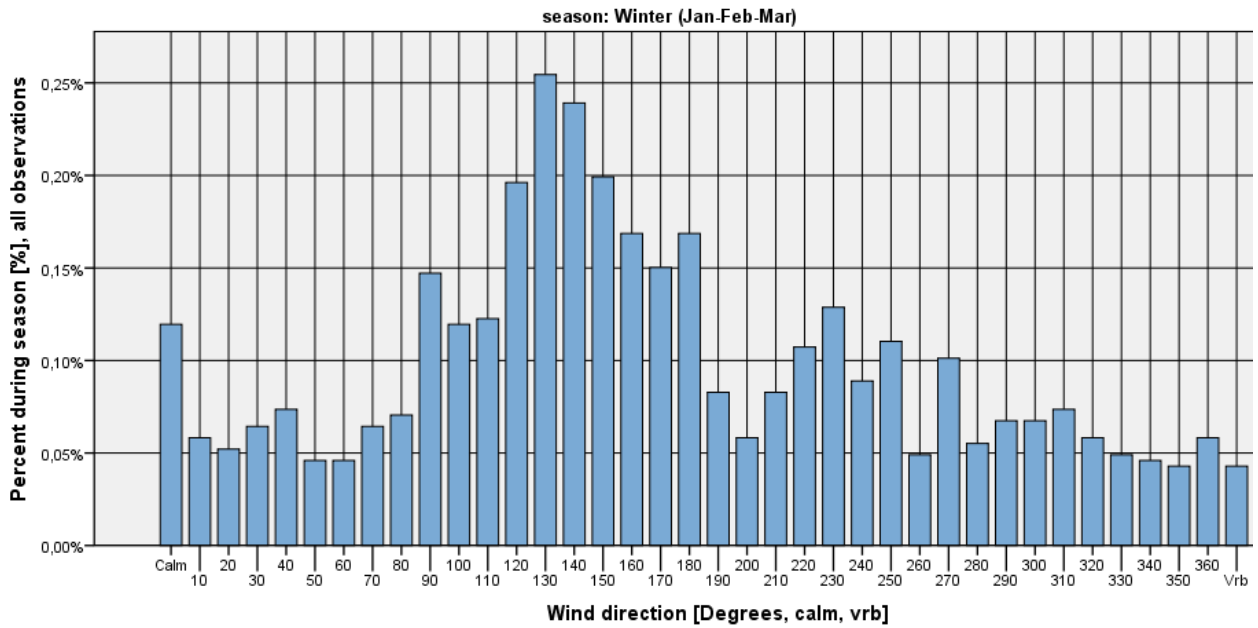


Figure 200

EKEB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed ≤ 5 kt

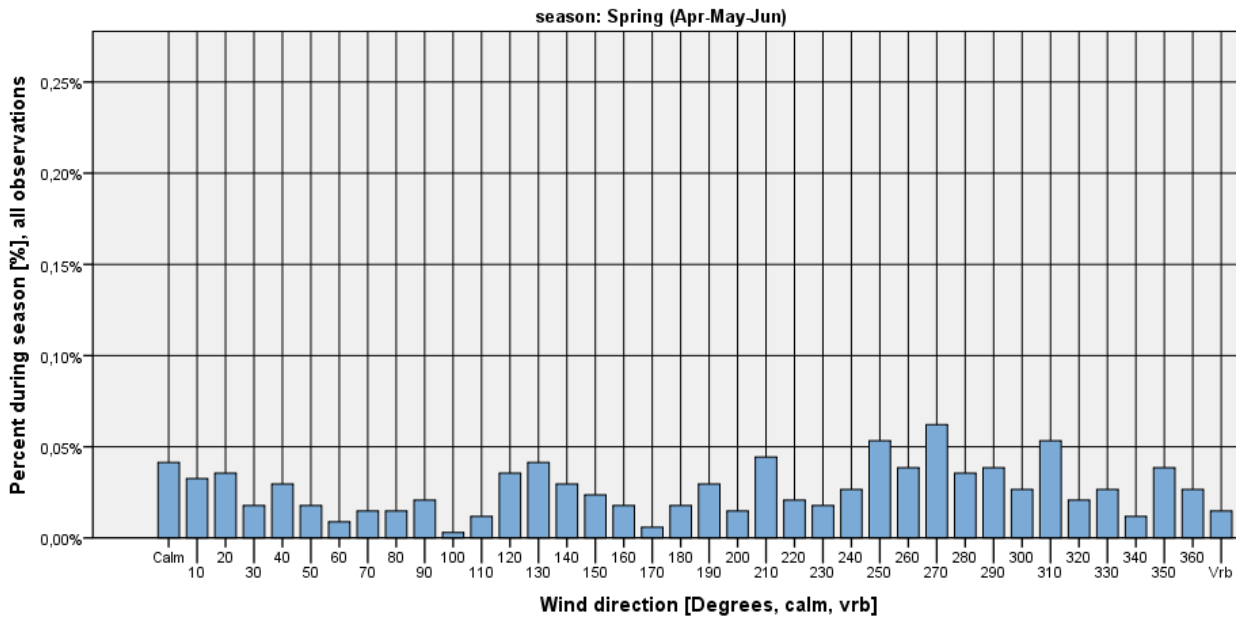


Figure 201

EKEB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

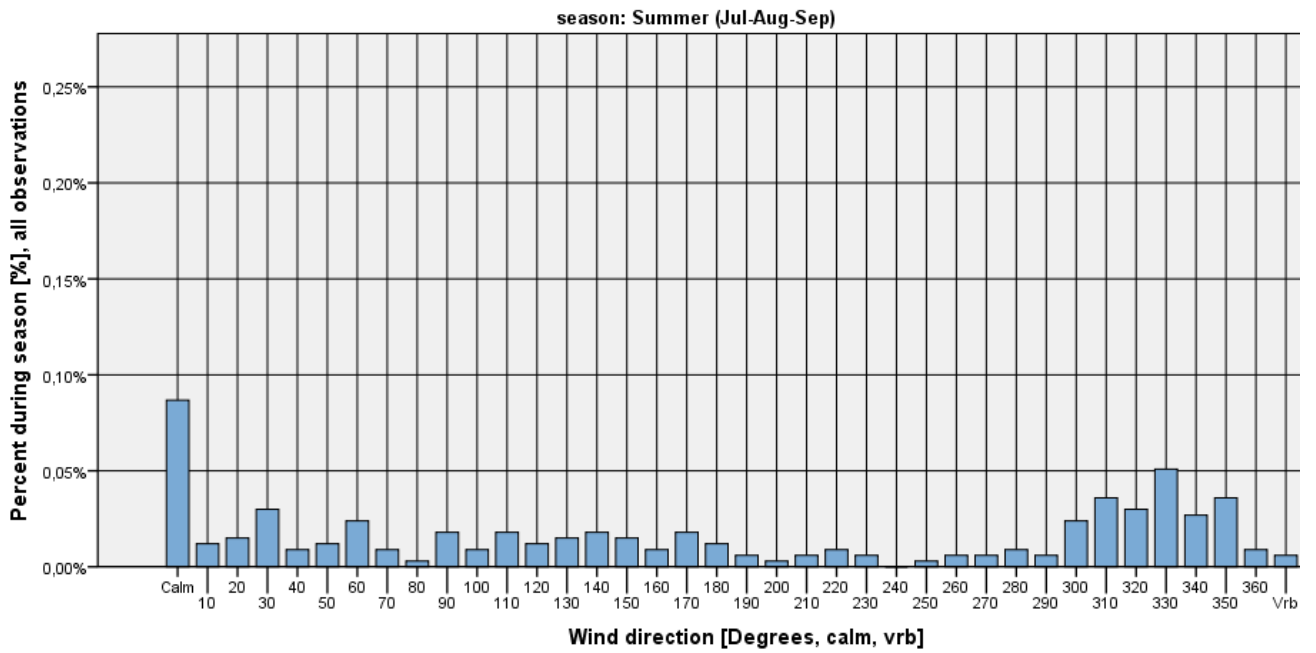


Figure 202

EKEB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

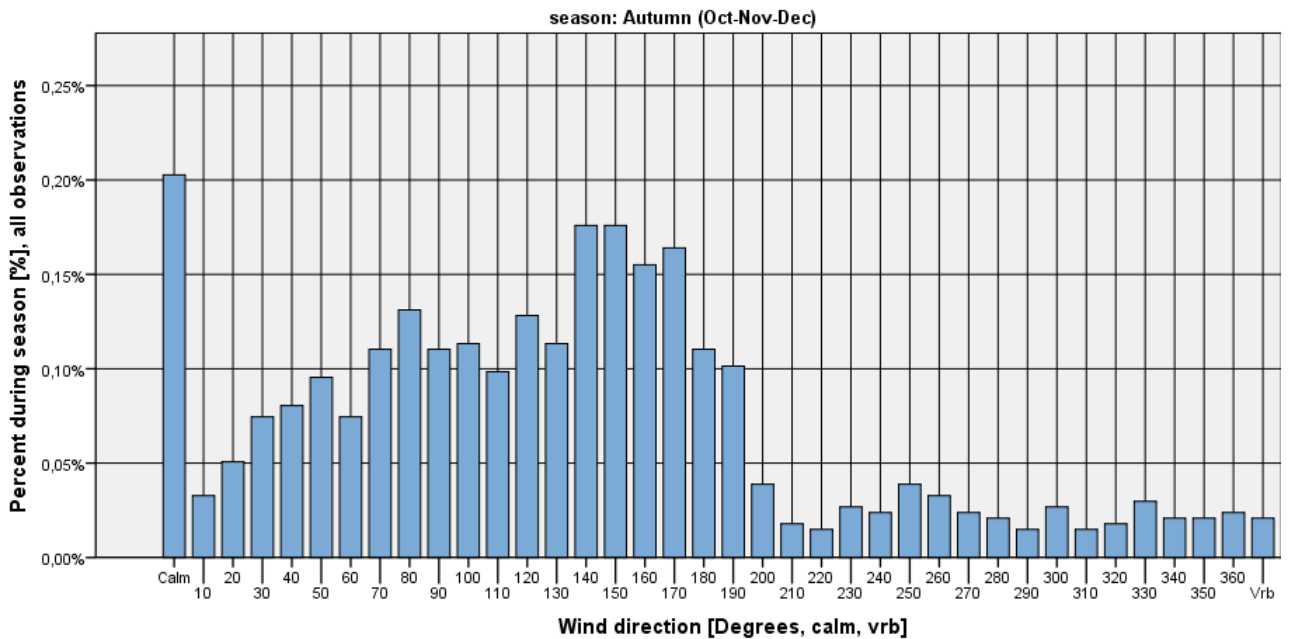


Figure 203

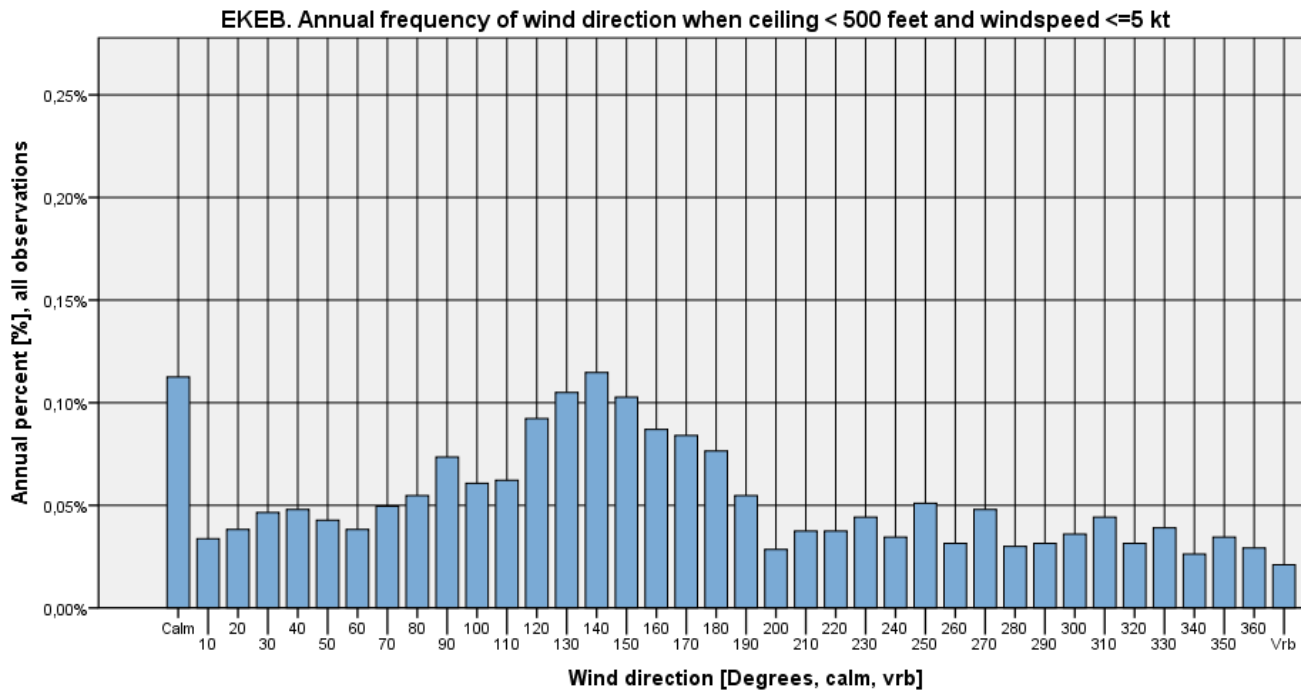


Figure 204



Ceiling < 500 feet and wind speed > 5 kts

EKEB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

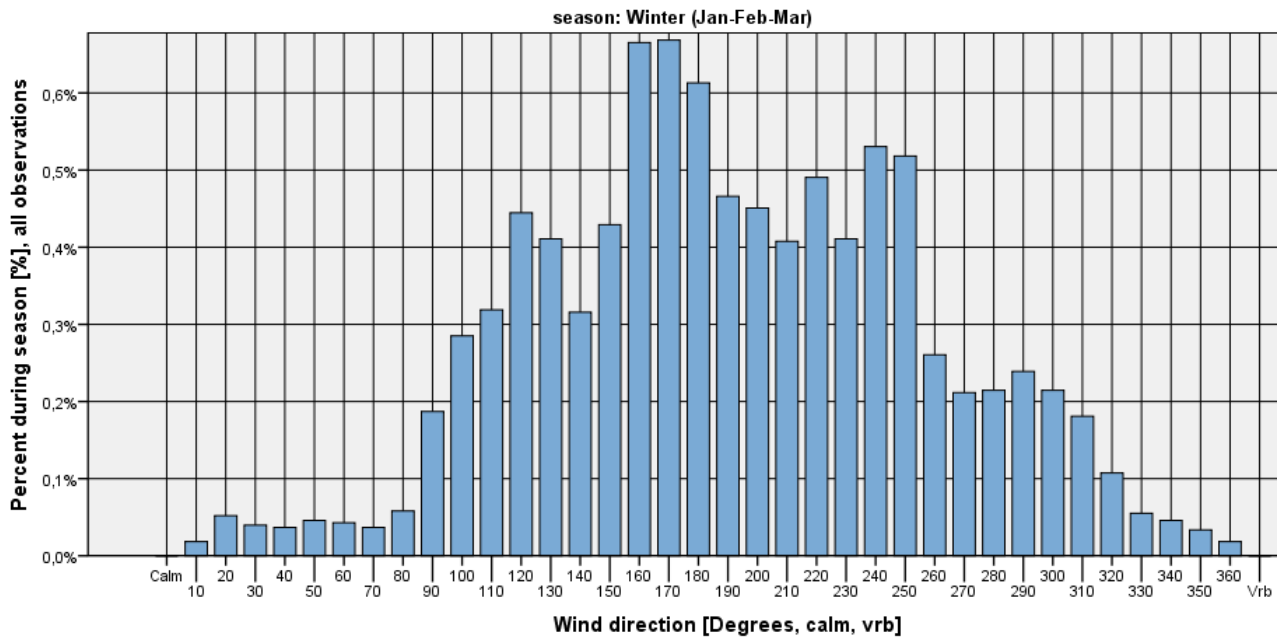


Figure 205

EKEB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

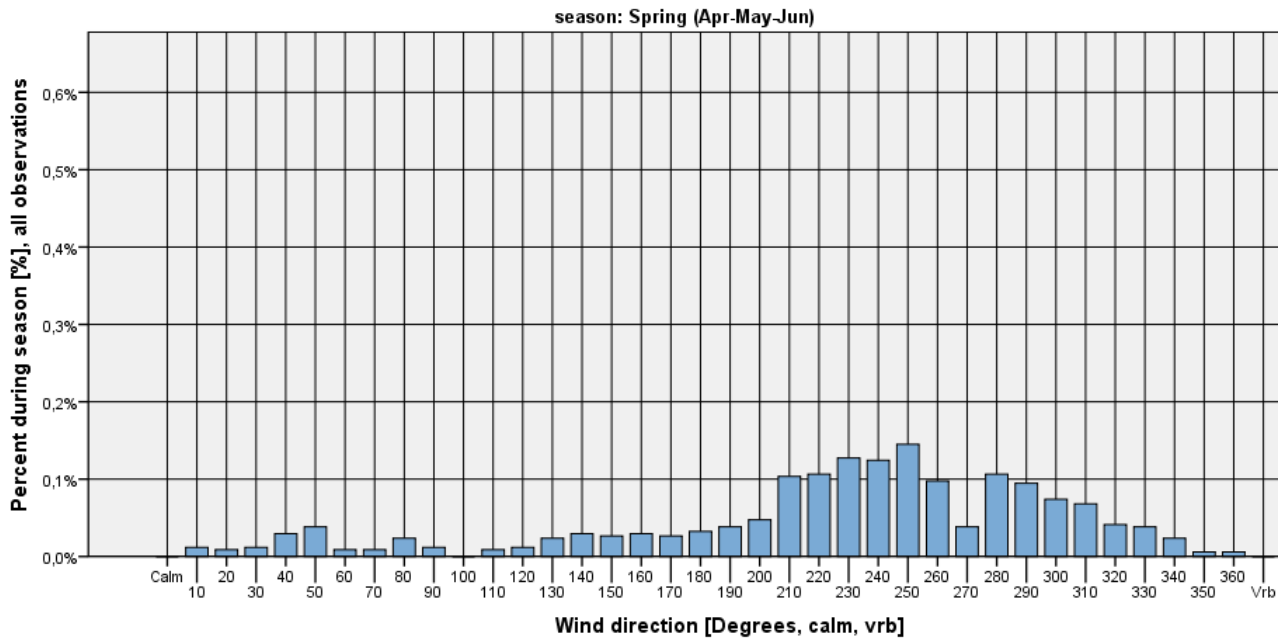


Figure 206



EKEB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

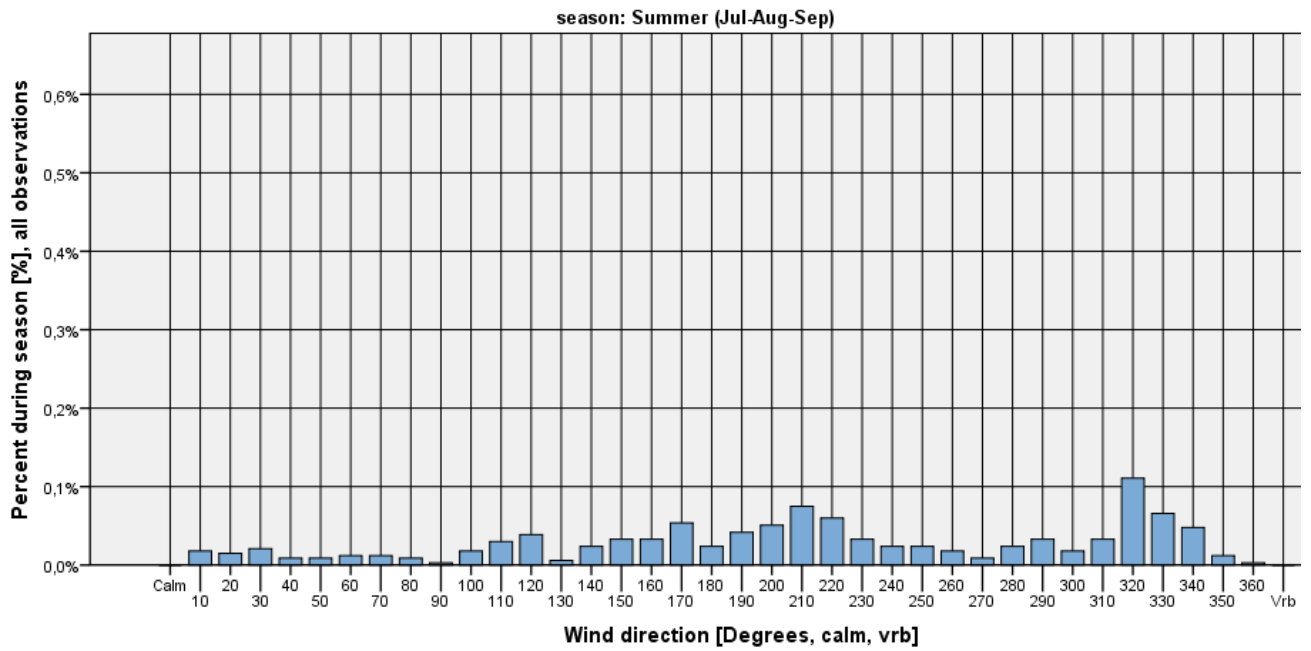


Figure 207

EKEB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

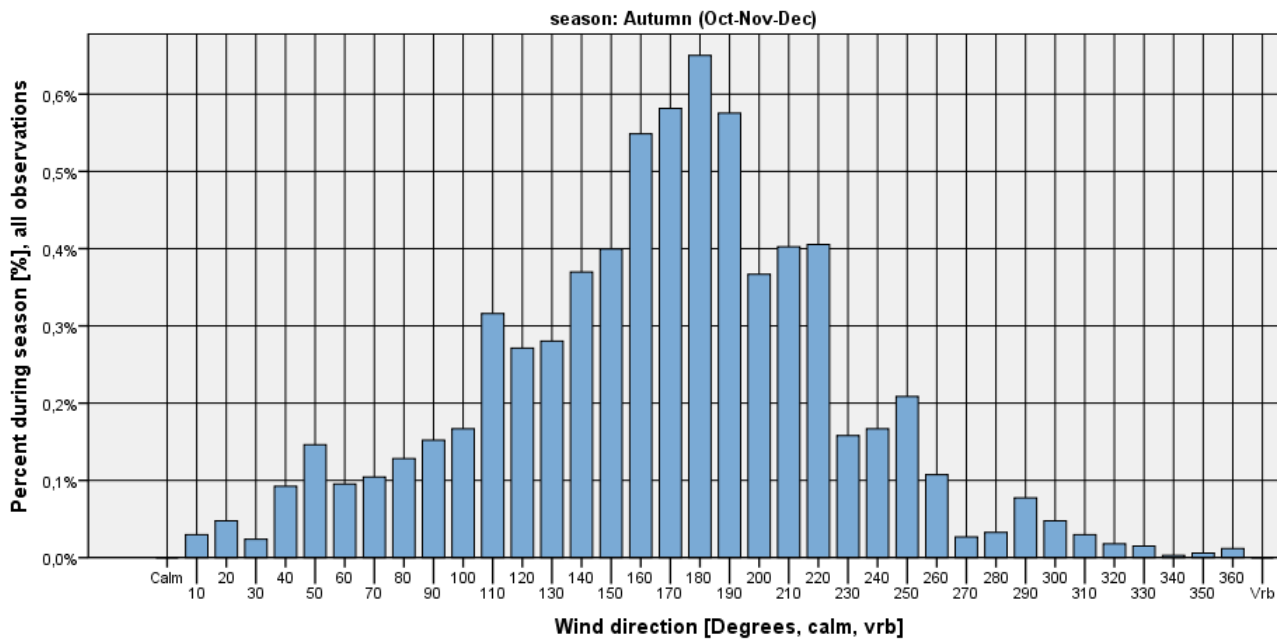


Figure 208

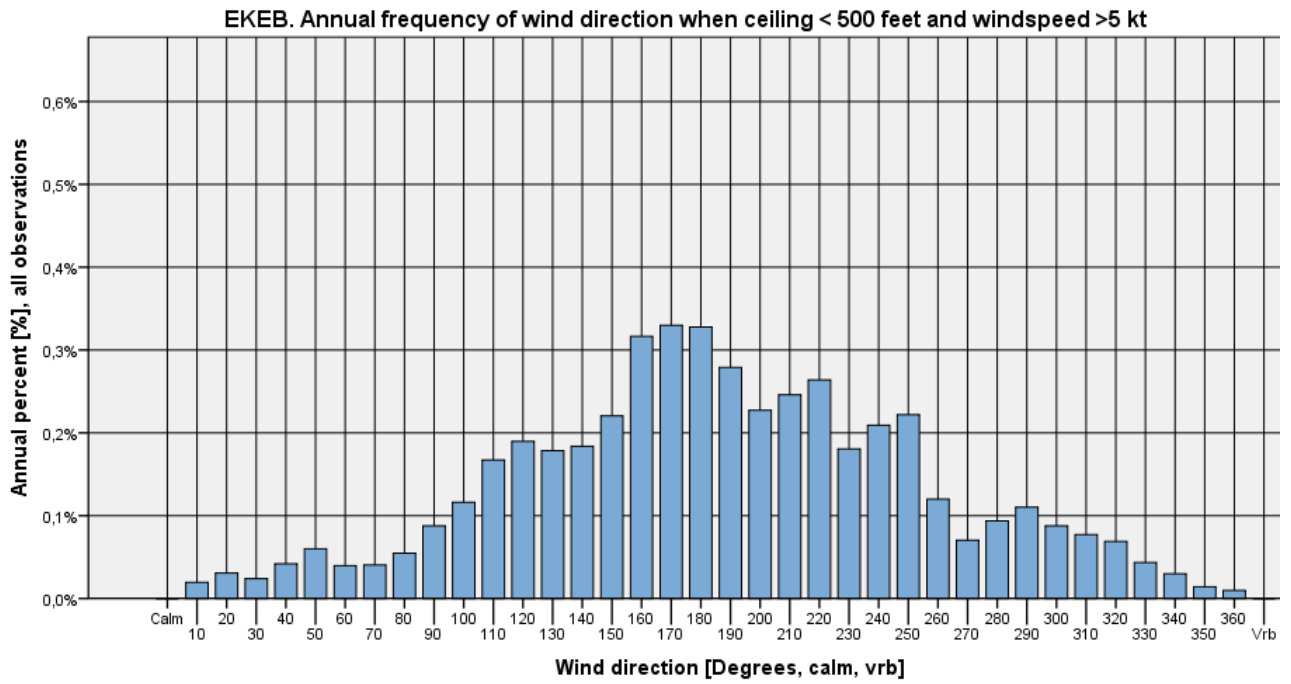
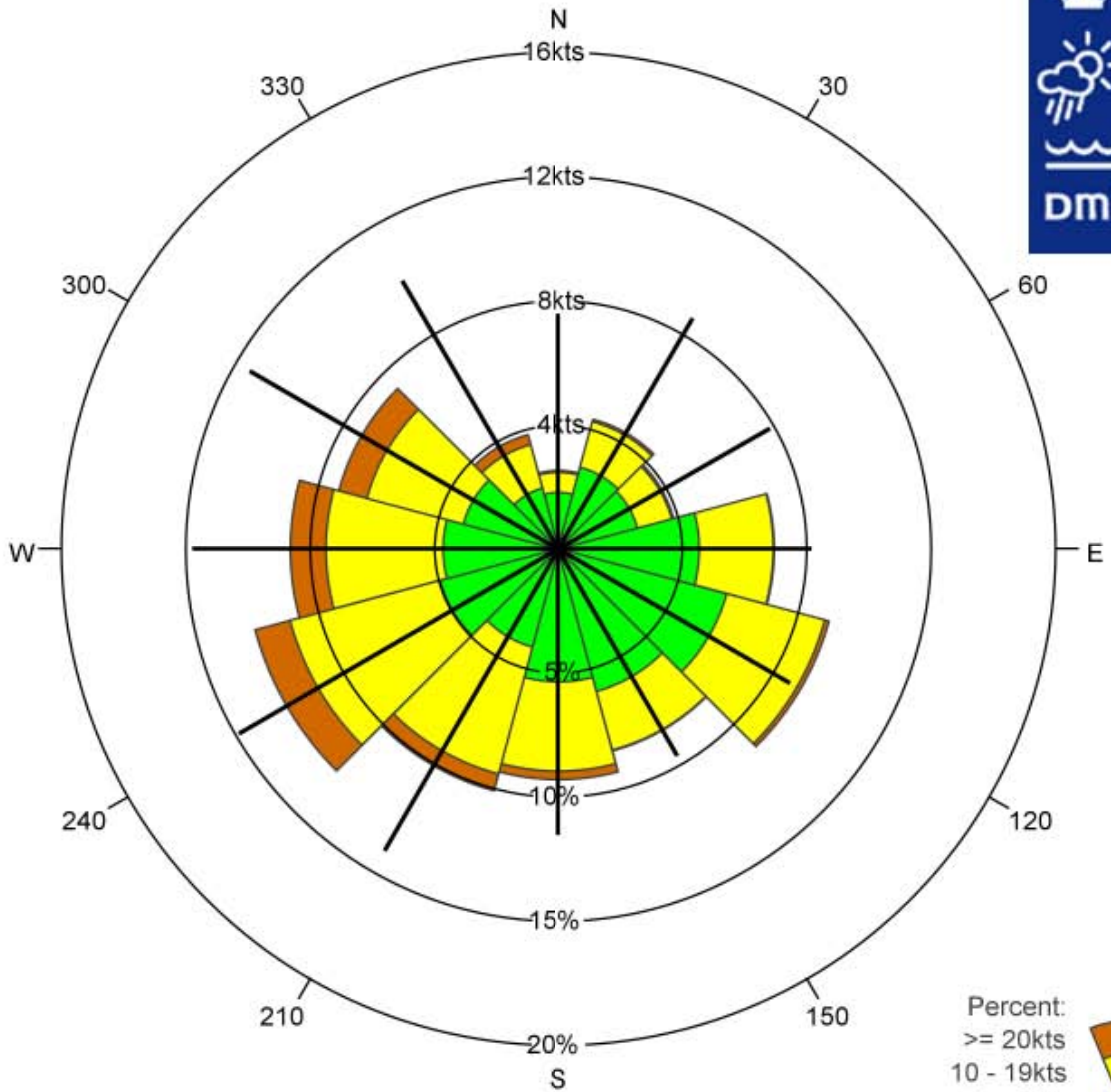


Figure 209



Wind roses

EKEB - Esbjerg Lufthavn AUTUMN & WINTER: OCTOBER - MARCH 01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.2	5.4	4.8	8.7	11.3	8.4	9.3	10.1	12.6	10.8	9.2	4.8	98.6
% 1 - 9kts	2.3	3.4	3.3	5.7	7.0	5.9	5.4	4.1	4.9	4.7	4.0	2.6	53.3
% 10 - 19kts	0.8	1.9	1.4	3.0	4.1	2.5	3.6	5.3	6.2	4.7	4.0	1.8	39.3
% >= 20kts	0.1	0.1	0.1	0.0	0.2	0.0	0.3	0.7	1.5	1.4	1.2	0.4	6.0
Mean wind speed	7.6	8.6	7.9	8.2	8.6	7.7	9.2	11.2	11.9	11.8	11.5	10.0	9.9
Max wind speed	26.0	25.0	26.0	22.0	28.0	26.0	39.0	37.0	49.0	38.0	43.0	32.0	49.0

Number of observations = 66158

Source: DMI

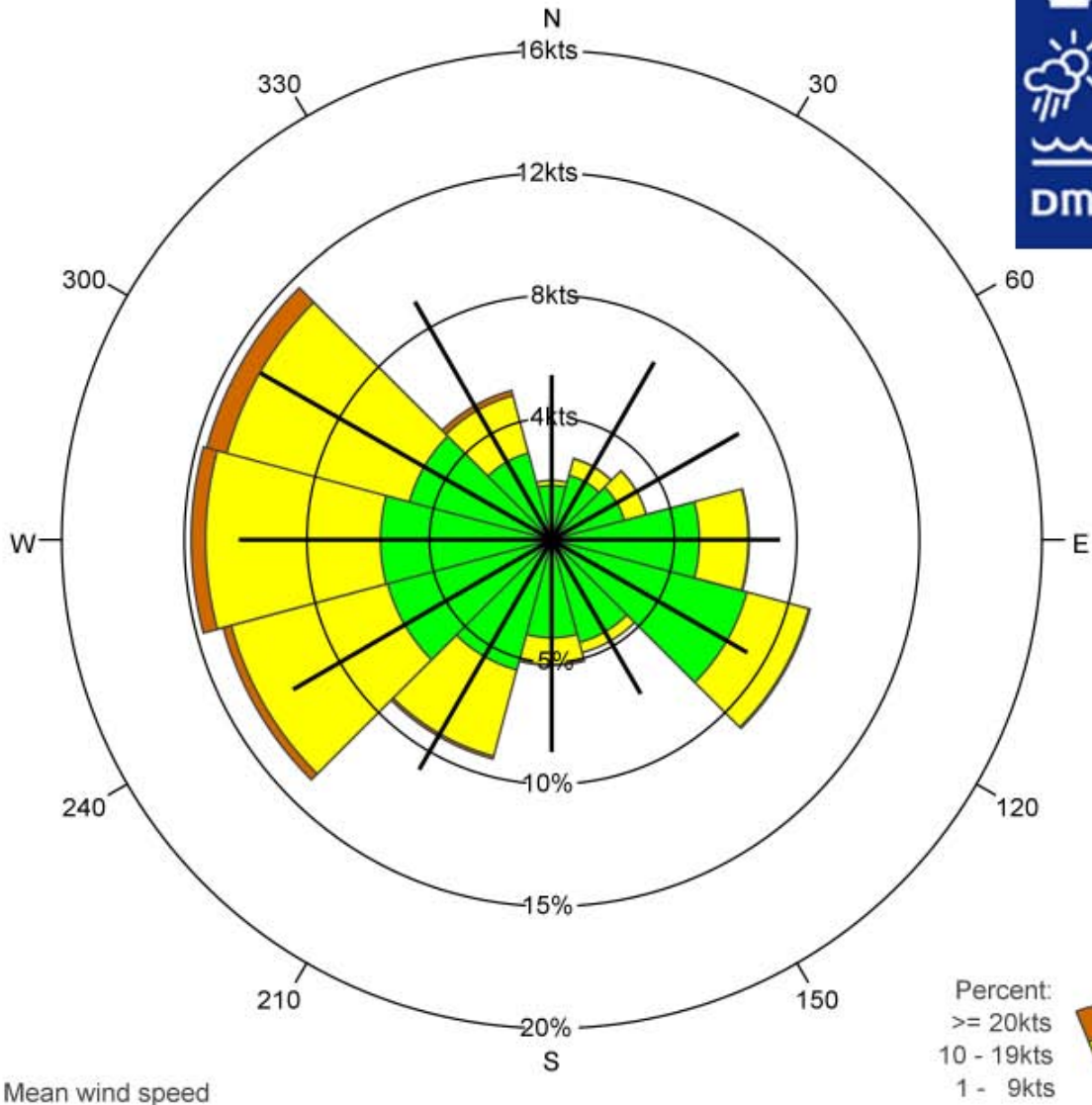
Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 942=1.4%

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



EKEB - Esbjerg Lufthavn SPRING & SUMMER: APRIL - SEPTEMBER 01-02-2003 - 01-02-2012



Legend:
 Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	2.4	3.4	4.0	8.0	10.9	4.8	5.1	9.3	13.9	14.7	14.6	6.3	97.5
% 1 - 9kts	2.2	2.7	3.1	6.0	8.2	4.3	4.0	5.5	6.9	7.0	6.0	3.7	59.7
% 10 - 19kts	0.2	0.7	0.9	2.0	2.6	0.4	1.1	3.6	6.6	7.1	7.7	2.4	35.5
% >= 20kts	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.3	0.6	0.8	0.2	2.2
Mean wind speed	5.4	6.7	7.0	7.5	7.4	5.8	7.0	8.7	9.8	10.2	10.9	9.0	8.7
Max wind speed	20.0	22.0	21.0	24.0	27.0	18.0	30.0	27.0	30.0	34.0	30.0	30.0	34.0

Number of observations = 67184
 Calm defined a wind speed = 0kts
 Number of observations with calm/varying wind direction: 1659=2.5%
 Observations with calm/varying wind direction are not used in the statistics

Source: DMI

Availability

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

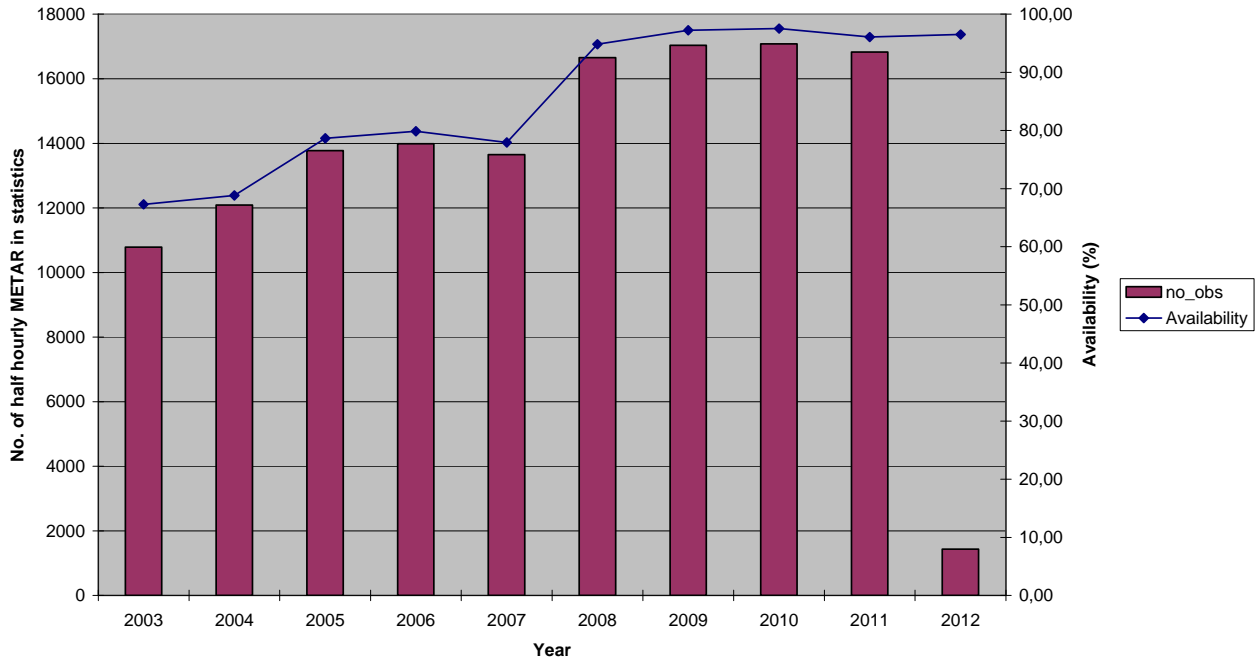


Figure 210

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

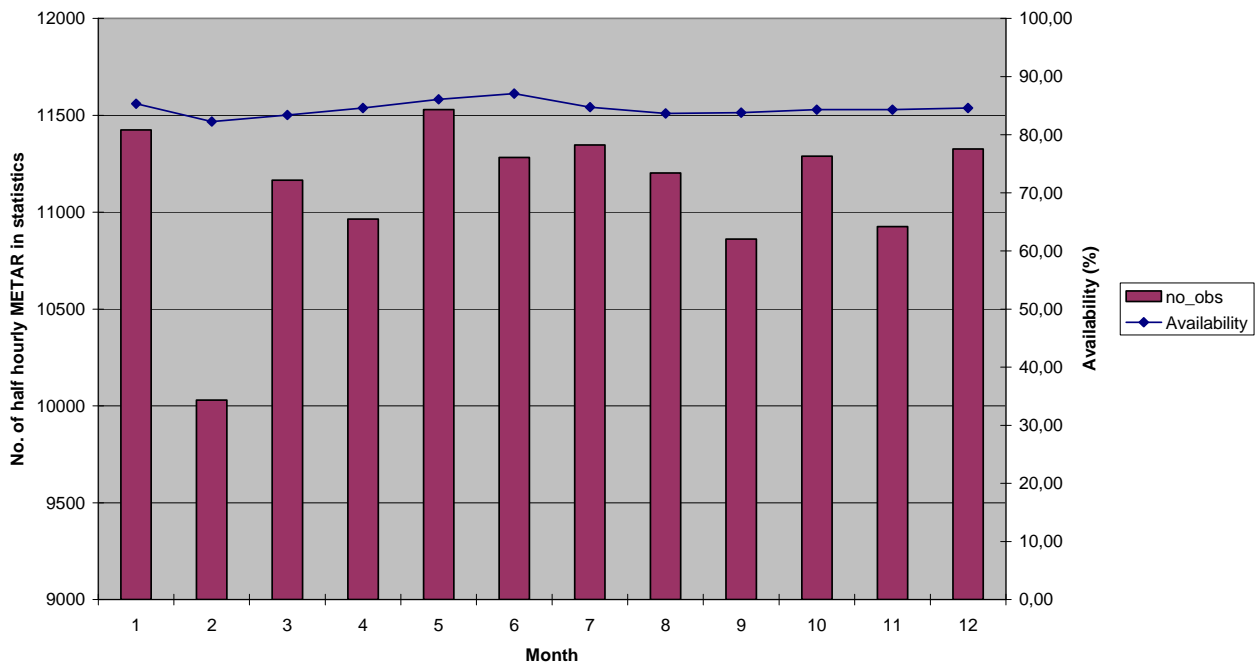


Figure 211

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

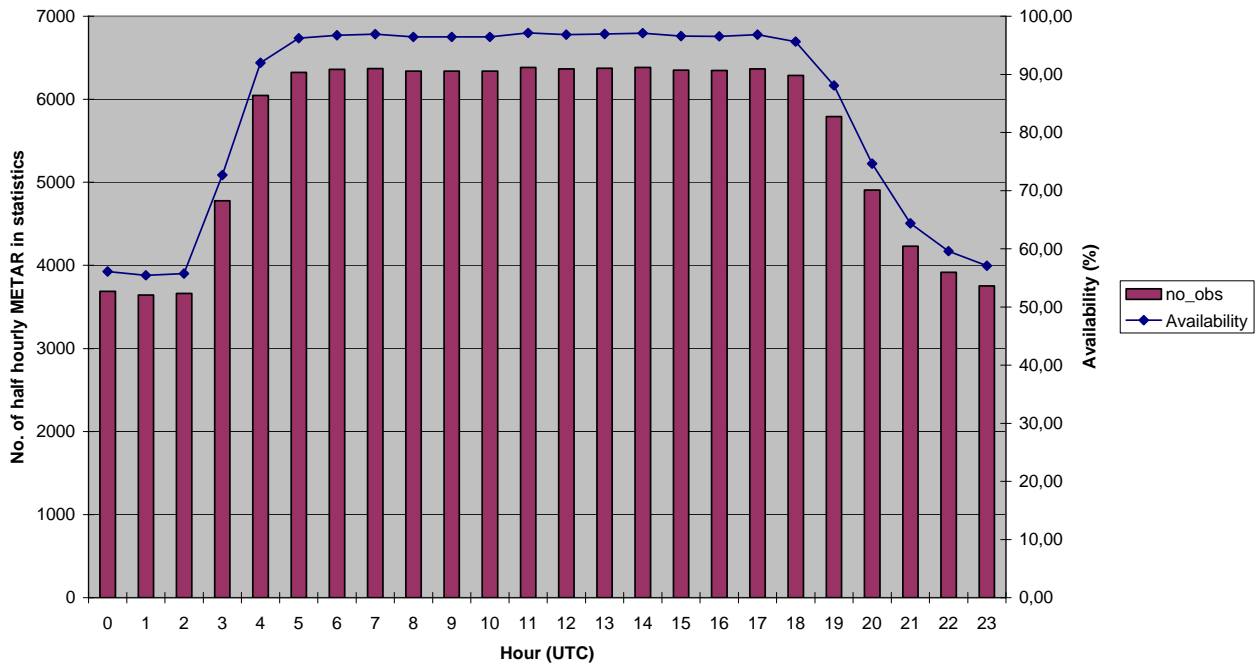


Figure 212

EKEB. Average no. of half 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	,8	,9	,7	1,8	1,9	1,9	1,9	1,8
1	,0	,0	,8	,8	,7	1,8	1,9	1,9	1,9	1,9
2	,0	,0	,7	,8	,7	1,7	1,9	1,9	1,9	1,8
3	,5	,5	,9	,9	,7	1,8	1,9	1,9	1,9	2,0
4	1,5	1,5	1,5	1,4	1,4	1,8	1,9	1,9	1,9	2,0
5	1,9	1,9	1,9	1,9	1,9	2,0	2,0	2,0	1,9	1,9
6	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	2,0
7	1,9	2,0	1,9	1,9	2,0	2,0	2,0	2,0	1,9	2,0
8	1,9	1,9	1,9	1,9	1,9	1,9	2,0	2,0	1,9	2,0
9	1,9	1,9	1,9	1,9	1,9	1,9	2,0	2,0	1,9	2,0
10	1,9	1,9	1,9	1,9	1,9	1,9	1,9	2,0	2,0	1,9
11	1,9	1,9	1,9	1,9	1,9	2,0	2,0	2,0	1,9	1,9
12	1,9	1,9	1,9	1,9	1,9	2,0	2,0	2,0	1,9	1,9
13	1,9	1,9	1,9	1,9	1,9	2,0	2,0	2,0	1,9	2,0
14	1,9	1,9	1,9	1,9	1,9	2,0	2,0	2,0	1,9	1,9
15	2,0	1,9	1,9	1,9	1,9	2,0	2,0	1,9	2,0	1,9
16	1,9	1,9	1,9	1,9	1,9	1,9	1,9	2,0	1,9	1,9
17	1,9	1,9	1,9	1,9	1,9	2,0	2,0	2,0	1,9	1,9
18	1,9	1,9	1,9	1,9	2,0	2,0	2,0	1,9	1,9	2,0
19	1,7	1,8	1,8	1,8	1,8	1,9	1,9	2,0	1,9	1,9
20	1,0	1,4	1,5	1,6	1,4	1,9	1,9	2,0	1,9	1,9
21	,5	,6	1,1	1,3	1,1	1,9	1,9	1,9	1,9	2,0
22	,2	,1	,9	1,1	,9	1,8	1,9	1,9	1,9	2,0
23	,1	,1	,9	,9	,8	1,8	1,9	1,9	1,9	1,9

Table 25



EKGF Tyra Øst

Heliport location: 55,717°N 4,800°E Elevation: 67 m above msl.

EKGF observations in statistics: 78.434 half hourly METAR⁵ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 49,7%.

The availability is mainly lowered by the facts that EKGF does not issue METAR during night time and two thirds of the observations are hourly and only one third half hourly. More details may be found in the Availability Section.

All EKGF METAR are manual.

Cross tables Visibility – Ceiling

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

No. Obs = 19.810	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	2,56	3,45	3,56	3,59	0,25	3,84
<1 km	0	2,62	3,77	3,98	4,02	0,26	4,28
<1.5 km	0	2,66	4,07	4,39	4,47	0,34	4,81
<3.0 km	0	2,73	4,82	5,67	5,90	0,66	6,56
< 5.0 km	0	2,77	5,78	8,16	8,85	2,23	11,09
>= 5.0 km or CAVOK	0	0	0,68	7,11	14,49	74,43	88,91
Total	0	2,77	6,46	15,27	23,34	76,66	100

Table 26

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

No. Obs = 19.649	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,10	3,19	3,93	4,04	4,07	0,44	4,50
<1 km	0,10	3,23	4,09	4,23	4,26	0,47	4,73
<1.5 km	0,10	3,28	4,26	4,47	4,53	0,63	5,16
<3.0 km	0,10	3,32	4,68	5,19	5,30	1,34	6,65
< 5.0 km	0,10	3,36	5,20	6,37	6,63	2,49	9,12
>= 5.0 km or CAVOK	0	0,0051	0,81	3,78	6,79	84,09	90,88
Total	0,10	3,37	6,01	10,15	13,42	86,58	100

Table 27

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



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

No. Obs = 19.254	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,84	1,04	1,06	1,06	0,14	1,20
<1 km	0	0,87	1,13	1,18	1,18	0,15	1,33
<1.5 km	0	0,88	1,22	1,33	1,35	0,19	1,54
<3.0 km	0	0,90	1,54	1,90	1,98	0,42	2,40
< 5.0 km	0	0,96	1,96	2,89	3,18	1,42	4,60
>= 5,0 km or CAVOK	0	0,0052	0,61	3,95	7,57	87,83	95,40
Total	0	0,96	2,57	6,83	10,75	89,25	100

Table 28

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

No. Obs = 19.721	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,21	0,31	0,33	0,33	0,01	0,33
<1 km	0	0,22	0,39	0,42	0,42	0,01	0,42
<1.5 km	0	0,22	0,45	0,51	0,51	0,02	0,53
<3.0 km	0	0,24	0,67	0,94	1,00	0,16	1,16
< 5.0 km	0	0,24	0,96	2,05	2,44	1,08	3,52
>= 5,0 km or CAVOK	0	0	0,59	4,51	11,29	85,19	96,48
Total	0	0,24	1,55	6,57	13,73	86,27	100

Table 29

Annual: EKGF – Frequencies (%) Visibility - Ceiling

No. Obs = 78.434	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,024	1,70	2,19	2,26	2,27	0,21	2,48
<1 km	0,024	1,74	2,35	2,46	2,48	0,22	2,70
<1.5 km	0,024	1,76	2,51	2,69	2,72	0,30	3,02
<3.0 km	0,024	1,80	2,93	3,43	3,56	0,65	4,20
< 5.0 km	0,024	1,84	3,48	4,88	5,29	1,81	7,10
>= 5,0 km or CAVOK	0	0,0025	0,67	4,85	10,06	82,84	92,90
Total	0,024	1,84	4,16	9,73	15,35	84,65	100

Table 30



Wind direction histograms

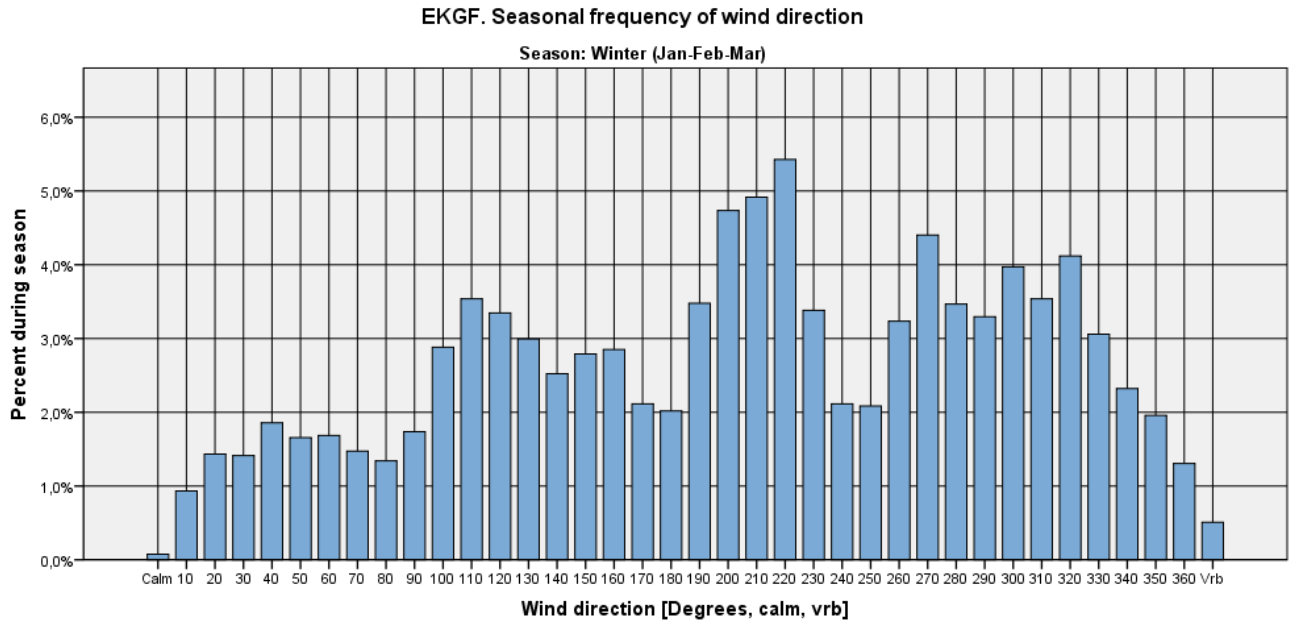


Figure 213

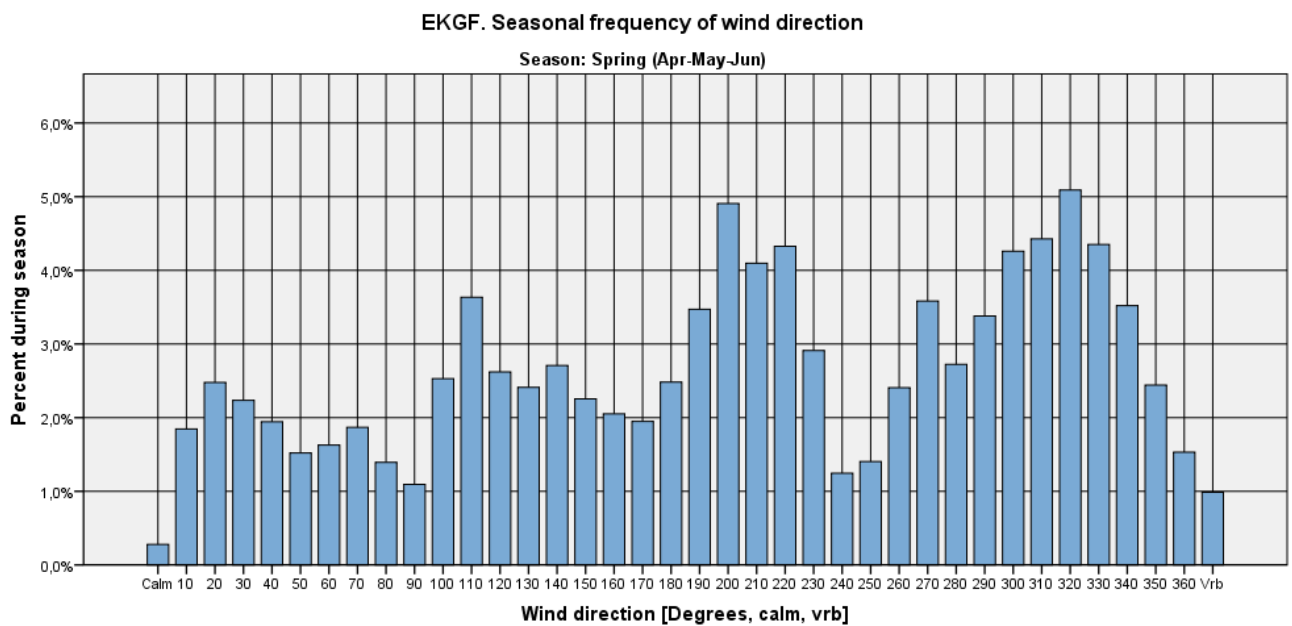


Figure 214

EKGF. Seasonal frequency of wind direction

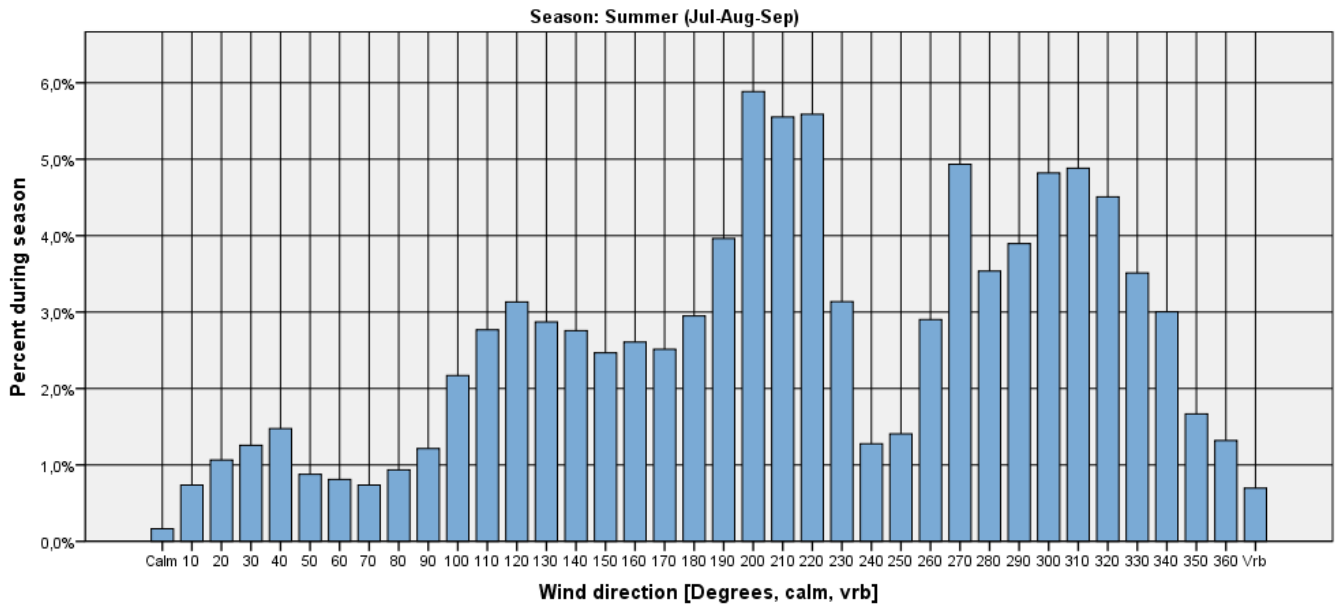


Figure 215

EKGF. Seasonal frequency of wind direction

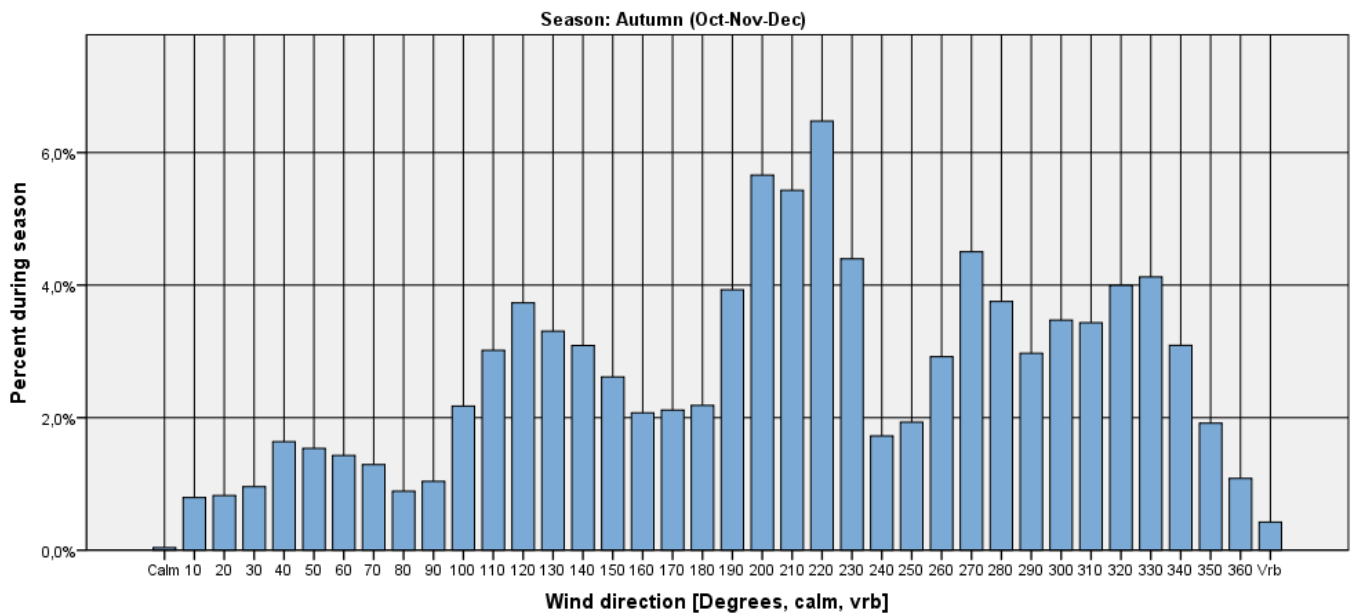


Figure 216

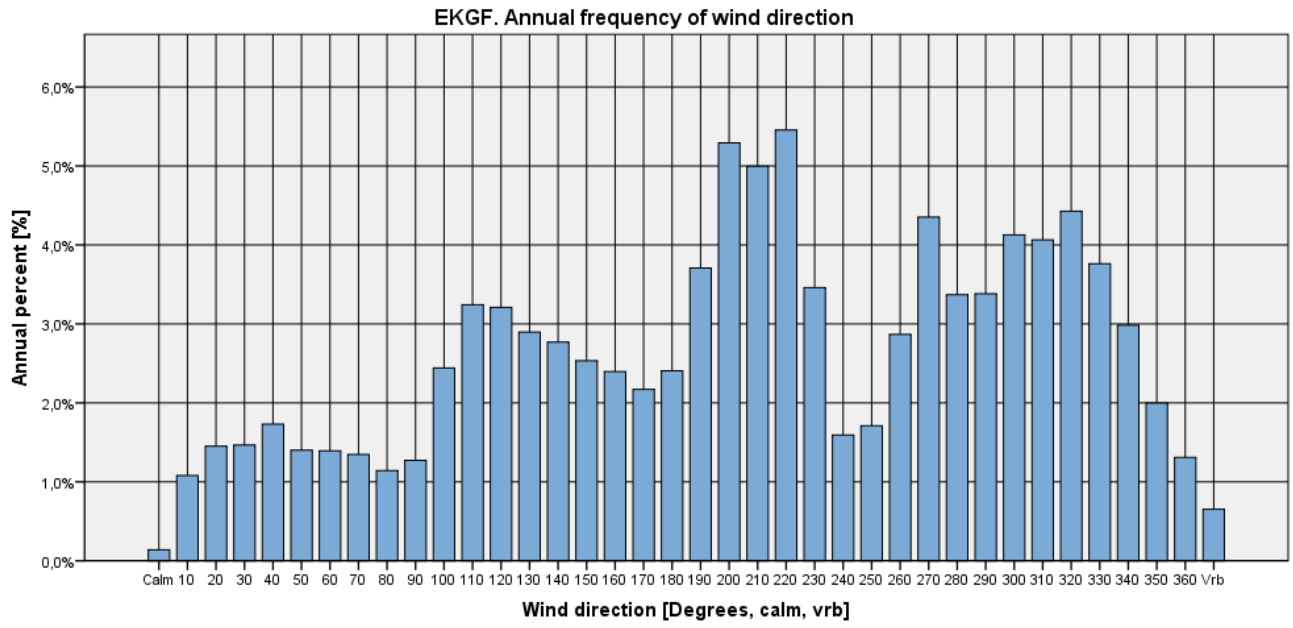


Figure 217



Visibility criteria on wind direction histograms

Visibility < 1000 m

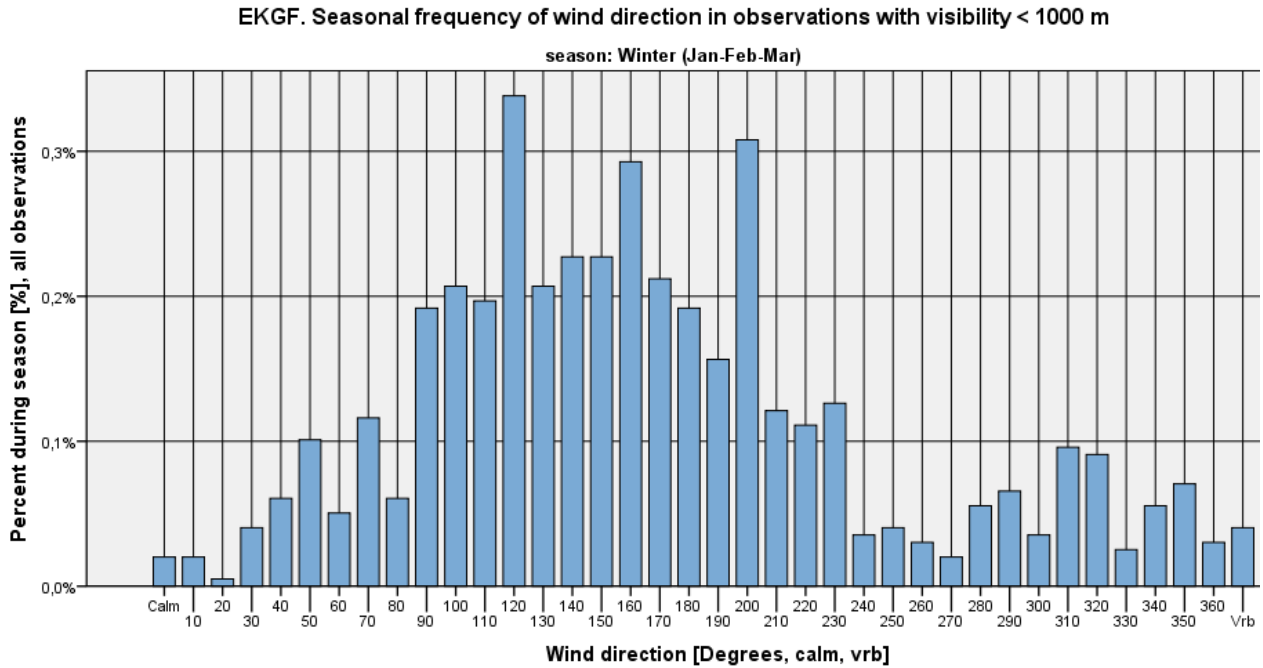


Figure 218

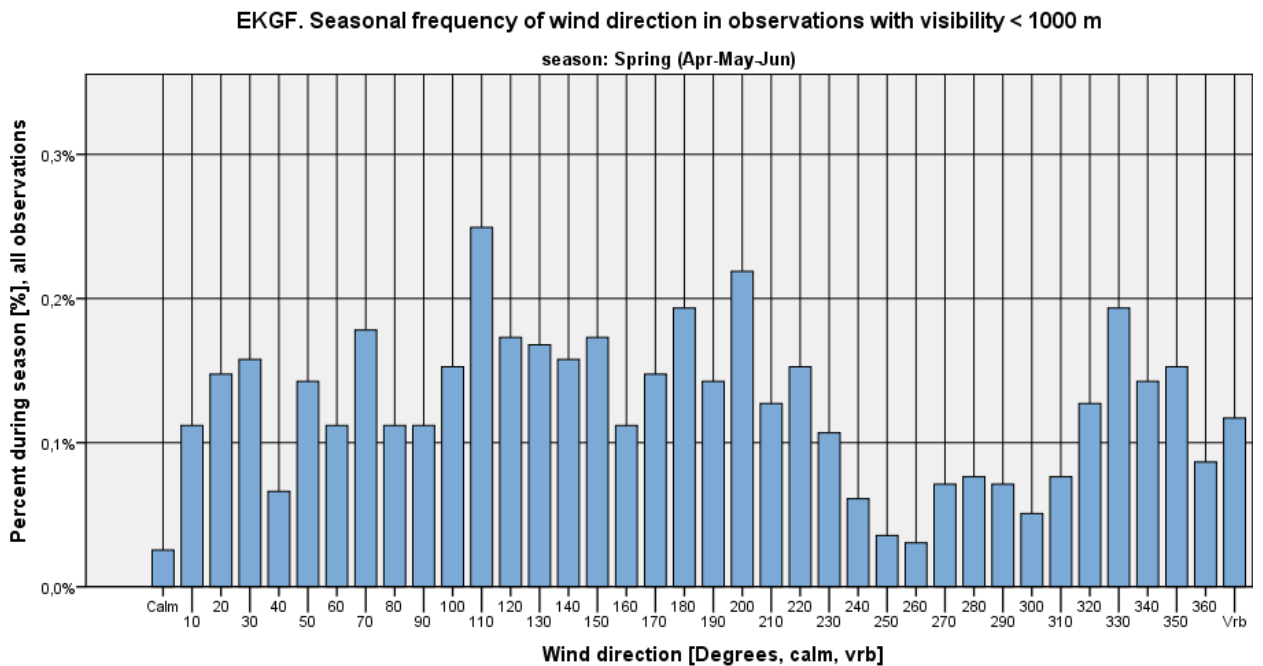


Figure 219

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

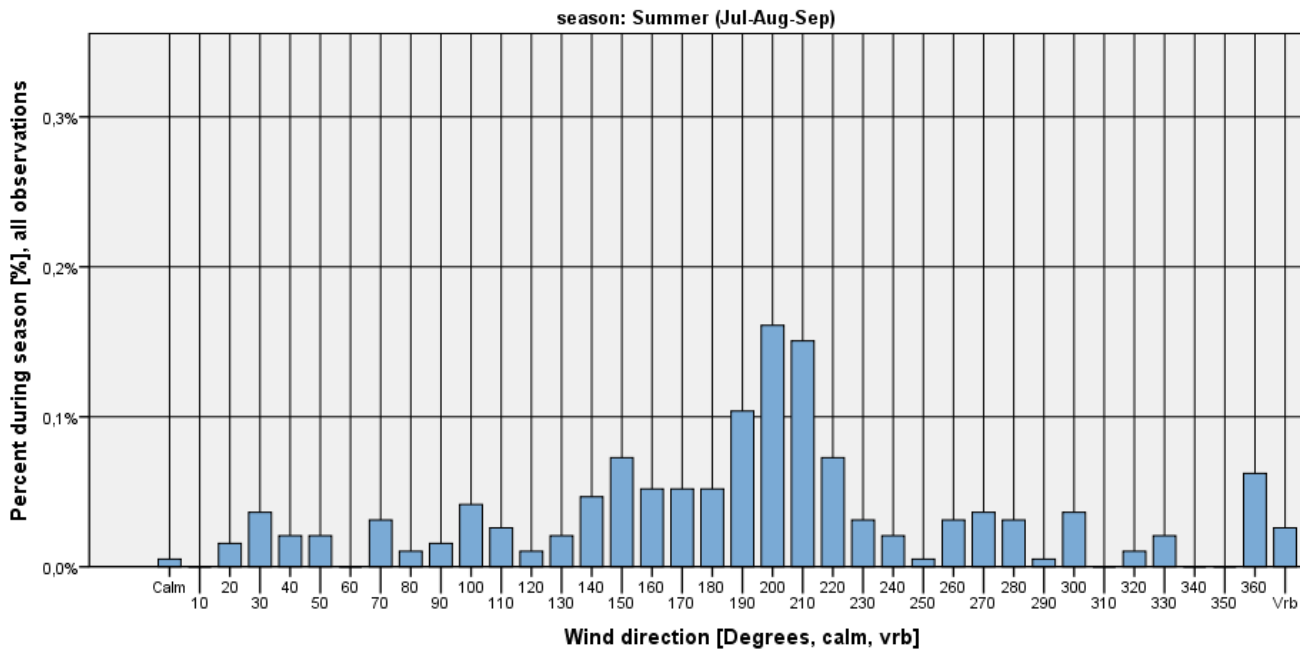


Figure 220

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

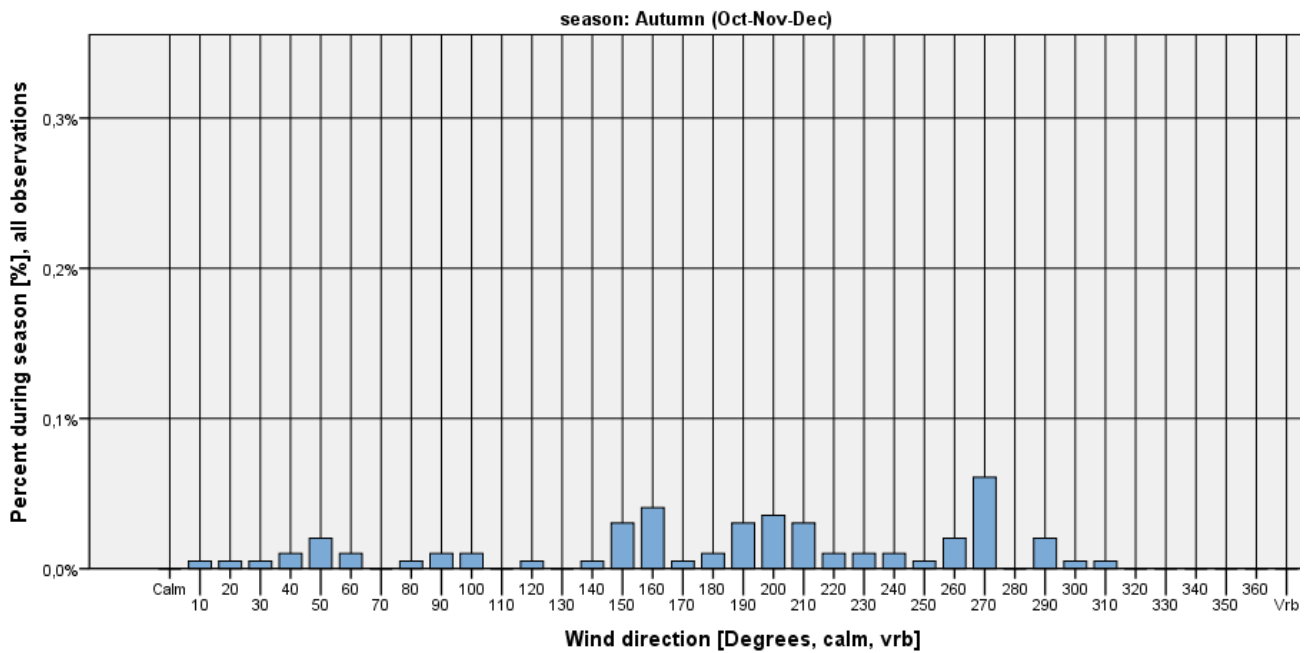


Figure 221

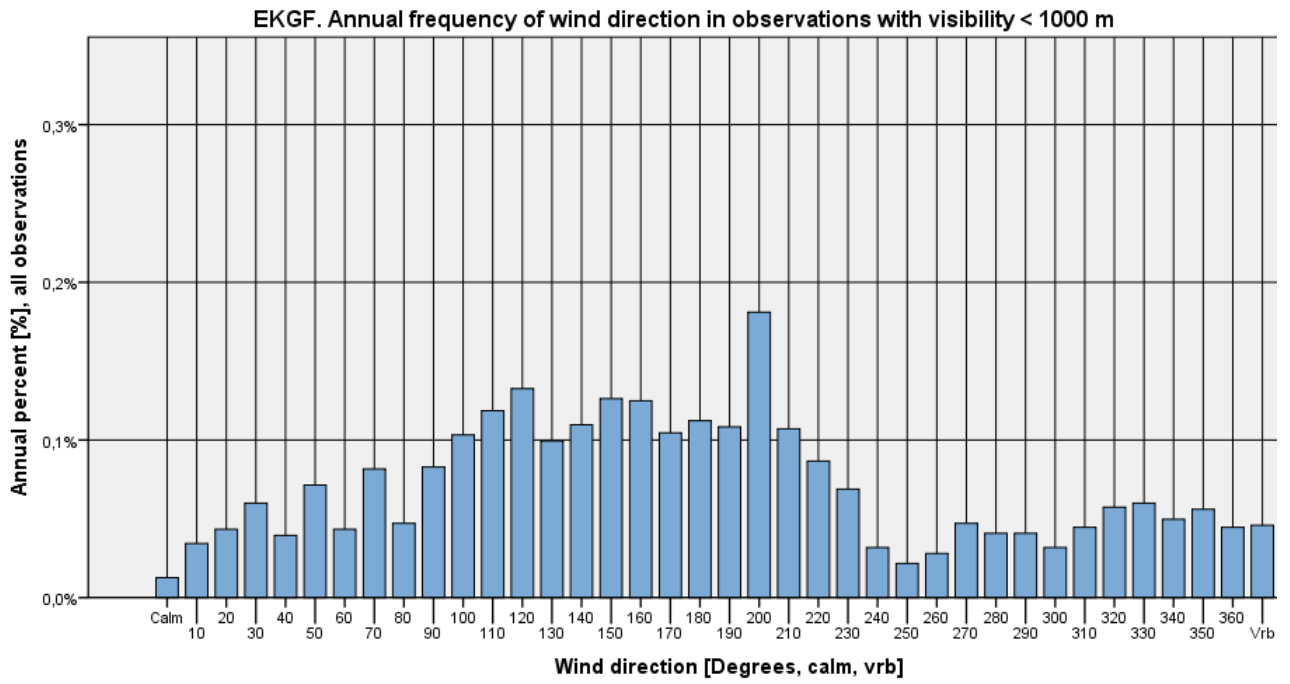


Figure 222



Visibility < 1000 m and wind speed <= 5 kts

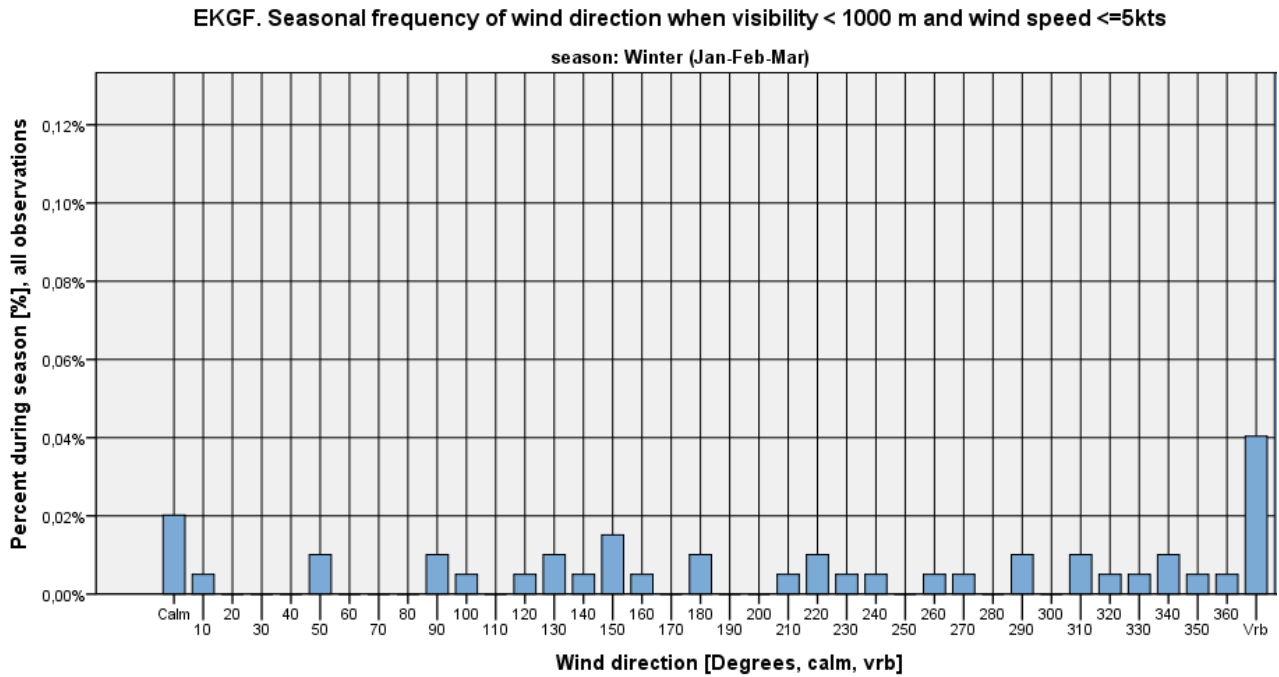


Figure 223

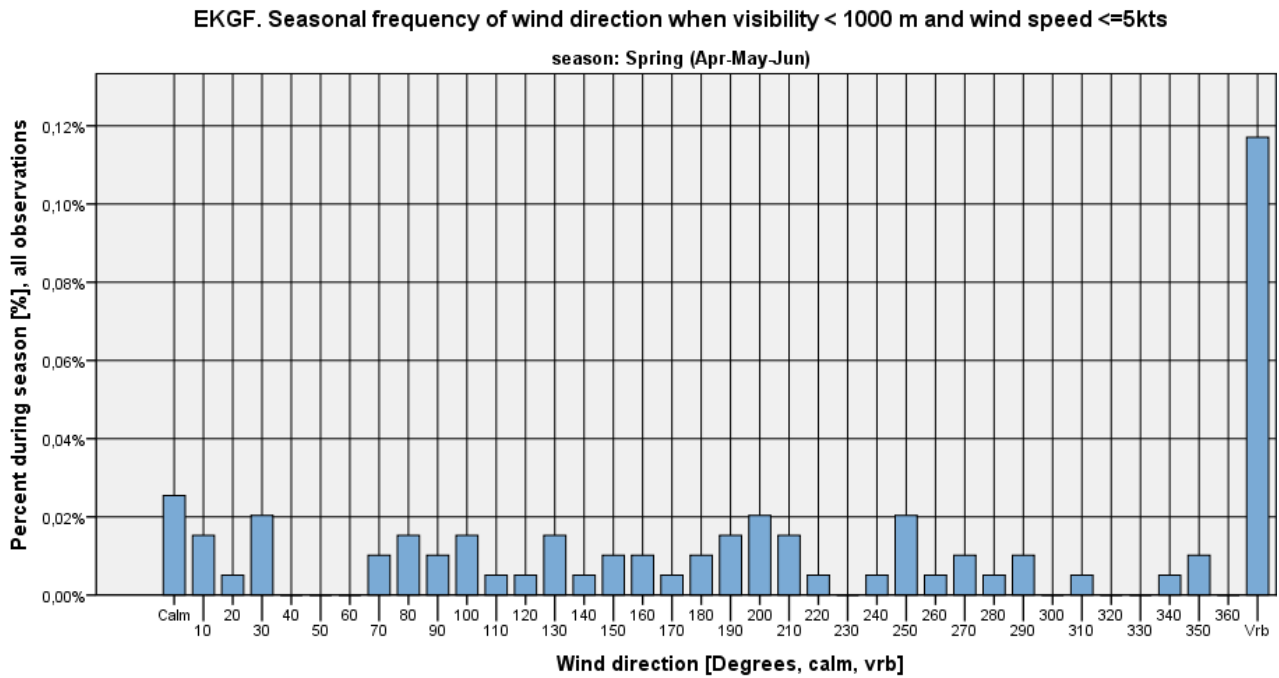


Figure 224



EKGF. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

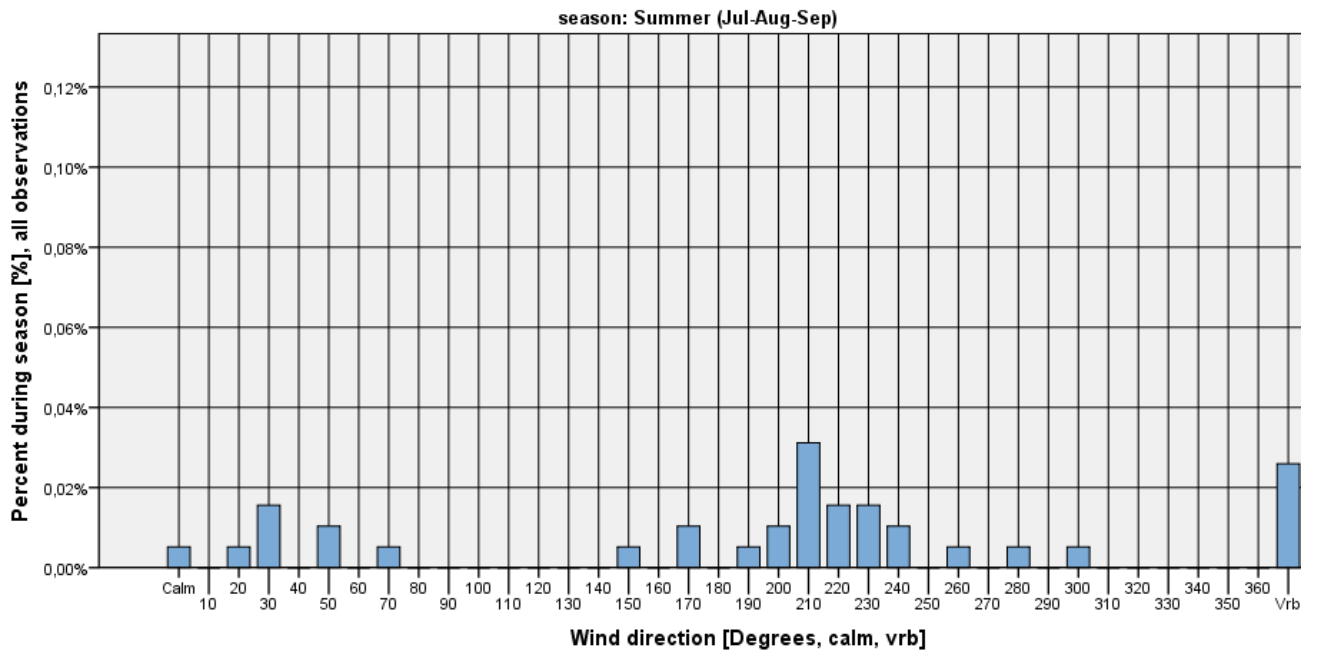


Figure 225

EKGF. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

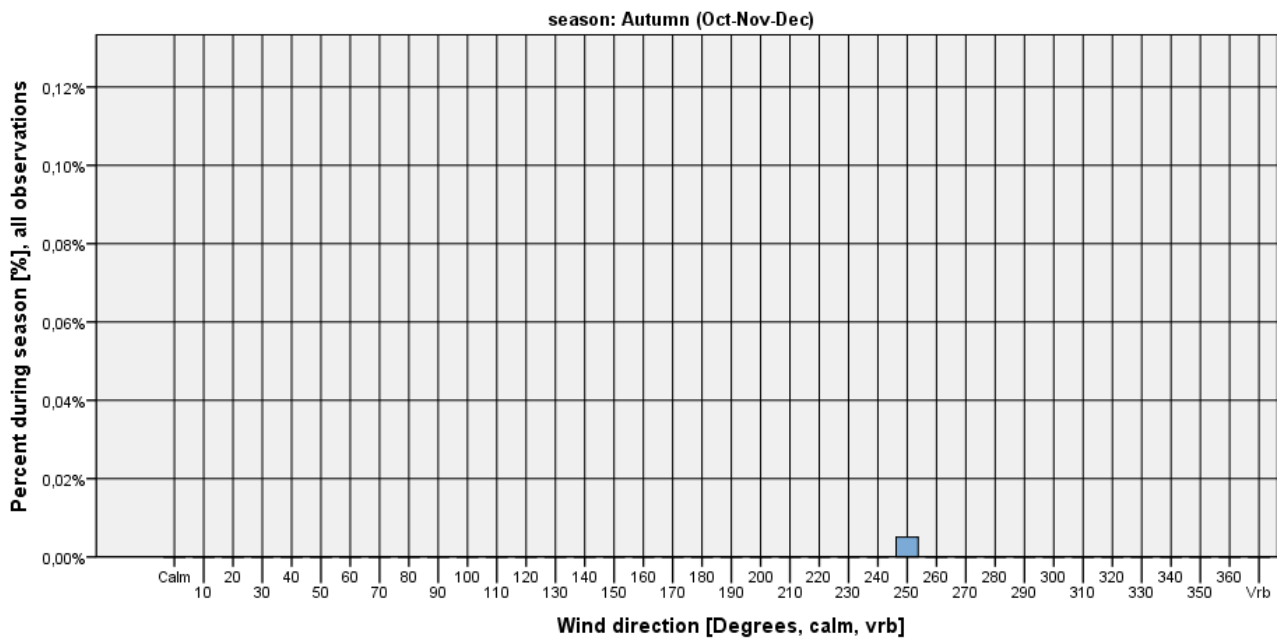


Figure 226

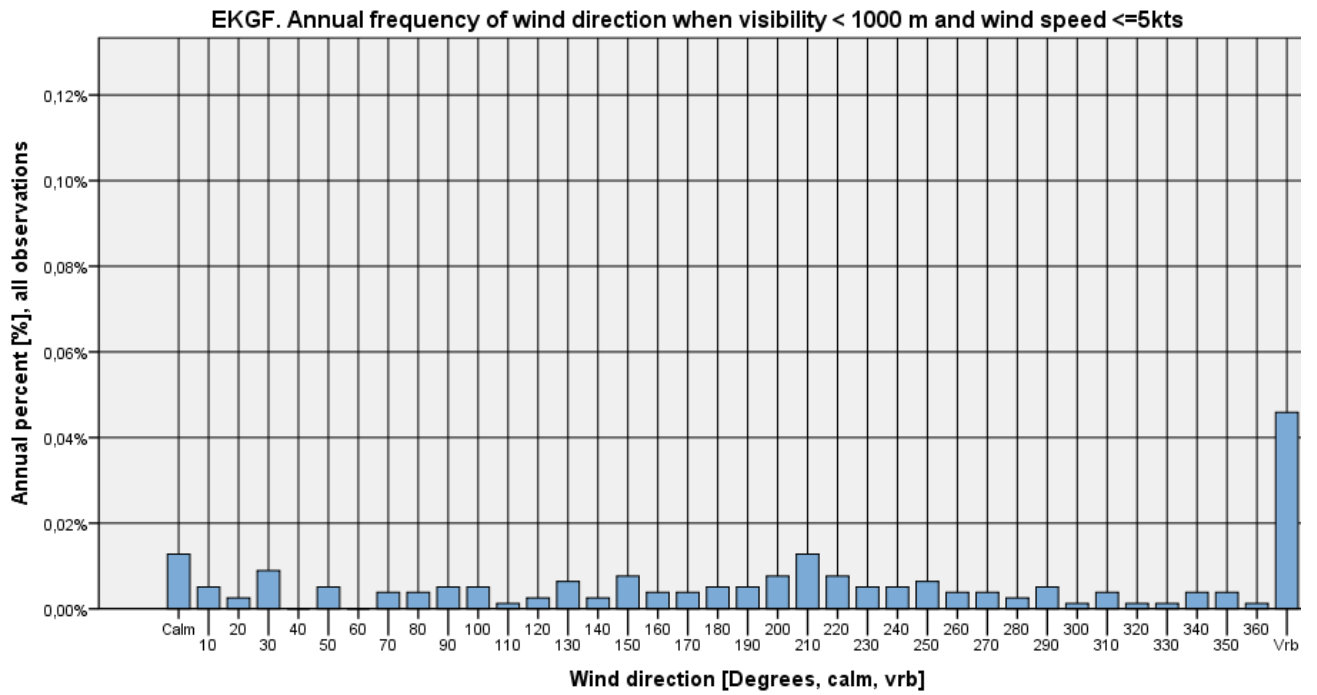


Figure 227



Visibility < 1000 m and wind speed > 5 kts

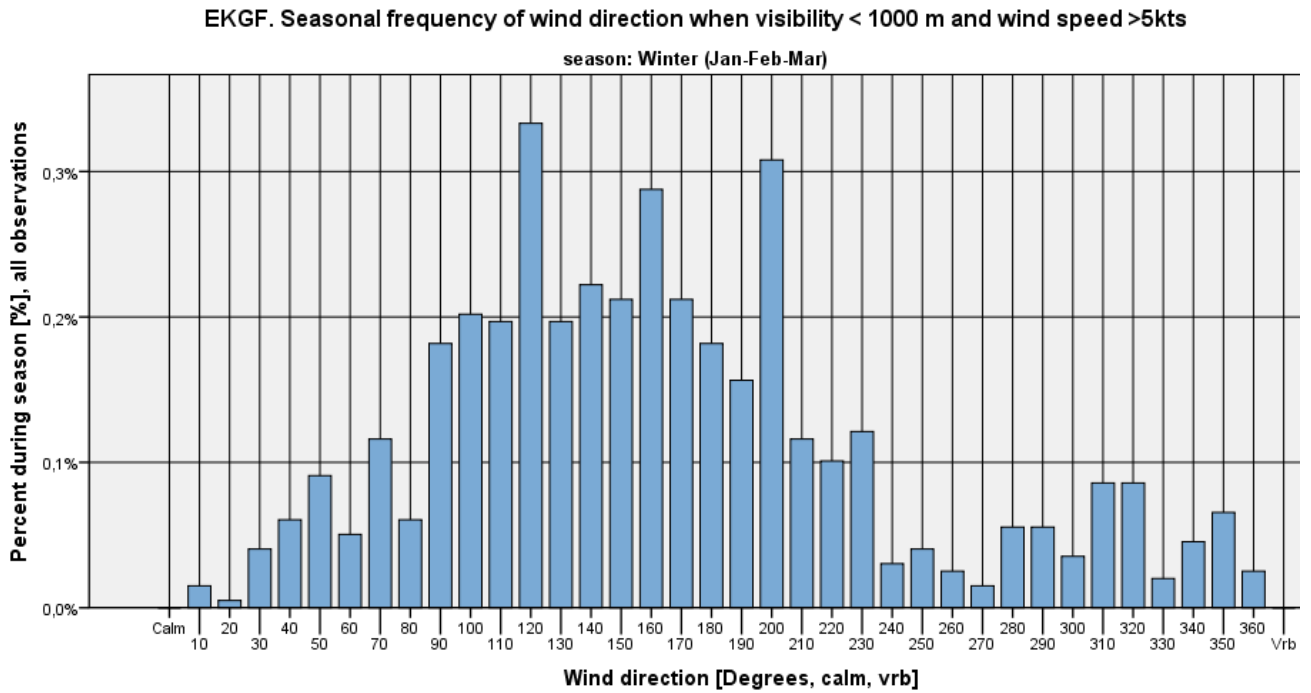


Figure 228

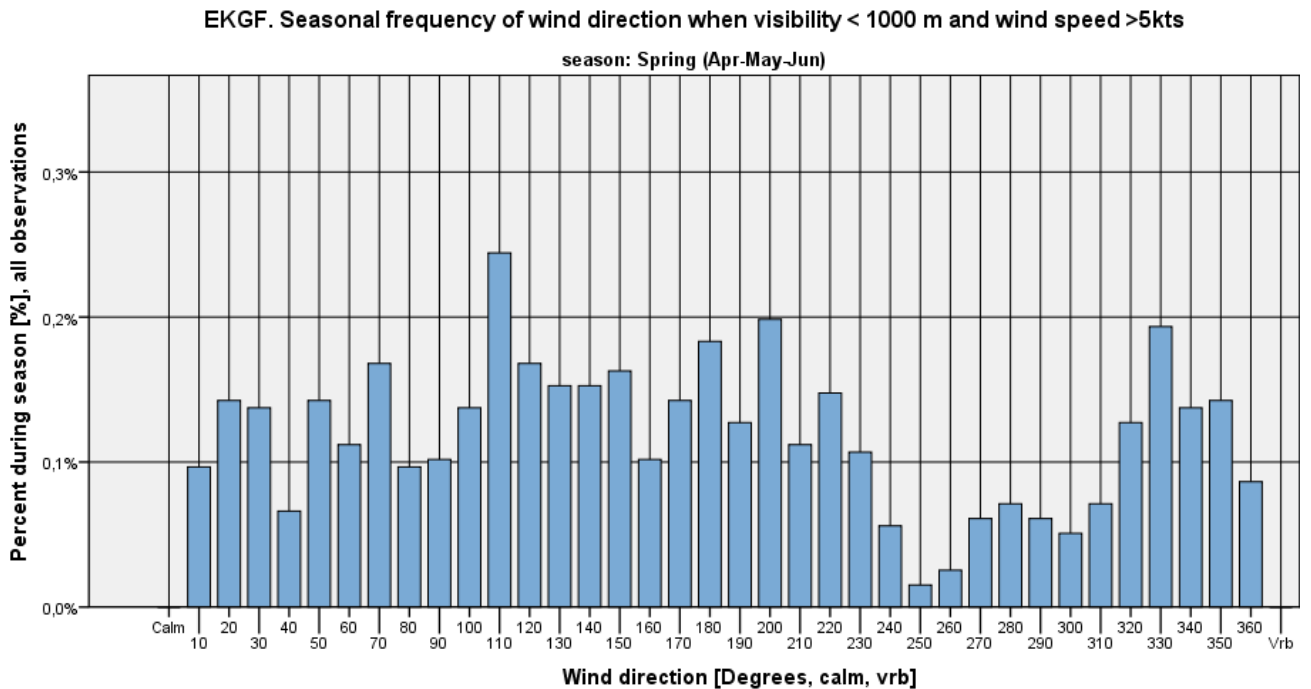


Figure 229



EKGF. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

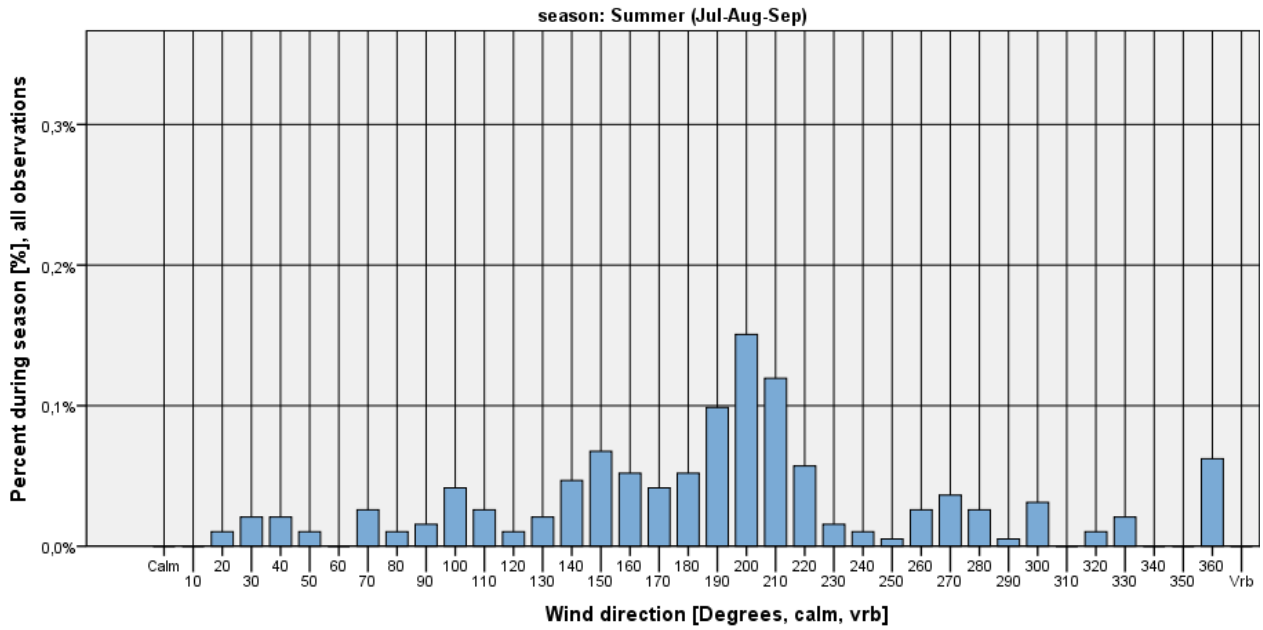


Figure 230

EKGF. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

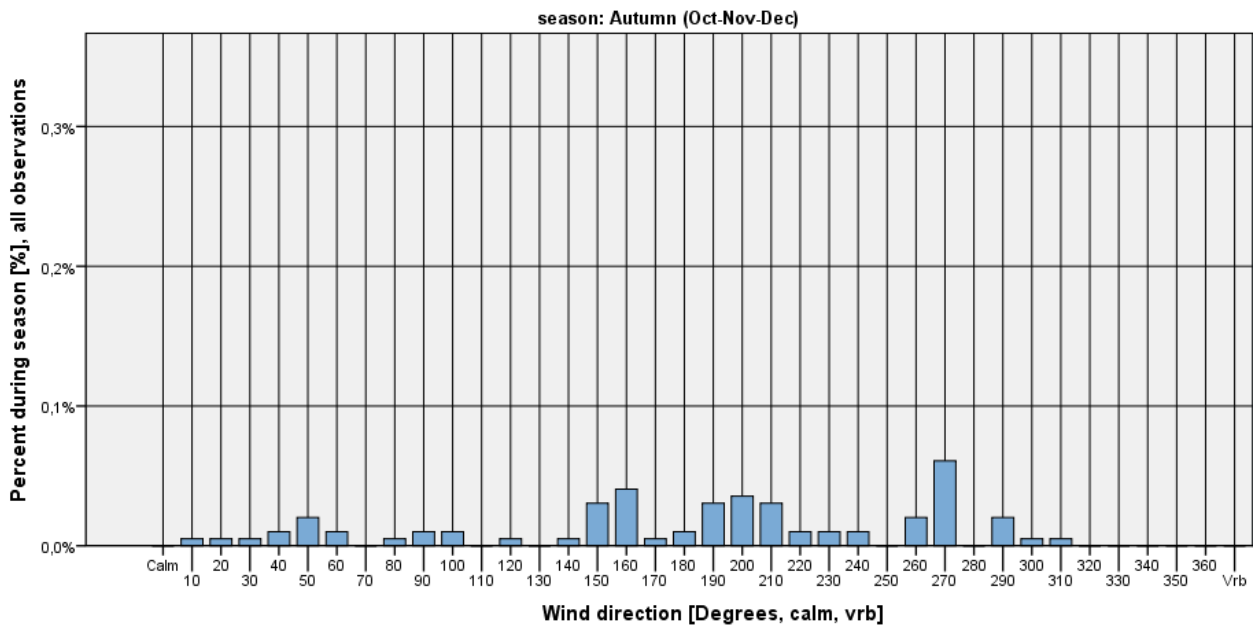


Figure 231

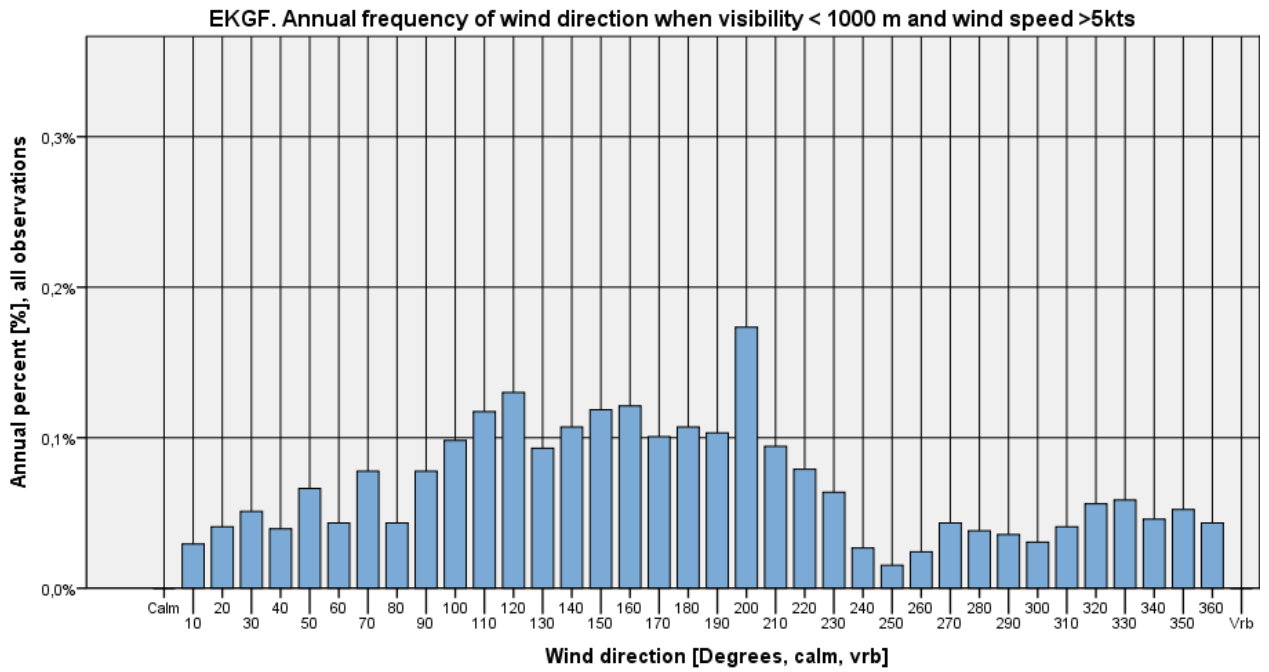


Figure 232



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

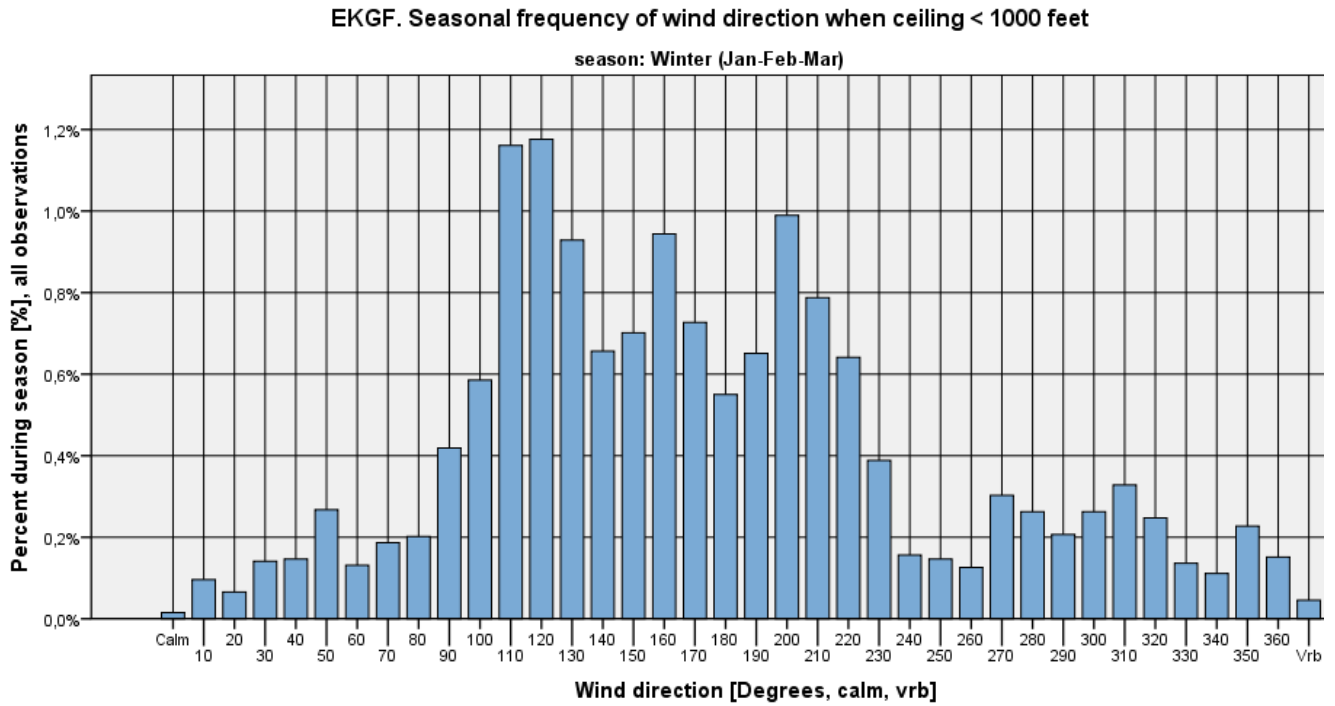


Figure 233

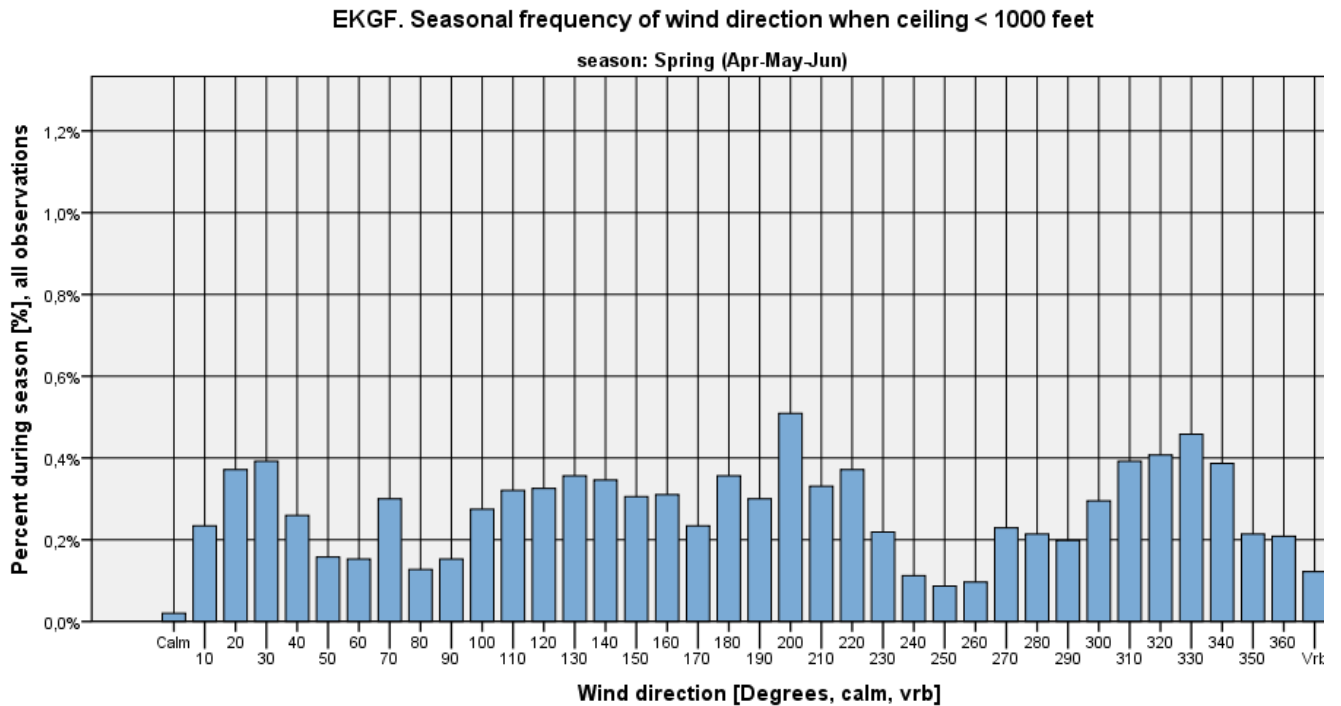


Figure 234



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

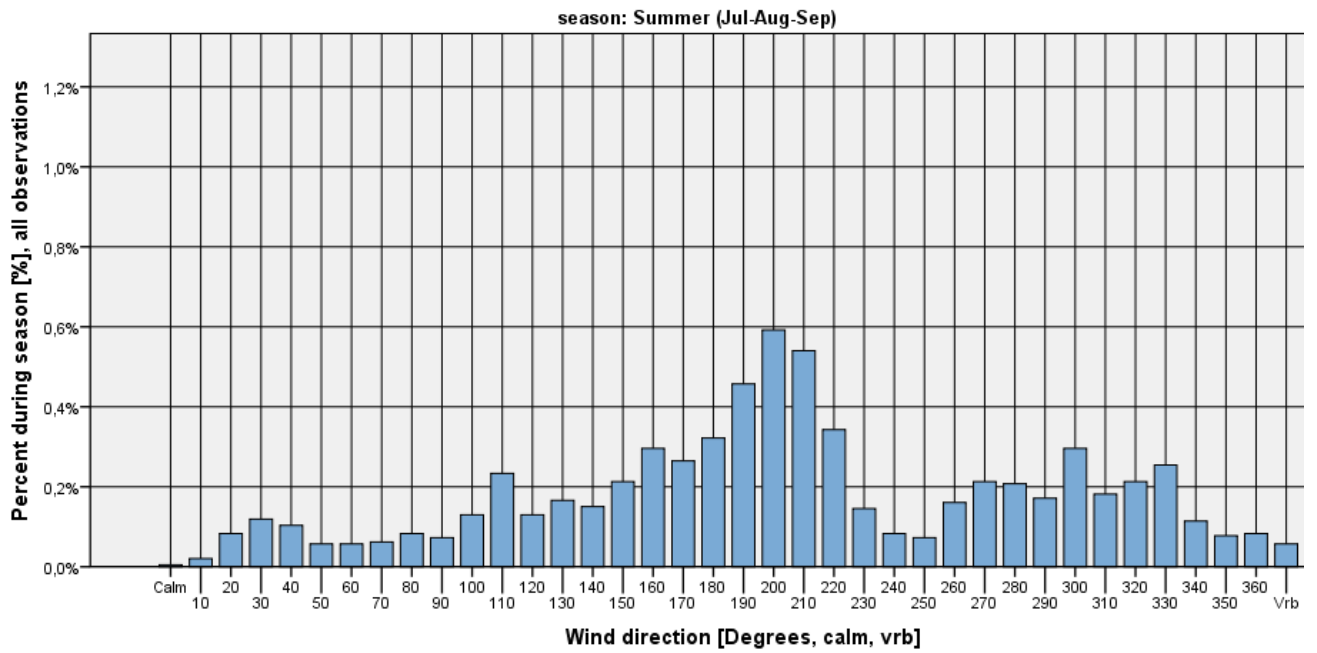


Figure 235

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

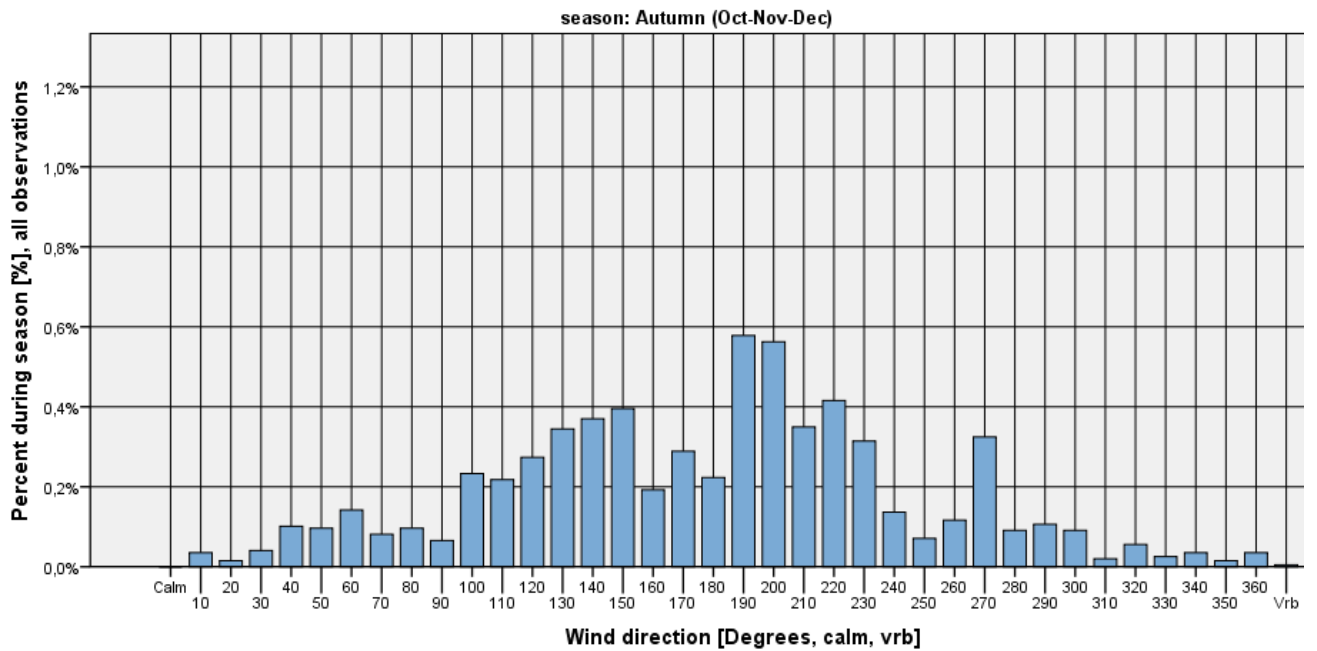


Figure 236

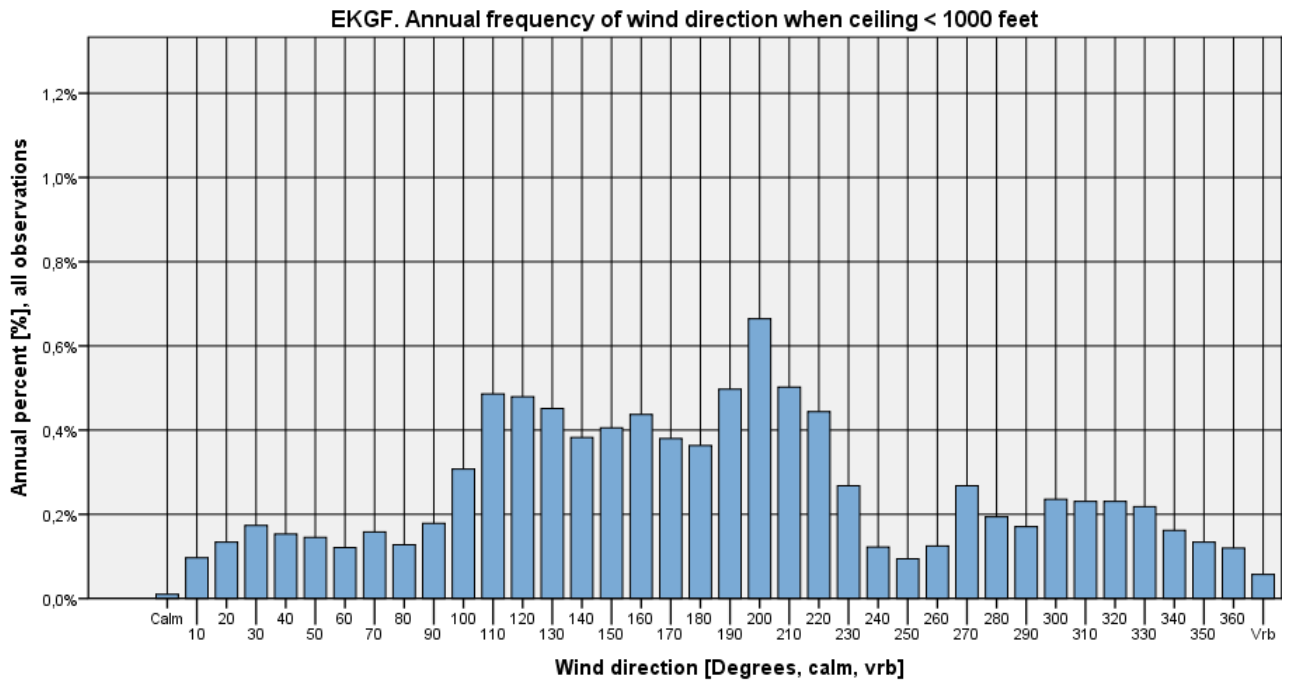


Figure 237



Ceiling < 1000 feet and wind speed ≤ 5 kts

EKGF. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed ≤ 5 kt

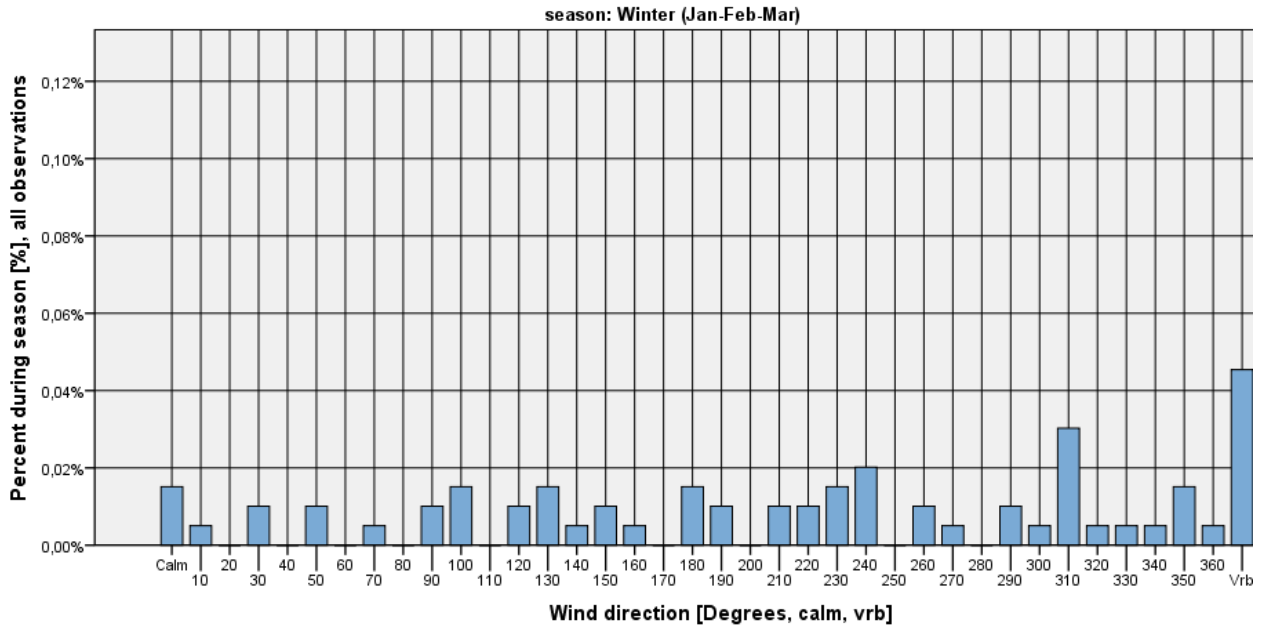


Figure 238

EKGF. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed ≤ 5 kt

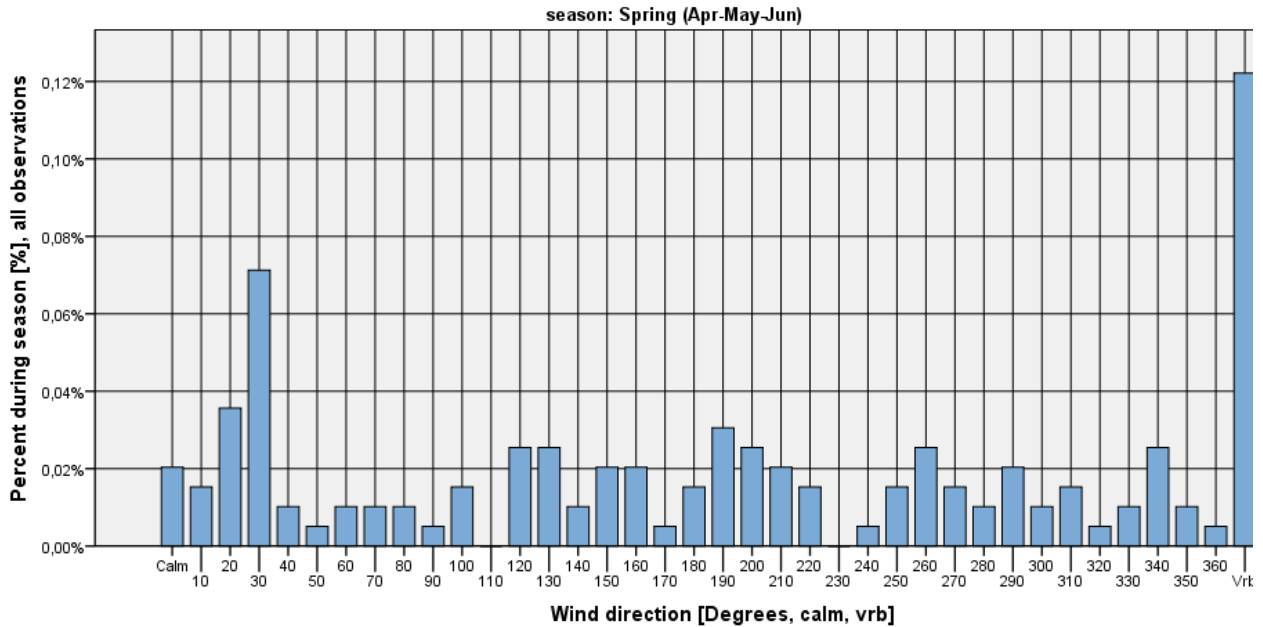


Figure 239



EKGF. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

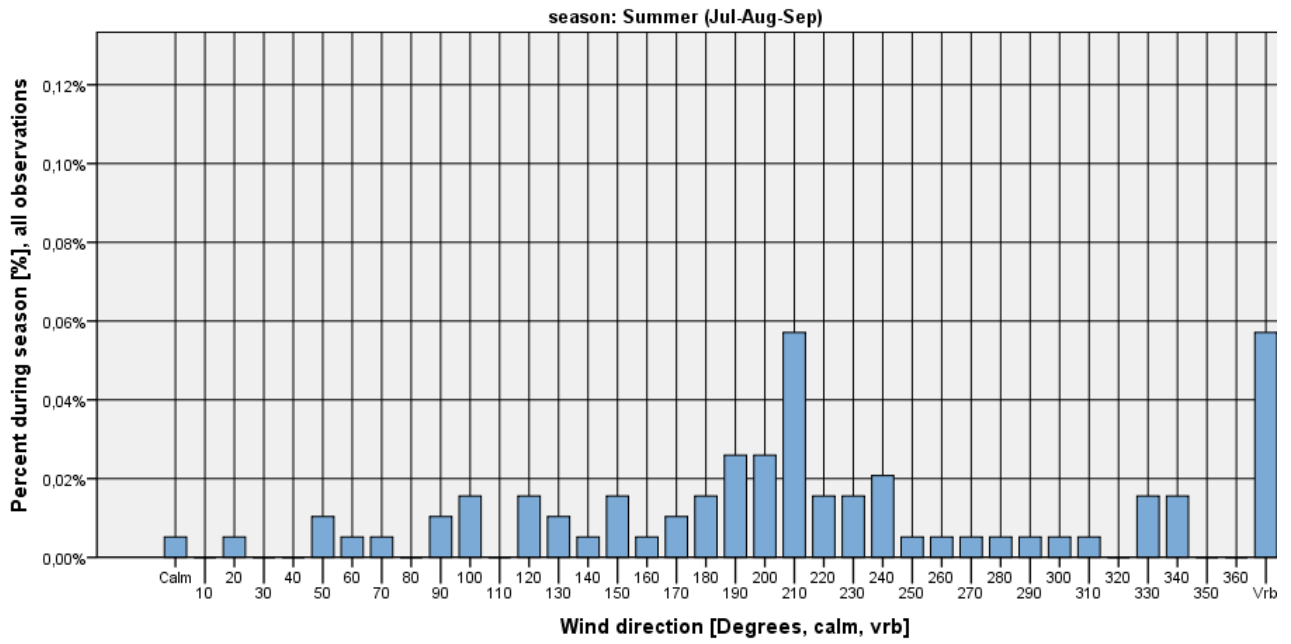


Figure 240

EKGF. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

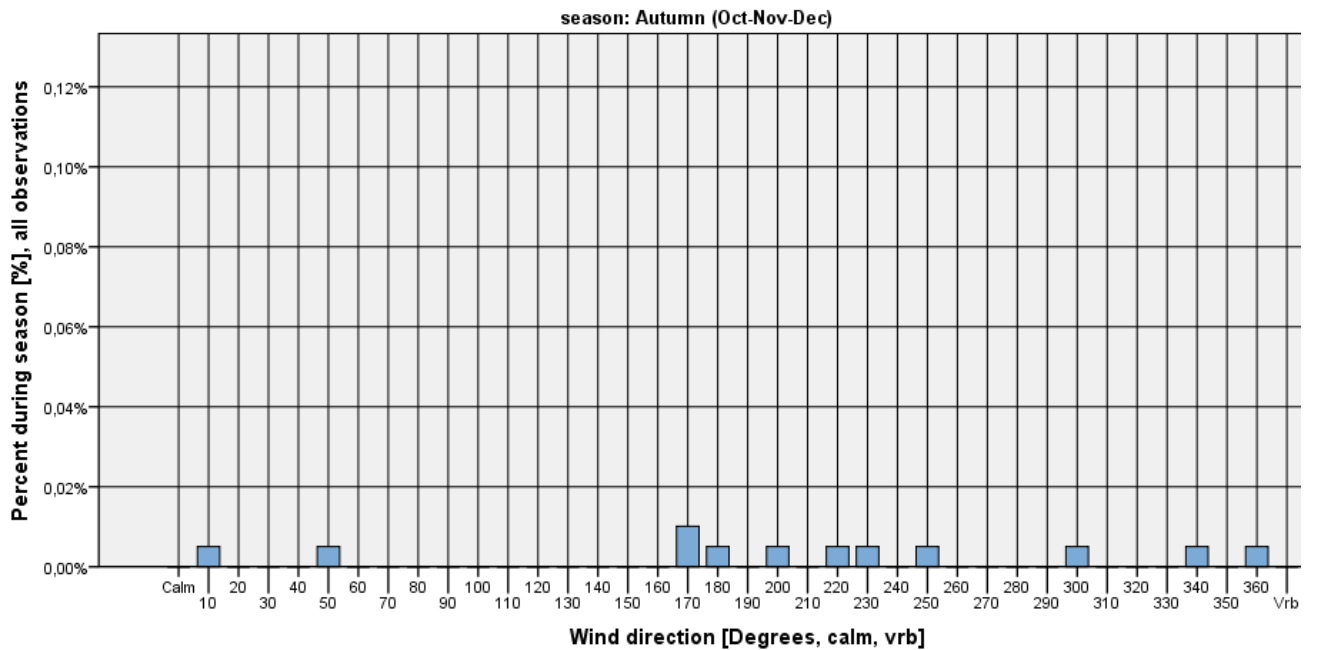


Figure 241

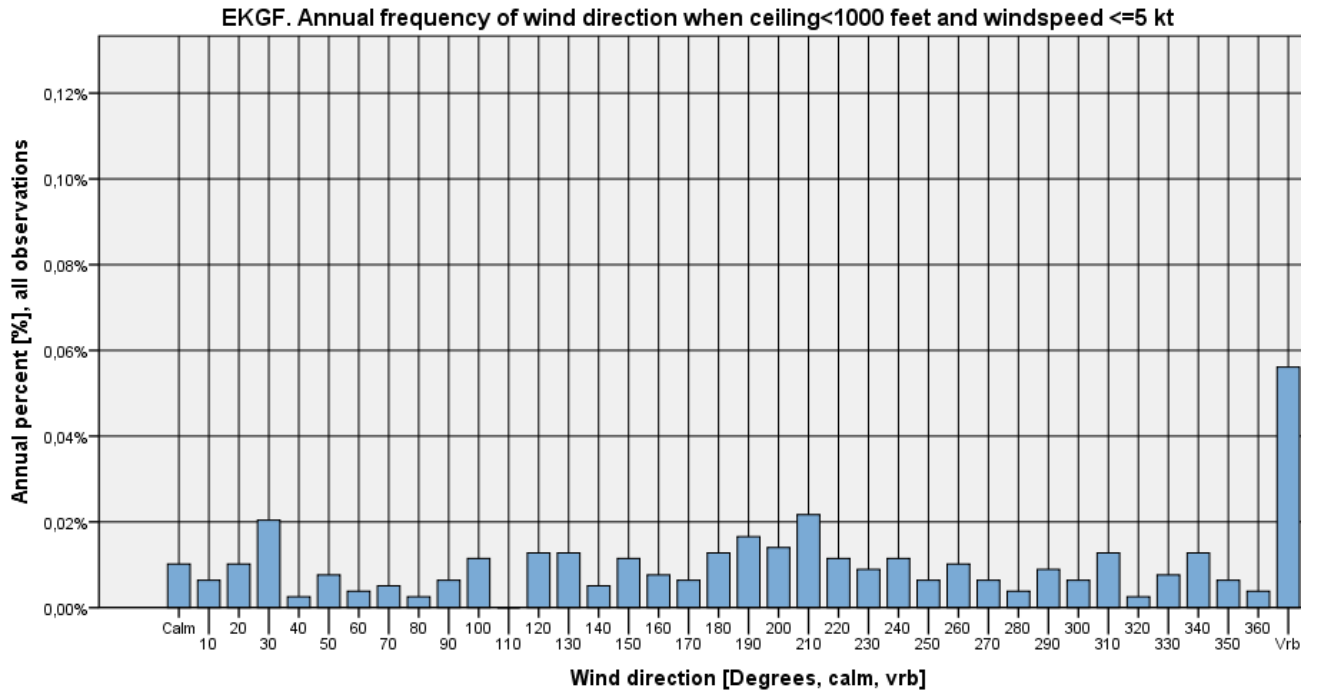


Figure 242



Ceiling < 1000 feet and wind speed > 5 kts

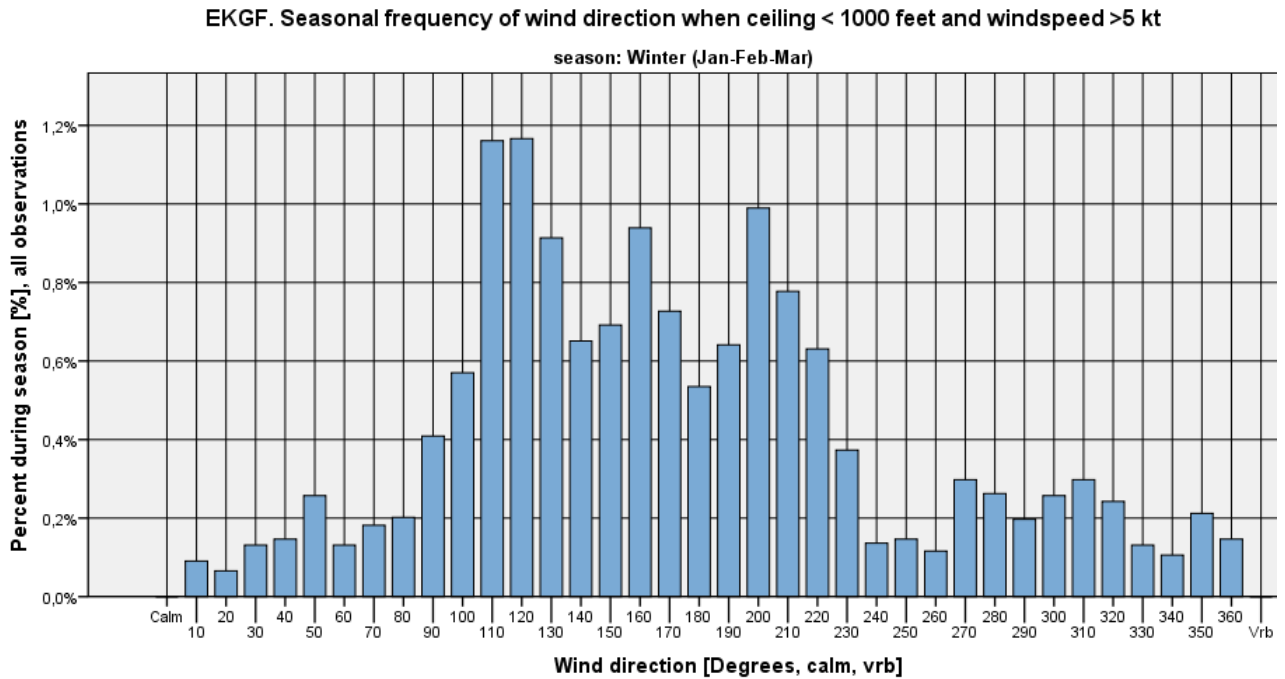


Figure 243

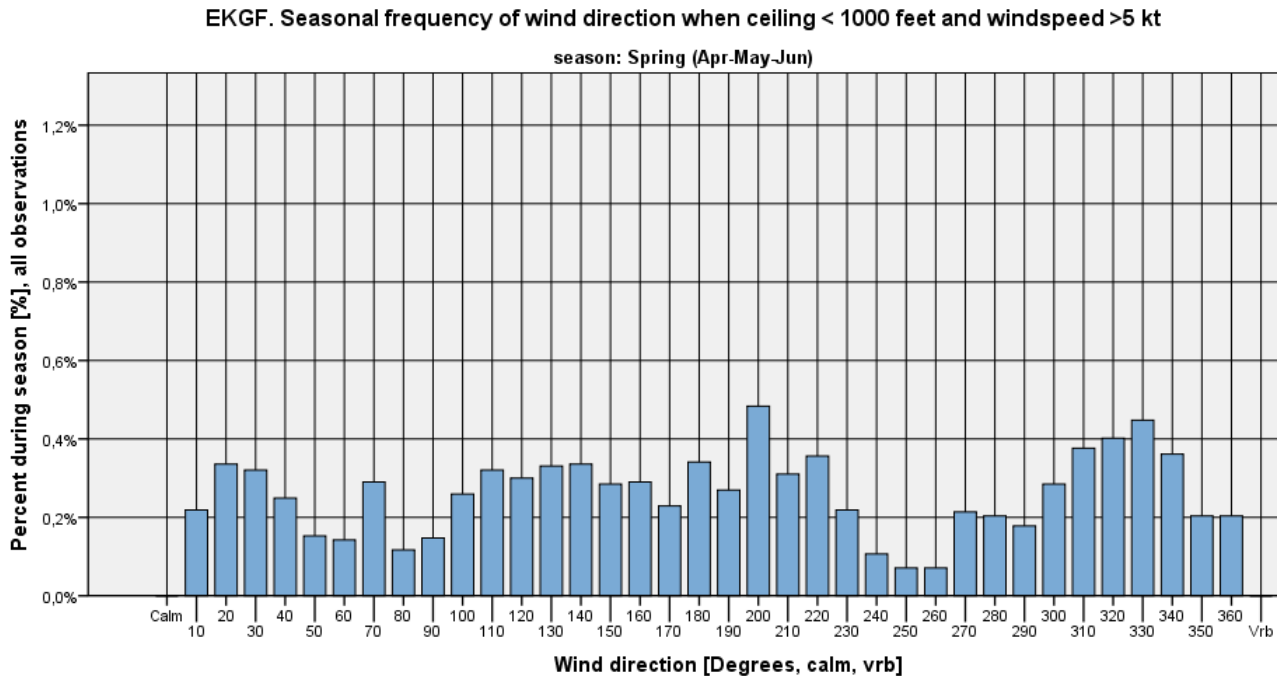


Figure 244



EKGF. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

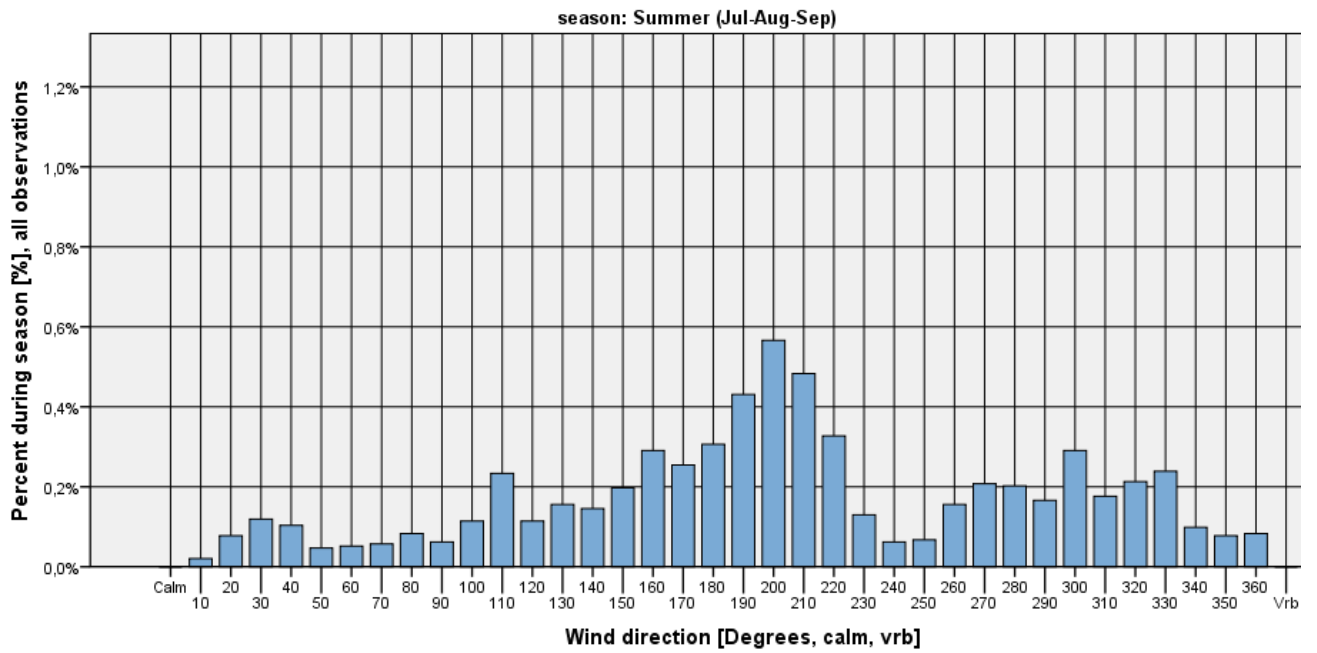


Figure 245

EKGF. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

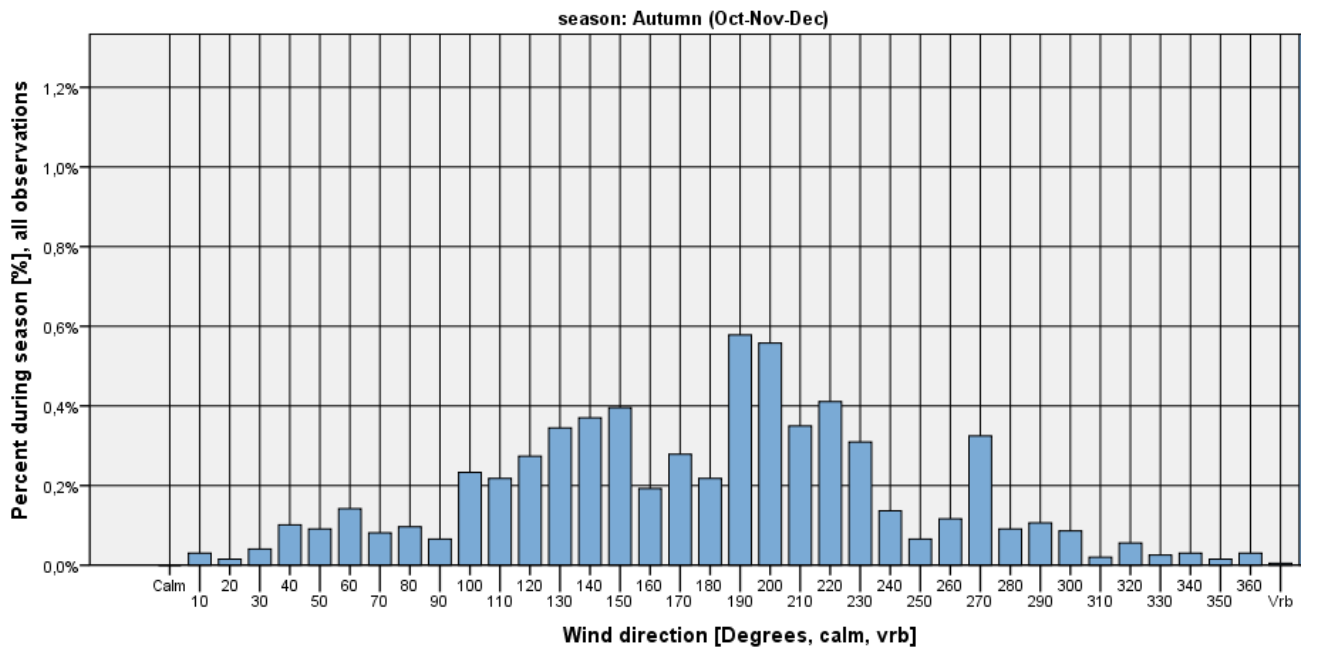


Figure 246

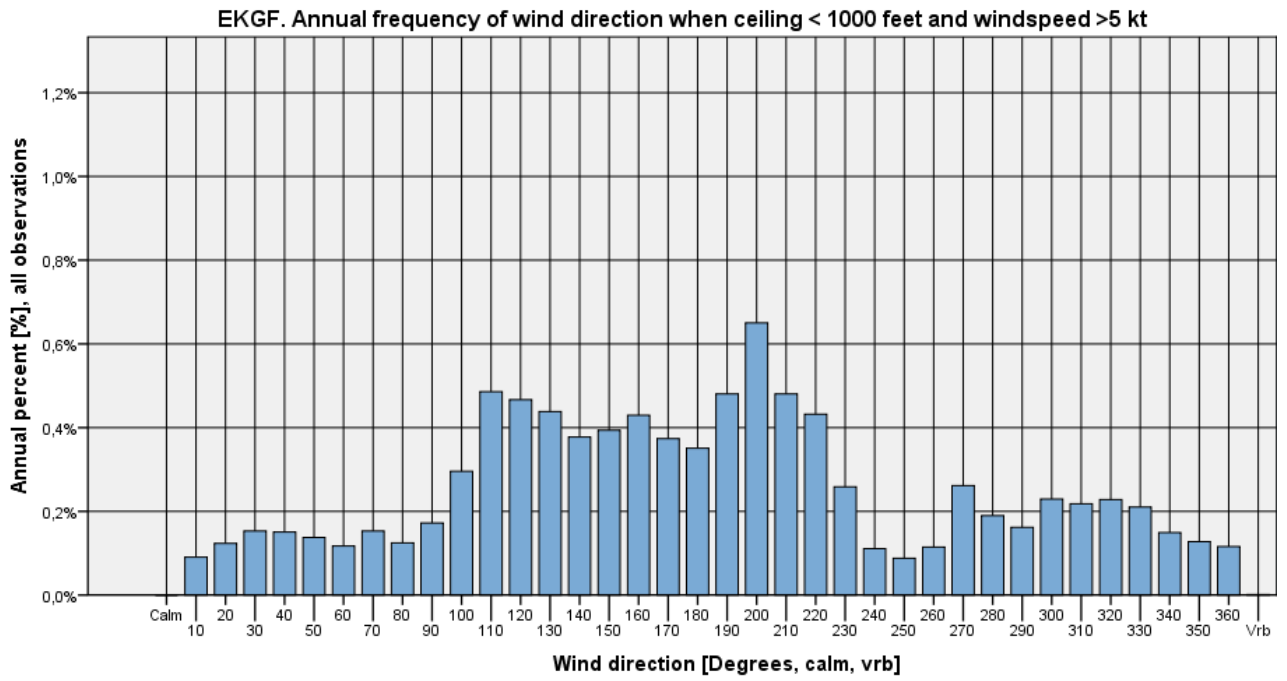


Figure 247



Ceiling < 500 feet

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

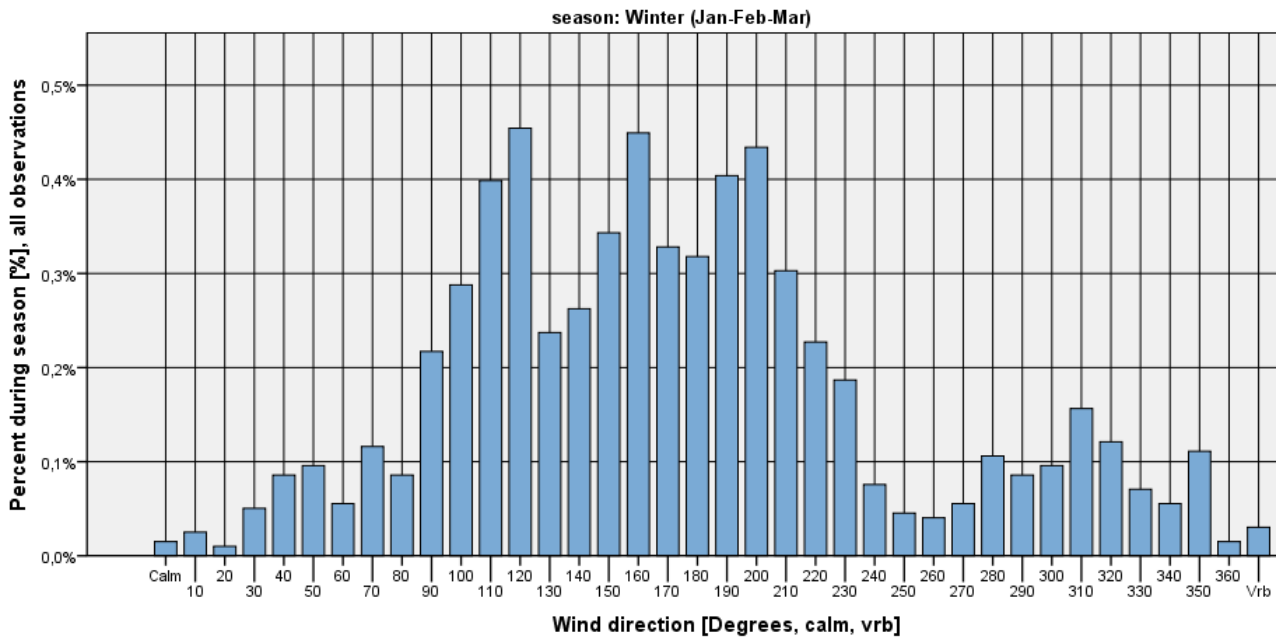


Figure 248

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

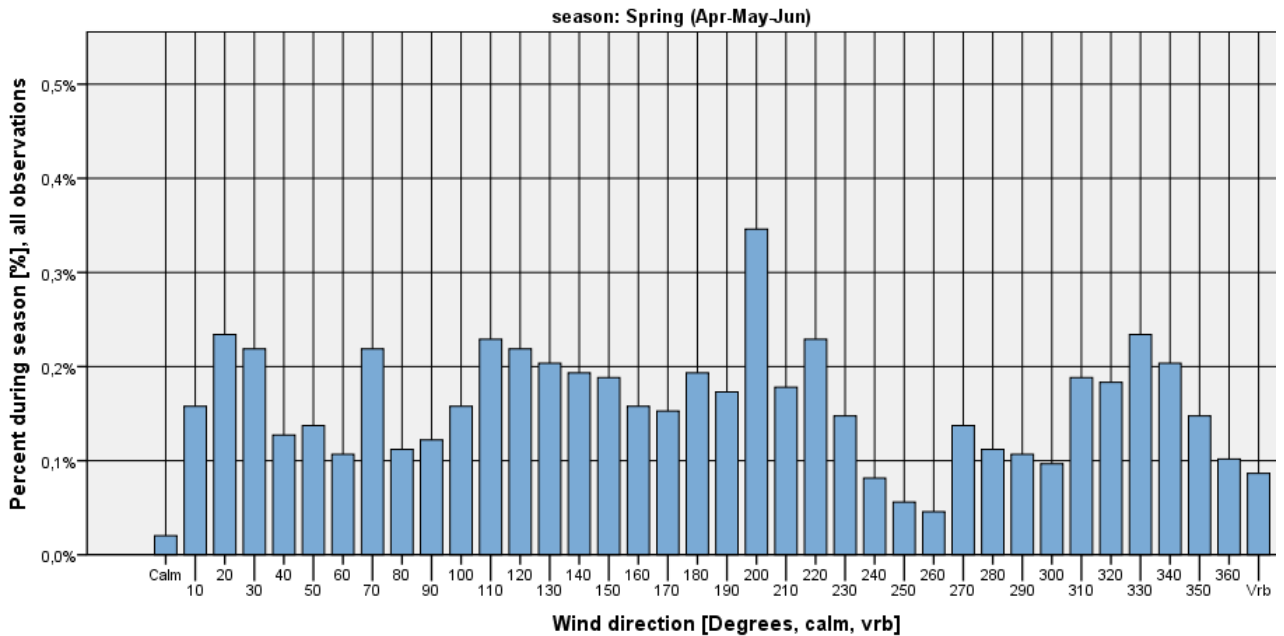


Figure 249



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

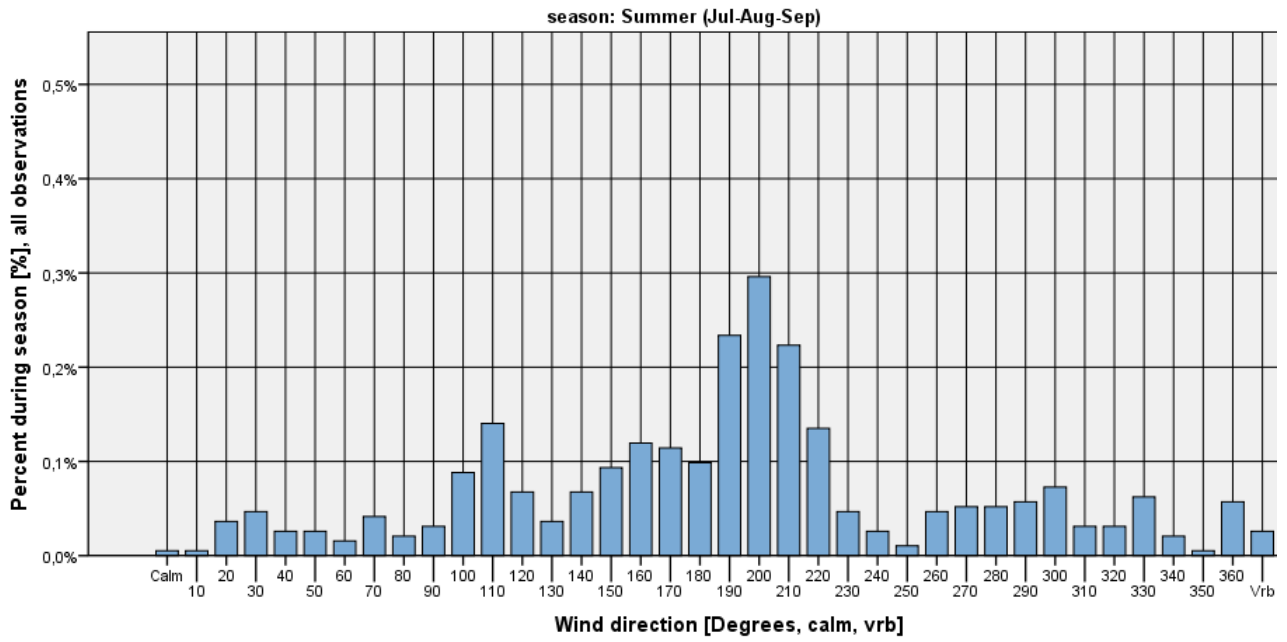


Figure 250

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

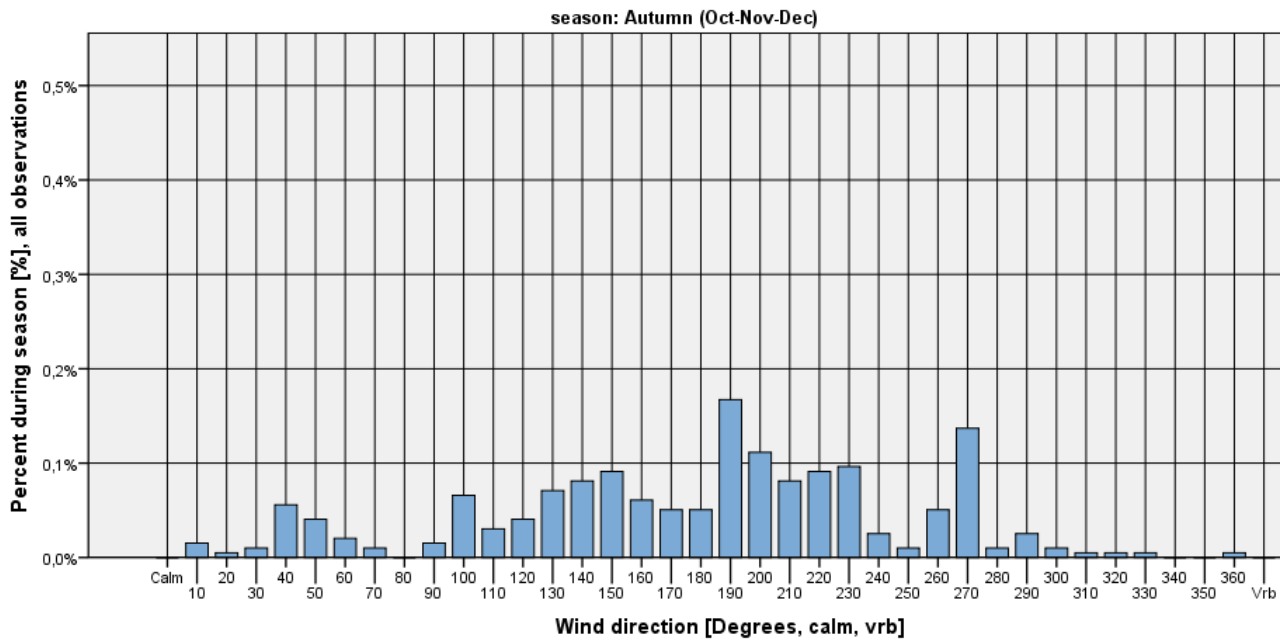


Figure 251

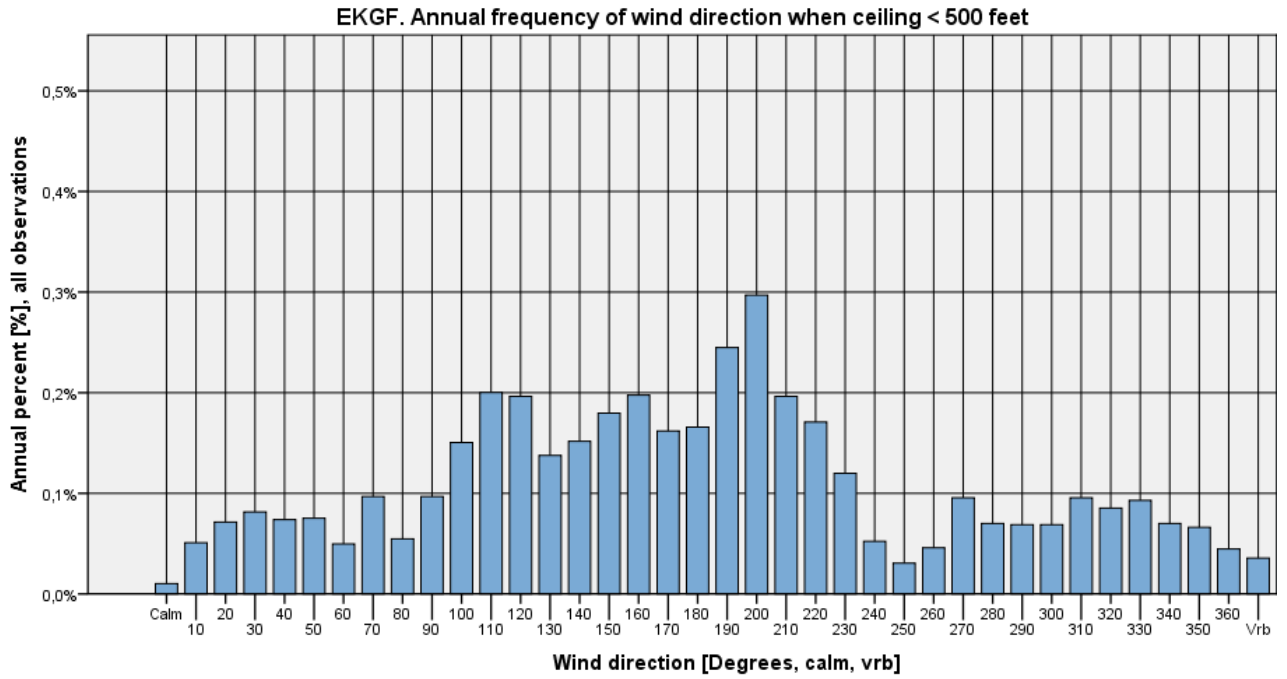


Figure 252



Ceiling < 500 feet and wind speed ≤ 5 kts

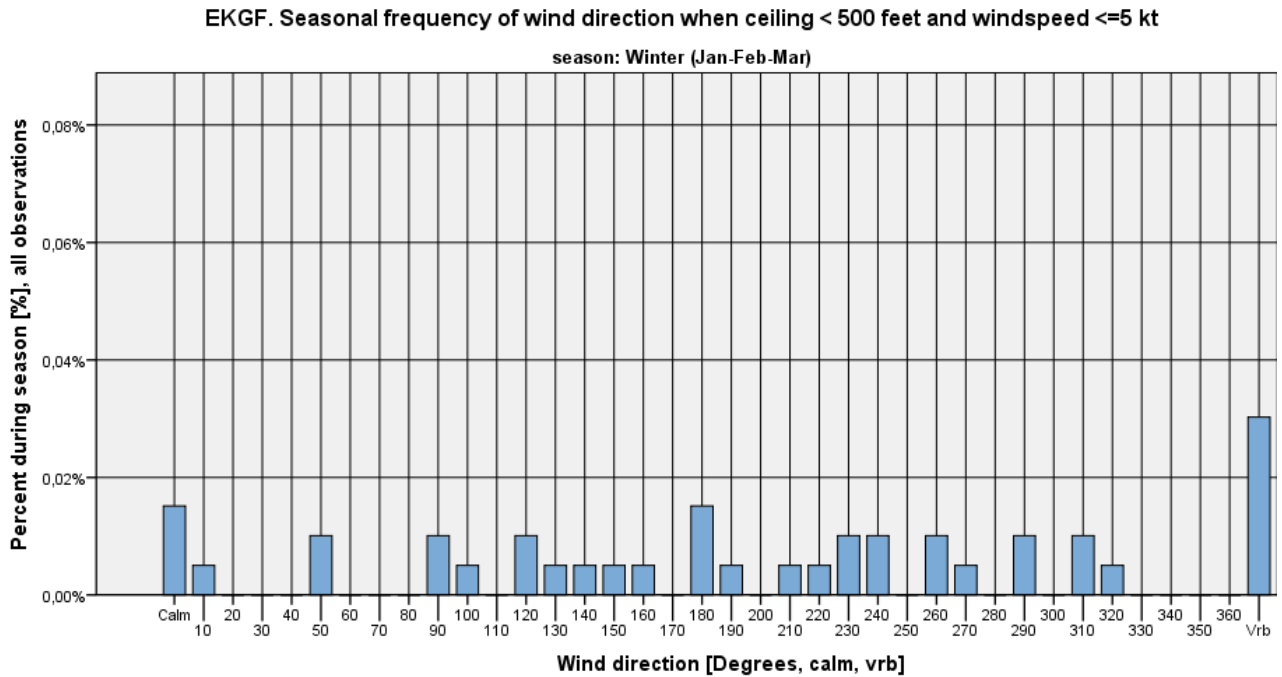


Figure 253

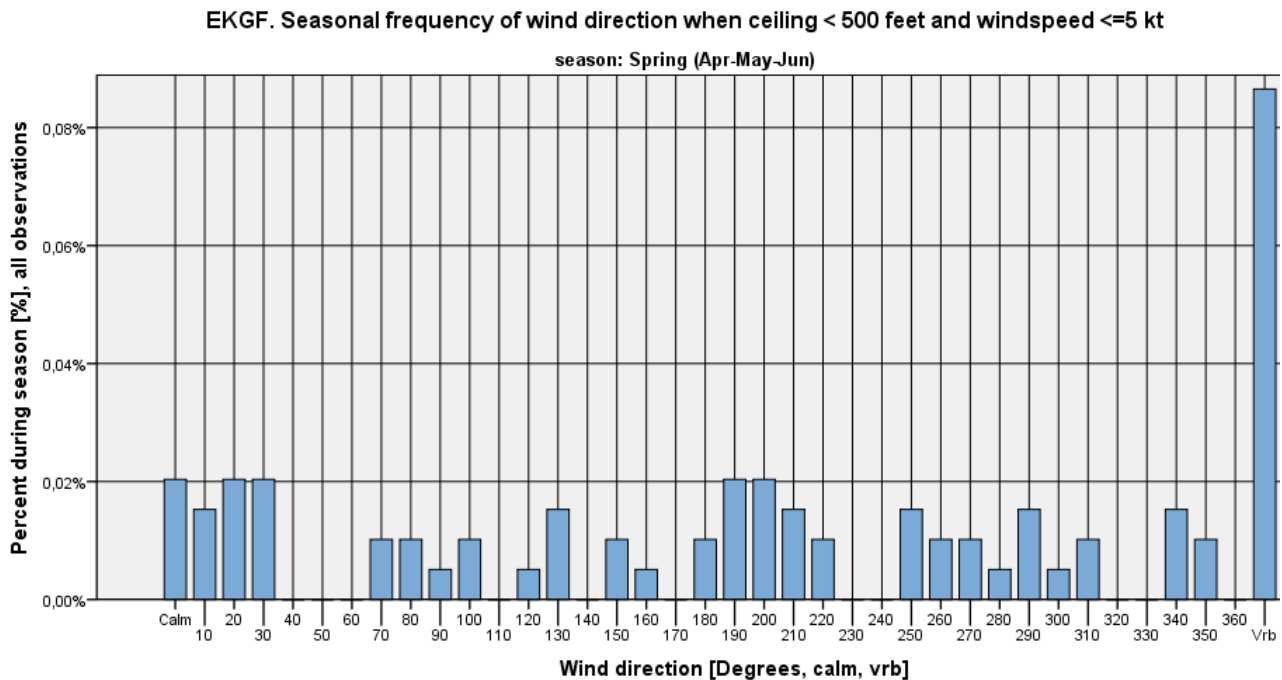


Figure 254



EKGF. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

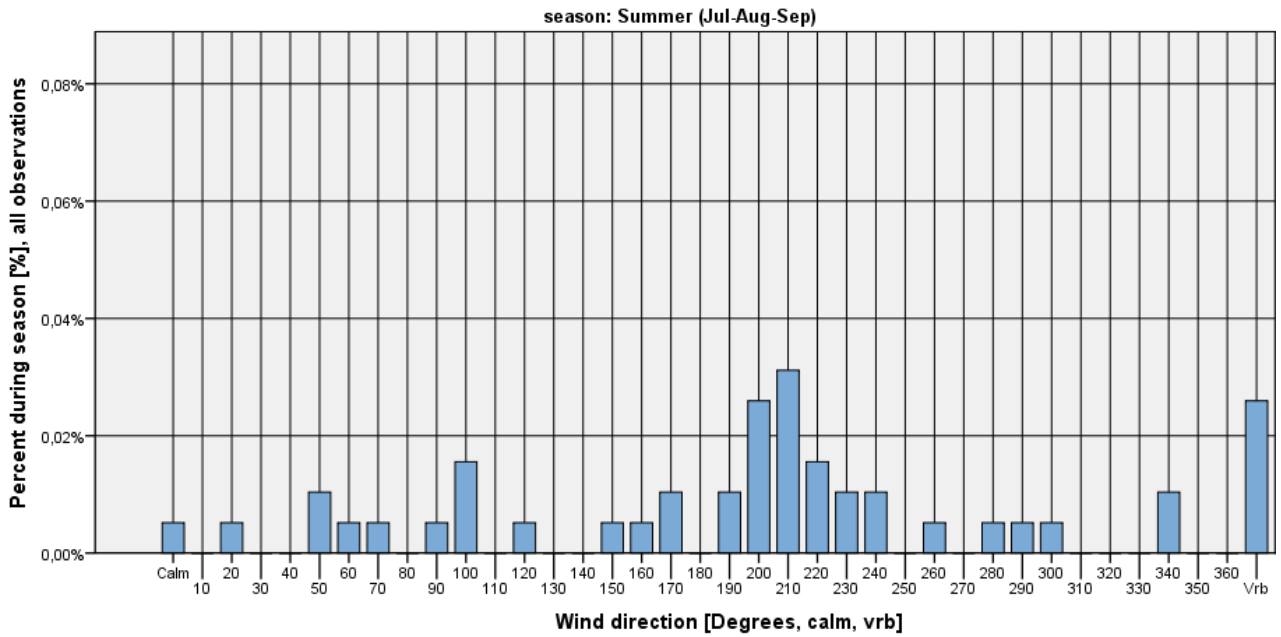


Figure 255

EKGF. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

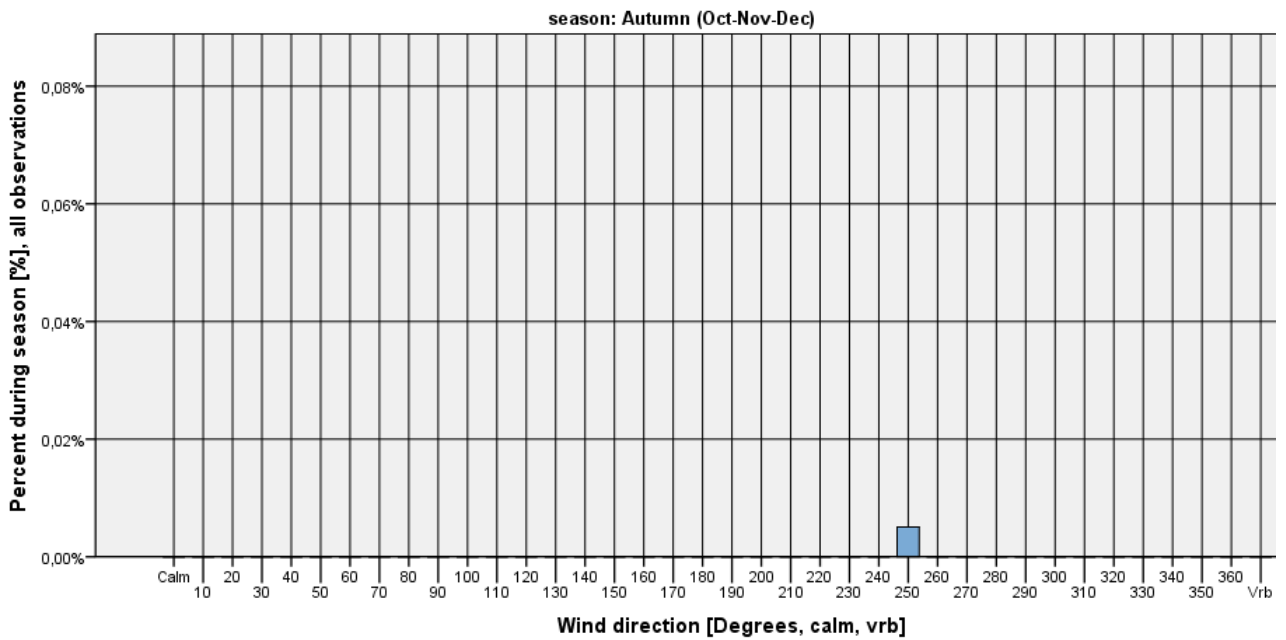


Figure 256

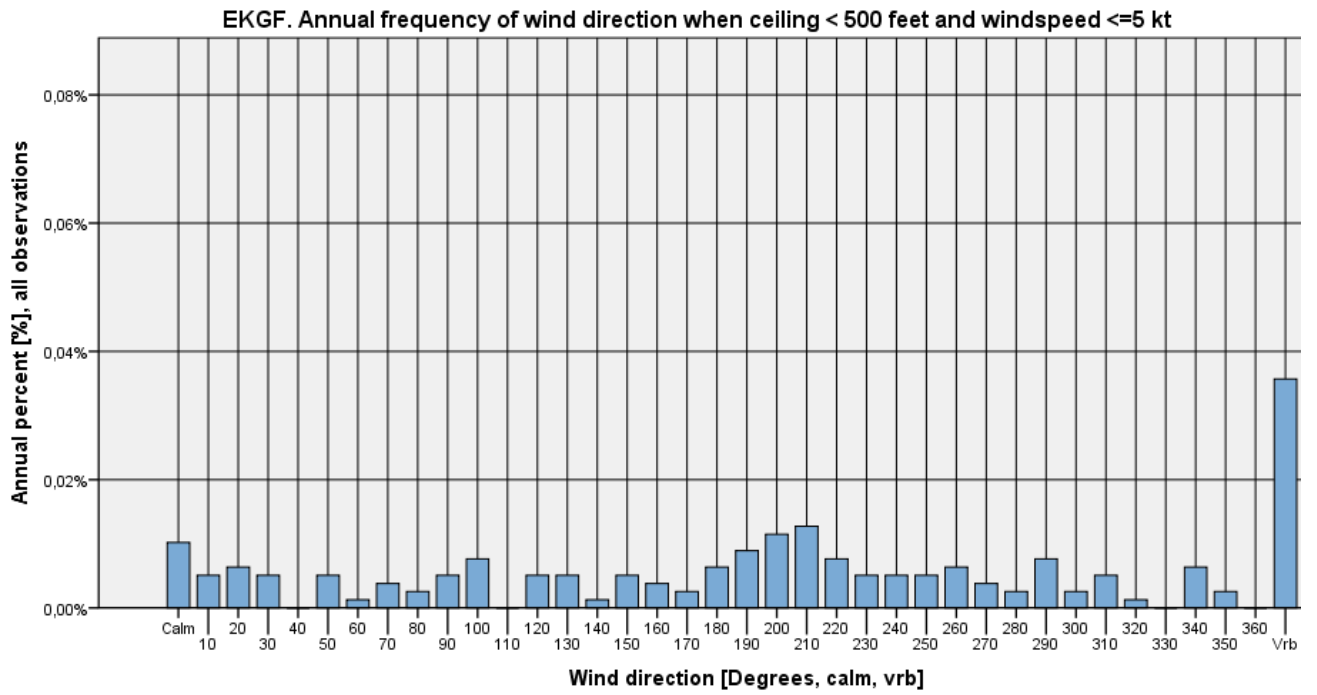


Figure 257



Ceiling < 500 feet and wind speed > 5 kts

EKGF. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

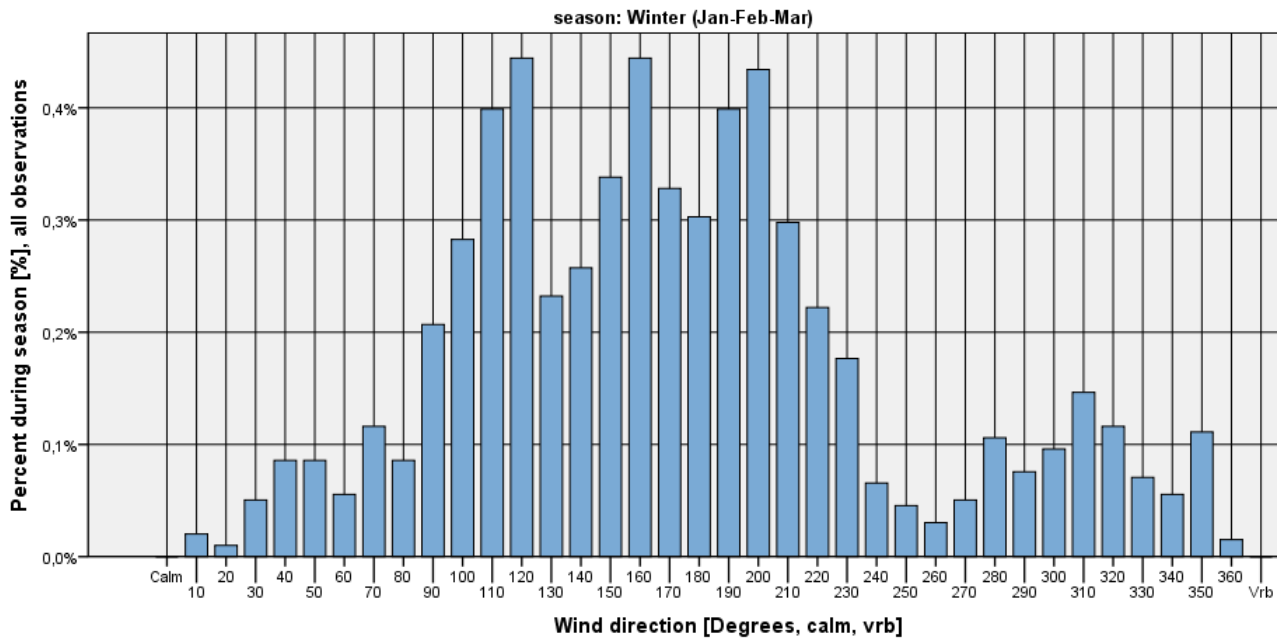


Figure 258

EKGF. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

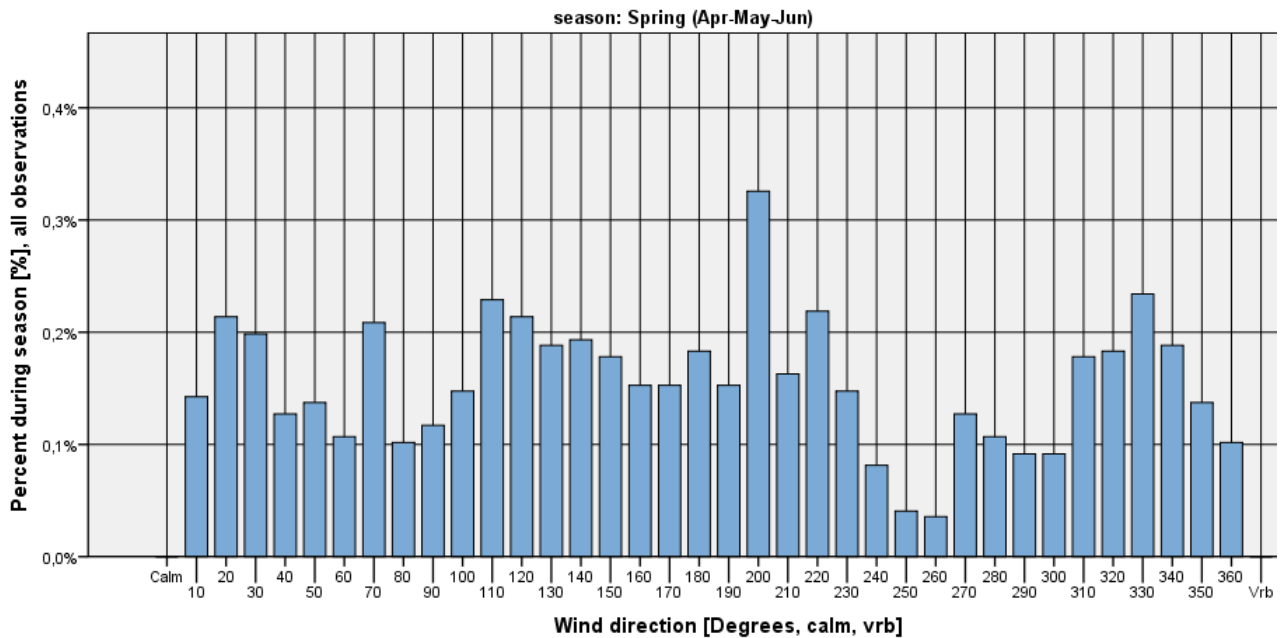


Figure 259



EKGF. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

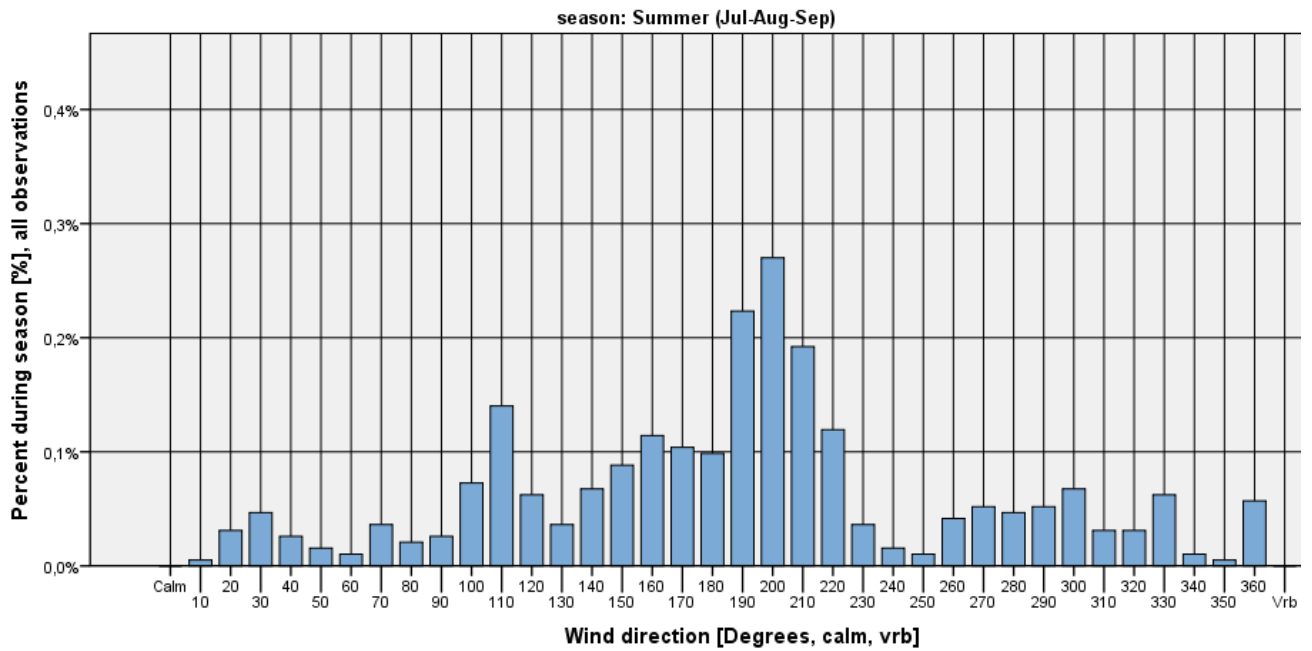


Figure 260

EKGF. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

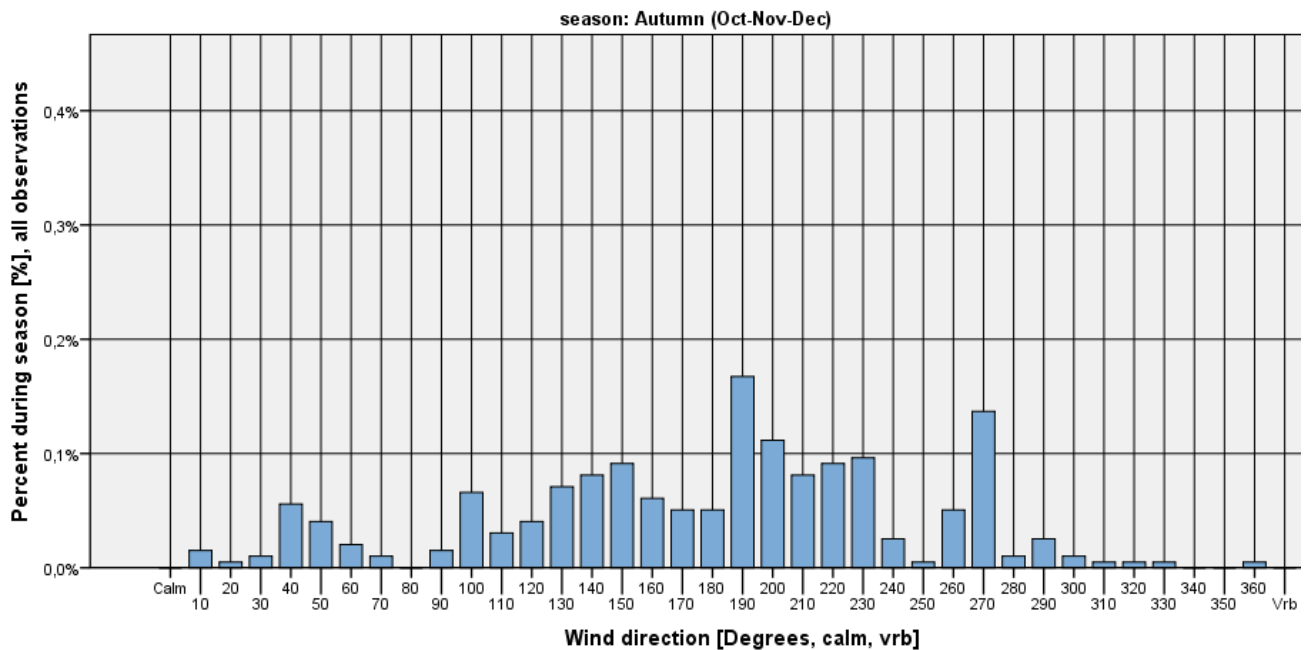


Figure 261

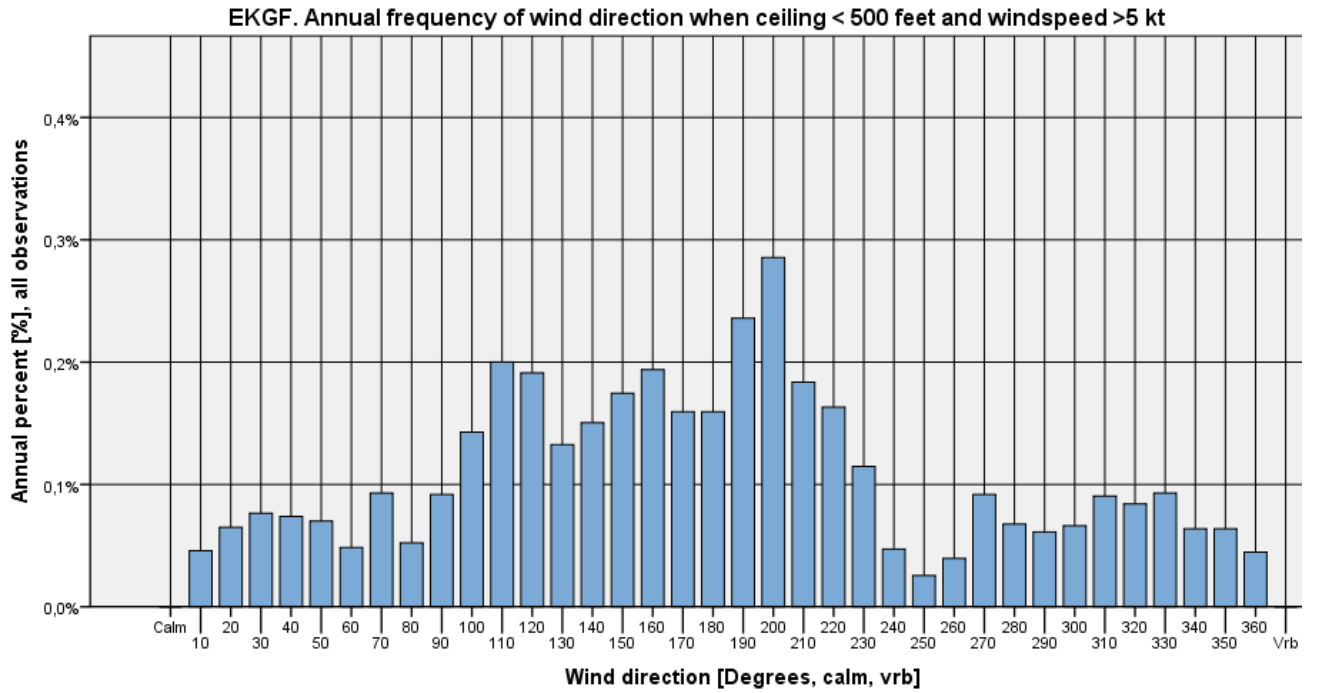
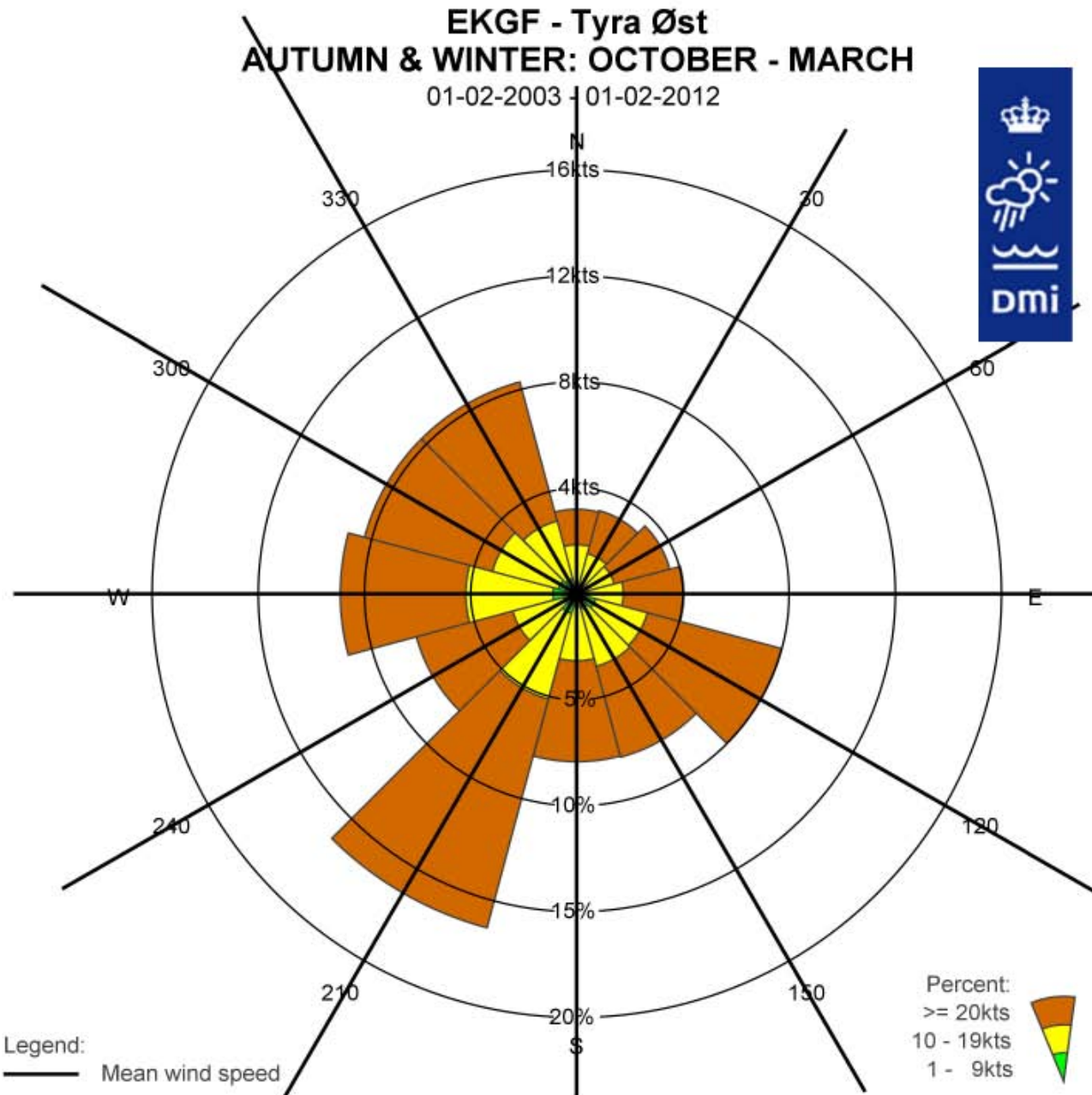


Figure 262



Wind roses



	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	4.0	4.1	4.5	5.0	10.0	8.0	7.9	16.3	7.8	11.1	10.3	10.4	99.5
% 1 - 9kts	0.5	0.5	0.4	0.5	0.9	0.7	0.6	1.0	0.6	1.1	0.9	0.7	8.4
% 10 - 19kts	1.9	1.5	1.4	1.7	2.5	2.8	2.5	4.2	2.5	4.1	3.2	2.8	31.2
% >= 20kts	1.7	2.1	2.7	2.8	6.5	4.4	4.8	11.2	4.7	5.9	6.2	6.8	59.9
Mean wind speed	19.2	20.2	21.9	21.3	23.7	21.7	22.8	24.9	22.3	21.2	23.3	25.2	22.9
Max wind speed	69.0	51.0	54.0	47.0	50.0	53.0	59.0	70.0	65.0	63.0	60.0	62.0	70.0

Number of observations = 39531

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 208=0.5%

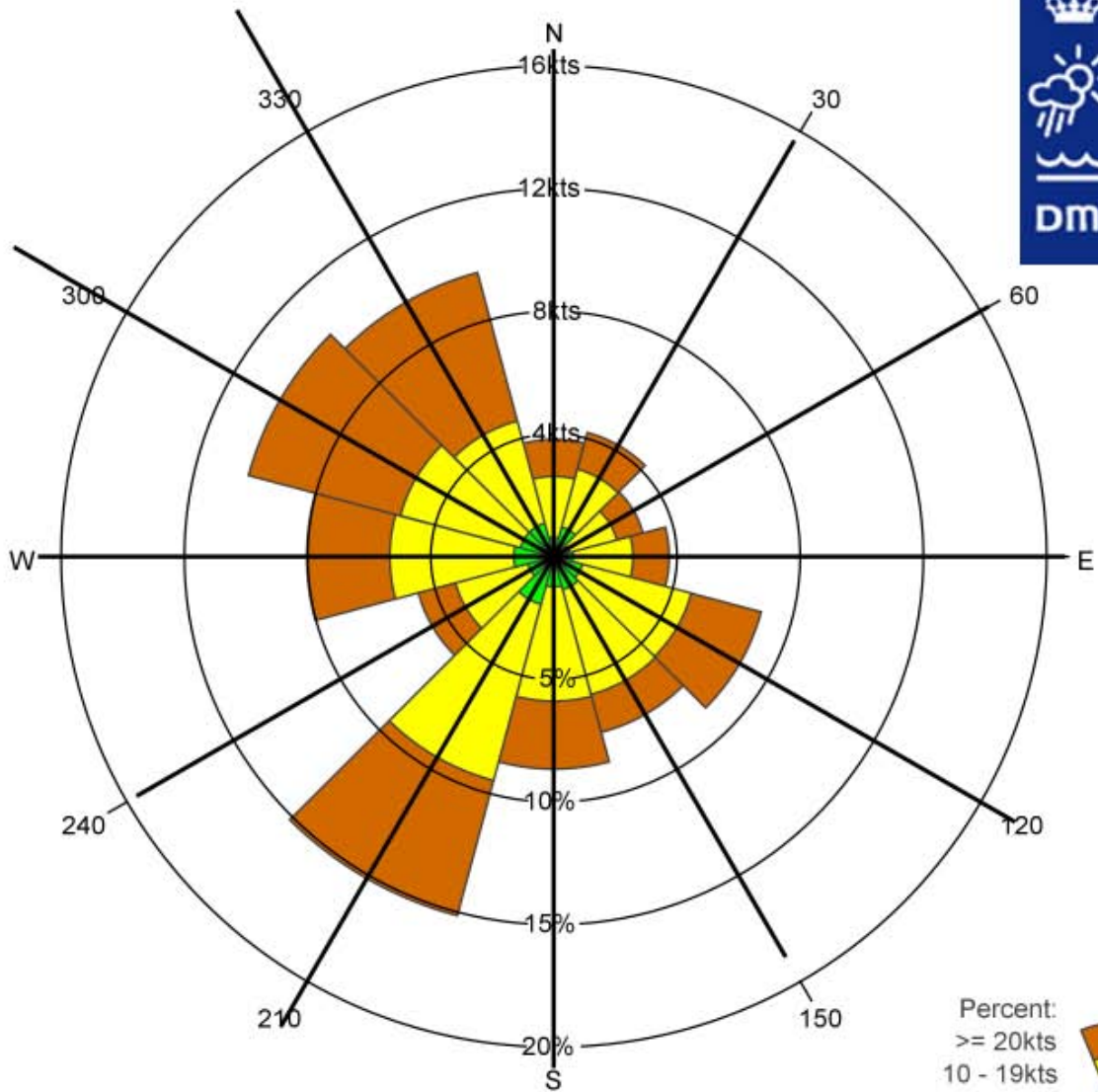
Observations with calm/varying wind direction are not used in the statistics



EKGF - Tyra Øst

SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
 Mean wind speed

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



	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	4.8	5.2	3.7	4.7	8.7	7.4	8.7	15.2	5.7	10.0	12.8	12.0	98.9
% 1 - 9kts	0.8	1.2	0.7	0.8	1.2	1.4	1.2	2.0	1.1	1.6	1.4	1.4	14.9
% 10 - 19kts	2.5	2.5	2.0	2.4	4.6	4.4	4.7	7.4	3.0	5.0	5.0	4.3	47.9
% >= 20kts	1.5	1.5	1.1	1.5	3.0	1.6	2.8	5.7	1.6	3.4	6.4	6.3	36.2
Mean wind speed	16.5	15.7	16.3	16.6	17.3	15.1	16.7	17.7	15.7	16.8	20.2	20.6	17.6
Max wind speed	43.0	42.0	42.0	45.0	44.0	38.0	44.0	46.0	44.0	49.0	51.0	49.0	51.0

Number of observations = 38903

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 415=1.1%

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

Availability

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

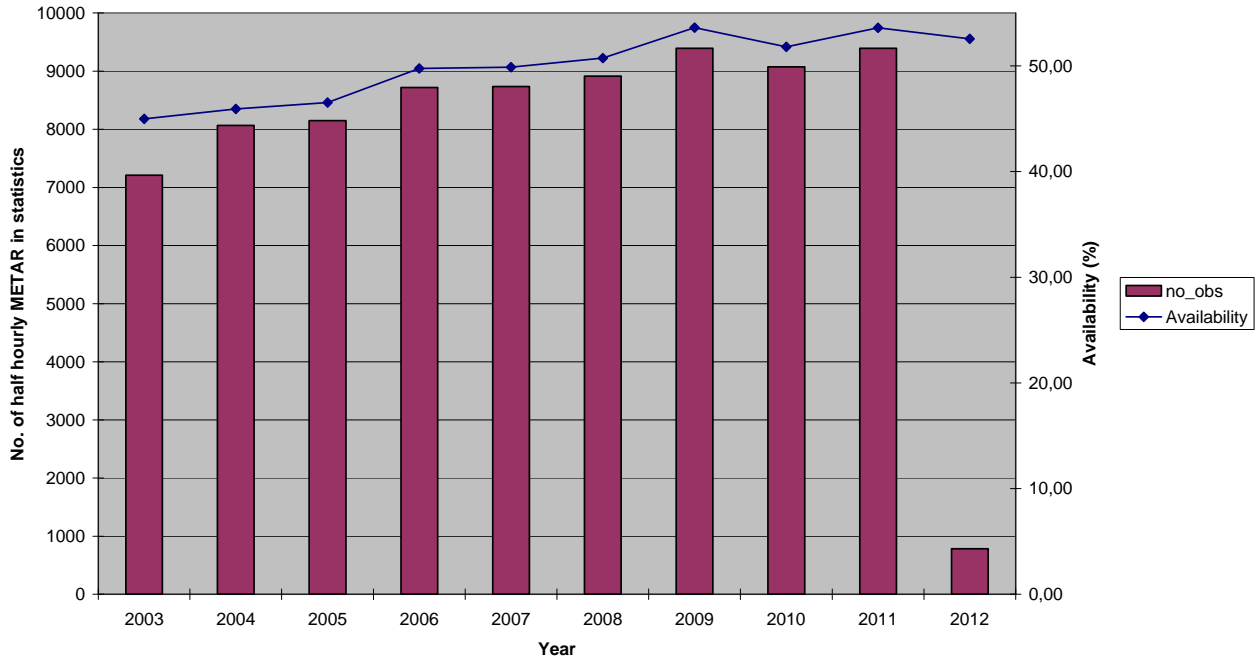


Figure 263

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

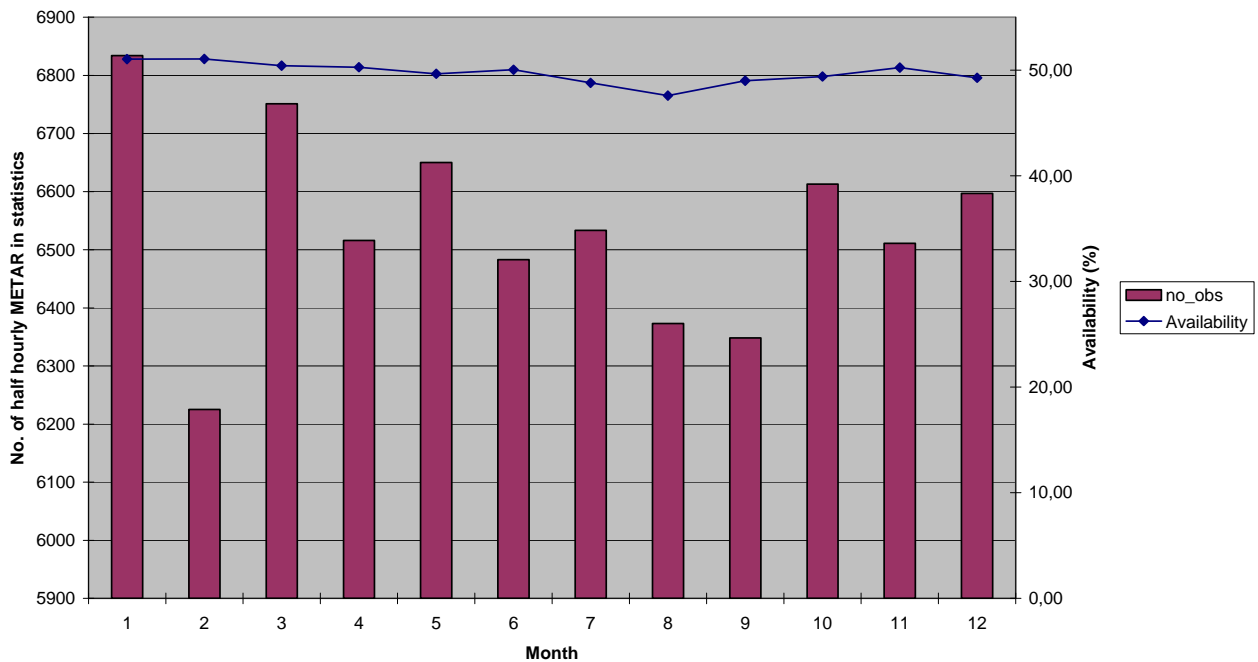


Figure 264

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

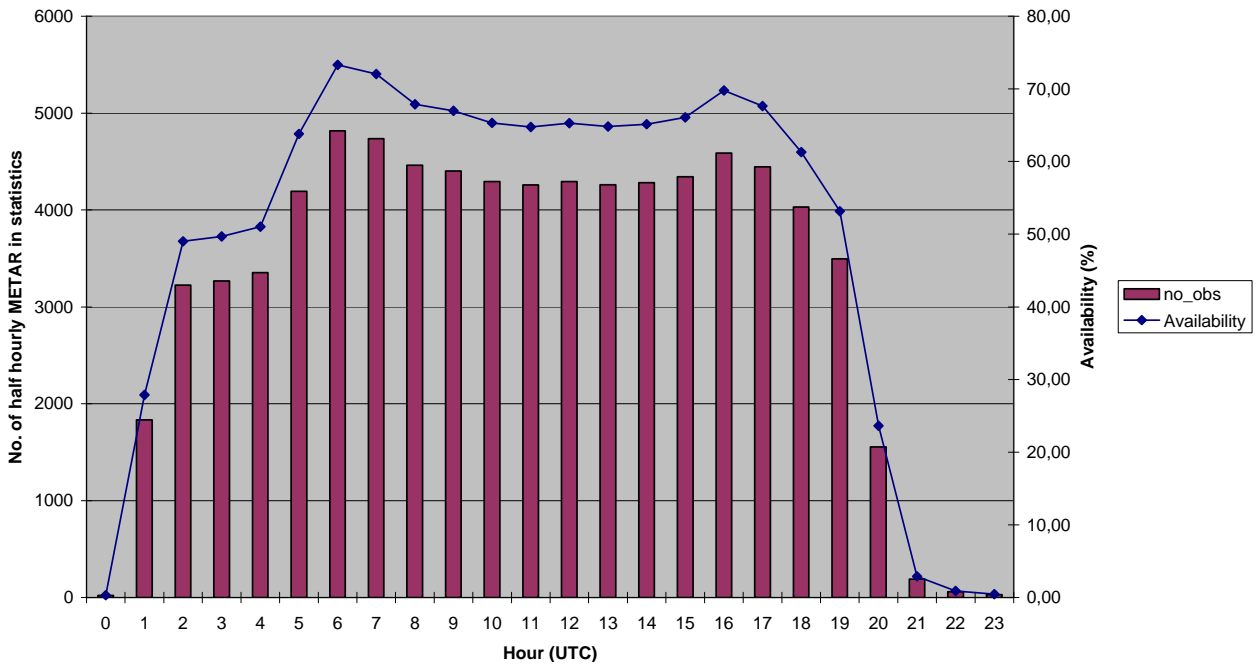


Figure 265

EKGf. Average no. of half 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
1	,0	,0	,0	,0	,0	,0	,0	,0	,0	0,0
2	,6	,6	,6	,6	,6	,6	,6	,6	,6	0,0
3	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
4	1,0	1,0	1,0	1,0	1,0	1,0	1,1	1,1	1,1	1,0
5	1,1	1,2	1,2	1,2	1,3	1,3	1,5	1,4	1,4	1,3
6	1,3	1,3	1,4	1,5	1,5	1,5	1,7	1,6	1,6	1,5
7	1,3	1,3	1,3	1,4	1,5	1,5	1,6	1,5	1,6	1,6
8	1,2	1,2	1,2	1,3	1,4	1,4	1,5	1,4	1,4	1,5
9	1,2	1,2	1,3	1,3	1,4	1,4	1,5	1,4	1,5	1,3
10	1,1	1,2	1,2	1,3	1,3	1,4	1,4	1,4	1,4	1,4
11	1,2	1,2	1,2	1,3	1,3	1,3	1,4	1,3	1,4	1,4
12	1,1	1,2	1,2	1,3	1,3	1,3	1,4	1,4	1,4	1,3
13	1,2	1,2	1,3	1,3	1,3	1,3	1,4	1,4	1,4	1,4
14	1,2	1,2	1,2	1,3	1,3	1,3	1,4	1,3	1,4	1,4
15	1,2	1,2	1,2	1,3	1,4	1,3	1,5	1,3	1,4	1,5
16	1,2	1,2	1,3	1,4	1,4	1,4	1,5	1,4	1,5	1,3
17	1,2	1,2	1,3	1,4	1,3	1,4	1,5	1,4	1,5	1,5
18	1,1	1,1	1,2	1,2	1,3	1,3	1,3	1,3	1,4	1,5
19	1,0	1,0	1,0	1,0	1,2	1,2	1,2	1,2	1,3	1,2
20	,8	,9	,8	,9	,9	1,0	1,0	1,0	1,0	1,1
21	,4	,4	,4	,5	,4	,4	,4	,4	,3	,9
22	,1	,1	,1	,1	,1	,0	,0	,0	,0	,0
23	,0	,0	,0	,0	,0	,0	,0	,0	,0	0,0

Table 31



EKKA Karup - mil

Karup Airport – Flyvestation Karup

Airport location: 56,300°N 9,117°E Elevation: 52 m above msl

EKKA observations in statistics: 155.162 half hourly METAR⁶ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 98,3%.

EKKA METAR are all manual.

Cross tables Visibility – Ceiling

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

No. Obs = 38.255	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,031	3,43	4,27	4,42	4,45	0,77	5,22
<1 km	0,031	3,63	4,99	5,20	5,26	0,95	6,21
<1.5 km	0,031	3,72	6,19	6,75	6,88	1,25	8,12
<3.0 km	0,031	3,79	9,25	13,23	14,12	3,55	17,67
< 5.0 km	0,031	3,79	10,77	20,85	23,96	8,16	32,12
>= 5,0 km or CAVOK	0	0	0,36	6,05	12,57	55,31	67,88
Total	0,031	3,79	11,13	26,90	36,53	63,47	100

Table 32

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

No. Obs = 38.730	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,88	1,04	1,05	1,07	0,50	1,56
<1 km	0	0,91	1,17	1,20	1,22	0,62	1,84
<1.5 km	0	0,95	1,38	1,45	1,48	0,82	2,30
<3.0 km	0	0,97	2,21	2,97	3,12	1,82	4,94
< 5.0 km	0	0,97	2,78	5,25	5,92	4,12	10,04
>= 5,0 km or CAVOK	0	0	0,23	3,06	6,52	83,44	89,96
Total	0	0,97	3,01	8,32	12,44	87,56	100

Table 33

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

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

No. Obs = 39.063	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,026	0,72	0,80	0,83	0,84	1,15	1,99
<1 km	0,026	0,77	0,87	0,91	0,93	1,39	2,32
<1.5 km	0,026	0,80	0,98	1,07	1,09	1,72	2,81
<3.0 km	0,026	0,82	1,50	2,19	2,47	3,29	5,77
< 5.0 km	0,026	0,82	1,95	3,89	4,74	6,09	10,82
>= 5,0 km or CAVOK	0	0	0,13	1,92	4,62	84,55	89,18
Total	0,026	0,82	2,08	5,81	9,36	90,64	100

Table 34

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

No. Obs = 39.114	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,049	2,06	2,44	2,49	2,52	1,41	3,93
<1 km	0,051	2,19	2,84	2,92	2,97	1,73	4,69
<1.5 km	0,051	2,24	3,33	3,54	3,60	2,27	5,88
<3.0 km	0,051	2,27	5,62	8,68	9,51	4,93	14,44
< 5.0 km	0,051	2,27	6,74	15,38	18,49	10,12	28,61
>= 5,0 km or CAVOK	0	0	0,22	3,88	9,34	62,04	71,39
Total	0,051	2,27	6,95	19,26	27,83	72,17	100

Table 35

Annual: EKKA – Frequencies (%) Visibility - Ceiling

No. Obs = 155.162	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,026	1,77	2,13	2,19	2,21	0,96	3,17
<1 km	0,027	1,87	2,45	2,55	2,58	1,18	3,76
<1.5 km	0,027	1,92	2,96	3,19	3,25	1,52	4,77
<3.0 km	0,027	1,95	4,62	6,74	7,28	3,40	10,68
< 5.0 km	0,027	1,95	5,54	11,31	13,24	7,12	20,36
>= 5,0 km or CAVOK	0	0	0,23	3,72	8,25	71,39	79,64
Total	0,027	1,95	5,77	15,03	21,48	78,52	100

Table 36

Wind direction histograms

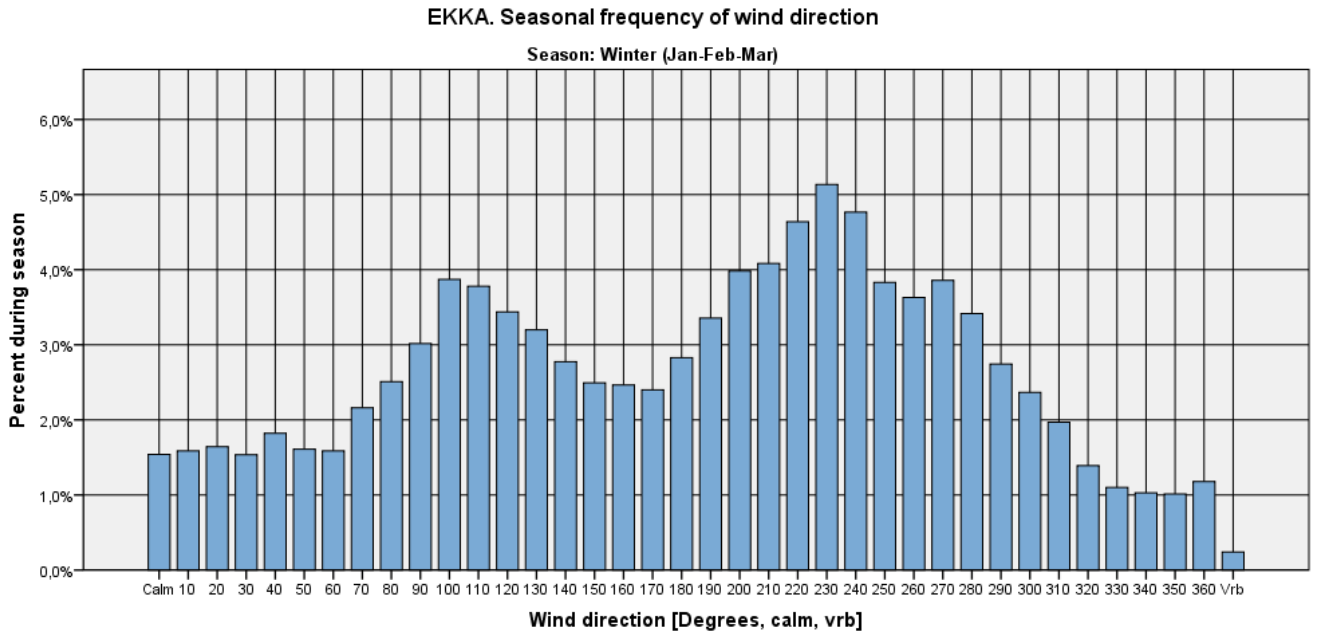


Figure 266

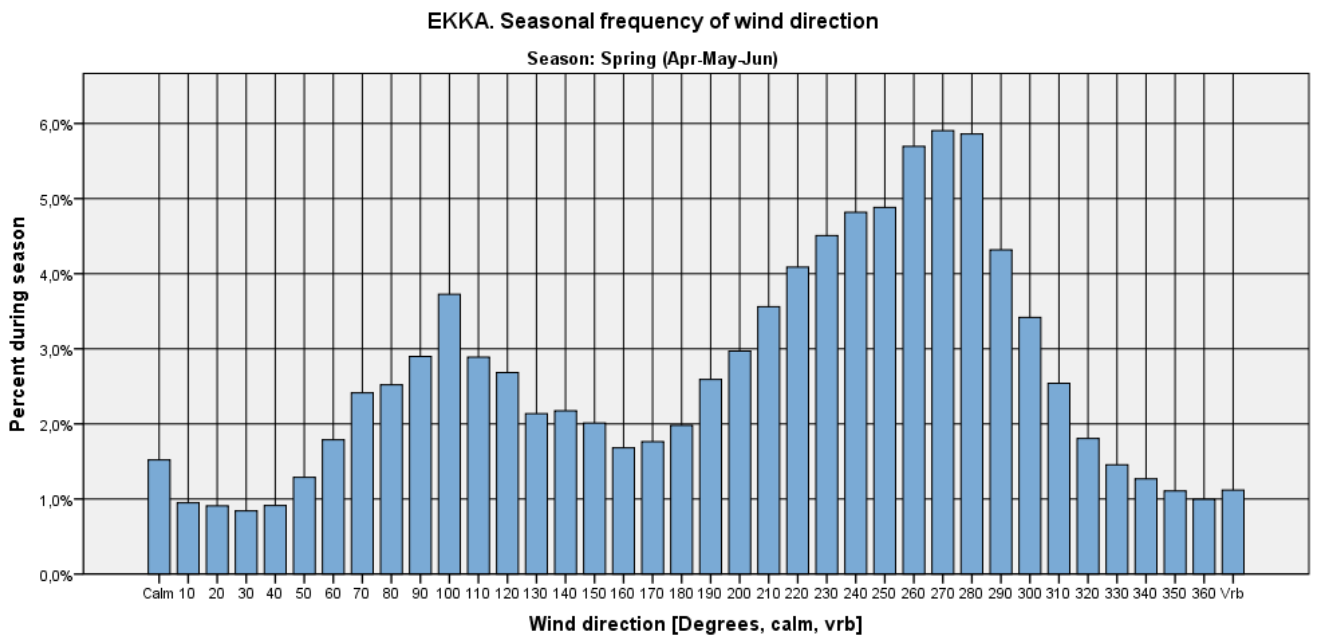


Figure 267

EKKA. Seasonal frequency of wind direction

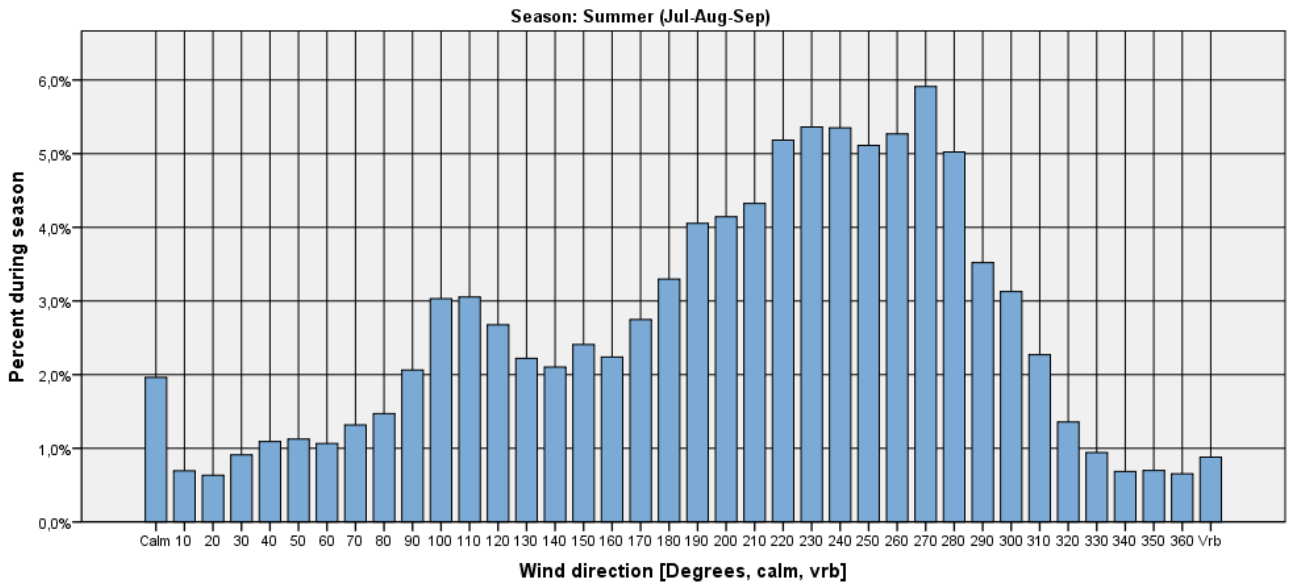


Figure 268

EKKA. Seasonal frequency of wind direction

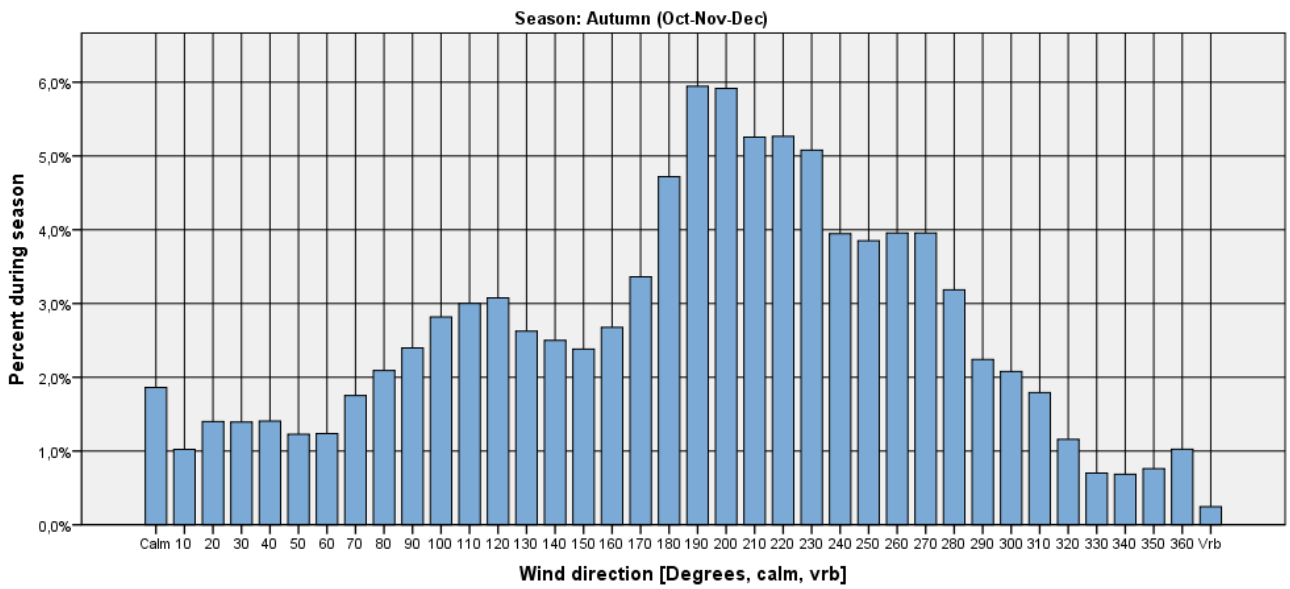


Figure 269

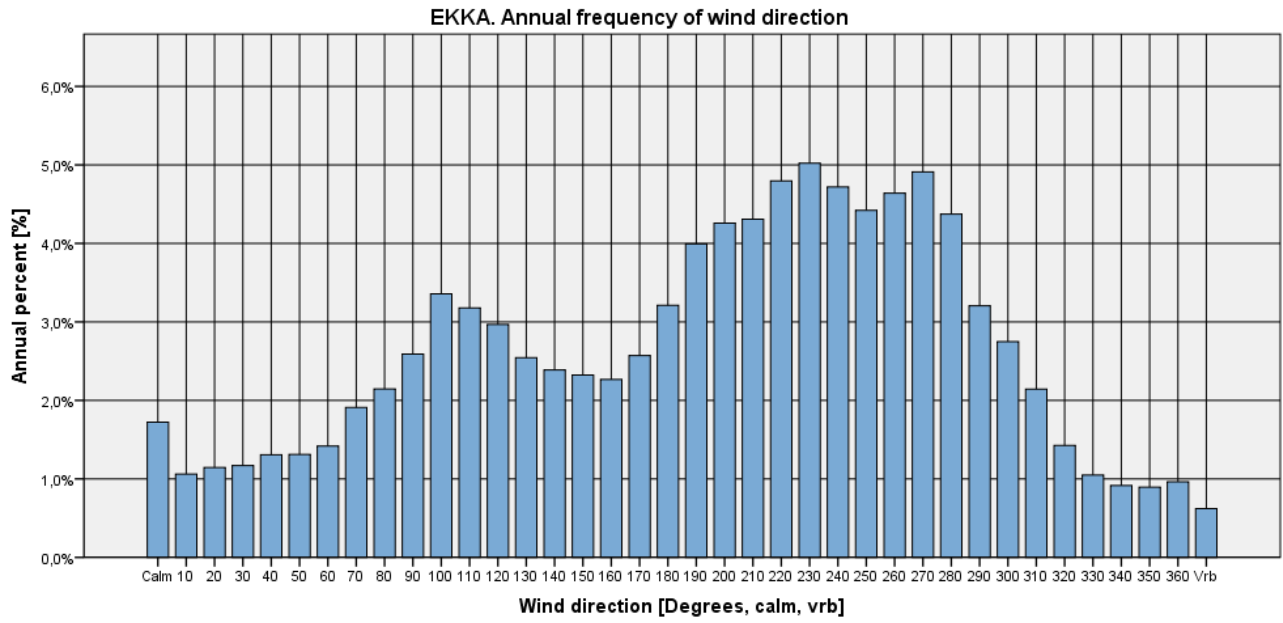


Figure 270

Visibility criteria on wind direction histograms

Visibility < 1000 m

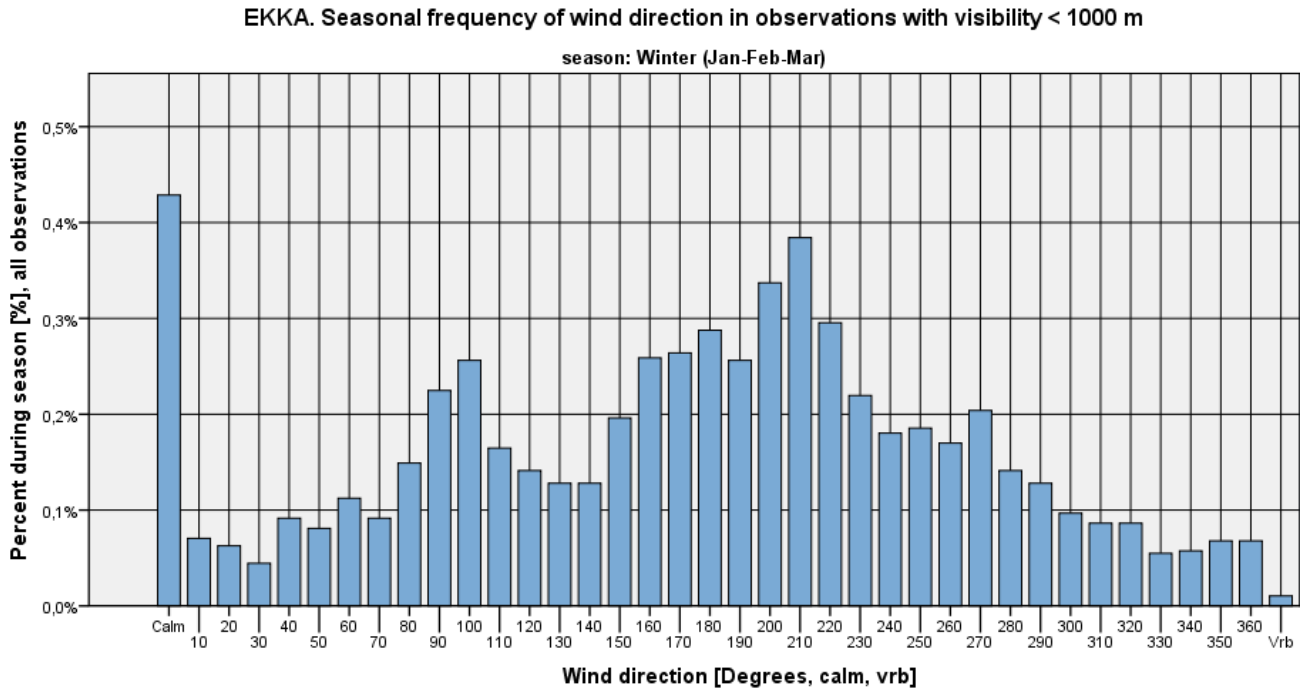


Figure 271

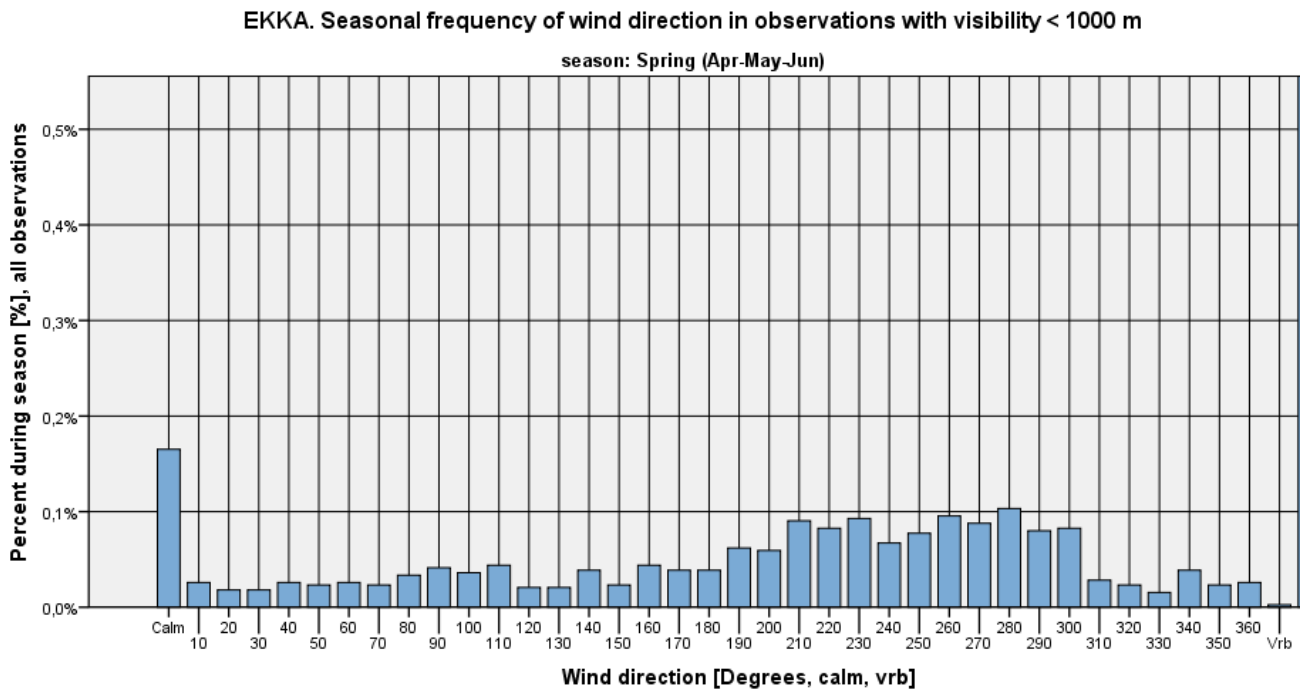


Figure 272

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

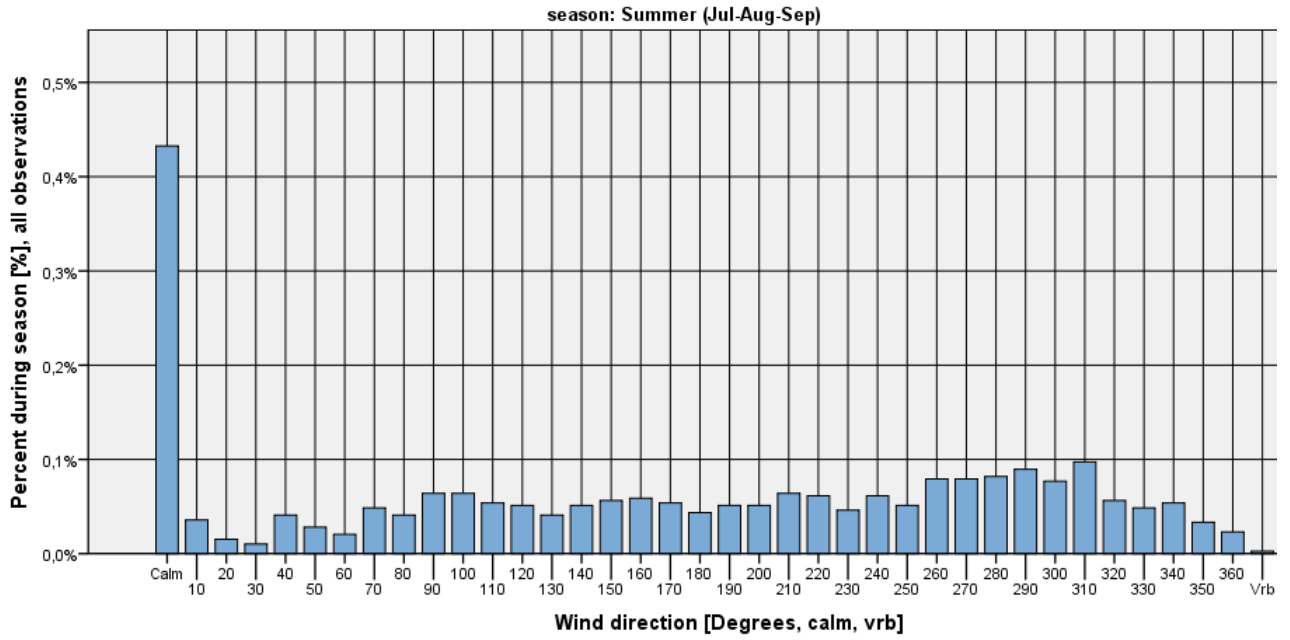


Figure 273

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

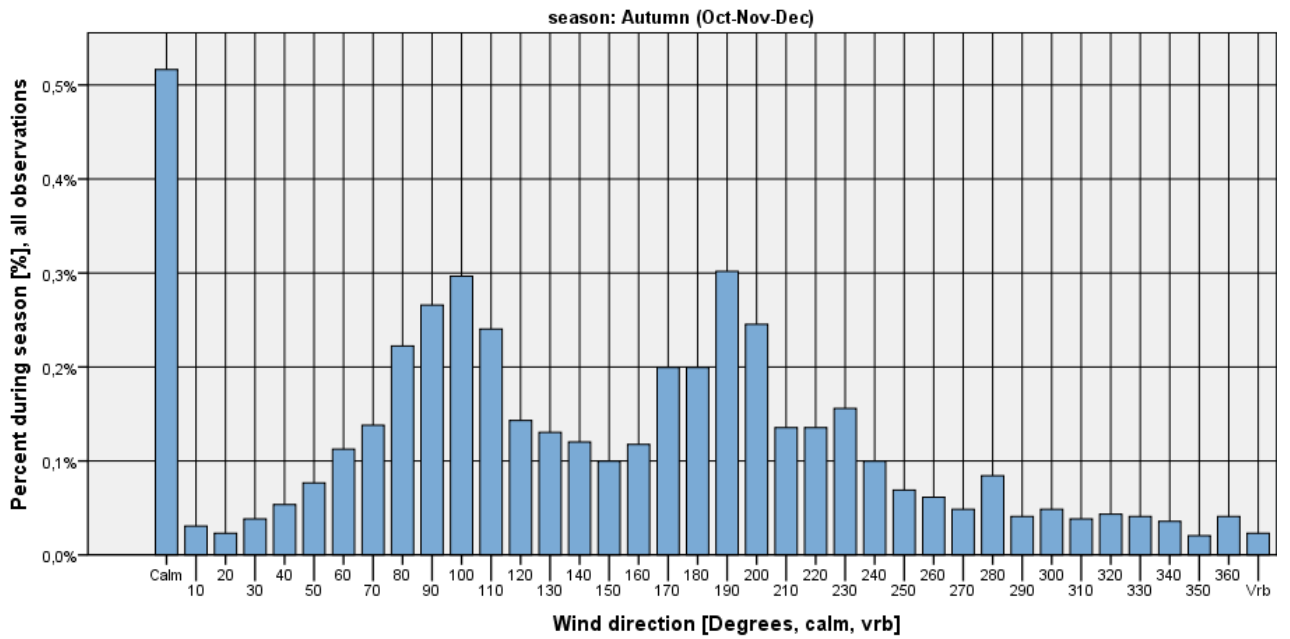


Figure 274

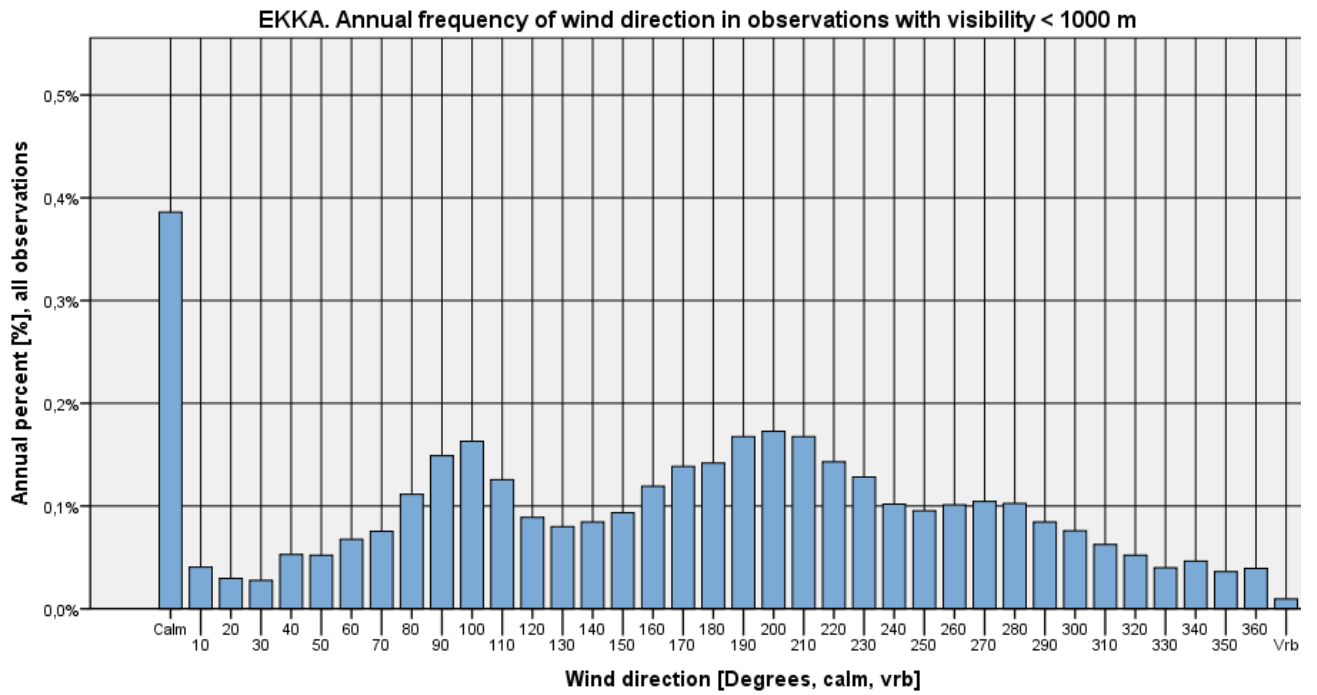


Figure 275



Visibility < 1000 m and wind speed <= 5 kts

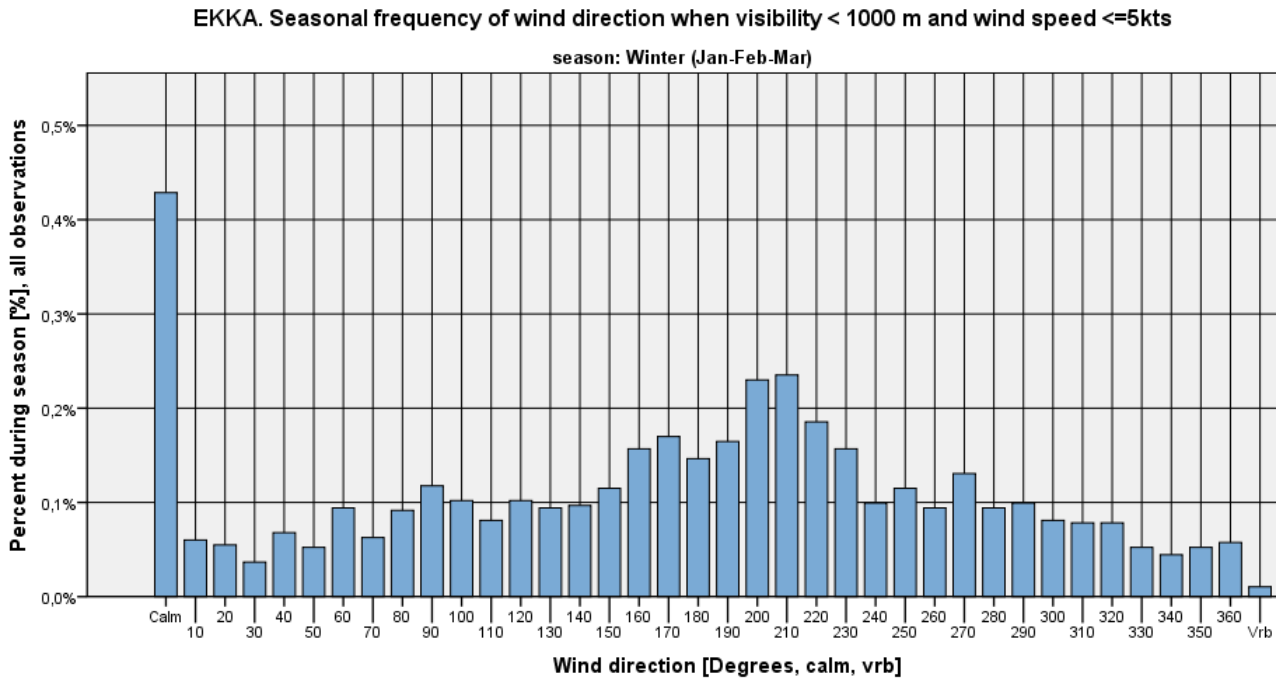


Figure 276

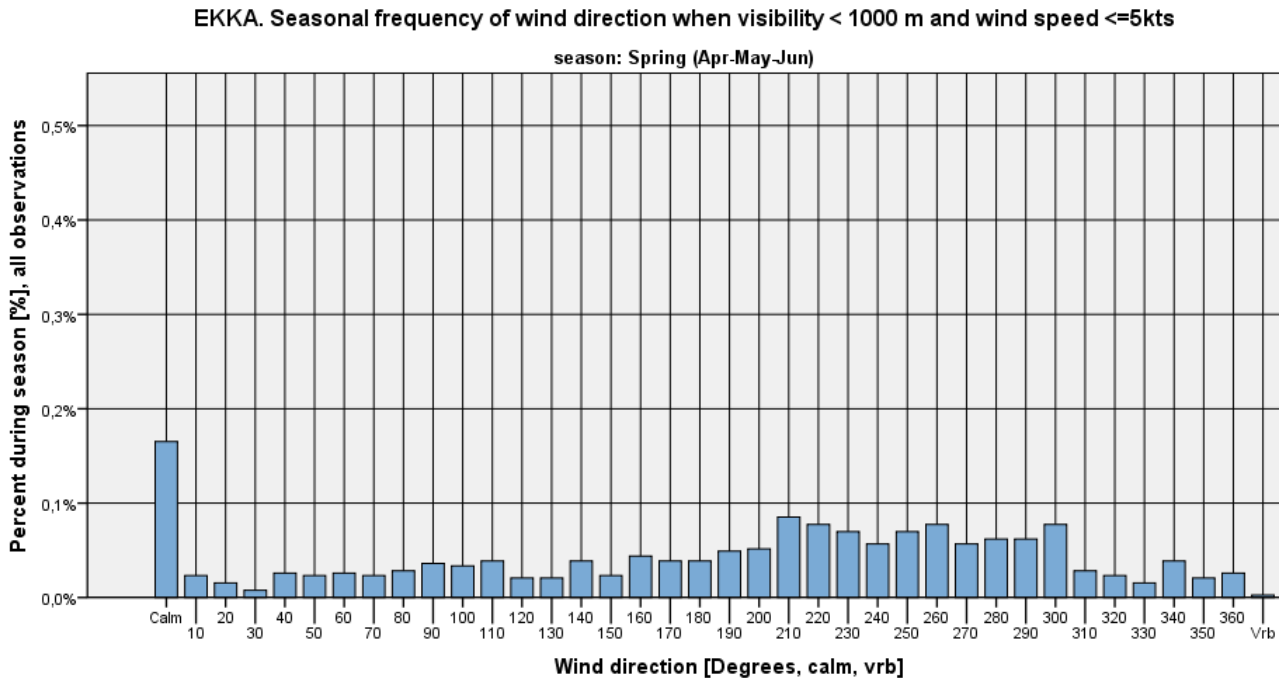


Figure 277



EKKA. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

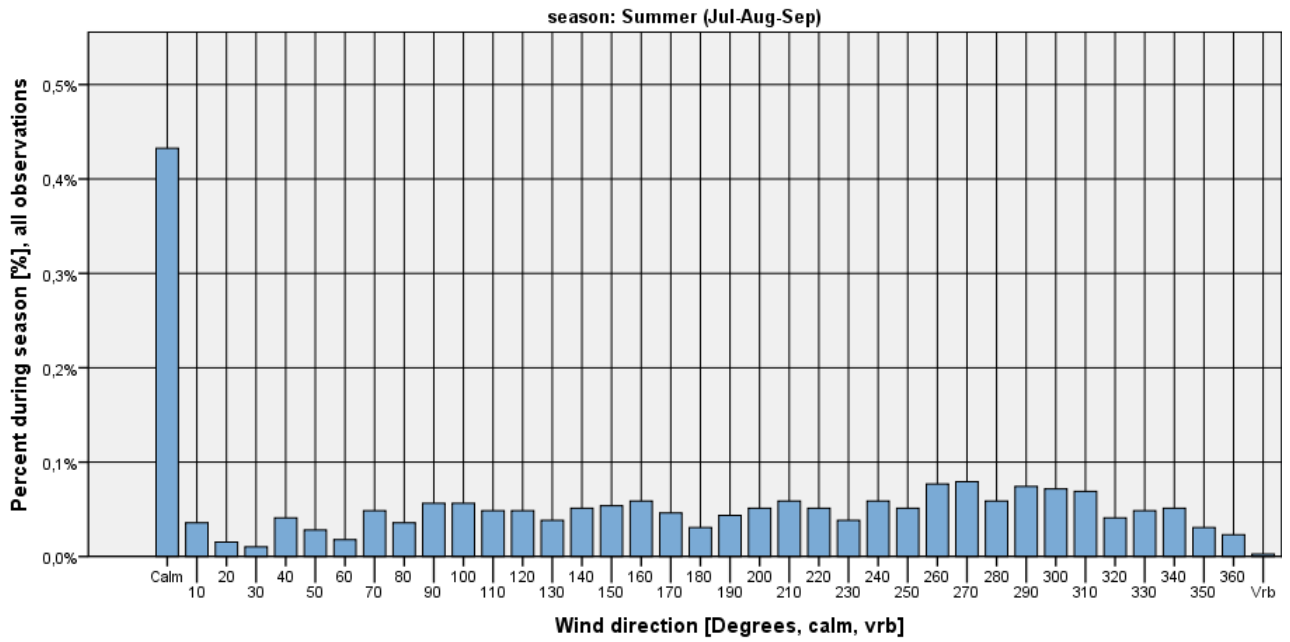


Figure 278

EKKA. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

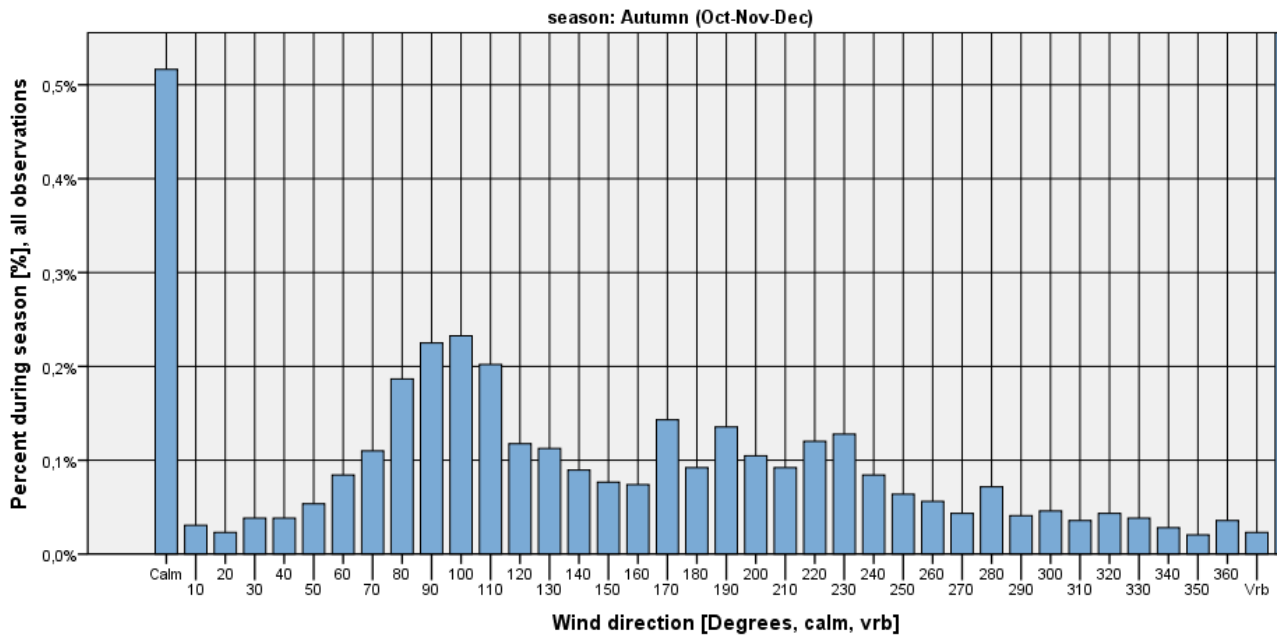


Figure 279

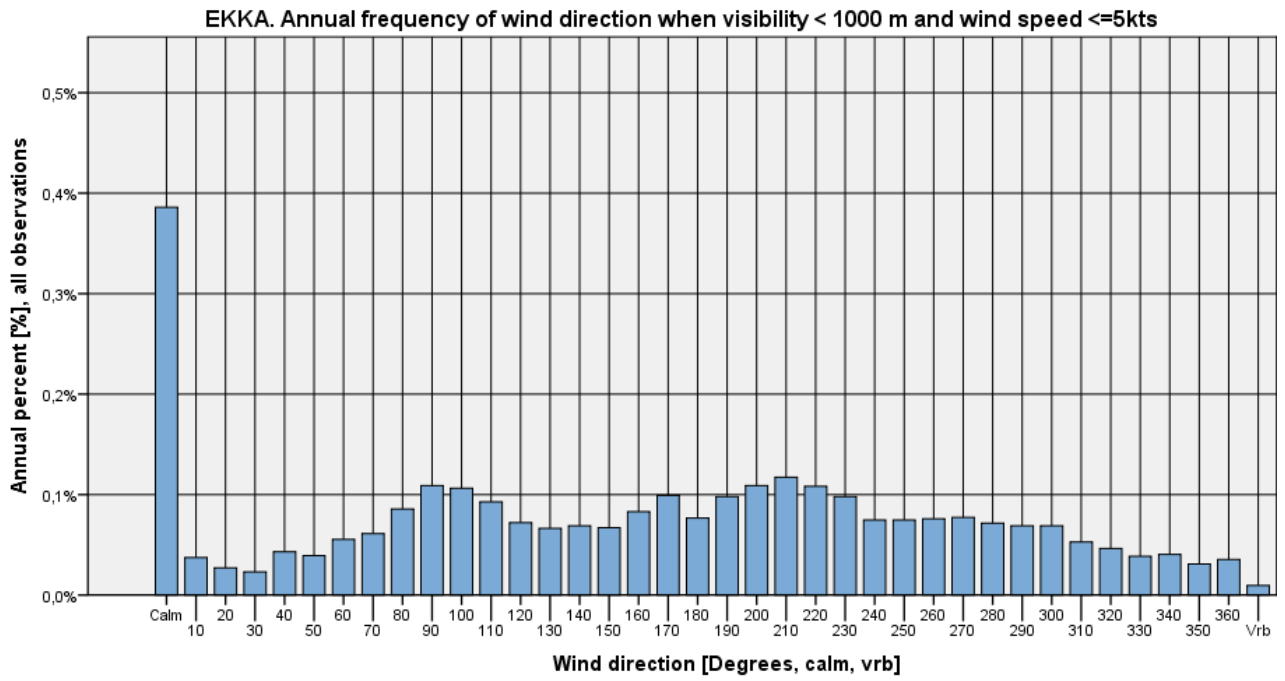


Figure 280

Visibility < 1000 m and wind speed > 5 kts

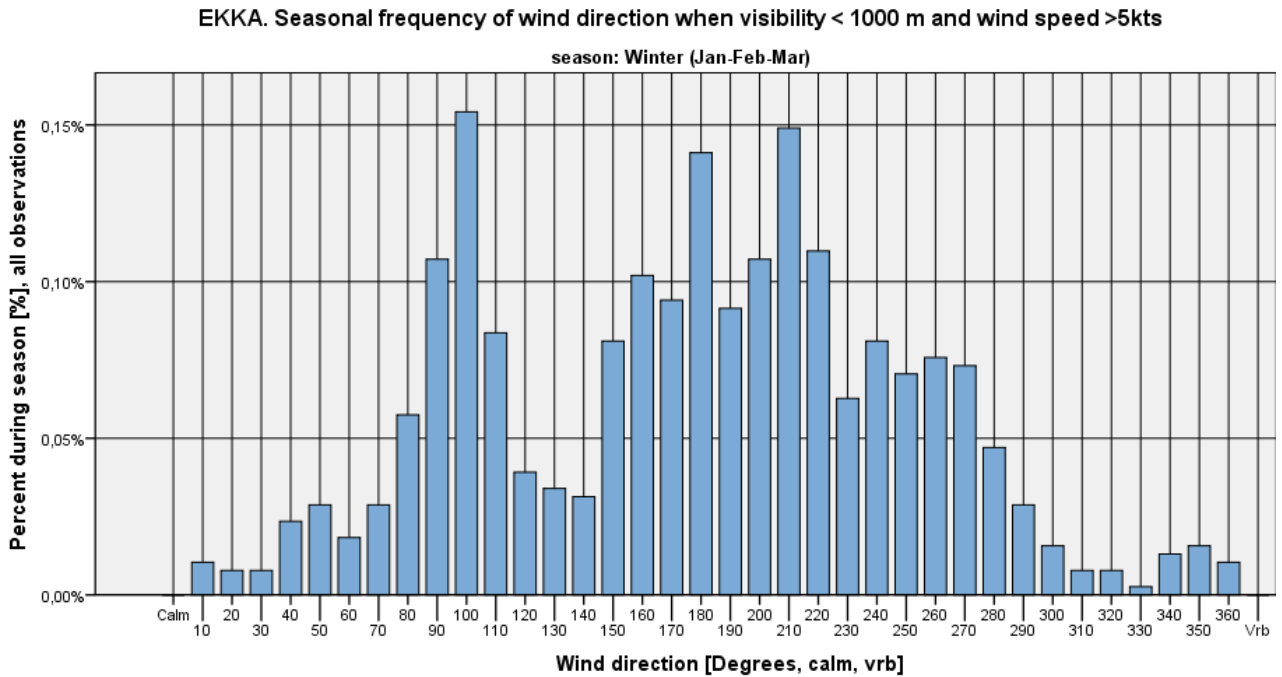


Figure 281

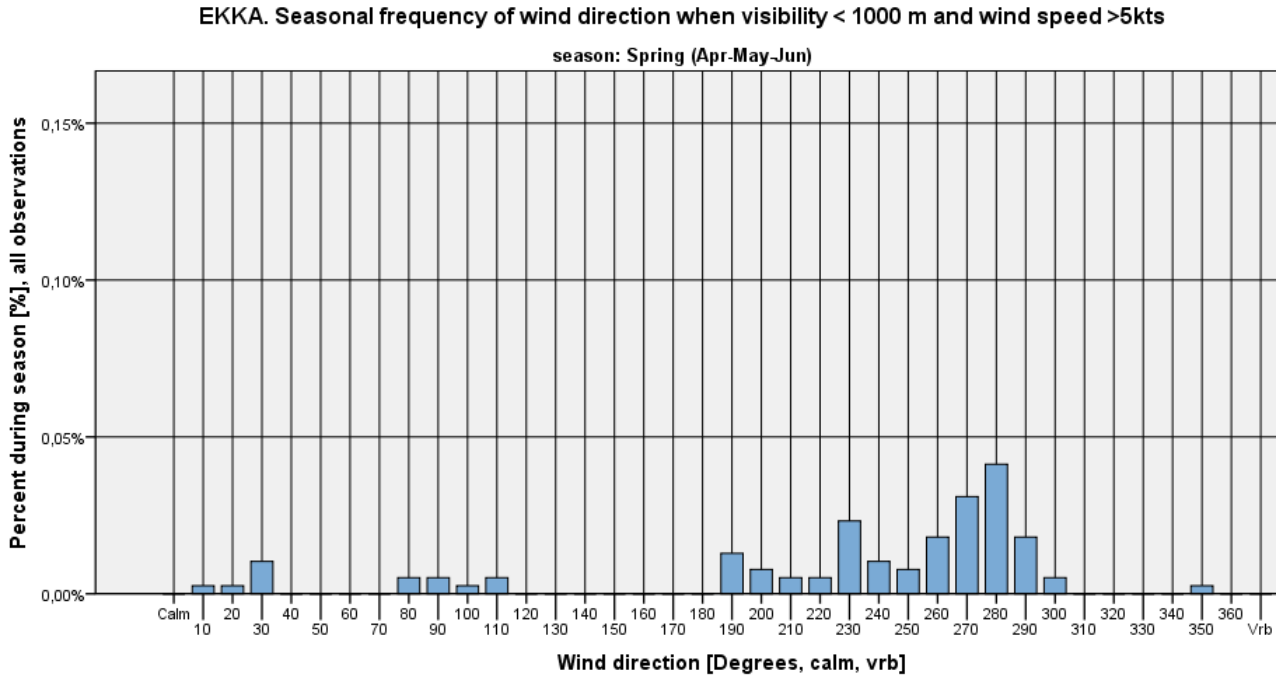


Figure 282

EKKA. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

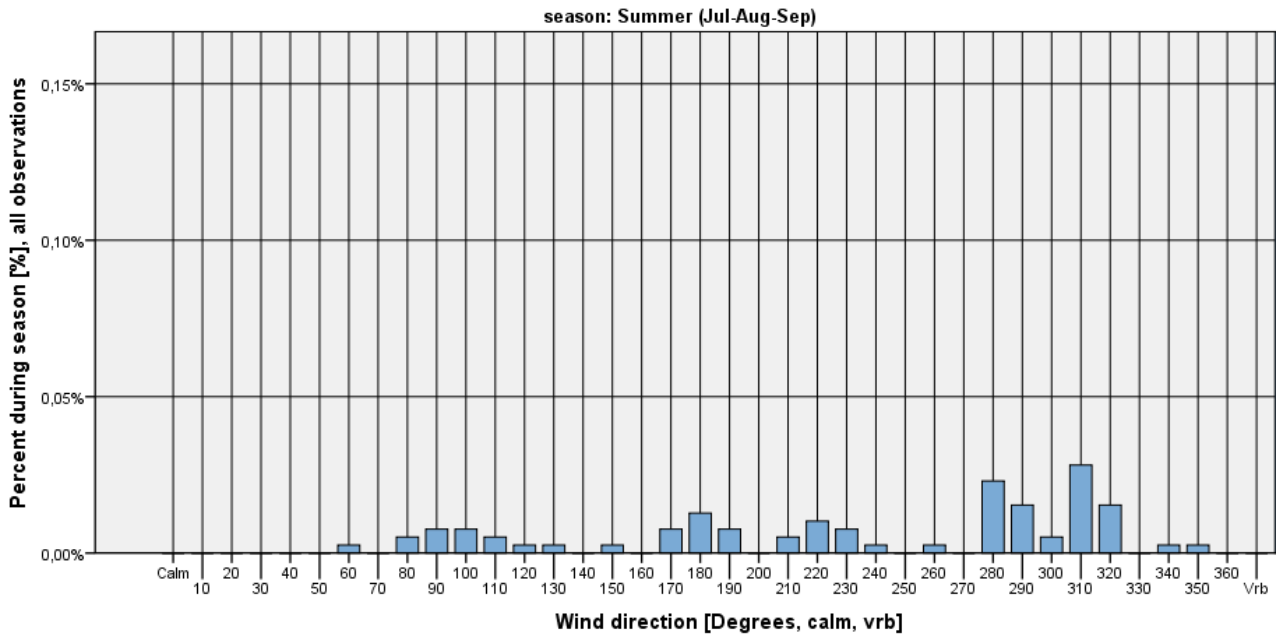


Figure 283

EKKA. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

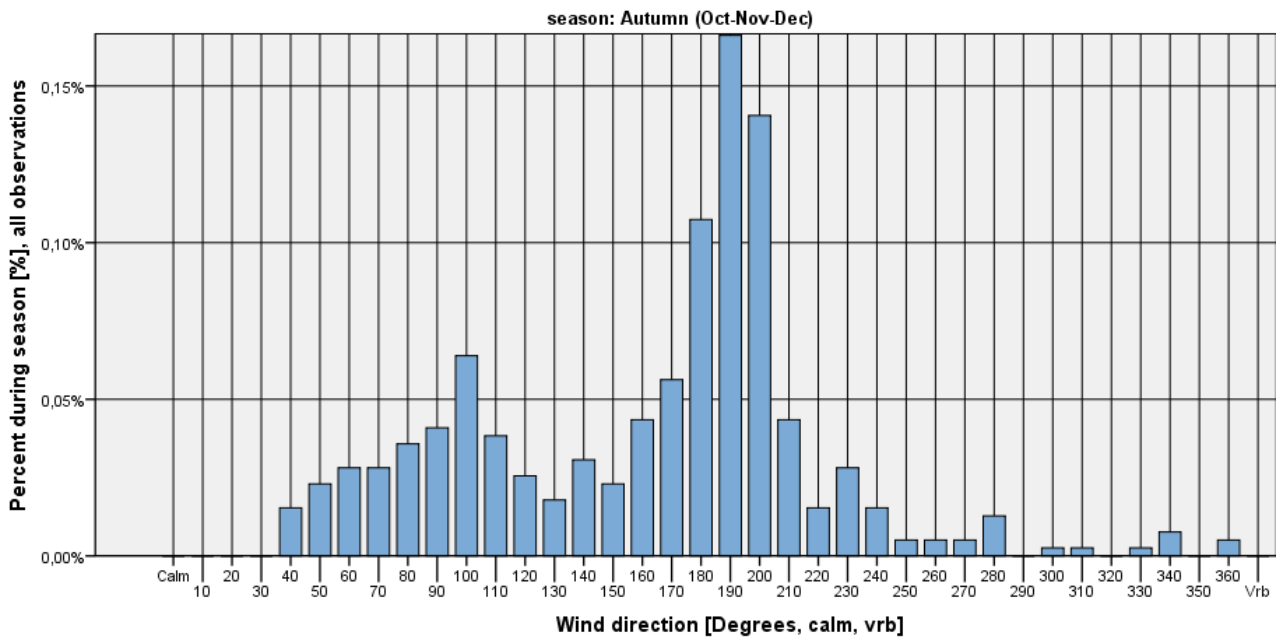


Figure 284

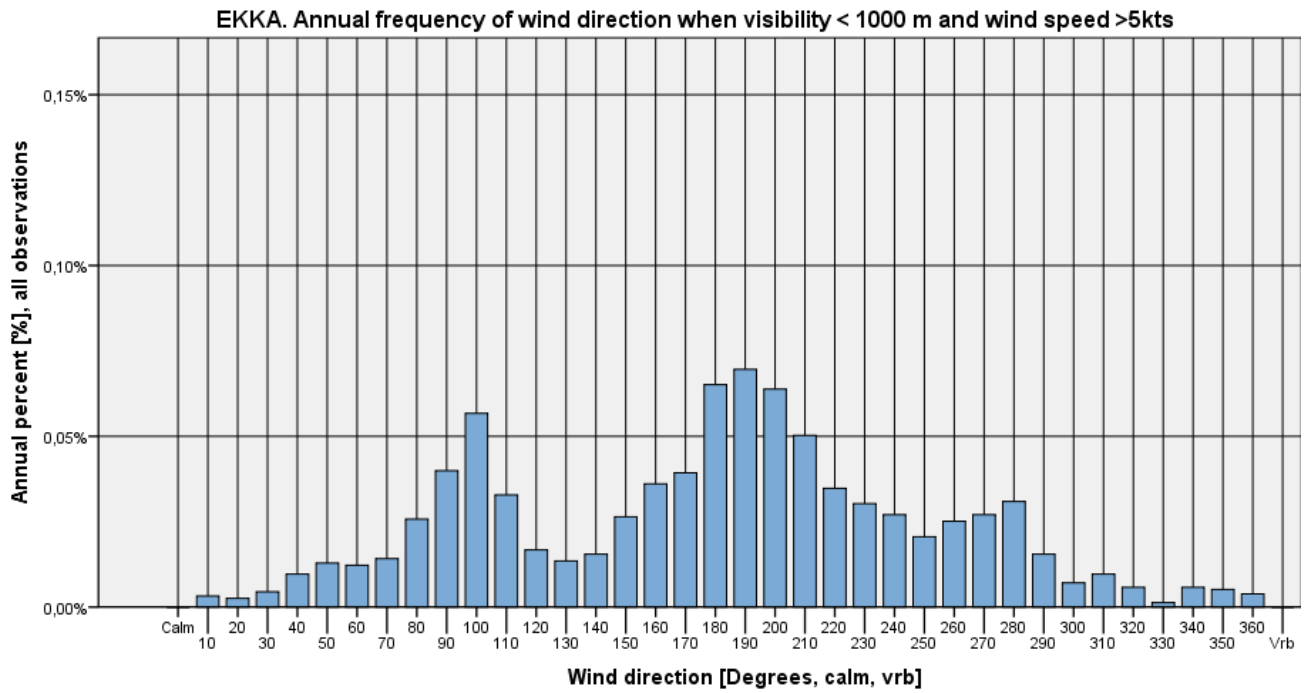


Figure 285



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

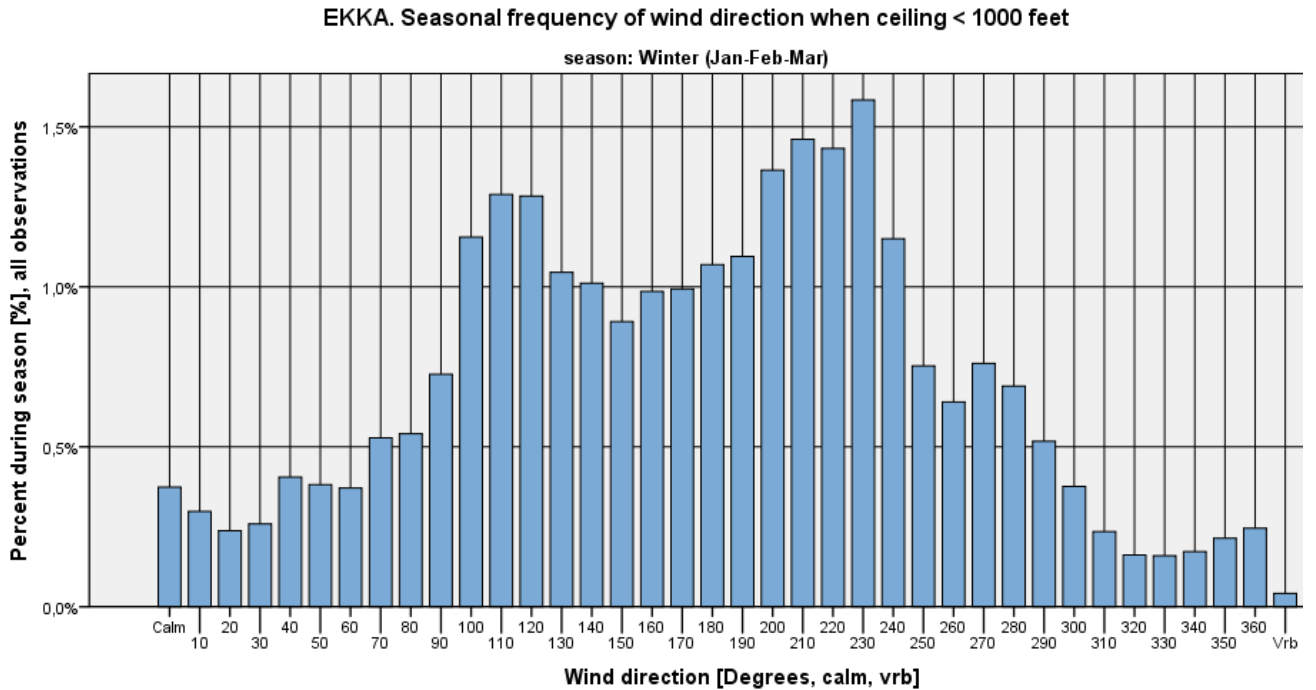


Figure 286

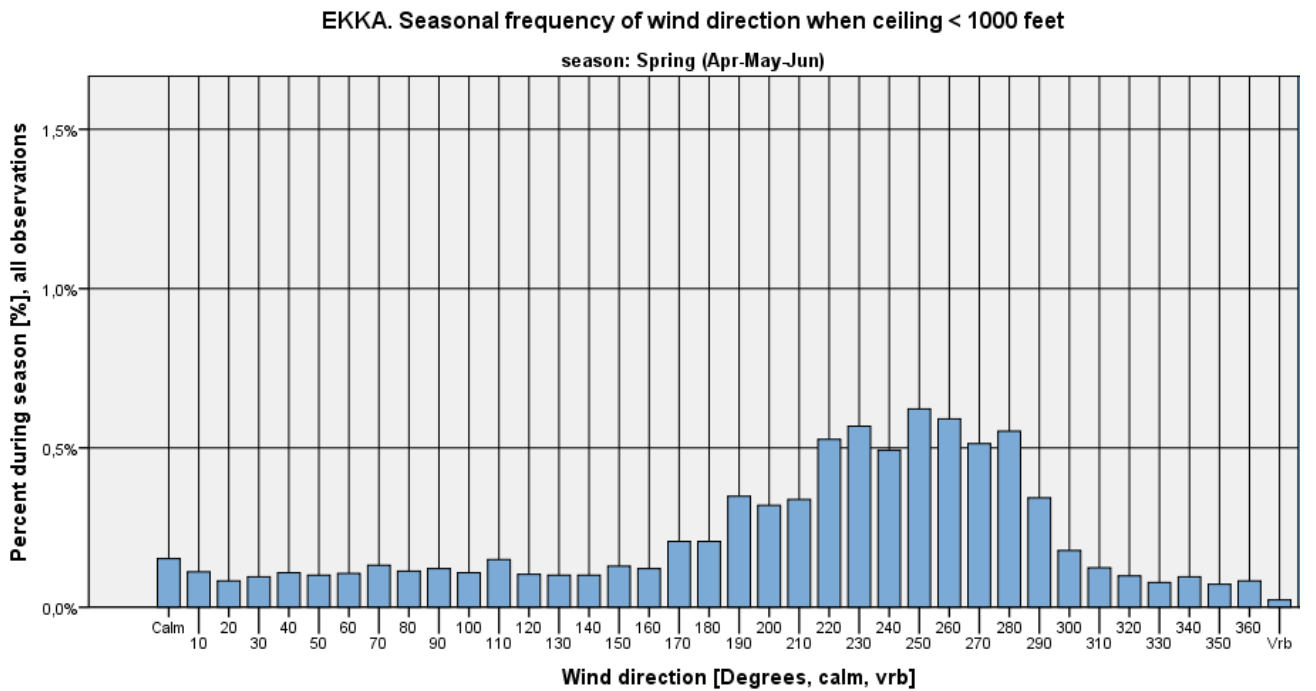


Figure 287



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

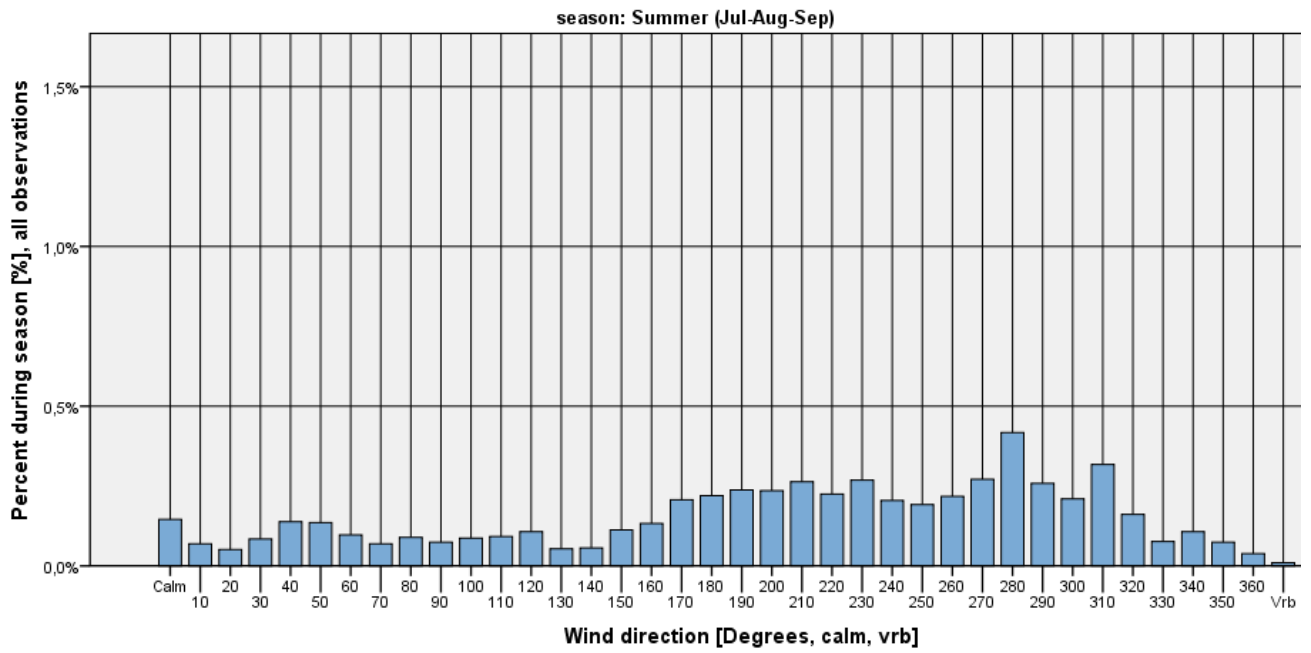


Figure 288

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

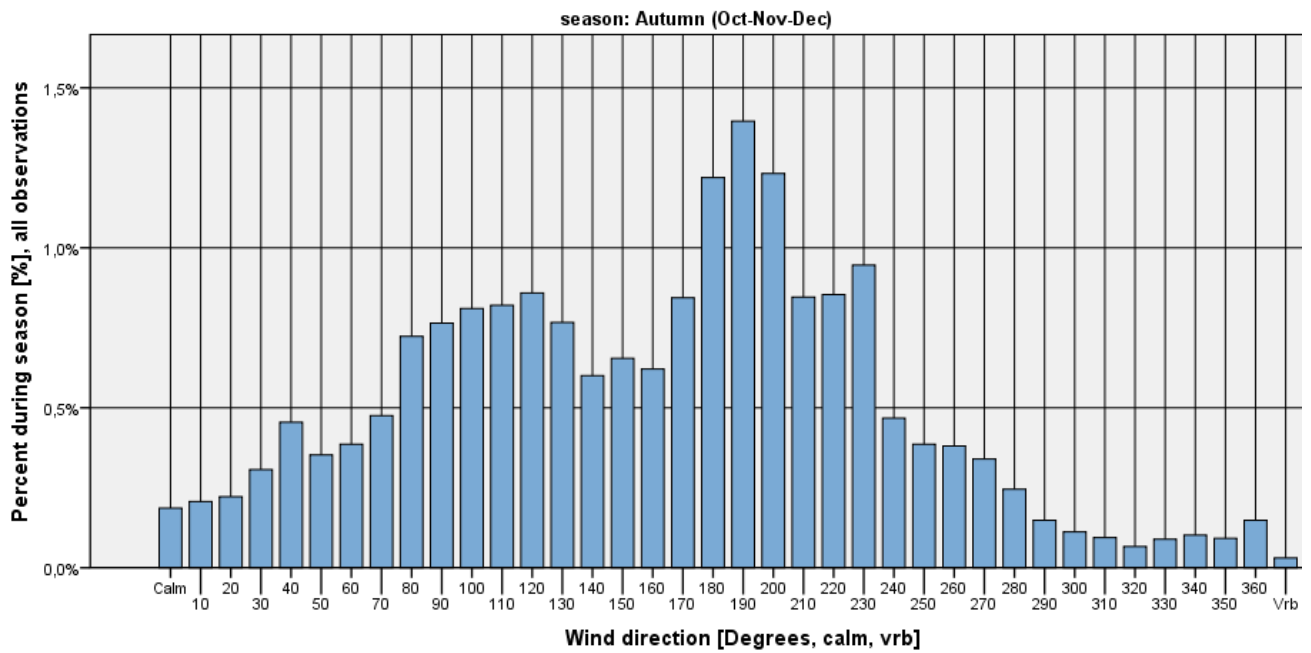


Figure 289

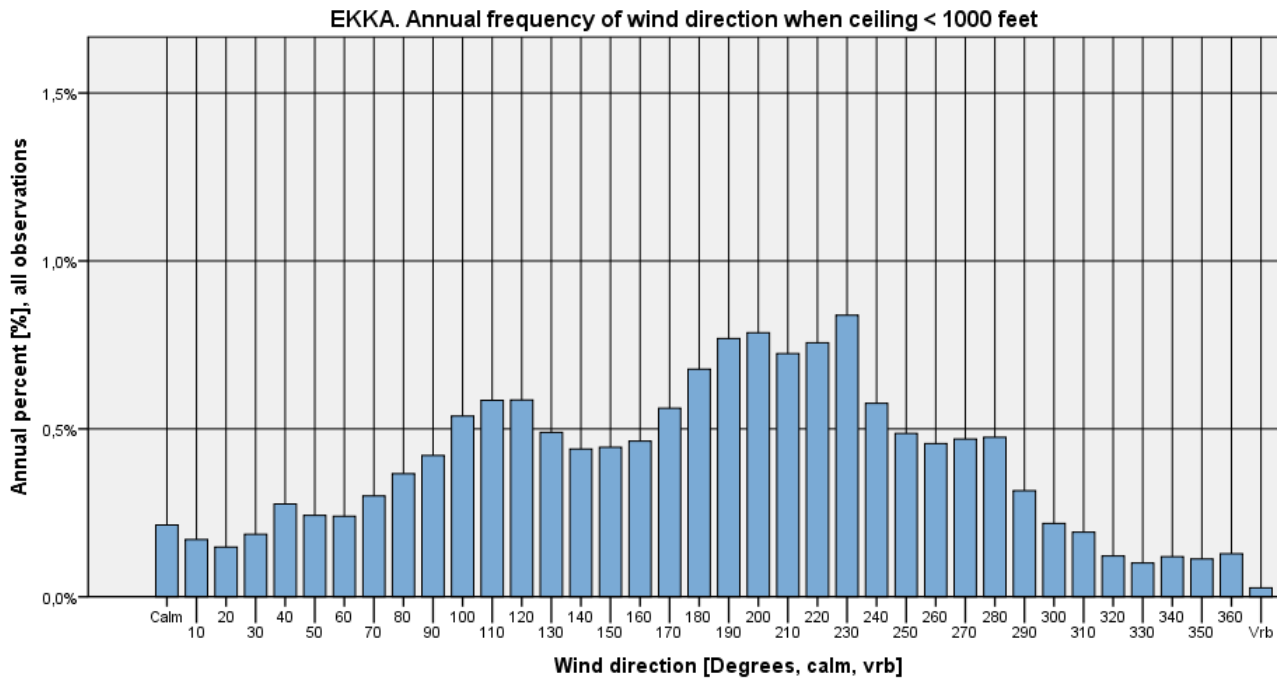


Figure 290



Ceiling < 1000 feet and wind speed ≤ 5 kts

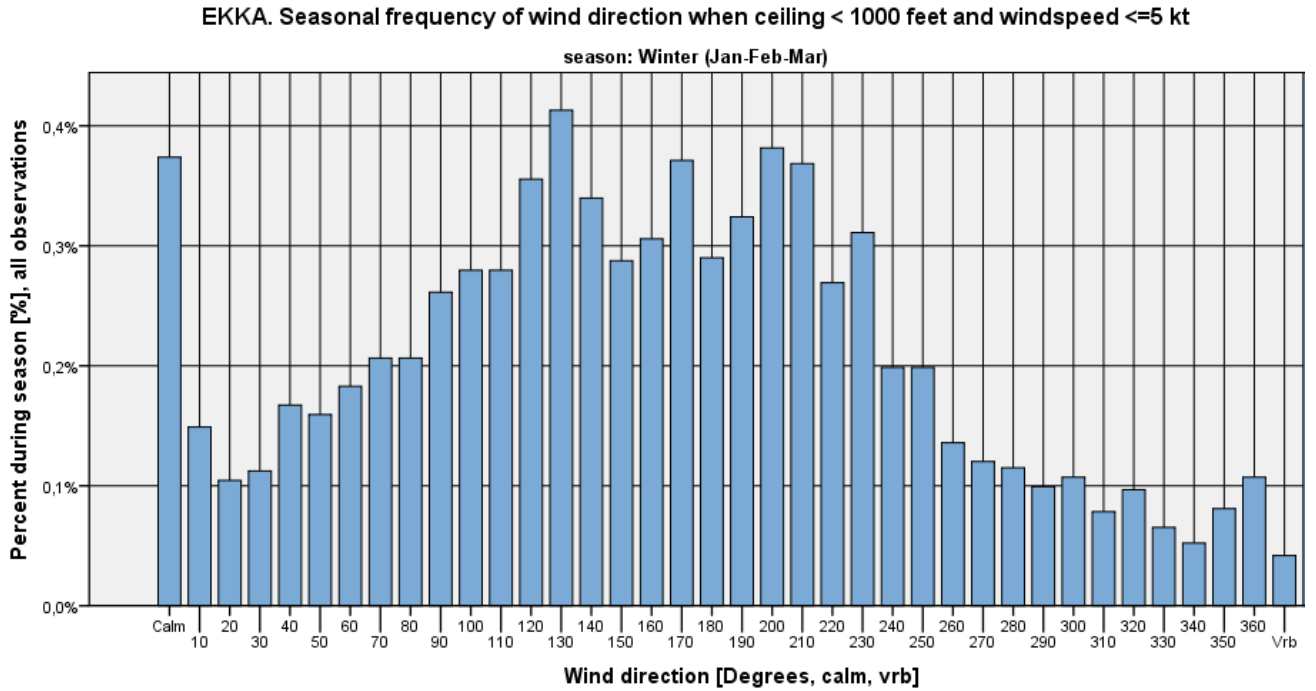


Figure 291

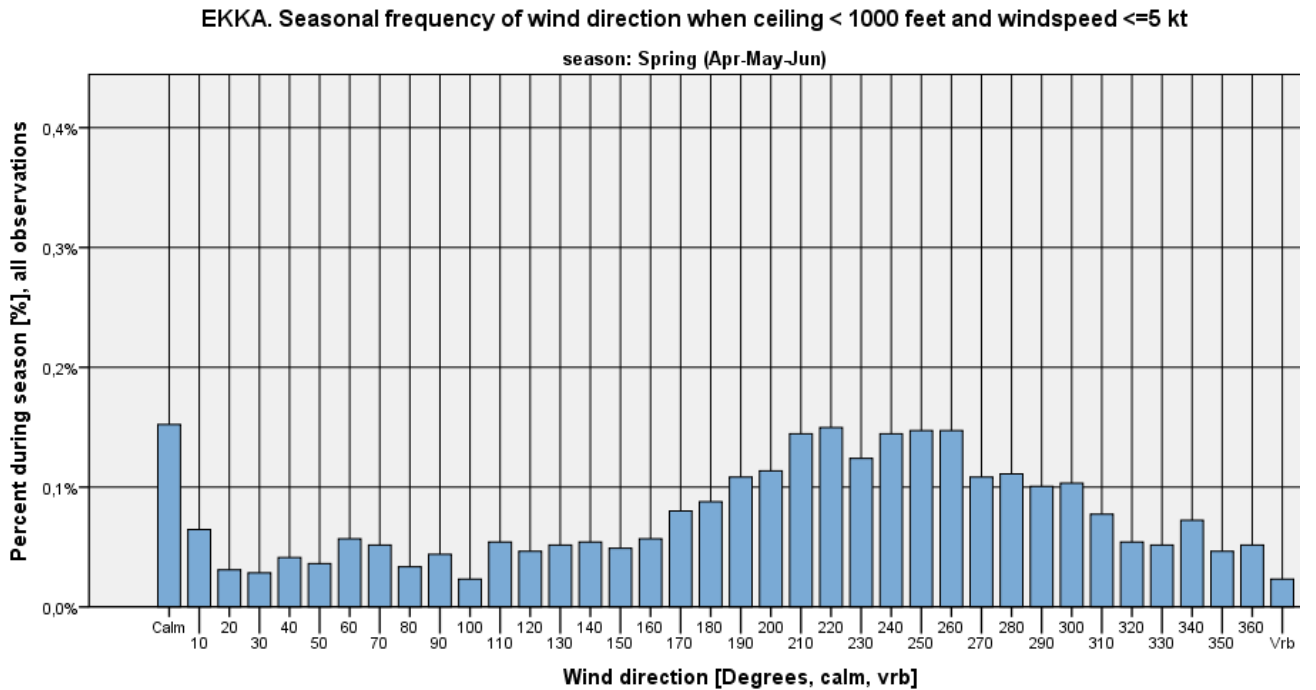


Figure 292



EKKA. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

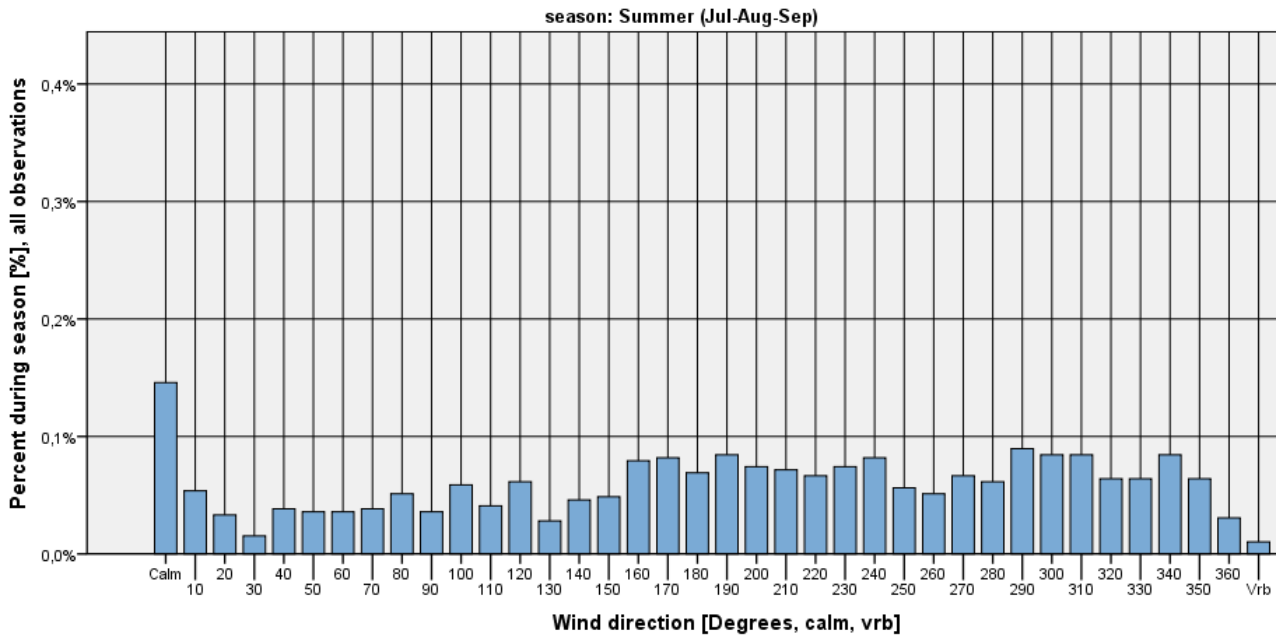


Figure 293

EKKA. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

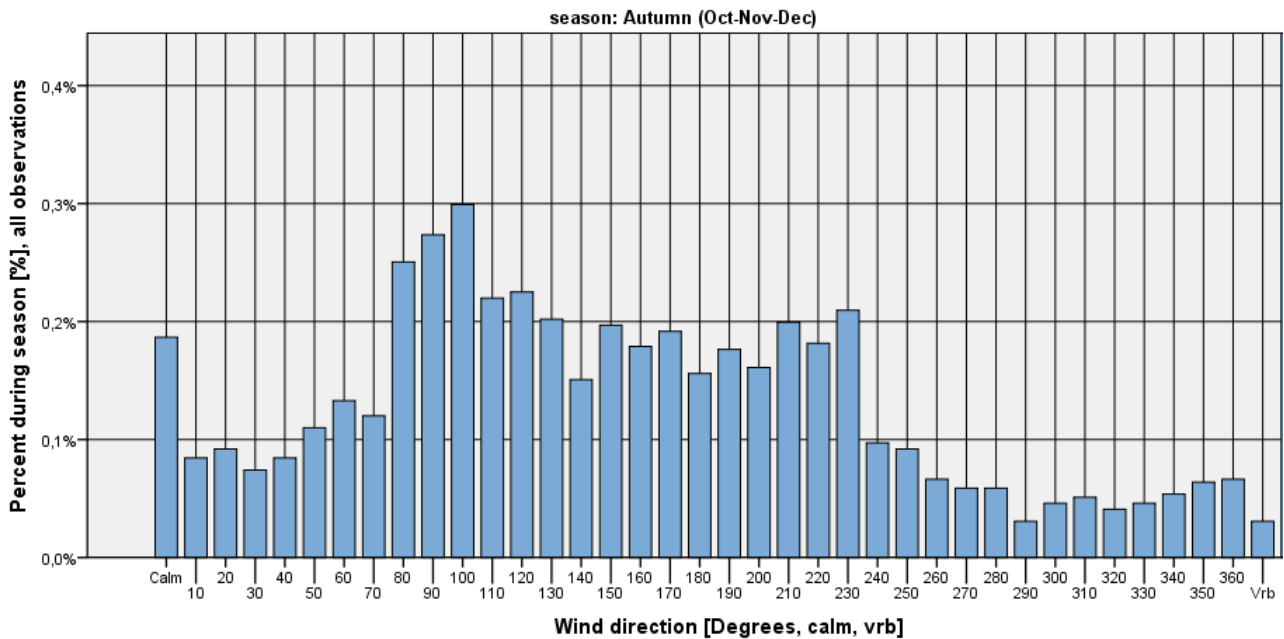


Figure 294

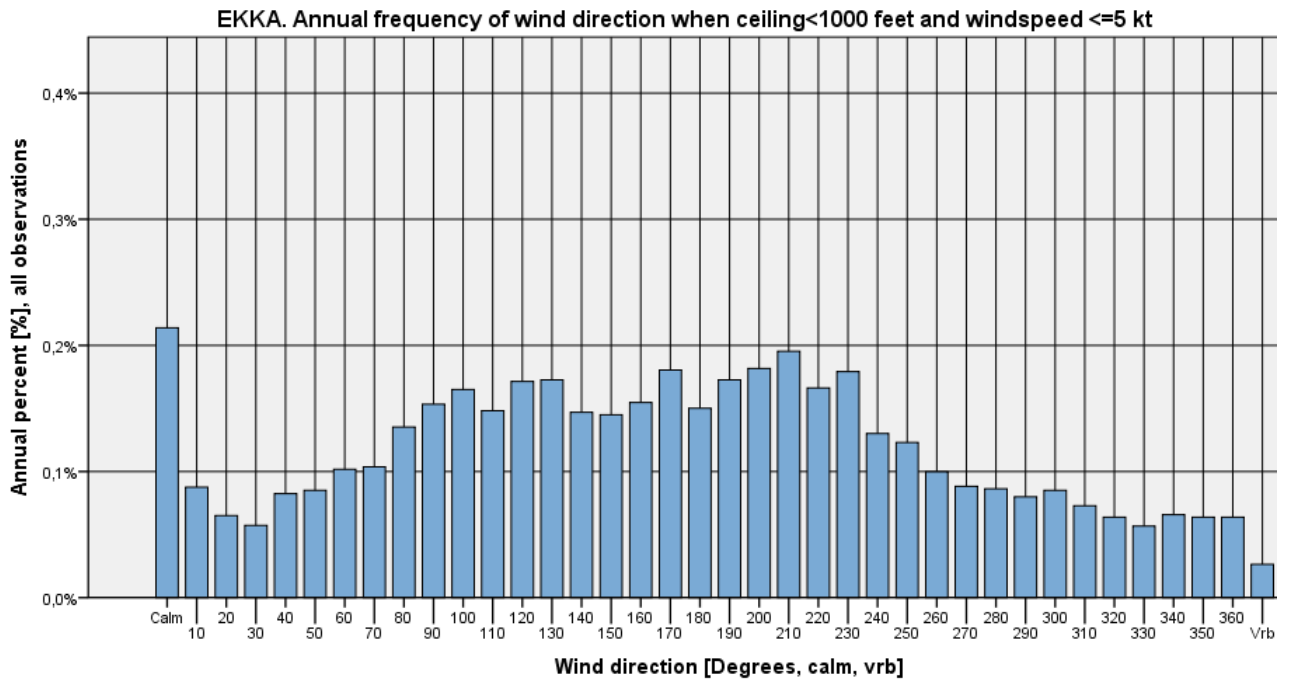


Figure 295



Ceiling < 1000 feet and wind speed > 5 kts

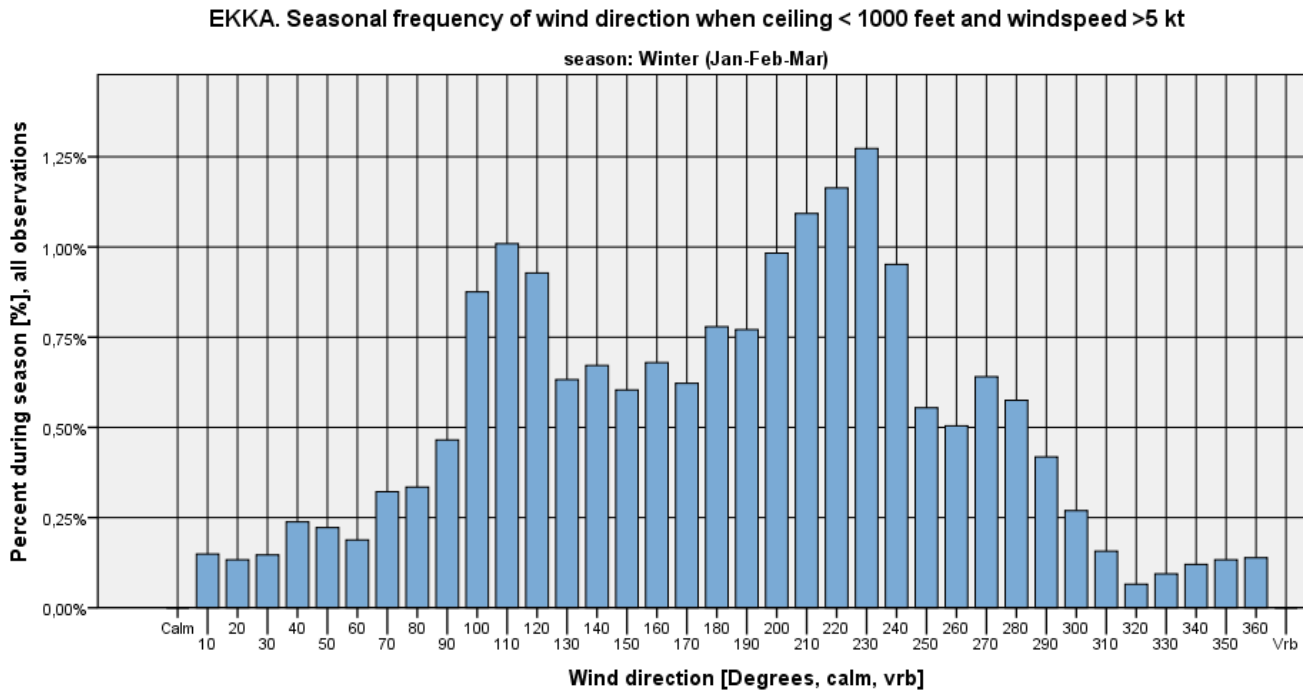


Figure 296

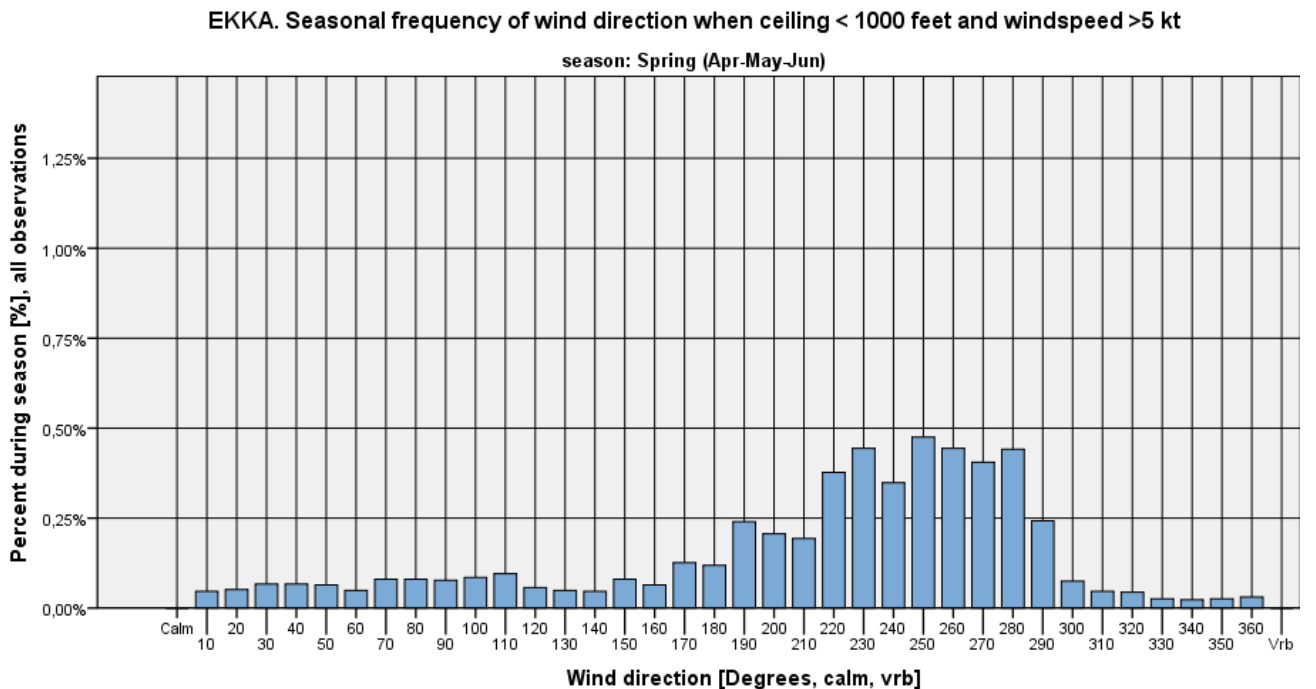


Figure 297



EKKA. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

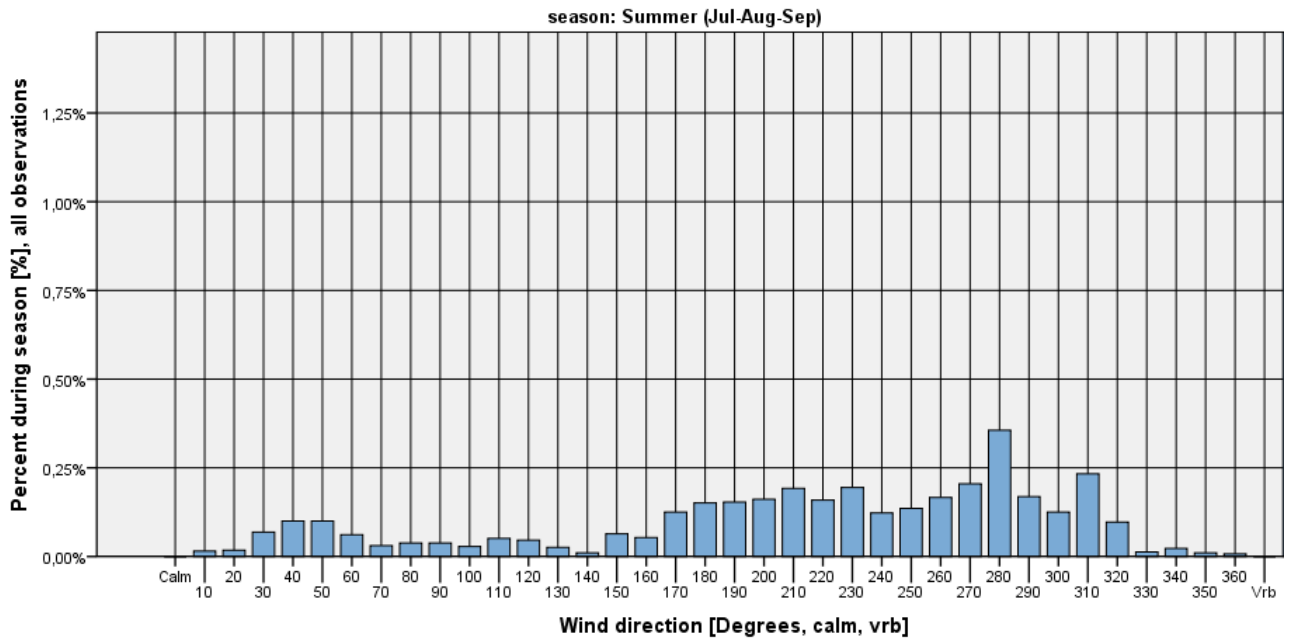


Figure 298

EKKA. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

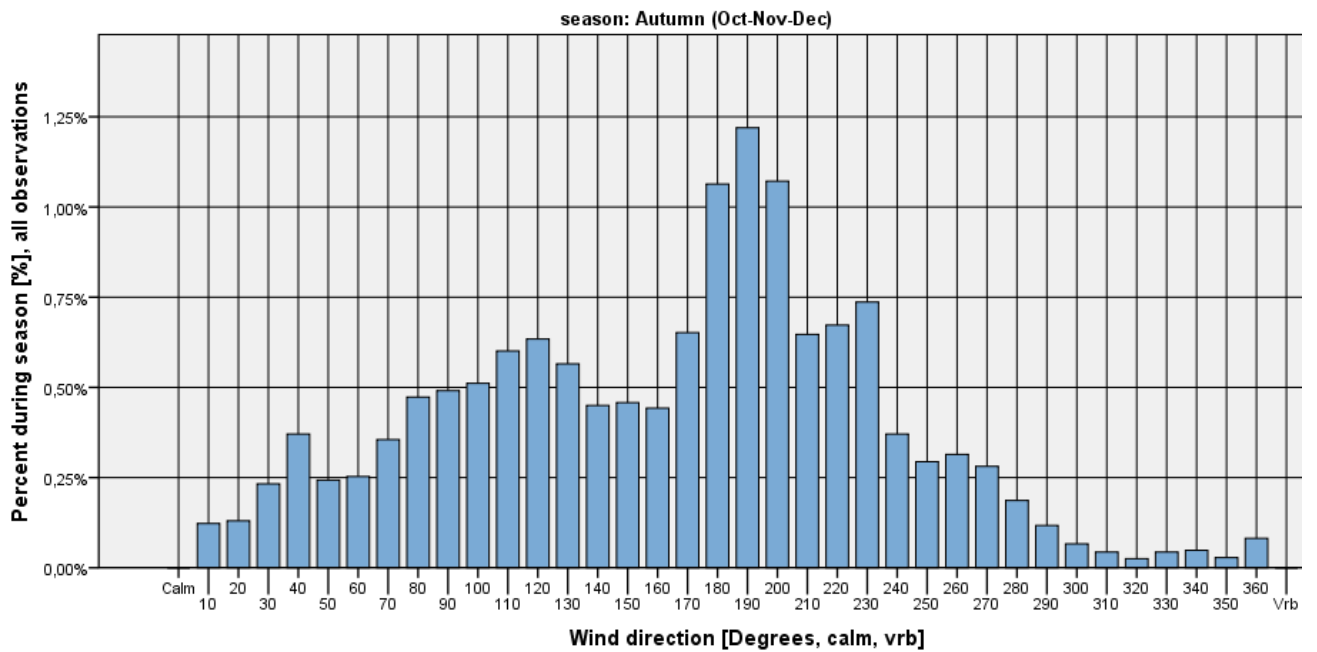


Figure 299

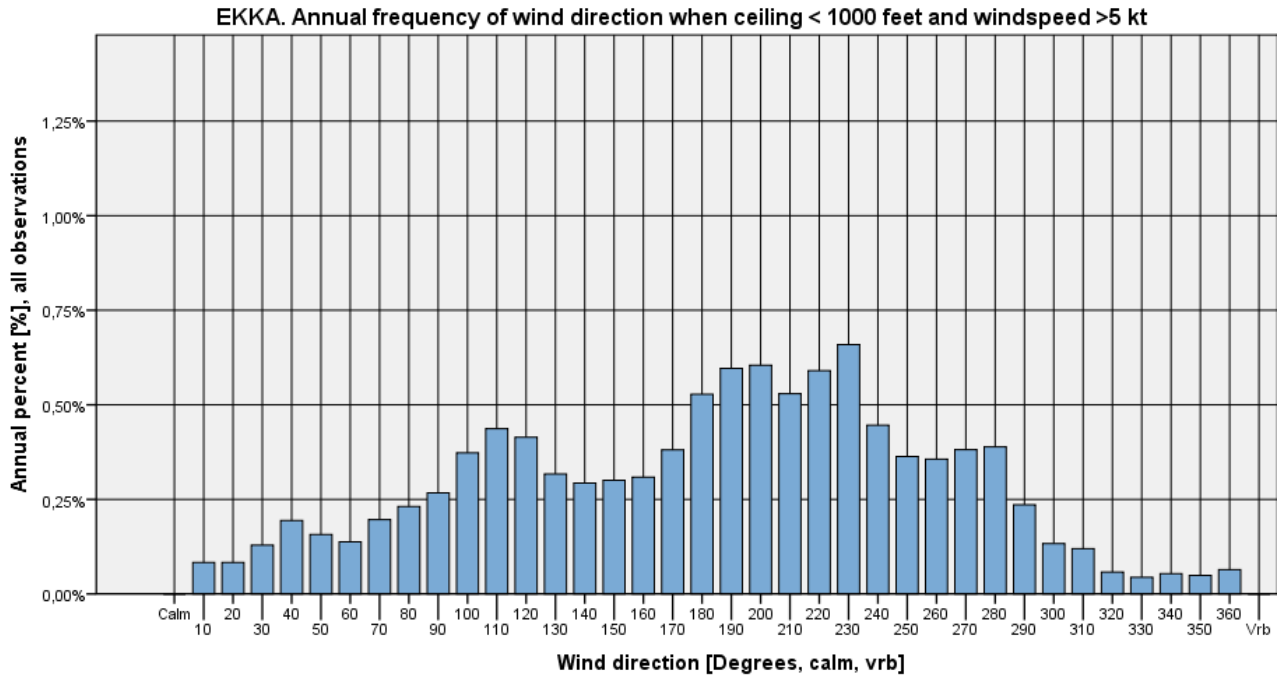


Figure 300



Ceiling < 500 feet

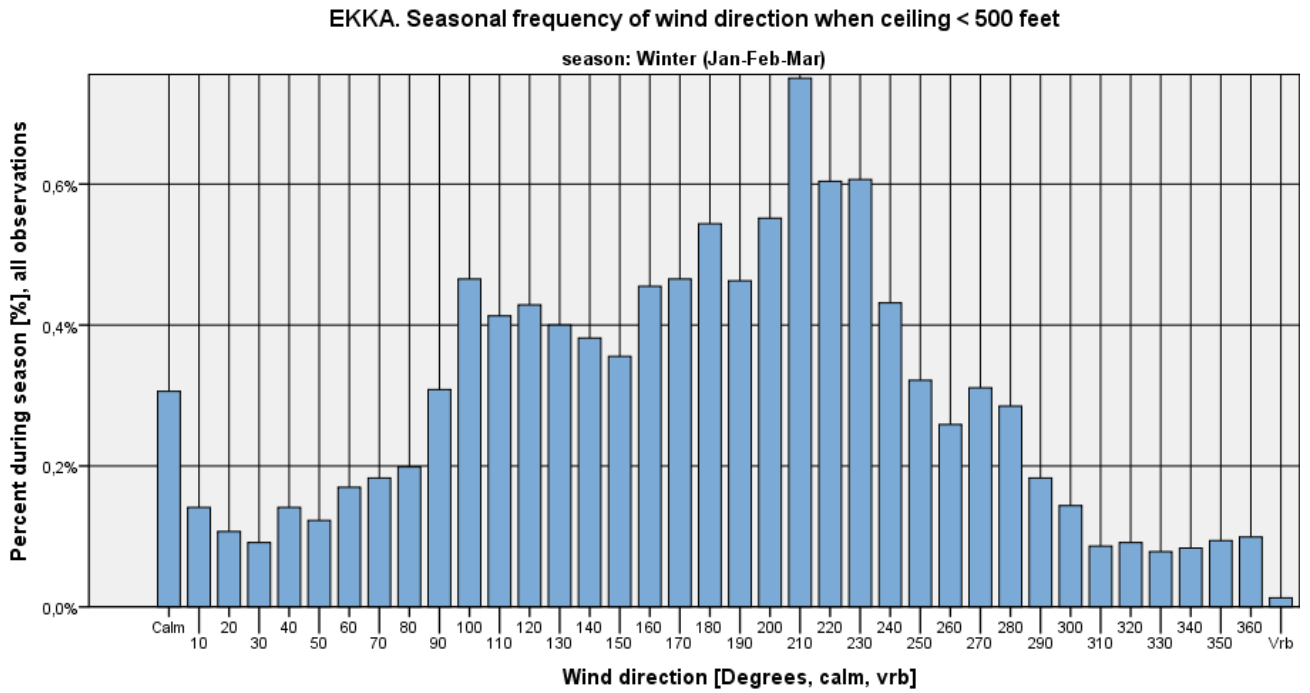


Figure 301

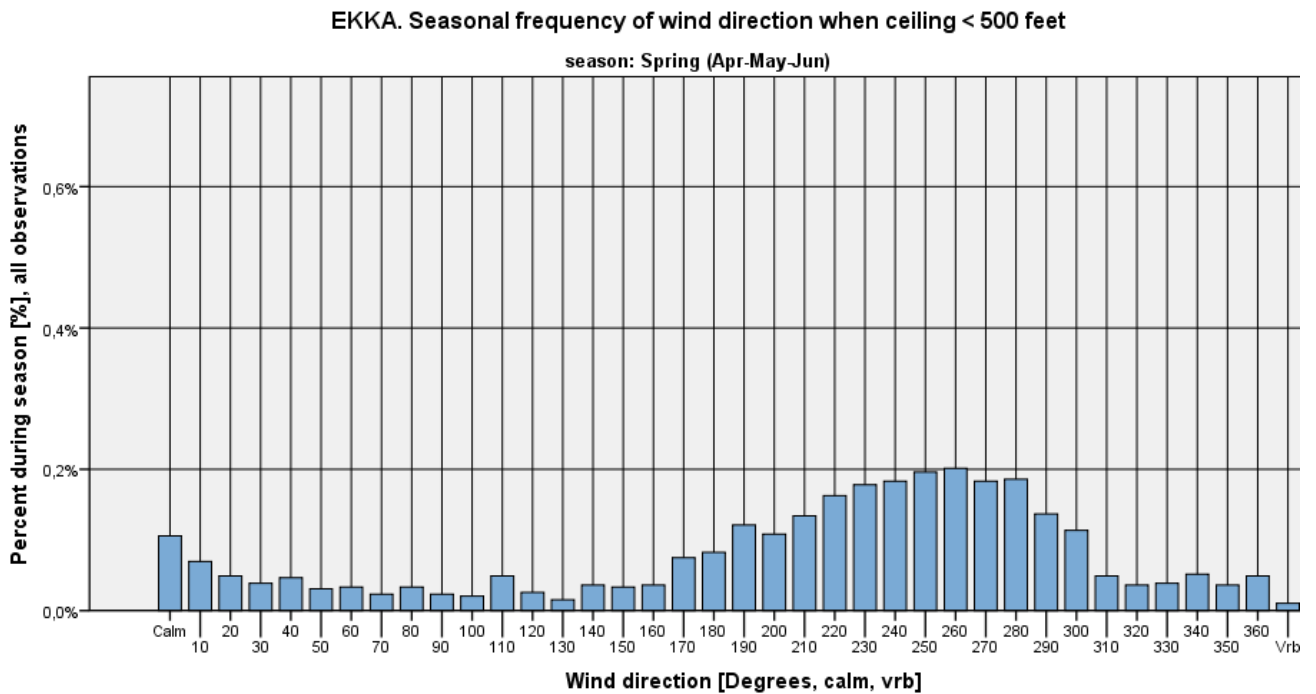


Figure 302



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

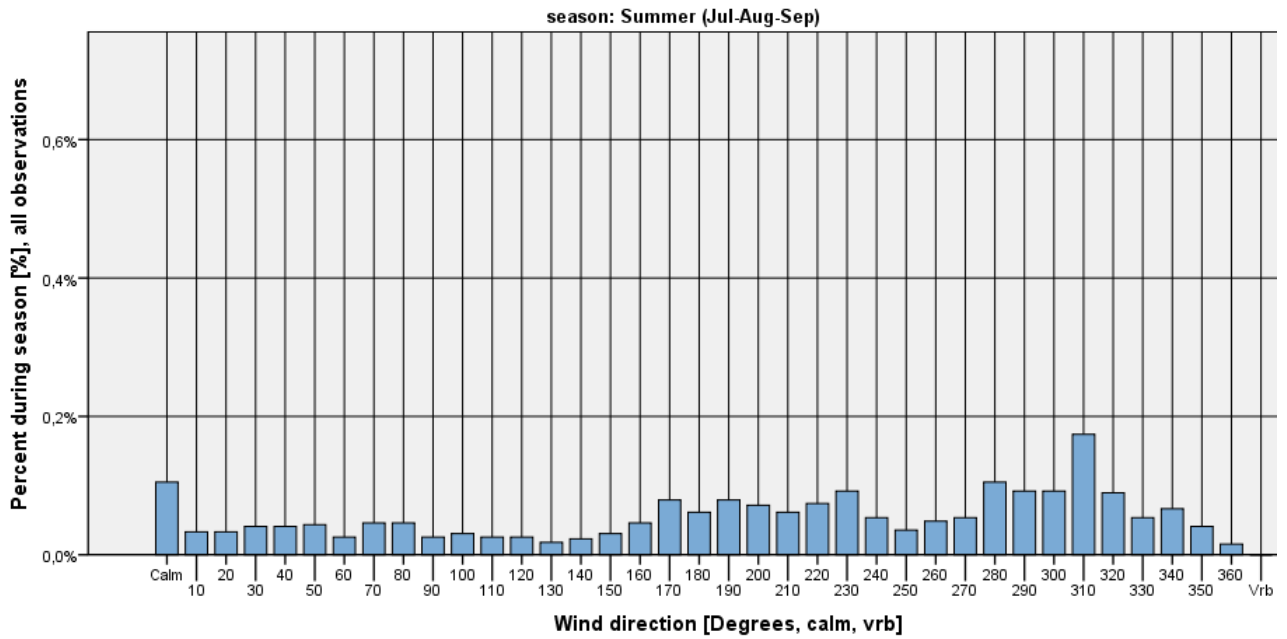


Figure 303

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

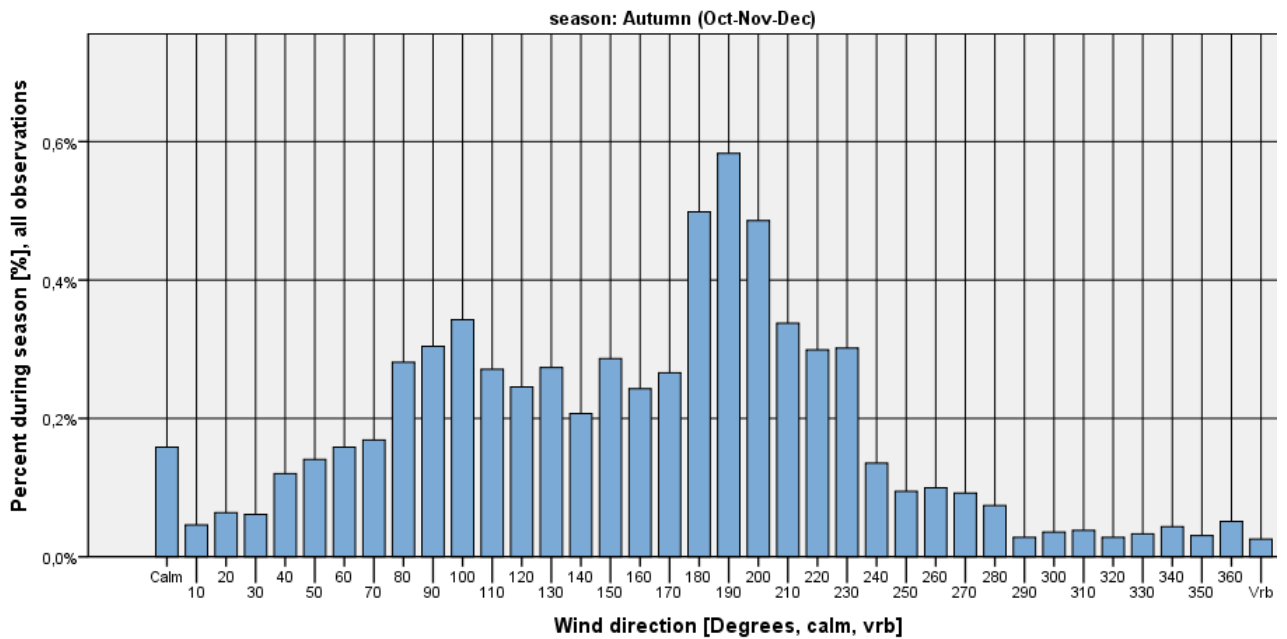


Figure 304

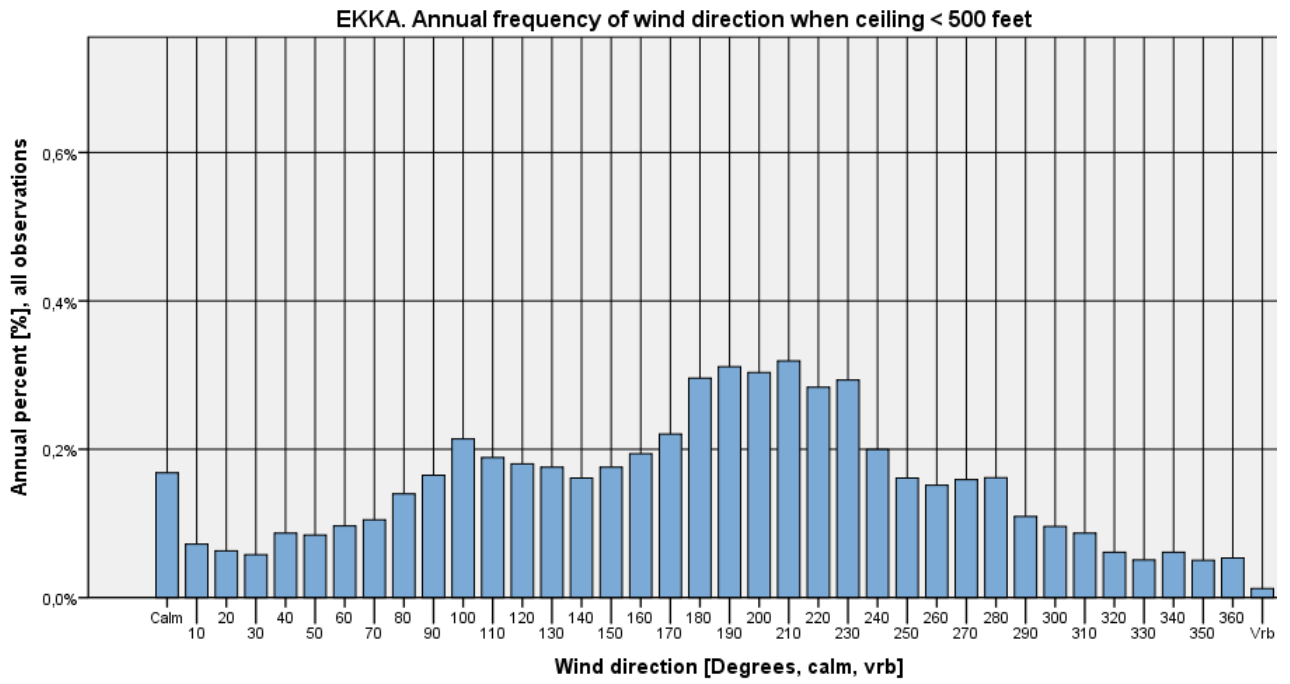


Figure 305



Ceiling < 500 feet and wind speed <= 5 kts

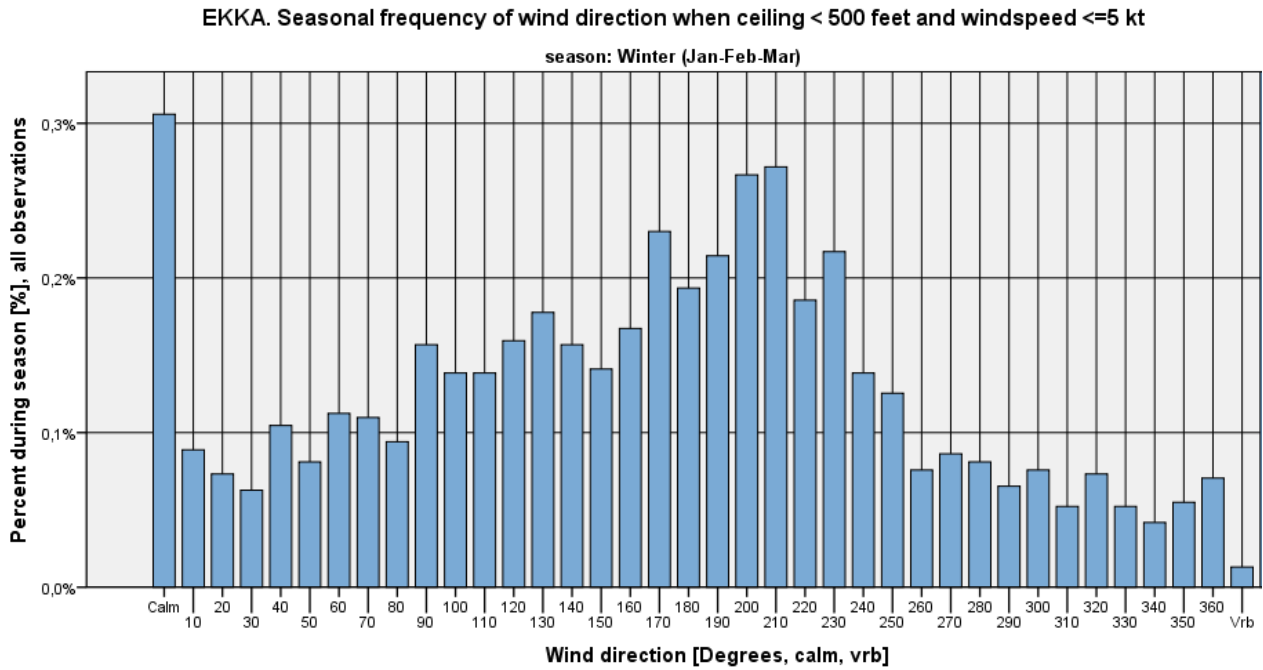


Figure 306

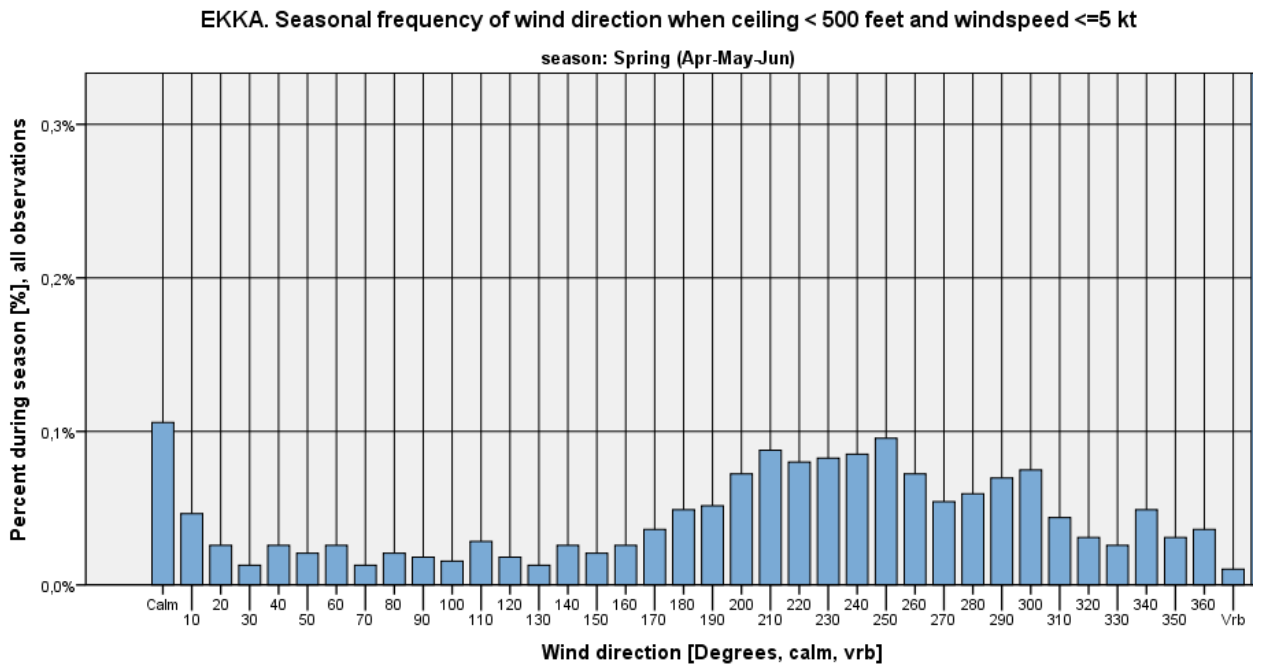


Figure 307



EKKA. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

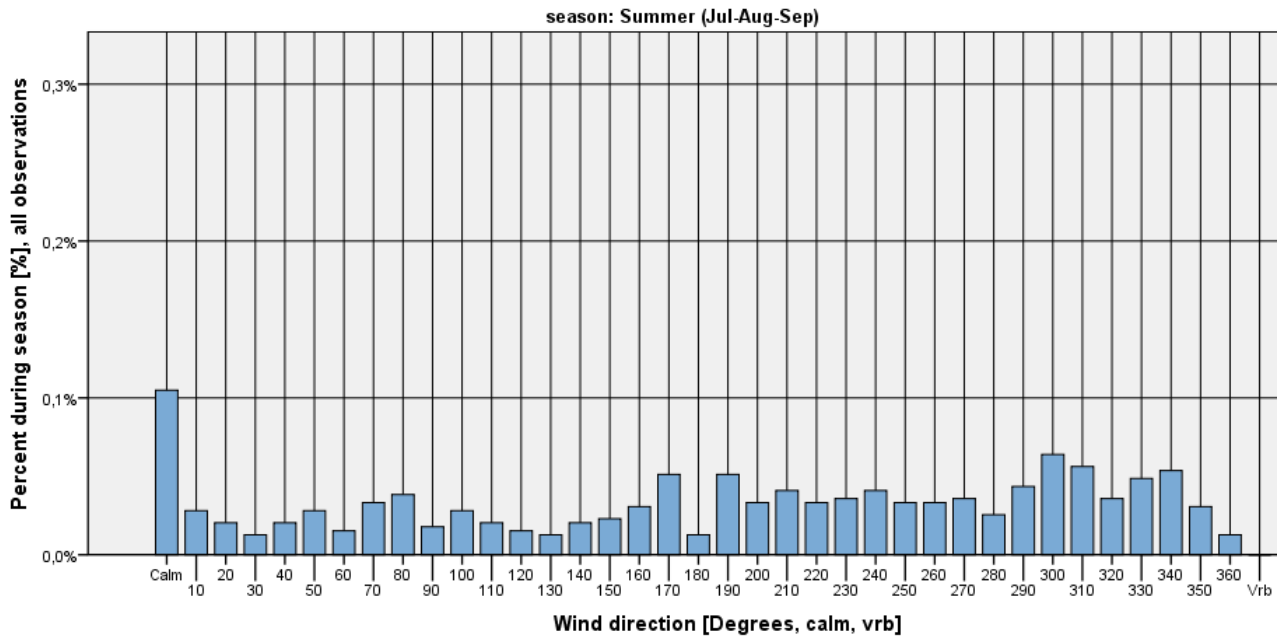


Figure 308

EKKA. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

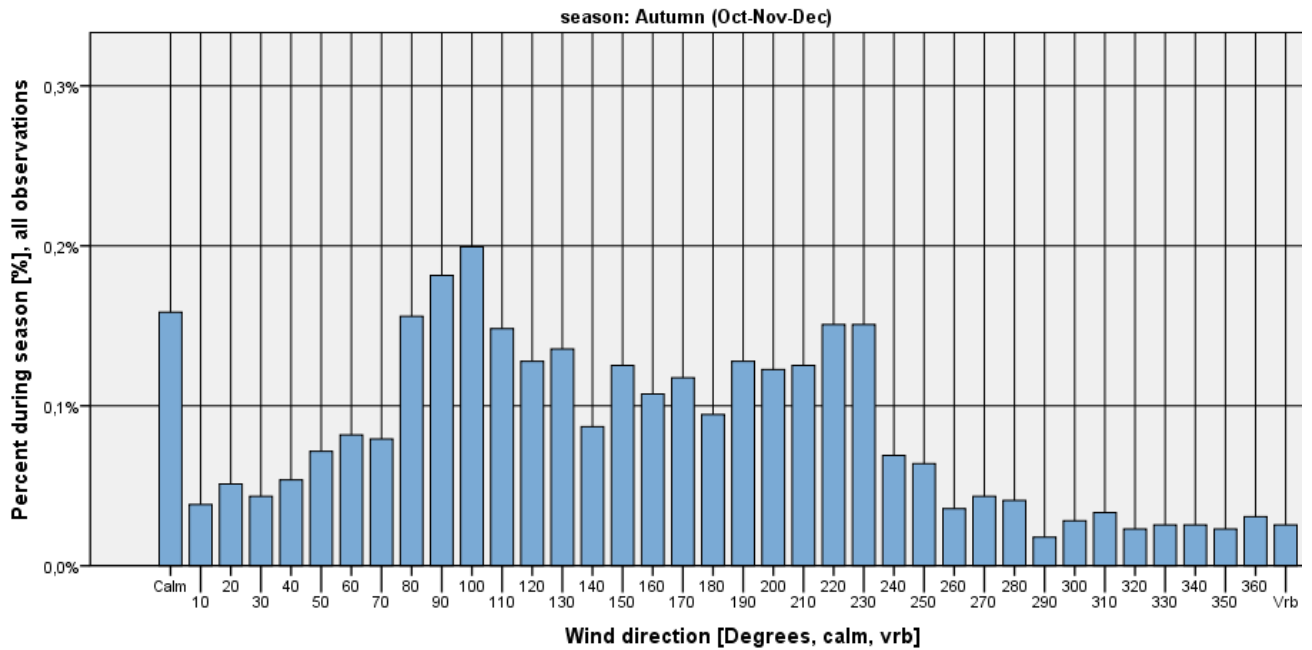


Figure 309

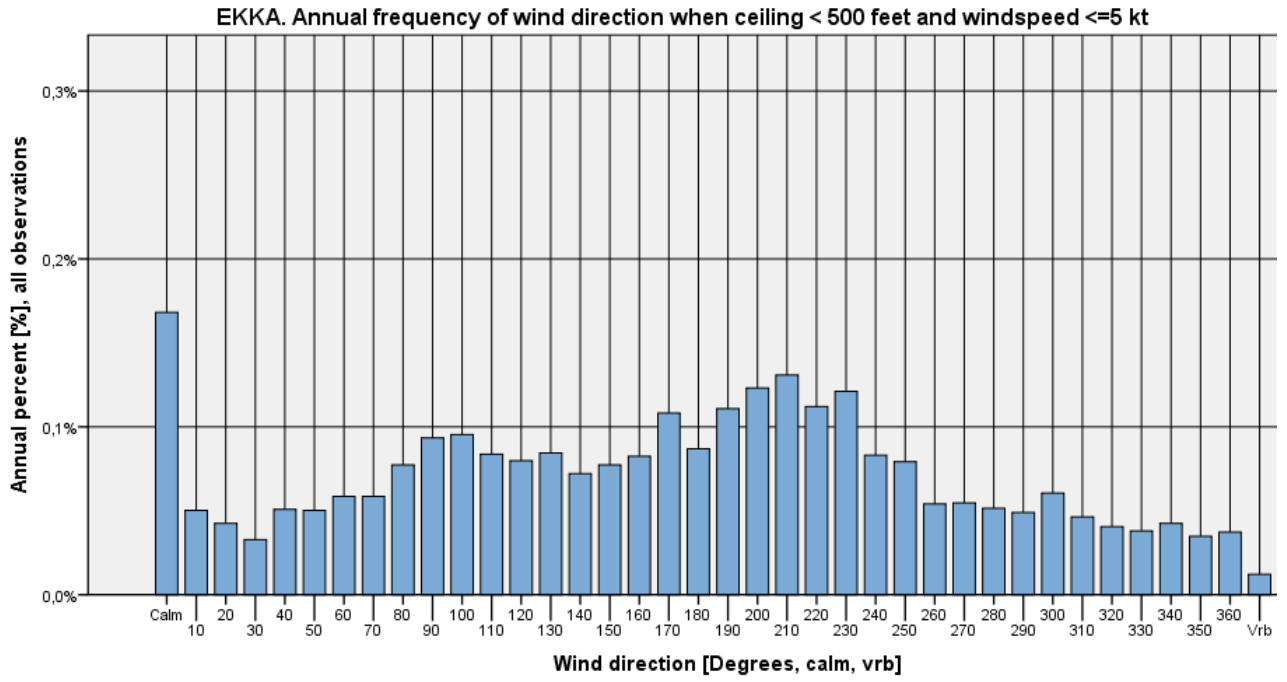


Figure 310



Ceiling < 500 feet and wind speed > 5 kts

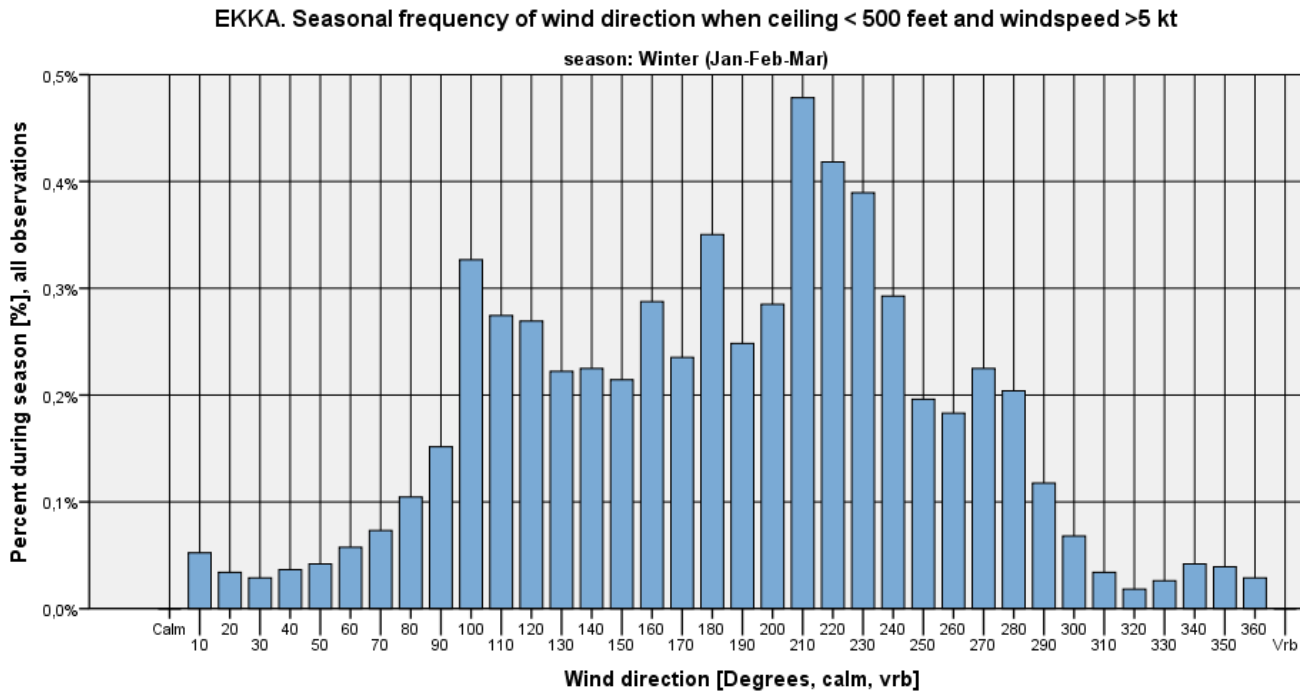


Figure 311

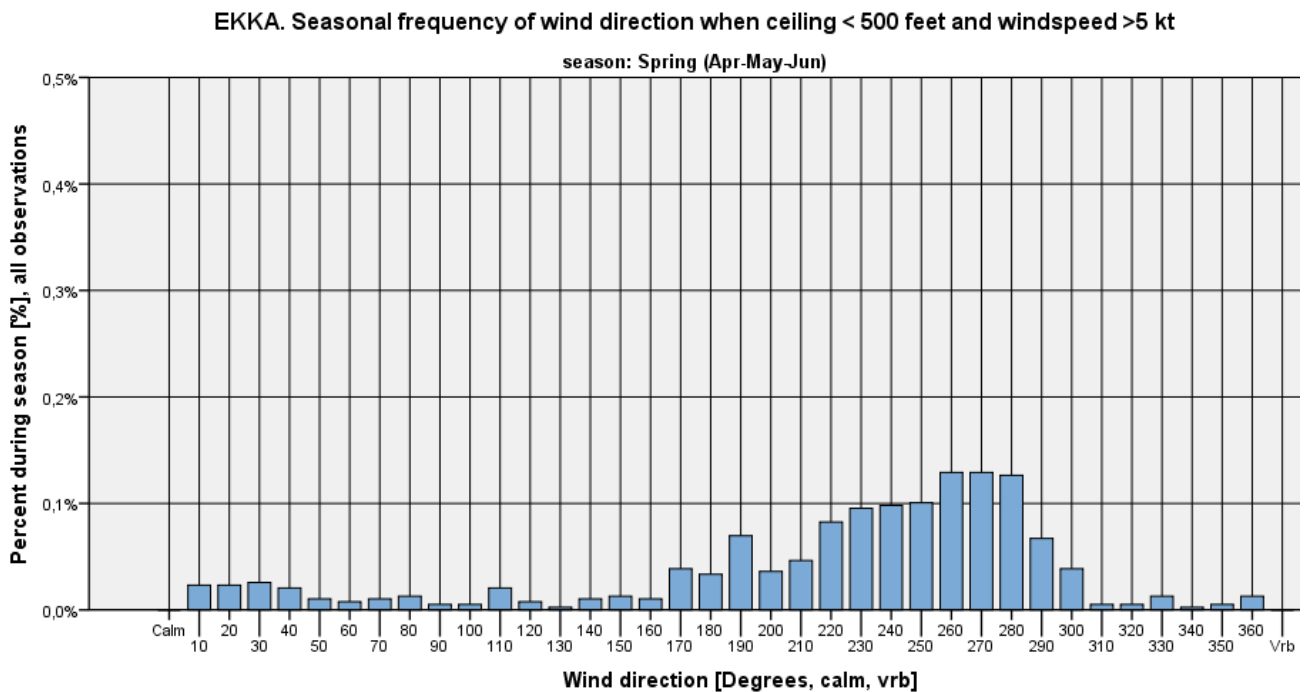


Figure 312



EKKA. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

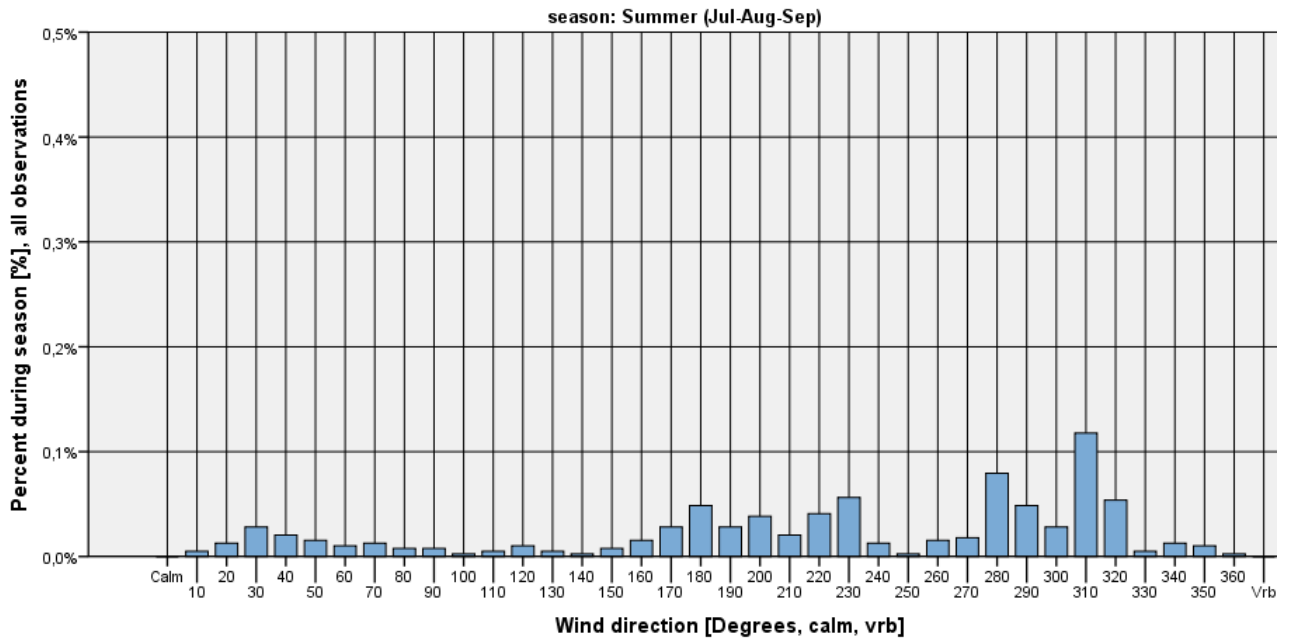


Figure 313

EKKA. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

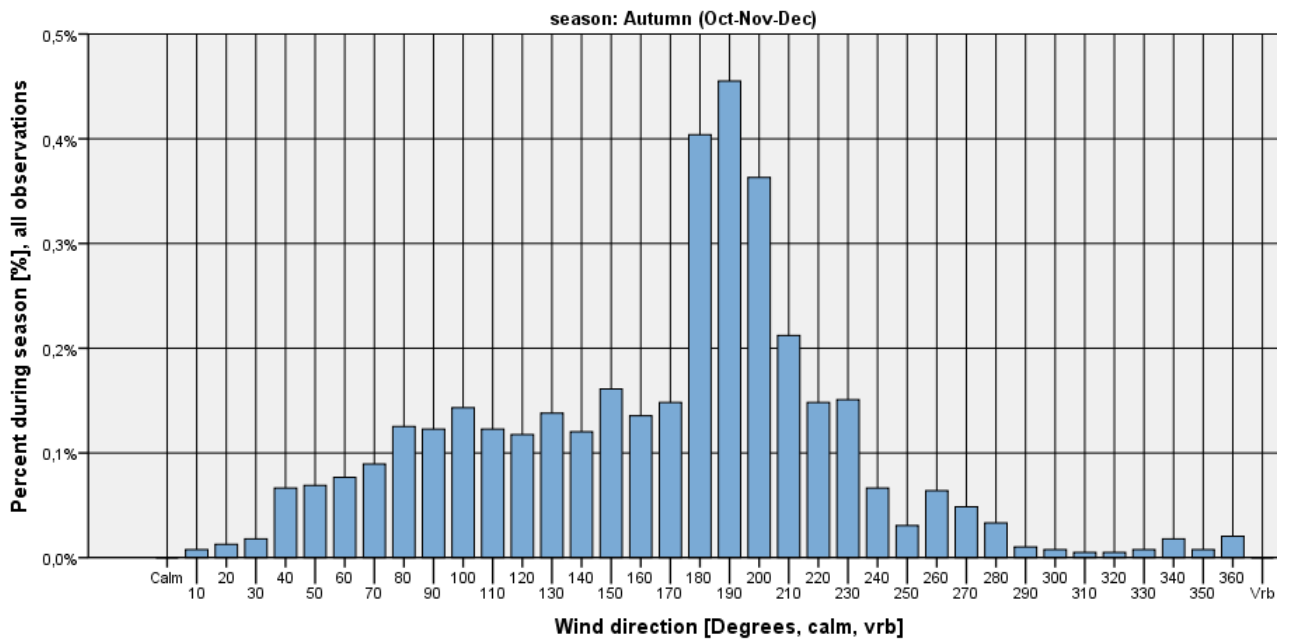


Figure 314

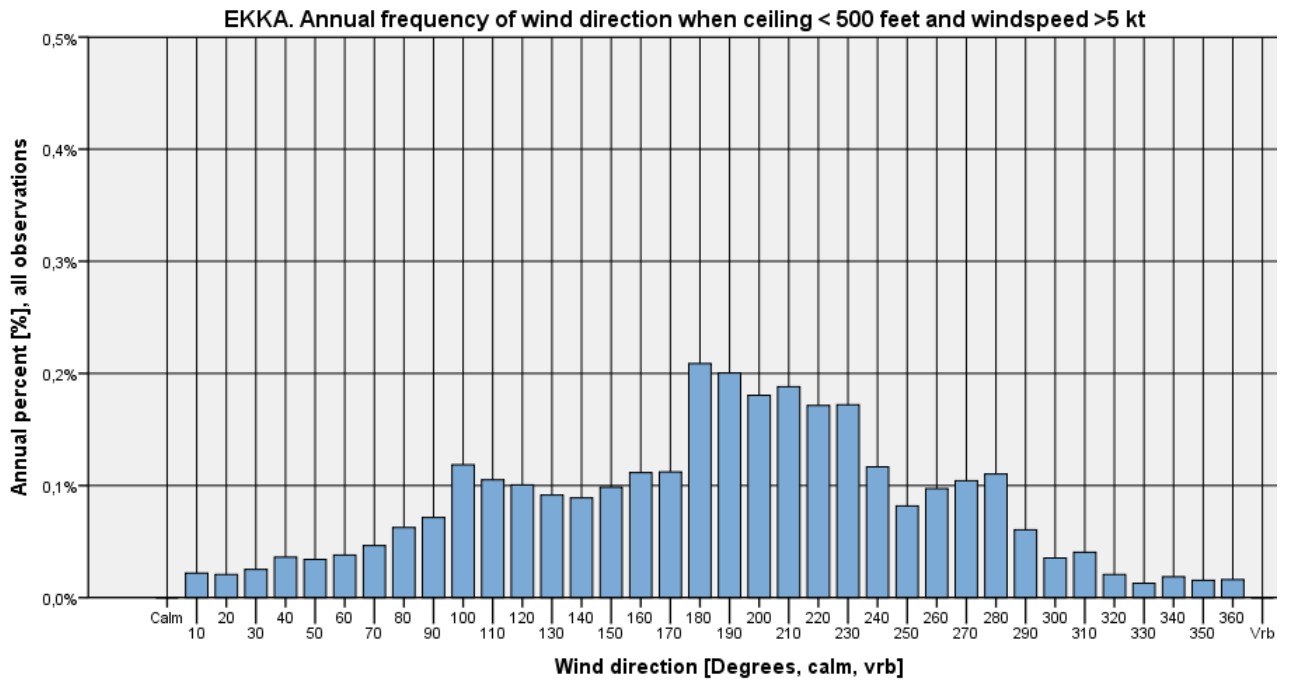


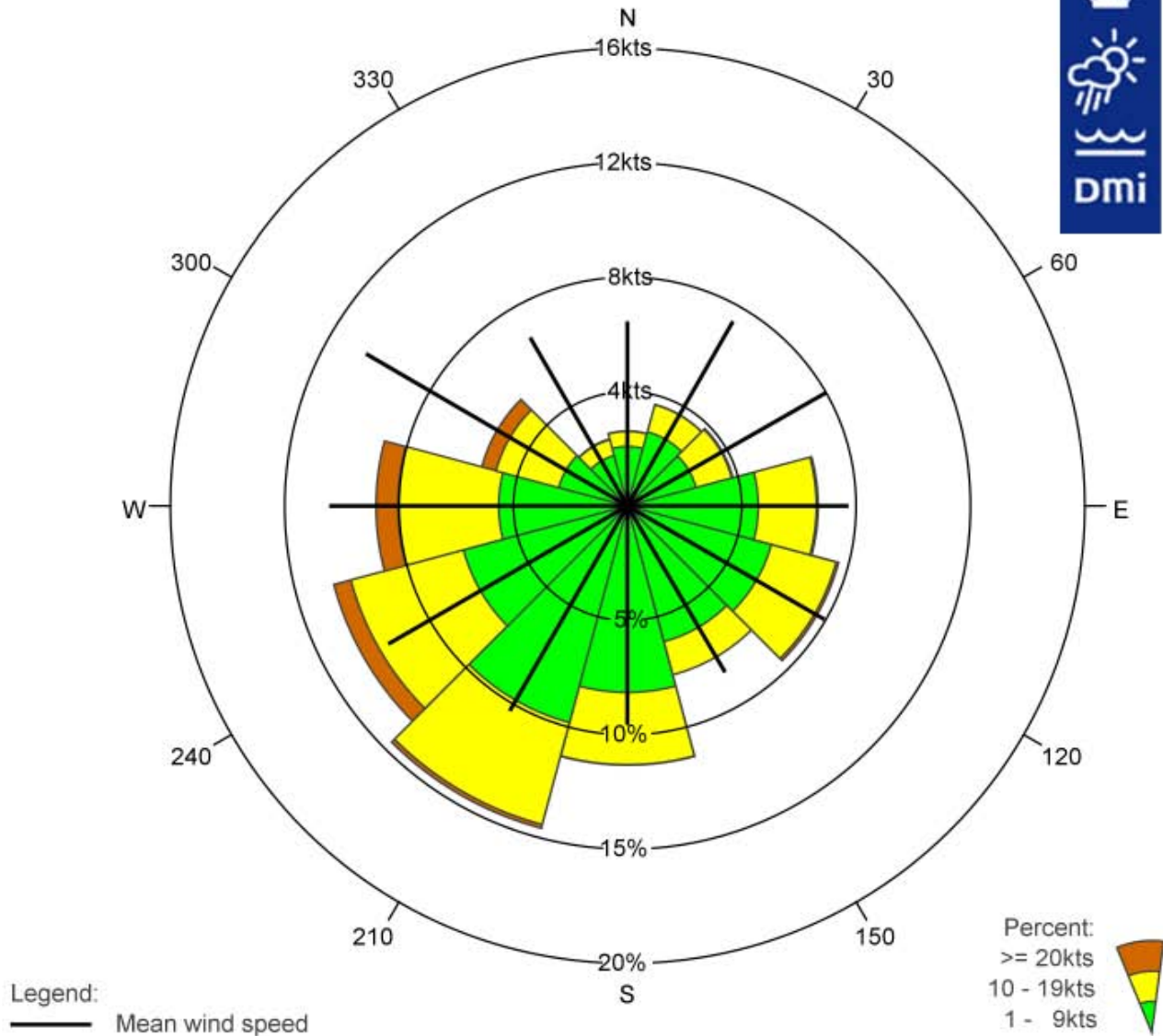
Figure 315



Wind roses

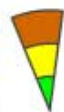
EKKA Karup - mil AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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



	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.3	4.6	4.8	8.3	9.6	7.6	11.3	14.6	13.3	11.0	6.6	3.0	98.1
% 1 - 9kts	2.6	3.4	3.1	5.7	6.5	6.1	8.2	9.8	7.4	5.6	3.1	2.3	63.8
% 10 - 19kts	0.7	1.2	1.6	2.5	2.9	1.5	3.2	4.6	5.1	4.4	2.8	0.7	31.3
% >= 20kts	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.2	0.8	0.9	0.6	0.0	2.9
Mean wind speed	6.4	7.4	8.0	7.7	7.9	6.7	7.7	8.3	9.7	10.4	10.6	6.8	8.4
Max wind speed	24.0	25.0	25.0	24.0	23.0	19.0	24.0	39.0	42.0	44.0	36.0	25.0	44.0

Number of observations = 77369

Source: DMI

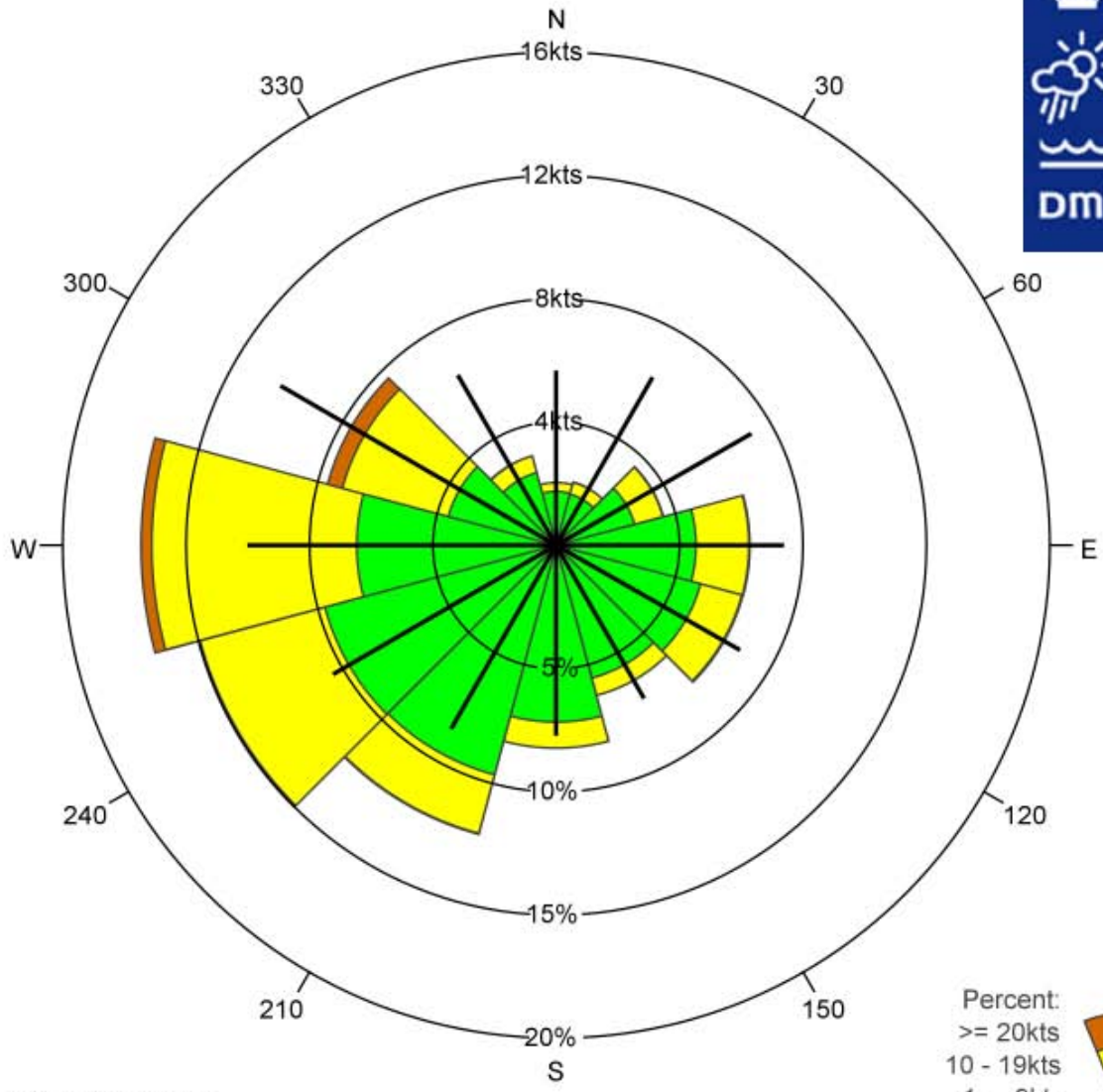
Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 1505=1.9%

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



EKKA Karup - mil
SPRING & SUMMER: APRIL - SEPTEMBER
01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	2.5	2.7	4.5	7.8	7.8	6.3	8.2	12.1	15.0	16.8	9.6	3.8	97.3
% 1 - 9kts	2.2	2.1	3.3	5.7	6.1	5.6	7.2	9.6	9.7	8.1	4.5	3.1	67.1
% 10 - 19kts	0.4	0.5	1.2	2.1	1.7	0.7	1.1	2.5	5.2	8.3	4.5	0.7	28.9
% >= 20kts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	0.0	1.3
Mean wind speed	5.7	6.3	7.3	7.4	6.9	5.7	6.2	6.9	8.4	10.0	10.3	6.4	7.8
Max wind speed	20.0	23.0	25.0	25.0	24.0	19.0	21.0	23.0	25.0	30.0	33.0	21.0	33.0

Number of observations = 77793
 Calm defined a wind speed = 0kts
 Number of observations with calm/varying wind direction: 2133=2.7%
 Observations with calm/varying wind direction are not used in the statistics

Source: DMI

Availability

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

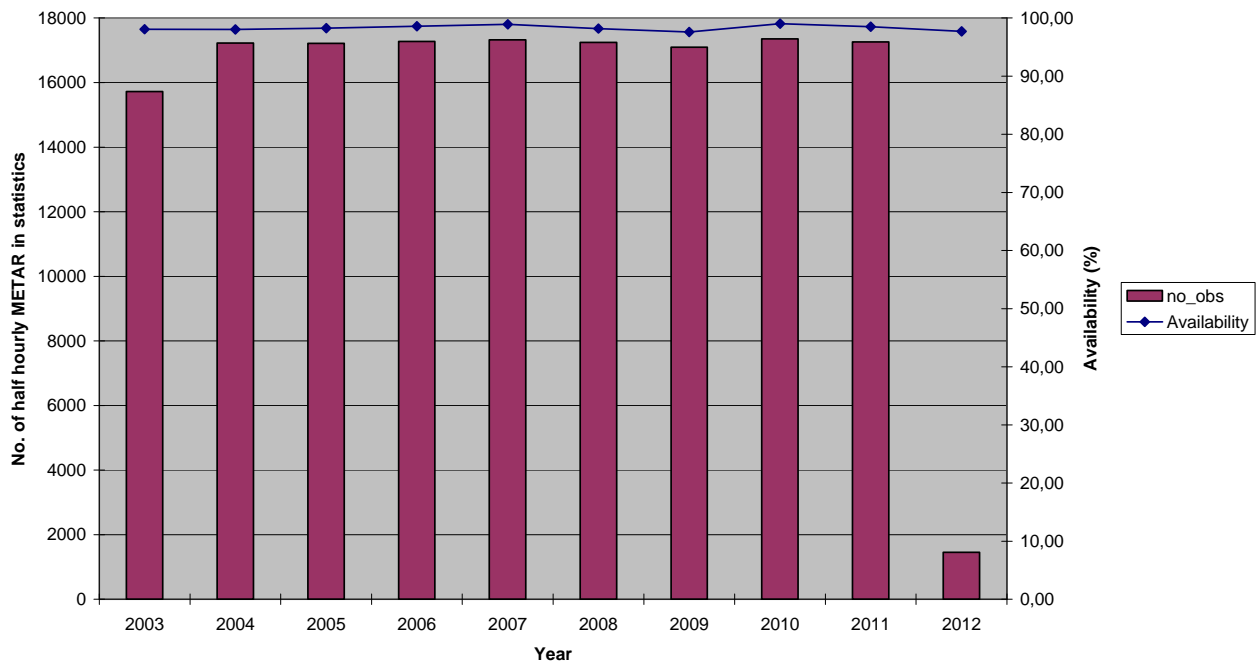


Figure 316

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

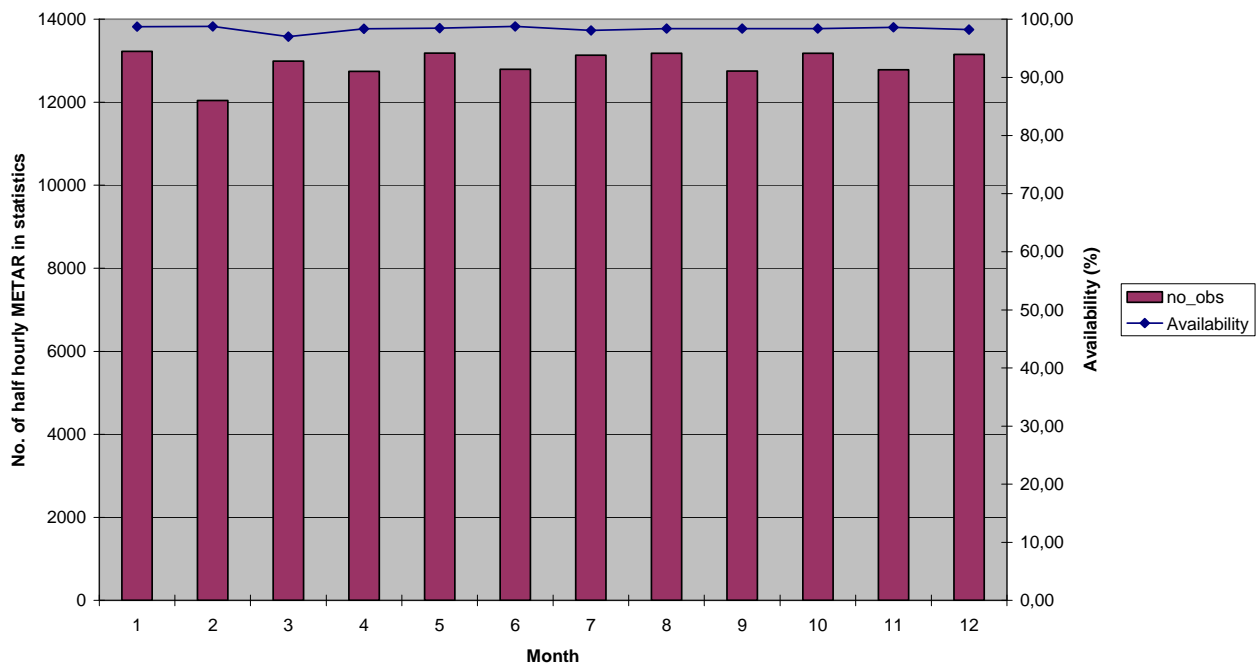


Figure 317

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

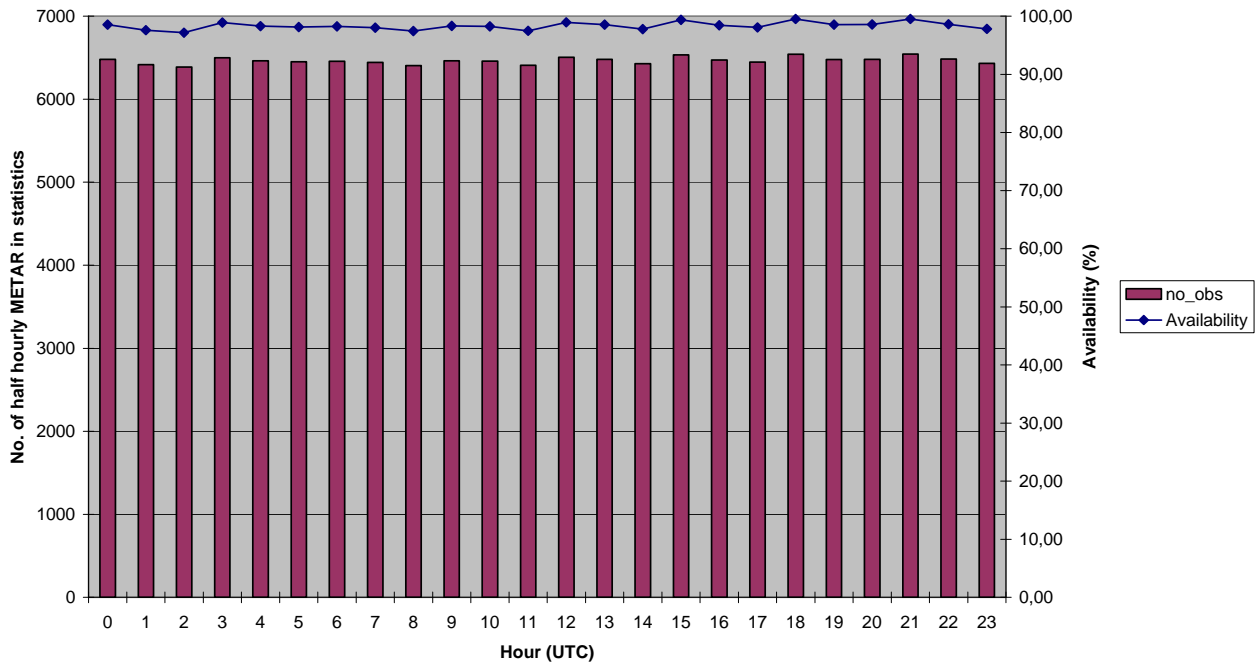


Figure 318

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

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

Table 37



EKOD Odense/Beldringe

Odense Airport

Airport location: 55,483°N 10,333°E Elevation: 17 m above msl.

EKOD observations in statistics: 46.025 half hourly METAR⁷ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 29,2%.

The availability reflects that EKOD mostly is issuing hourly METAR during daytime. Half hourly METAR are mostly issued in the morning. More details may be found in the Availability Section.

EKOD METAR are all manual.

Cross tables Visibility – Ceiling

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

No. Obs = 11.279	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	1,13	2,38	2,49	2,52	0,27	2,78
<1 km	0	1,20	2,86	3,03	3,06	0,35	3,41
<1.5 km	0	1,30	3,88	4,17	4,26	0,41	4,67
<3.0 km	0	1,42	7,33	9,91	10,52	1,21	11,73
< 5.0 km	0	1,43	8,92	16,25	18,52	4,35	22,87
>= 5,0 km or CAVOK	0	0,0089	0,54	8,50	18,94	58,19	77,13
Total	0	1,44	9,46	24,75	37,46	62,54	100

Table 38

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

No. Obs = 11.416	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,17	0,31	0,34	0,34	0,01	0,35
<1 km	0	0,17	0,32	0,36	0,36	0,02	0,38
<1.5 km	0	0,18	0,40	0,46	0,47	0,05	0,53
<3.0 km	0	0,19	0,81	1,29	1,39	0,43	1,82
< 5.0 km	0	0,20	1,12	3,04	3,59	1,63	5,22
>= 5,0 km or CAVOK	0	0	0,15	3,00	7,38	87,40	94,78
Total	0	0,20	1,27	6,04	10,97	89,03	100

Table 39

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

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

No. Obs = 12.300	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,033	0,13	0,13	0,13	0,17	0,30
<1 km	0	0,033	0,13	0,14	0,14	0,24	0,38
<1.5 km	0	0,033	0,15	0,16	0,16	0,34	0,50
<3.0 km	0	0,033	0,32	0,68	0,77	0,80	1,57
< 5.0 km	0	0,033	0,54	2,11	2,77	2,60	5,37
>= 5,0 km or CAVOK	0	0	0,12	2,50	6,49	88,14	94,63
Total	0	0,033	0,67	4,61	9,26	90,74	100

Table 40

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

No. Obs = 11.030	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,63	1,34	1,39	1,41	0,83	2,25
<1 km	0	0,65	1,78	1,87	1,89	0,93	2,83
<1.5 km	0	0,69	2,34	2,67	2,75	1,13	3,88
<3.0 km	0	0,73	4,76	7,13	7,54	2,17	9,71
< 5.0 km	0	0,73	6,07	14,11	16,08	5,53	21,61
>= 5,0 km or CAVOK	0	0	0,31	7,80	17,29	61,10	78,39
Total	0	0,73	6,38	21,90	33,37	66,63	100

Table 41

Annual: EKOD – Frequencies (%) Visibility - Ceiling

No. Obs = 46.025	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,48	1,02	1,06	1,08	0,31	1,39
<1 km	0	0,50	1,24	1,32	1,33	0,38	1,71
<1.5 km	0	0,54	1,65	1,82	1,86	0,48	2,34
<3.0 km	0	0,58	3,22	4,64	4,94	1,13	6,07
< 5.0 km	0	0,58	4,07	8,68	10,02	3,49	13,52
>= 5,0 km or CAVOK	0	0,0022	0,28	5,36	12,35	74,14	86,48
Total	0	0,59	4,34	14,04	22,37	77,63	100

Table 42

Wind direction histograms

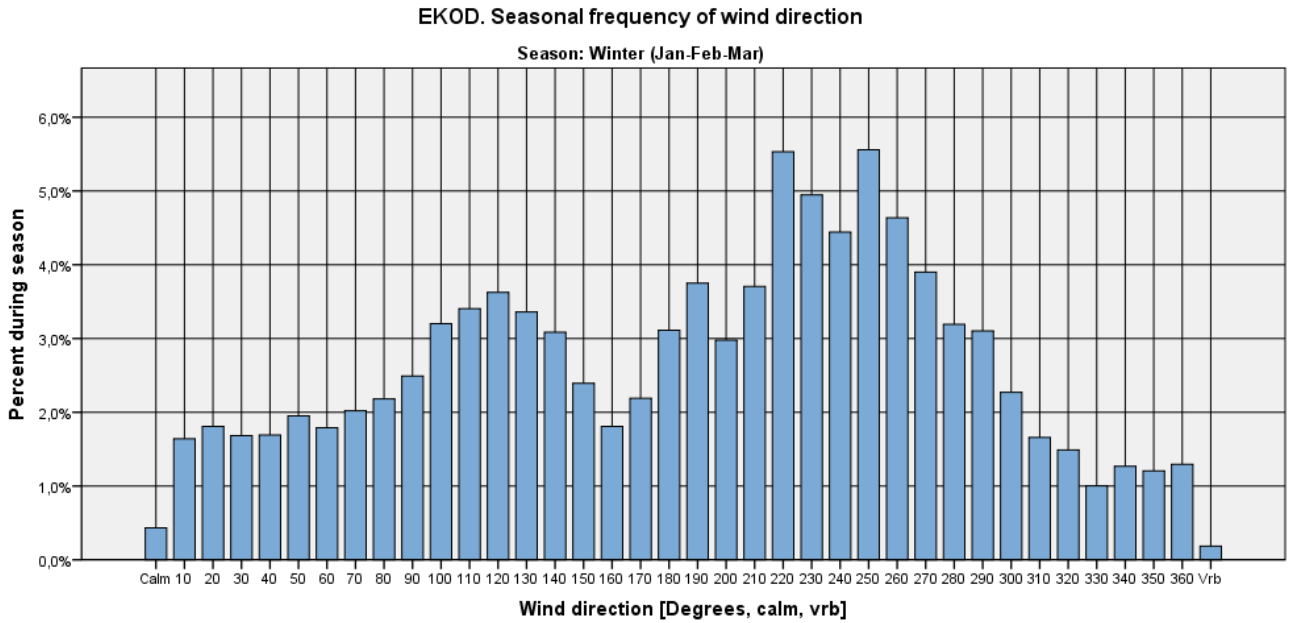


Figure 319

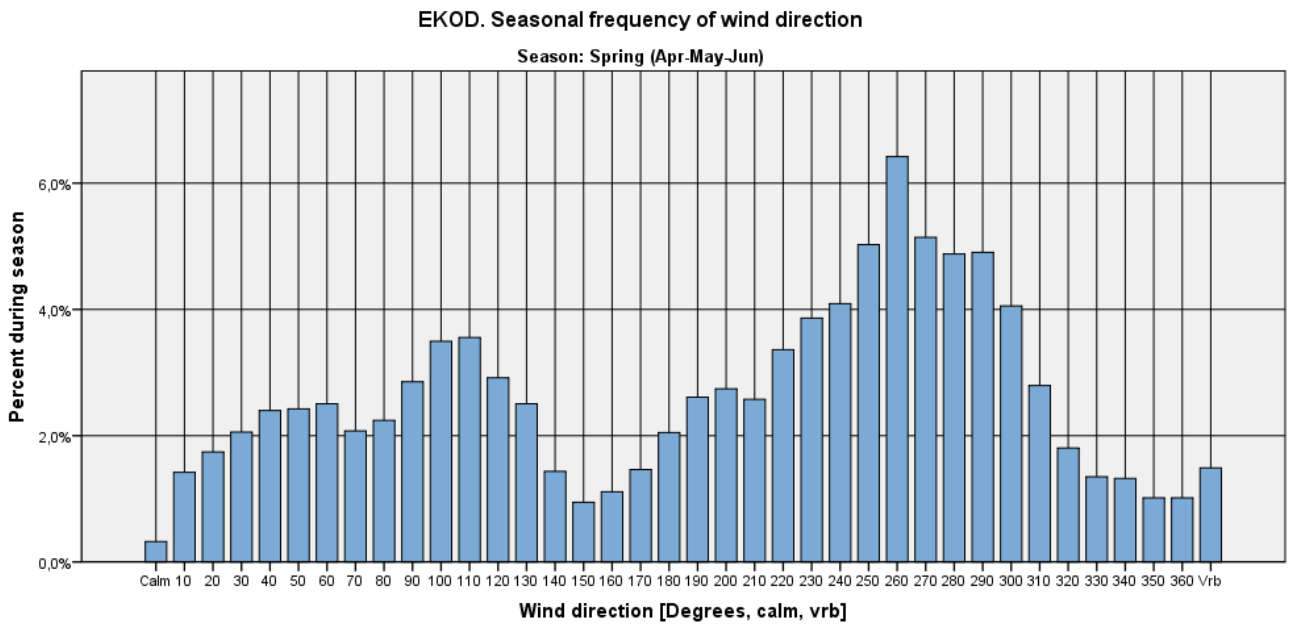


Figure 320

EKOD. Seasonal frequency of wind direction

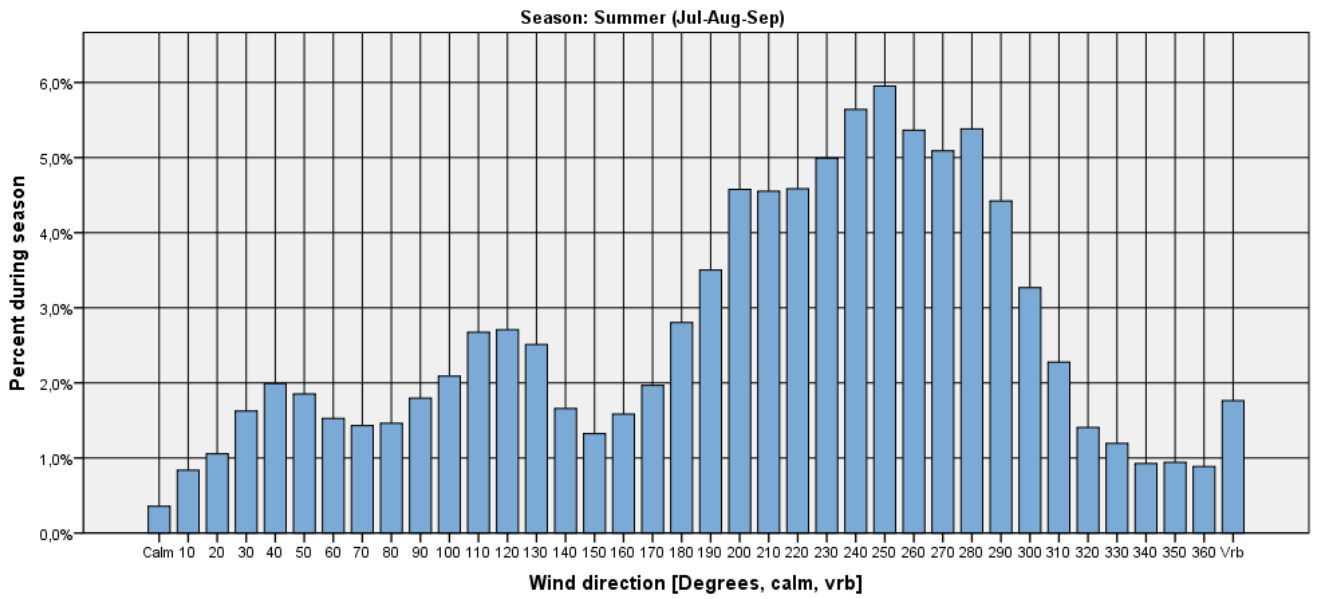


Figure 321

EKOD. Seasonal frequency of wind direction

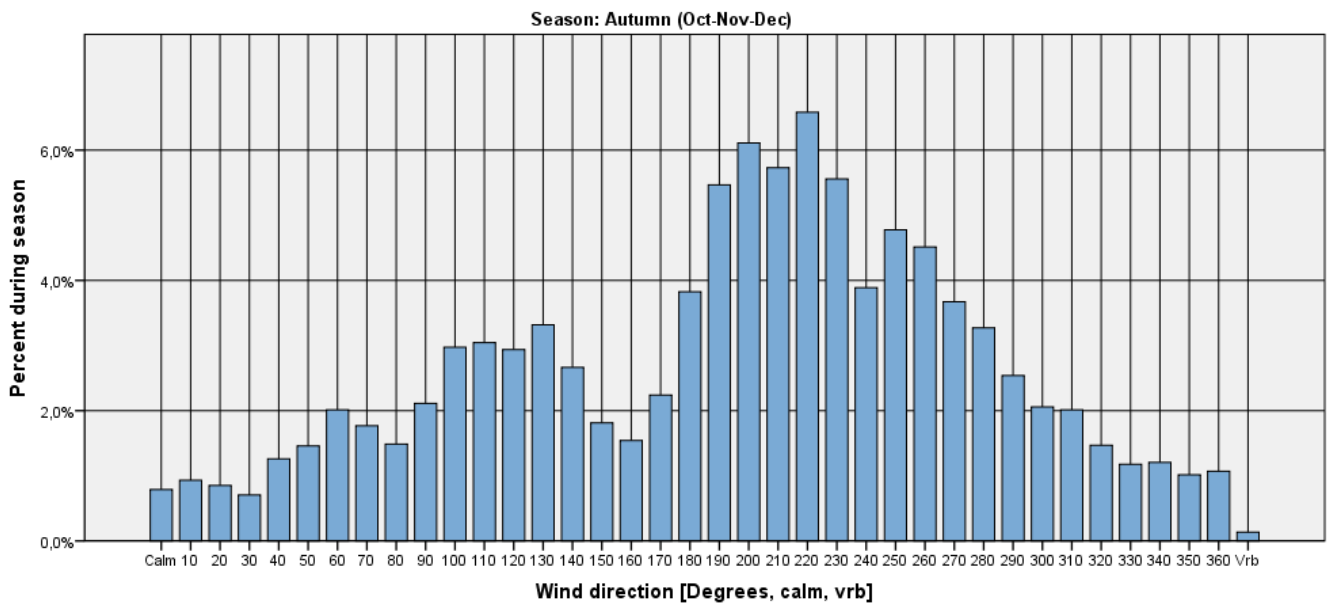


Figure 322

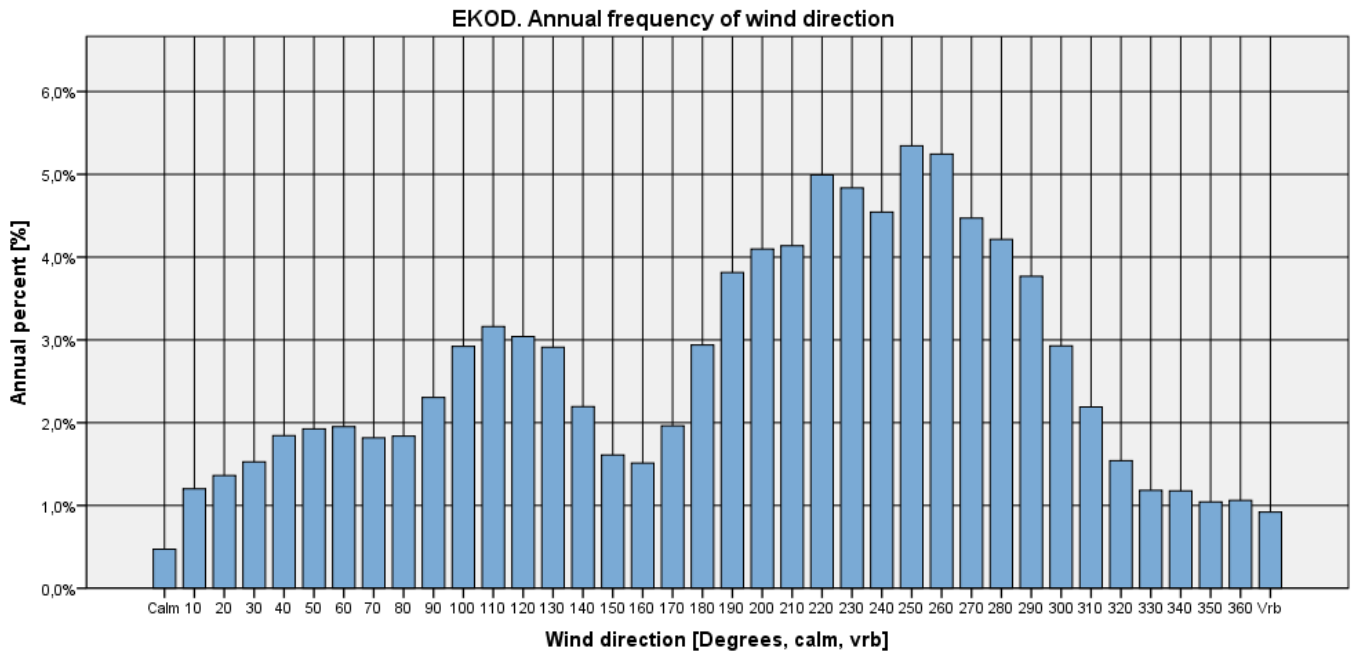


Figure 323

Visibility criteria on wind direction histograms

Visibility < 1000 m

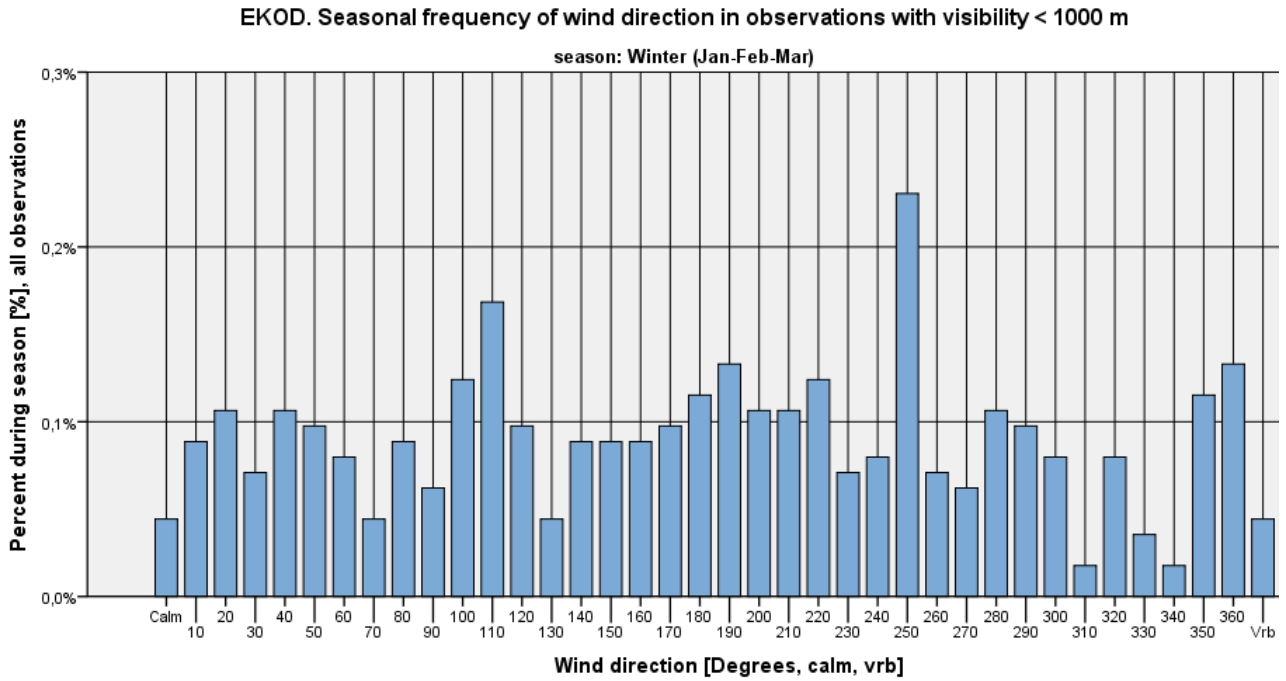


Figure 324

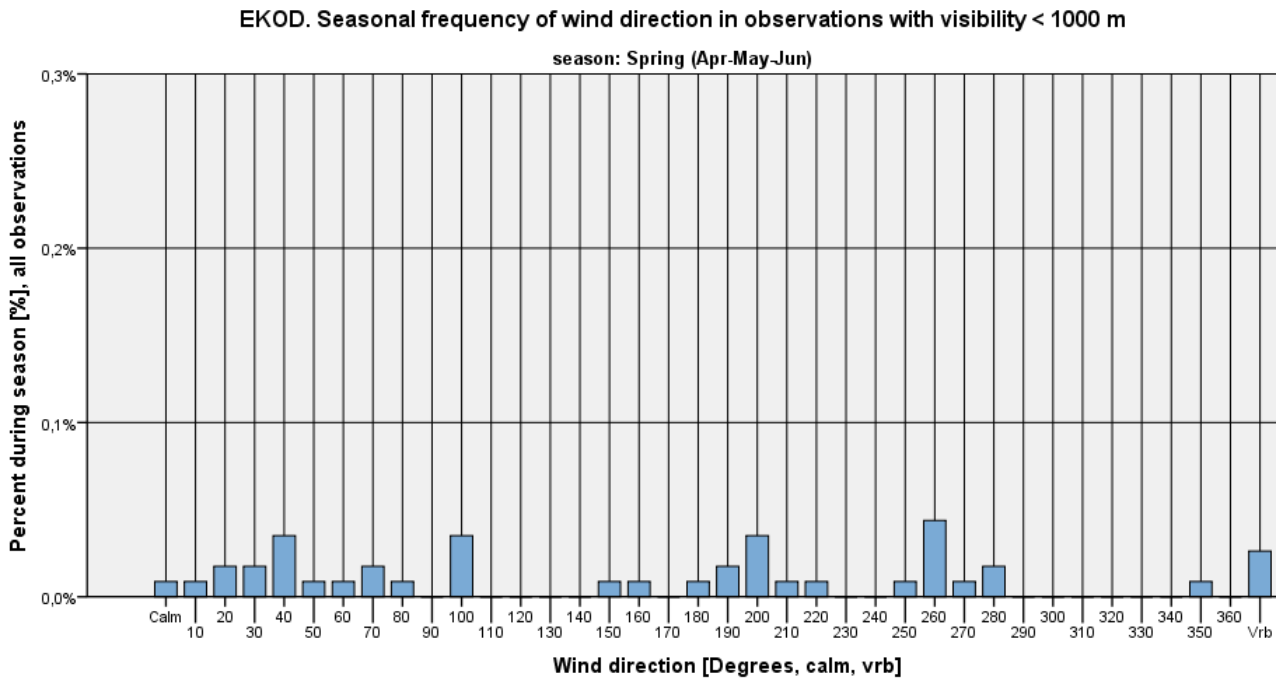


Figure 325

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

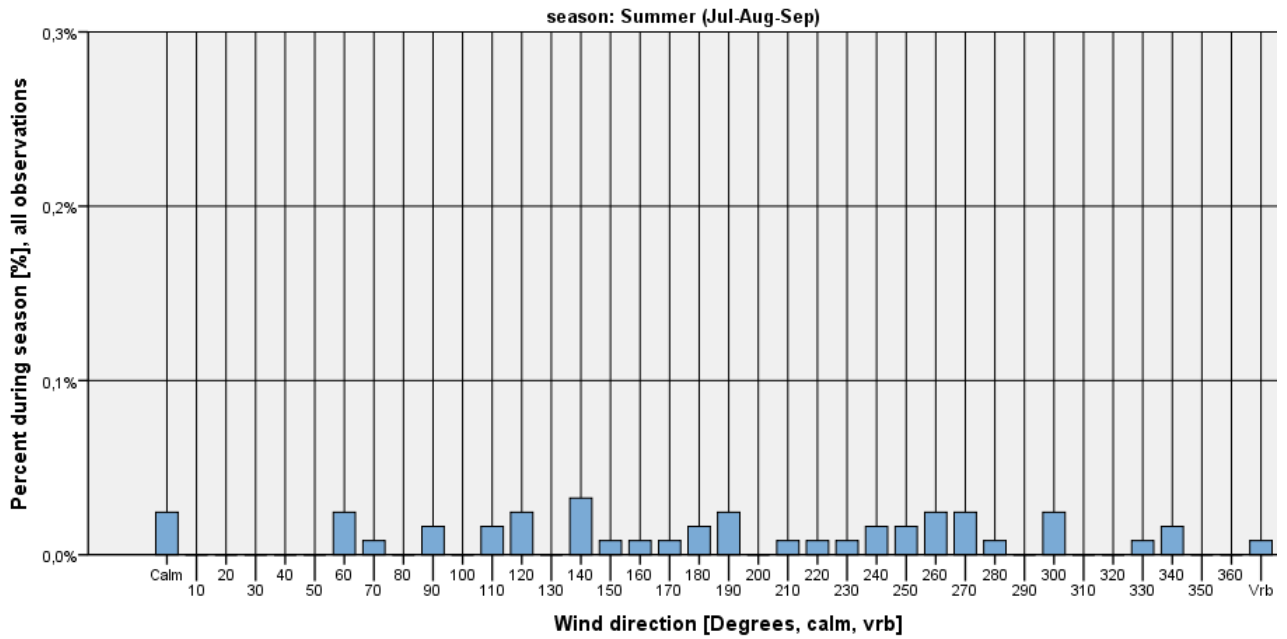


Figure 326

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

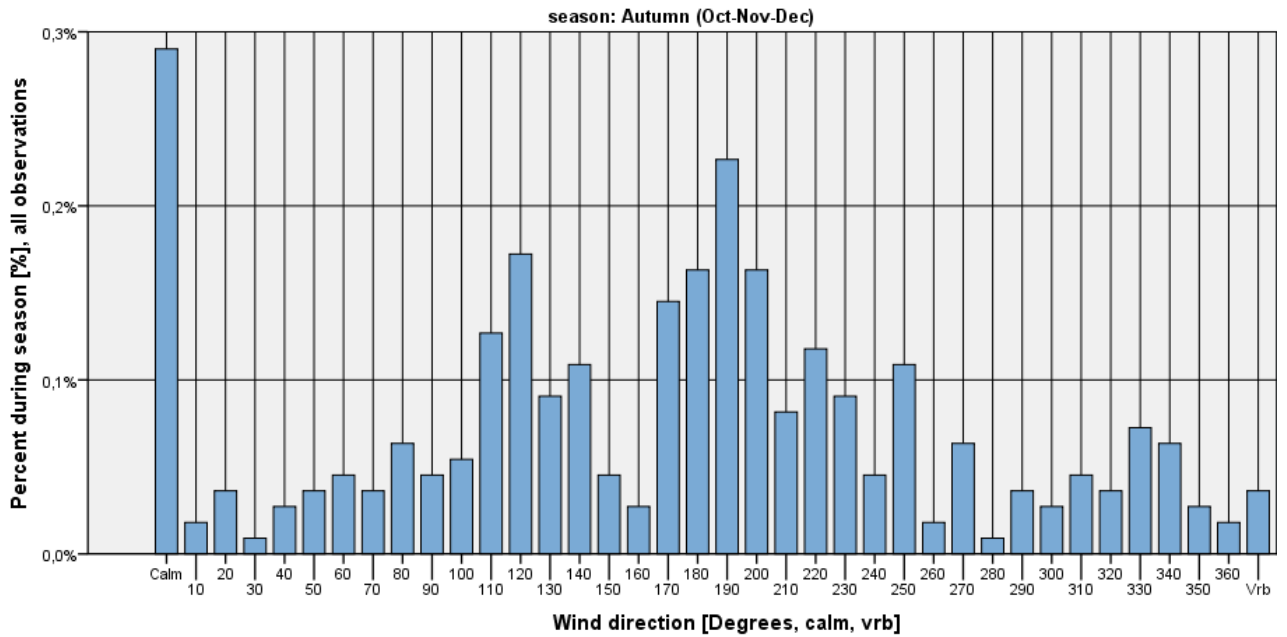


Figure 327

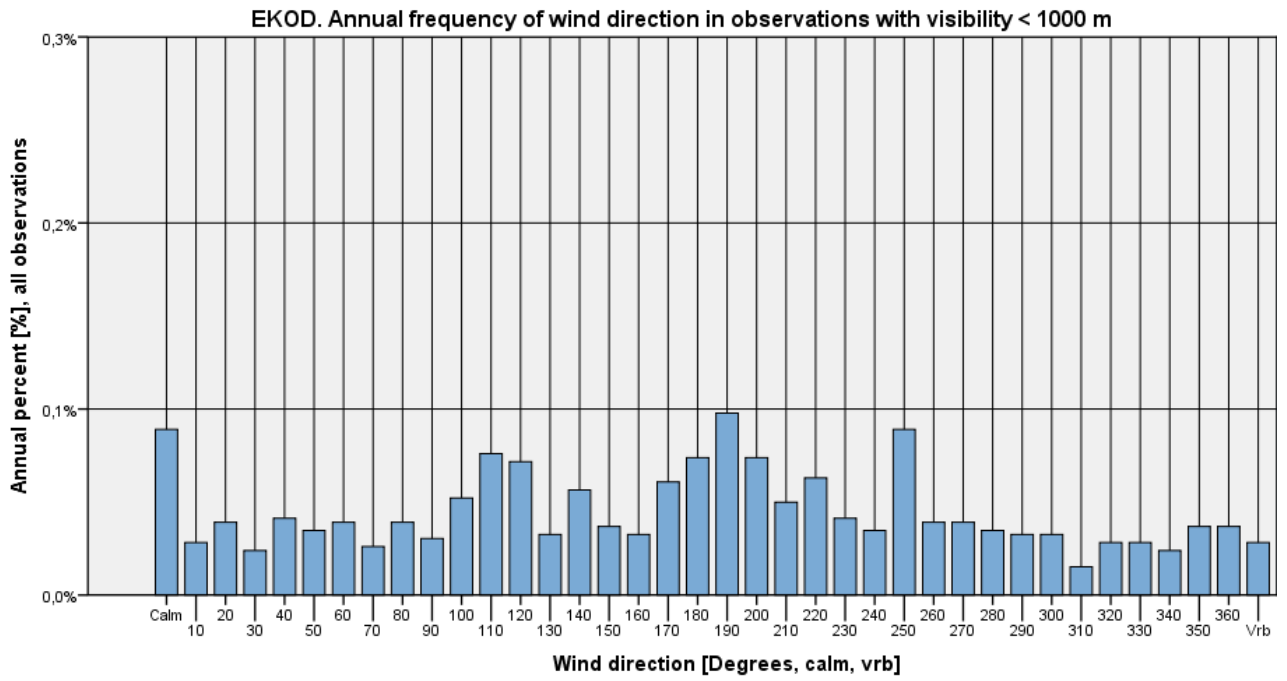


Figure 328



Visibility < 1000 m and wind speed ≤ 5 kts

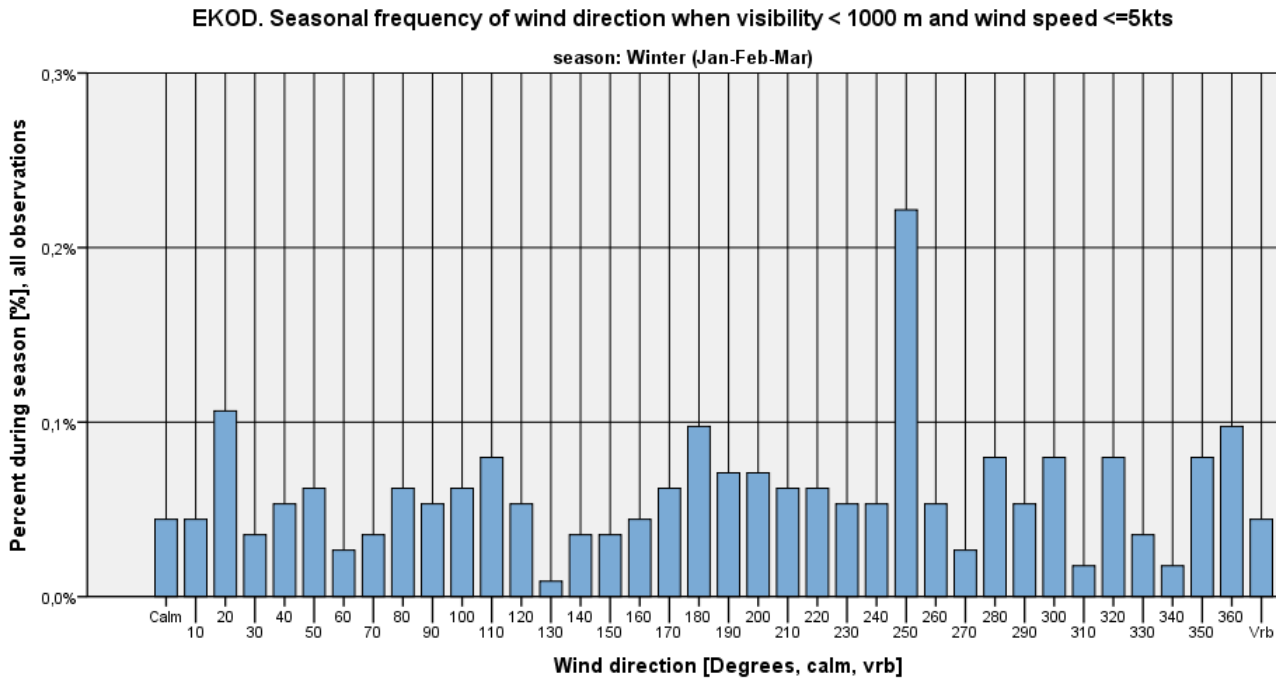


Figure 329

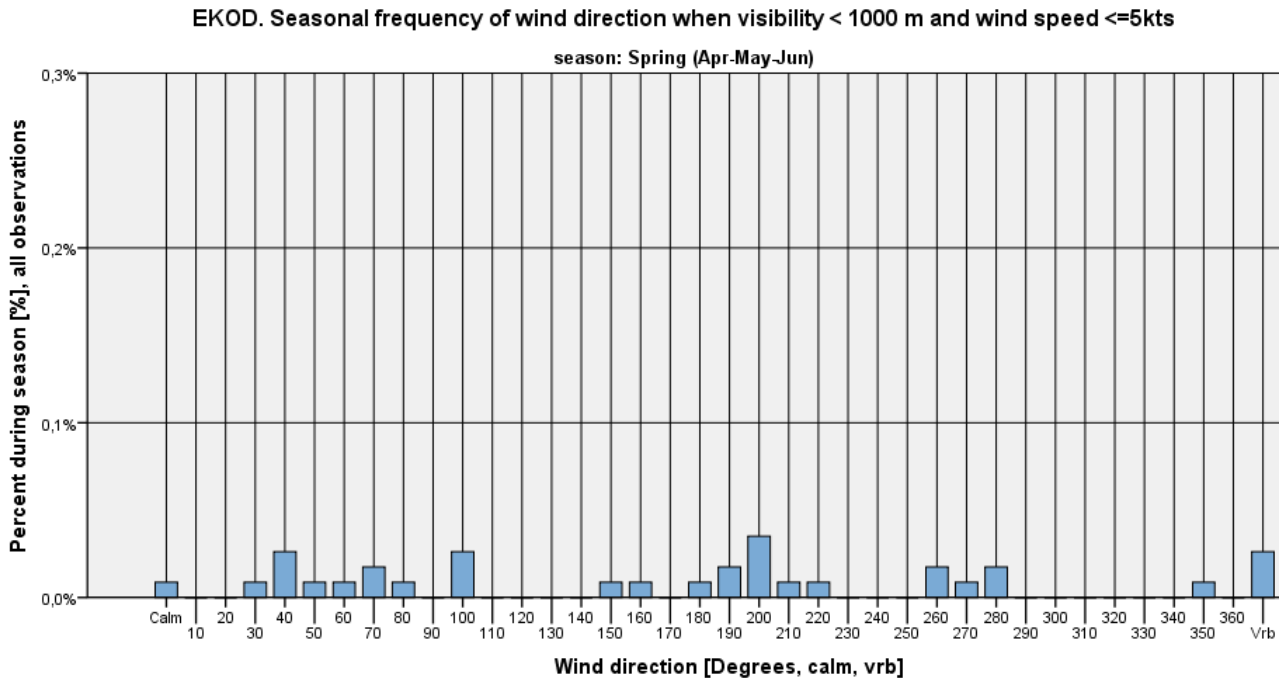


Figure 330



EKOD. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

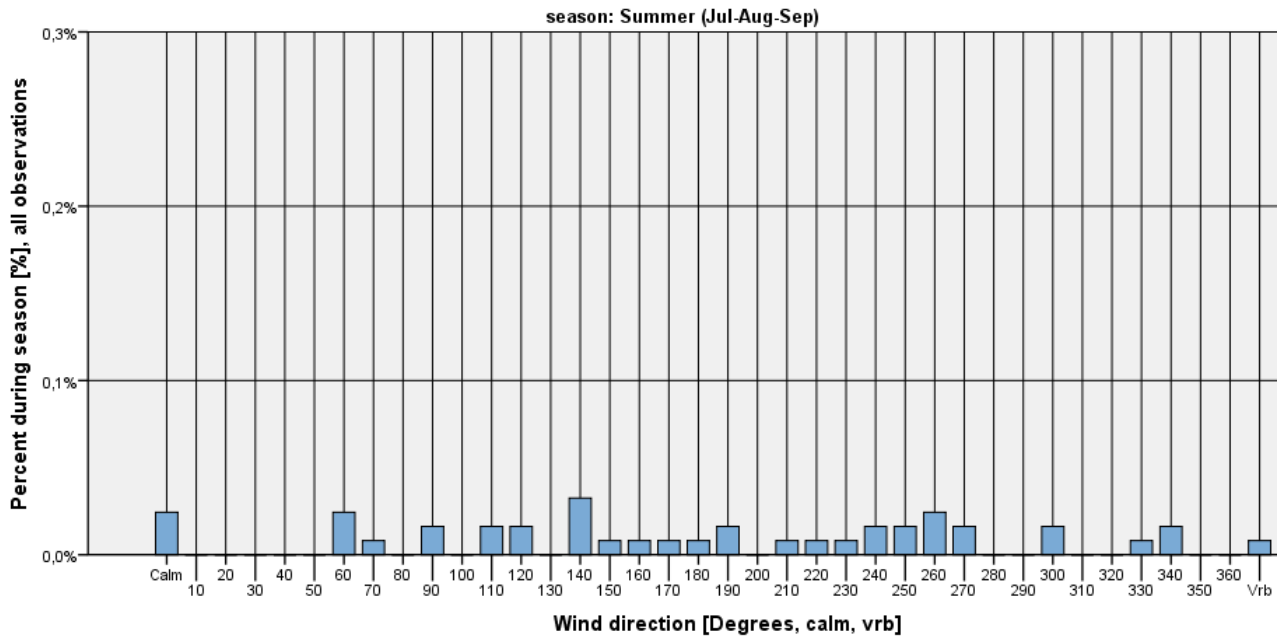


Figure 331

EKOD. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

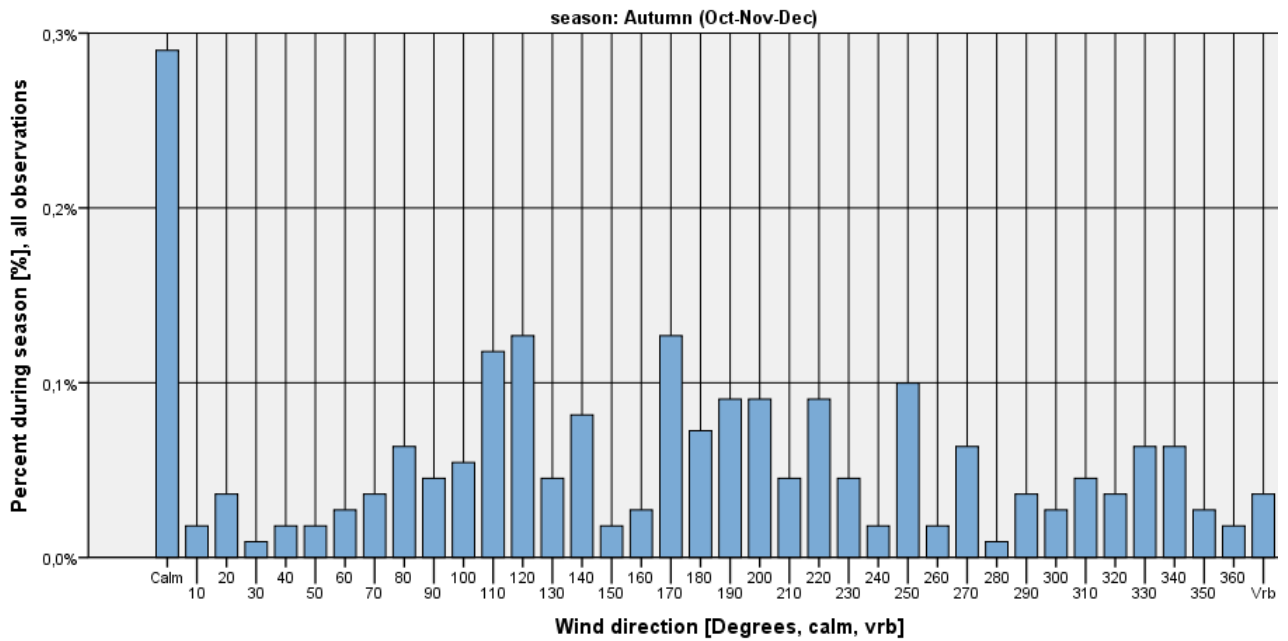


Figure 332

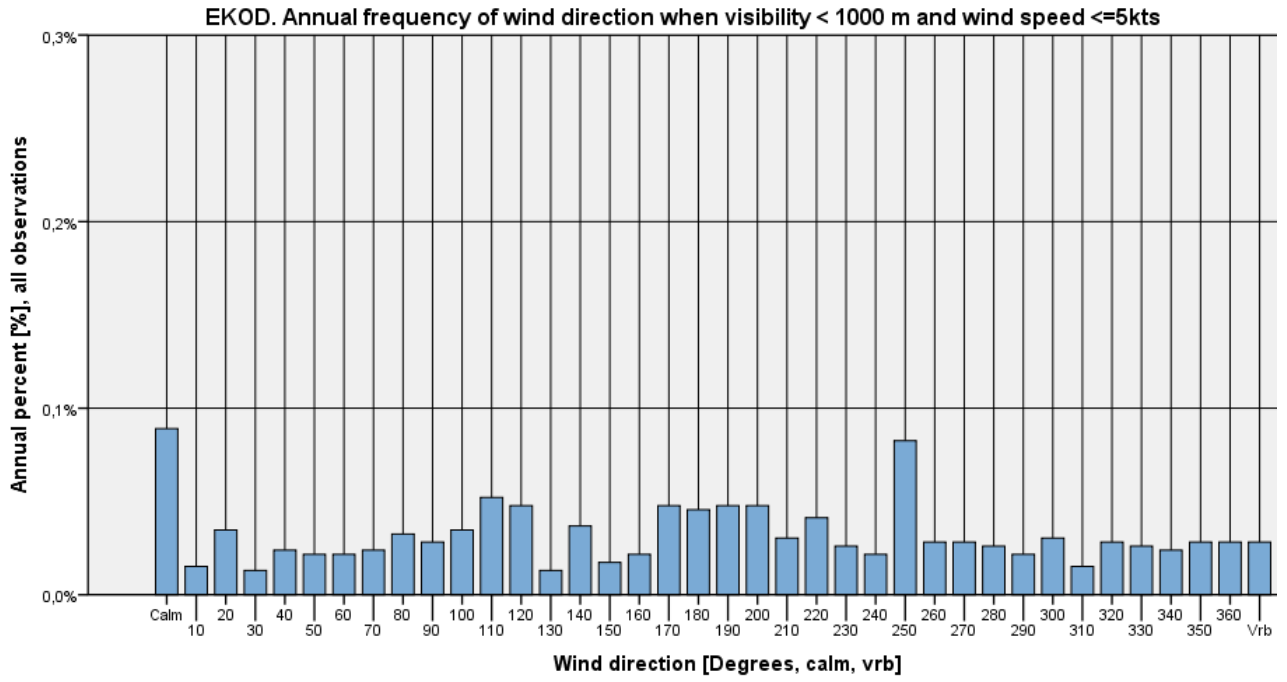


Figure 333



Visibility < 1000 m and wind speed > 5 kts

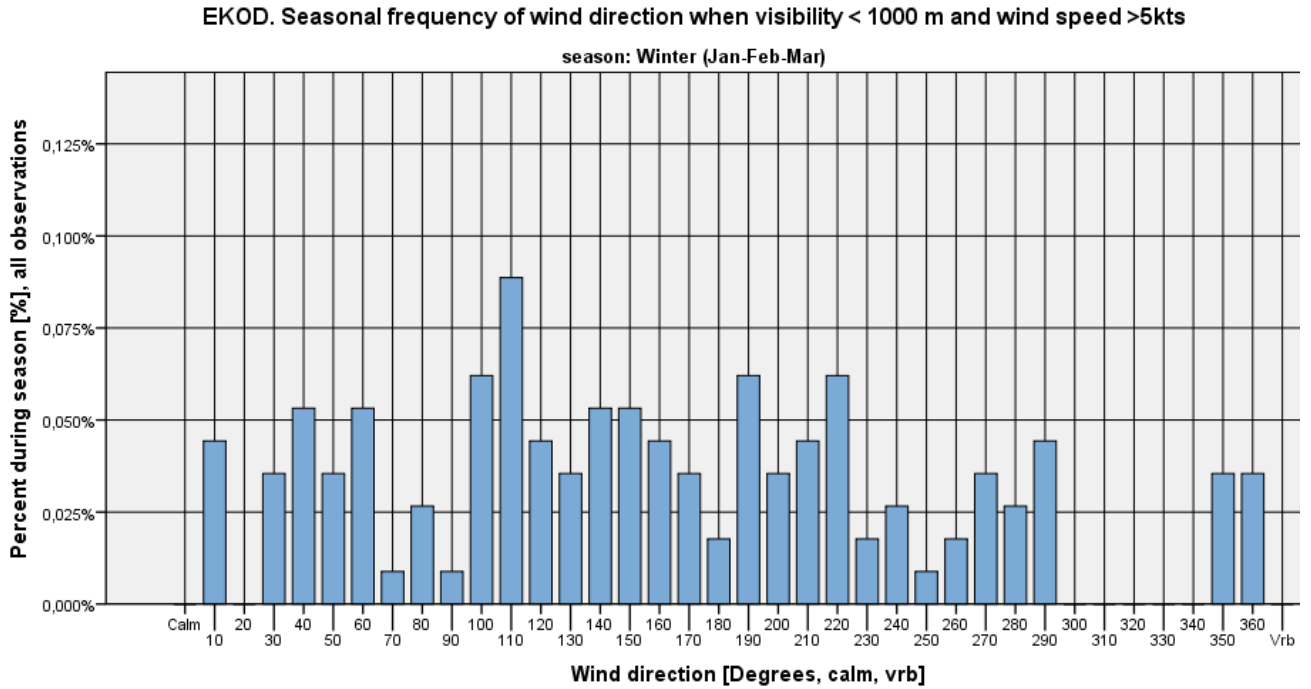


Figure 334

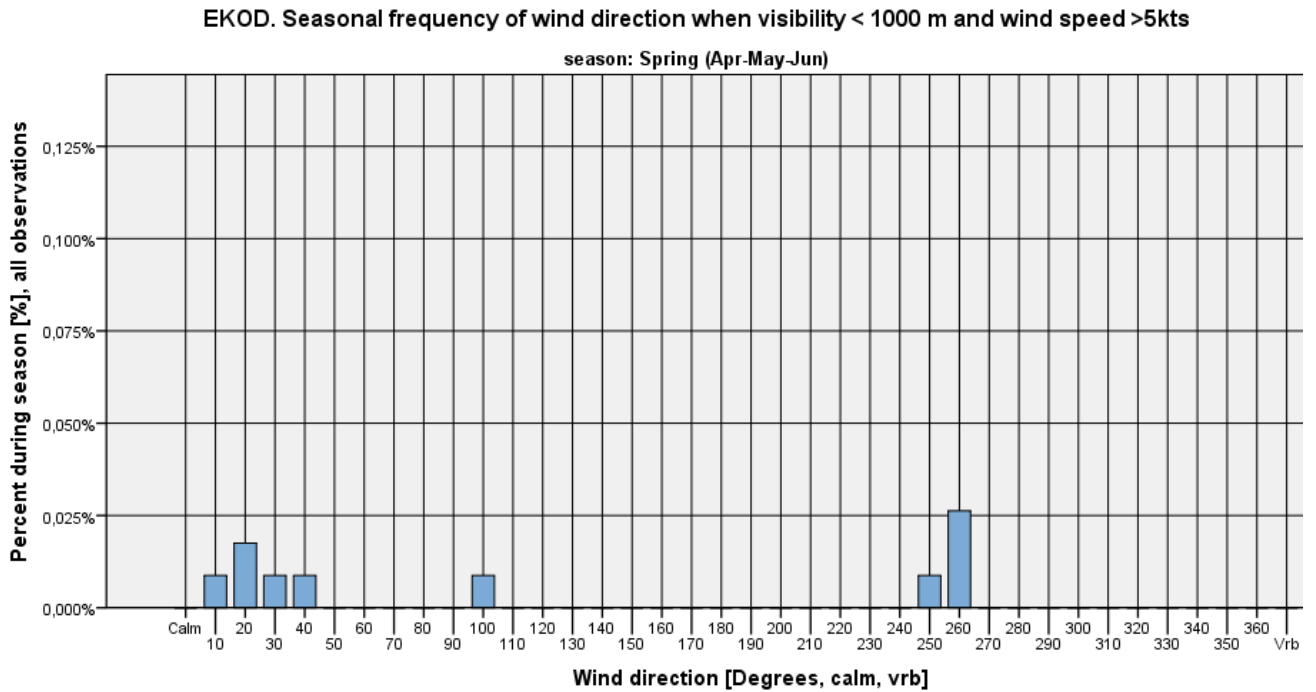


Figure 335



EKOD. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

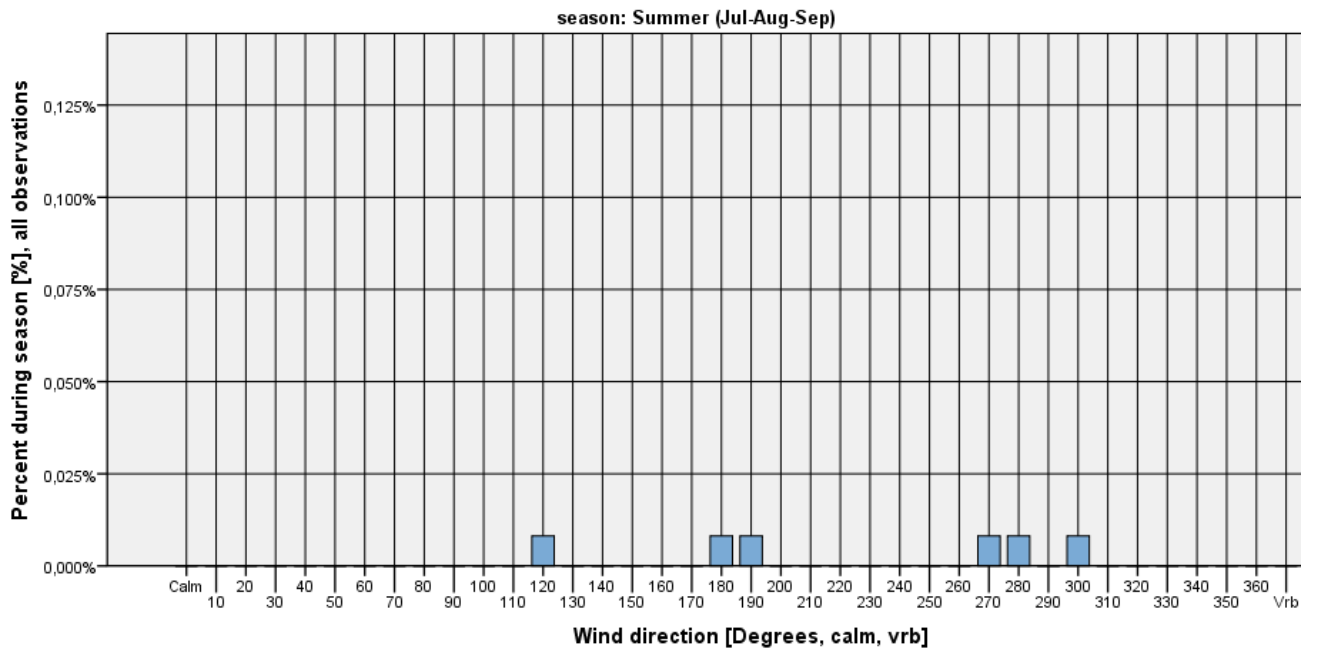


Figure 336

EKOD. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

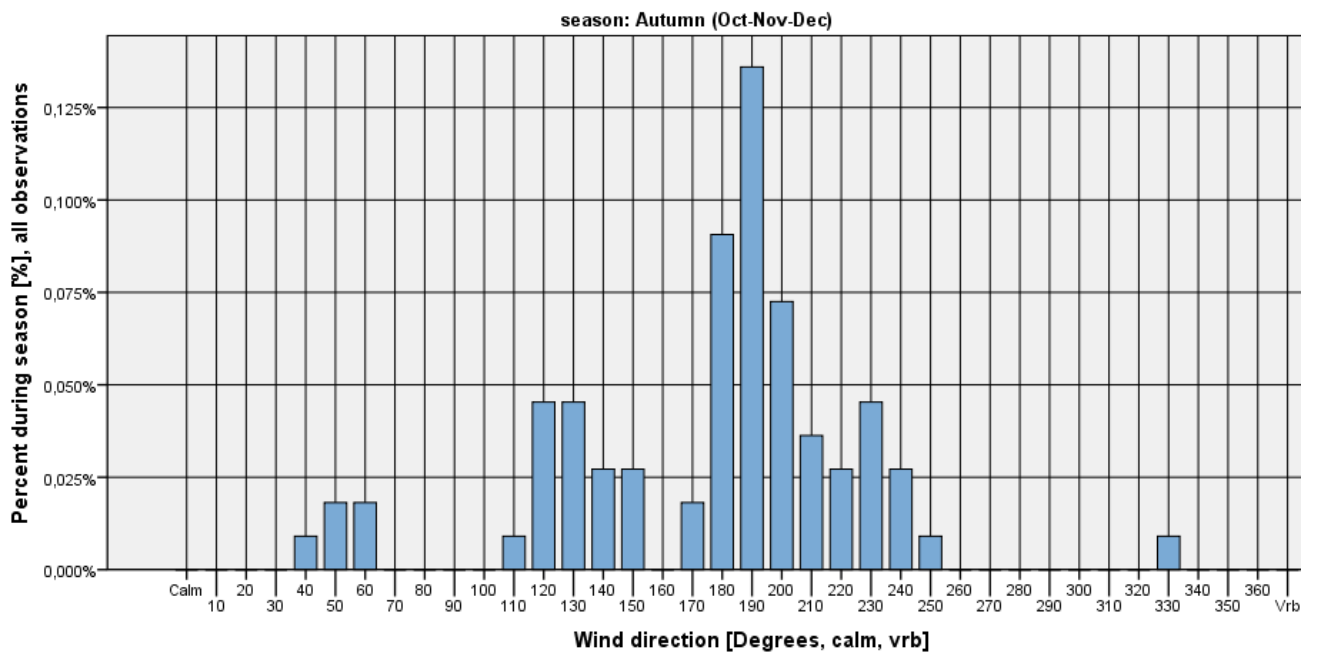


Figure 337

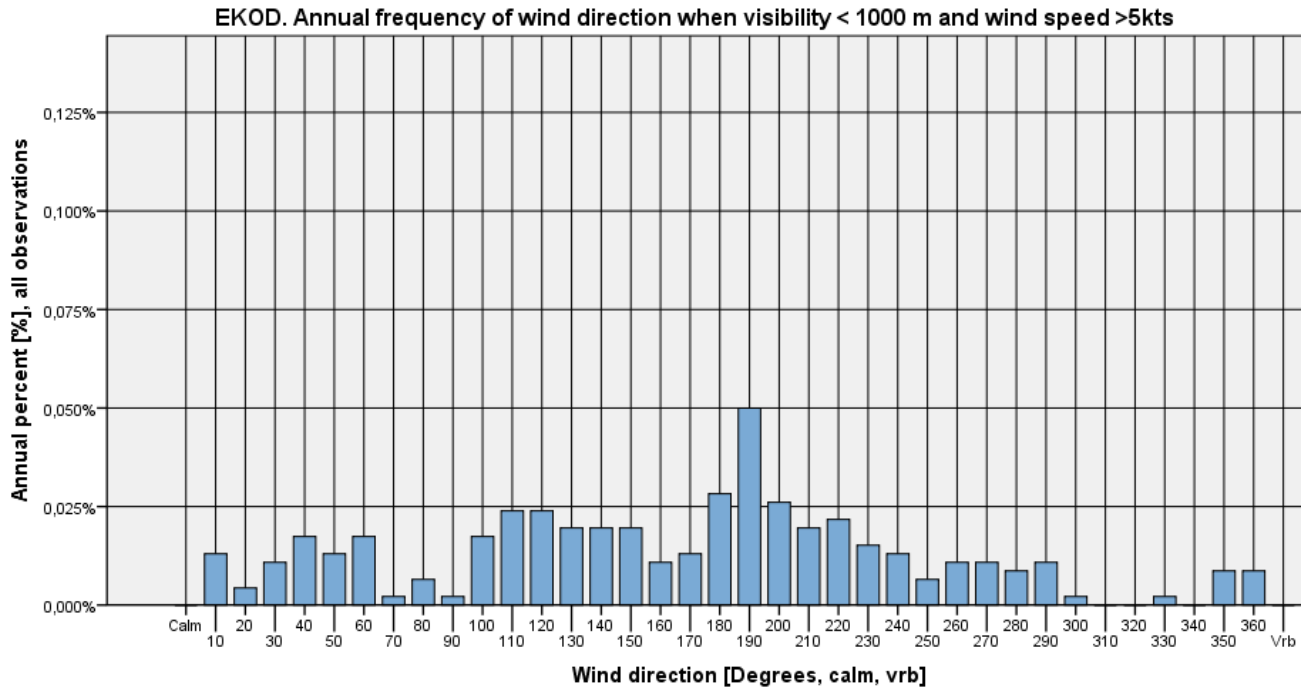


Figure 338



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

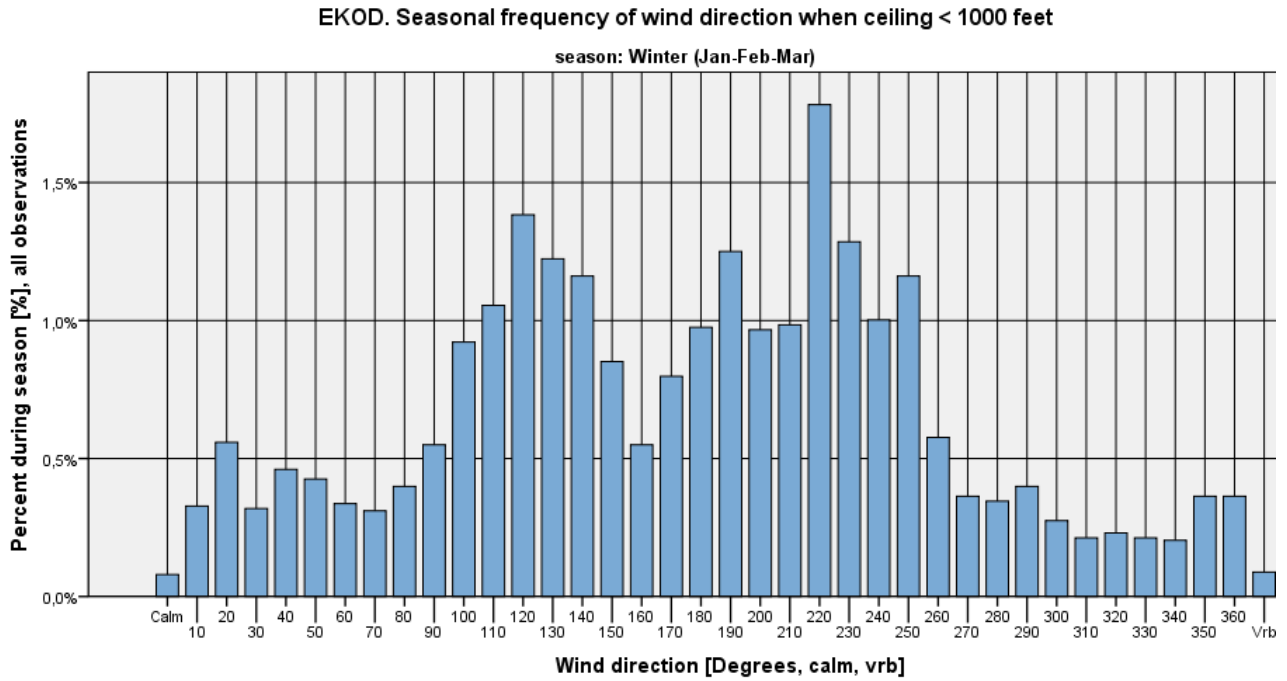


Figure 339

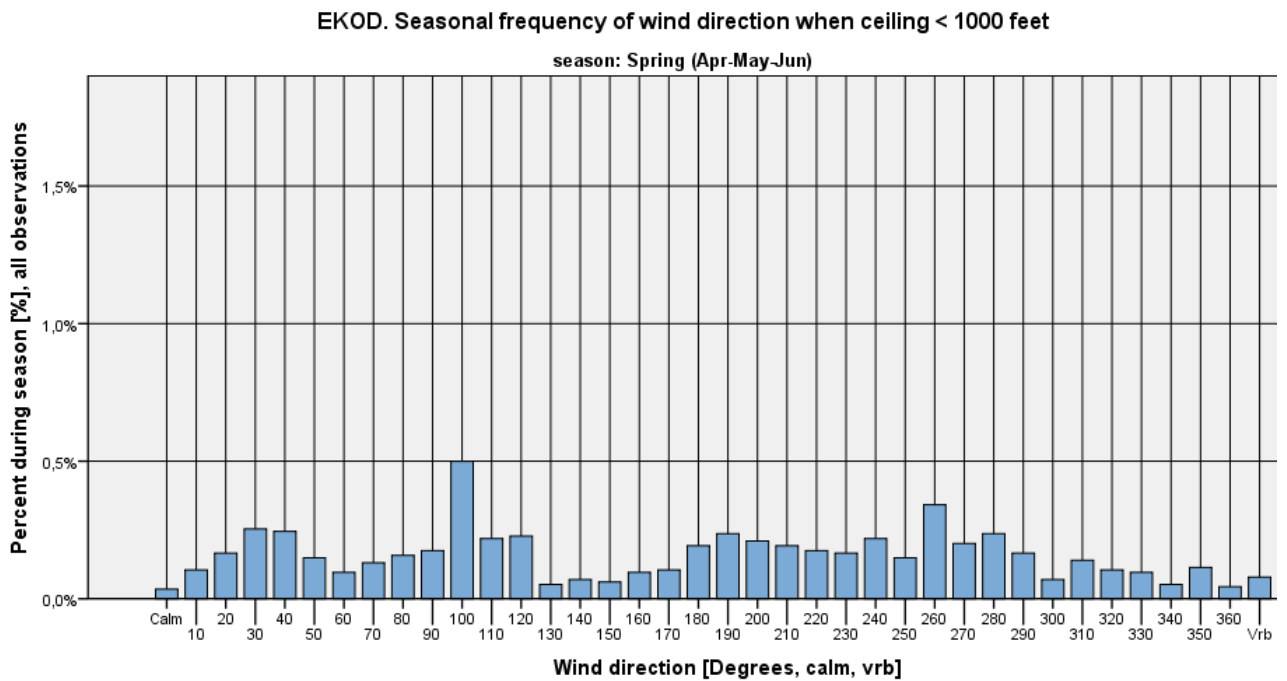


Figure 340



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

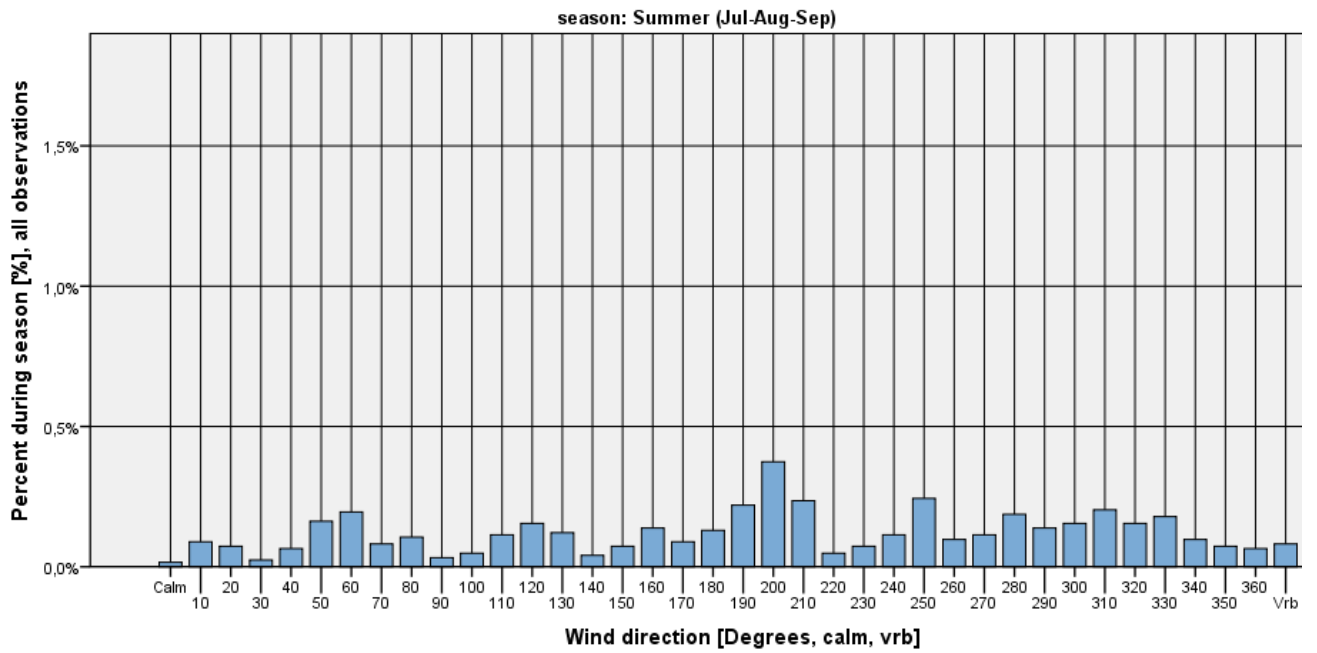


Figure 341

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

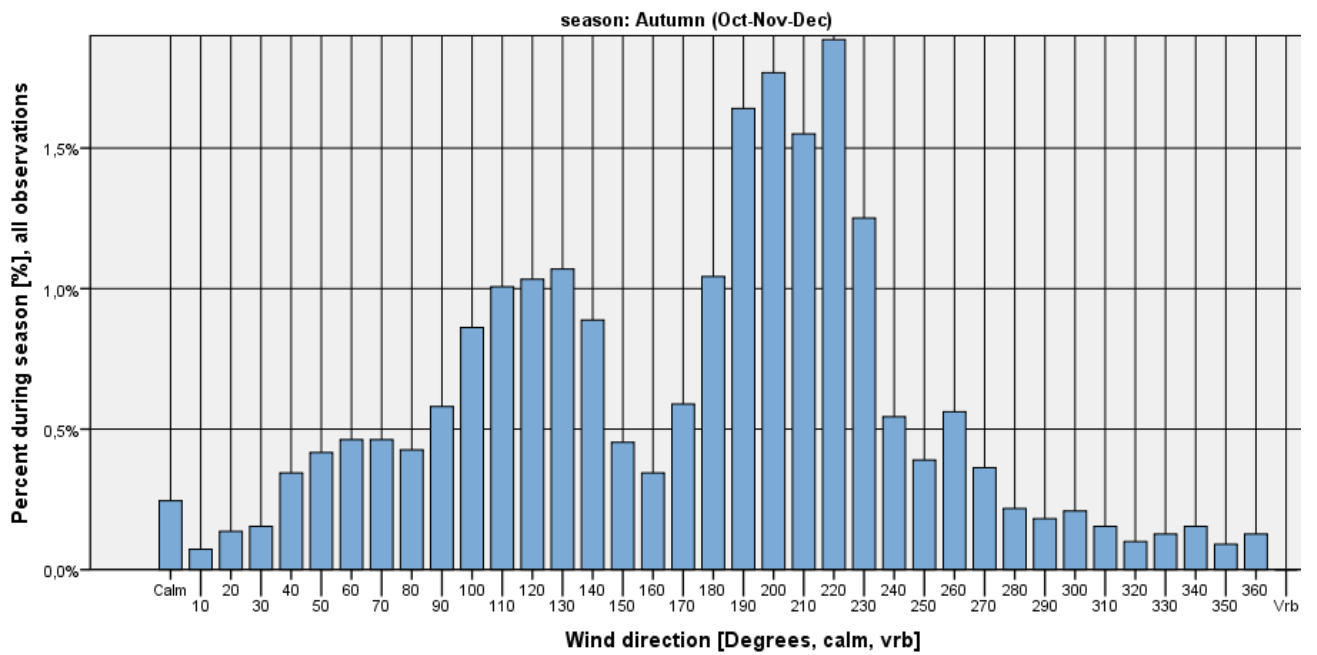


Figure 342

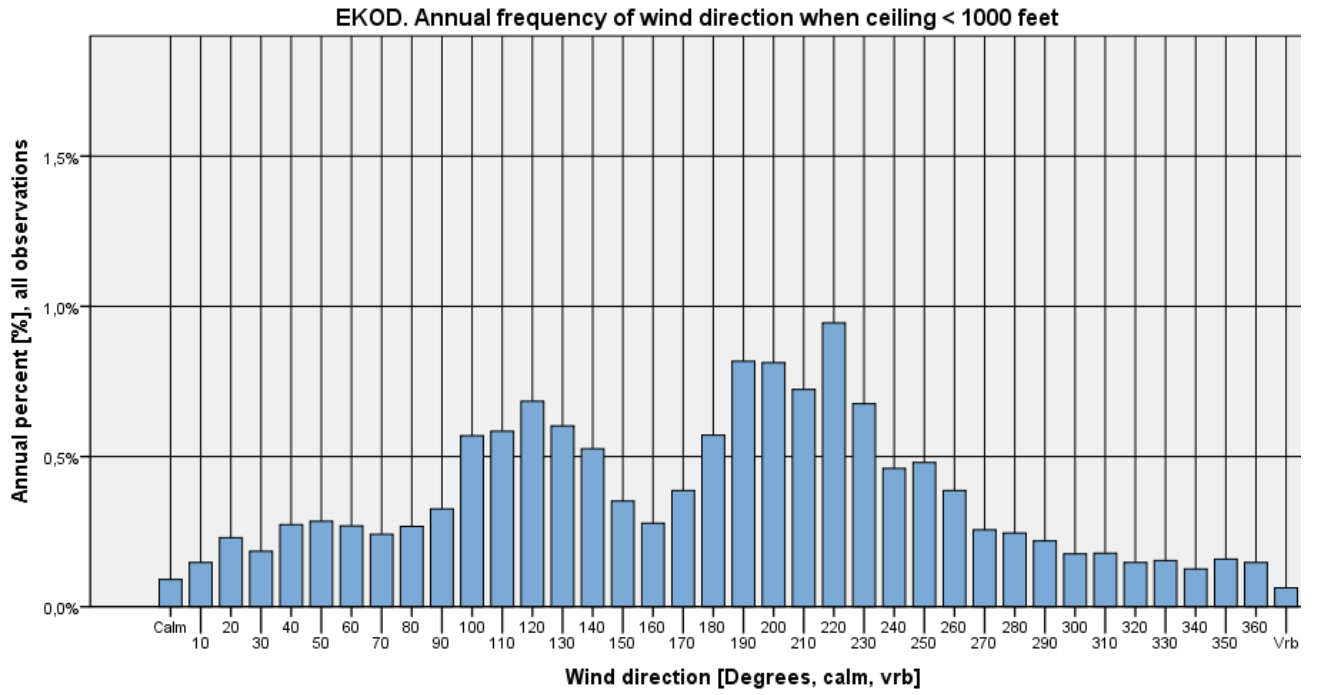


Figure 343



Ceiling < 1000 feet and wind speed ≤ 5 kts

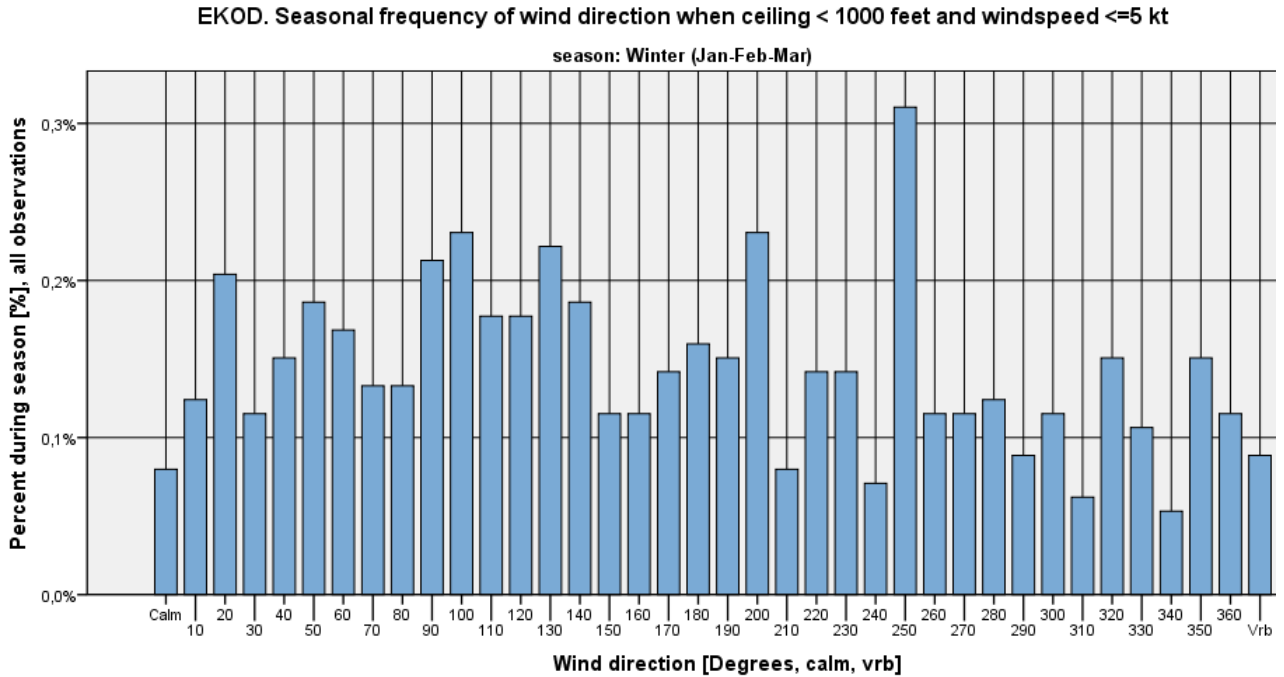


Figure 344

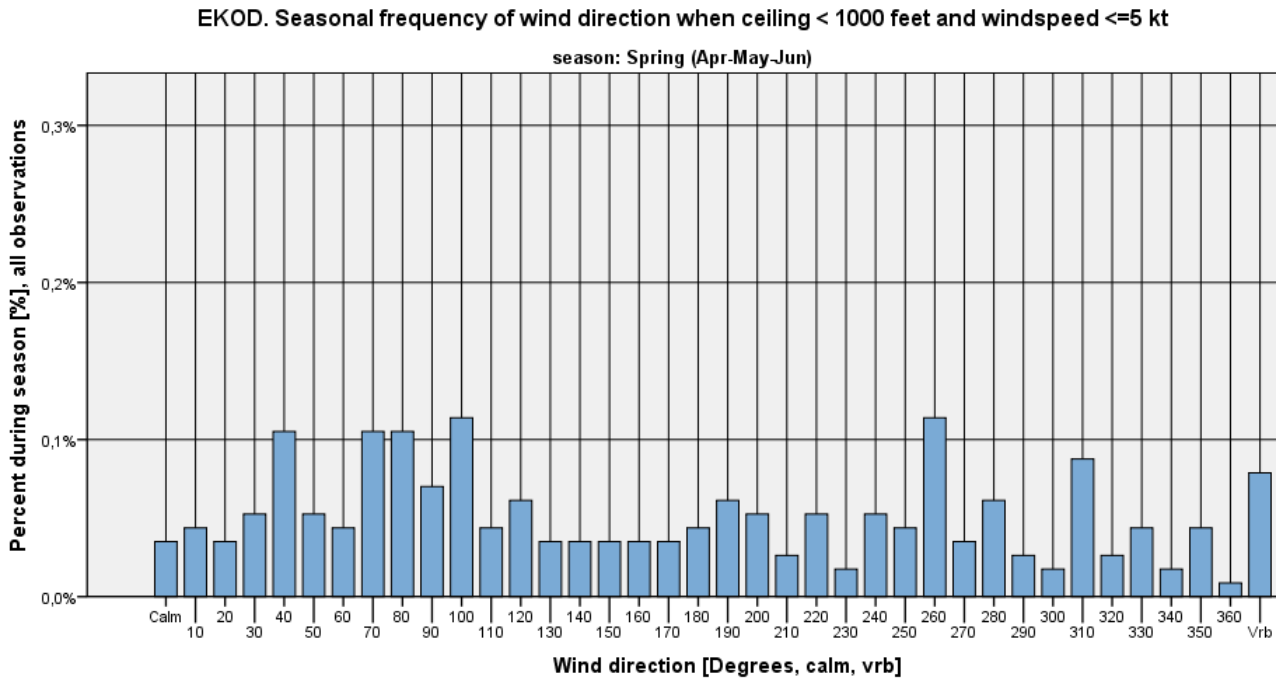


Figure 345



EKOD. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

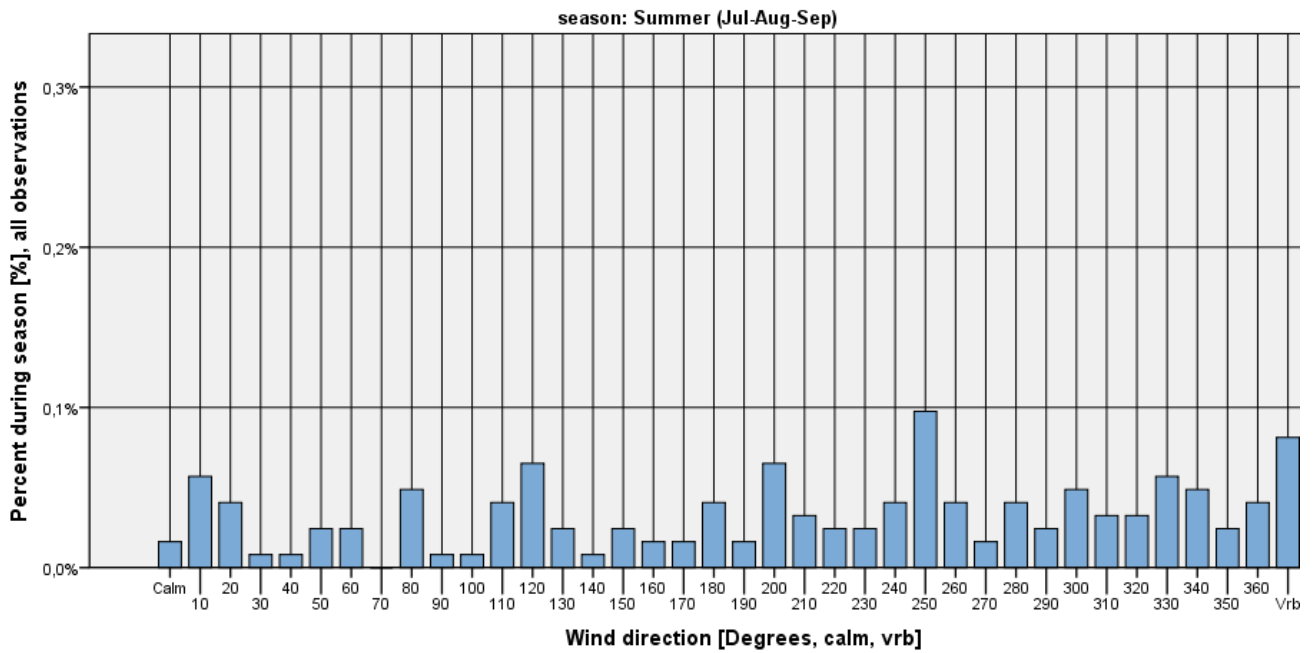


Figure 346

EKOD. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

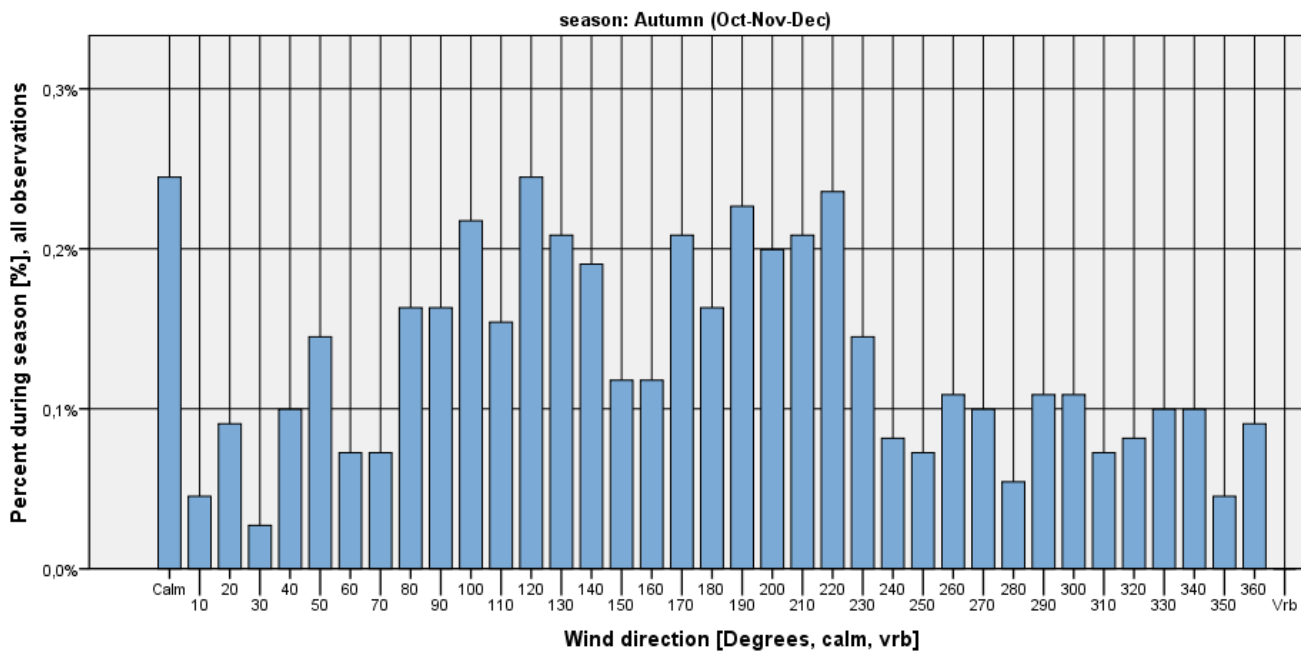


Figure 347

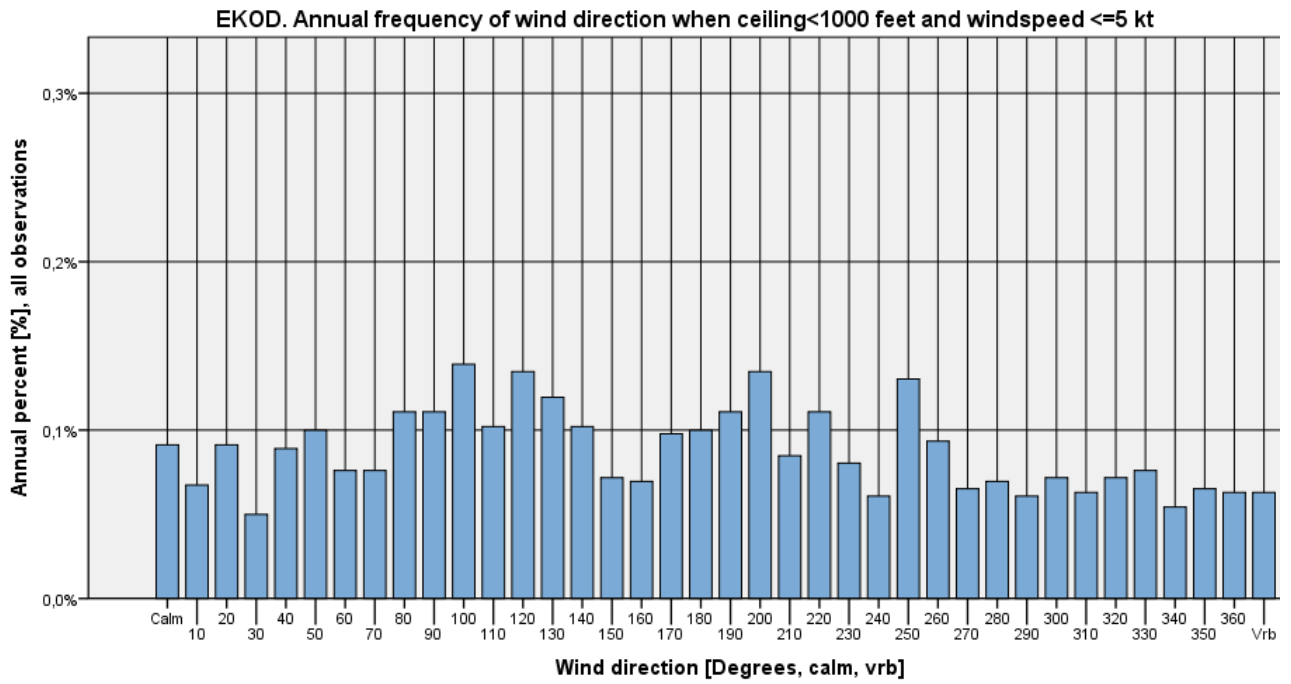


Figure 348



Ceiling < 1000 feet and wind speed > 5 kts

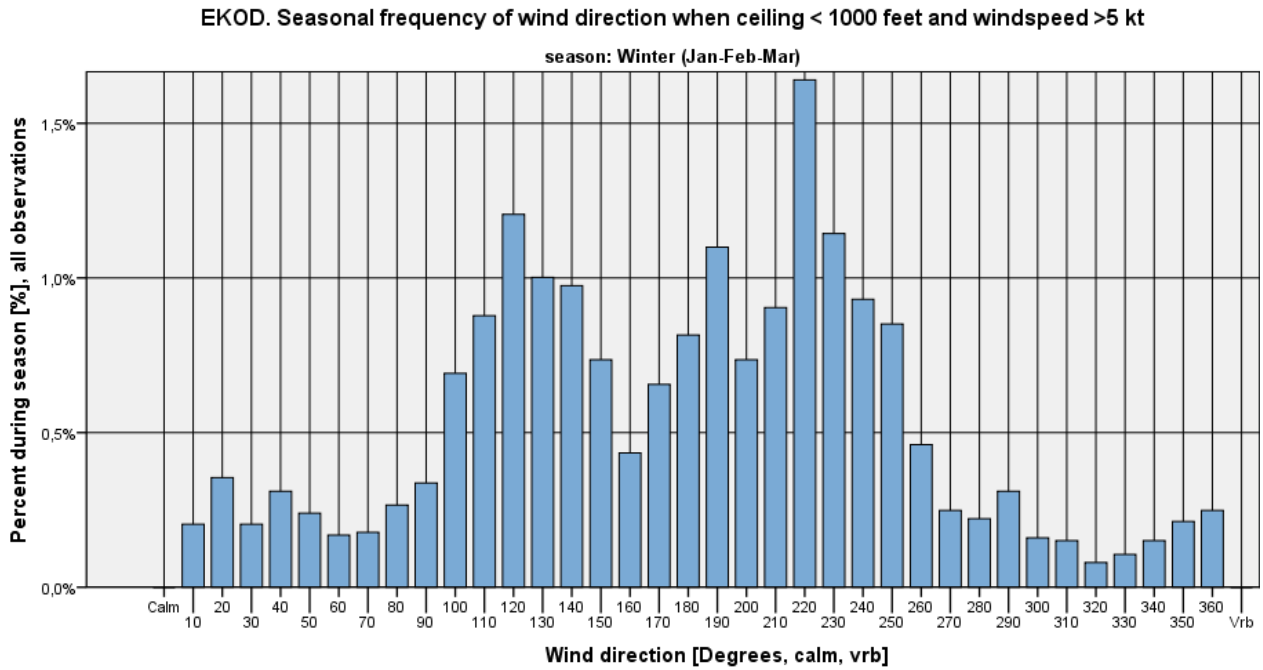


Figure 349

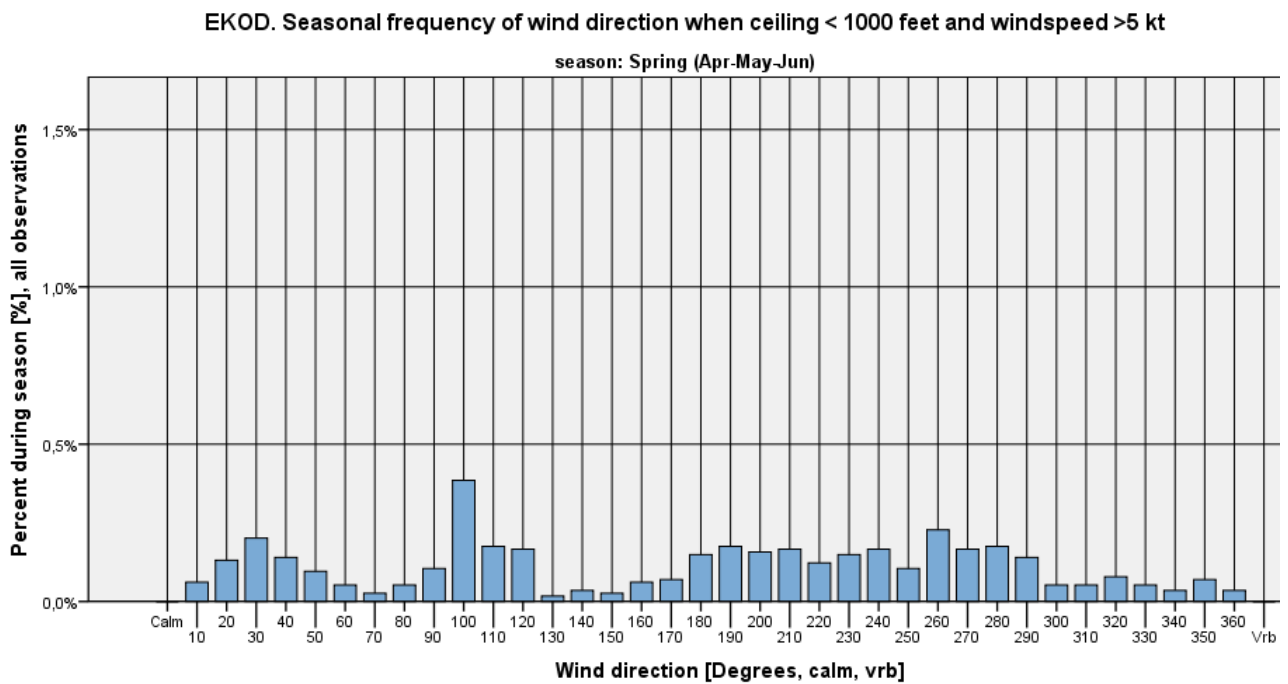


Figure 350



EKOD. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

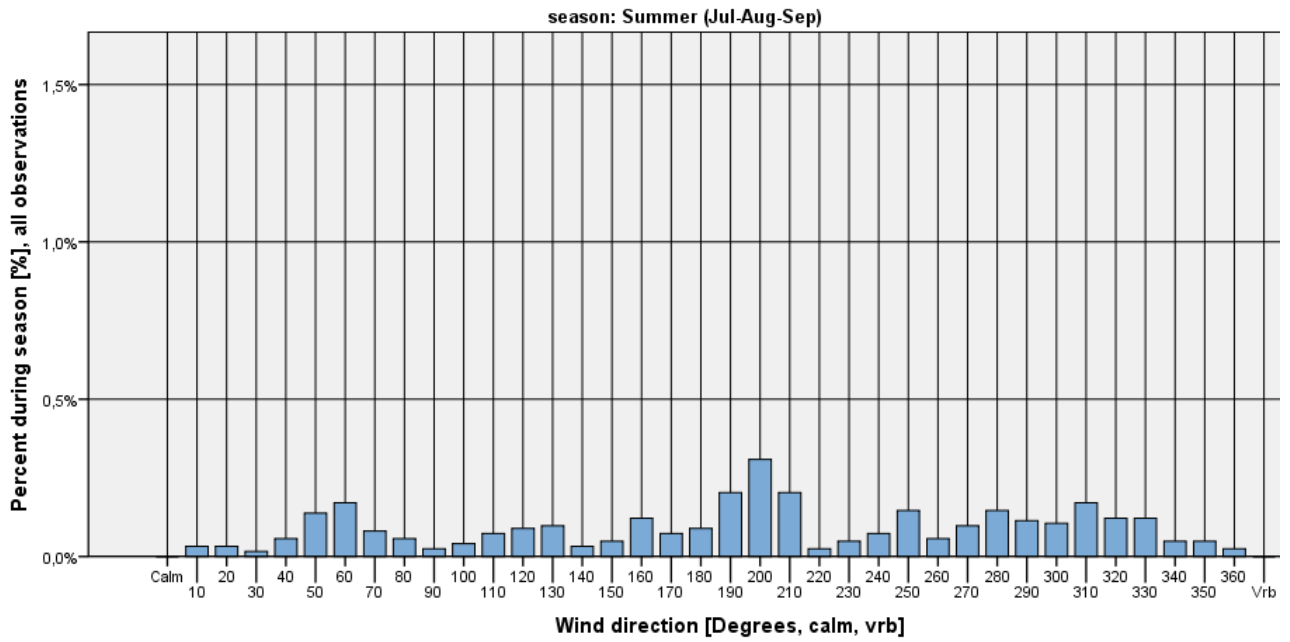


Figure 351

EKOD. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

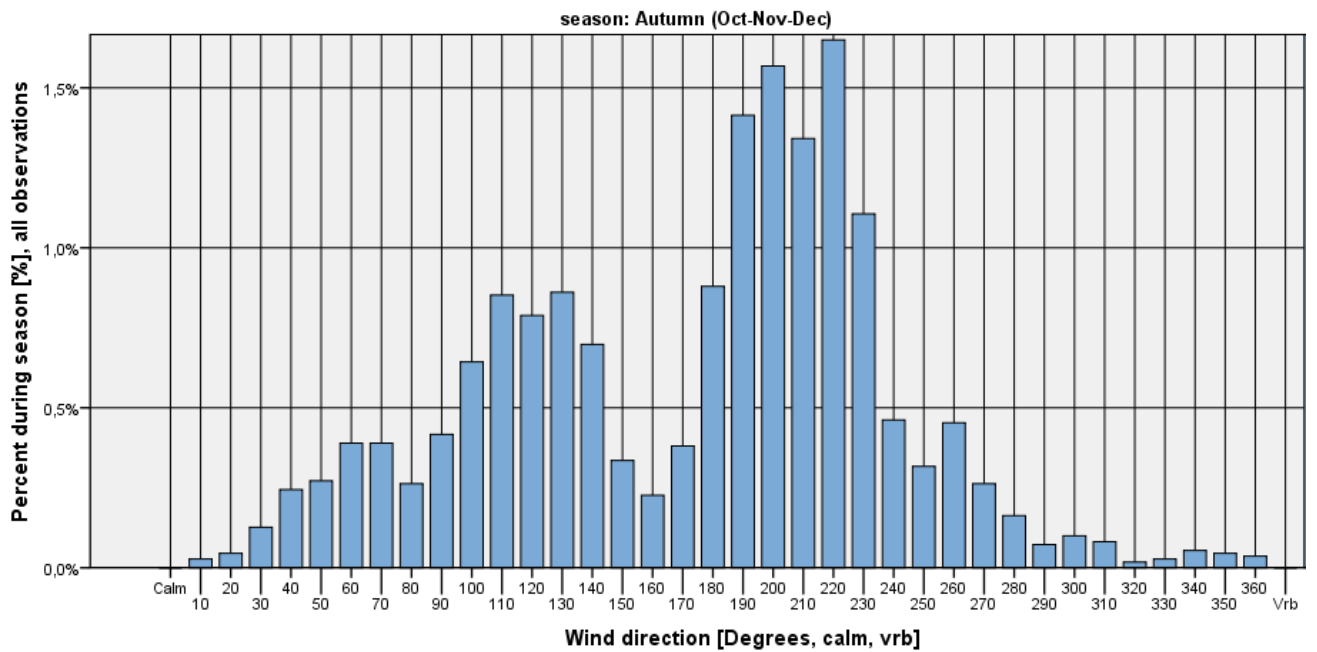


Figure 352

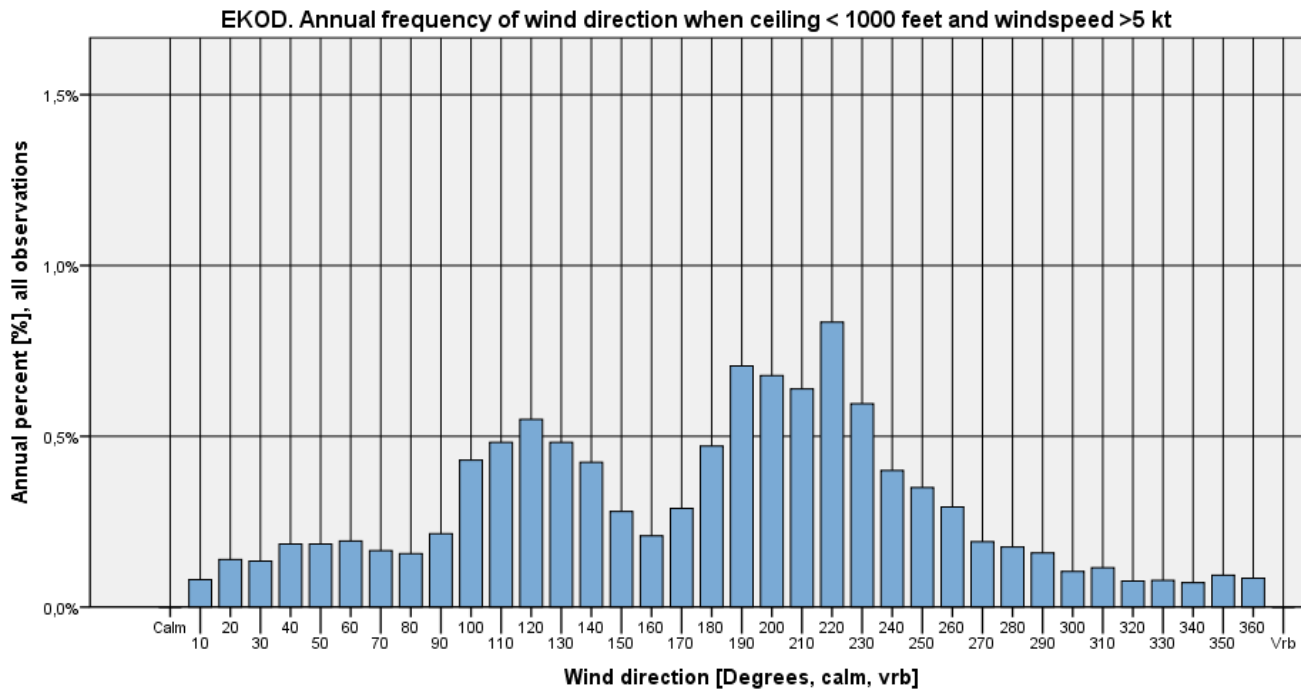


Figure 353



Ceiling < 500 feet

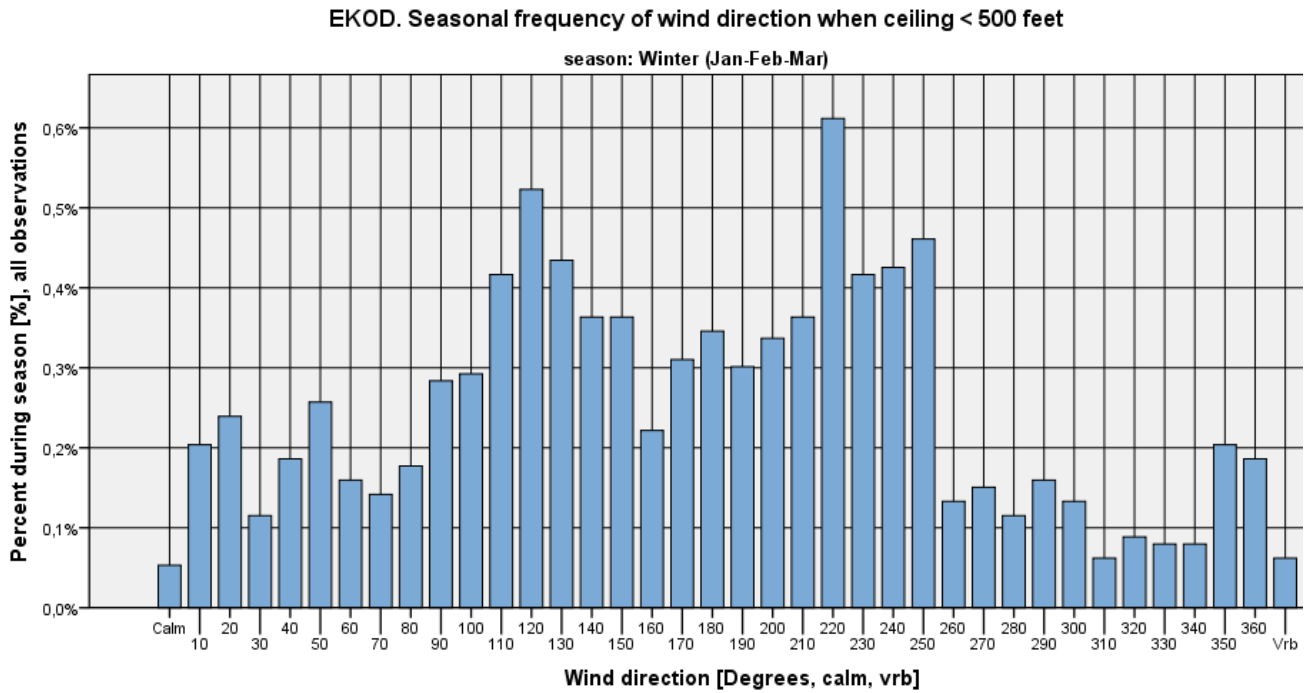


Figure 354

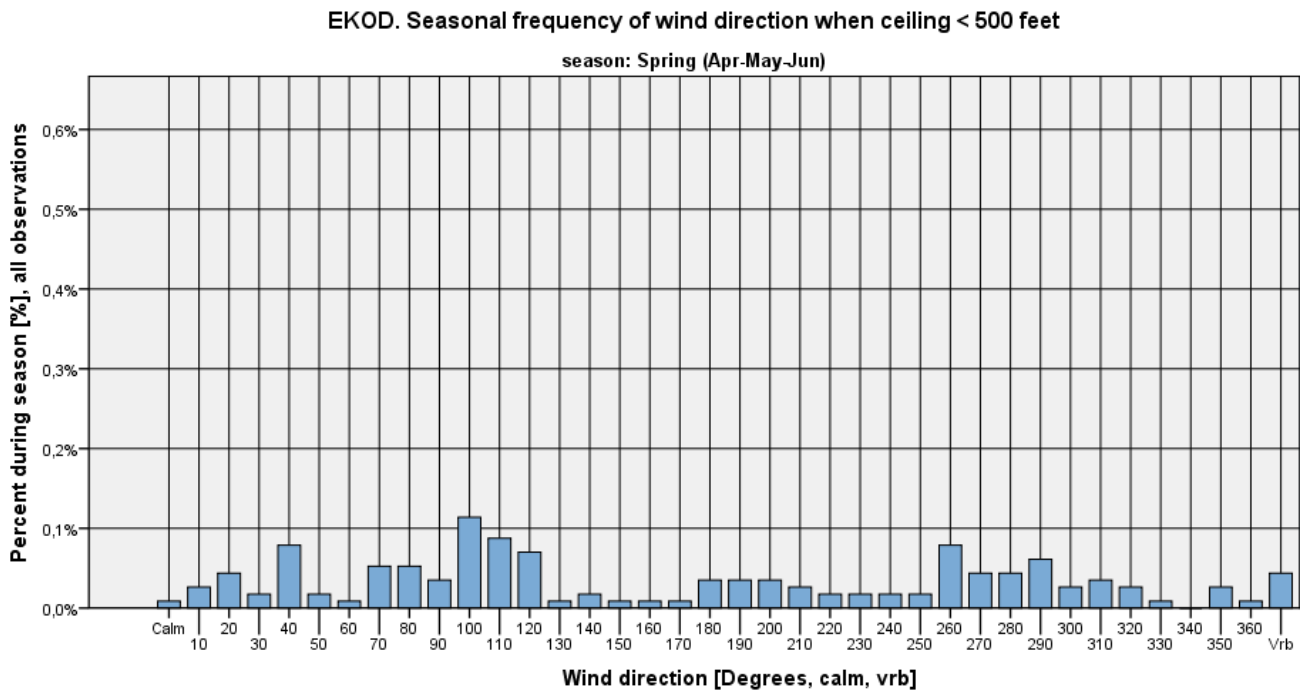


Figure 355



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

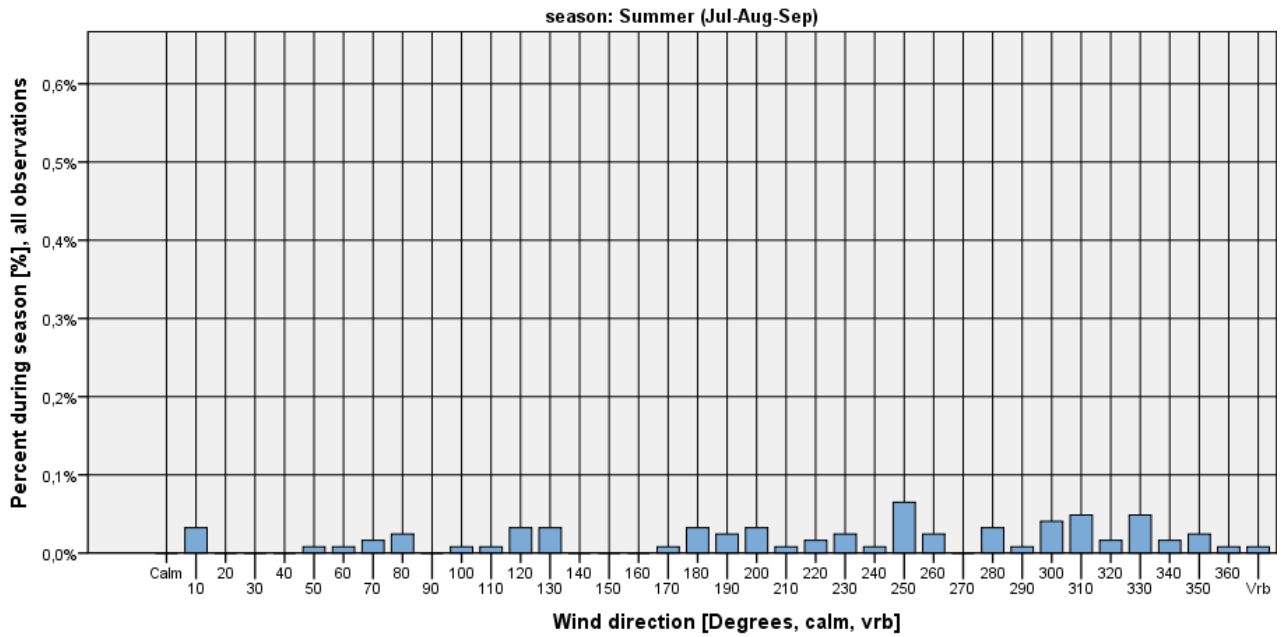


Figure 356

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

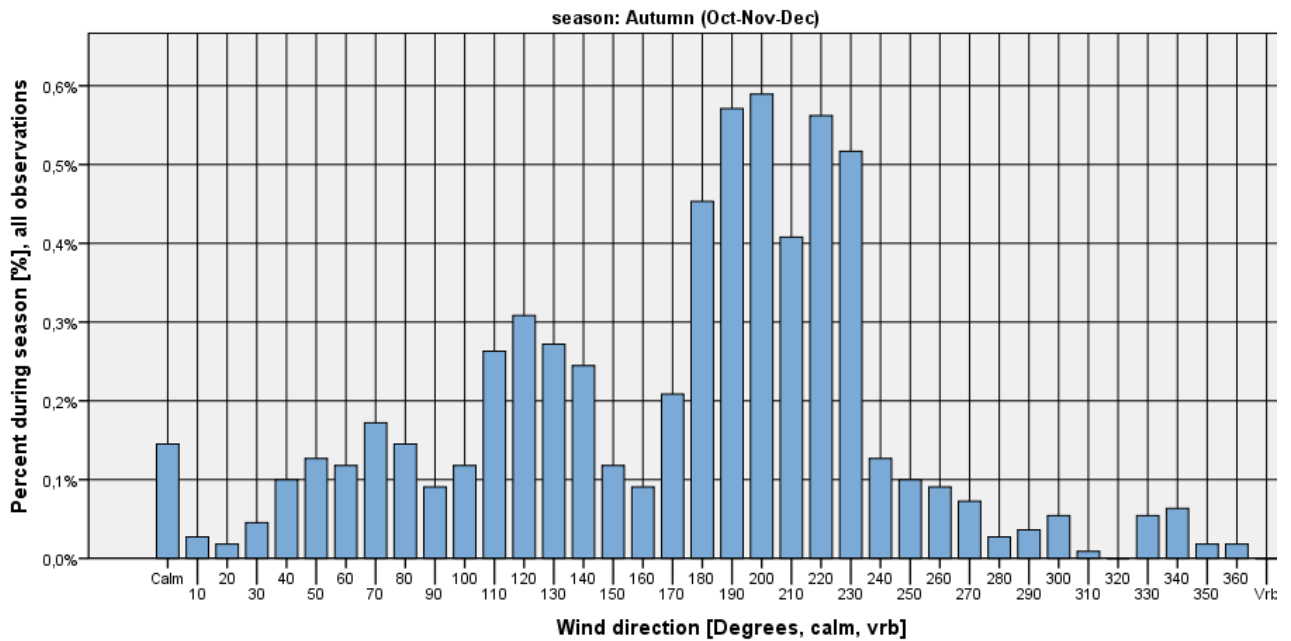


Figure 357

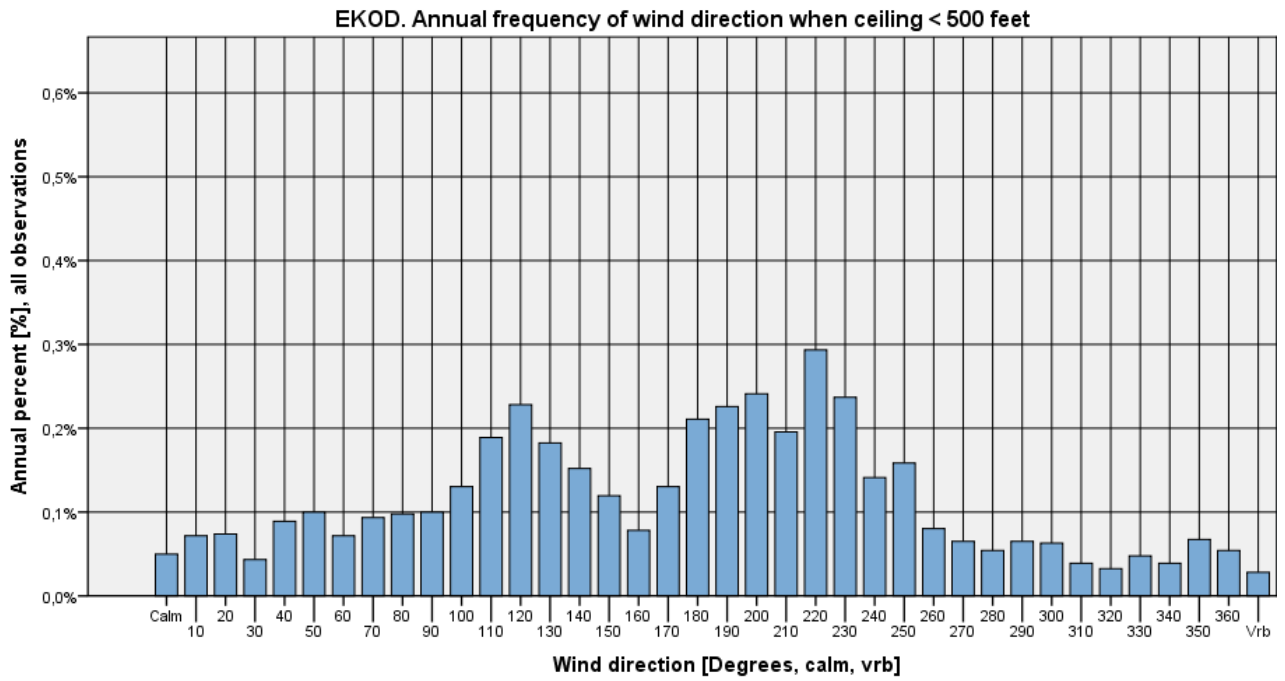


Figure 358



Ceiling < 500 feet and wind speed ≤ 5 kts

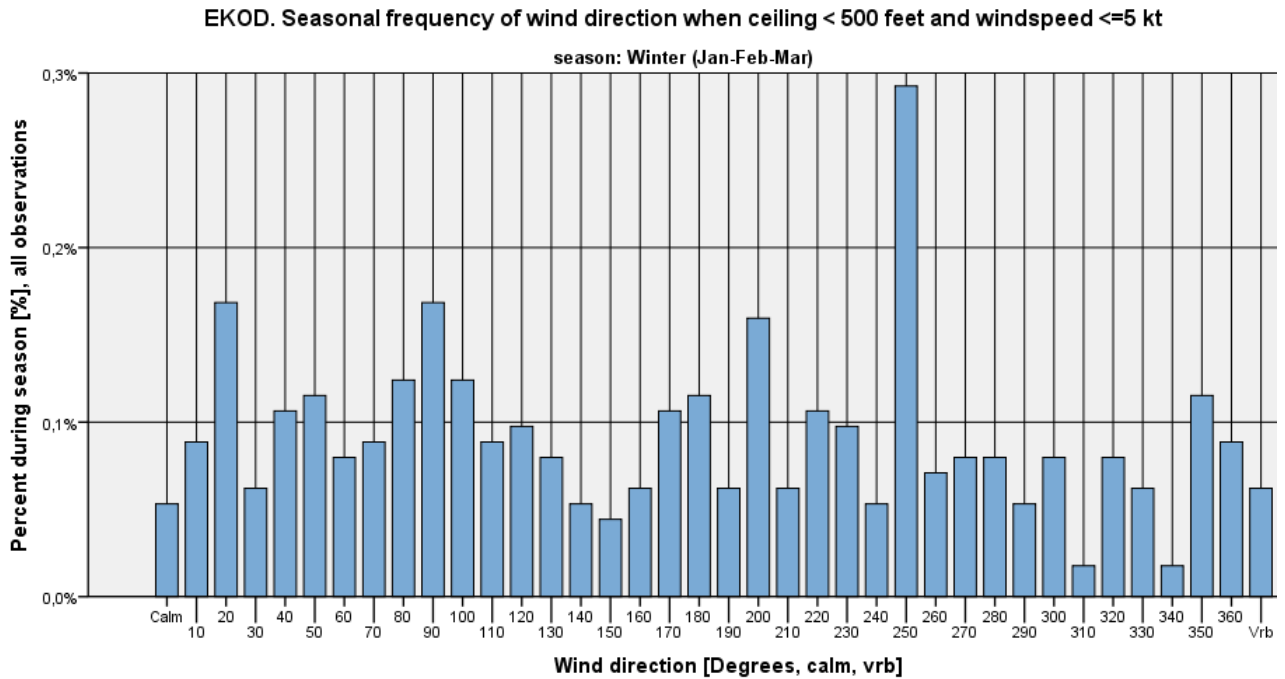


Figure 359

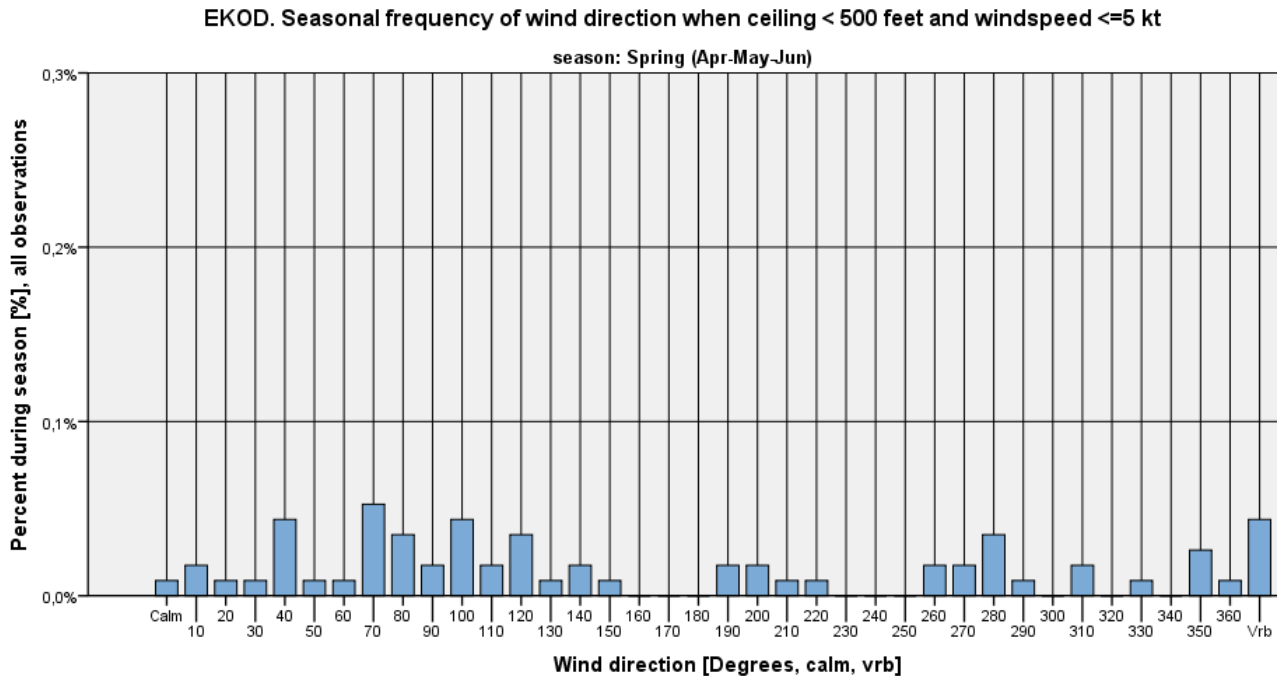


Figure 360



EKOD. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

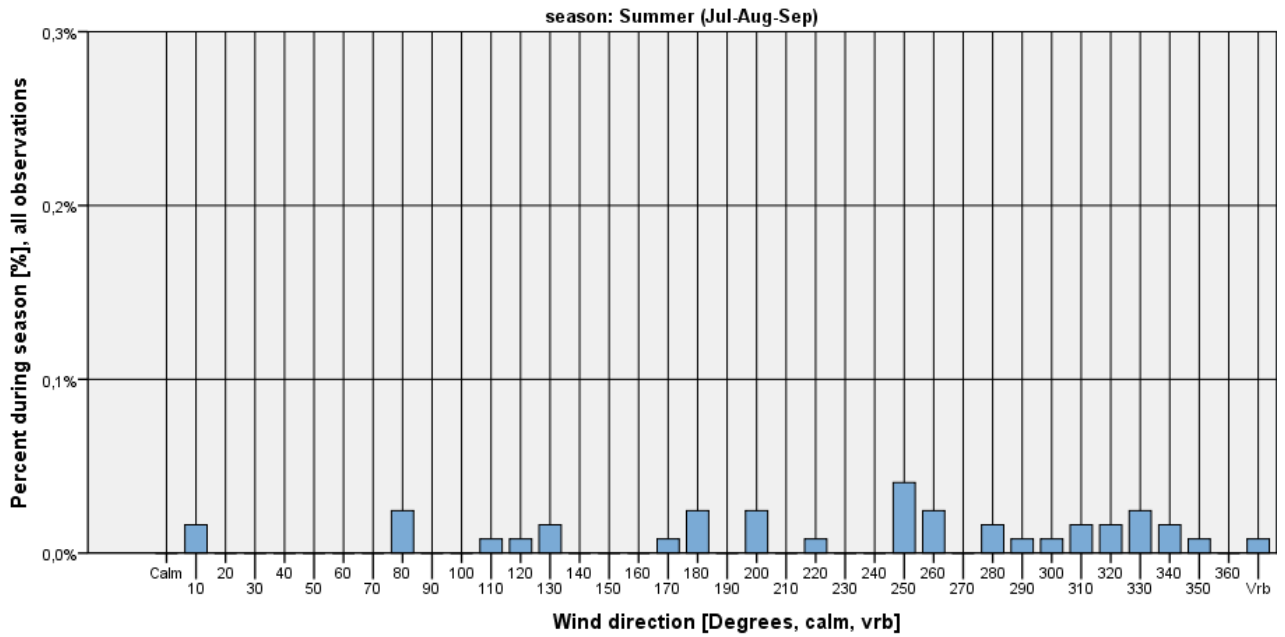


Figure 361

EKOD. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

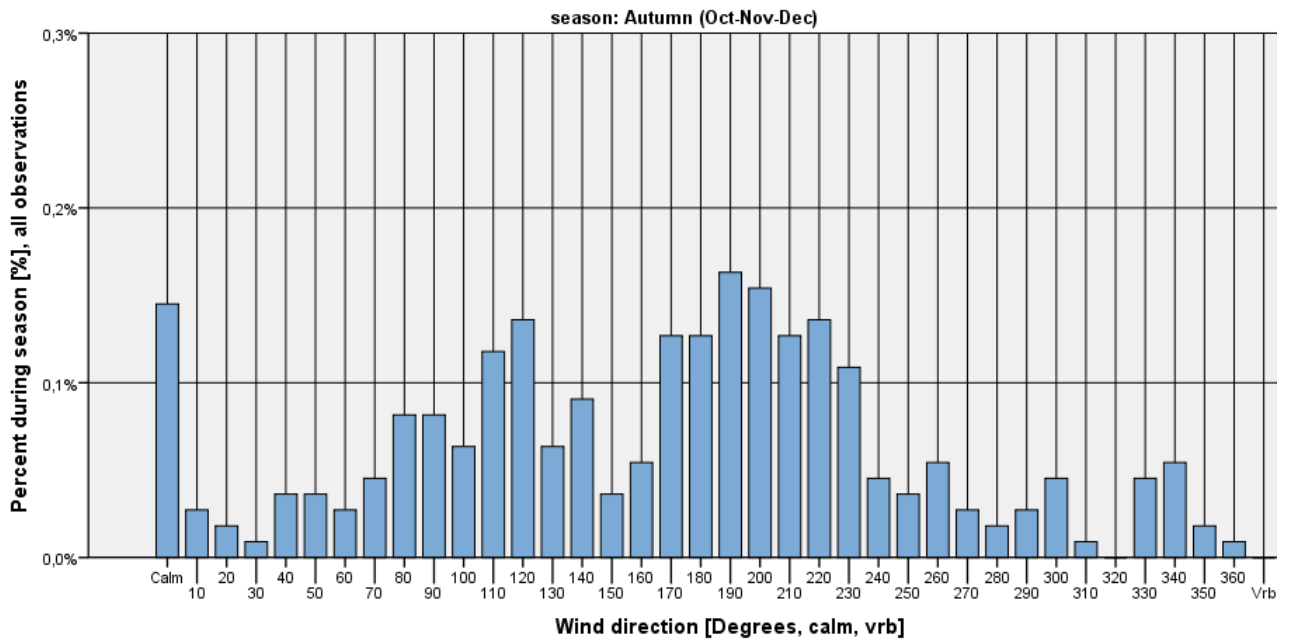


Figure 362

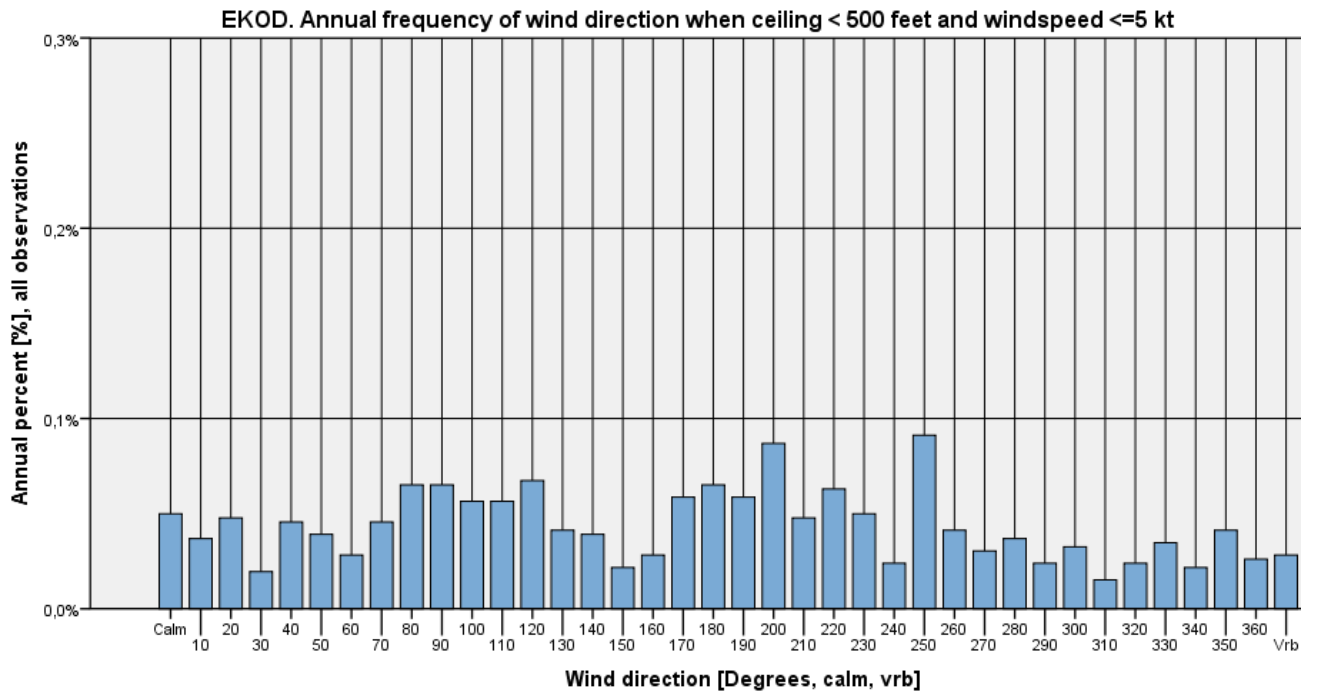


Figure 363



Ceiling < 500 feet and wind speed > 5 kts

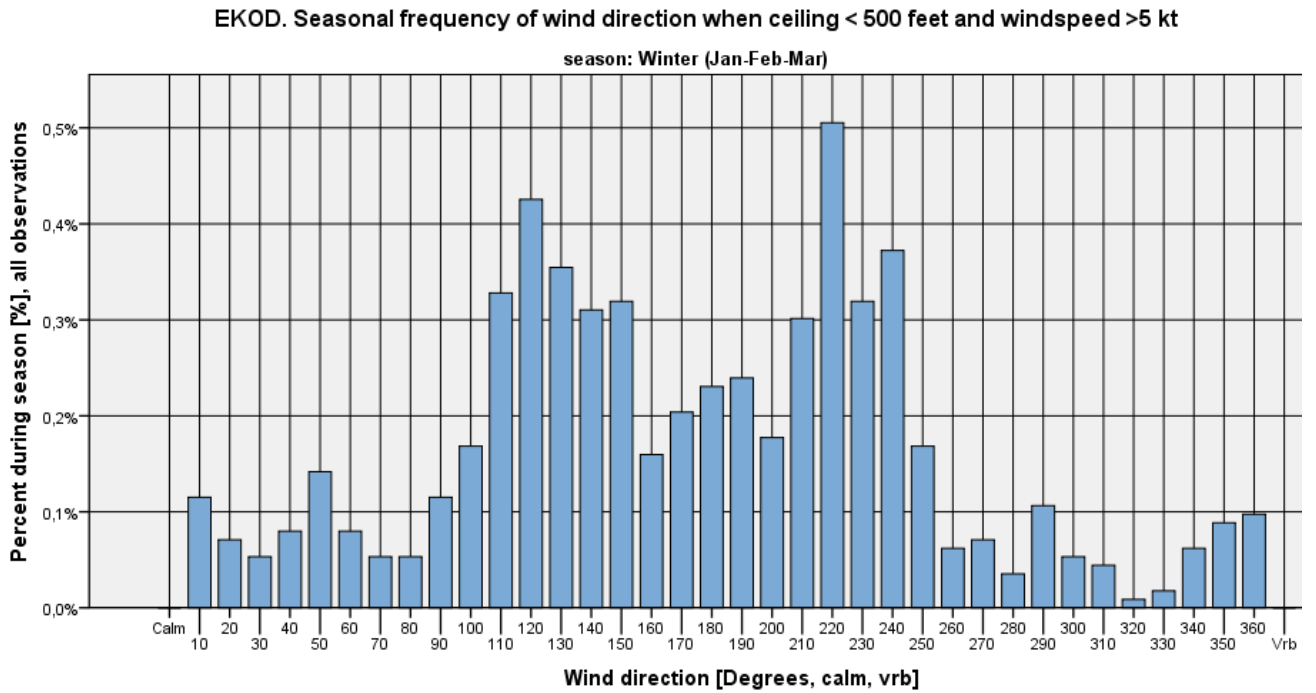


Figure 364

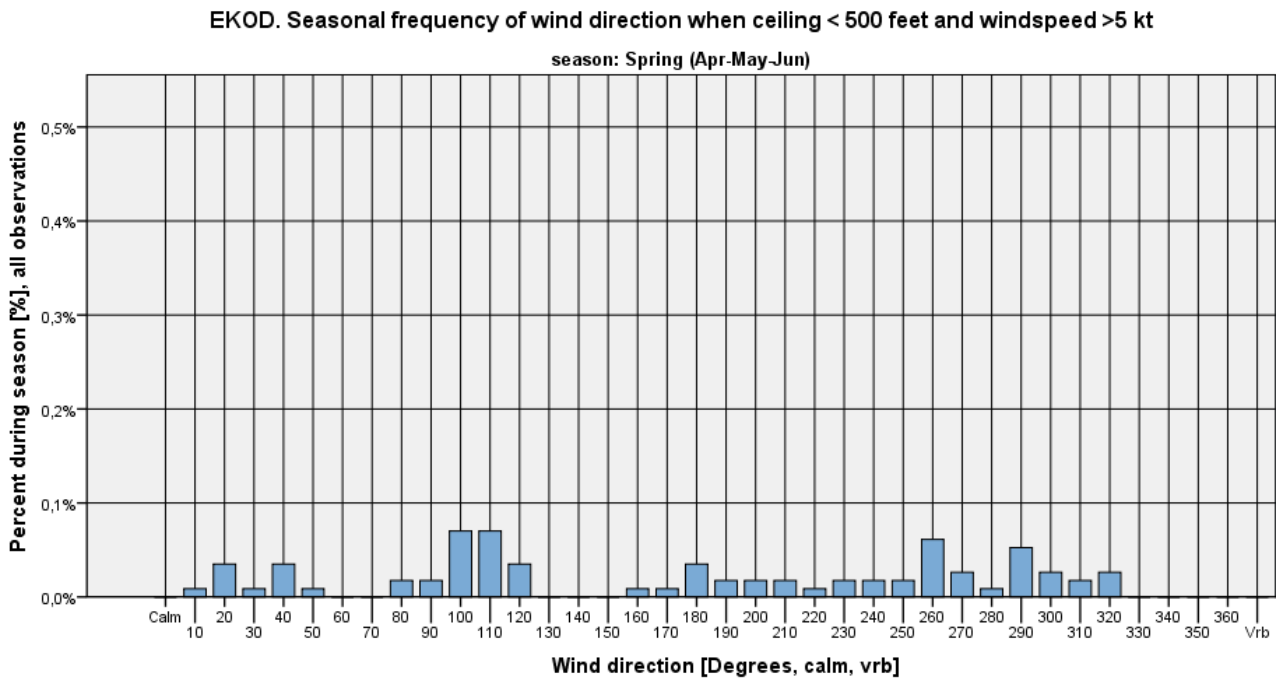


Figure 365



EKOD. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

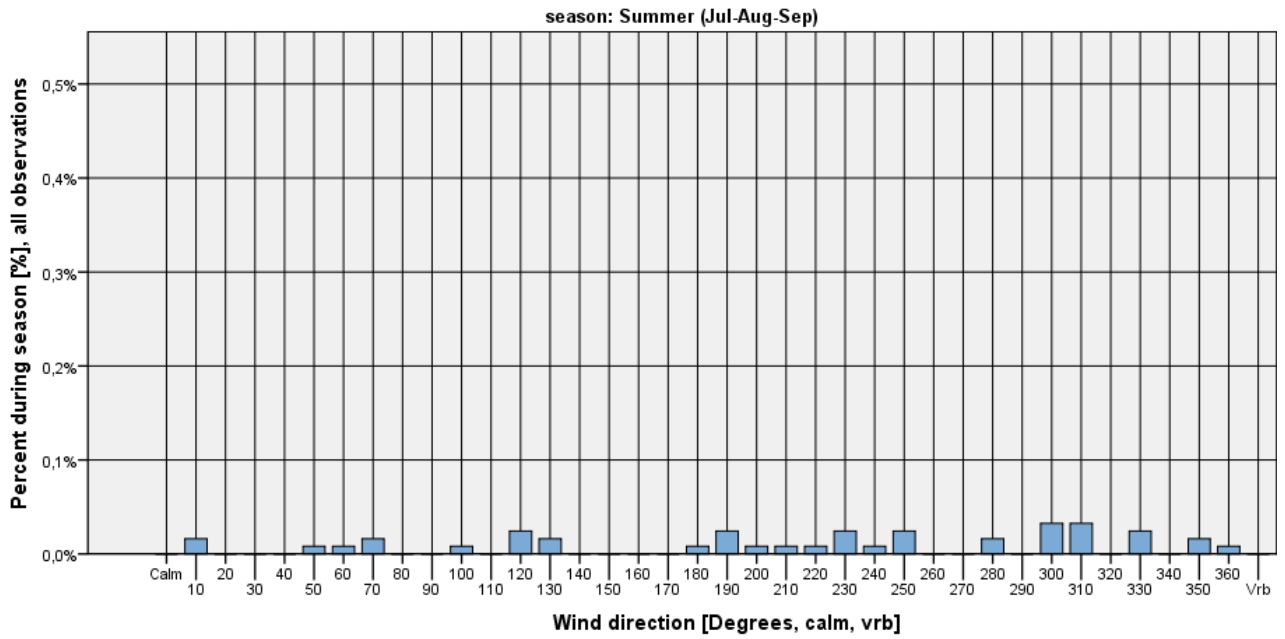


Figure 366

EKOD. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

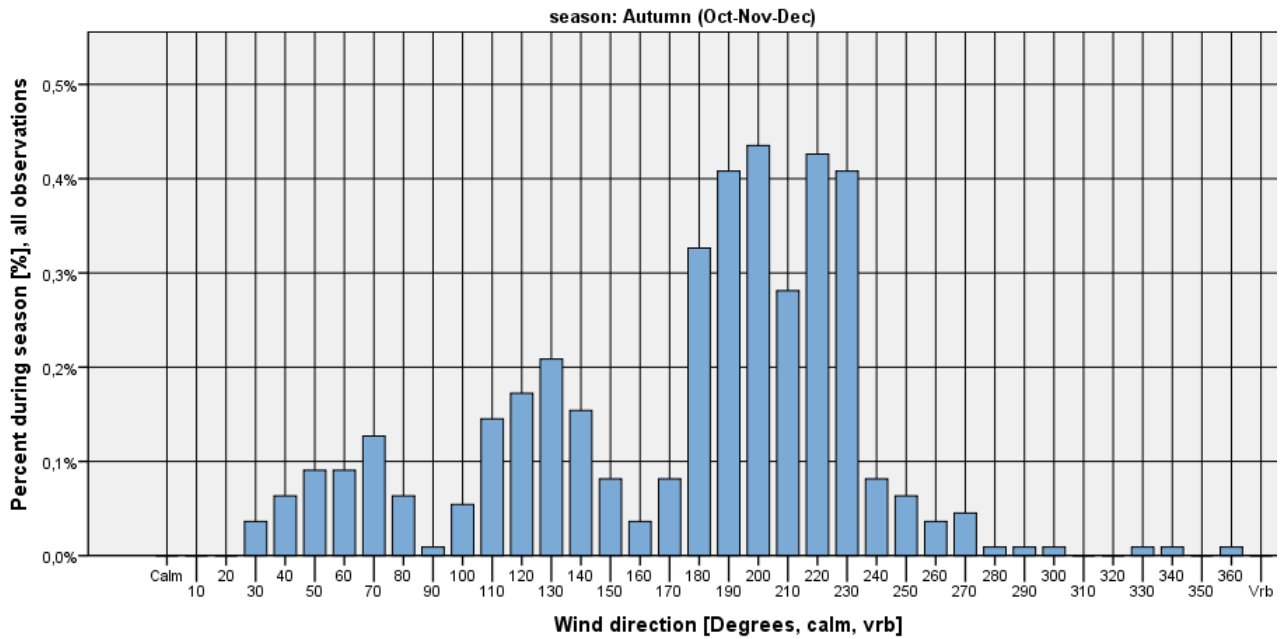


Figure 367

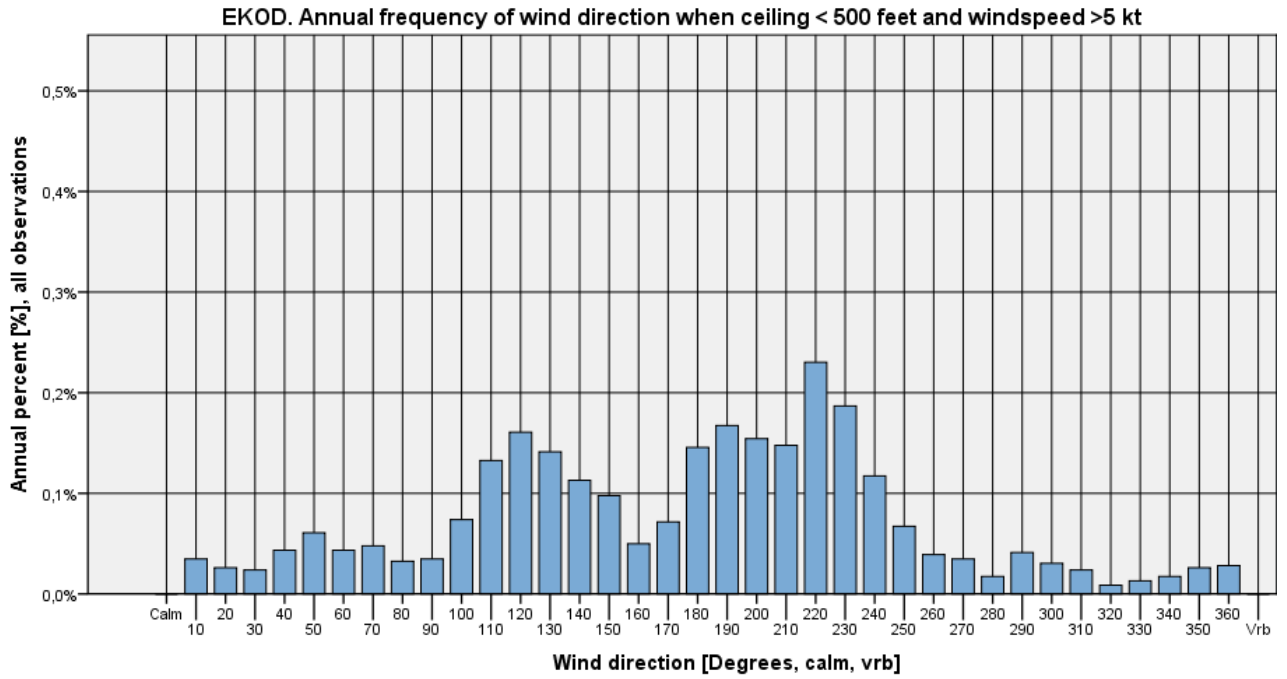


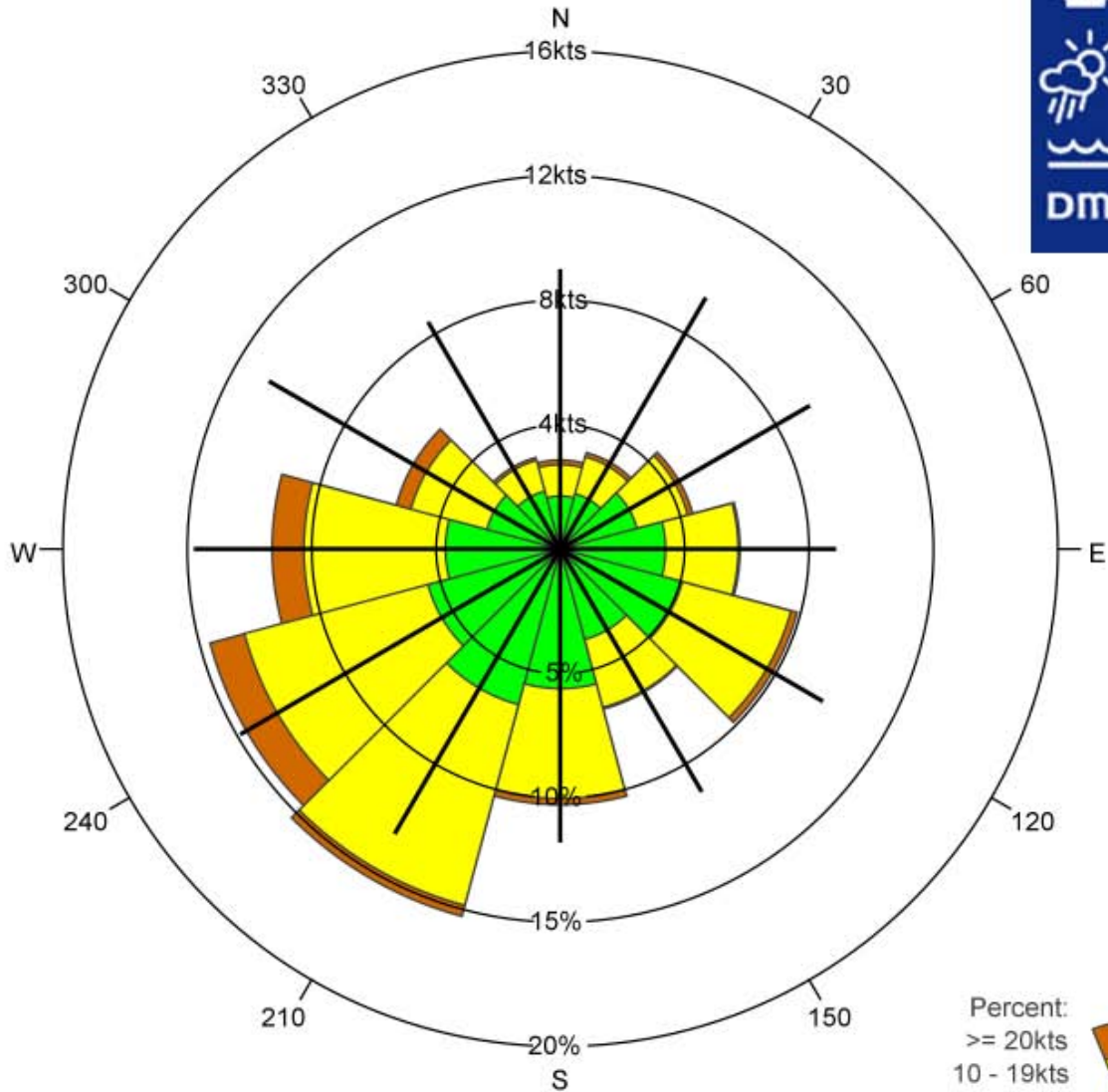
Figure 368



Wind roses

EKOD Odense - Beldringe AUTUMN & WINTER: OCTOBER - MARCH

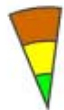
01-02-2003 - 01-02-2012



Legend:

— Mean wind speed

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



	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.6	4.0	5.5	7.2	9.9	6.7	10.3	15.3	14.6	11.6	6.8	3.8	99.2
% 1 - 9kts	2.1	2.3	3.2	4.2	5.1	3.8	5.6	6.5	5.5	4.6	3.1	2.4	48.4
% 10 - 19kts	1.3	1.6	2.1	2.9	4.5	2.8	4.4	8.4	7.7	5.7	3.1	1.3	45.8
% >= 20kts	0.2	0.2	0.2	0.1	0.3	0.1	0.2	0.4	1.4	1.3	0.6	0.1	5.1
Mean wind speed	9.0	9.3	9.3	8.9	9.7	9.0	9.5	10.6	11.9	11.8	10.8	8.5	10.2
Max wind speed	32.0	24.0	27.0	24.0	24.0	22.0	30.0	30.0	46.0	33.0	33.0	32.0	46.0

Number of observations = 22309

Source: DMI

Calm defined a wind speed = 0kts

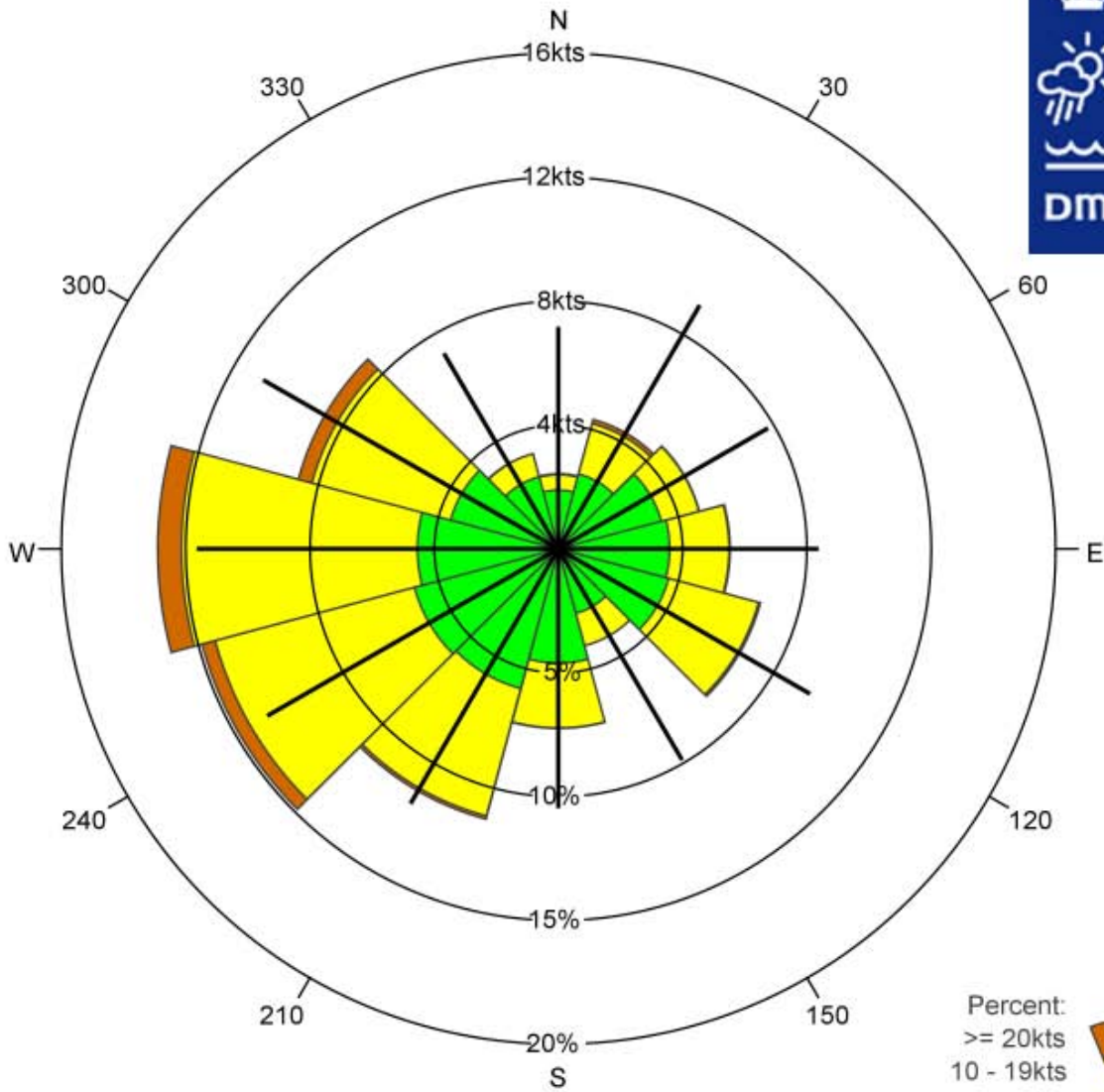
Number of observations with calm/varying wind direction: 172=0.8%

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



EKOD Odense - Beldringe SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.0	5.4	5.9	6.9	8.4	4.1	7.2	11.3	14.9	16.1	10.8	4.0	98.0
% 1 - 9kts	2.4	3.1	4.3	4.5	4.6	2.7	4.6	5.8	6.0	5.7	4.5	3.0	51.2
% 10 - 19kts	0.6	2.1	1.6	2.4	3.7	1.4	2.6	5.3	8.3	9.5	5.8	1.0	44.3
% >= 20kts	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.5	1.0	0.6	0.0	2.6
Mean wind speed	7.2	9.1	7.8	8.4	9.4	7.9	8.4	9.5	10.8	11.7	11.0	7.3	9.7
Max wind speed	29.0	27.0	21.0	23.0	27.0	21.0	22.0	26.0	26.0	32.0	34.0	21.0	34.0

Number of observations = 23716
 Calm defined a wind speed = 0kts
 Number of observations with calm/varying wind direction: 468=2.0%
 Observations with calm/varying wind direction are not used in the statistics

Source: DMI

Availability

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

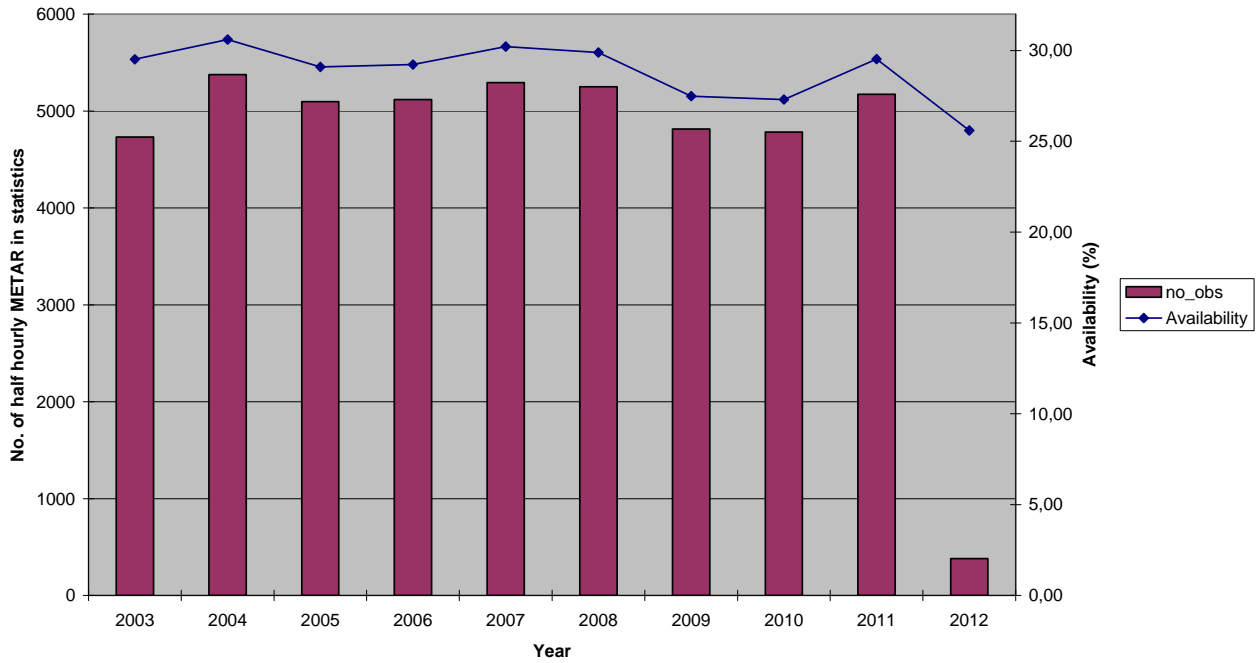


Figure 369

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

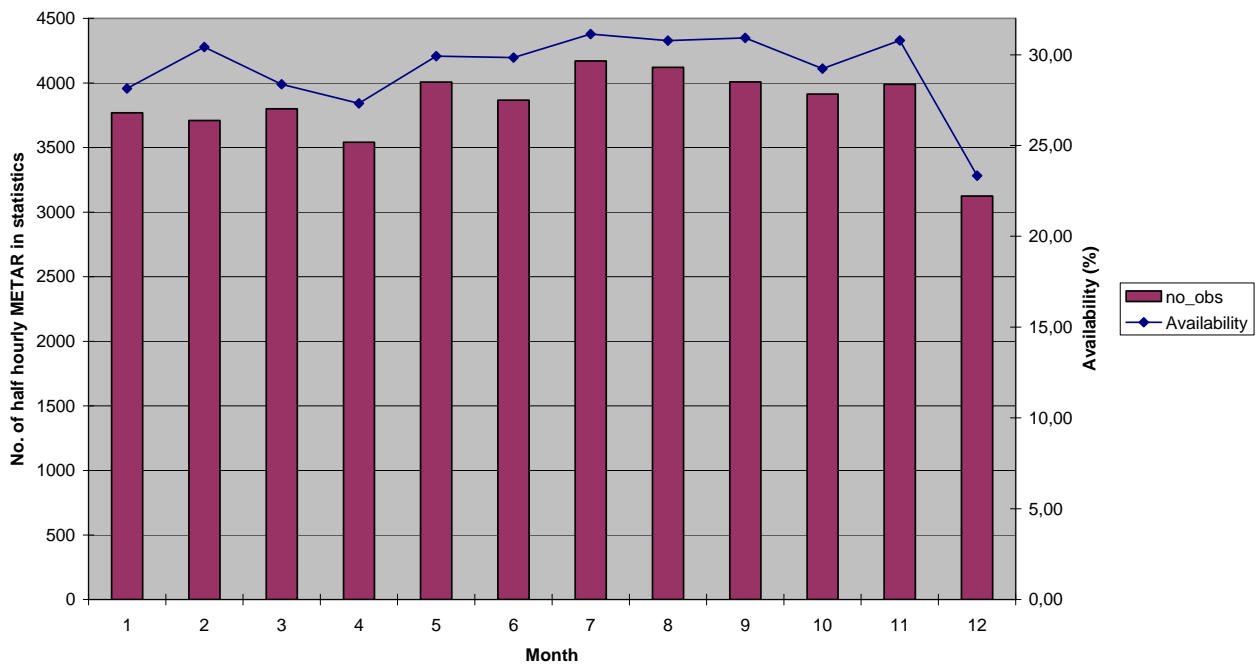


Figure 370

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

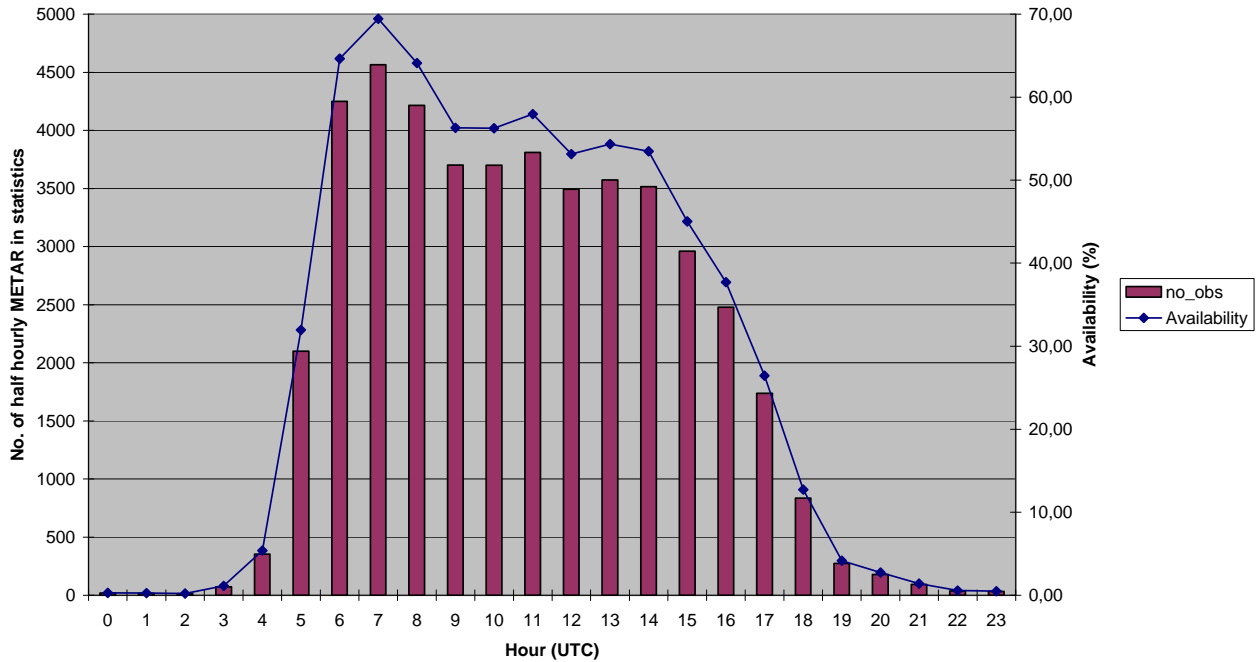


Figure 371

EKOD. Average no. of half 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
1	,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
3	,0	,0	0,0	0,0	,0	,0	,0	,0	,0	0,0
4	,0	,0	,0	,0	,1	,1	,1	,0	,1	,0
5	,1	,2	,1	,2	,3	,3	,4	,3	,4	,1
6	1,0	1,0	1,0	,9	1,0	1,0	,9	1,0	1,0	,5
7	1,3	1,4	1,4	1,3	1,3	1,3	1,2	1,4	1,4	1,1
8	1,2	1,2	1,2	1,2	1,2	1,3	1,3	1,4	1,3	1,4
9	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,2	1,3	1,2
10	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,2	1,2	1,2
11	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,2	1,2	1,2
12	1,1	1,1	1,0	1,1	1,1	1,1	1,1	1,2	1,2	1,2
13	1,0	1,1	1,1	1,1	1,1	1,1	1,1	1,2	1,2	1,2
14	1,1	1,1	1,1	1,0	1,1	1,0	1,1	1,1	1,2	1,1
15	1,1	1,1	1,0	1,0	1,1	1,0	,9	,9	1,0	,9
16	1,0	1,0	,9	1,0	1,0	,9	,8	,6	,8	,7
17	,9	,9	,9	,8	,8	,8	,6	,4	,4	,2
18	,7	,7	,6	,6	,6	,6	,3	,1	,1	,1
19	,4	,4	,3	,2	,3	,3	,1	,1	,1	,1
20	,1	,1	,1	,1	,1	,2	,0	,0	,1	,1
21	,0	,0	,0	,0	,1	,1	,0	,0	,1	,0
22	,0	,0	,0	,0	,0	,0	,0	,0	,0	0,0
23	,0	,0	0,0	,0	,0	,0	,0	,0	,0	0,0

Table 43

EKRK København/Roskilde

Roskilde Airport - Tune

Airport location: 55,583°N 12,133°E Elevation: 45 m above msl.

EKRK observations in statistics: 150.753 half hourly METAR⁸ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 95,6%.

EKRK METAR are all manual until 13 August 2009 and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

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

No. Obs = 37.372	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,035	3,75	4,99	5,10	5,14	0,58	5,73
<1 km	0,035	4,01	5,61	5,81	5,88	0,68	6,56
<1.5 km	0,035	4,30	6,65	7,23	7,46	0,97	8,43
<3.0 km	0,035	4,69	9,18	11,37	12,16	2,88	15,04
< 5.0 km	0,035	4,77	10,80	15,66	17,74	6,31	24,05
>= 5,0 km or CAVOK	0	0,019	0,89	6,43	13,20	62,75	75,95
Total	0,035	4,78	11,69	22,09	30,94	69,06	100

Table 44

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

No. Obs = 37.726	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,016	0,43	0,59	0,59	0,59	0,47	1,06
<1 km	0,016	0,51	0,72	0,73	0,73	0,57	1,30
<1.5 km	0,016	0,59	0,92	0,95	0,97	0,74	1,71
<3.0 km	0,016	0,68	1,51	1,86	1,97	1,81	3,79
< 5.0 km	0,016	0,69	1,88	2,78	3,20	4,03	7,23
>= 5,0 km or CAVOK	0	0,011	0,29	1,61	3,73	89,03	92,77
Total	0,016	0,70	2,17	4,39	6,93	93,07	100

Table 45

⁸ For every half hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.



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

No. Obs = 37.953	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,032	0,43	0,51	0,52	0,52	0,74	1,26
<1 km	0,032	0,46	0,56	0,57	0,57	0,85	1,42
<1.5 km	0,032	0,48	0,63	0,65	0,66	1,13	1,79
<3.0 km	0,032	0,52	0,89	1,08	1,20	2,63	3,83
< 5.0 km	0,032	0,54	1,20	1,81	2,23	5,29	7,53
>= 5,0 km or CAVOK	0	0,0053	0,27	1,82	3,82	88,66	92,47
Total	0,032	0,55	1,46	3,62	6,05	93,95	100

Table 46

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

No. Obs = 37.702	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,019	2,41	3,12	3,19	3,25	1,30	4,56
<1 km	0,019	2,57	3,43	3,53	3,60	1,50	5,10
<1.5 km	0,019	2,79	4,09	4,40	4,54	1,94	6,48
<3.0 km	0,019	3,05	6,38	8,38	8,90	3,87	12,77
< 5.0 km	0,021	3,11	8,05	12,96	14,76	7,61	22,37
>= 5,0 km or CAVOK	0	0,011	0,78	6,51	13,75	63,88	77,63
Total	0,021	3,12	8,82	19,47	28,51	71,49	100

Table 47

Annual: EKRK – Frequencies (%) Visibility - Ceiling

No. Obs = 150.753	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,025	1,75	2,29	2,34	2,37	0,77	3,14
<1 km	0,025	1,88	2,57	2,65	2,68	0,90	3,59
<1.5 km	0,025	2,03	3,06	3,30	3,39	1,20	4,59
<3.0 km	0,025	2,23	4,47	5,65	6,04	2,80	8,83
< 5.0 km	0,026	2,27	5,46	8,27	9,45	5,81	15,26
>= 5,0 km or CAVOK	0	0,011	0,55	4,08	8,61	76,13	84,74
Total	0,026	2,28	6,02	12,35	18,06	81,94	100

Table 48



Wind direction histograms

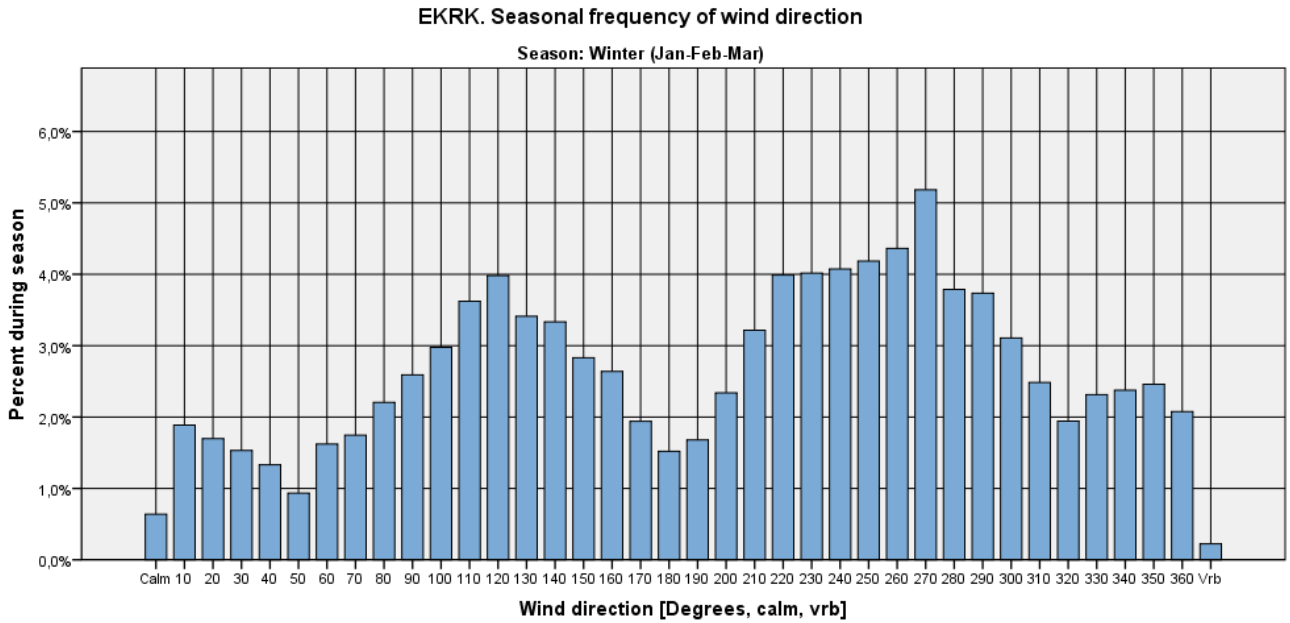


Figure 372

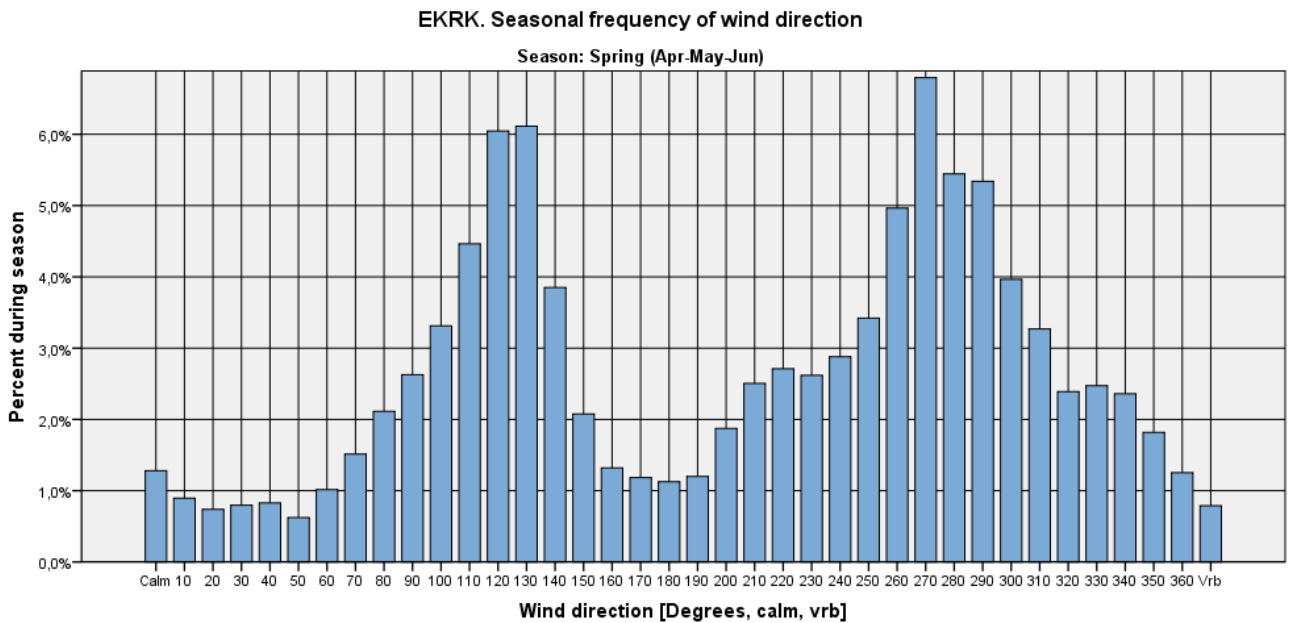


Figure 373

EKRK. Seasonal frequency of wind direction

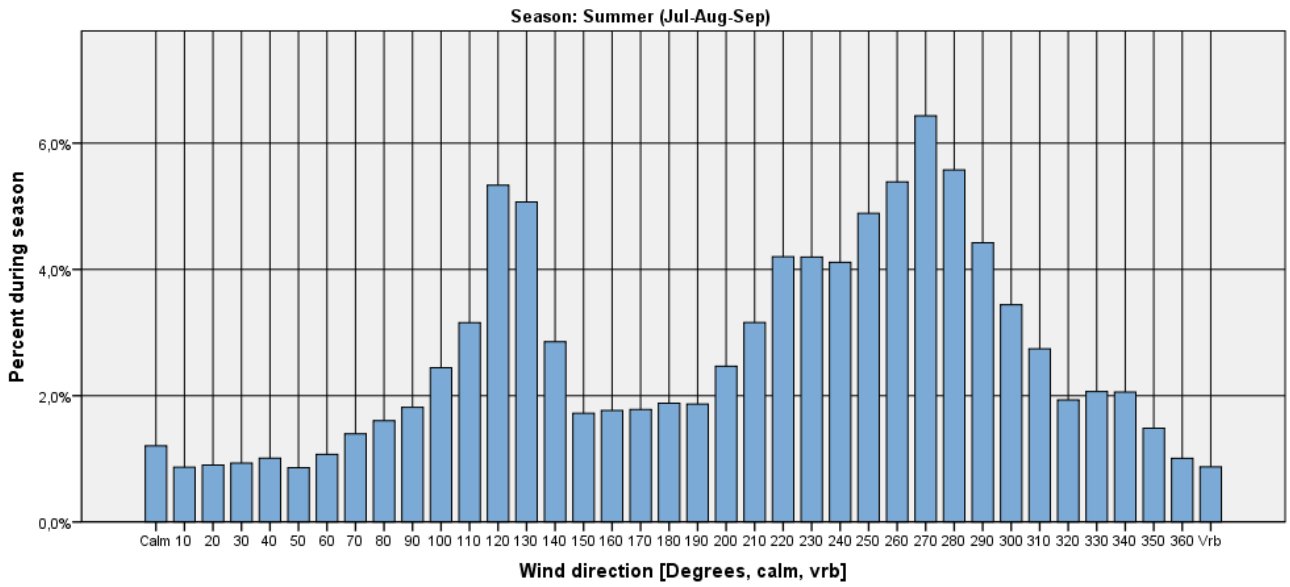


Figure 374

EKRK. Seasonal frequency of wind direction

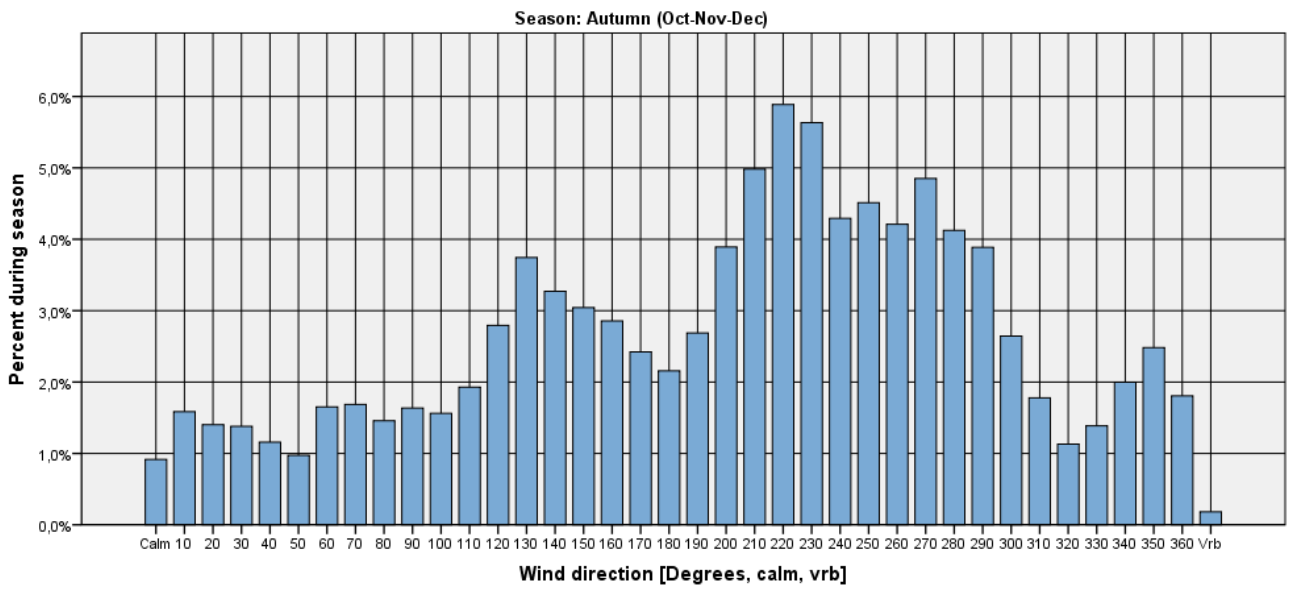


Figure 375

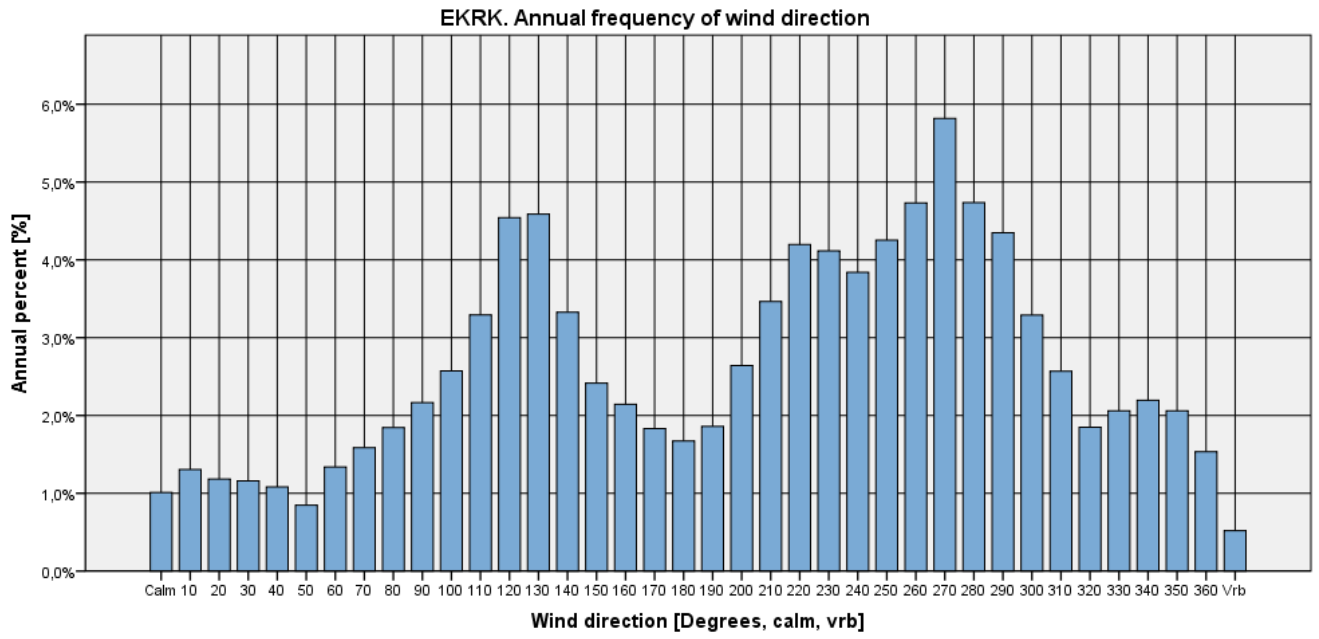


Figure 376

Visibility criteria on wind direction histograms

Visibility < 1000 m

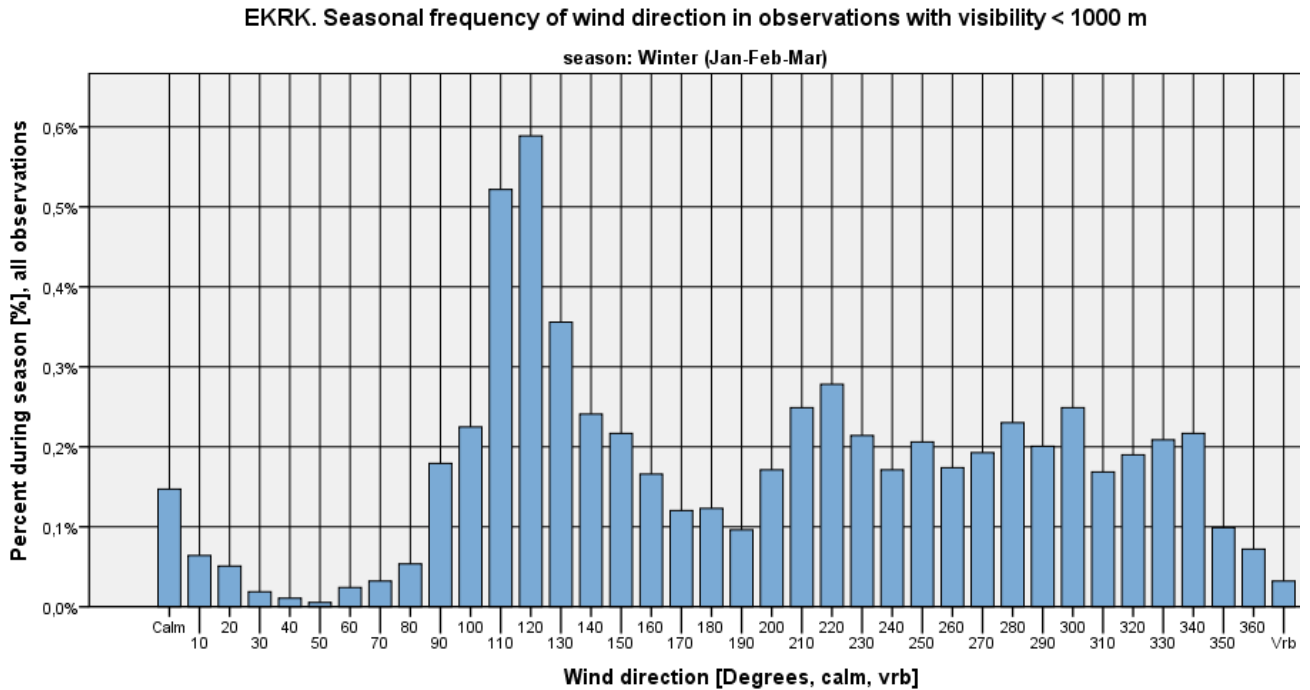


Figure 377

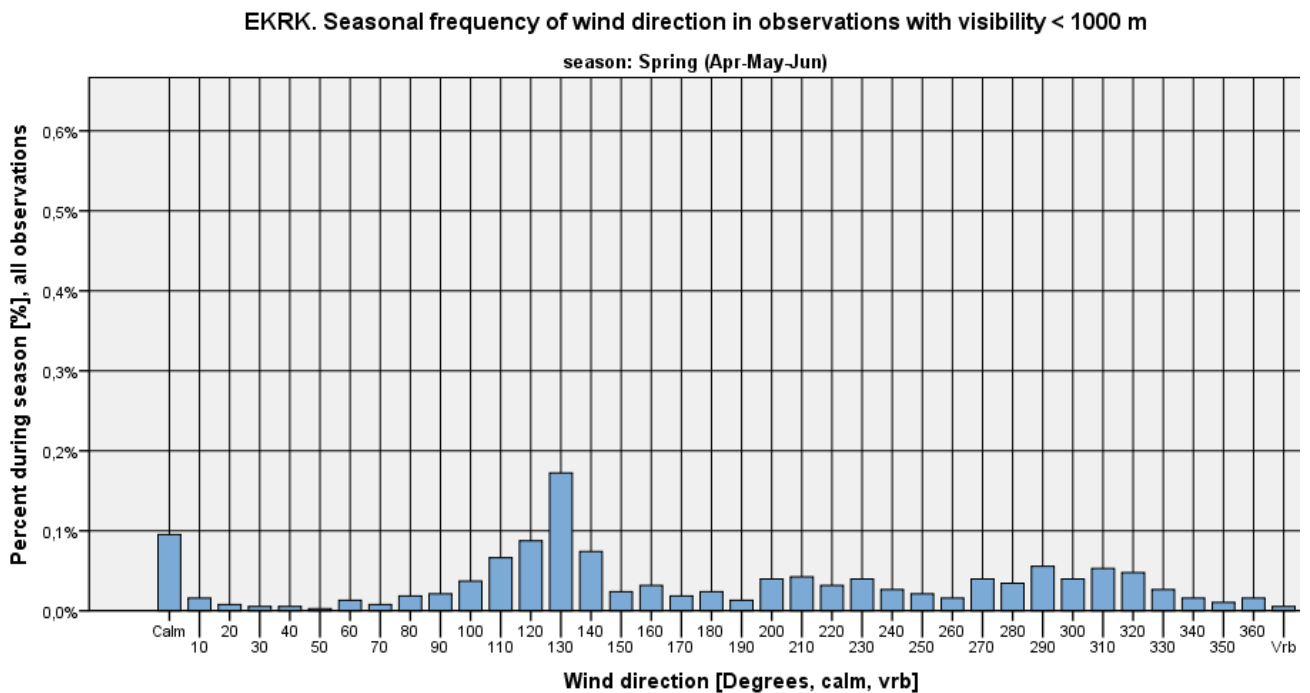


Figure 378

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

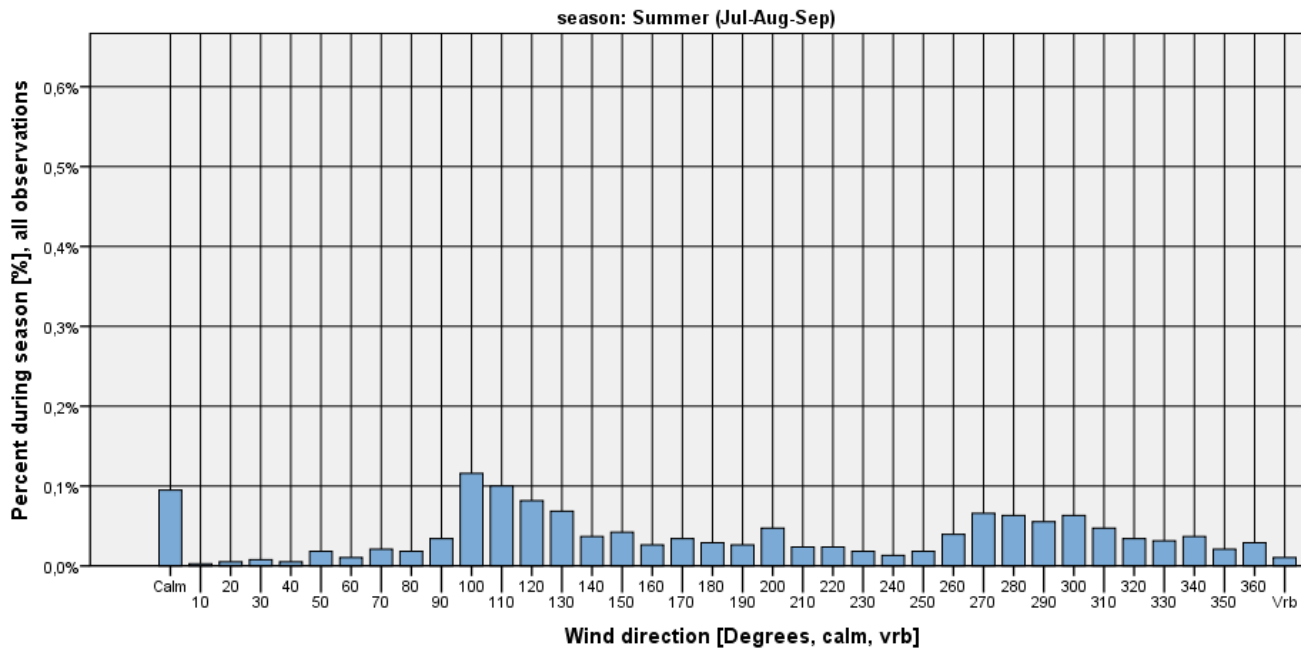


Figure 379

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

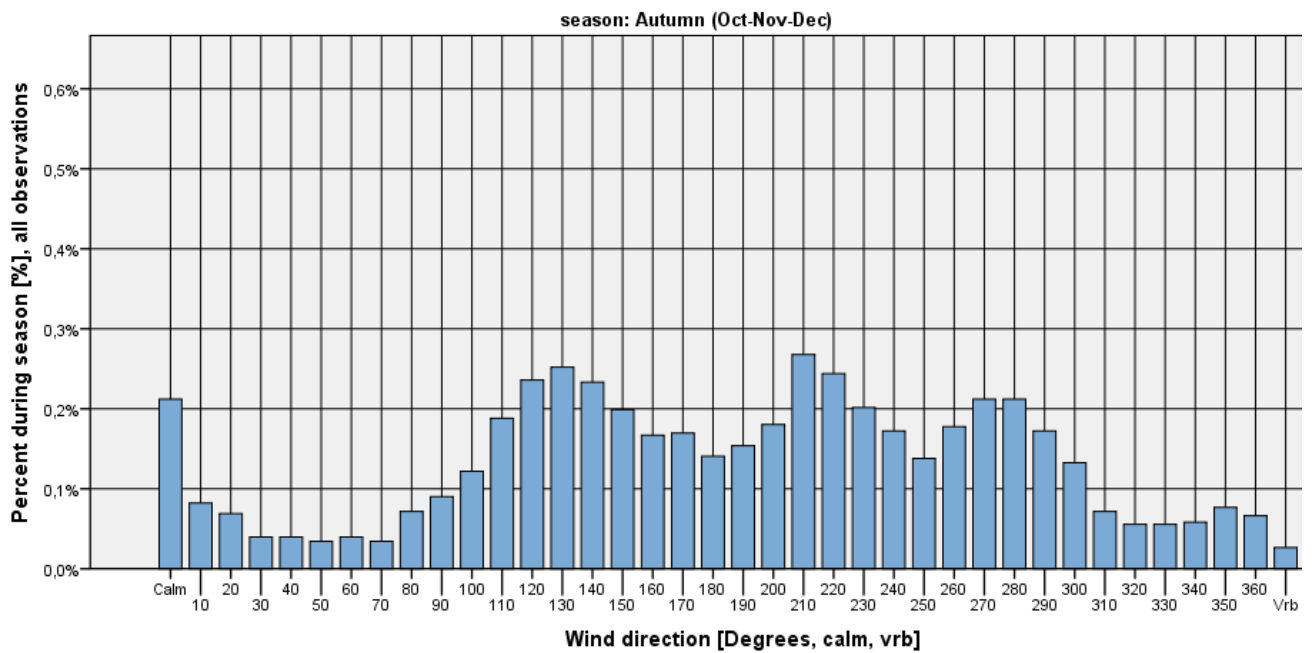


Figure 380

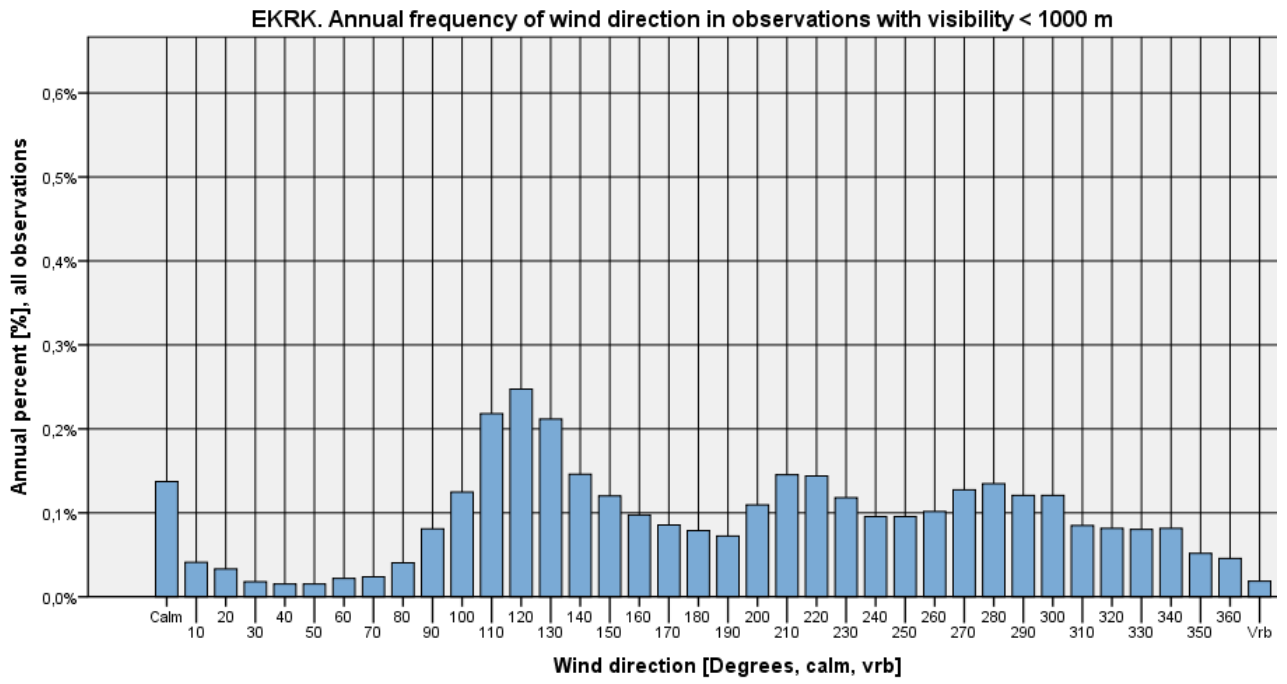


Figure 381



Visibility < 1000 m and wind speed ≤ 5 kts

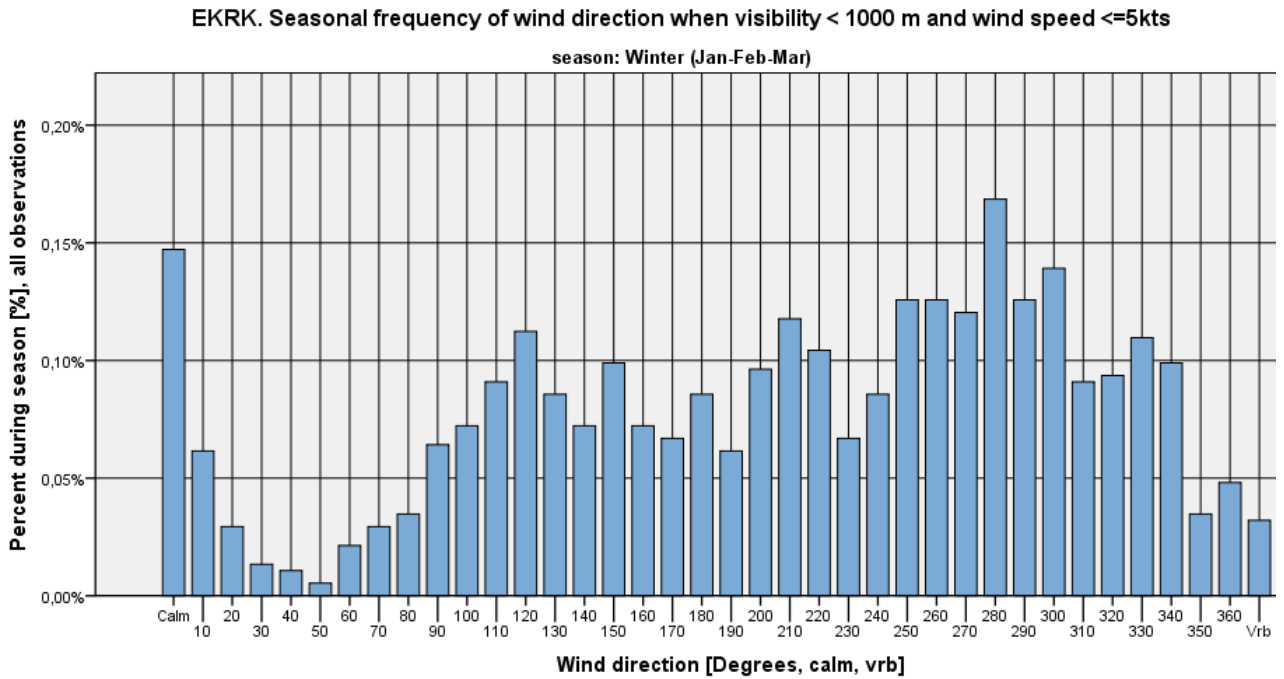


Figure 382

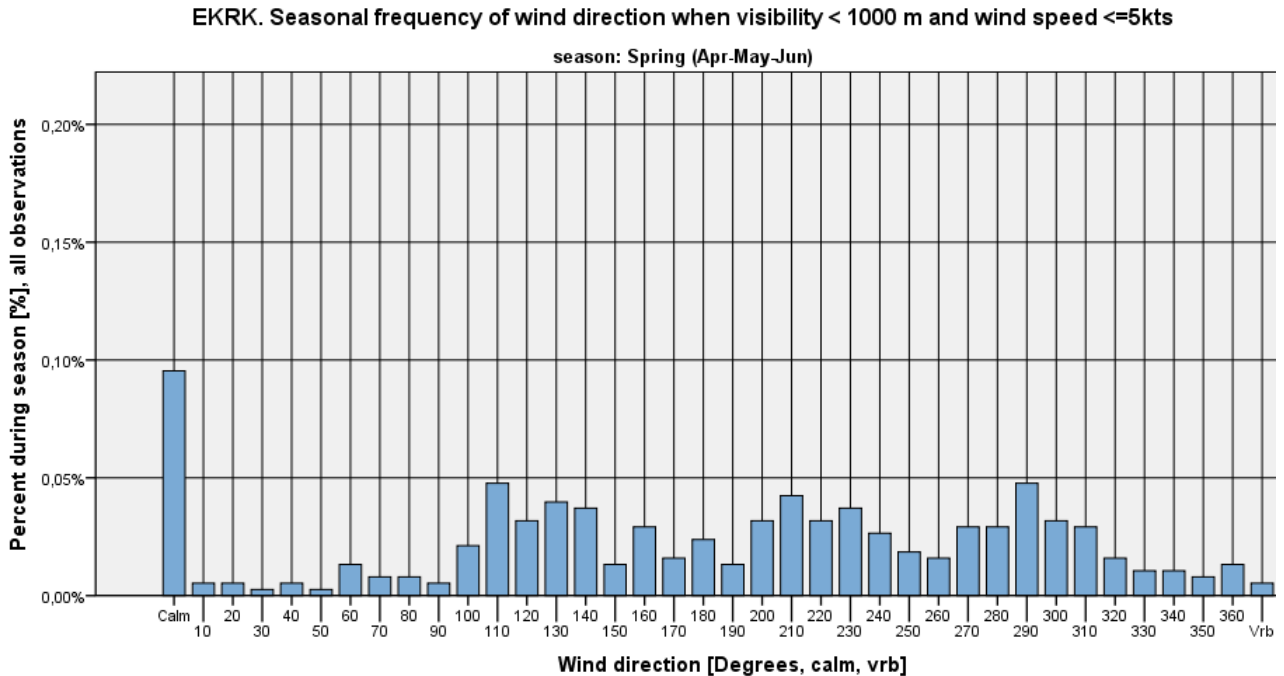


Figure 383



EKRR. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

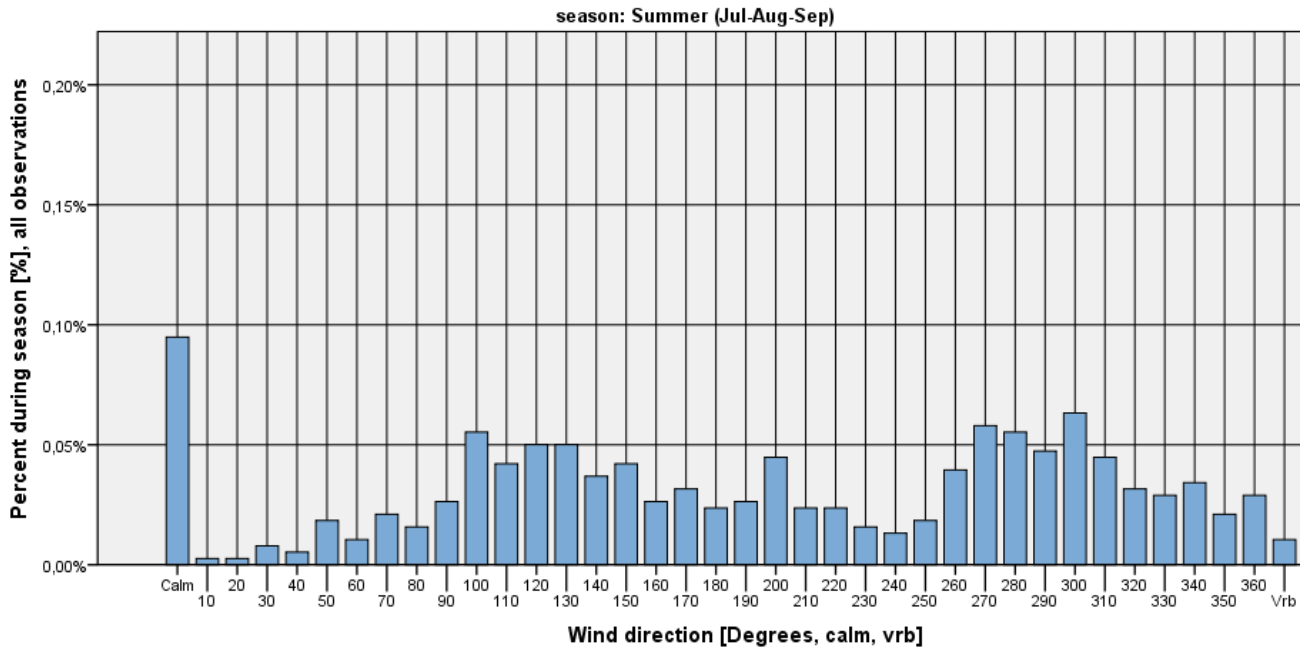


Figure 384

EKRR. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

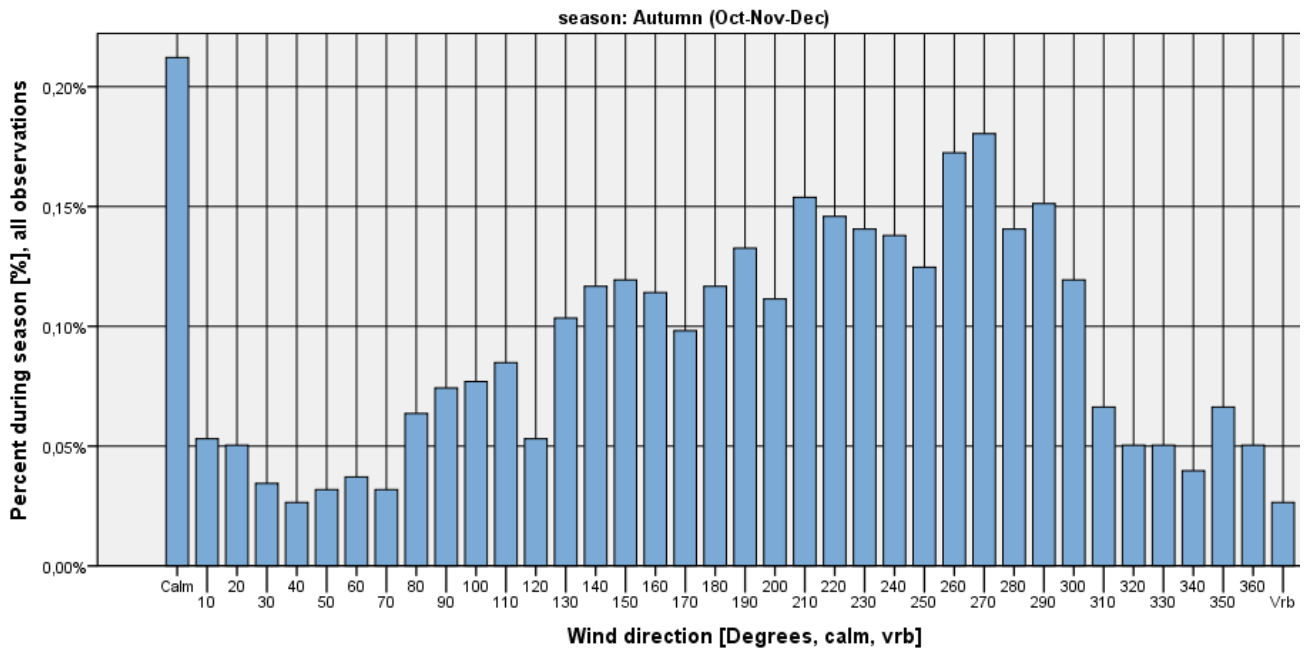


Figure 385

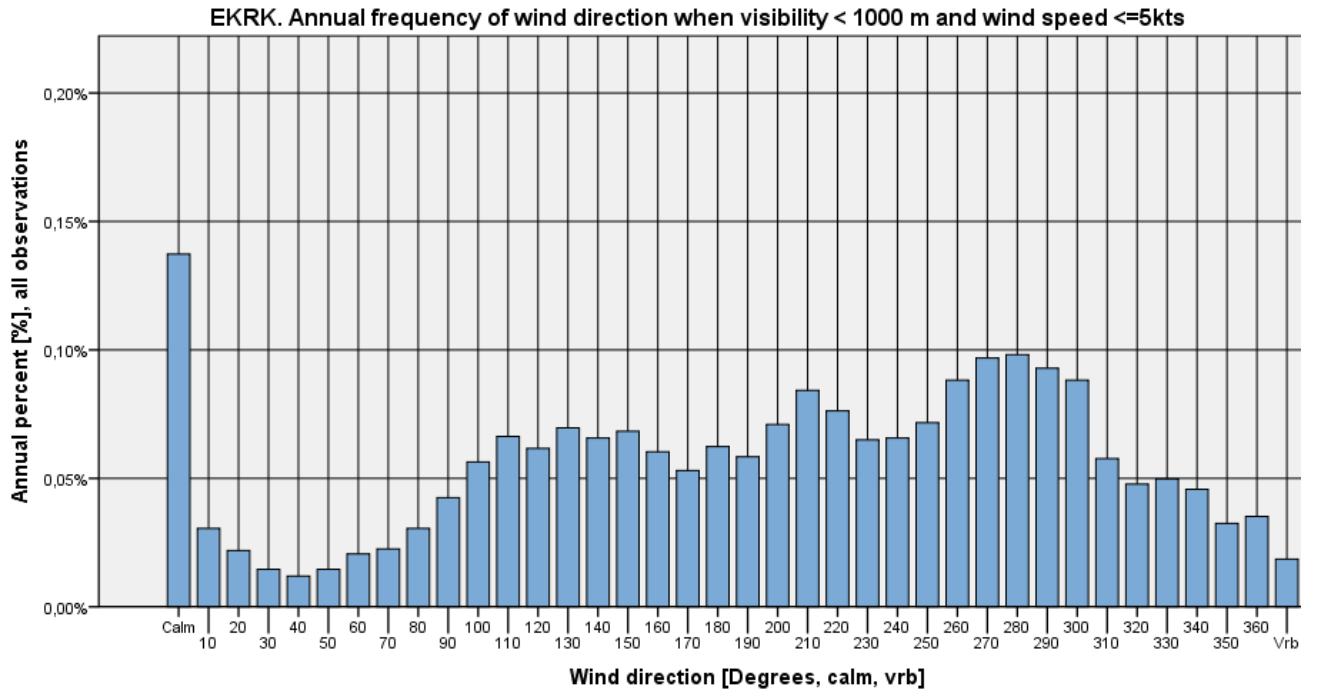


Figure 386



Visibility < 1000 m and wind speed > 5 kts

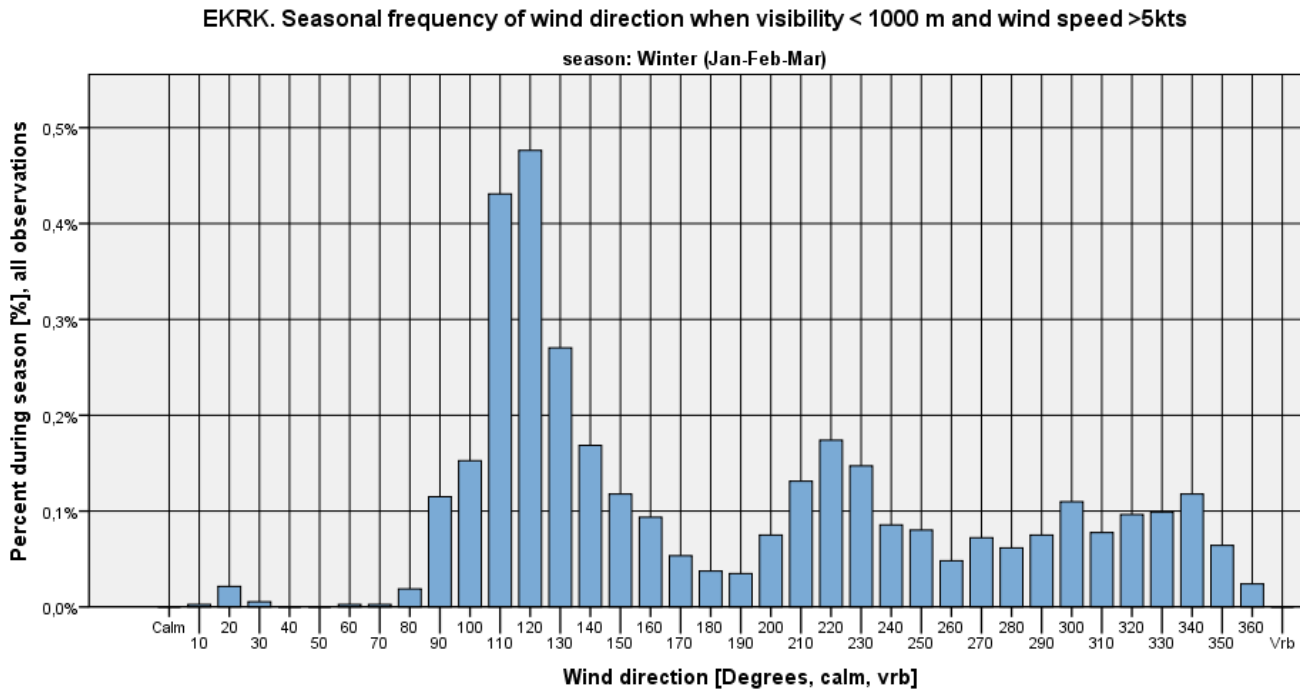


Figure 387

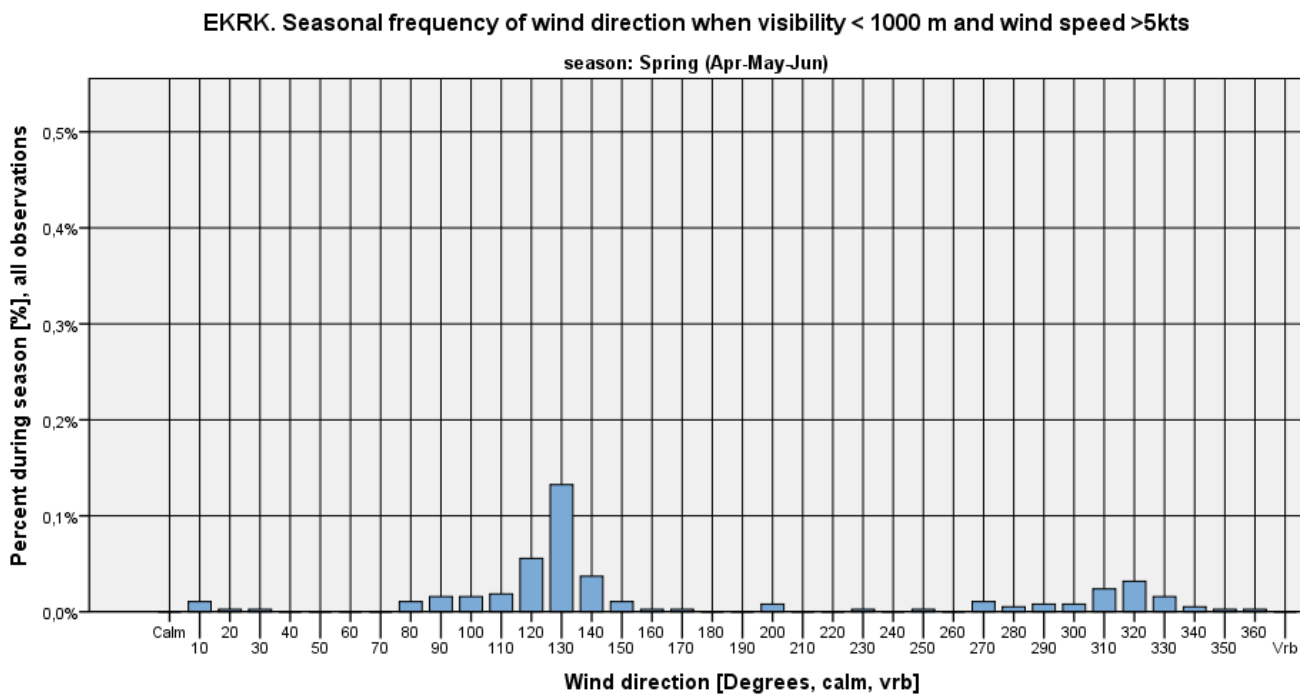


Figure 388



EKRK. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

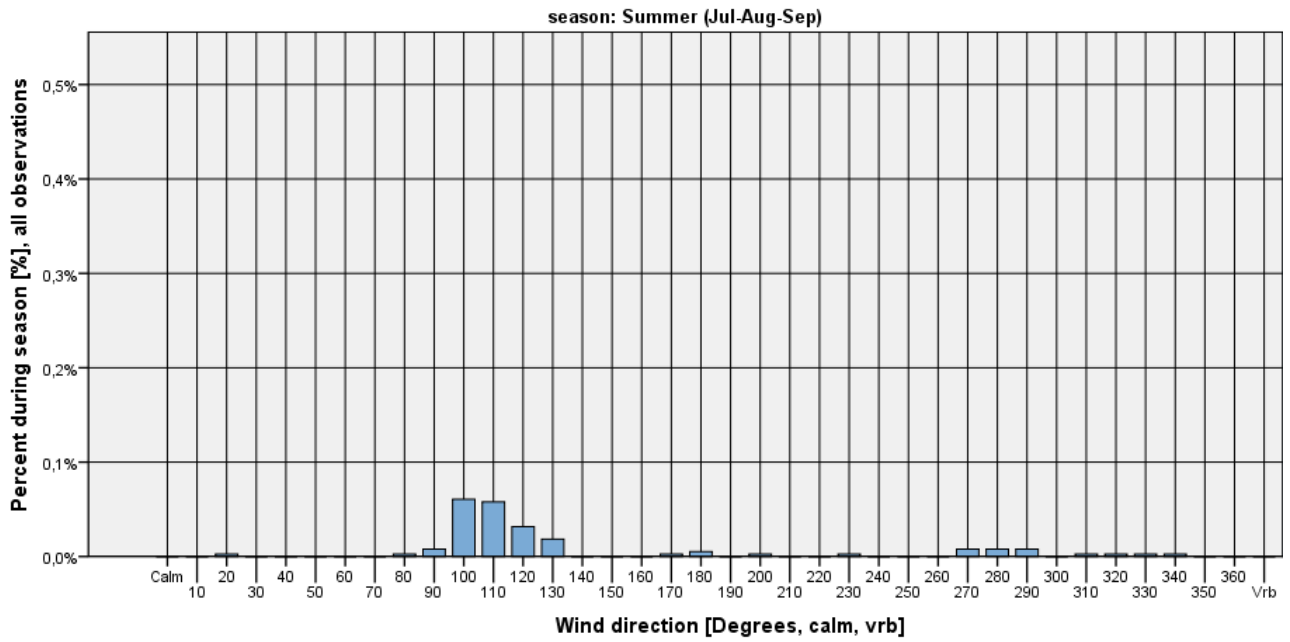


Figure 389

EKRK. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

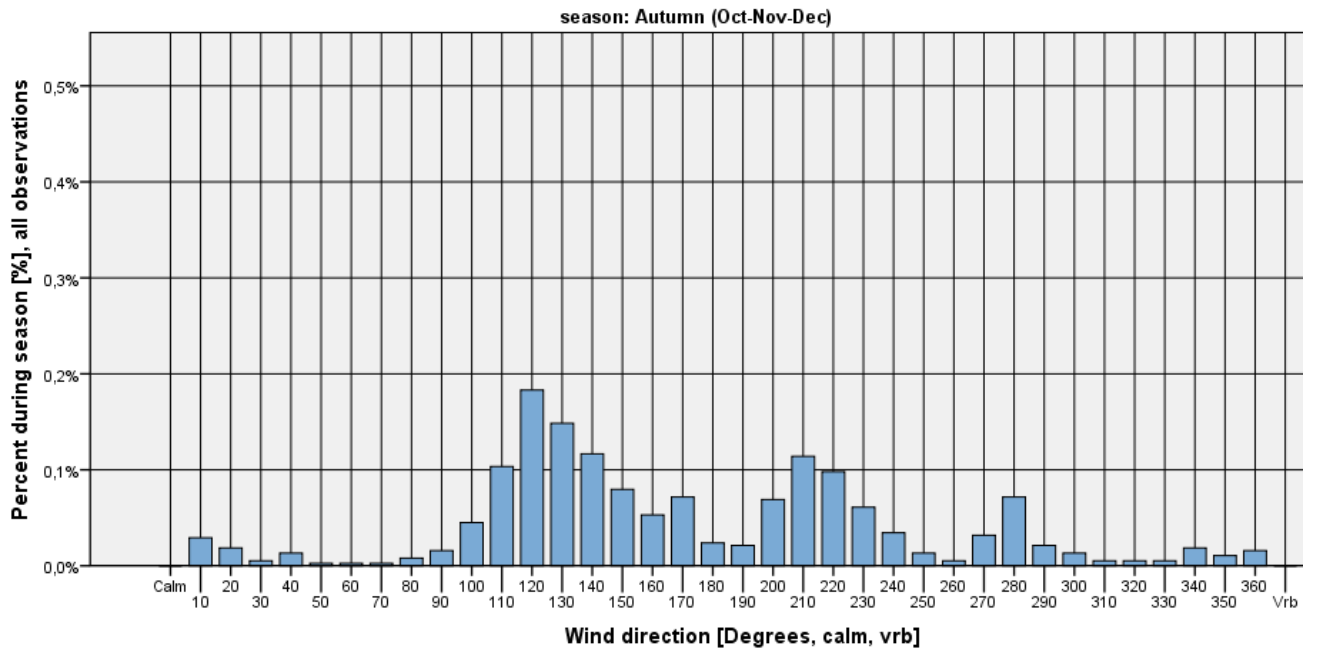


Figure 390

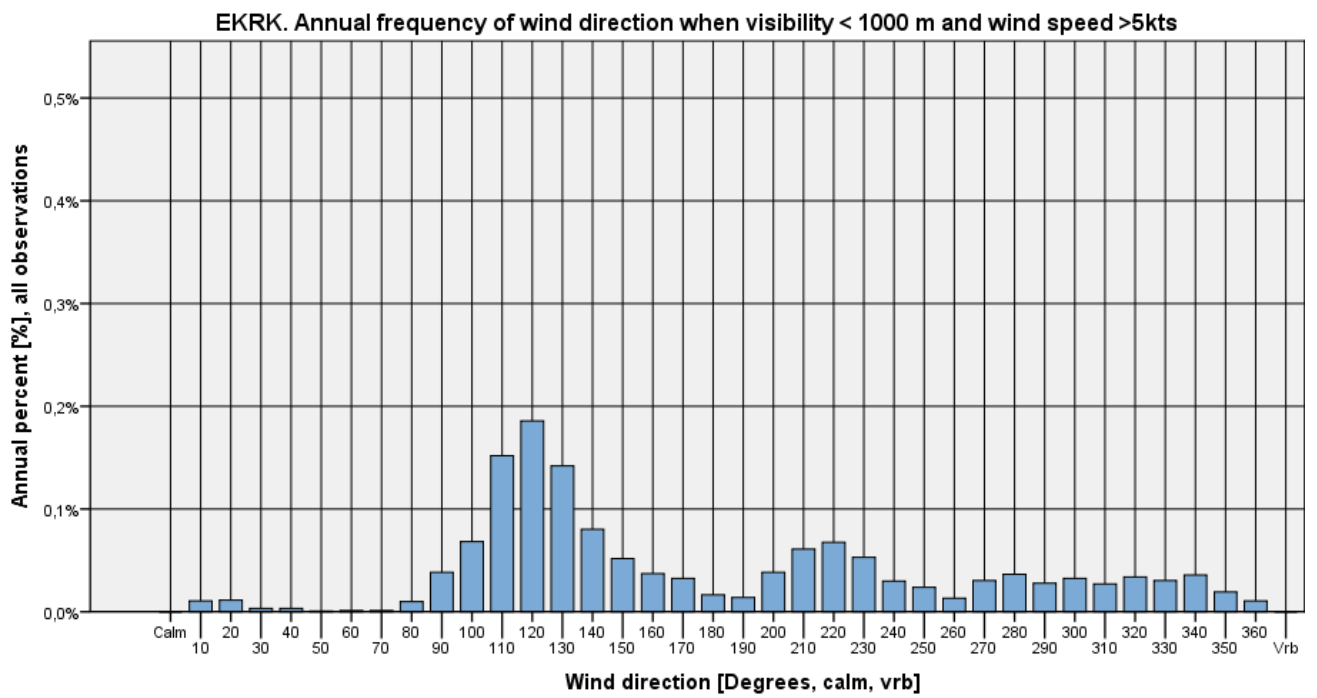


Figure 391



Ceiling criteria on wind direction histograms

Ceiling<1000 feet

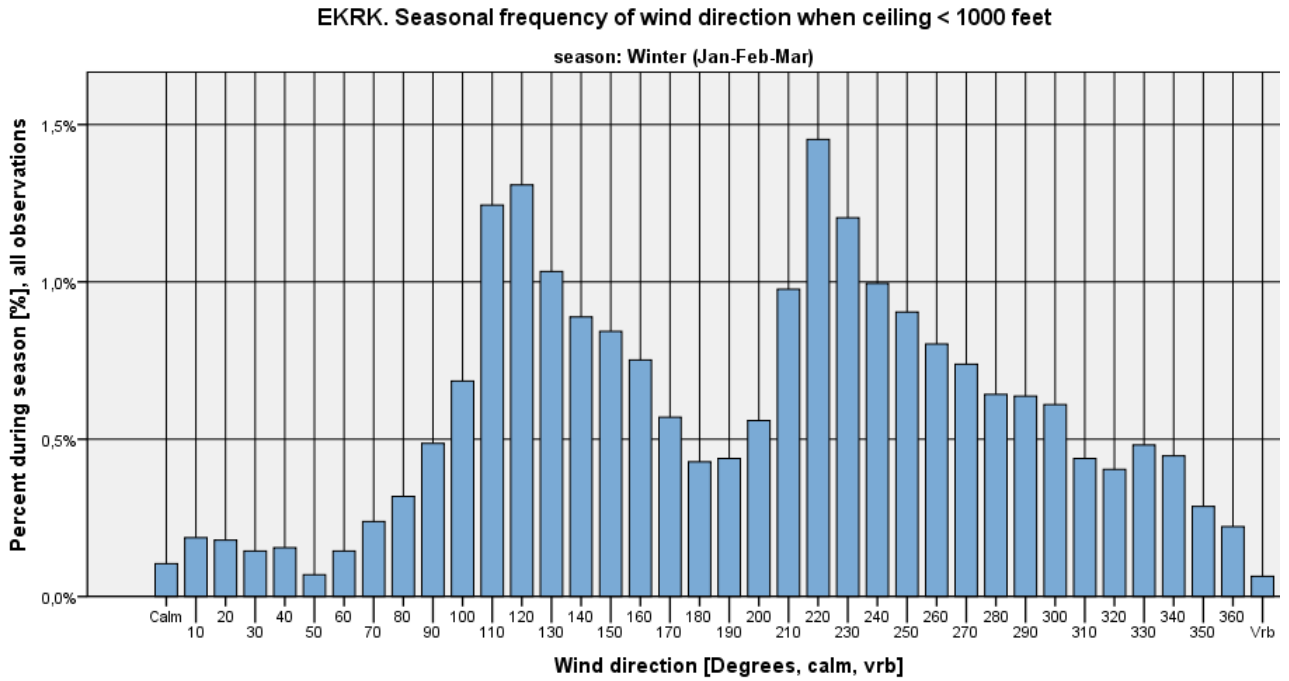


Figure 392

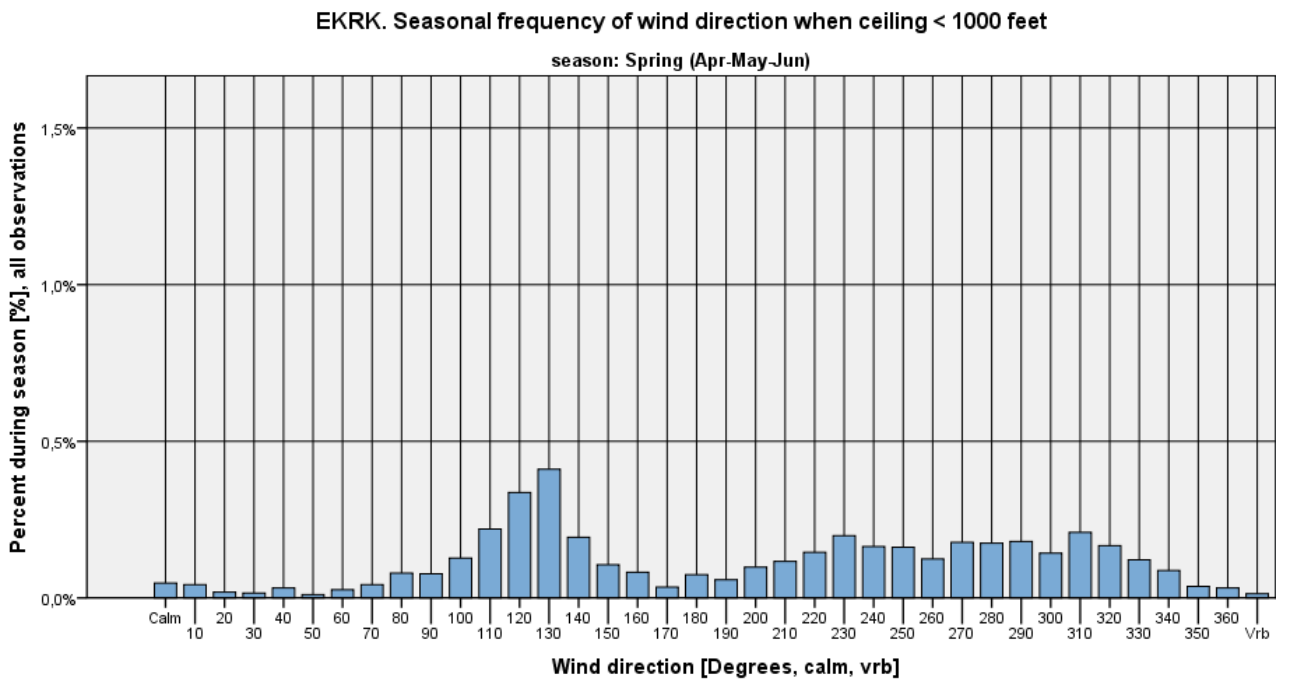


Figure 393



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

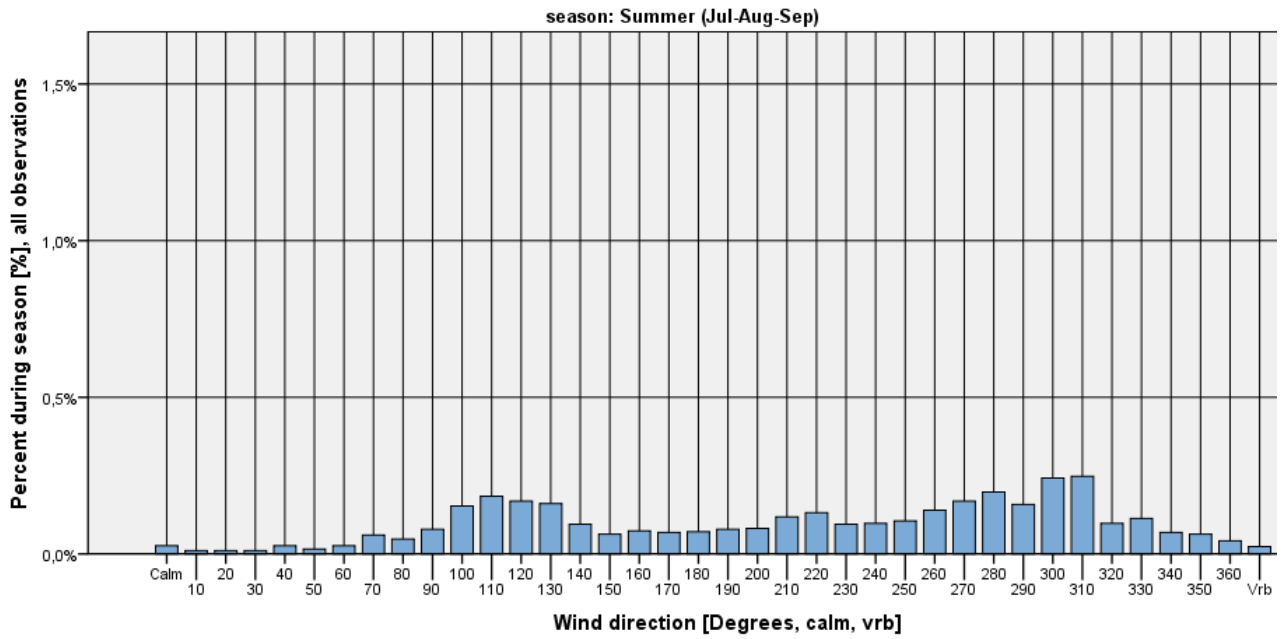


Figure 394

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

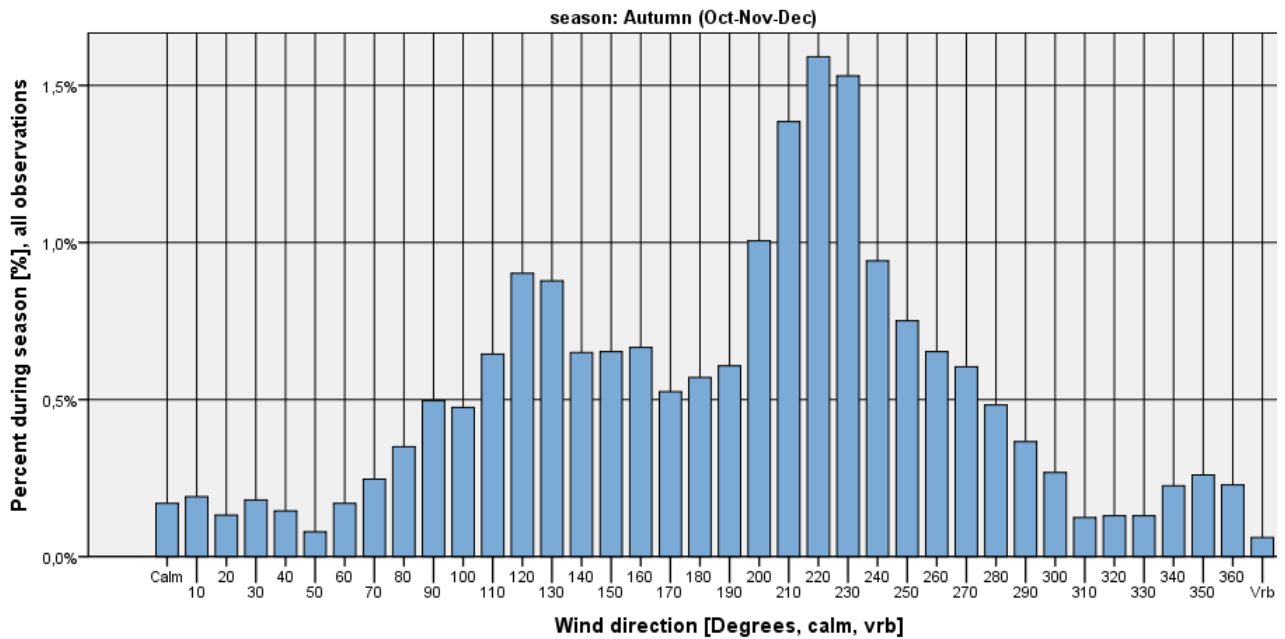


Figure 395

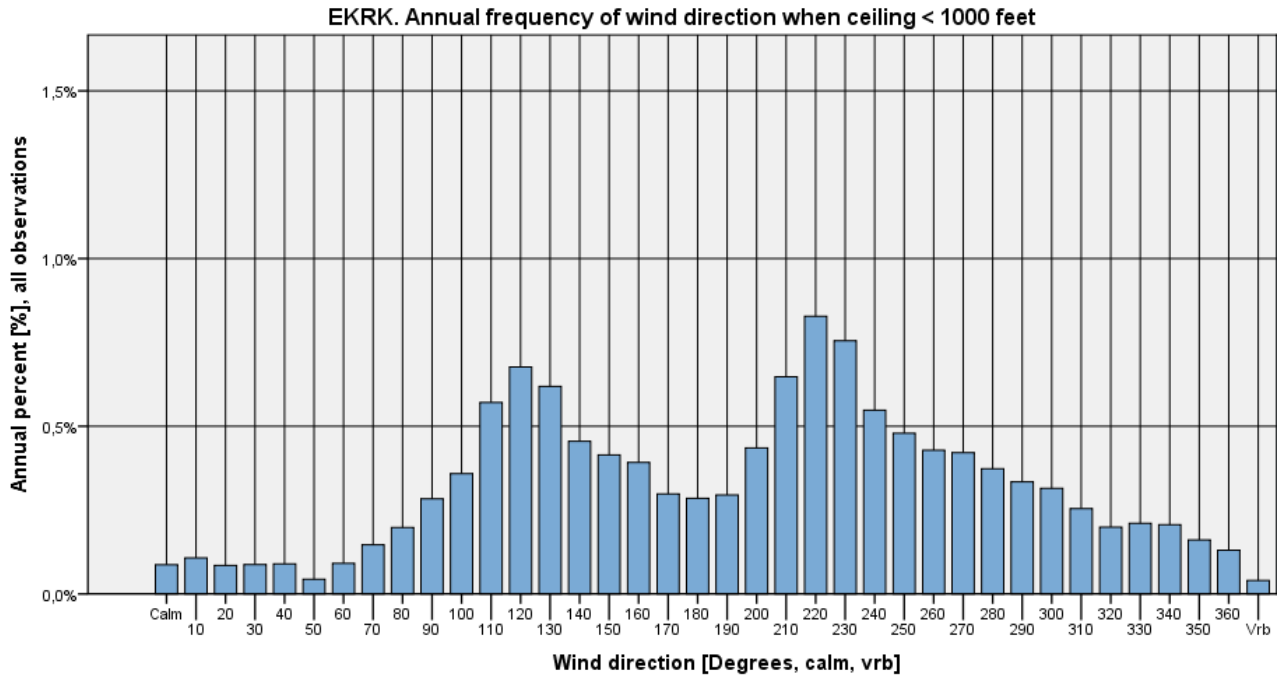


Figure 396



Ceiling < 1000 feet and wind speed <= 5 kts

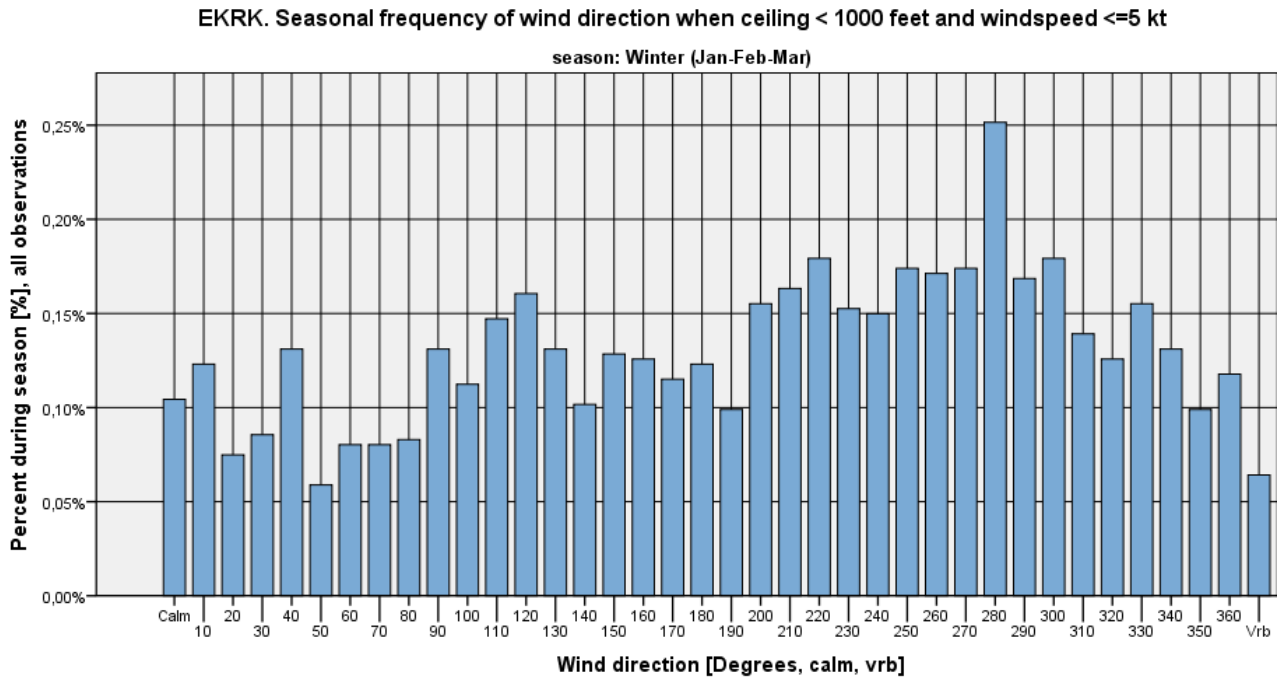


Figure 397

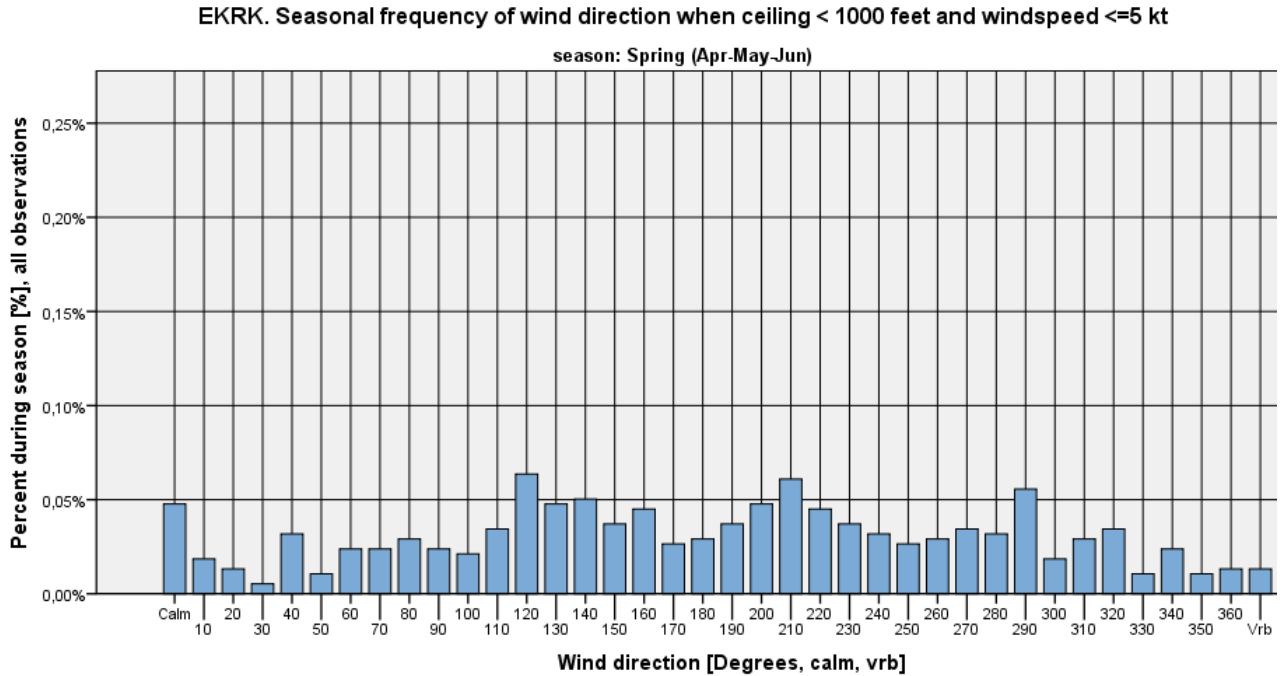


Figure 398



EKRR. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

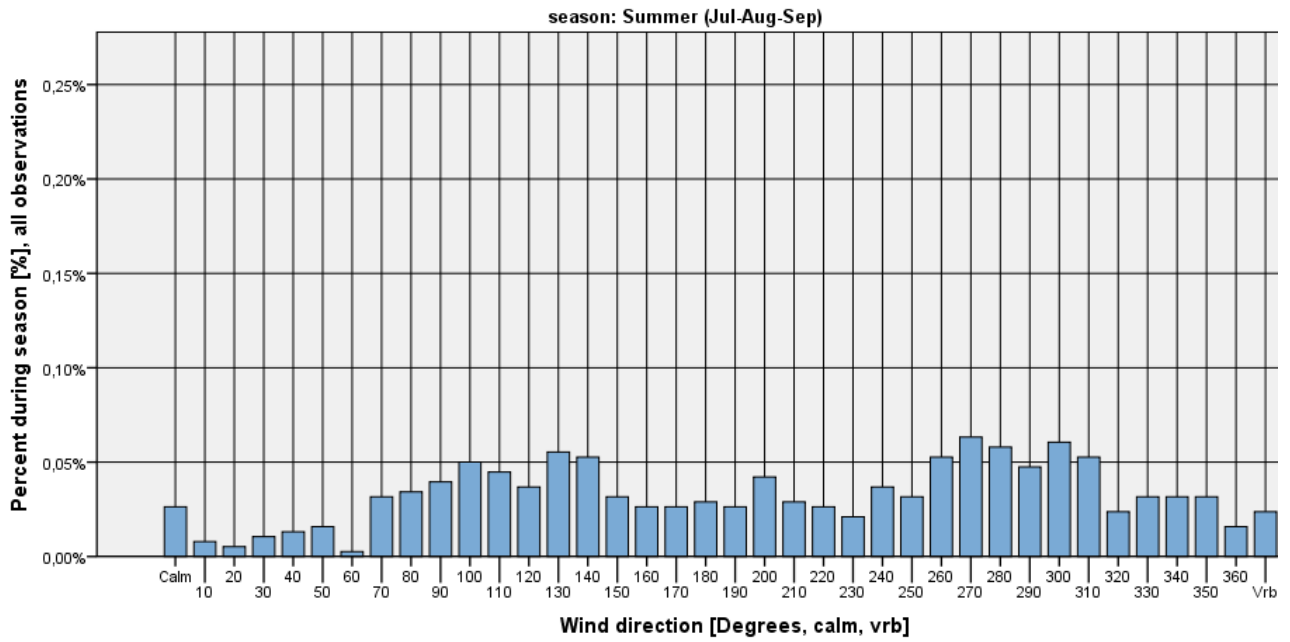


Figure 399

EKRR. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

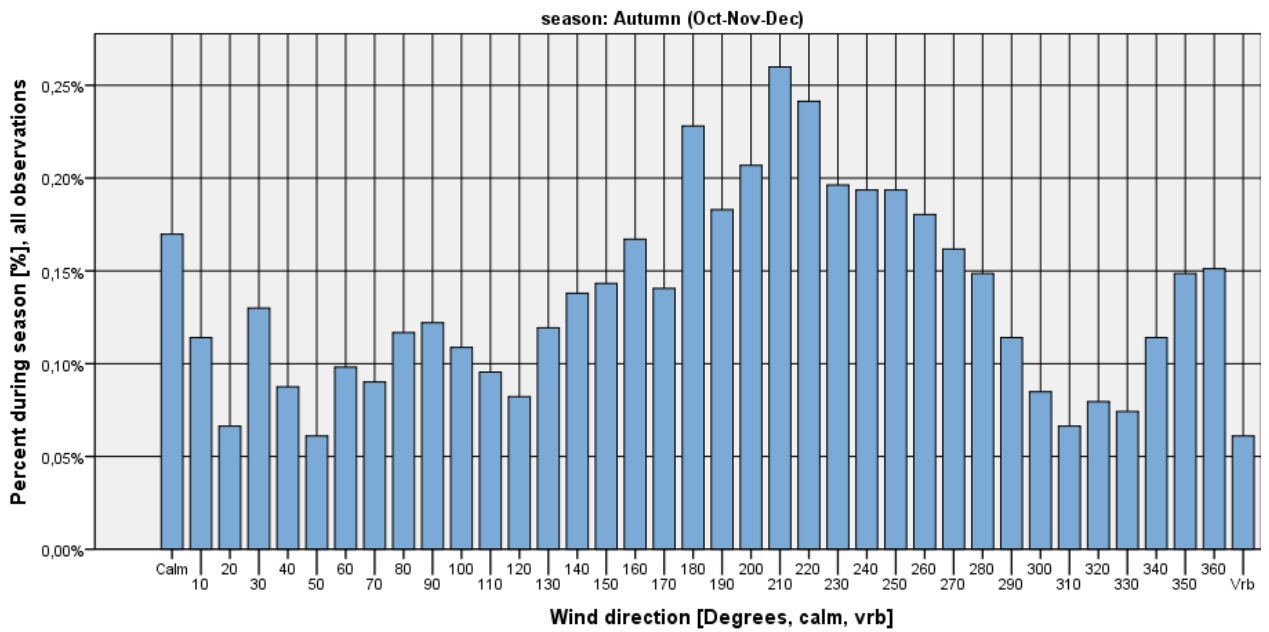


Figure 400

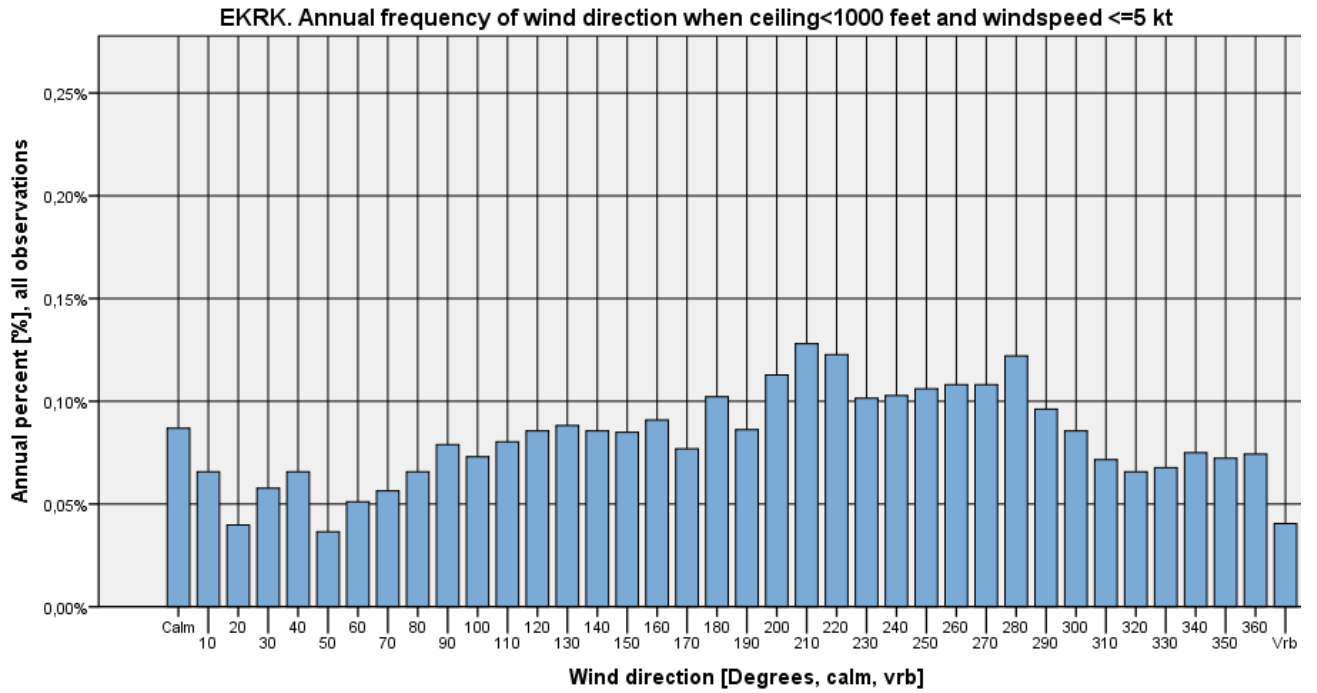


Figure 401



Ceiling < 1000 feet and wind speed > 5 kts

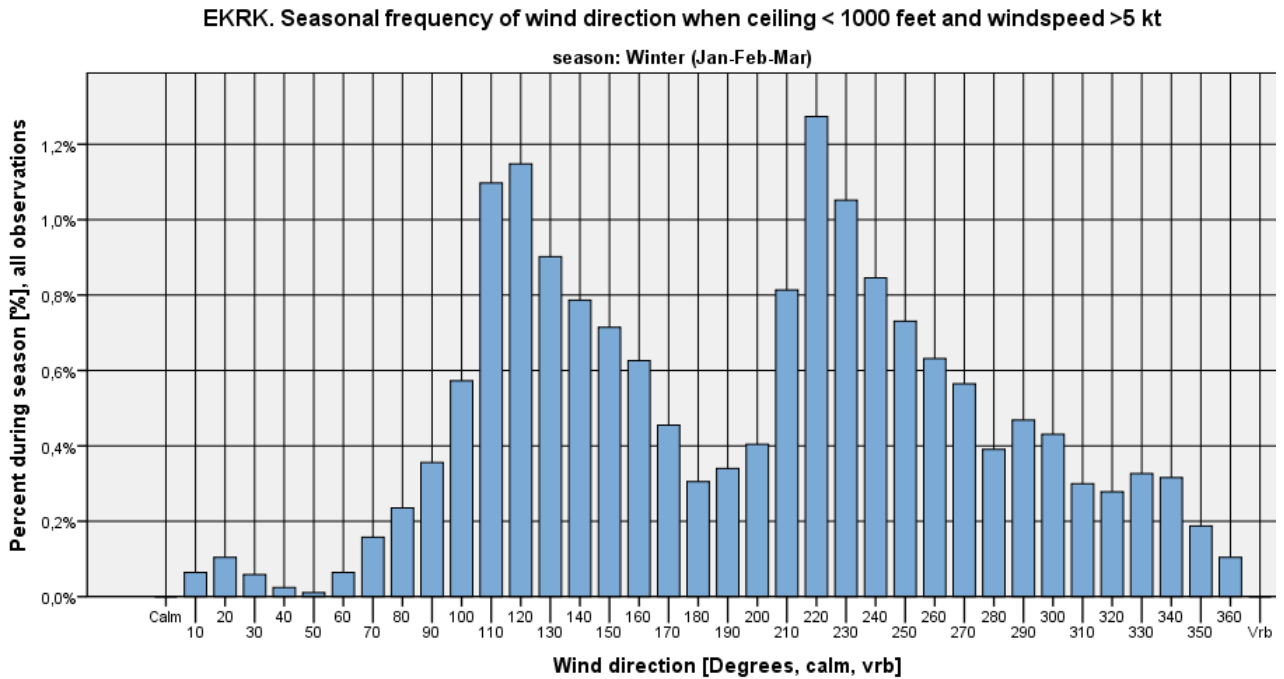


Figure 402

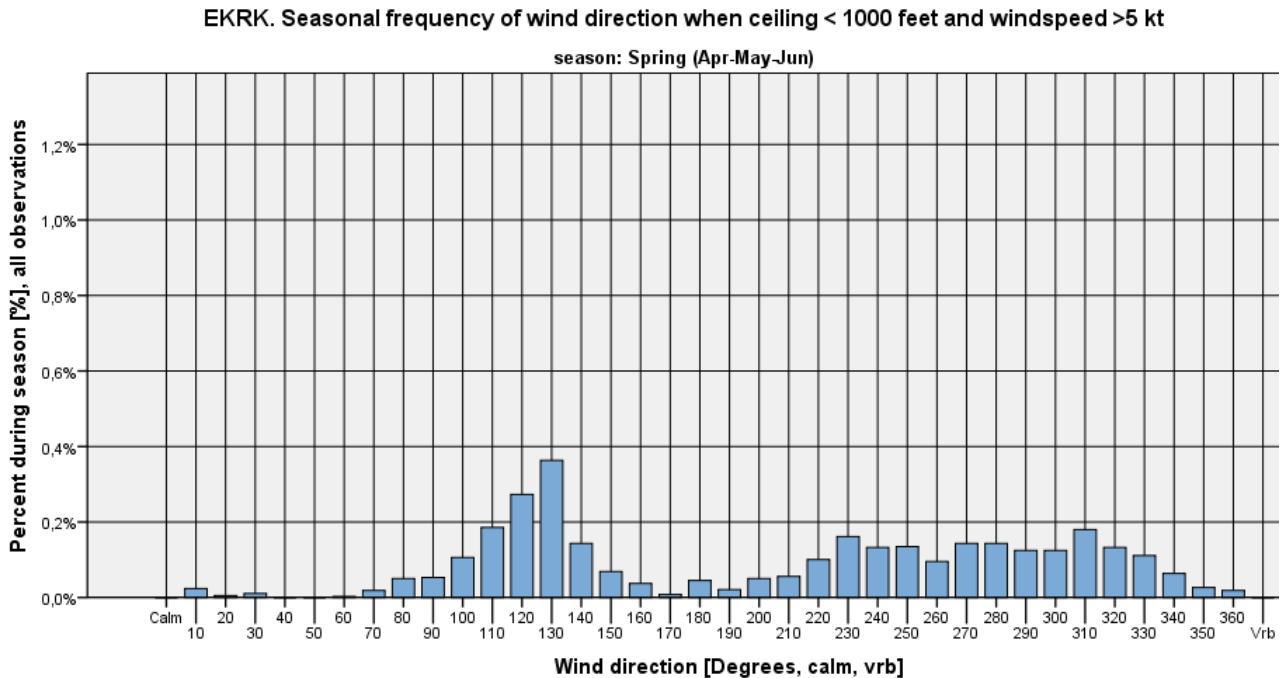


Figure 403



EKRK. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

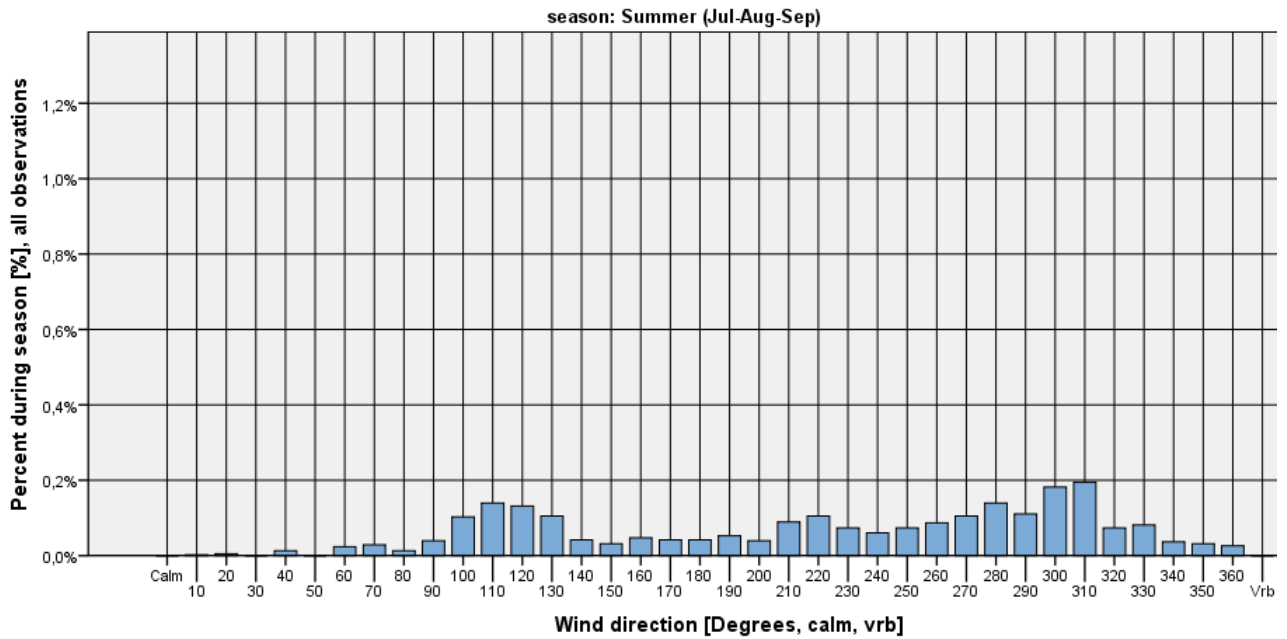


Figure 404

EKRK. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

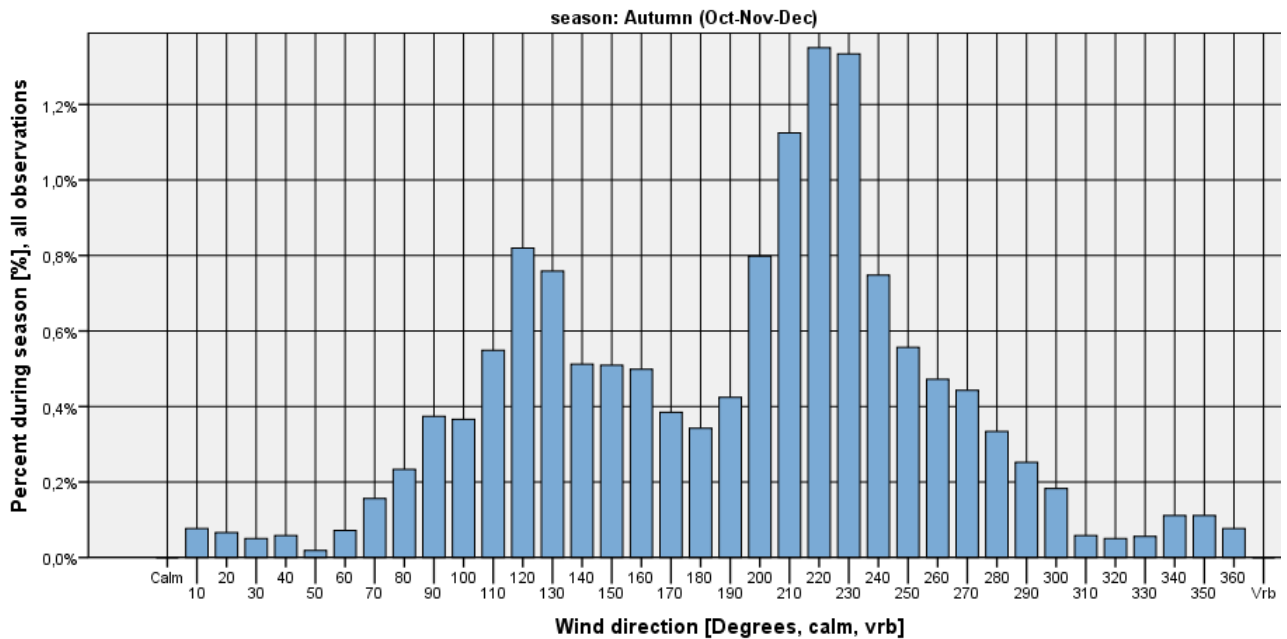


Figure 405

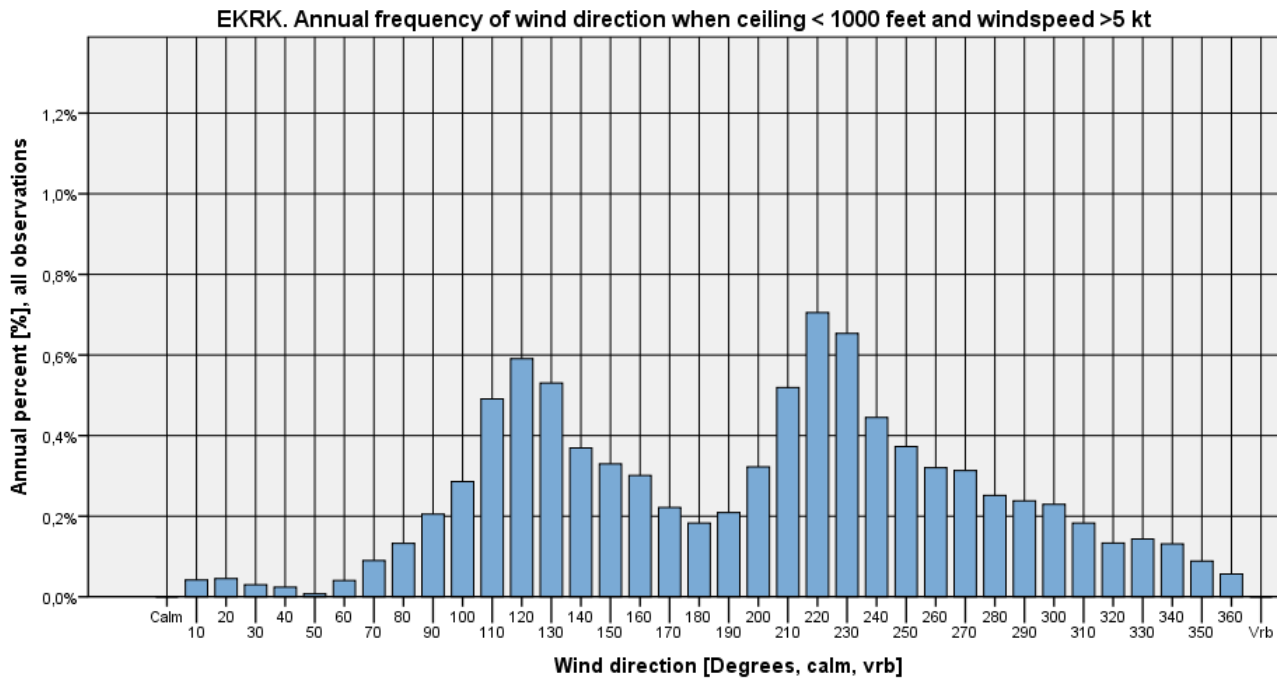


Figure 406



Ceiling < 500 feet

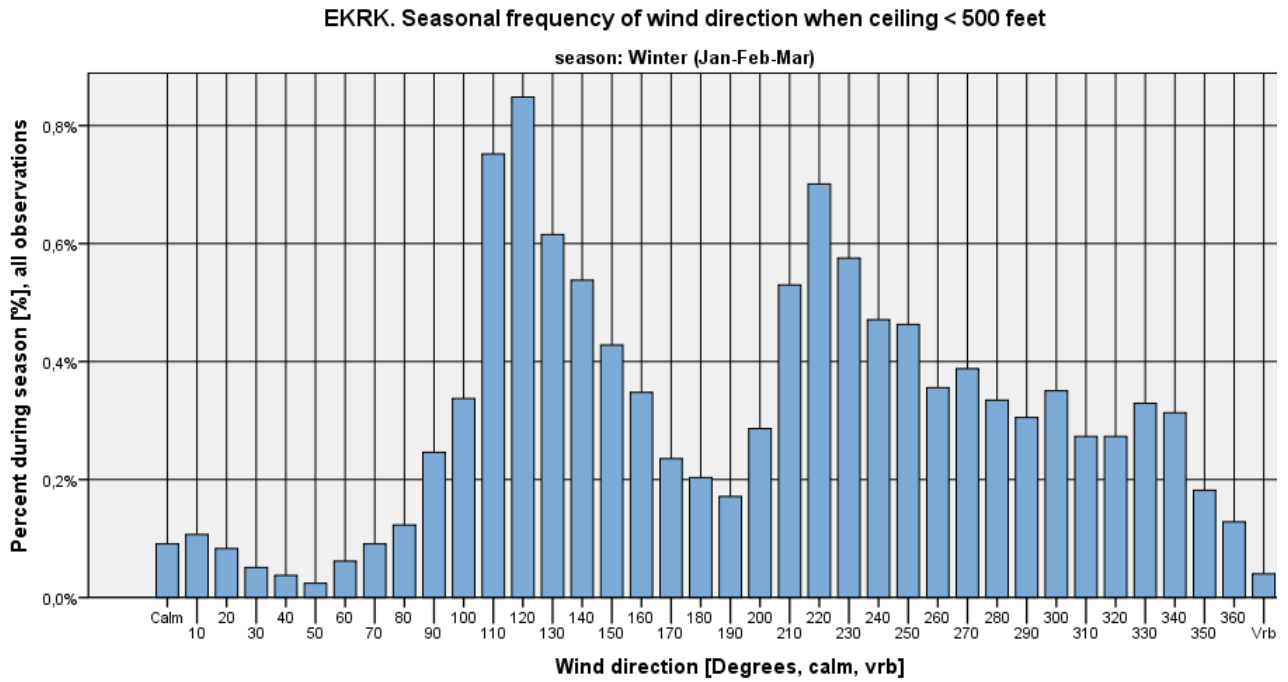


Figure 407

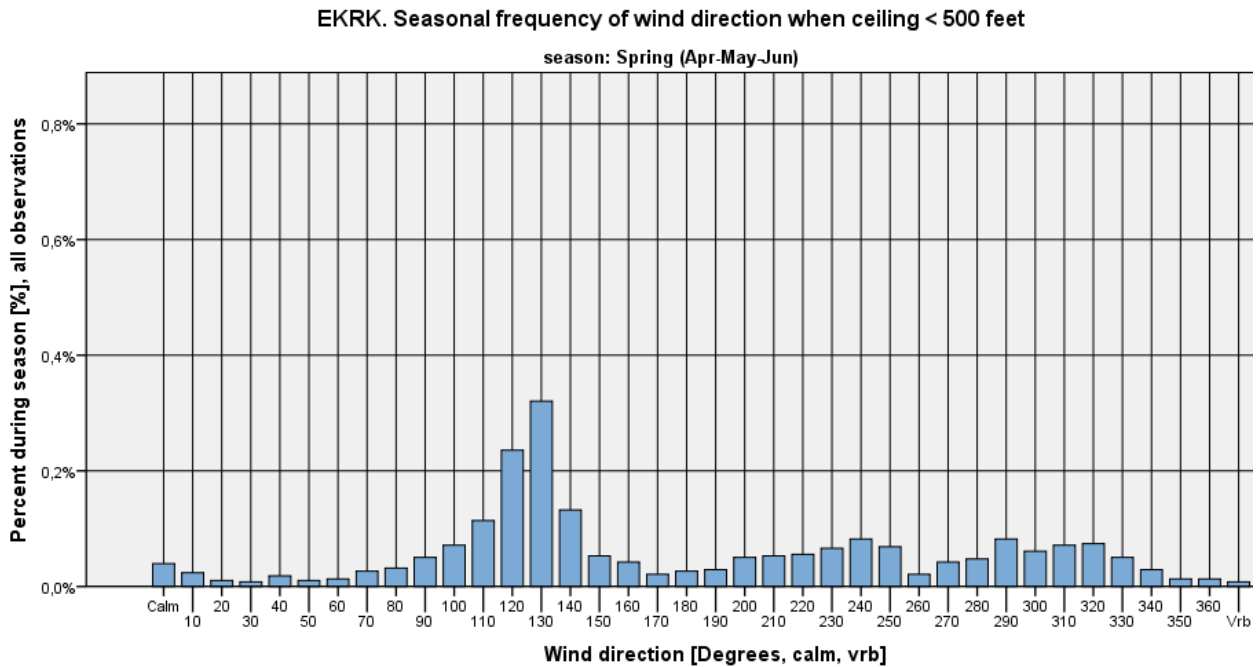


Figure 408



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

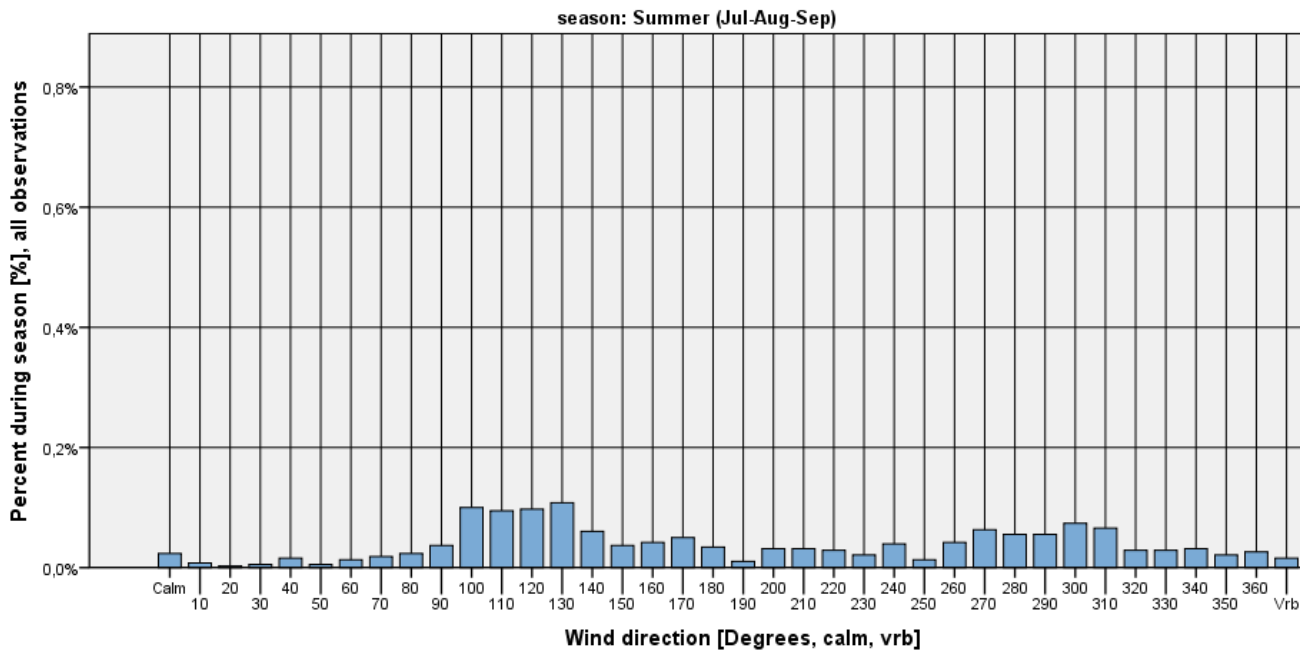


Figure 409

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

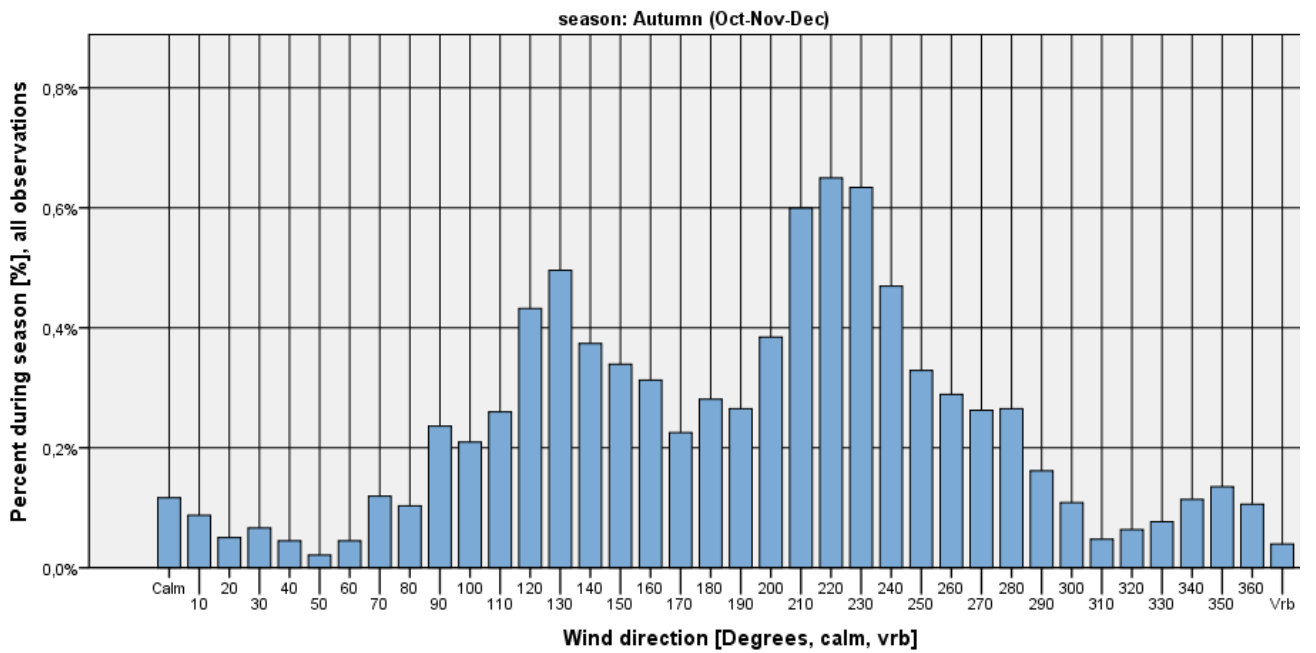


Figure 410

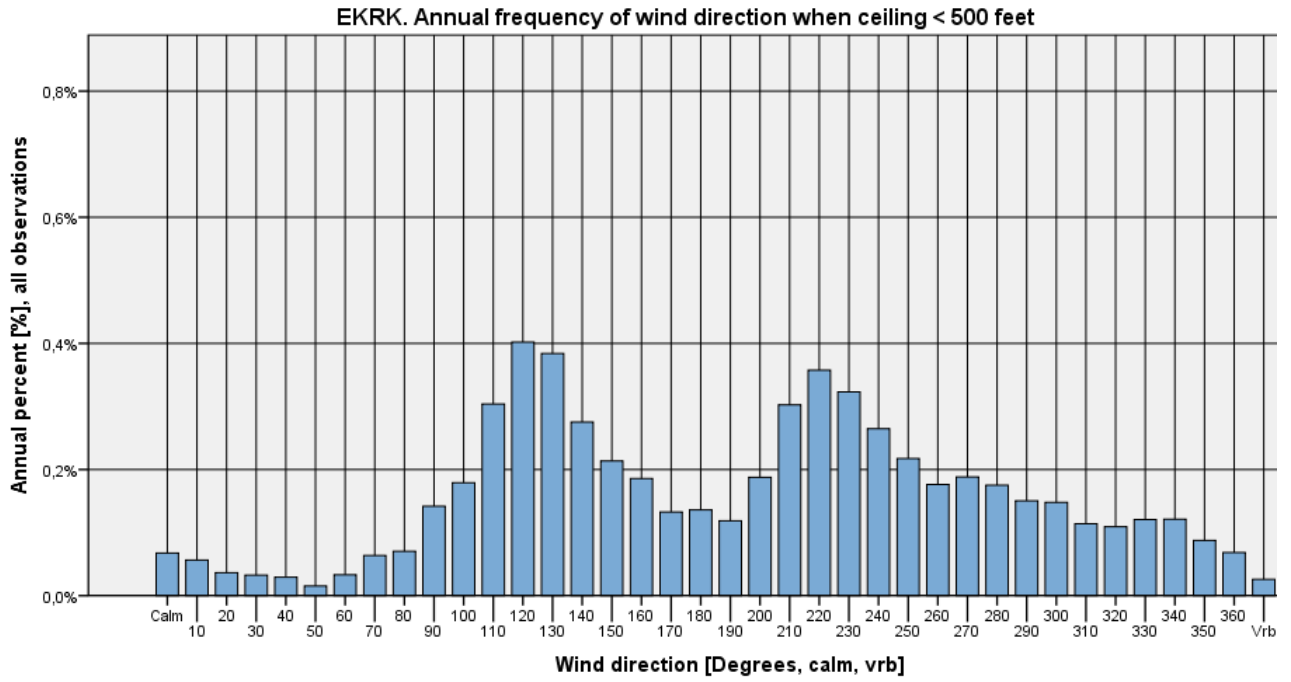


Figure 411



Ceiling < 500 feet and wind speed <= 5 kts

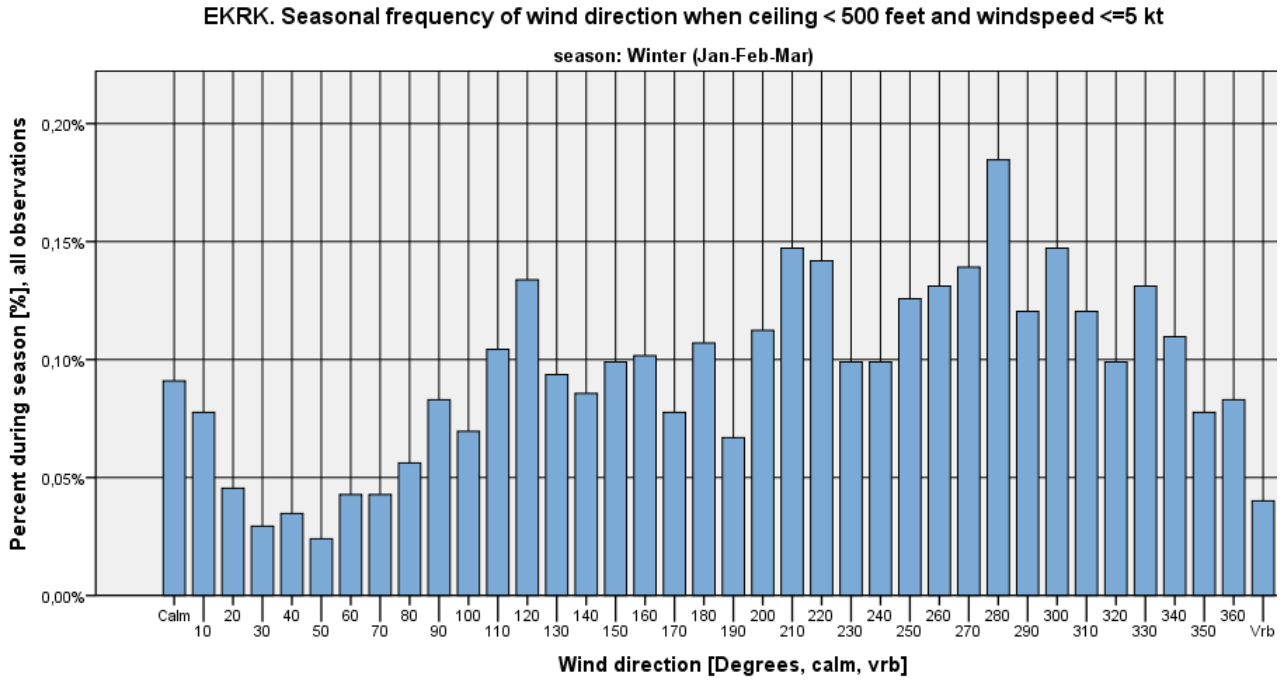


Figure 412

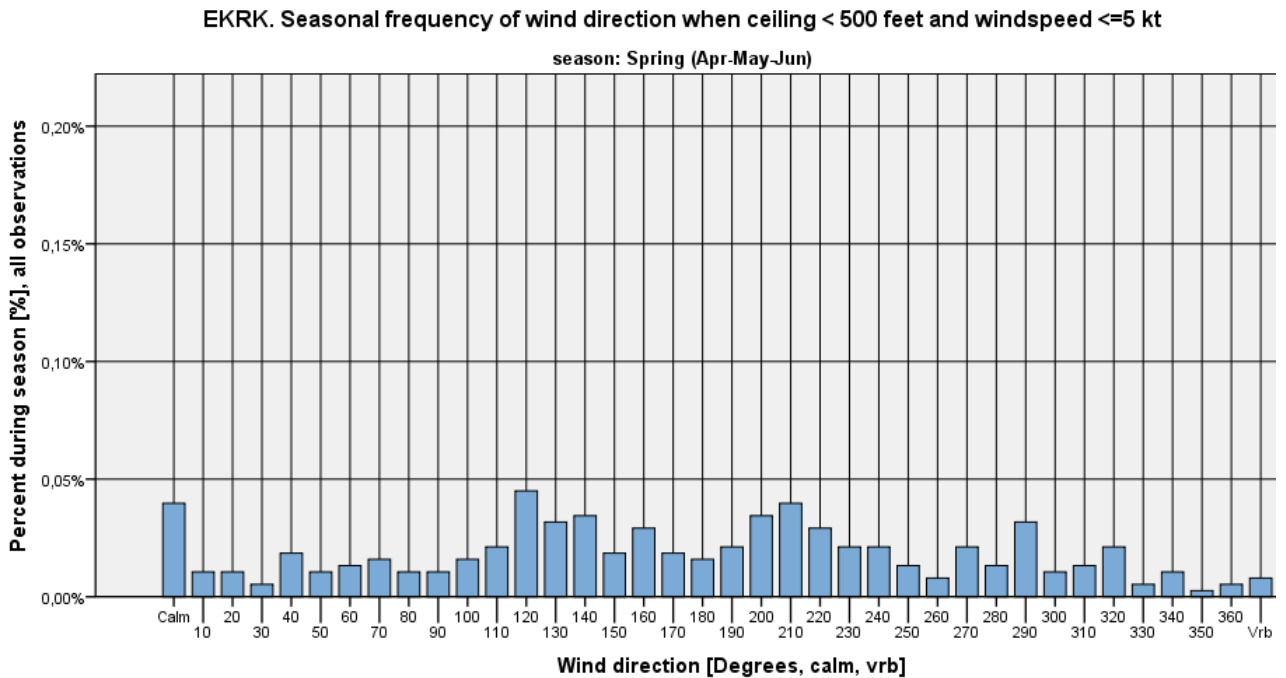


Figure 413



EKRK. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

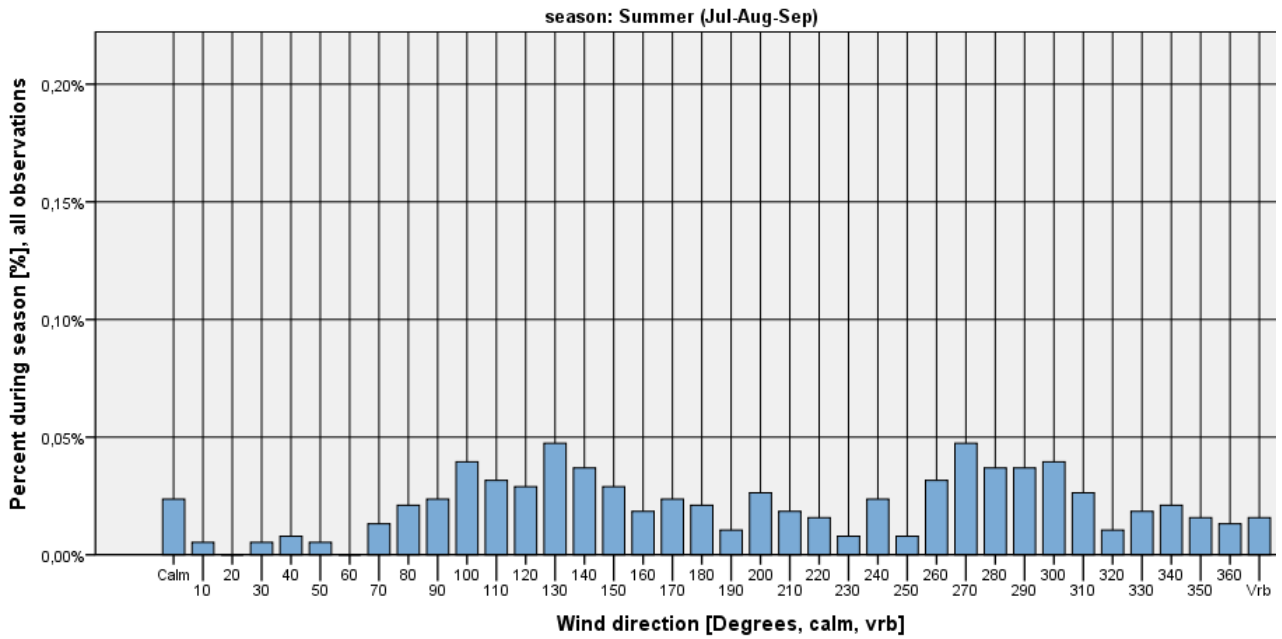


Figure 414

EKRK. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

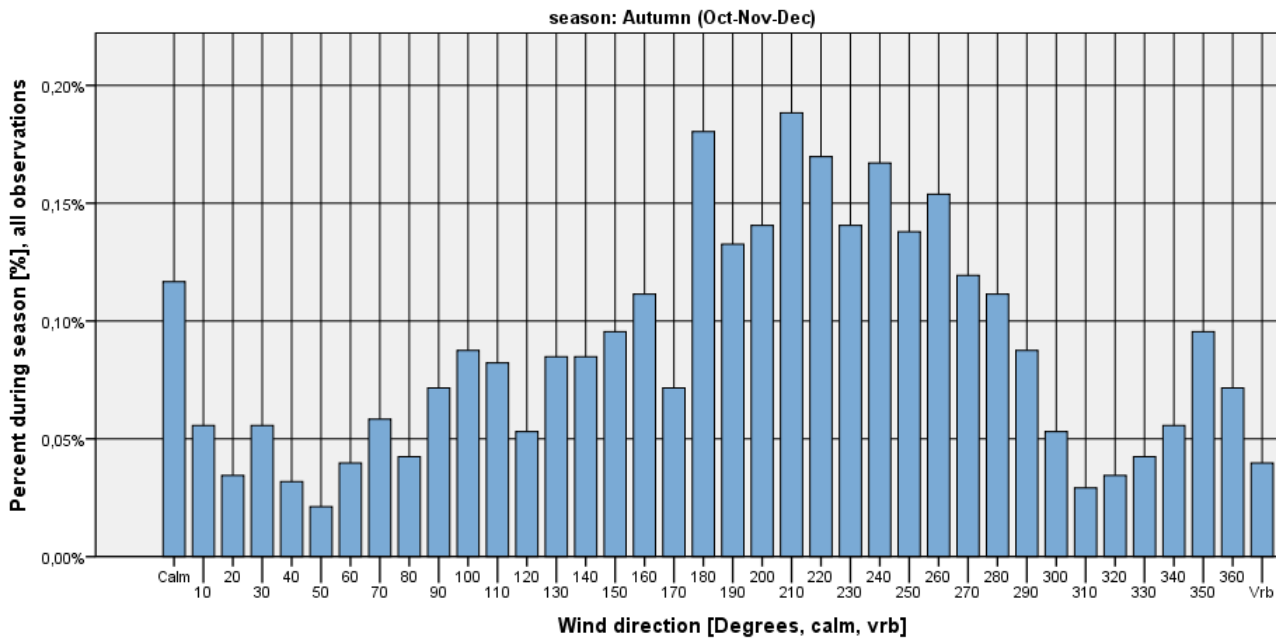


Figure 415

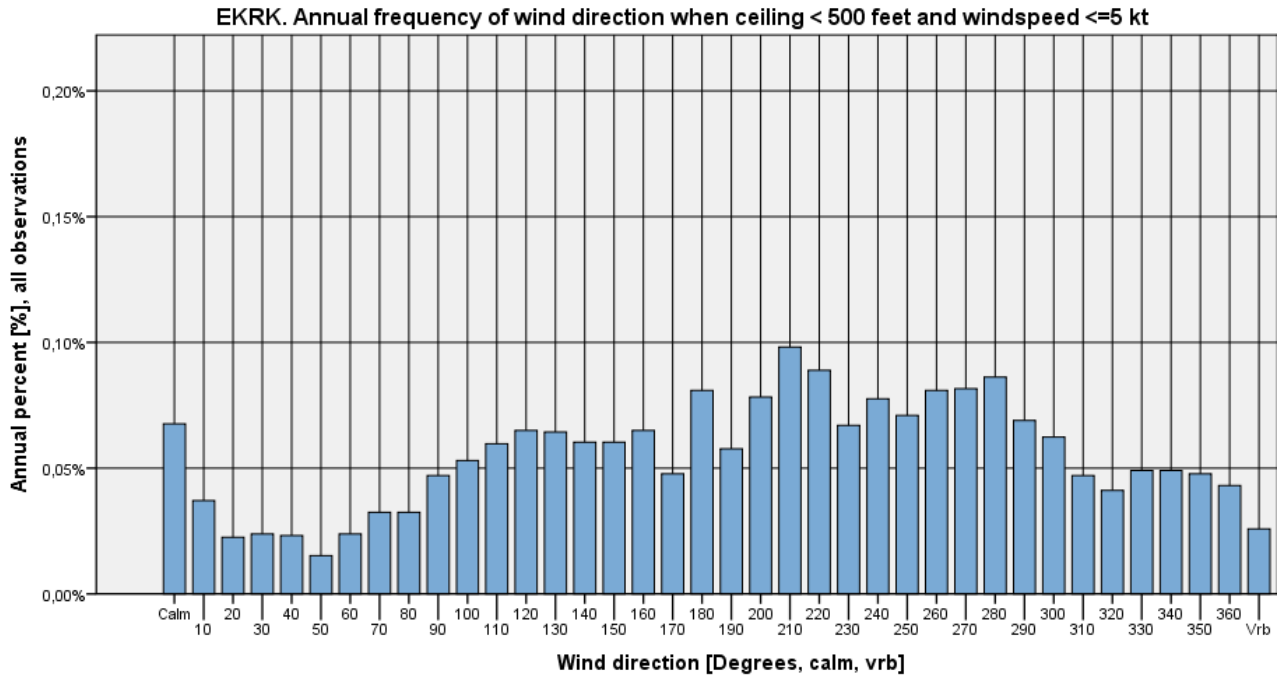


Figure 416



Ceiling < 500 feet and wind speed > 5 kts

EKRK. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

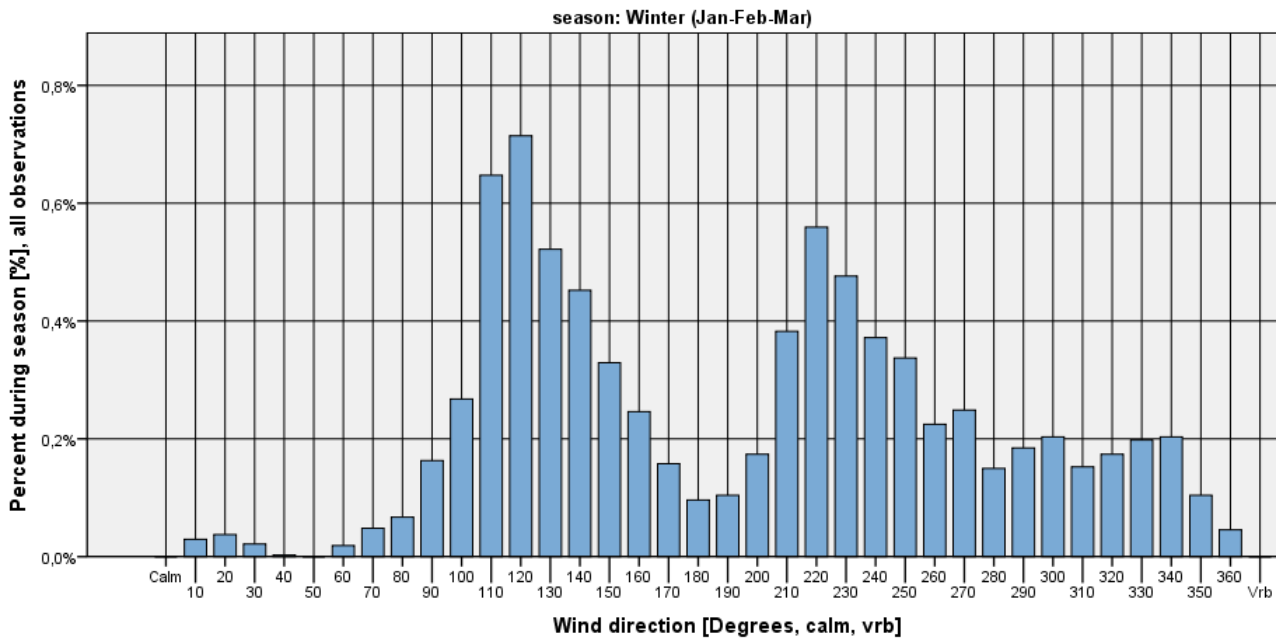


Figure 417

EKRK. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

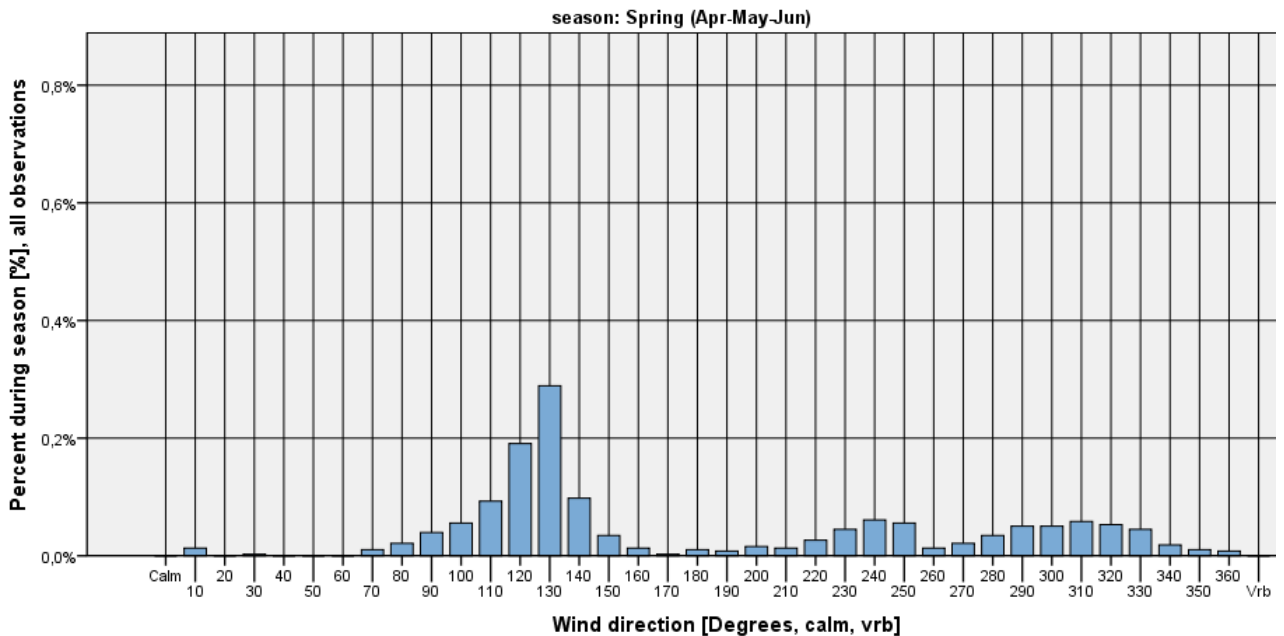


Figure 418



EKRR. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

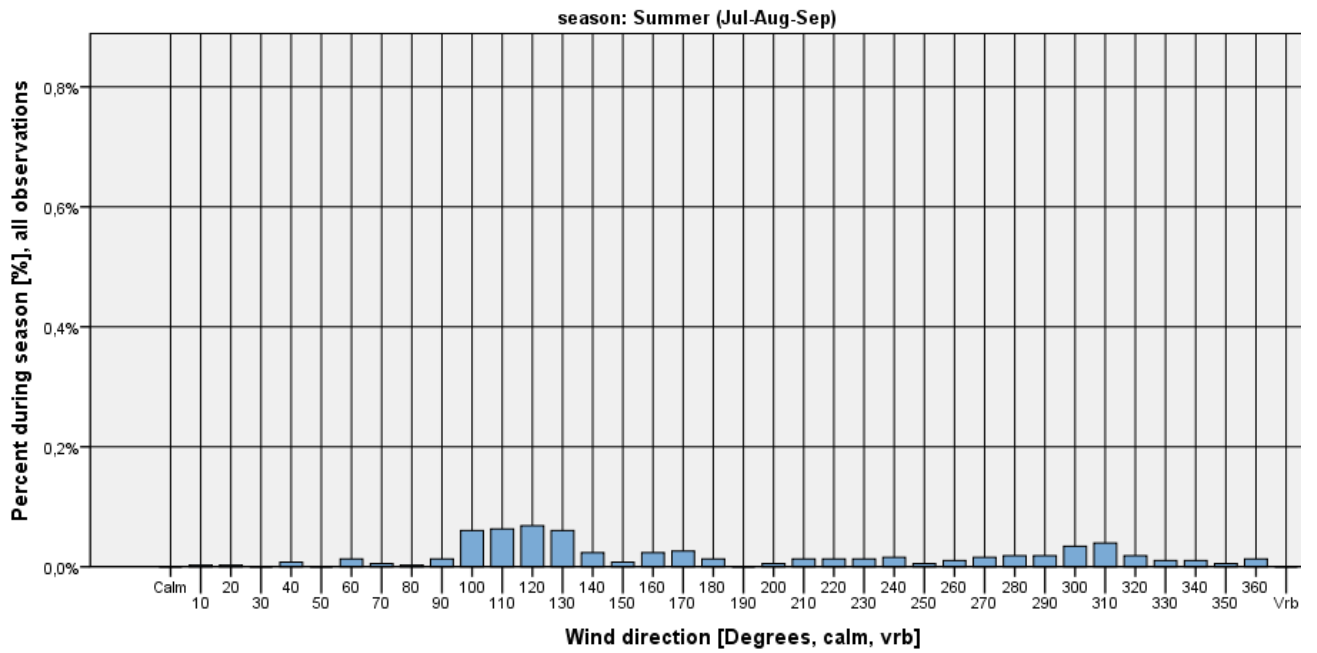


Figure 419

EKRR. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

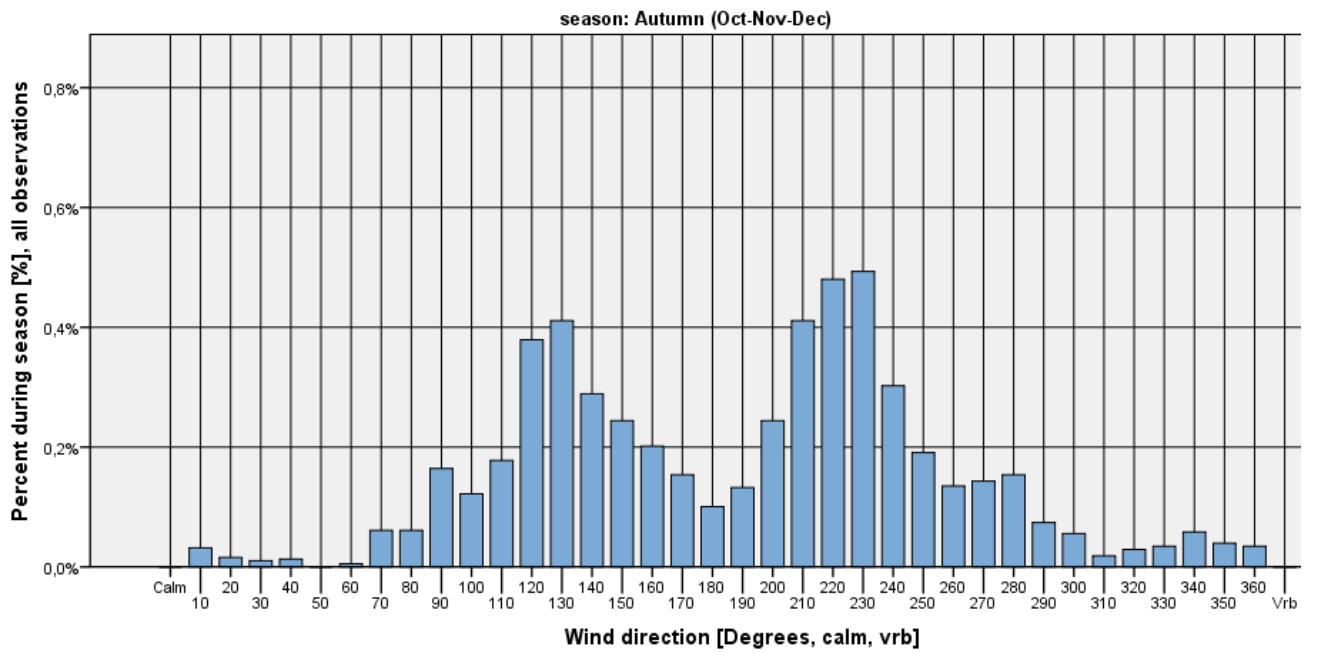


Figure 420

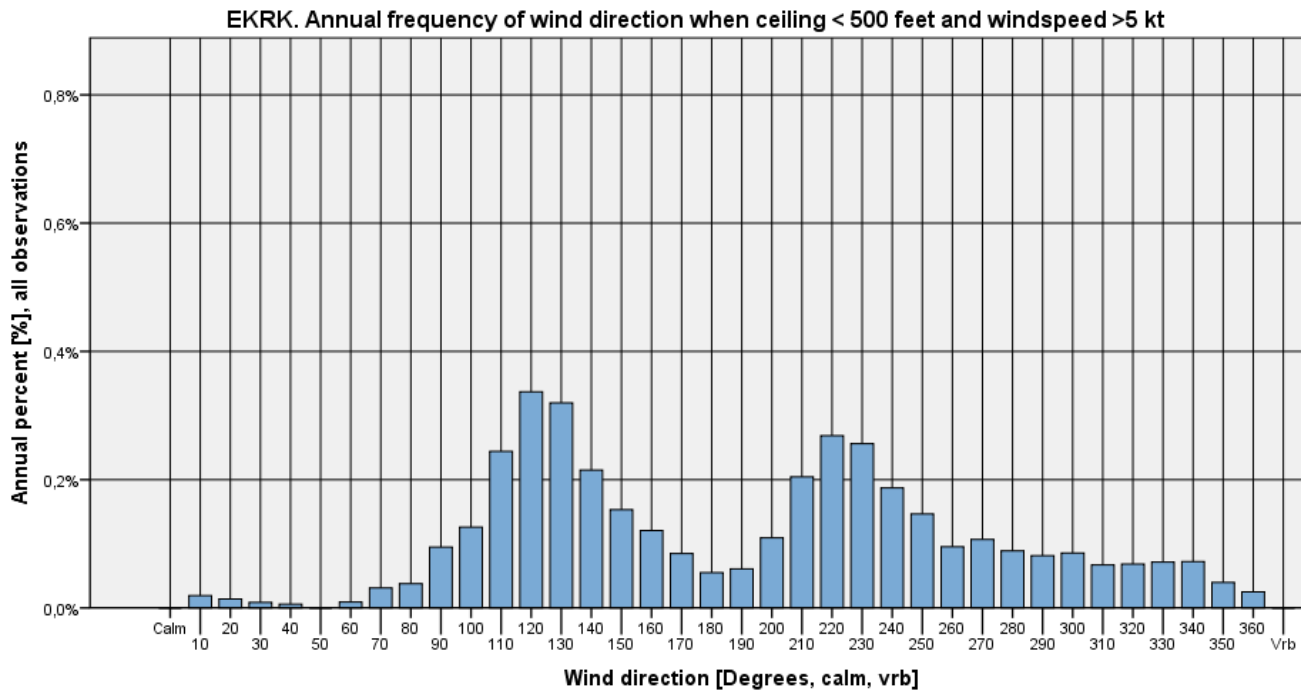


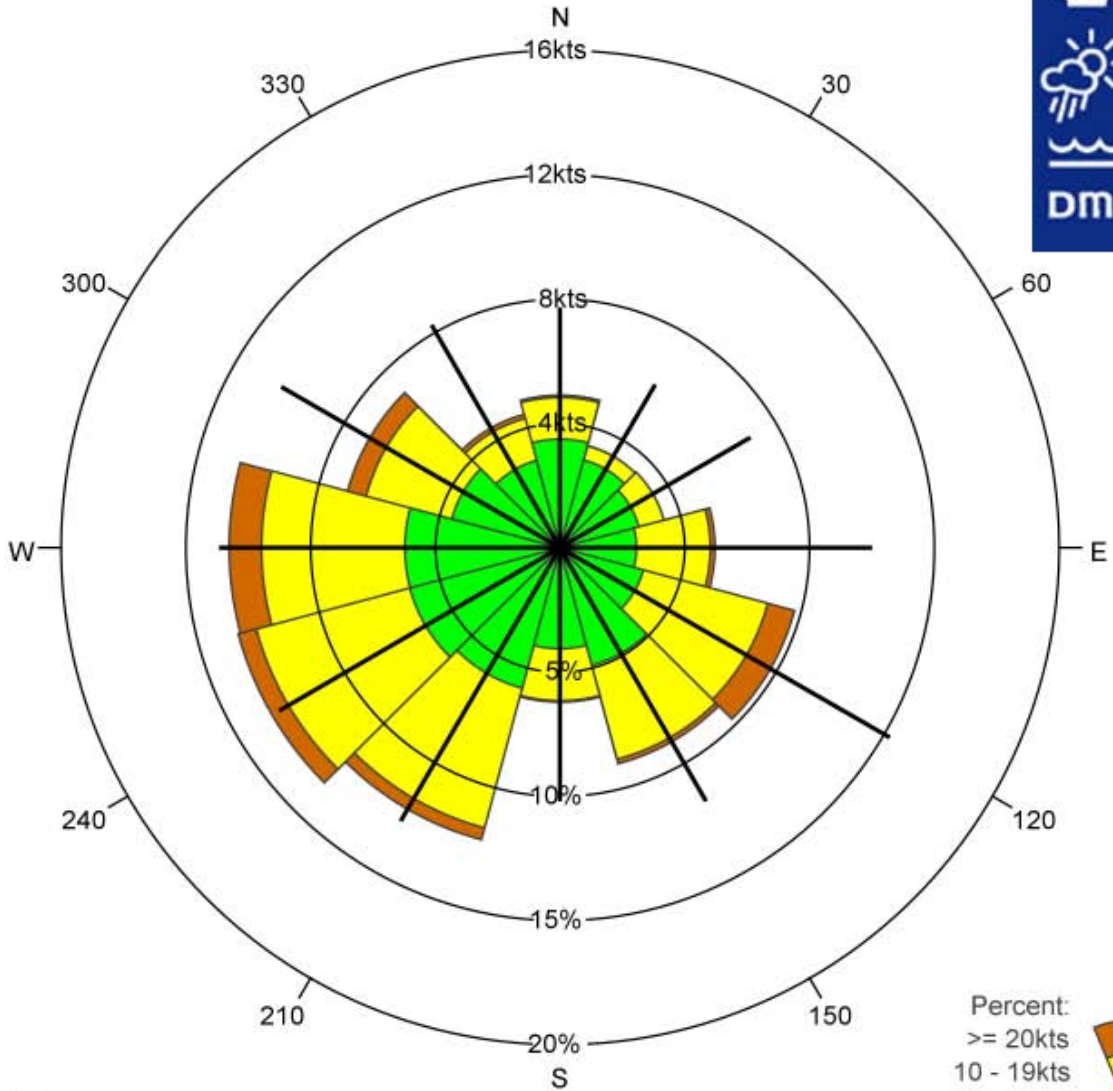
Figure 421



Wind roses

EKRK København - Roskilde AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	6.1	4.3	4.3	6.2	9.7	9.0	6.2	12.2	13.4	13.3	8.8	5.6	99.0
% 1 - 9kts	4.4	3.7	3.3	3.1	3.5	4.9	4.1	5.8	6.2	6.2	4.5	3.6	53.2
% 10 - 19kts	1.7	0.6	1.0	3.0	5.2	3.9	2.1	5.8	6.4	5.7	3.6	1.7	40.7
% >= 20kts	0.1	0.0	0.0	0.2	1.1	0.2	0.1	0.5	0.8	1.3	0.8	0.2	5.1
Mean wind speed	7.7	6.1	7.0	10.0	12.2	9.4	8.1	10.2	10.4	10.9	10.3	8.3	9.7
Max wind speed	34.0	20.0	20.0	30.0	34.0	26.0	25.0	34.0	40.0	41.0	42.0	35.0	42.0

Number of observations = 75074

Source: DMI

Calm defined a wind speed = 0kts

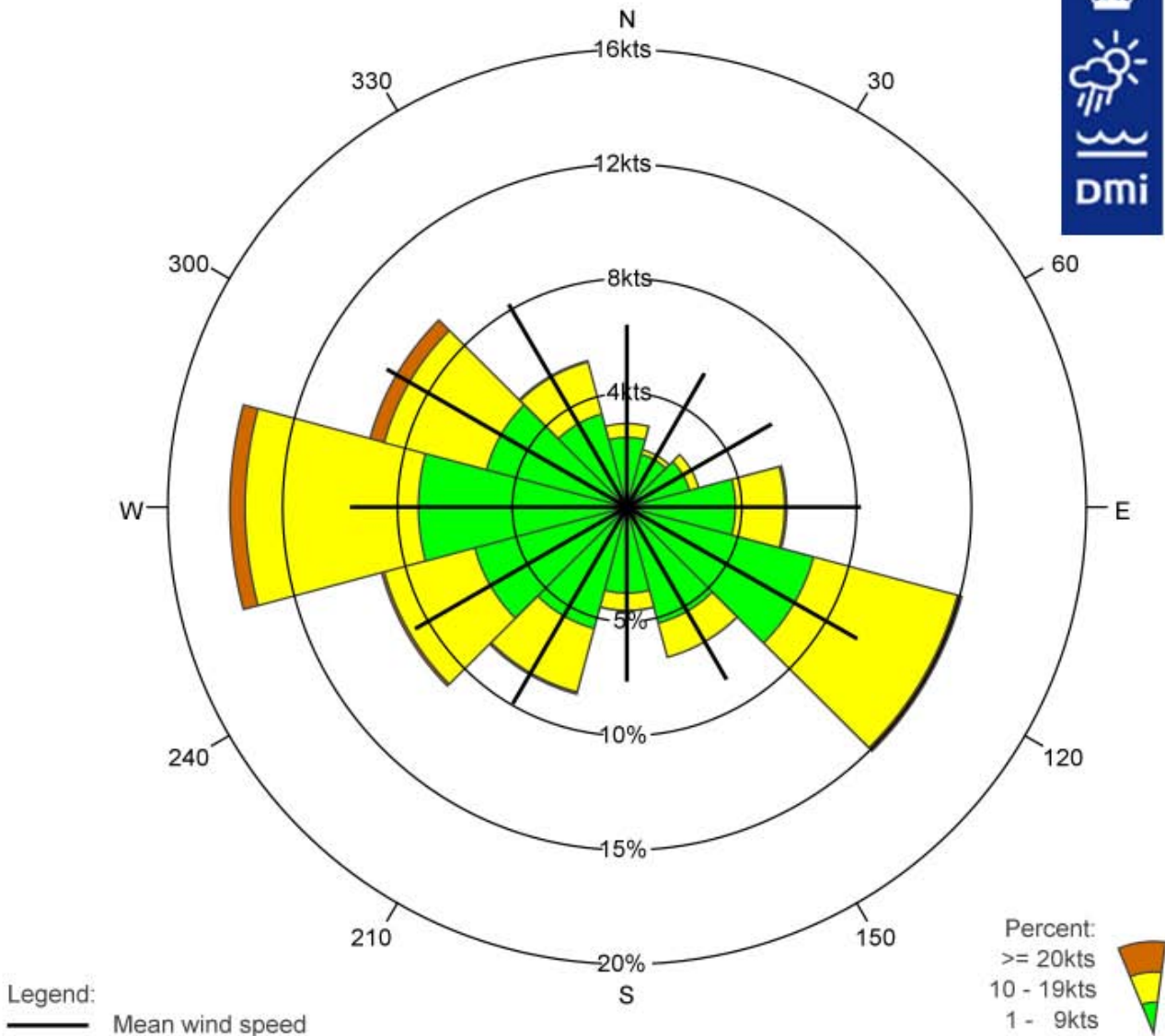
Number of observations with calm/varying wind direction: 737=1.0%

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



EKRK København - Roskilde SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.7	2.6	3.2	7.0	15.1	6.8	4.5	8.5	11.1	17.3	11.6	6.6	97.9
% 1 - 9kts	3.1	2.4	2.8	4.7	8.4	5.3	3.8	5.5	6.9	9.1	6.3	4.2	62.4
% 10 - 19kts	0.6	0.2	0.4	2.1	6.5	1.5	0.8	2.9	4.1	7.6	4.6	2.4	33.6
% >= 20kts	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.1	0.7	0.6	0.1	1.9
Mean wind speed	6.4	5.4	5.8	8.1	9.2	6.9	6.1	7.9	8.5	9.6	9.6	8.2	8.4
Max wind speed	29.0	15.0	17.0	27.0	26.0	20.0	23.0	27.0	26.0	30.0	43.0	32.0	43.0

Number of observations = 75679
 Calm defined a wind speed = 0kts
 Number of observations with calm/varying wind direction: 1570=2.1%
 Observations with calm/varying wind direction are not used in the statistics

Source: DMI

Availability

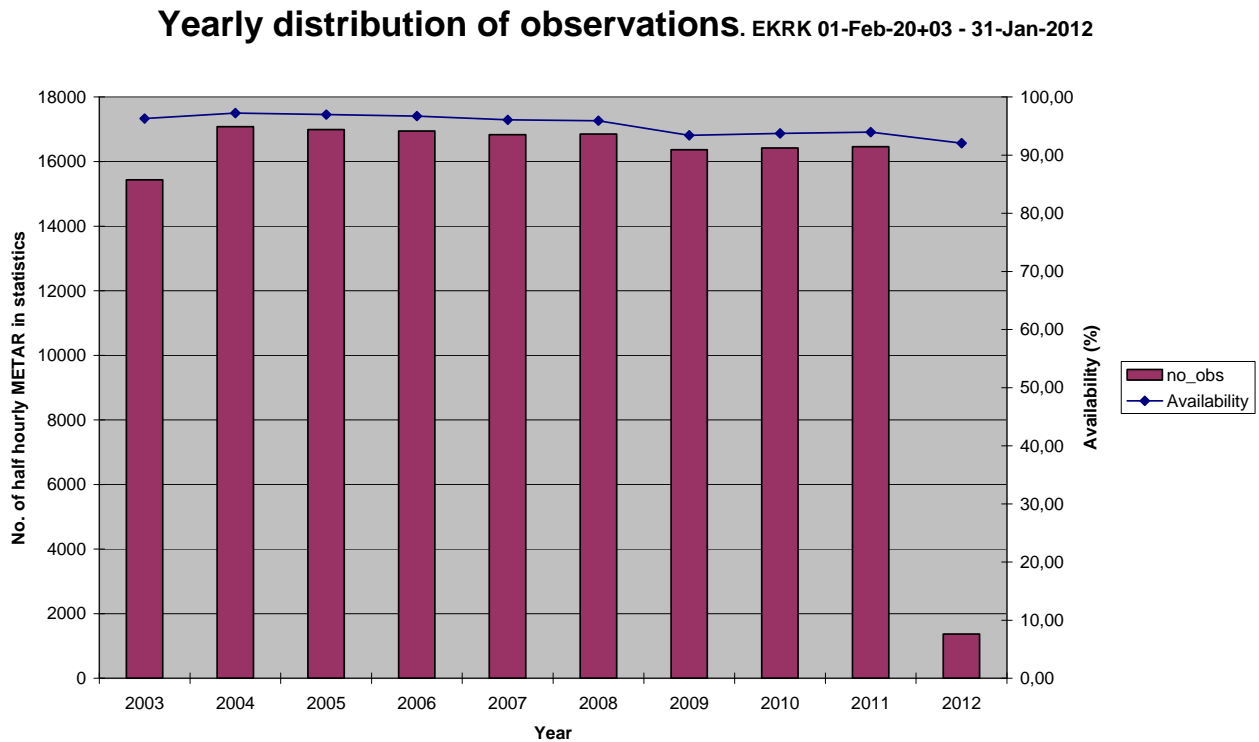


Figure 422

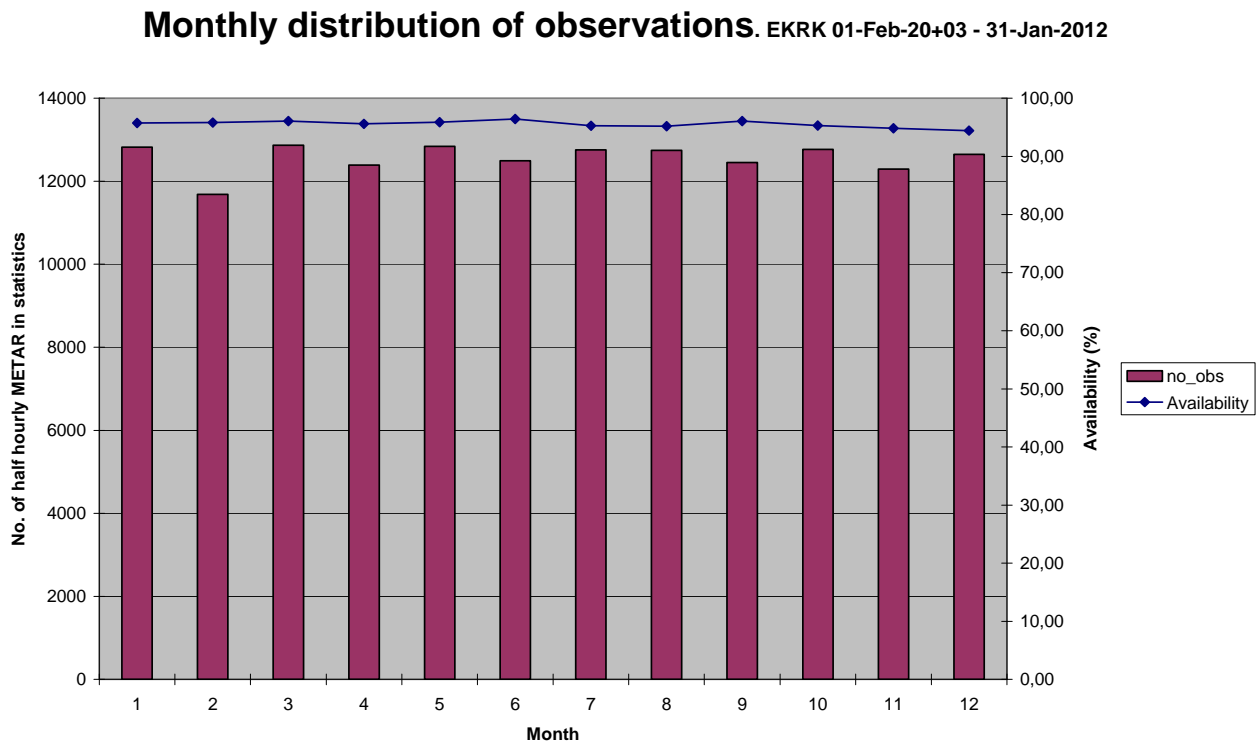


Figure 423

Hourly distribution of observations. EKRK 01-Feb-20+03 - 31-Jan-2012

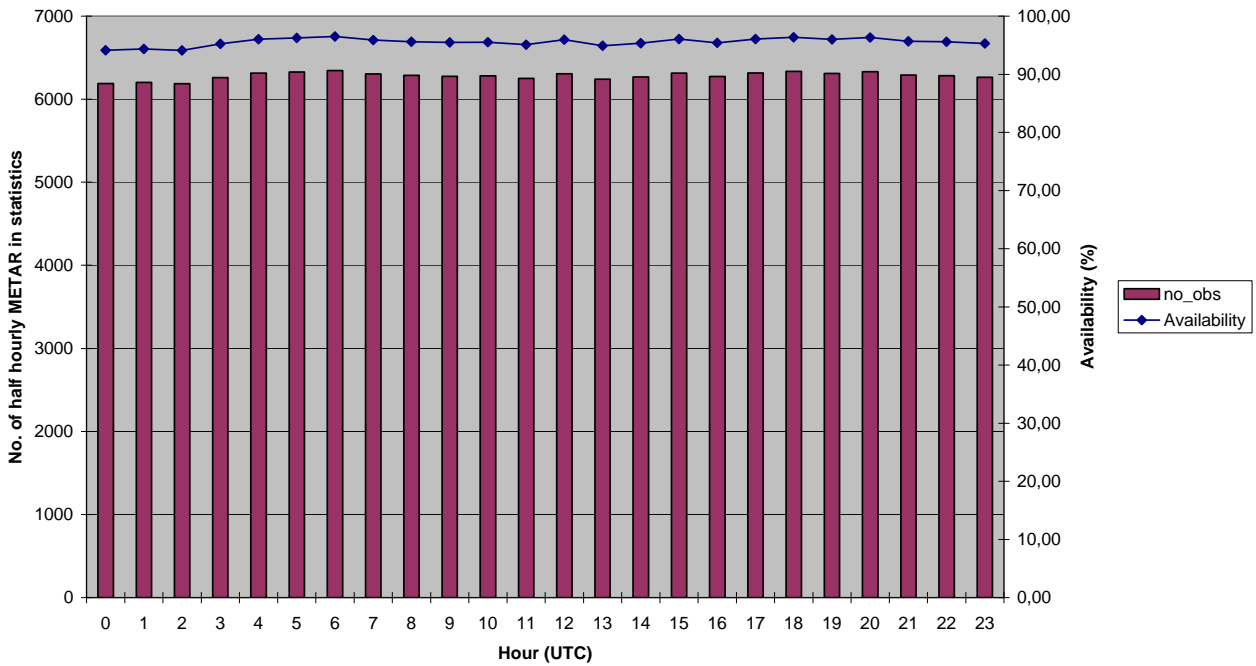


Figure 424

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

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

Table 49

EKRN Bornholm/Rønne

Bornholm Airport - Rønne

Airport location: 55,067°N 14,883°E Elevation: 102 m above msl.

EKRN observations in statistics: 124.657 half hourly METAR⁹ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 79,0%.

The availability is mainly lowered by lack of night observations during the first years of the period.

EKRN METAR are manual until 17-Dec-2007 and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

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

No. Obs = 31.148	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,026	2,02	3,37	3,49	3,53	0,13	3,65
<1 km	0,026	2,19	3,83	4,02	4,07	0,17	4,24
<1.5 km	0,026	2,35	4,64	5,14	5,31	0,34	5,64
<3.0 km	0,026	2,58	7,41	9,48	10,24	2,08	12,31
< 5.0 km	0,026	2,61	9,09	13,58	15,47	6,09	21,56
>= 5,0 km or CAVOK	0	0,022	1,44	8,93	16,84	61,60	78,44
Total	0,026	2,63	10,54	22,52	32,31	67,69	100

Table 50

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

No. Obs=31.144	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,026	1,06	1,46	1,47	1,49	0,18	1,66
<1 km	0,026	1,15	1,63	1,65	1,67	0,22	1,89
<1.5 km	0,026	1,29	1,98	2,03	2,06	0,39	2,45
<3.0 km	0,026	1,45	2,82	3,05	3,22	1,17	4,40
< 5.0 km	0,026	1,50	3,49	4,10	4,53	3,30	7,82
>= 5,0 km or CAVOK	0	0,022	0,86	2,81	4,21	87,97	92,18
Total	0,026	1,53	4,36	6,91	8,74	91,26	100

Table 51

⁹ For every half hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.



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

No. Obs = 31.268	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,13	0,16	0,17	0,18	0,16	0,33
<1 km	0	0,16	0,21	0,21	0,22	0,17	0,39
<1.5 km	0	0,20	0,29	0,33	0,34	0,27	0,60
<3.0 km	0	0,31	0,85	1,04	1,12	0,73	1,85
< 5.0 km	0	0,34	1,42	2,08	2,28	1,80	4,08
>= 5,0 km or CAVOK	0	0,010	0,53	3,26	5,82	90,09	95,92
Total	0	0,35	1,95	5,34	8,10	91,90	100

Table 52

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

No. Obs = 31.097	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,013	0,41	0,97	1,06	1,11	0,09	1,21
<1 km	0,013	0,46	1,14	1,27	1,35	0,12	1,47
<1.5 km	0,013	0,50	1,45	1,82	1,96	0,24	2,20
<3.0 km	0,013	0,63	3,33	4,99	5,59	1,41	7,00
< 5.0 km	0,013	0,65	4,77	9,56	11,12	4,27	15,39
>= 5,0 km or CAVOK	0	0	1,07	8,87	18,47	66,13	84,61
Total	0,013	0,65	5,84	18,43	29,59	70,41	100

Table 53

Annual: EKRN – Frequencies (%) Visibility - Ceiling

No. Obs = 124.657	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,016	0,90	1,49	1,55	1,57	0,14	1,71
<1 km	0,016	0,99	1,70	1,79	1,83	0,17	2,00
<1.5 km	0,016	1,09	2,09	2,33	2,41	0,31	2,72
<3.0 km	0,016	1,24	3,60	4,64	5,04	1,35	6,38
< 5.0 km	0,016	1,27	4,69	7,32	8,34	3,86	12,21
>= 5,0 km or CAVOK	0	0,014	0,98	5,96	11,33	76,47	87,79
Total	0,016	1,29	5,67	13,29	19,67	80,33	100

Table 54

Wind direction histograms

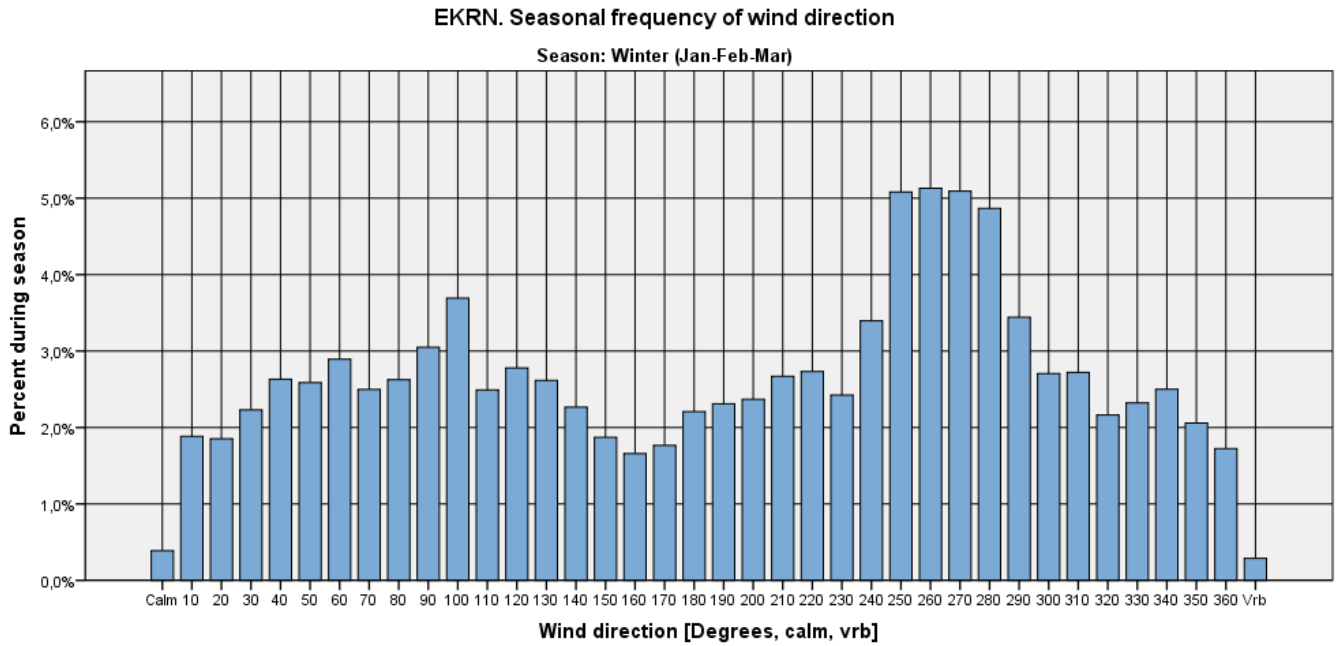


Figure 425

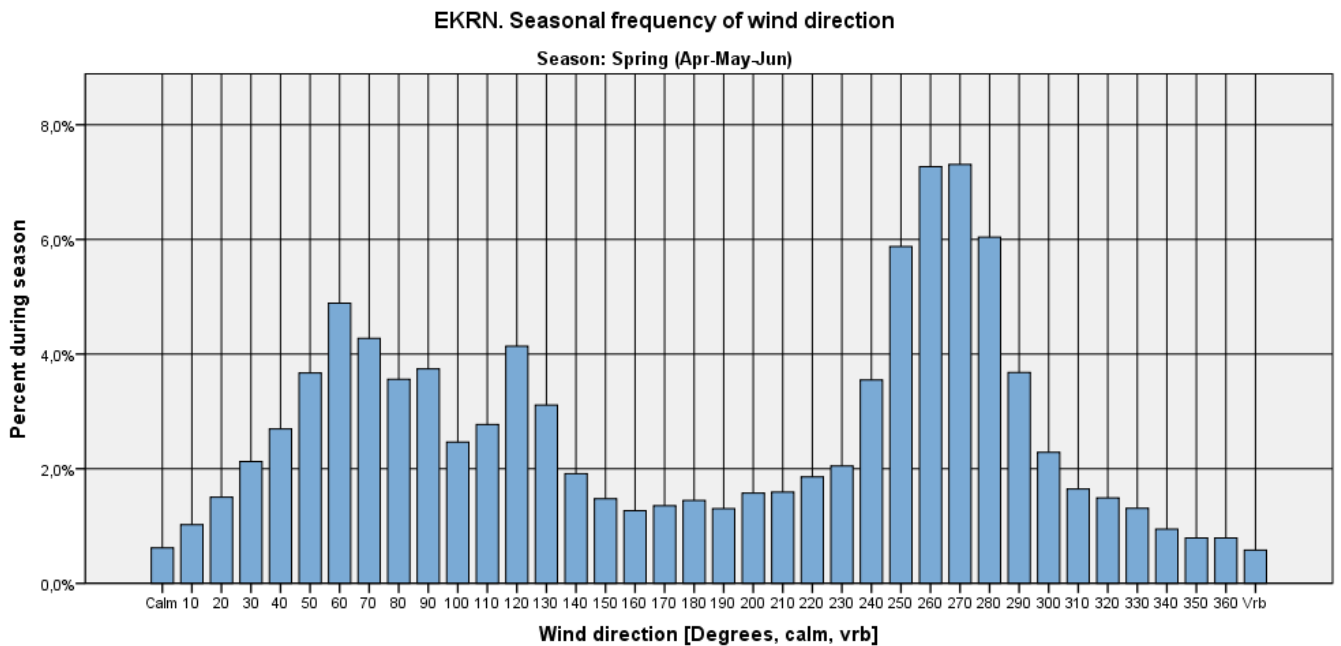


Figure 426

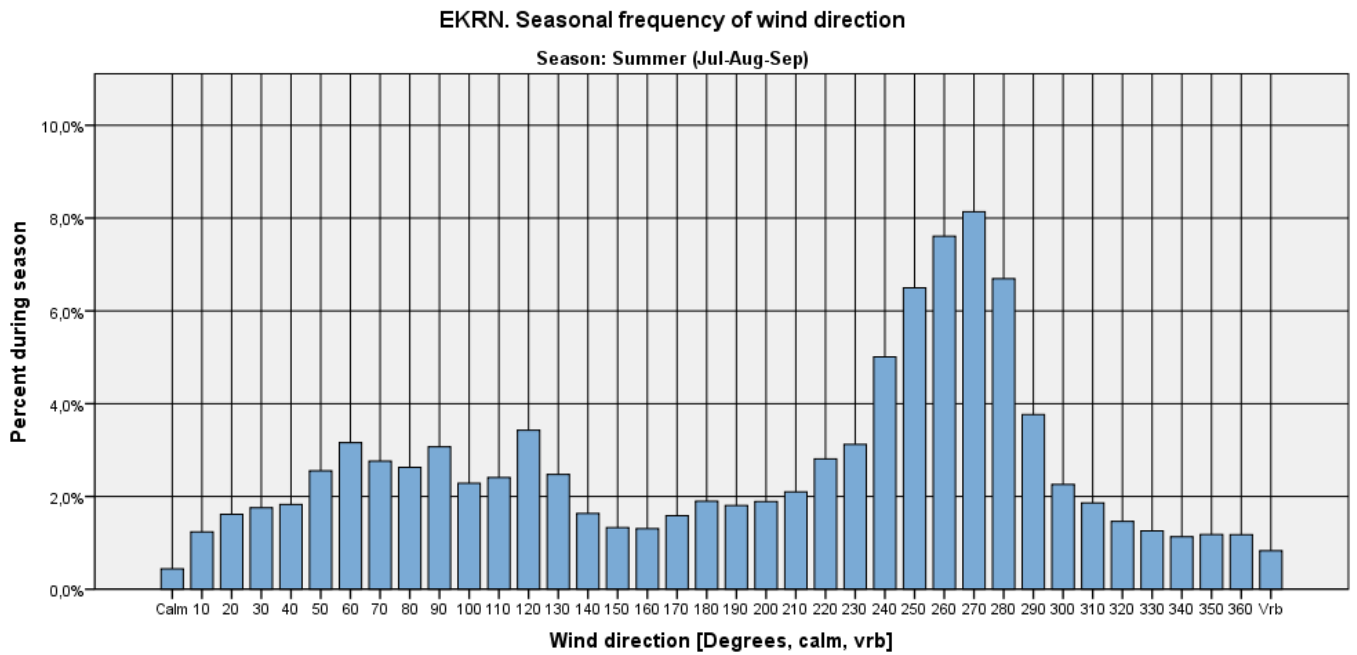


Figure 427

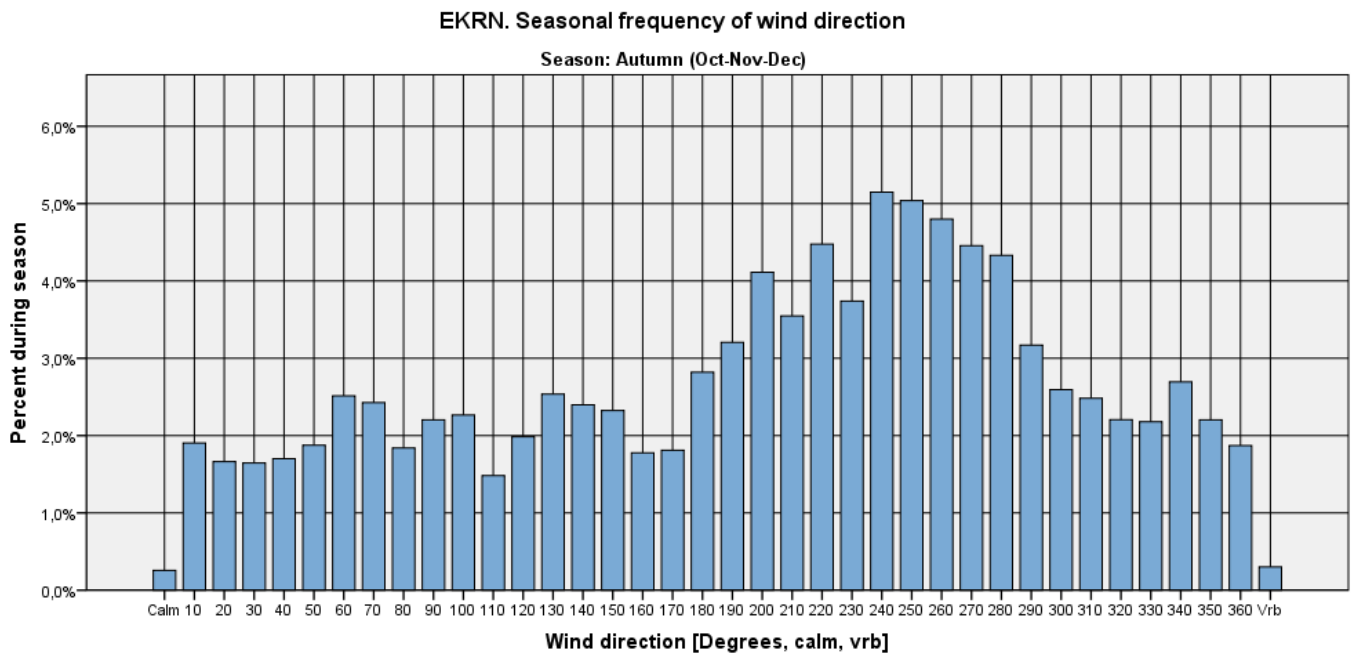


Figure 428

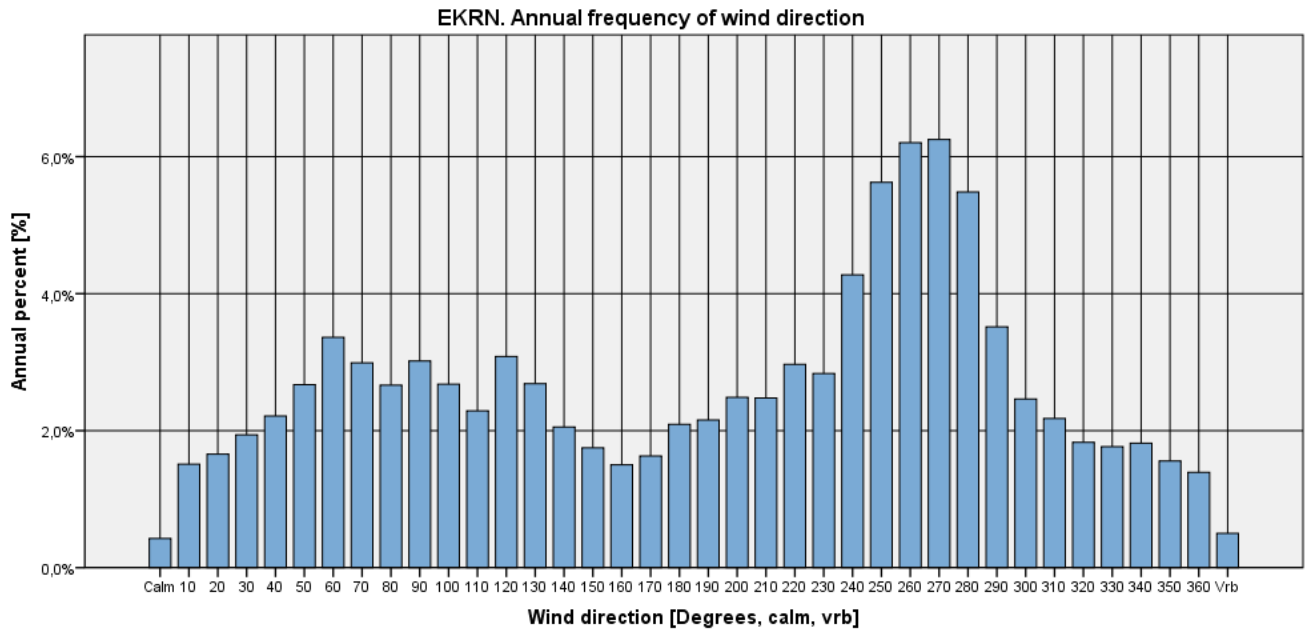


Figure 429



Visibility criteria on wind direction histograms

Visibility < 1000 m

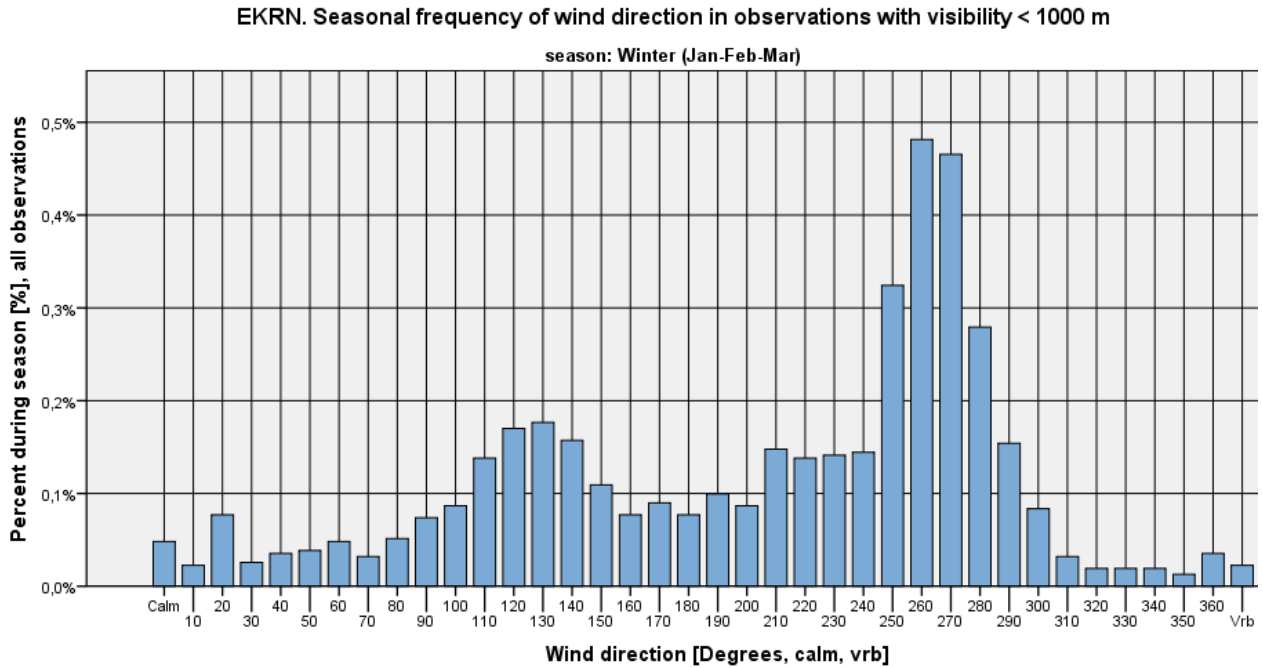


Figure 430

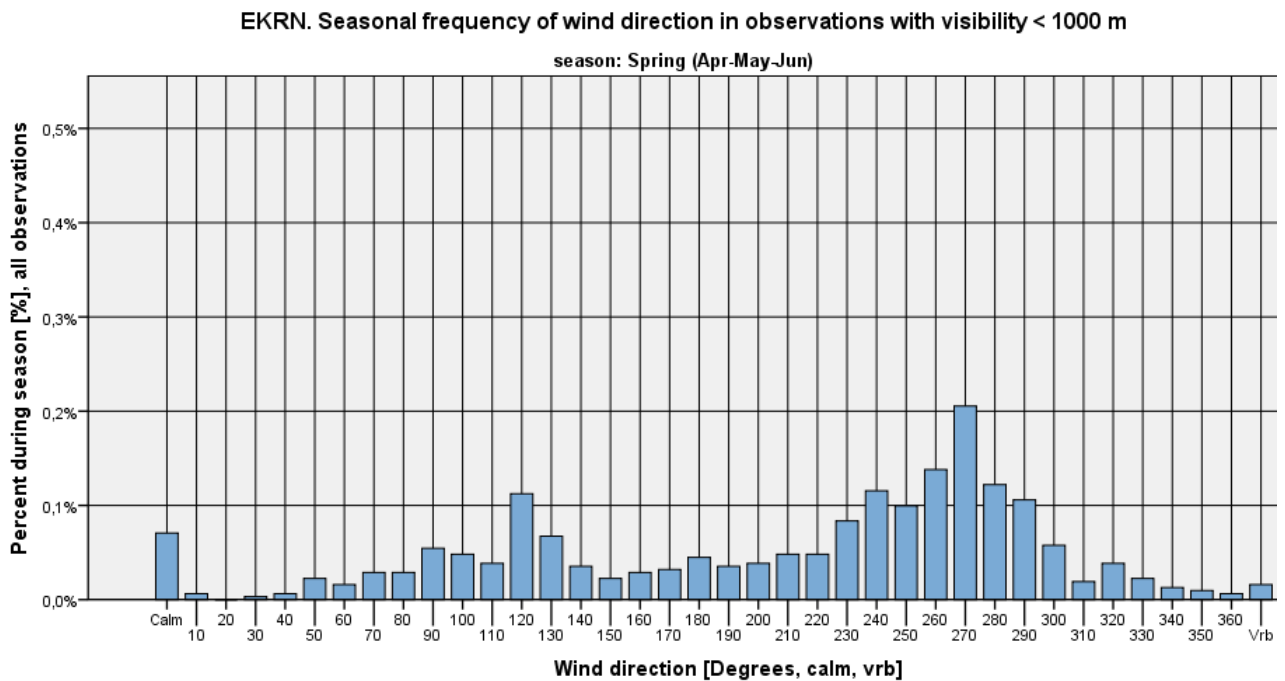


Figure 431



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

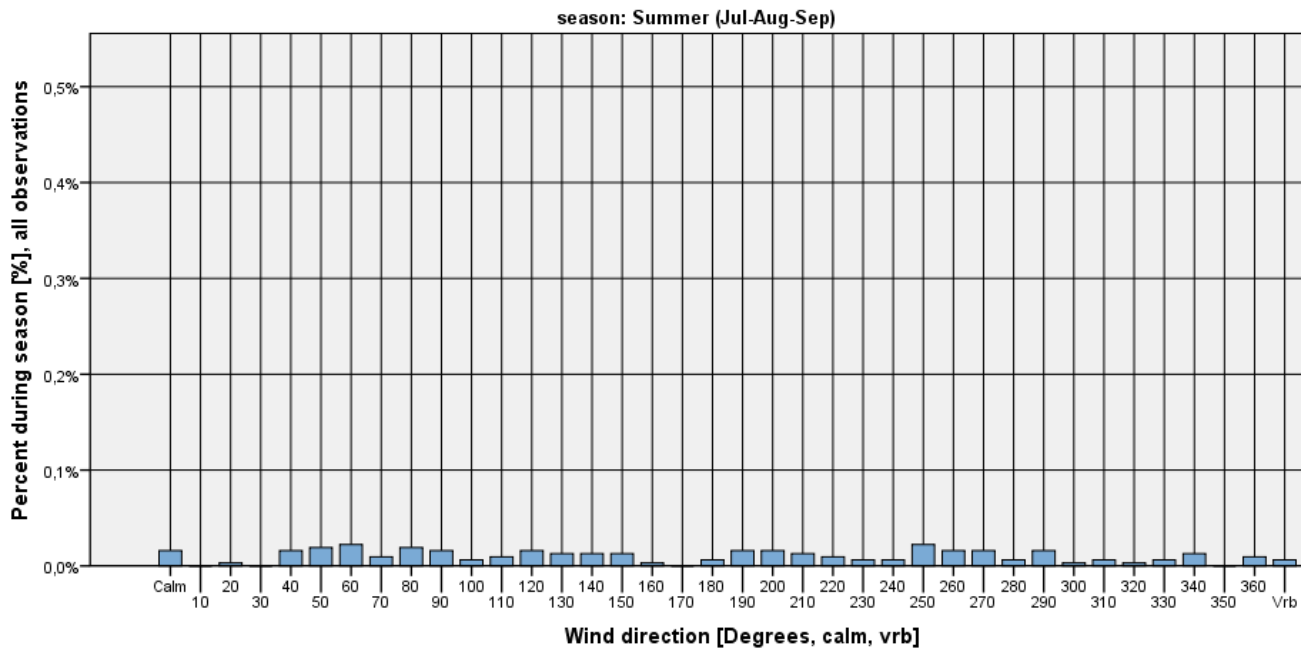


Figure 432

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

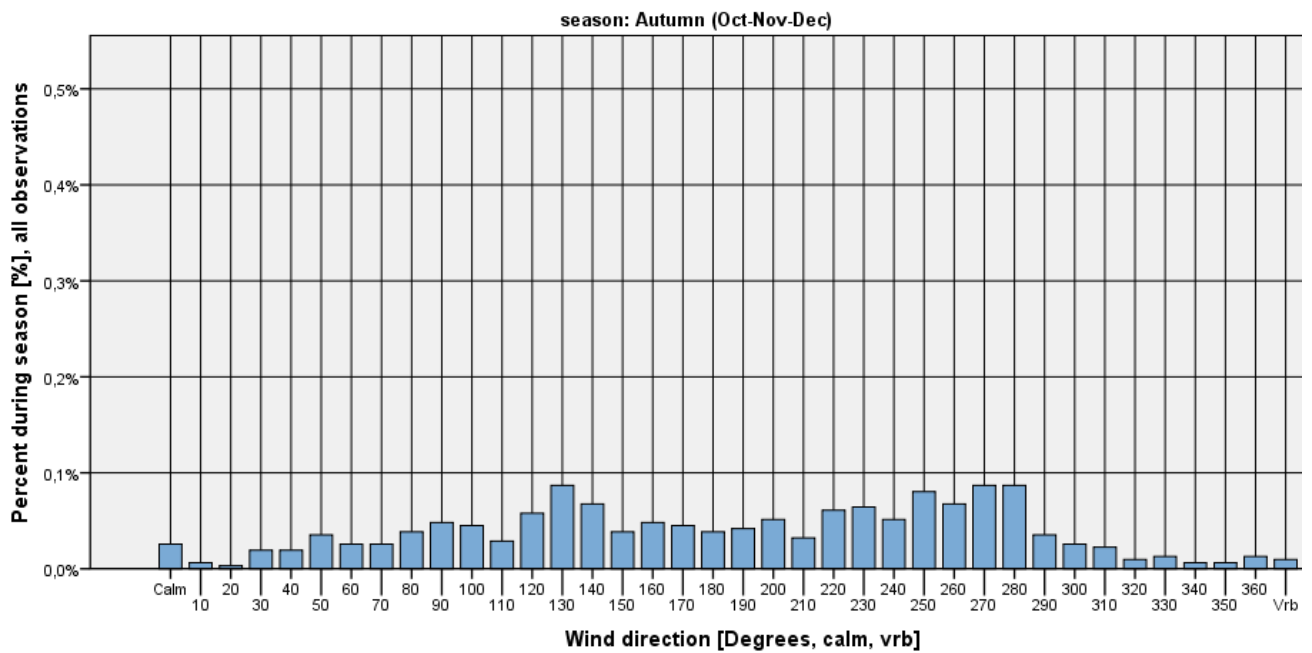


Figure 433

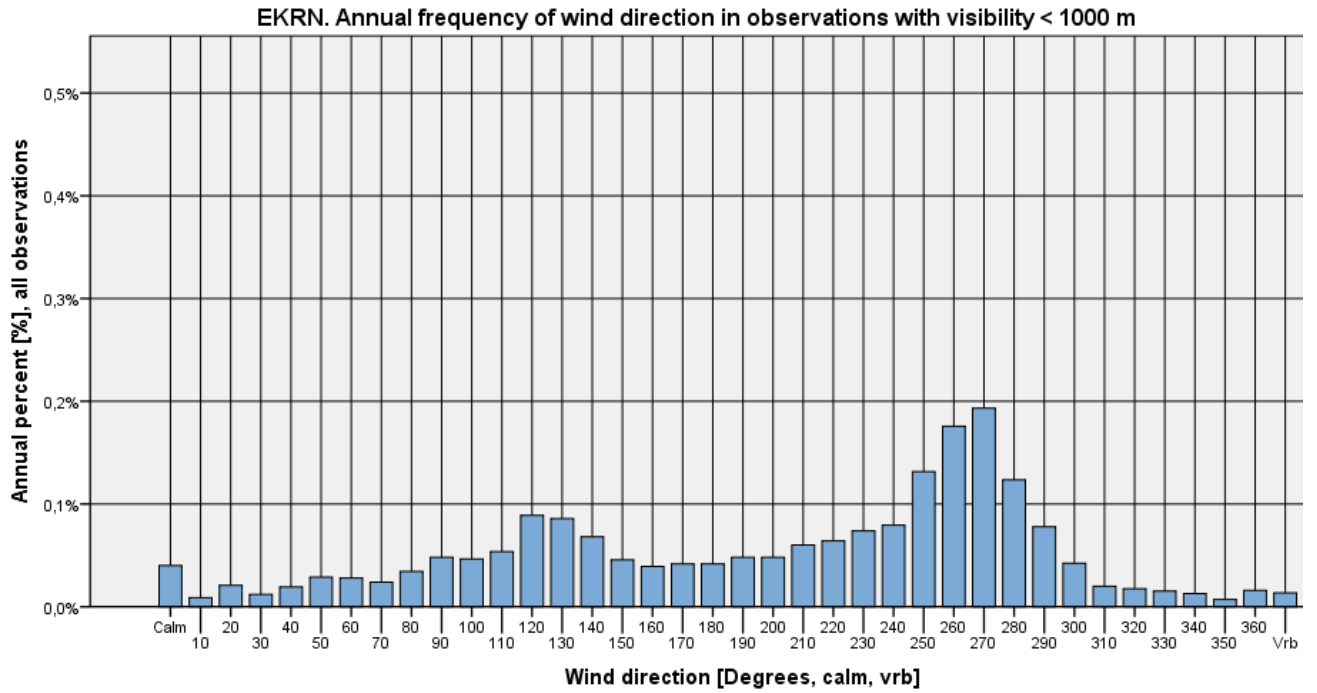


Figure 434



Visibility < 1000 m and wind speed <= 5 kts

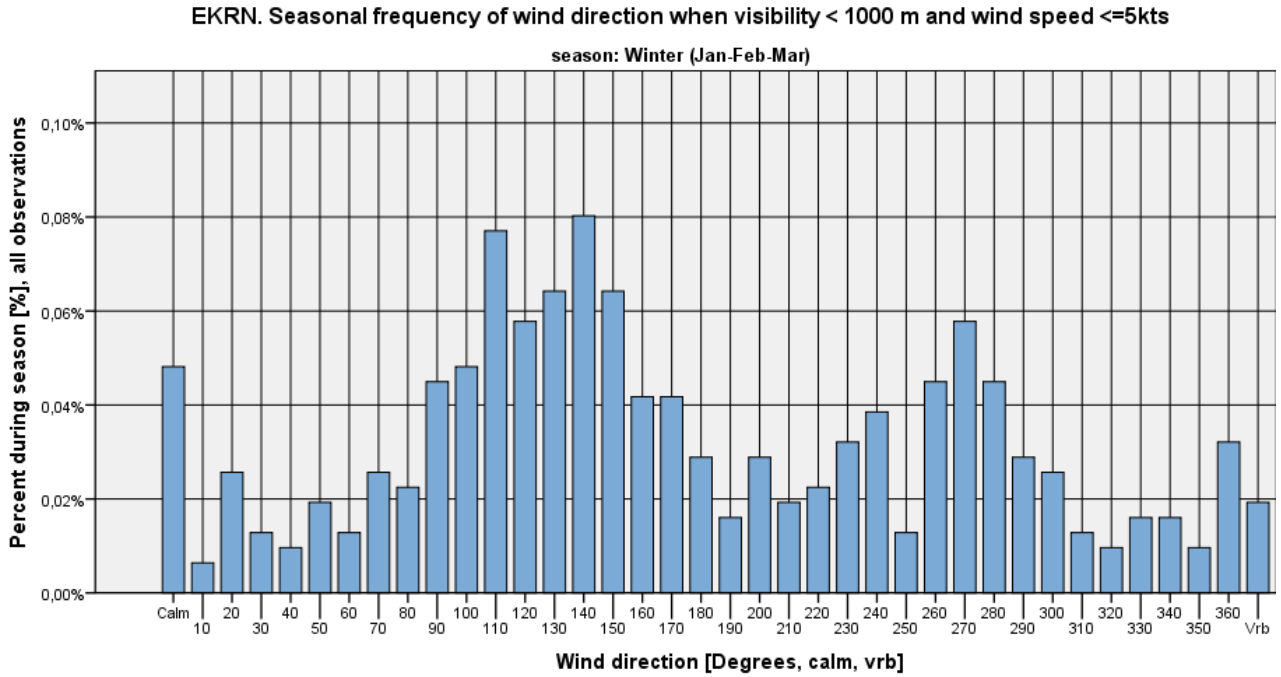


Figure 435

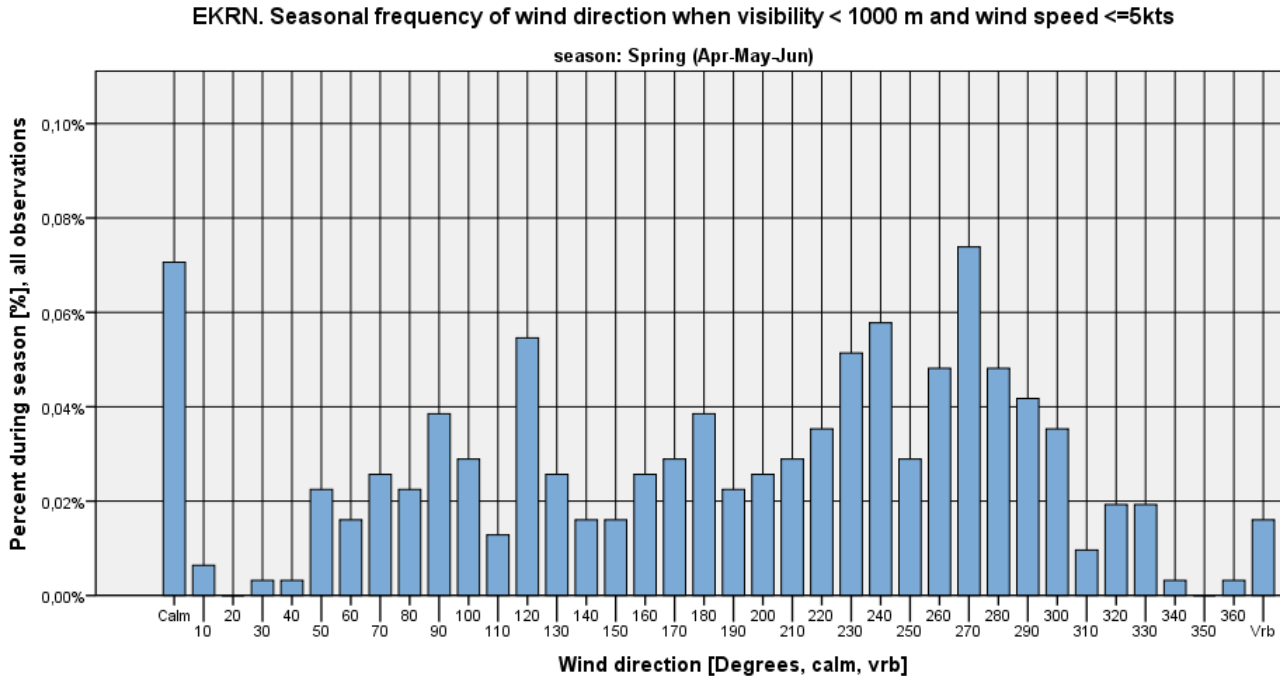


Figure 436



EKRN. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

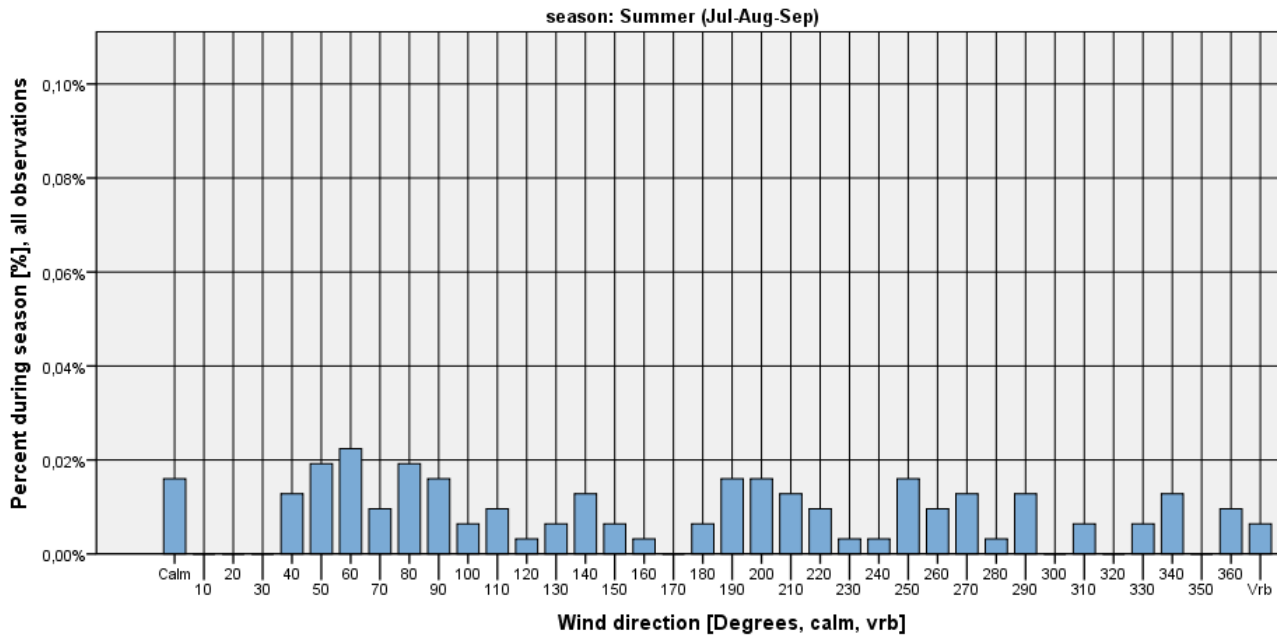


Figure 437

EKRN. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

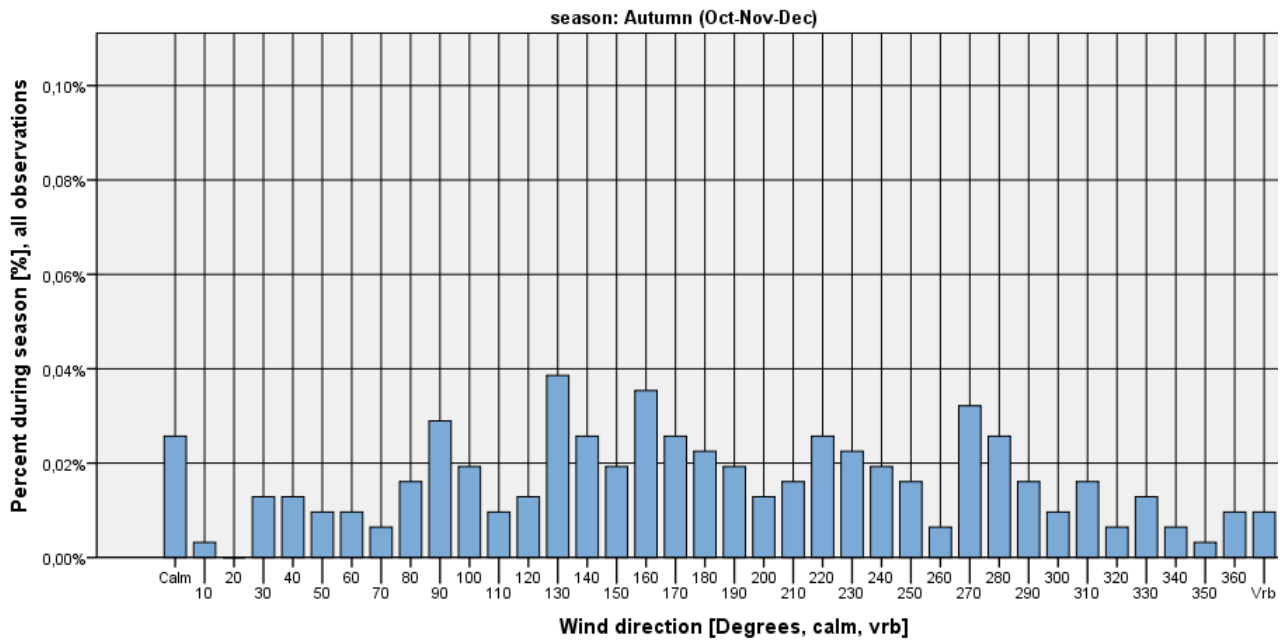


Figure 438

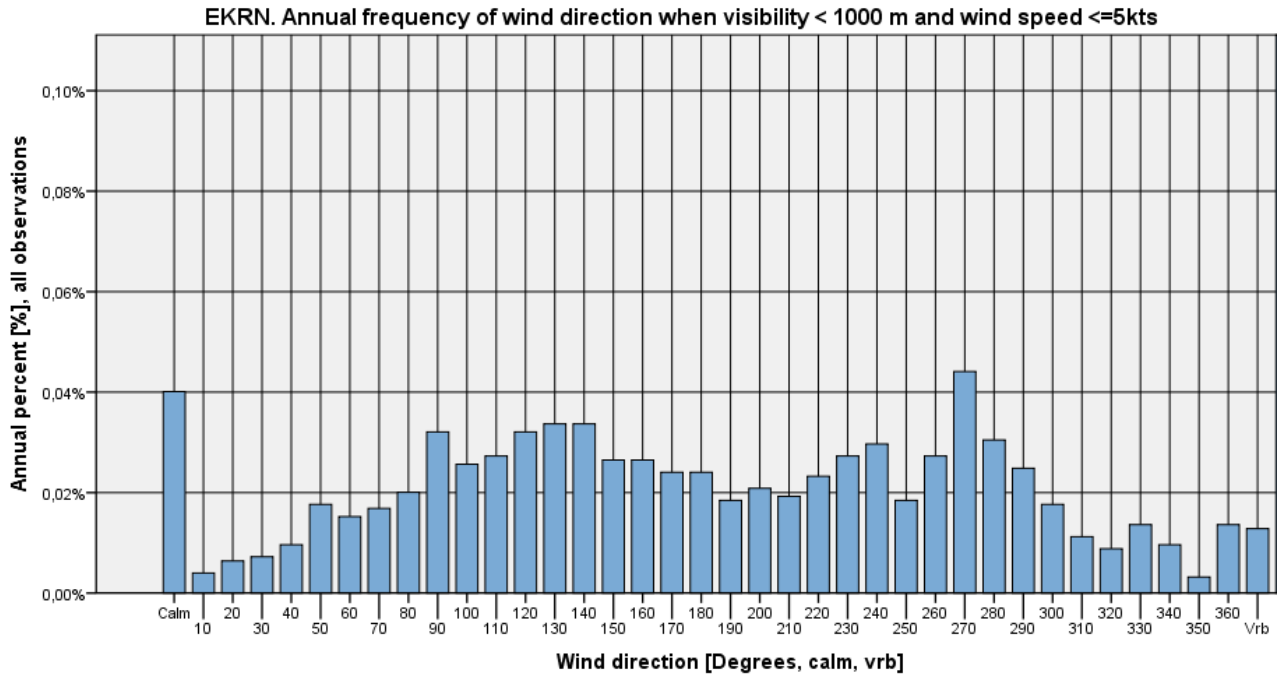


Figure 439



Visibility < 1000 m and wind speed > 5 kts

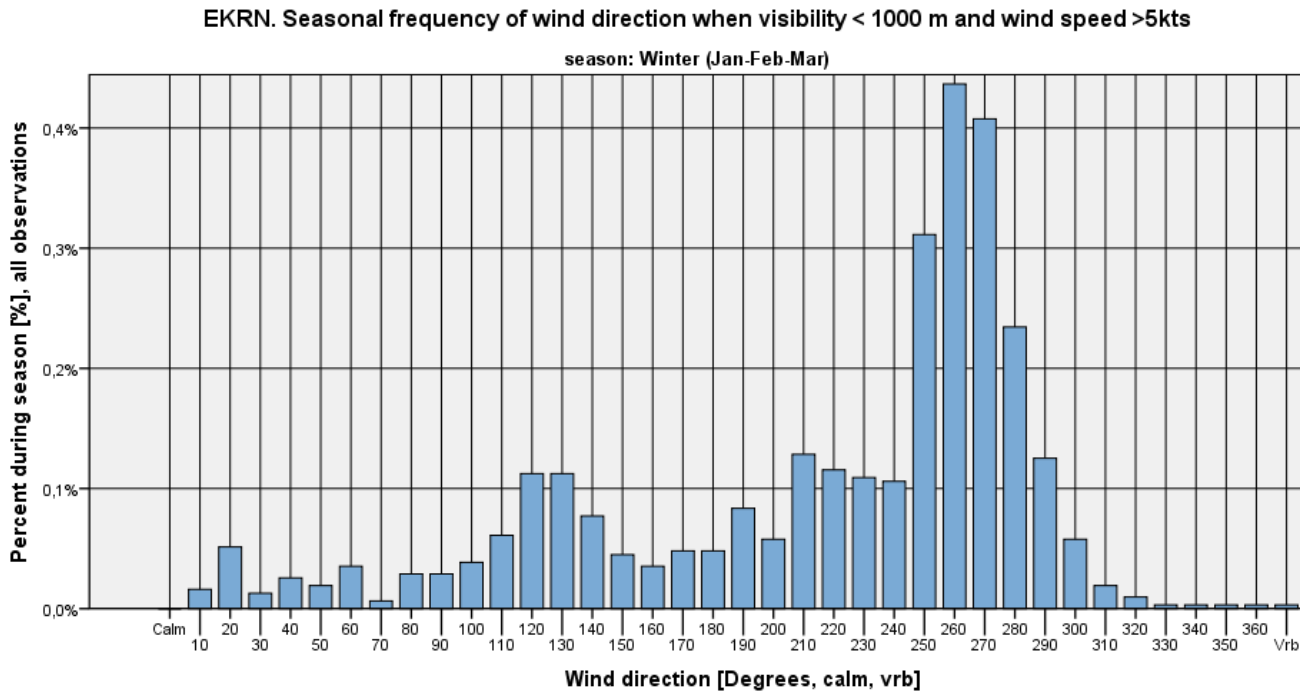


Figure 440

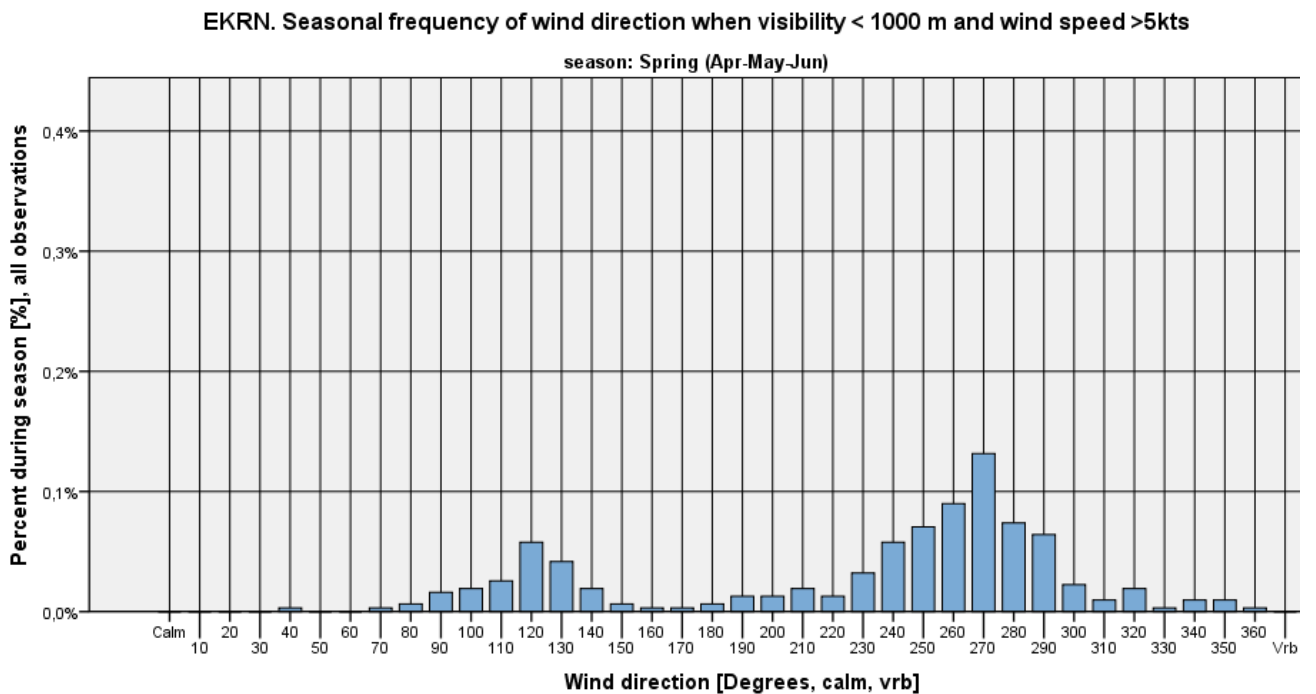


Figure 441



EKRN. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

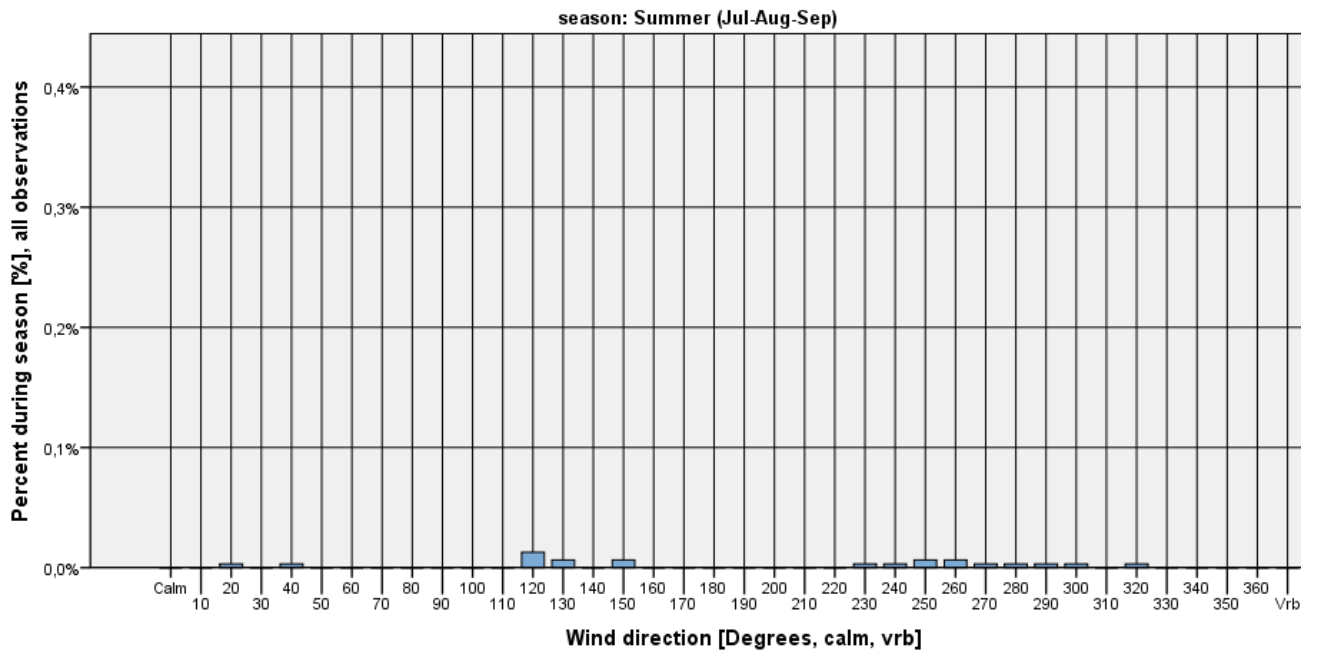


Figure 442

EKRN. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

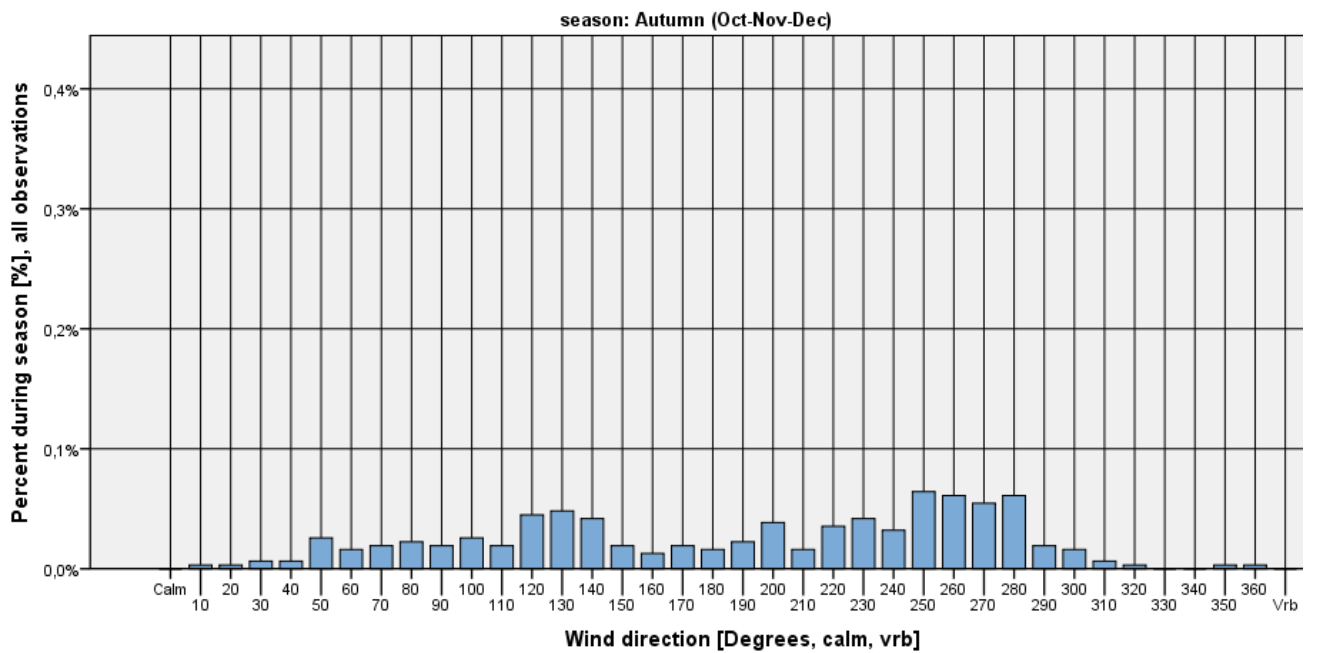


Figure 443

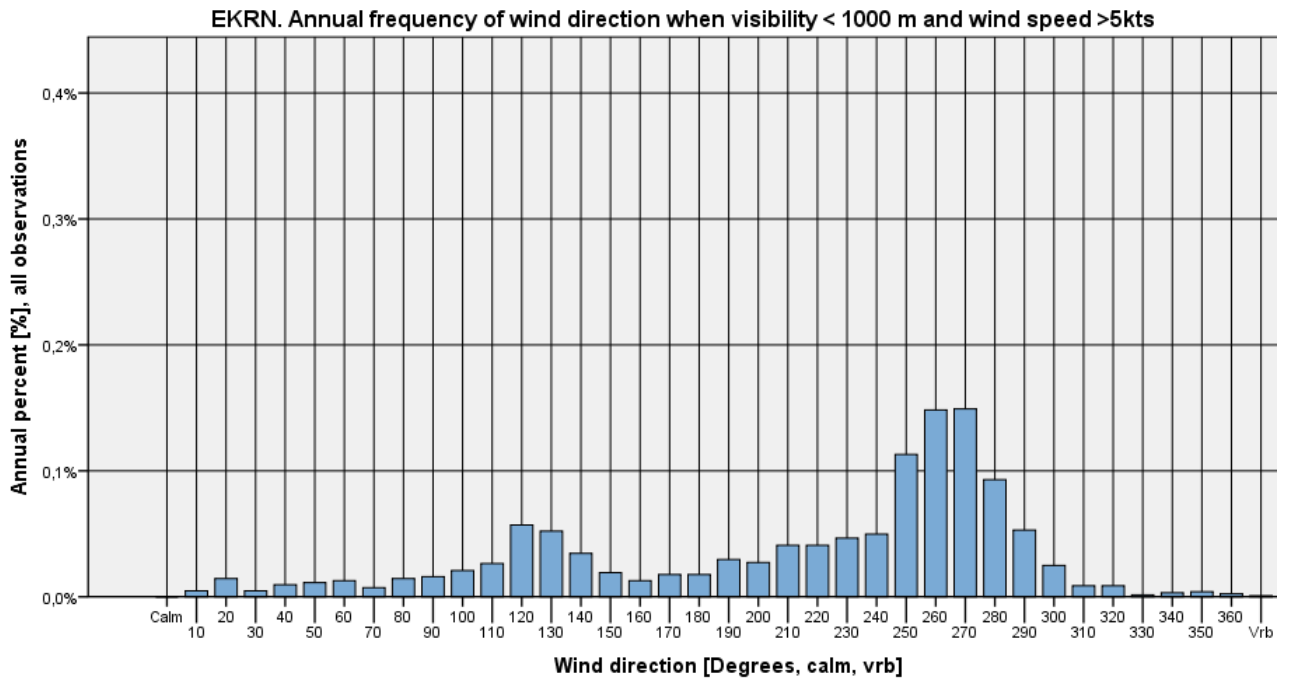


Figure 444



Ceiling criteria on wind direction histograms

Ceiling<1000 feet

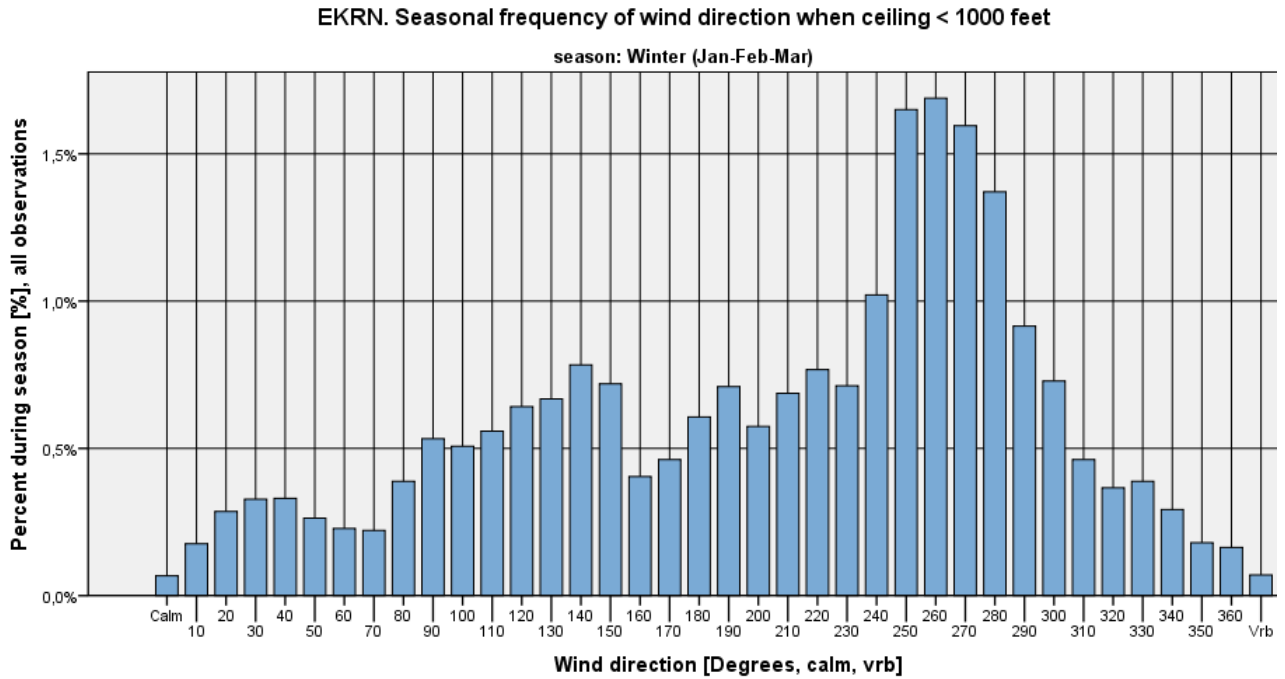


Figure 445

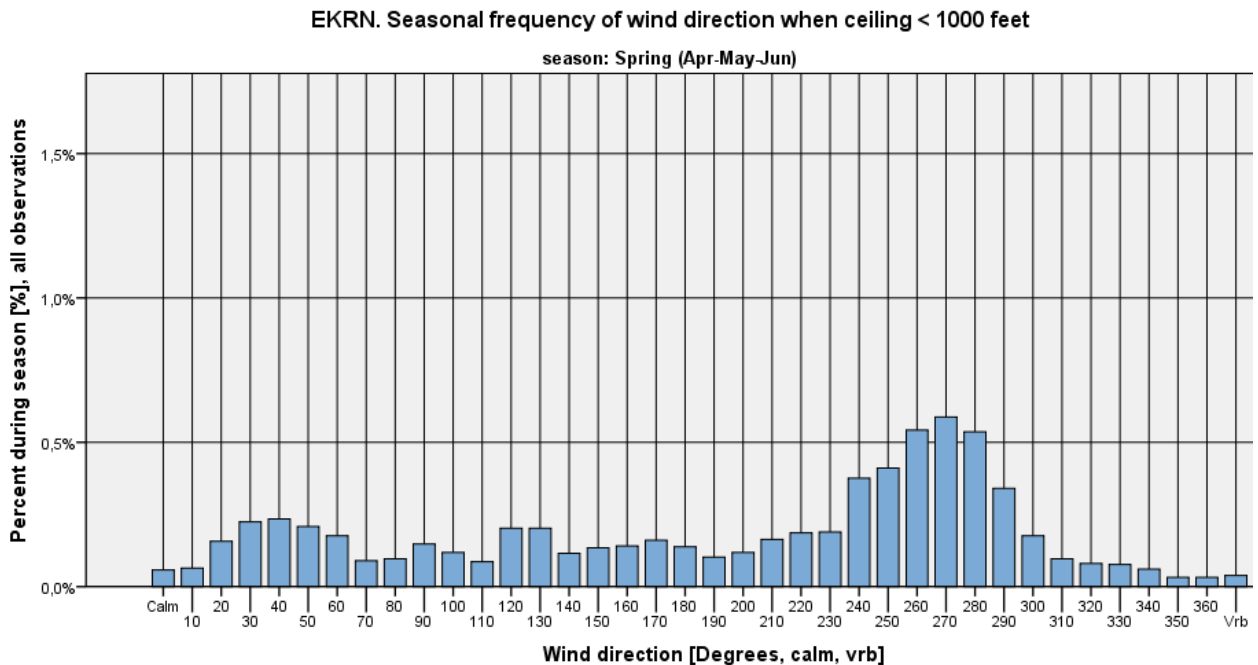


Figure 446



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

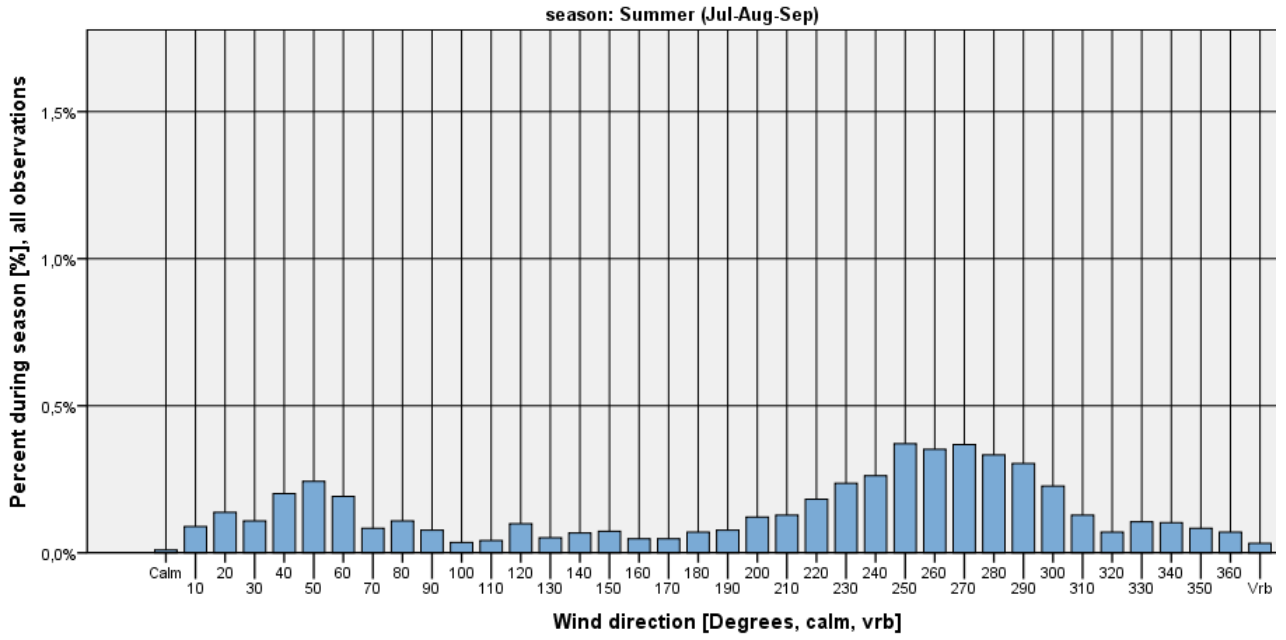


Figure 447

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

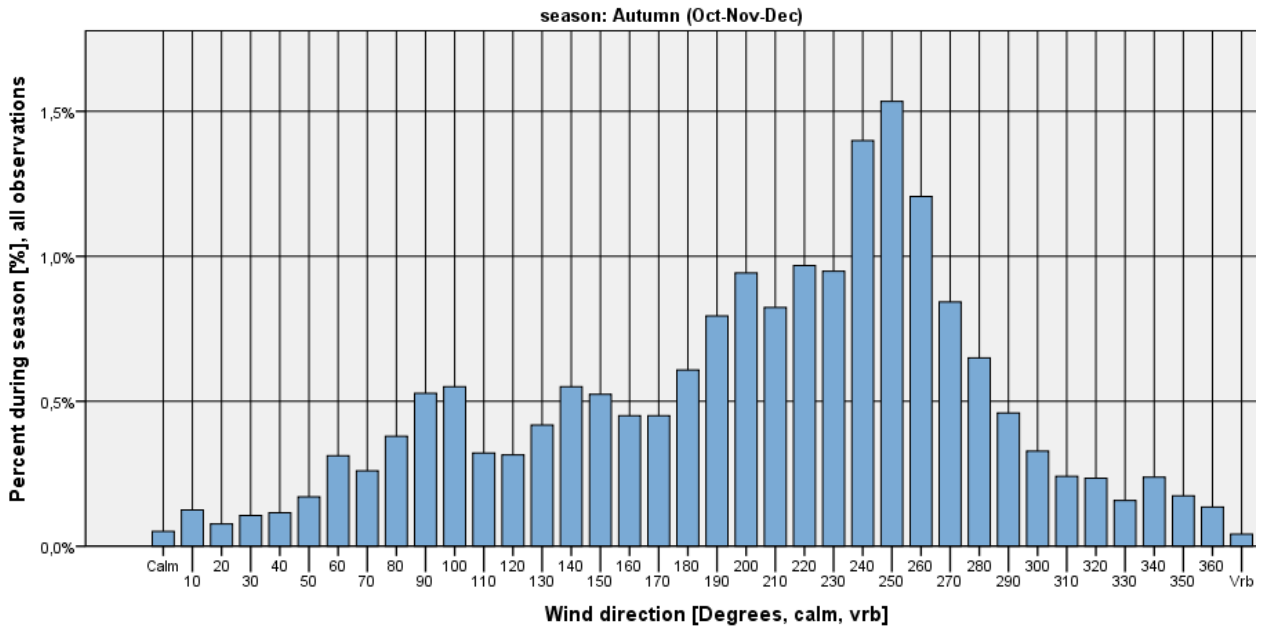


Figure 448

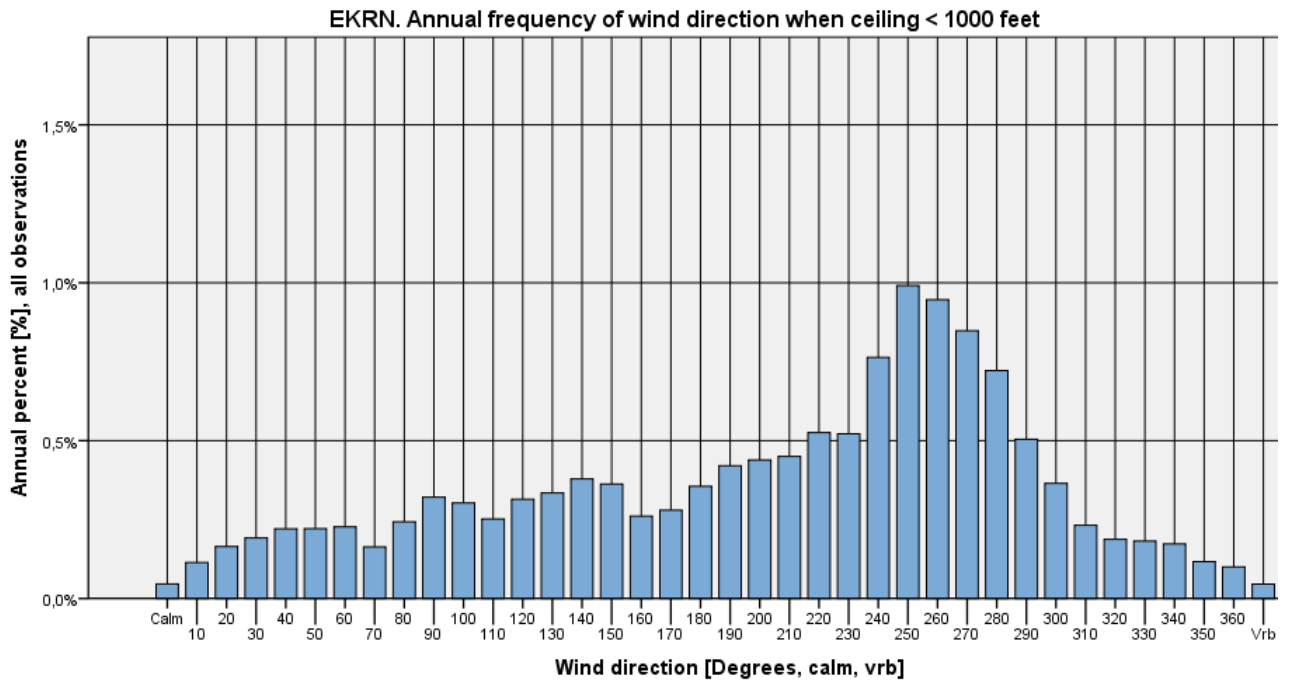


Figure 449



Ceiling < 1000 feet and wind speed <= 5 kts

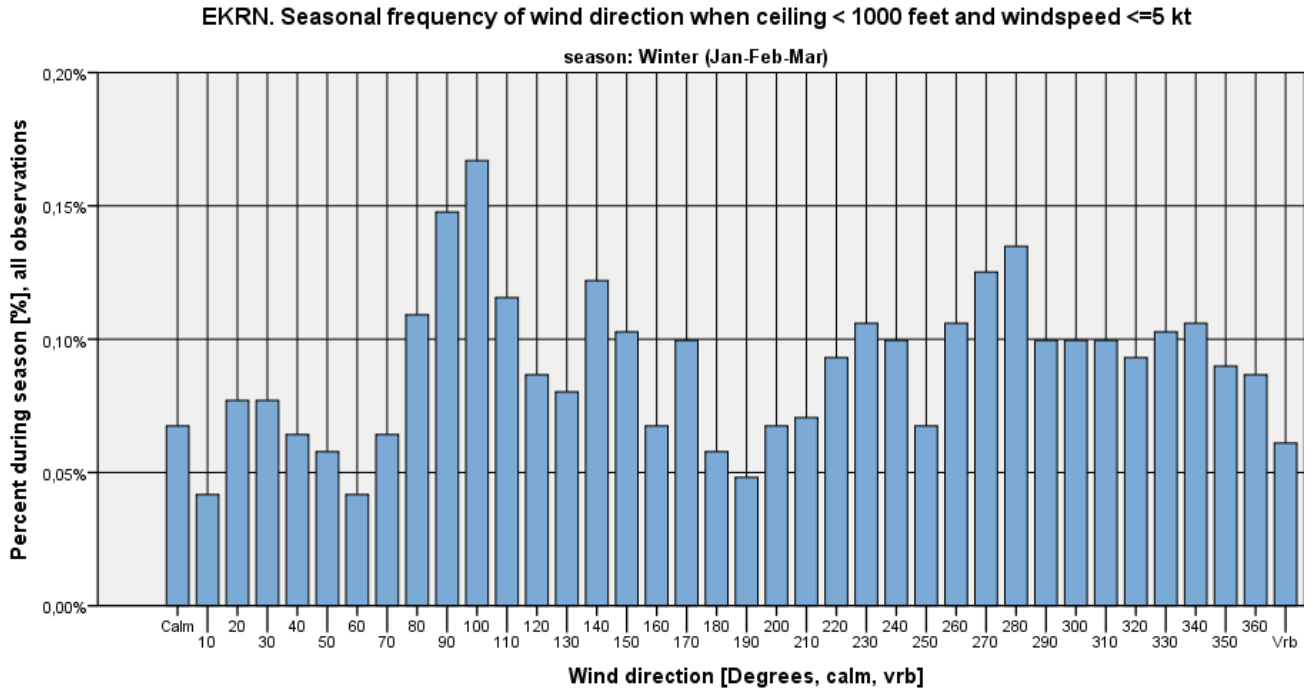


Figure 450

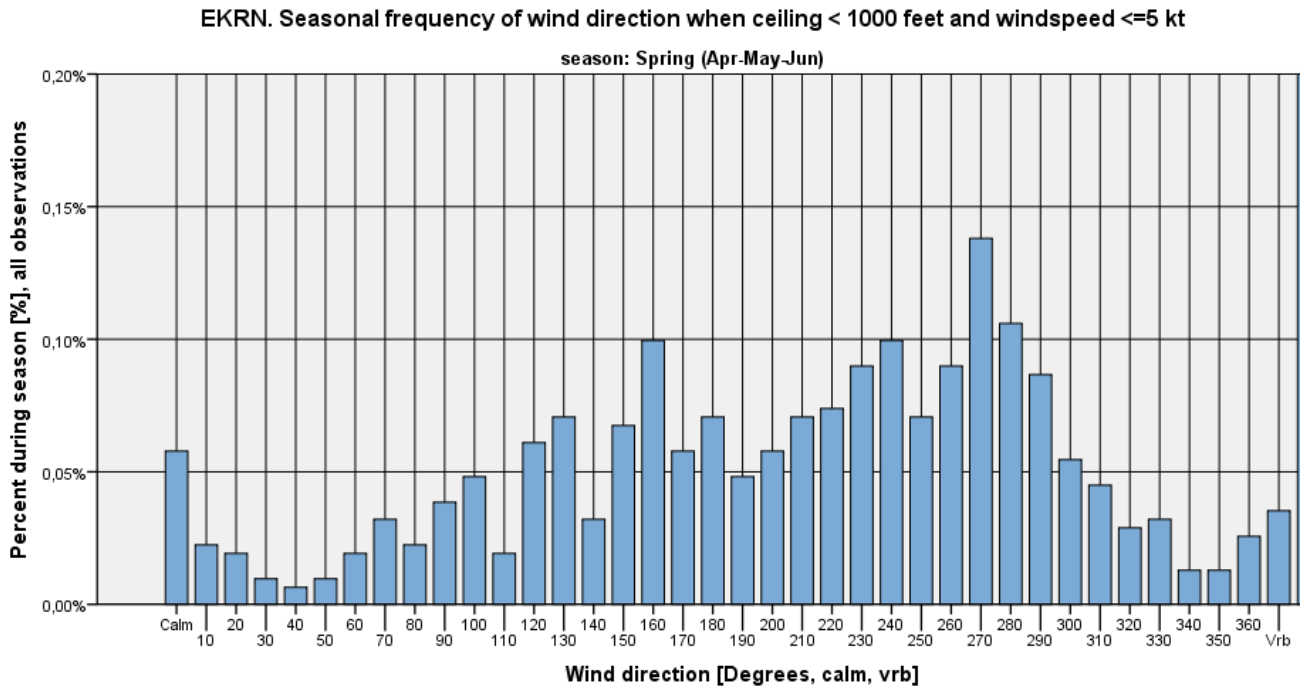


Figure 451



EKRN. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

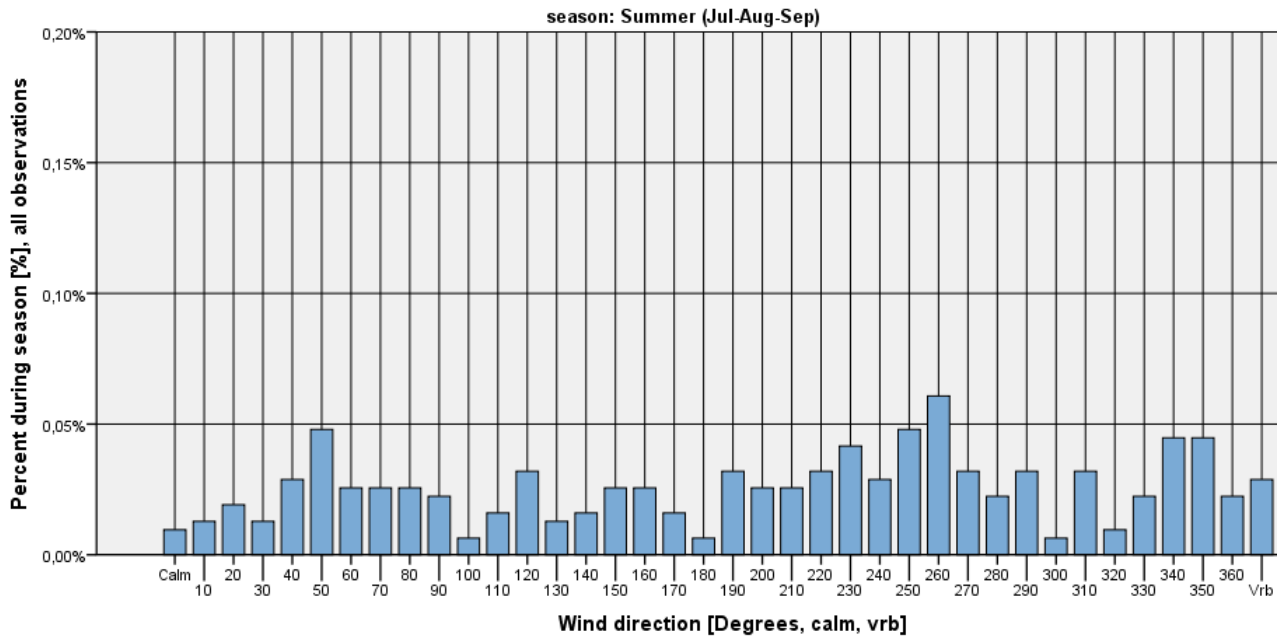


Figure 452

EKRN. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

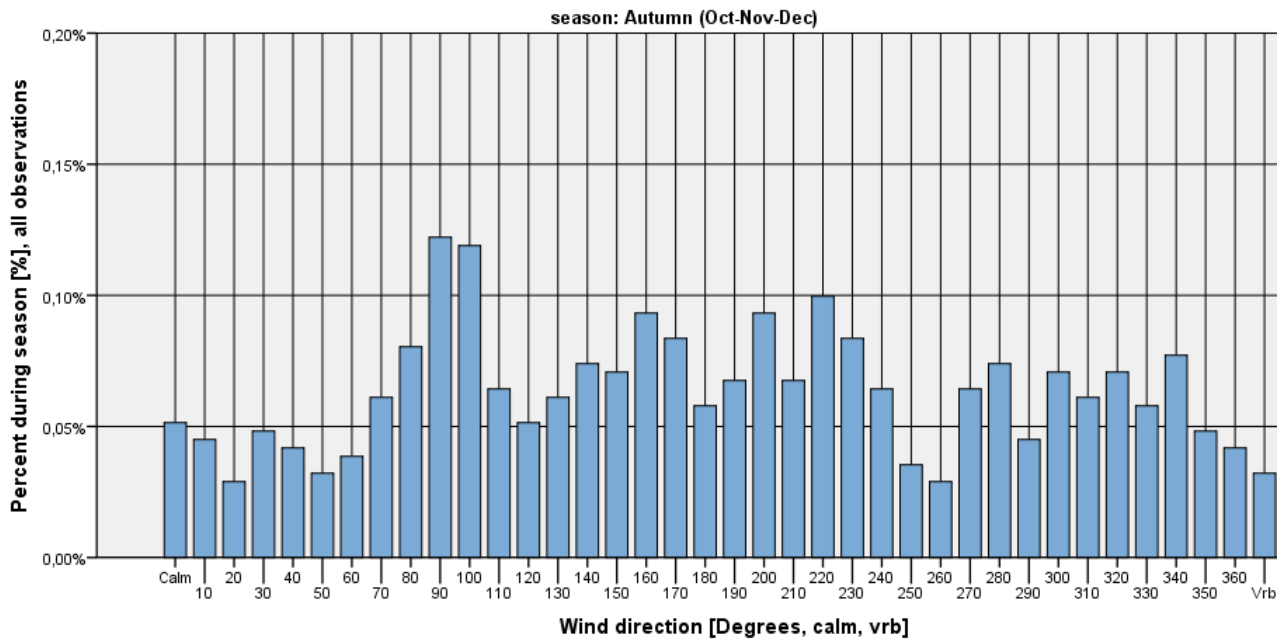


Figure 453

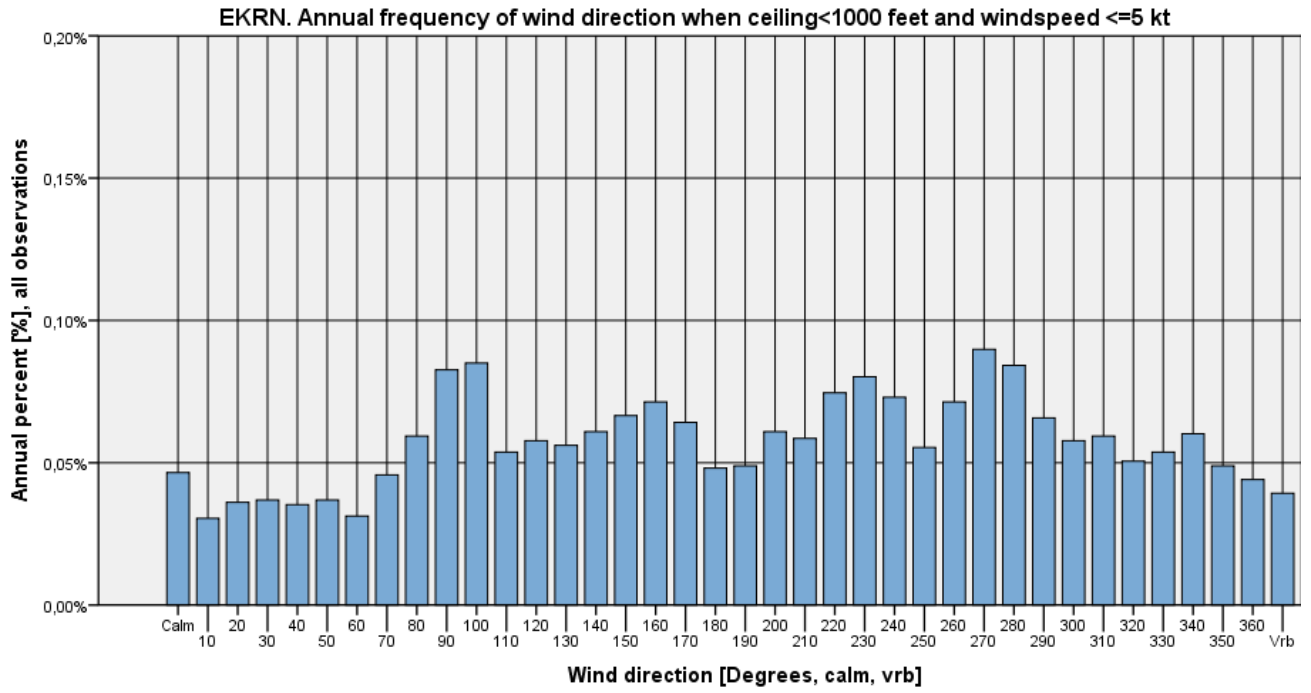


Figure 454



Ceiling < 1000 feet and wind speed > 5 kts

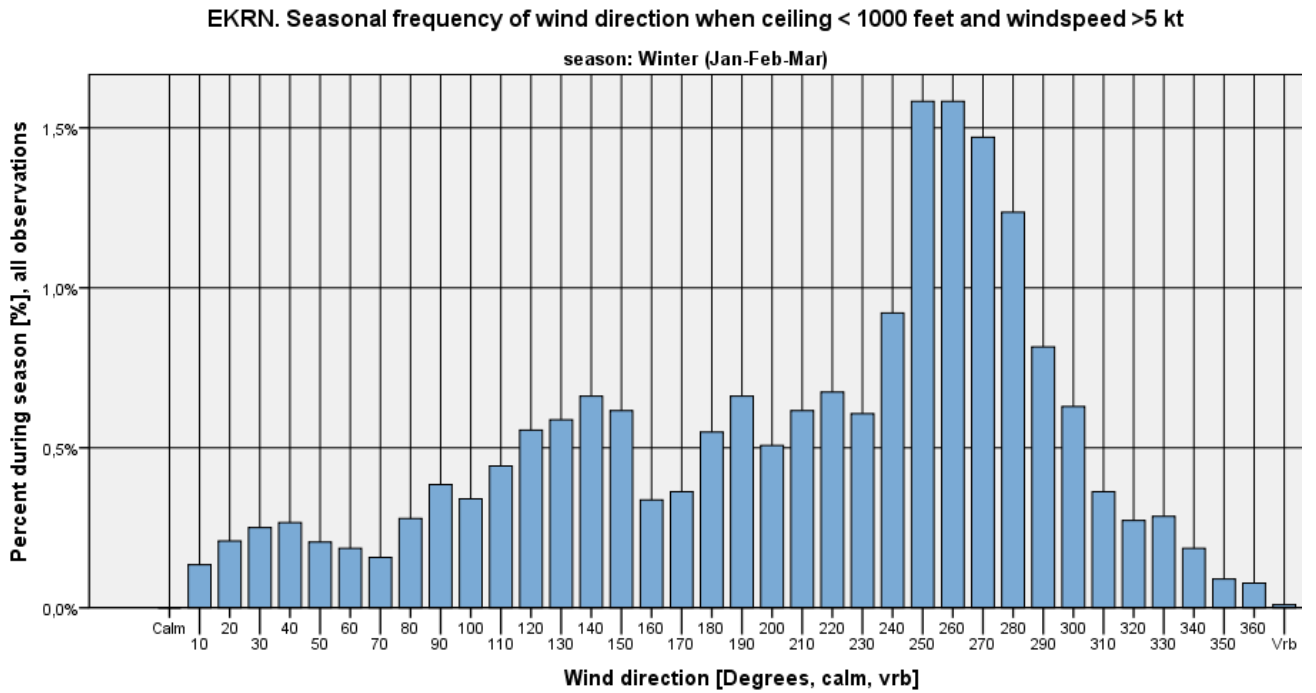


Figure 455

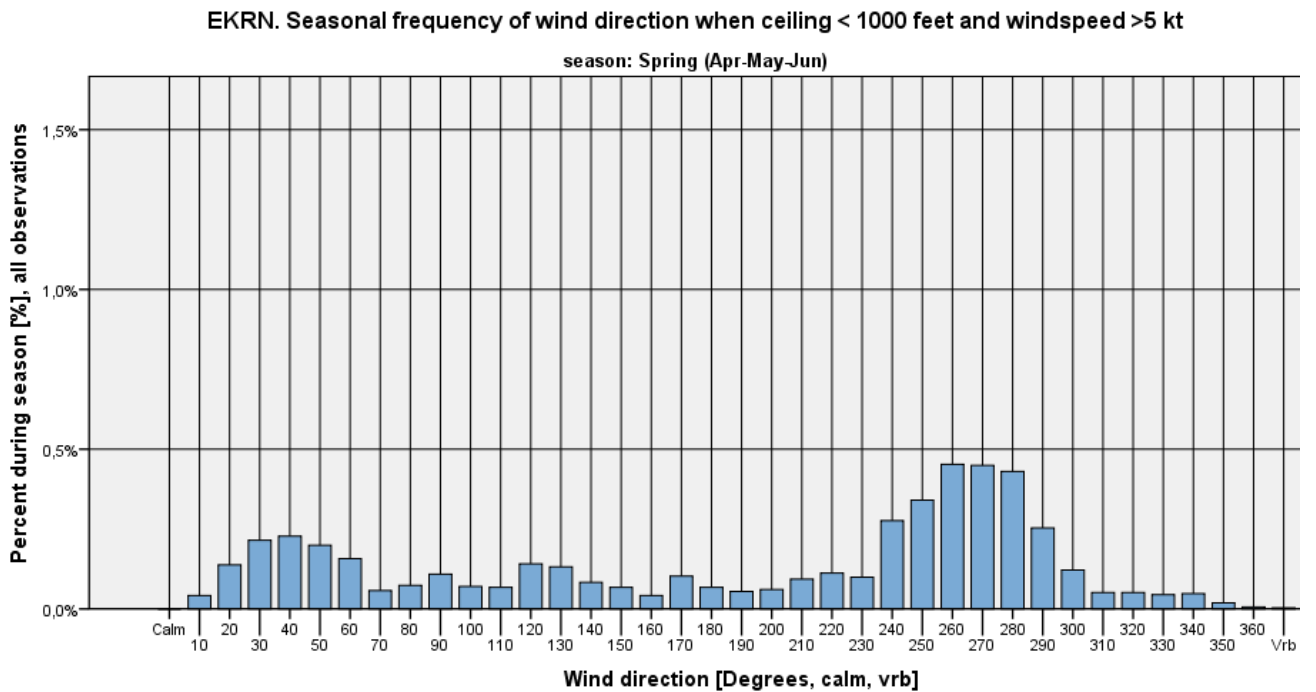


Figure 456



EKRN. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

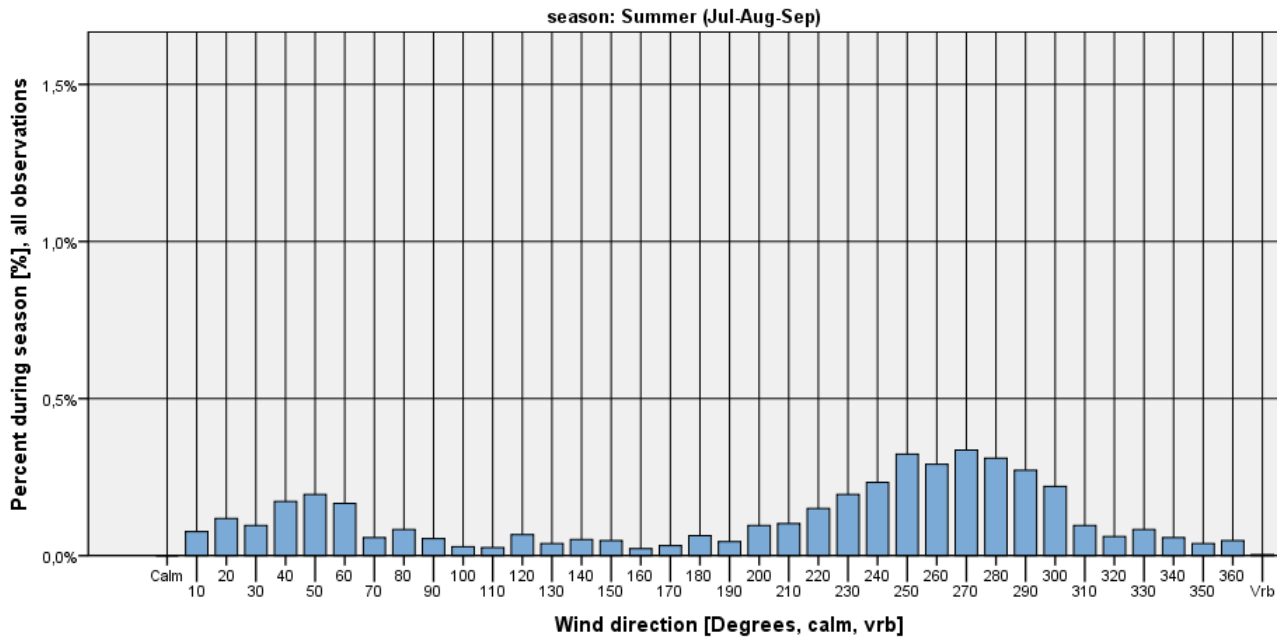


Figure 457

EKRN. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

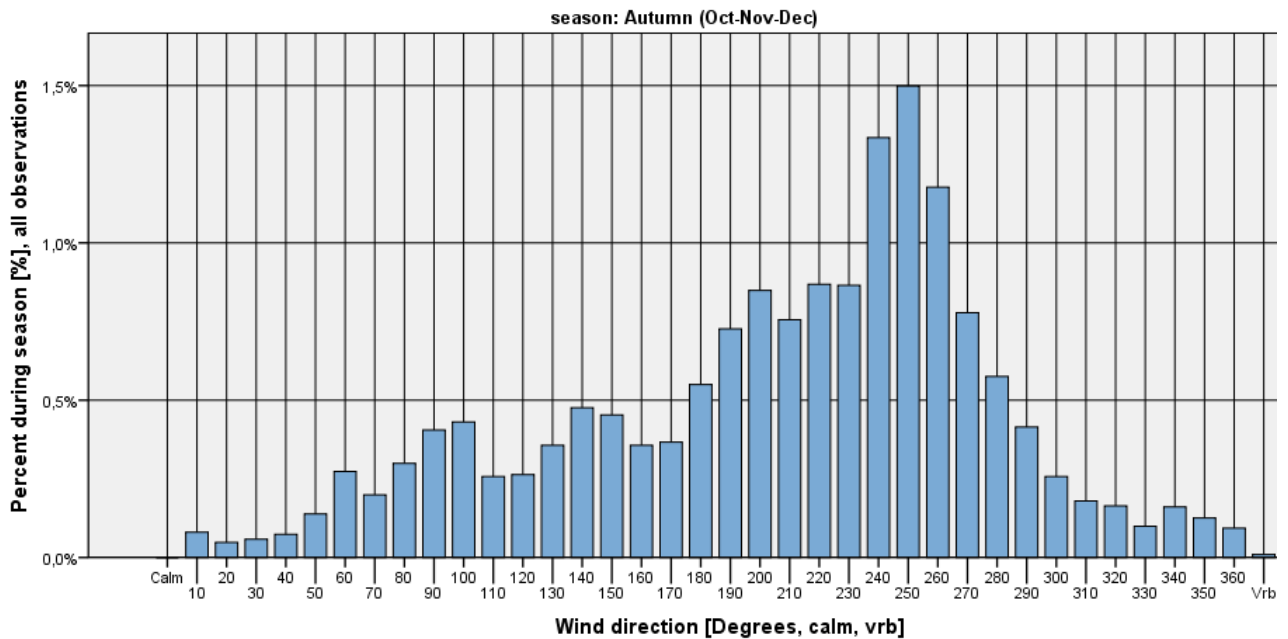


Figure 458

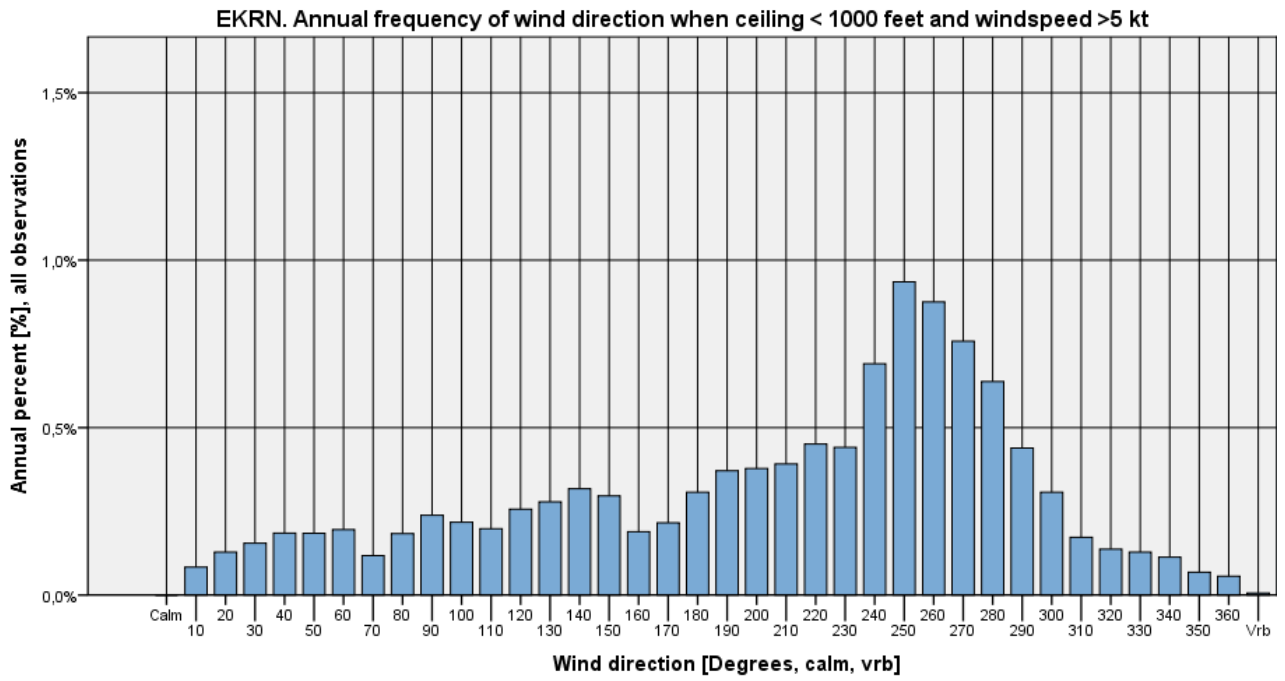


Figure 459



Ceiling<500 feet

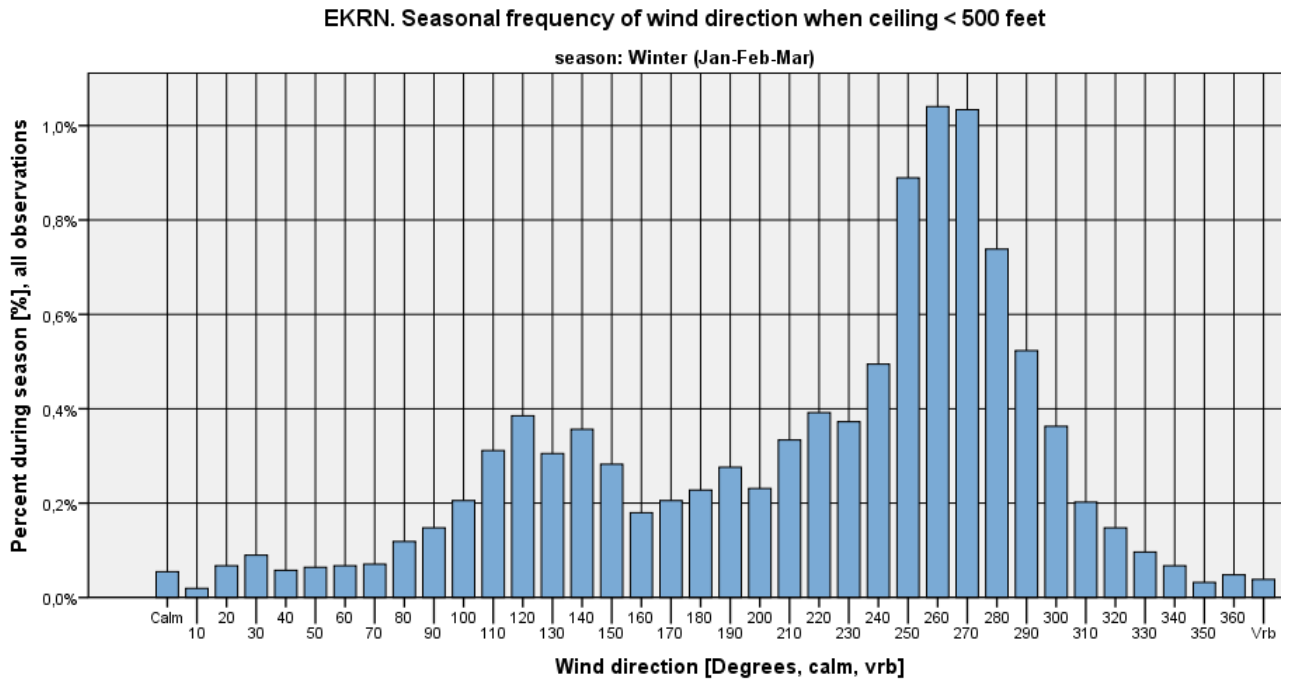


Figure 460

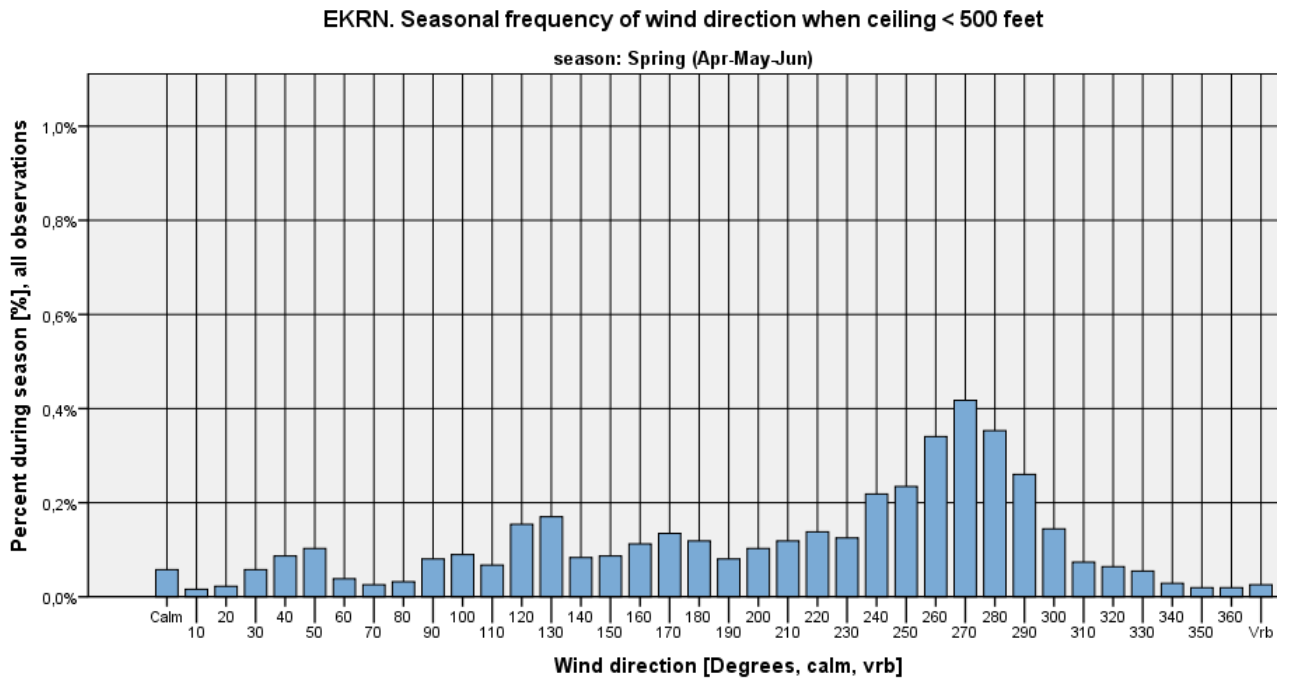


Figure 461



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

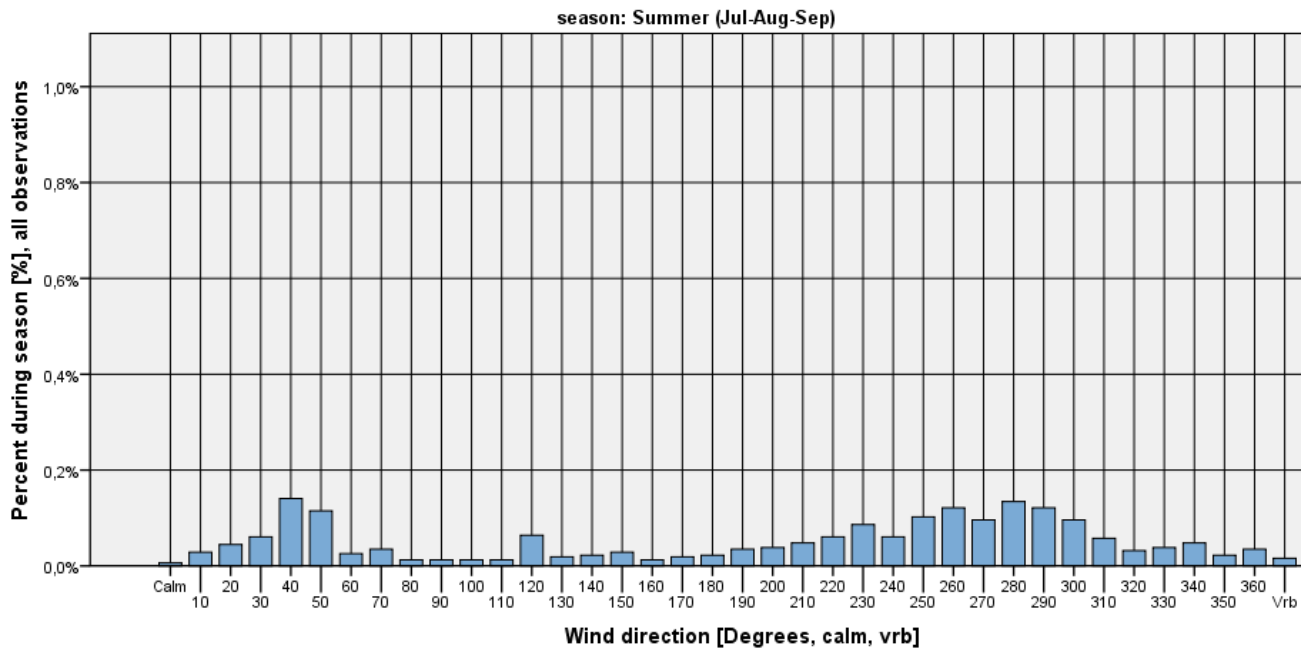


Figure 462

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

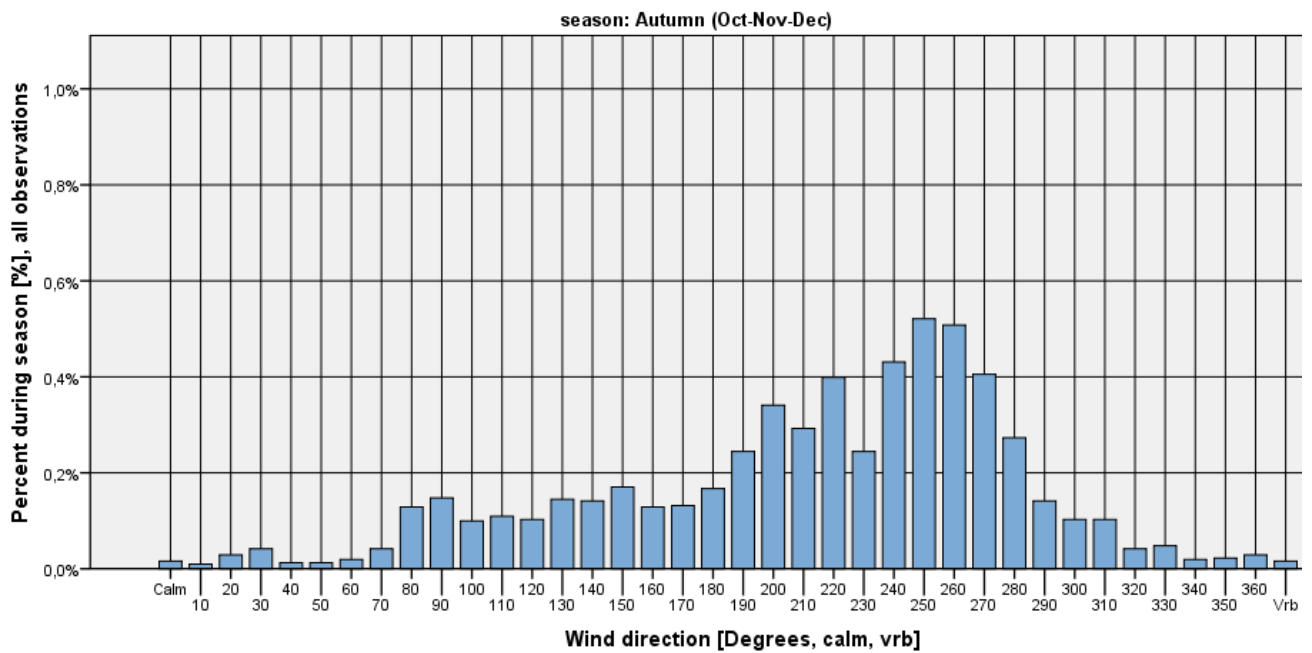


Figure 463

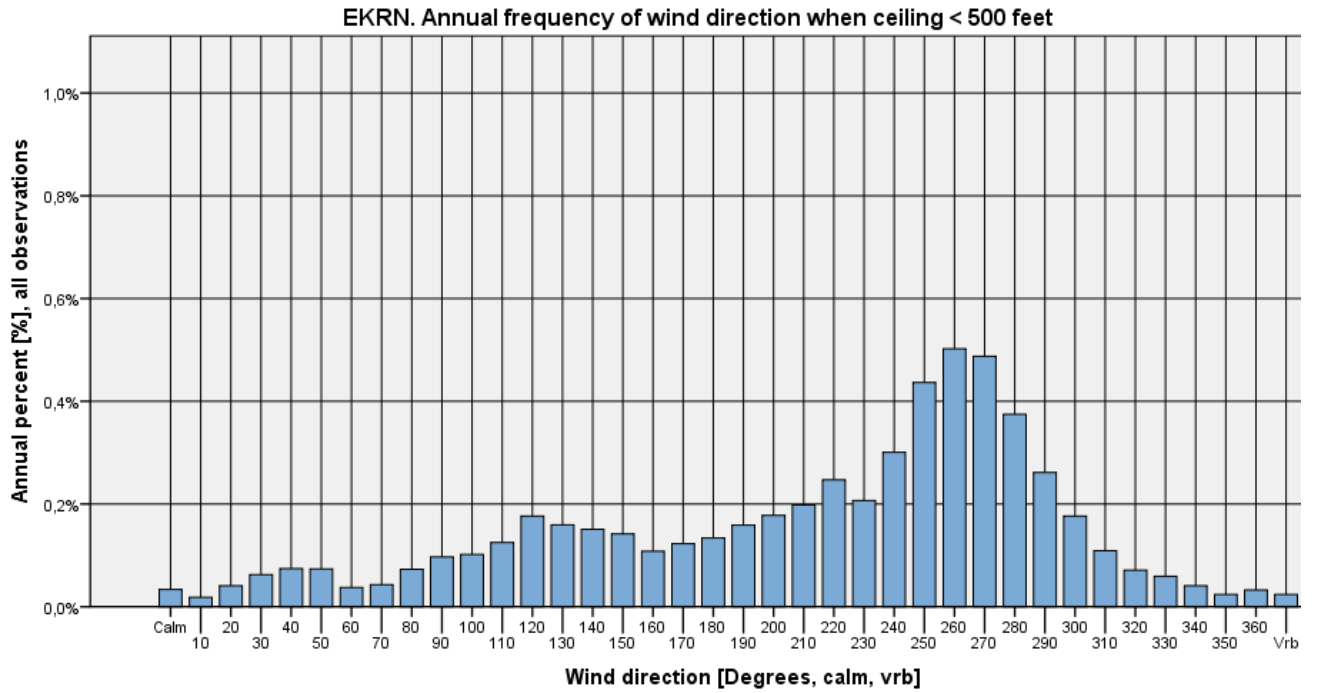


Figure 464



Ceiling < 500 feet and wind speed <= 5 kts

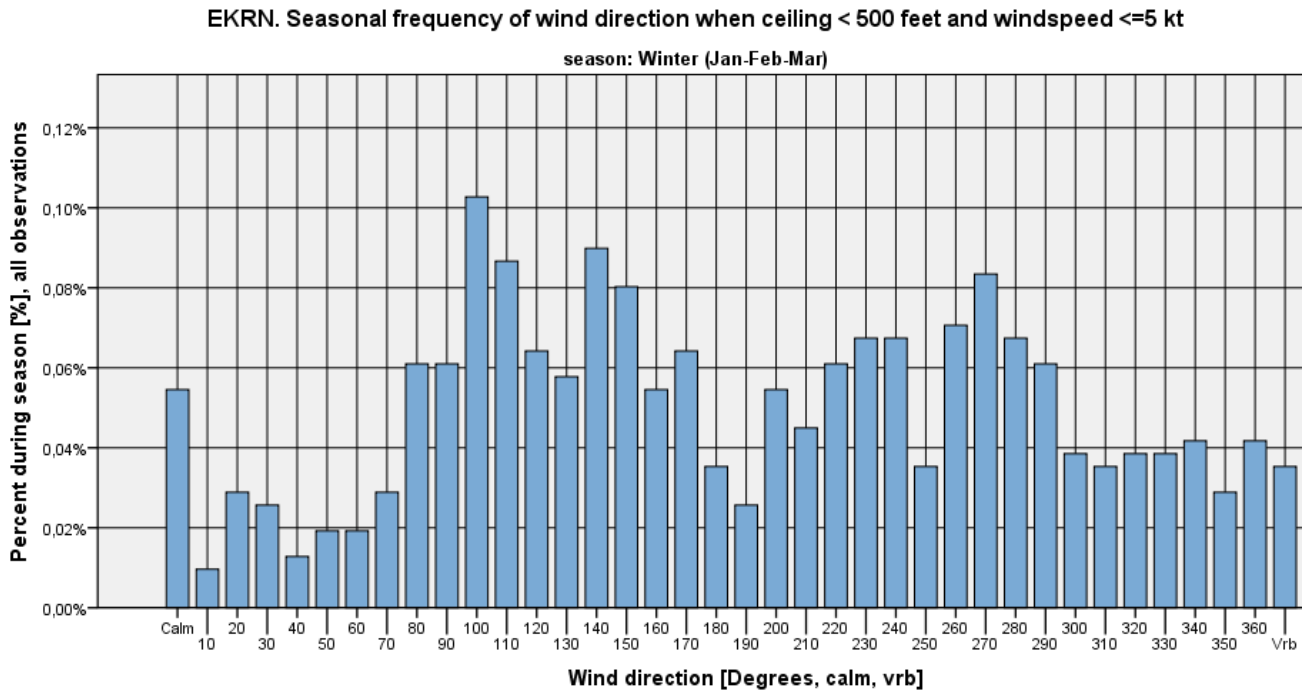


Figure 465

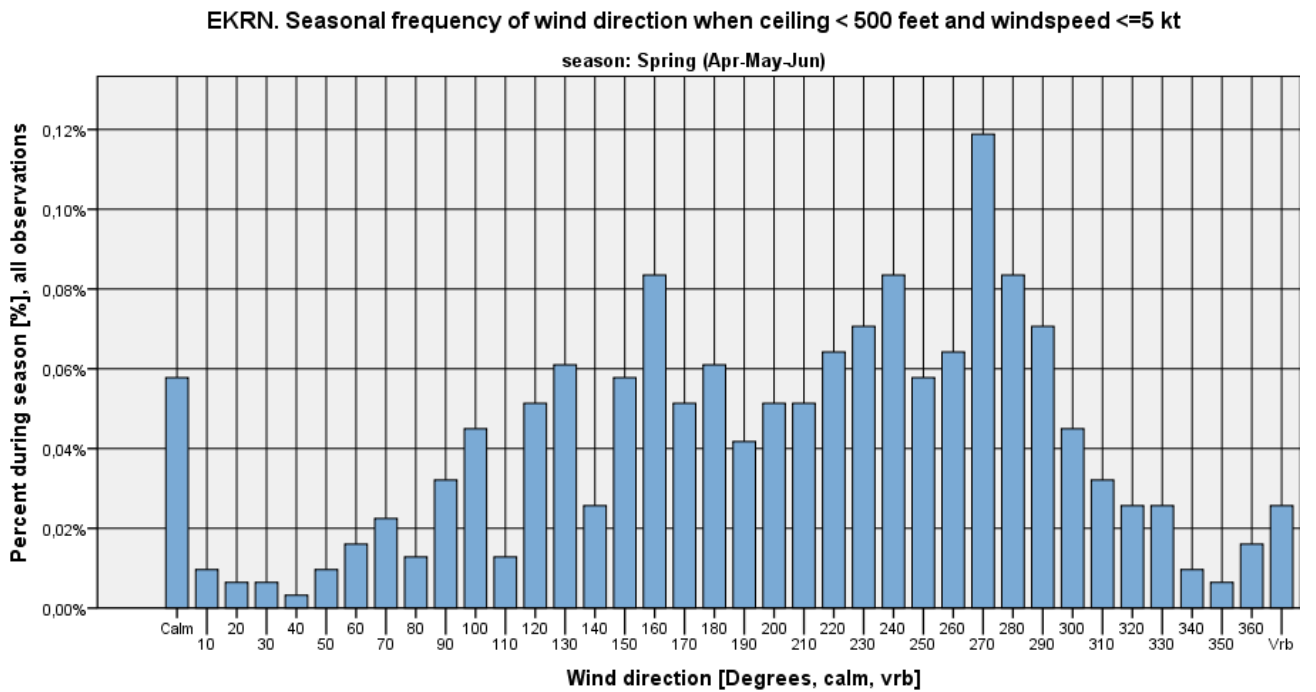


Figure 466



EKRN. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

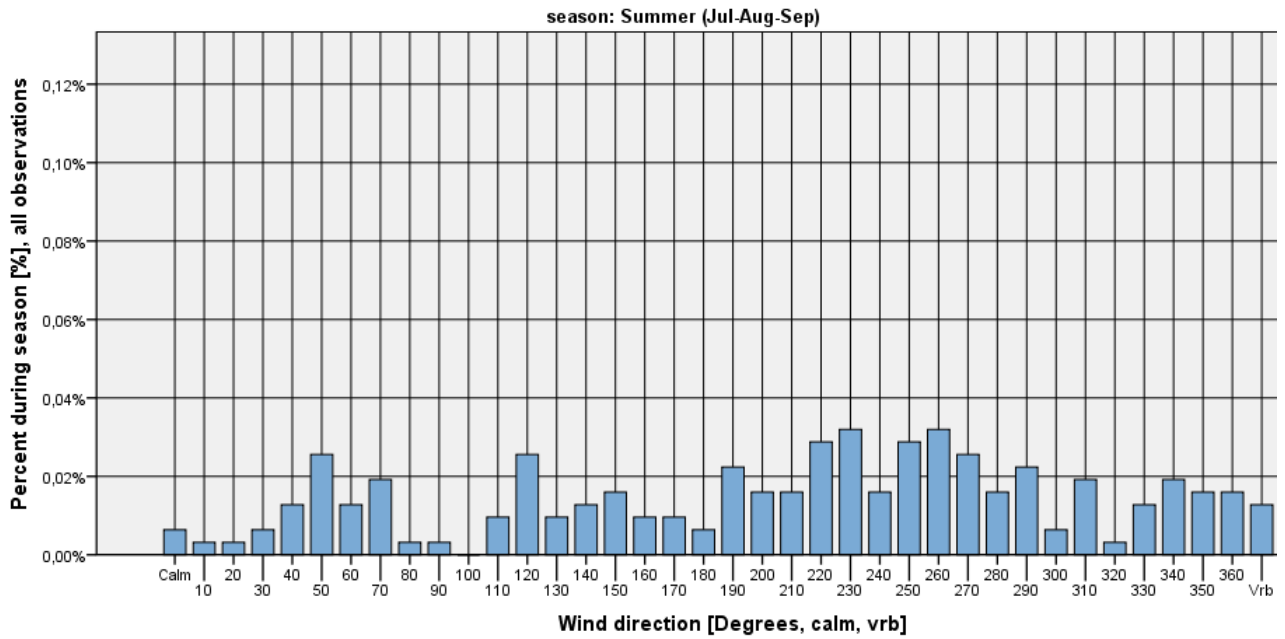


Figure 467

EKRN. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

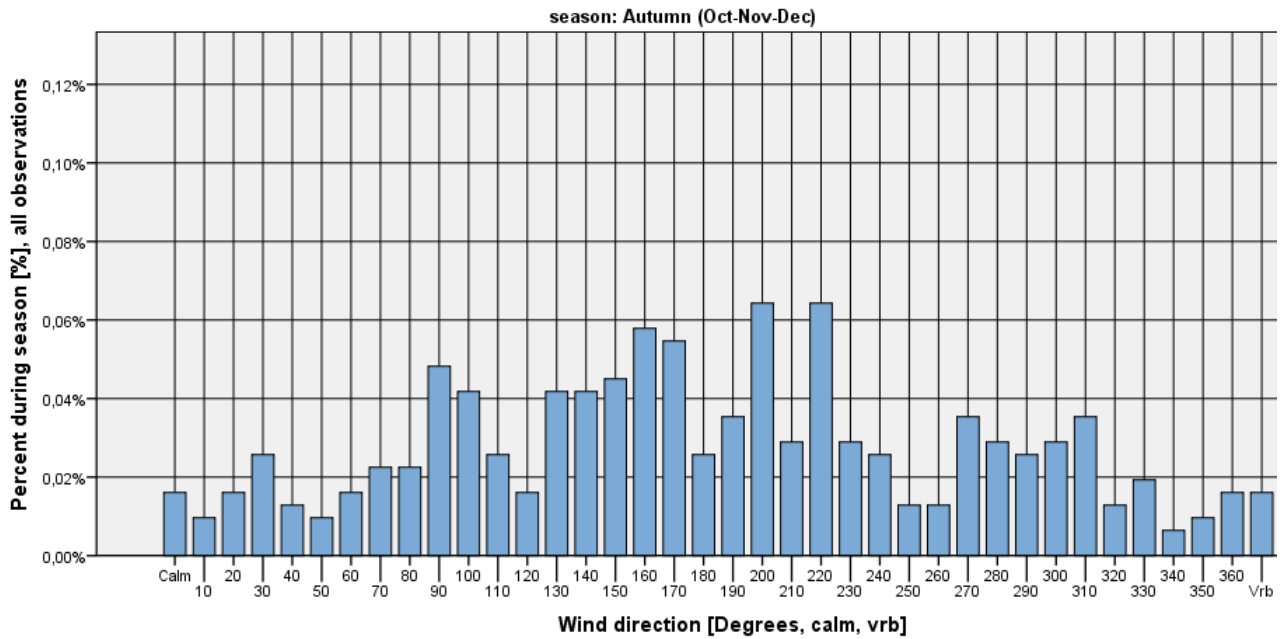


Figure 468

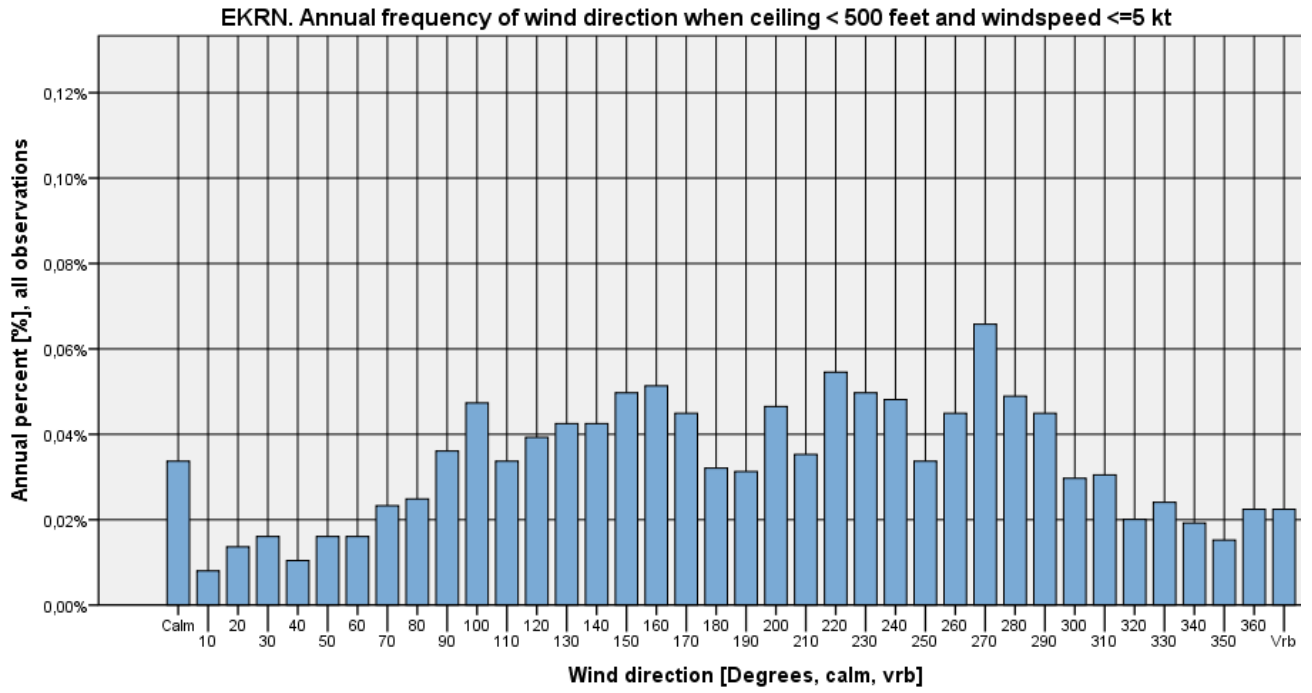


Figure 469



Ceiling < 500 feet and wind speed > 5 kts

EKRN. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

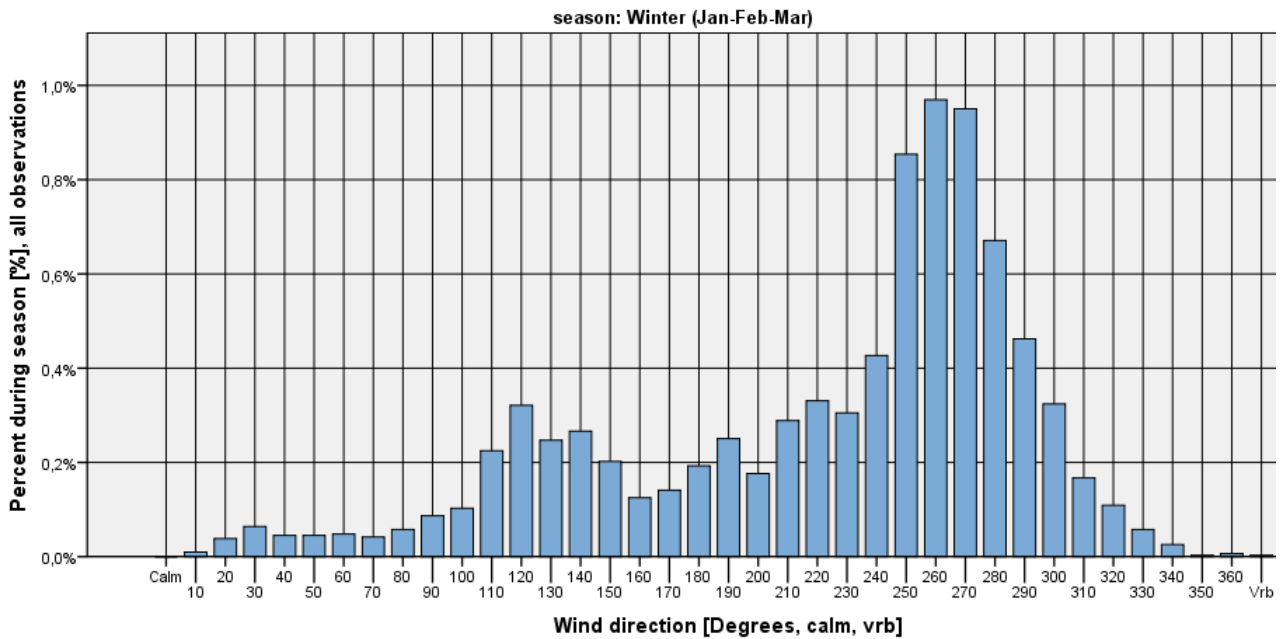


Figure 470

EKRN. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

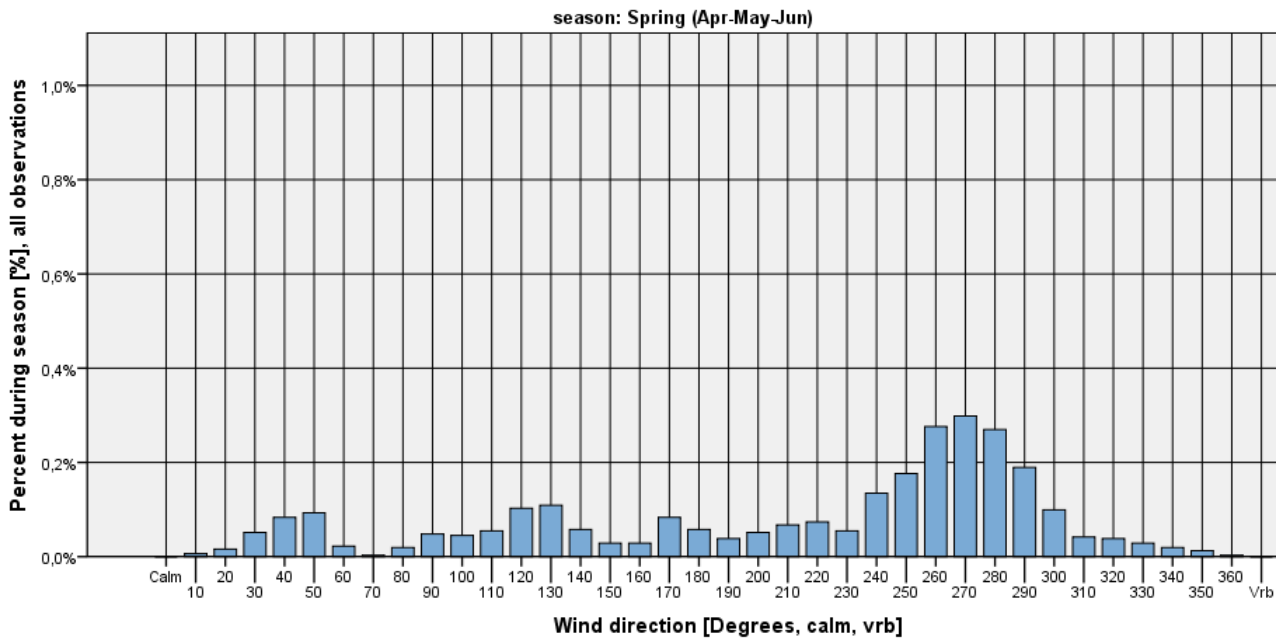


Figure 471



EKRN. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

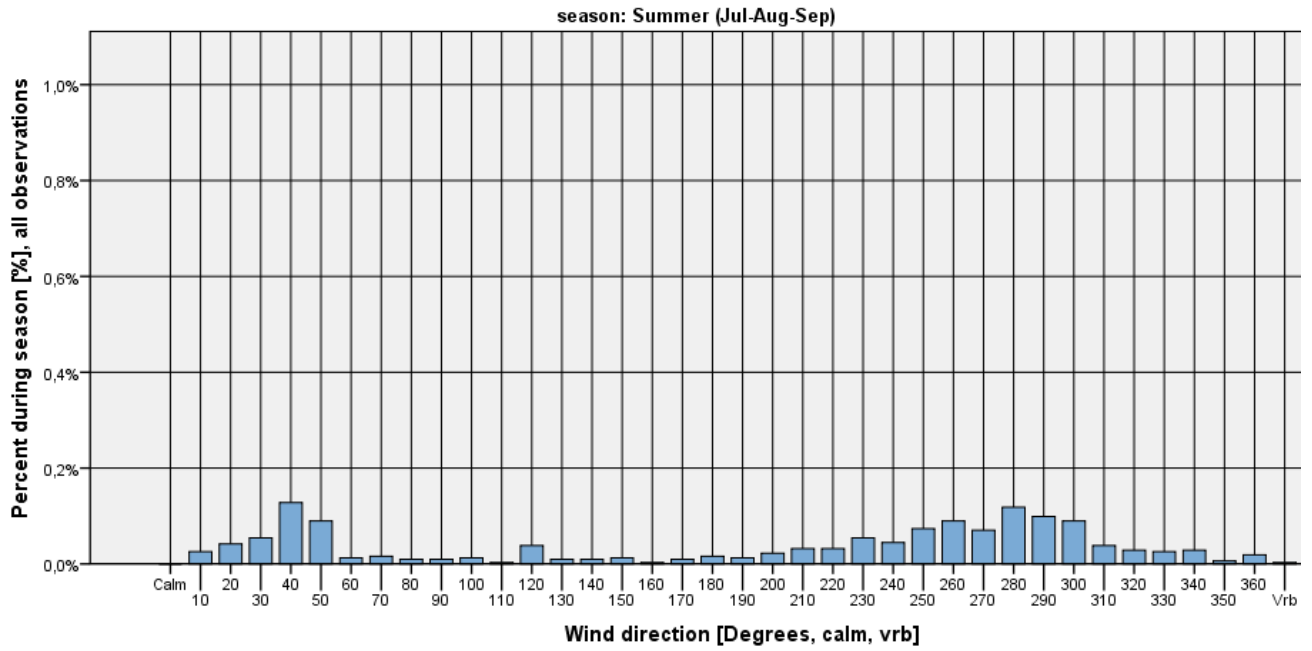


Figure 472

EKRN. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

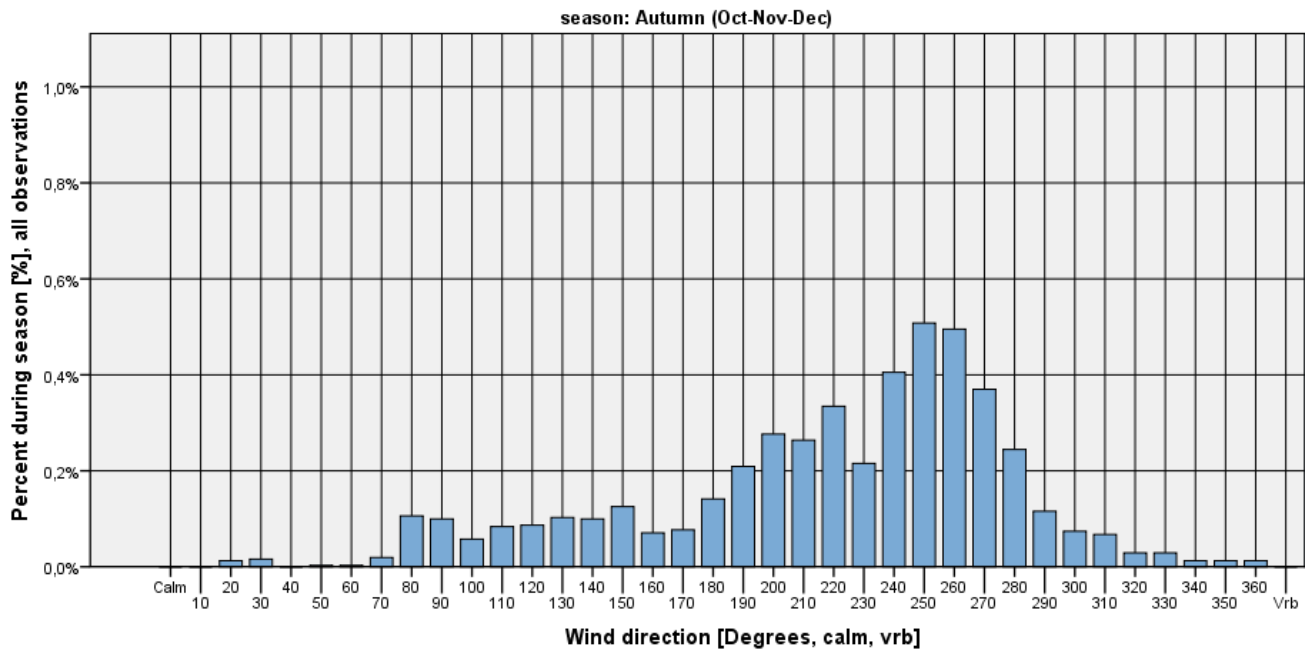


Figure 473

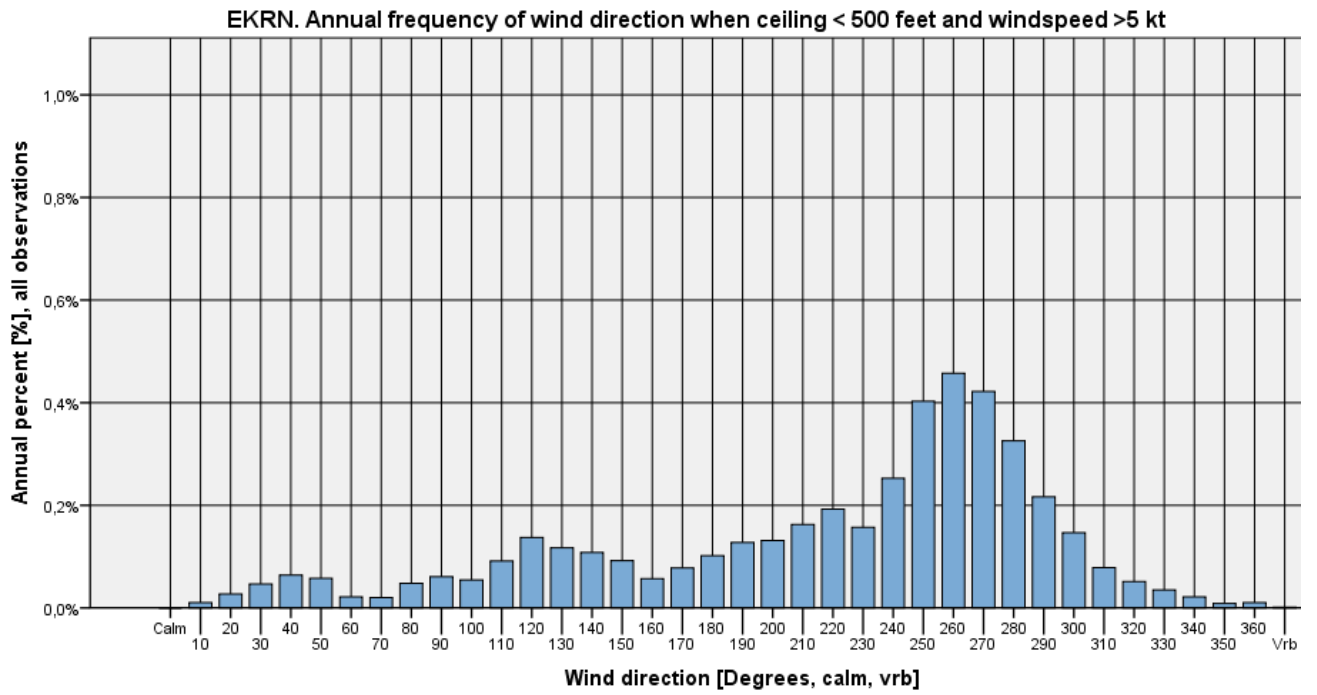


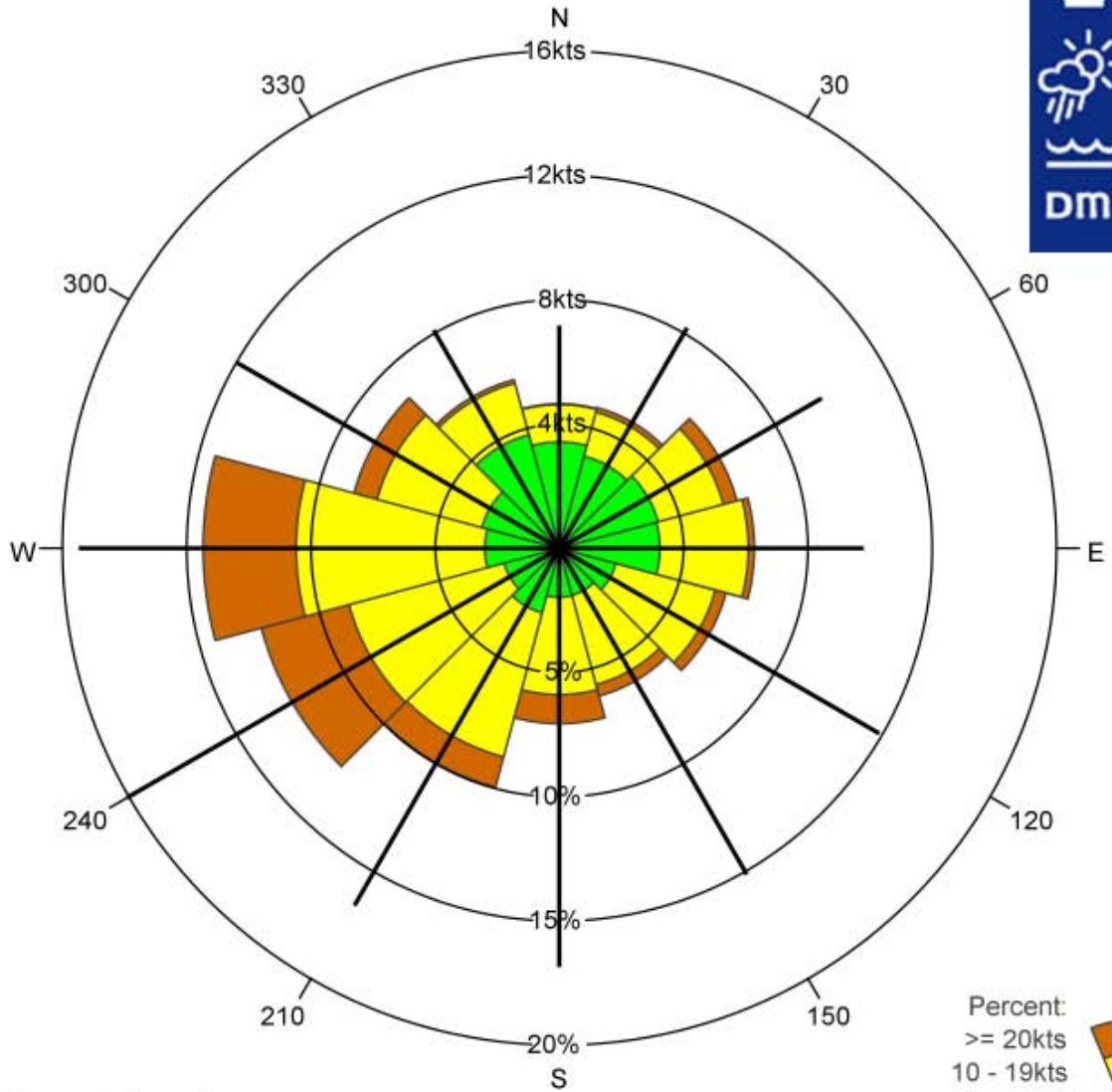
Figure 474



Wind roses

EKRN Bornholm - Rønne AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:

— Mean wind speed

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



	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	5.8	5.9	7.4	7.8	6.9	6.1	7.1	10.0	12.4	14.3	8.6	7.0	99.4
% 1 - 9kts	4.3	3.9	4.1	4.0	2.4	2.0	2.0	2.7	2.3	3.0	3.2	4.7	38.5
% 10 - 19kts	1.5	1.8	2.7	3.6	4.1	3.7	3.9	6.0	6.5	7.6	4.4	2.1	48.0
% >= 20kts	0.0	0.2	0.6	0.2	0.5	0.5	1.2	1.3	3.7	3.7	1.0	0.2	12.9
Mean wind speed	7.2	8.2	9.7	9.8	11.9	12.1	13.5	13.3	16.1	15.4	12.0	8.1	12.1
Max wind speed	24.0	30.0	33.0	25.0	27.0	29.0	35.0	32.0	40.0	43.0	46.0	27.0	46.0

Number of observations = 62245

Source: DMI

Calm defined a wind speed = 0kts

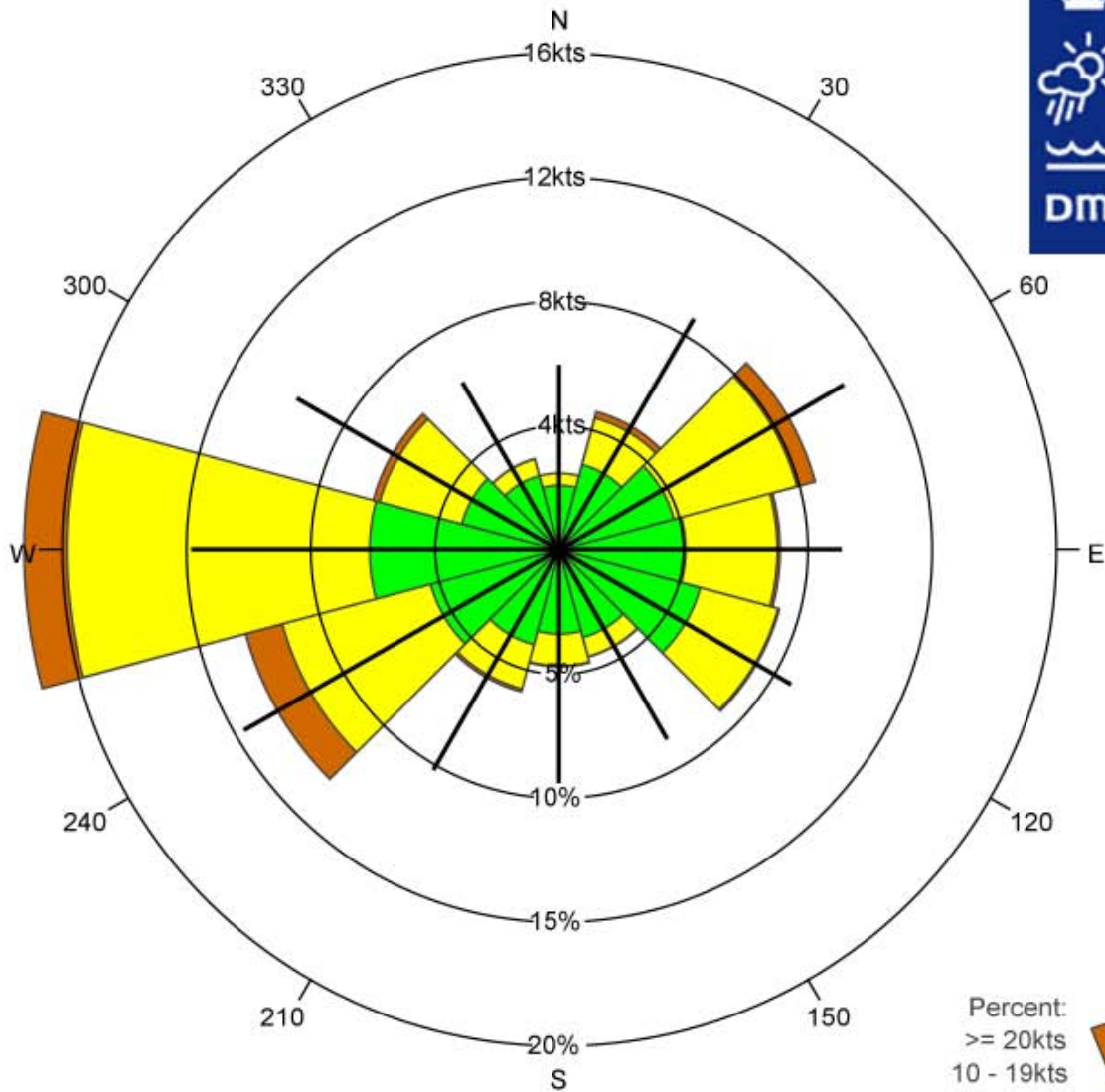
Number of observations with calm/varying wind direction: 385=0.6%

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



EKRN Bornholm - Rønne SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.1	5.8	10.6	8.9	9.2	4.5	4.7	5.9	13.1	21.5	7.8	3.8	98.8
% 1 - 9kts	2.6	3.6	4.8	5.1	5.9	3.6	3.4	4.0	5.4	7.6	4.1	3.1	53.0
% 10 - 19kts	0.5	1.9	5.1	3.7	3.2	0.8	1.3	1.8	6.2	12.2	3.4	0.7	40.9
% >= 20kts	0.0	0.3	0.7	0.1	0.1	0.0	0.0	0.1	1.5	1.7	0.3	0.0	4.9
Mean wind speed	6.0	8.6	10.6	9.1	8.6	7.0	7.5	8.2	11.7	11.9	9.8	6.2	9.7
Max wind speed	21.0	31.0	30.0	24.0	24.0	23.0	24.0	27.0	36.0	37.0	31.0	21.0	37.0

Number of observations = 62412

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 771=1.2%

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

Availability

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

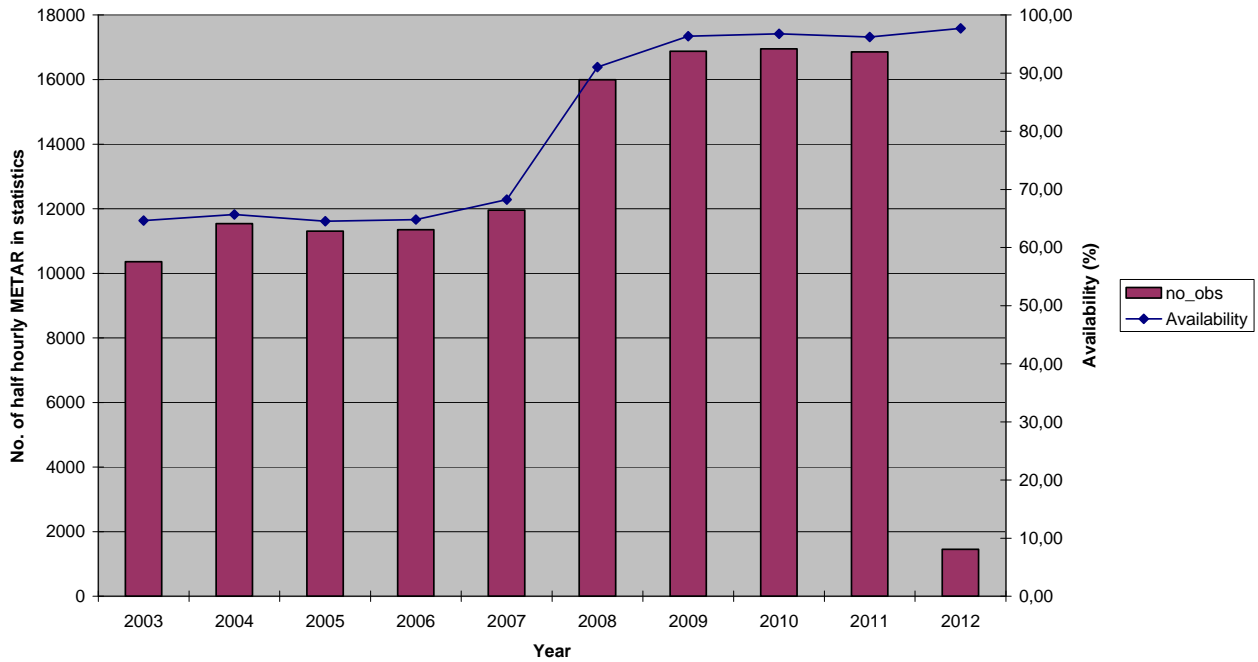


Figure 475

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

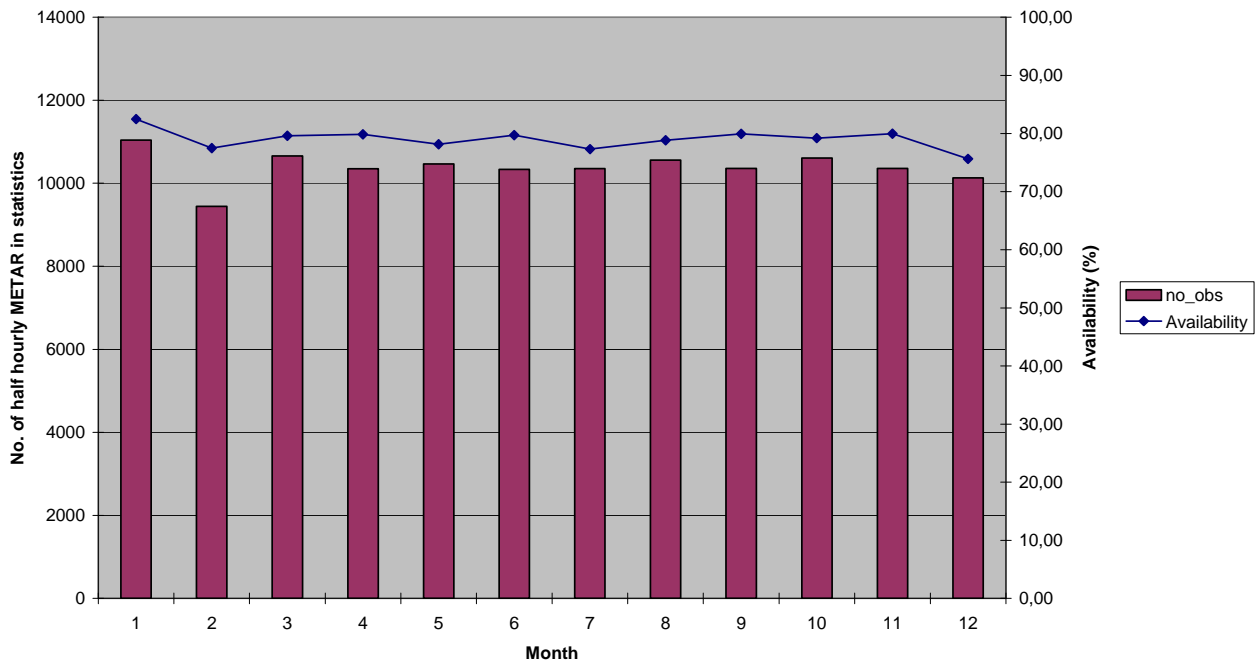


Figure 476

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

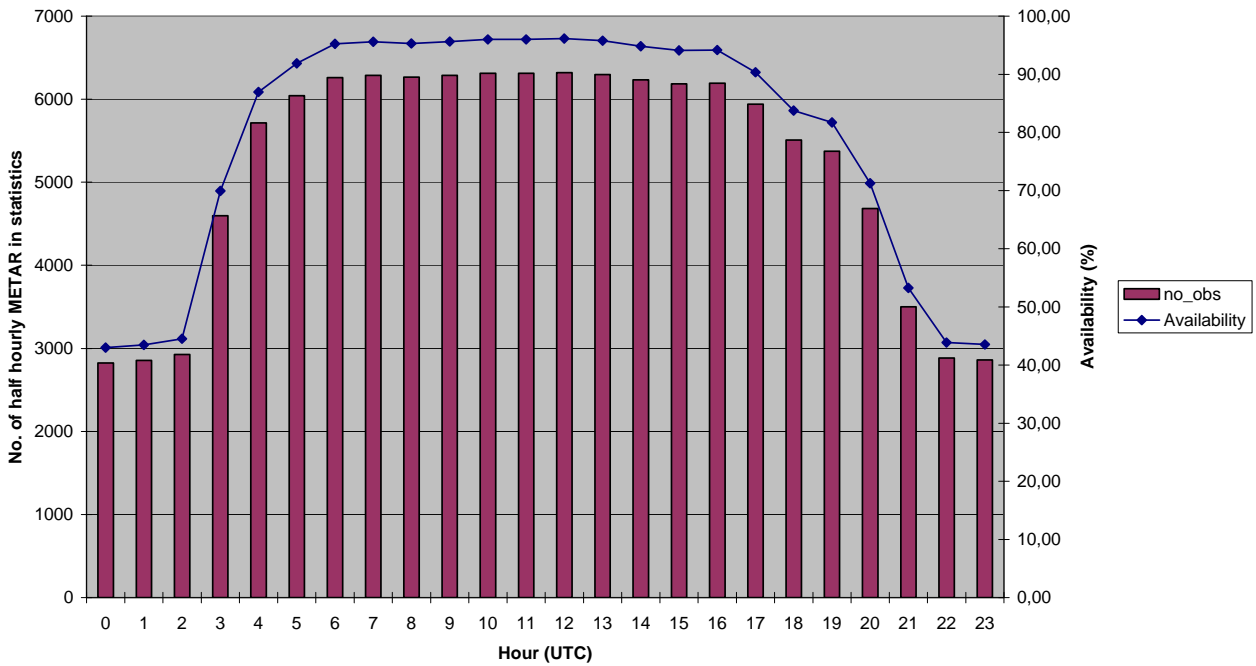


Figure 477

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

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

Table 55



EKSB Sønderborg Lufthavn

Sønderborg Airport

Airport location: 54,967°N 9,783°E Elevation: 7 m above msl.

EKSB observations in statistics: 57.550 half hourly METAR¹⁰ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 36,5 %.

The availability is lowered because EKSB mostly issue hourly METAR during daytime. Only approximately one fifth of the observations are issued as half hourly METAR. More details may be found in the availability section.

All EKSB METAR are manual.

Cross tables Visibility – Ceiling

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

No. Obs = 15.736	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,057	1,57	4,05	4,19	4,19	0,10	4,30
<1 km	0,057	1,70	4,88	5,16	5,18	0,13	5,31
<1.5 km	0,057	1,82	6,01	6,74	6,80	0,26	7,06
<3.0 km	0,057	2,08	11,21	15,03	15,86	1,32	17,18
< 5.0 km	0,057	2,12	13,73	23,67	26,05	4,07	30,12
>= 5,0 km or CAVOK	0	0	0,92	8,41	18,04	51,84	69,88
Total	0,057	2,12	14,64	32,08	44,09	55,91	100

Table 56

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

No. Obs = 13.107	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,023	0,40	0,61	0,61	0,61	0,08	0,69
<1 km	0,023	0,42	0,68	0,68	0,68	0,08	0,76
<1.5 km	0,023	0,43	0,77	0,78	0,79	0,11	0,90
<3.0 km	0,023	0,47	1,78	2,04	2,08	0,59	2,67
< 5.0 km	0,023	0,47	2,70	4,51	4,88	2,33	7,22
>= 5,0 km or CAVOK	0	0	0,24	3,00	6,86	85,92	92,78
Total	0,023	0,47	2,94	7,51	11,74	88,26	100

Table 57

¹⁰ For every half hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.

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

No. Obs = 13.599	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,015	0,14	0,18	0,18	0,18	0,08	0,26
<1 km	0,015	0,14	0,22	0,22	0,22	0,10	0,32
<1.5 km	0,015	0,14	0,28	0,28	0,28	0,15	0,43
<3.0 km	0,015	0,15	0,60	0,88	0,94	0,73	1,67
< 5.0 km	0,015	0,15	0,99	2,56	3,03	2,70	5,73
>= 5,0 km or CAVOK	0	0	0,25	3,06	6,96	87,31	94,27
Total	0,015	0,15	1,24	5,62	9,99	90,01	100

Table 58

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

No. Obs = 15.108	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,033	1,16	2,22	2,22	2,22	0,26	2,48
<1 km	0,033	1,24	2,71	2,73	2,73	0,27	3,00
<1.5 km	0,033	1,40	3,45	3,57	3,58	0,33	3,91
<3.0 km	0,033	1,58	7,89	10,09	10,30	0,68	10,98
< 5.0 km	0,046	1,62	11,00	19,25	20,86	3,18	24,05
>= 5,0 km or CAVOK	0	0	0,93	9,33	17,80	58,15	75,95
Total	0,046	1,62	11,93	28,58	38,66	61,34	100

Table 59

Annual: EKSB – Frequencies (%) Visibility - Ceiling

No. Obs = 57.550	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,033	0,86	1,87	1,91	1,91	0,13	2,04
<1 km	0,033	0,92	2,25	2,33	2,34	0,15	2,49
<1.5 km	0,033	0,99	2,79	3,02	3,04	0,22	3,26
<3.0 km	0,033	1,12	5,68	7,43	7,74	0,85	8,58
< 5.0 km	0,036	1,15	7,49	13,16	14,43	3,12	17,55
>= 5,0 km or CAVOK	0	0	0,61	6,15	12,81	69,64	82,45
Total	0,036	1,15	8,10	19,31	27,24	72,76	100

Table 60



Wind direction histograms

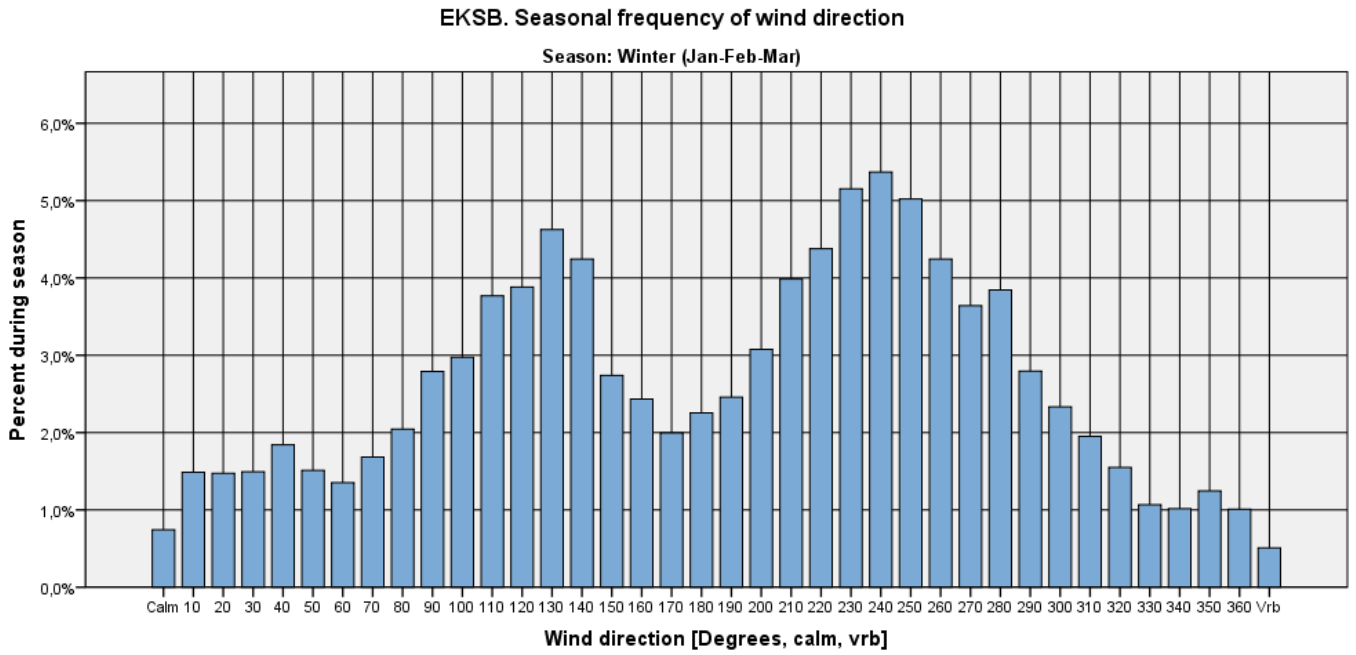


Figure 478

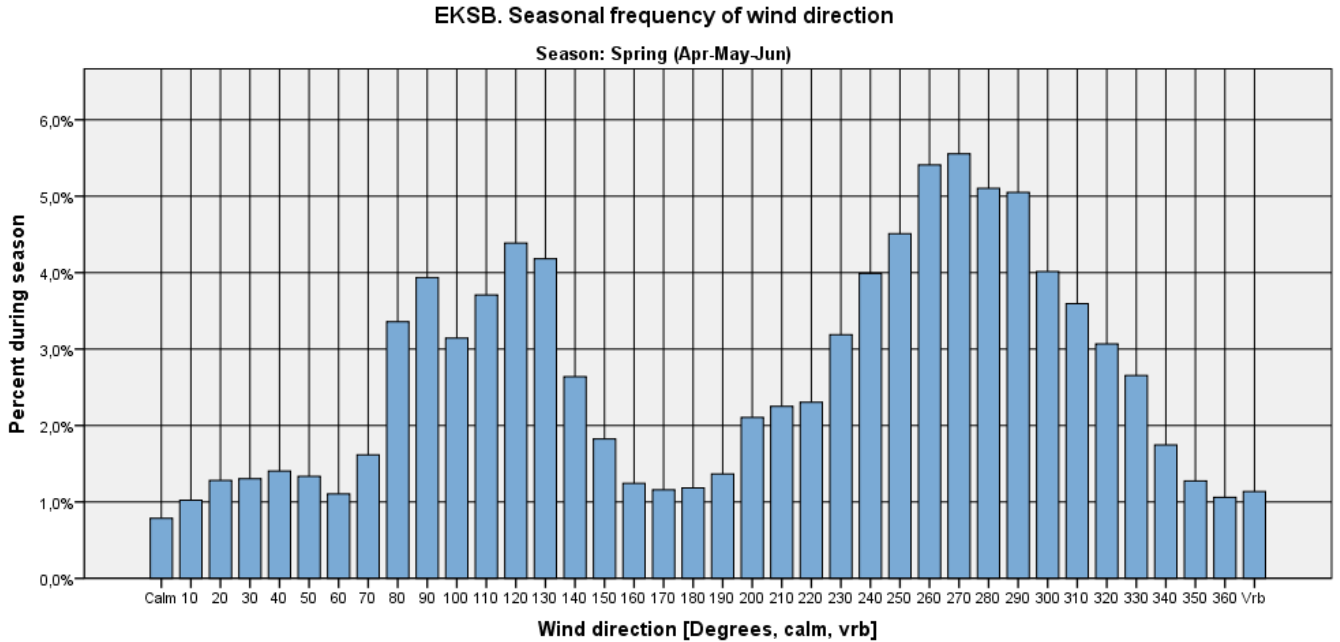


Figure 479

EKSB. Seasonal frequency of wind direction

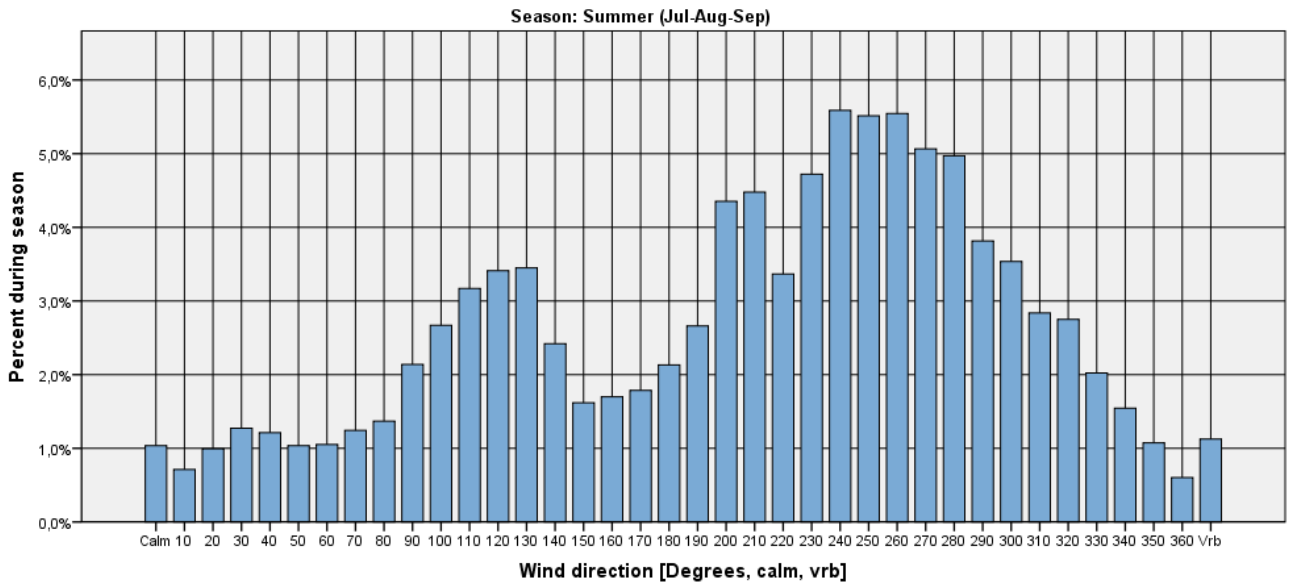


Figure 480

EKSB. Seasonal frequency of wind direction

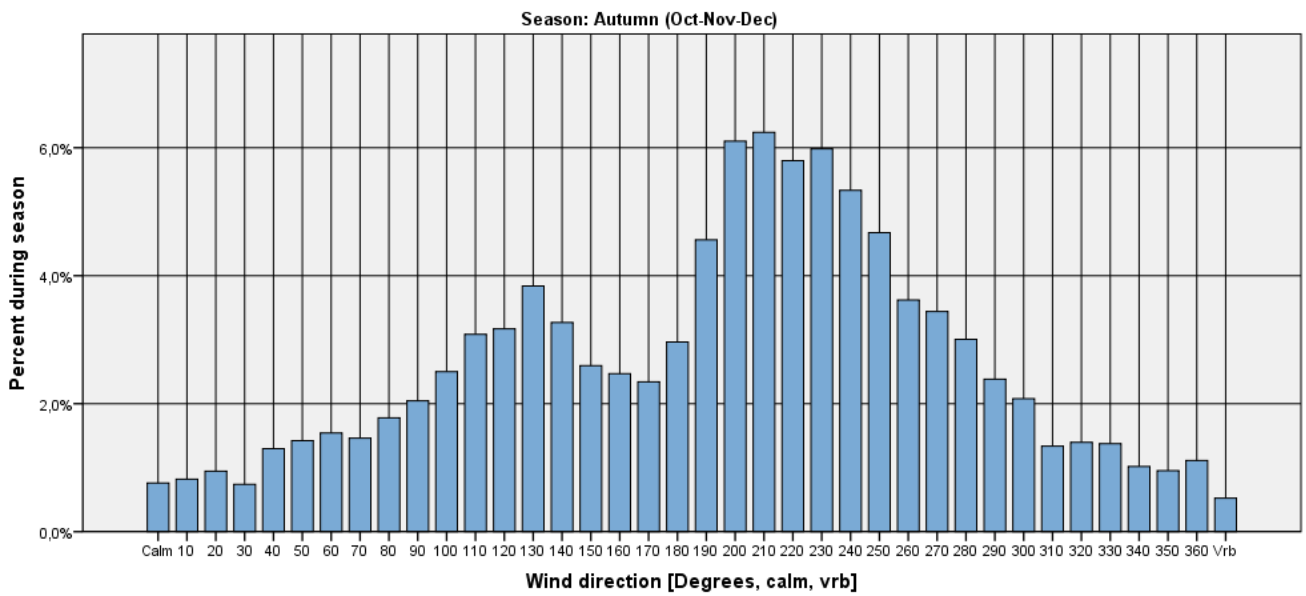


Figure 481

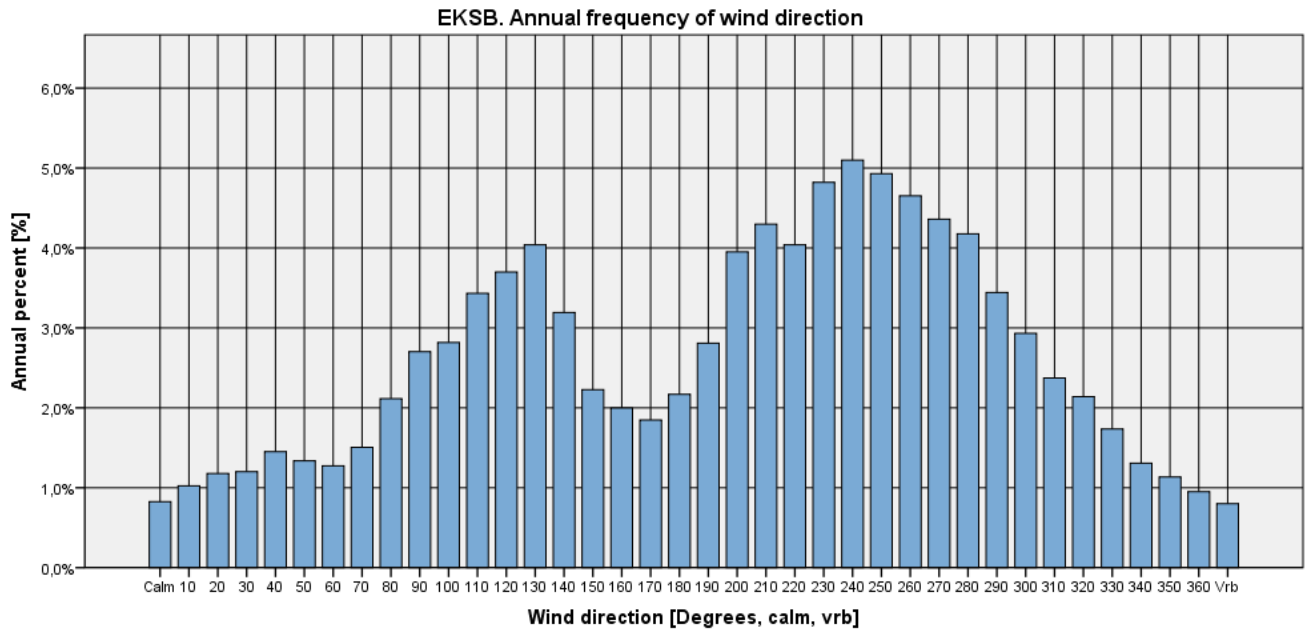


Figure 482



Visibility criteria on wind direction histograms

Visibility < 1000 m

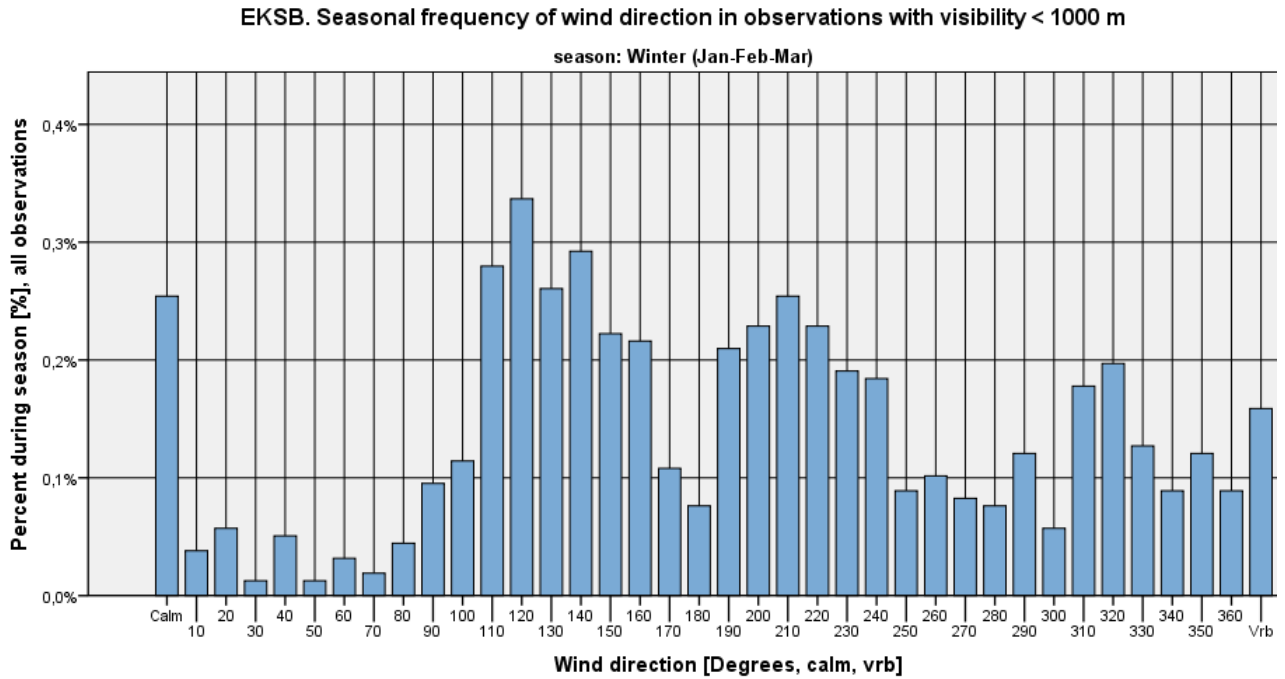


Figure 483

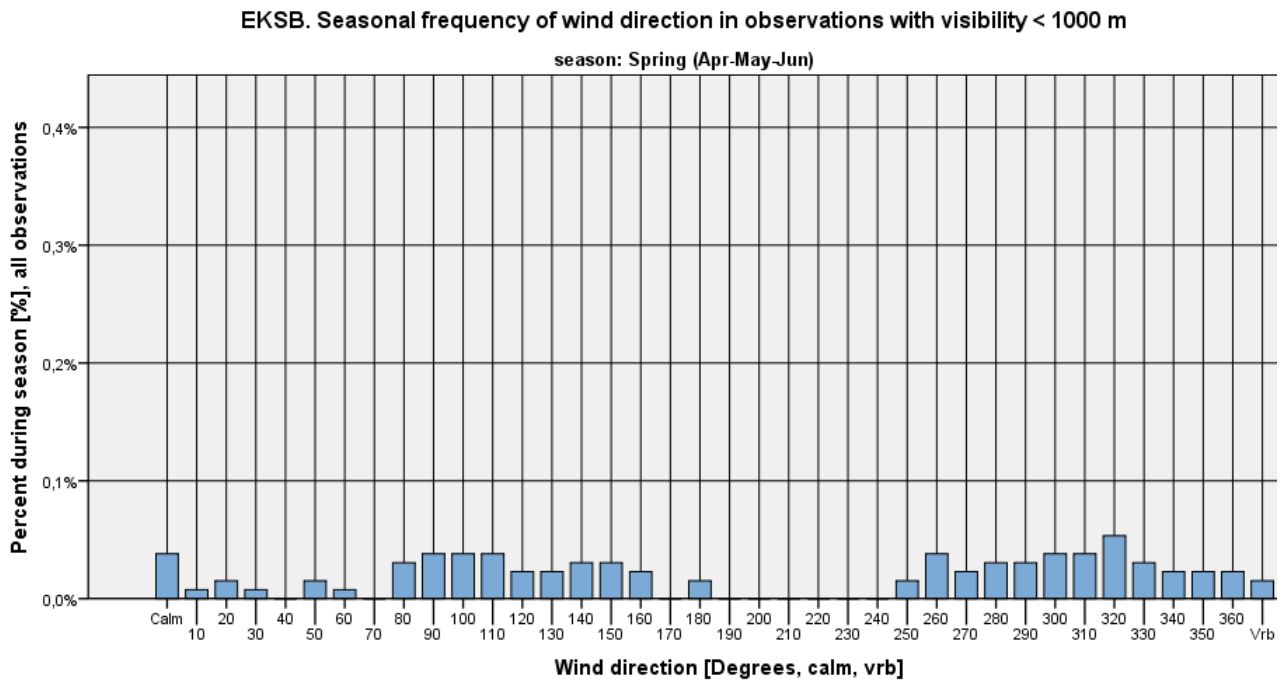


Figure 484

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

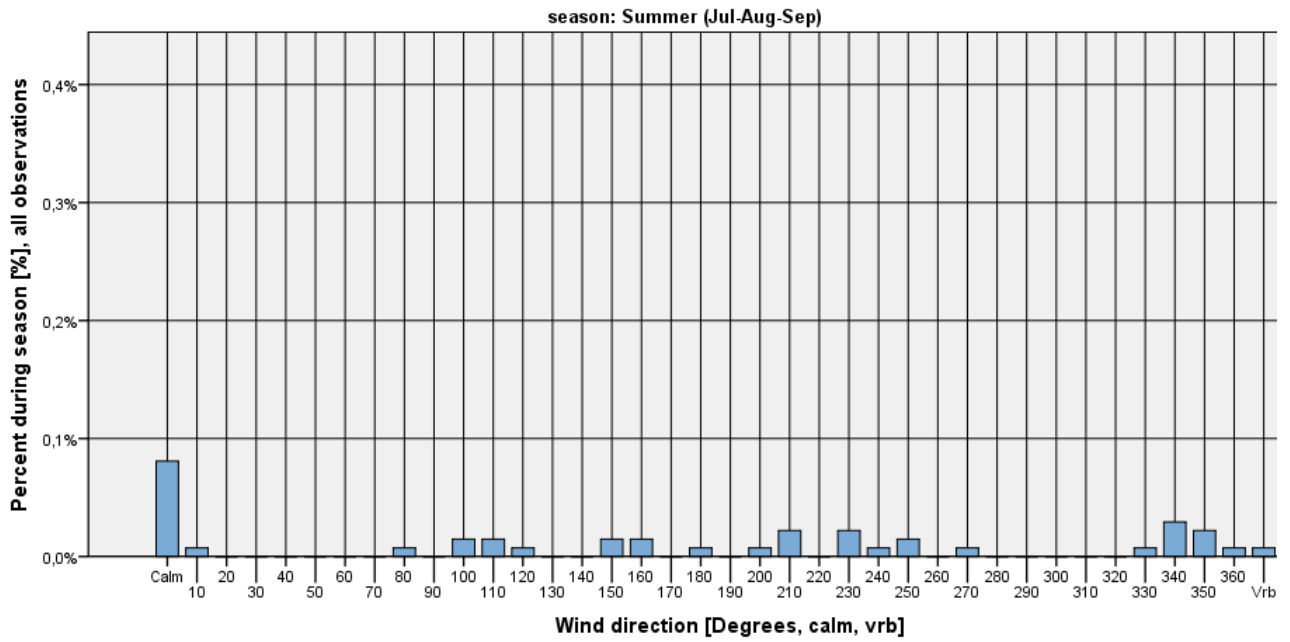


Figure 485

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

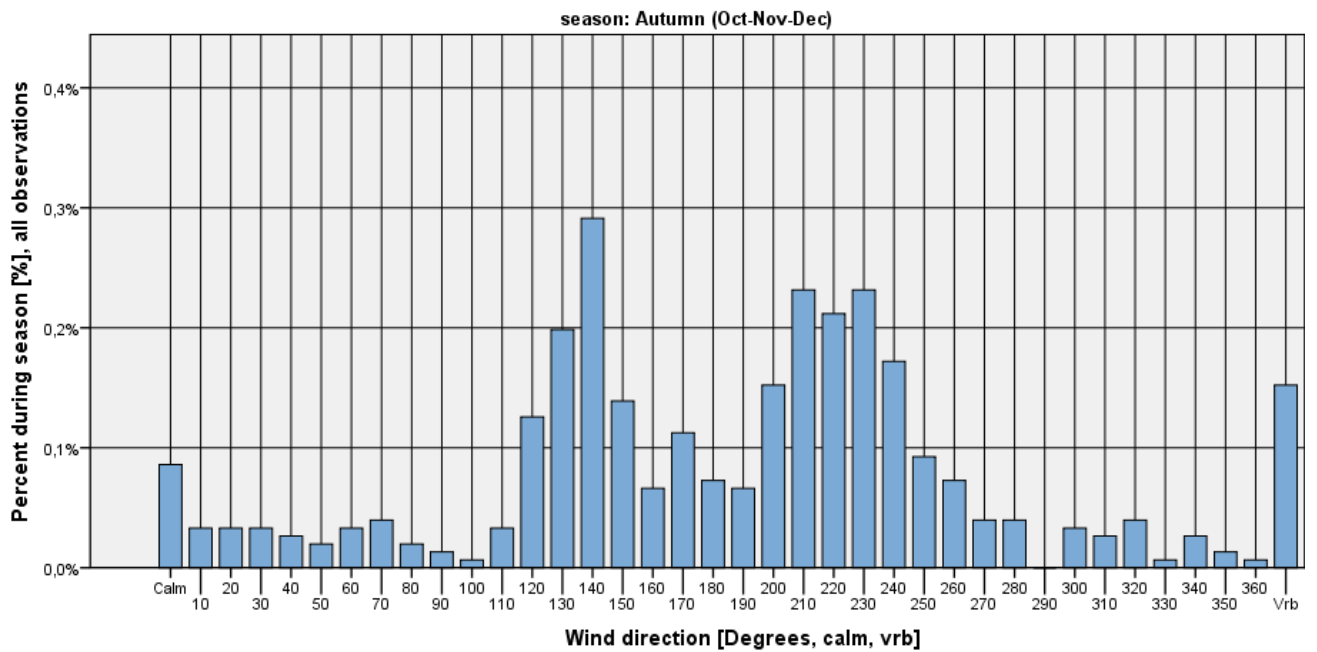


Figure 486

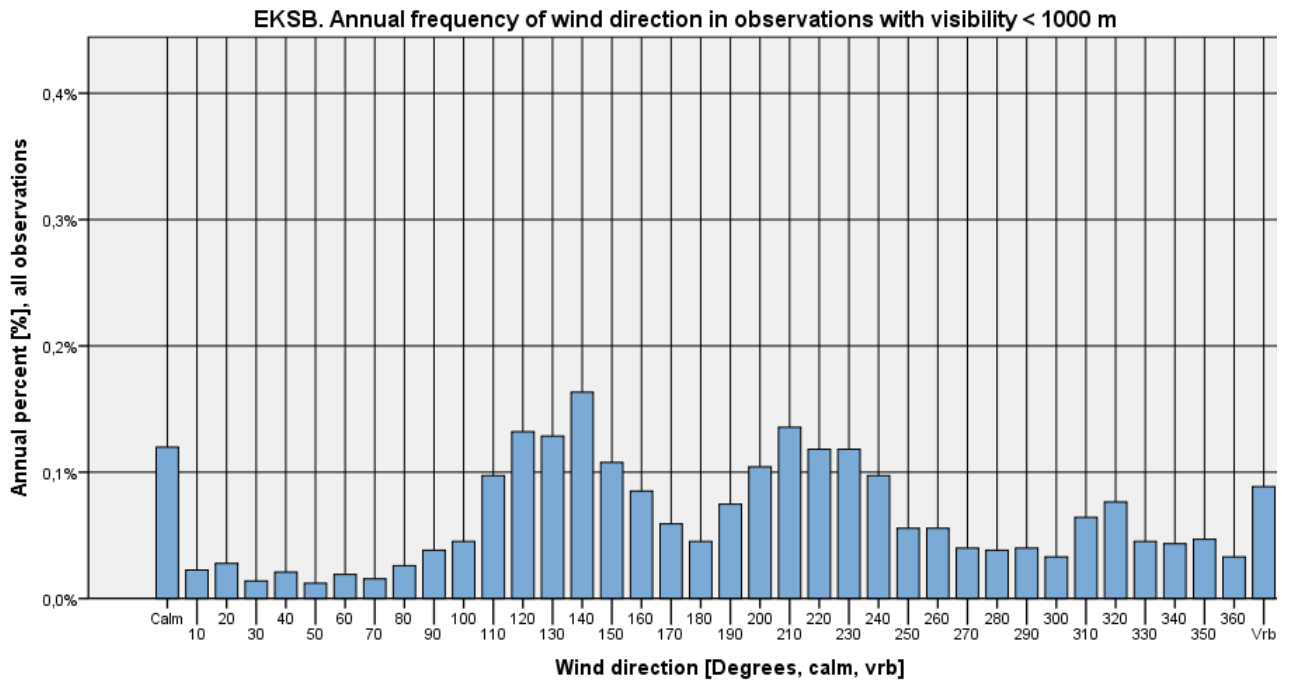


Figure 487



Visibility < 1000 m and wind speed <= 5 kts

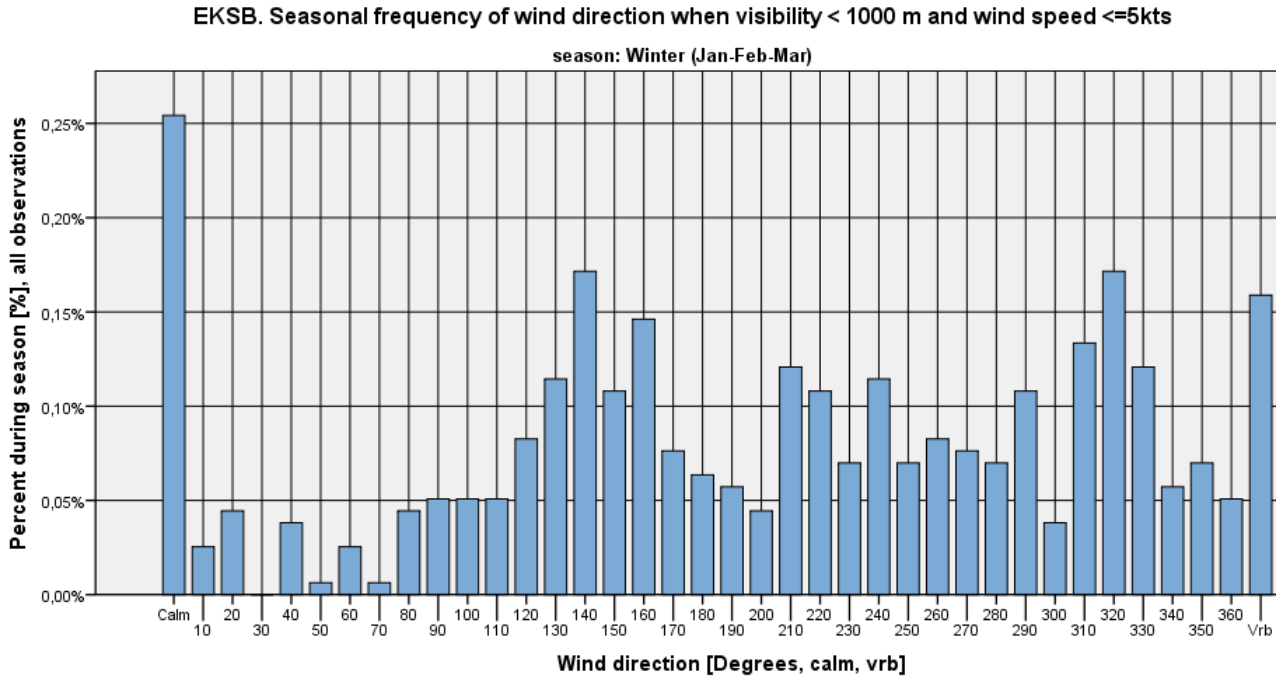


Figure 488

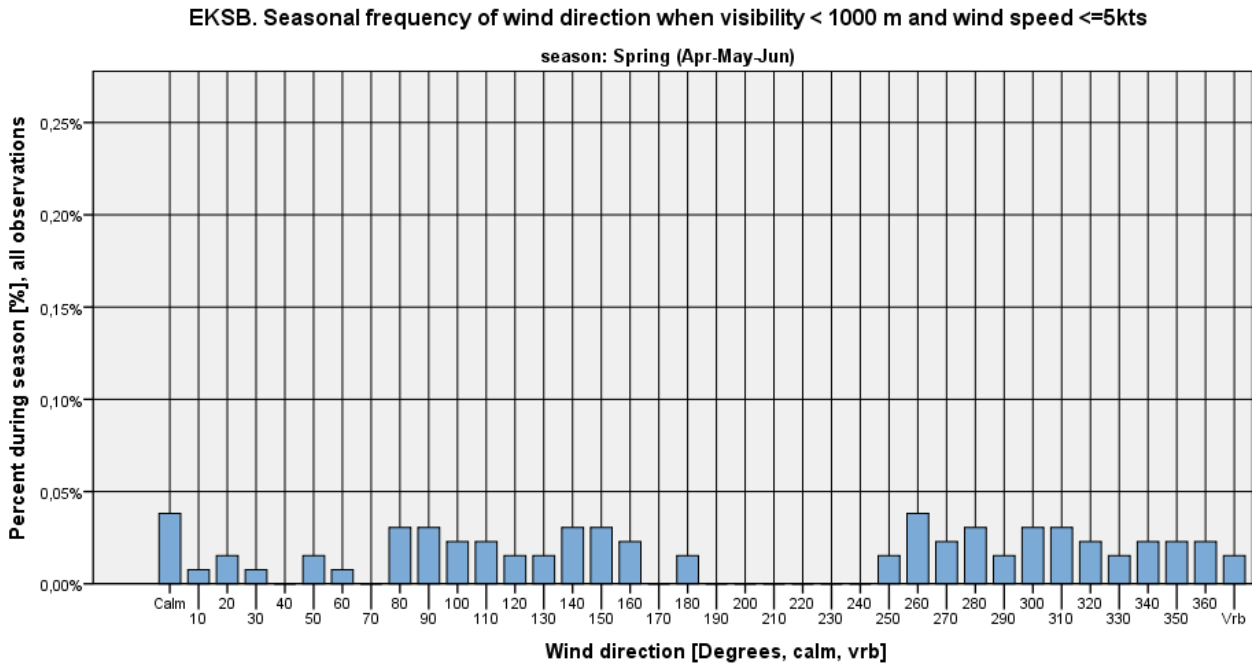


Figure 489



EKSB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

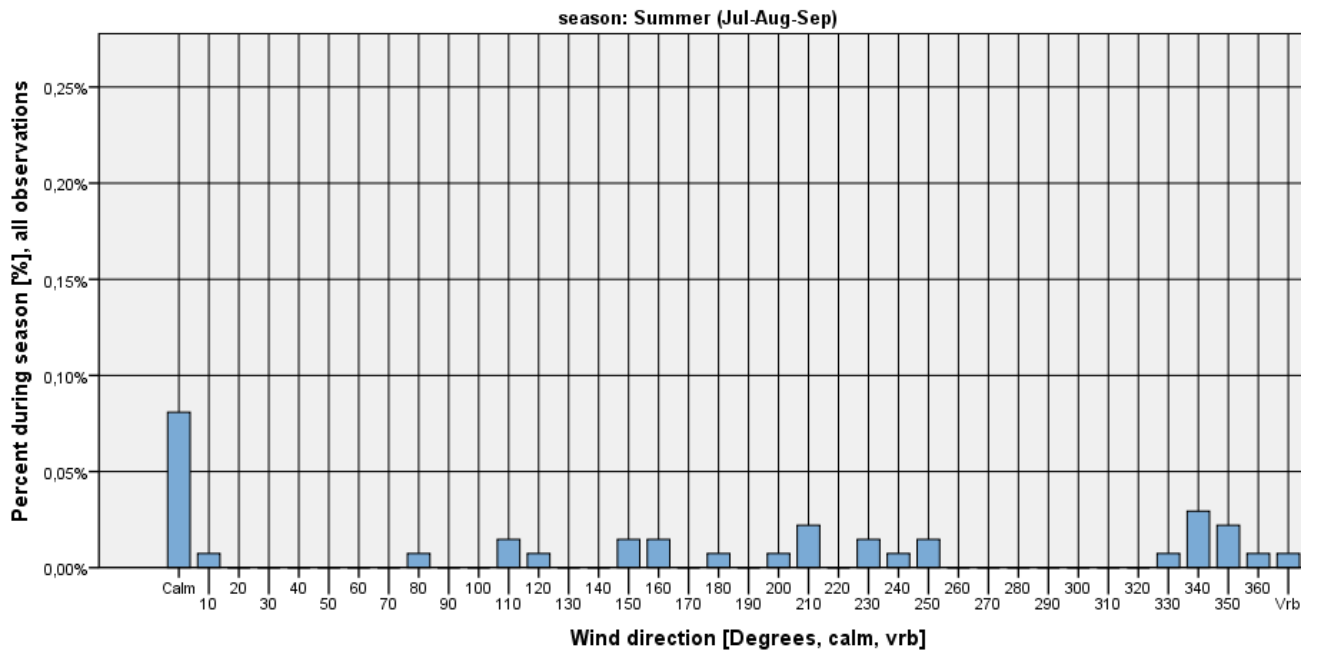


Figure 490

EKSB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

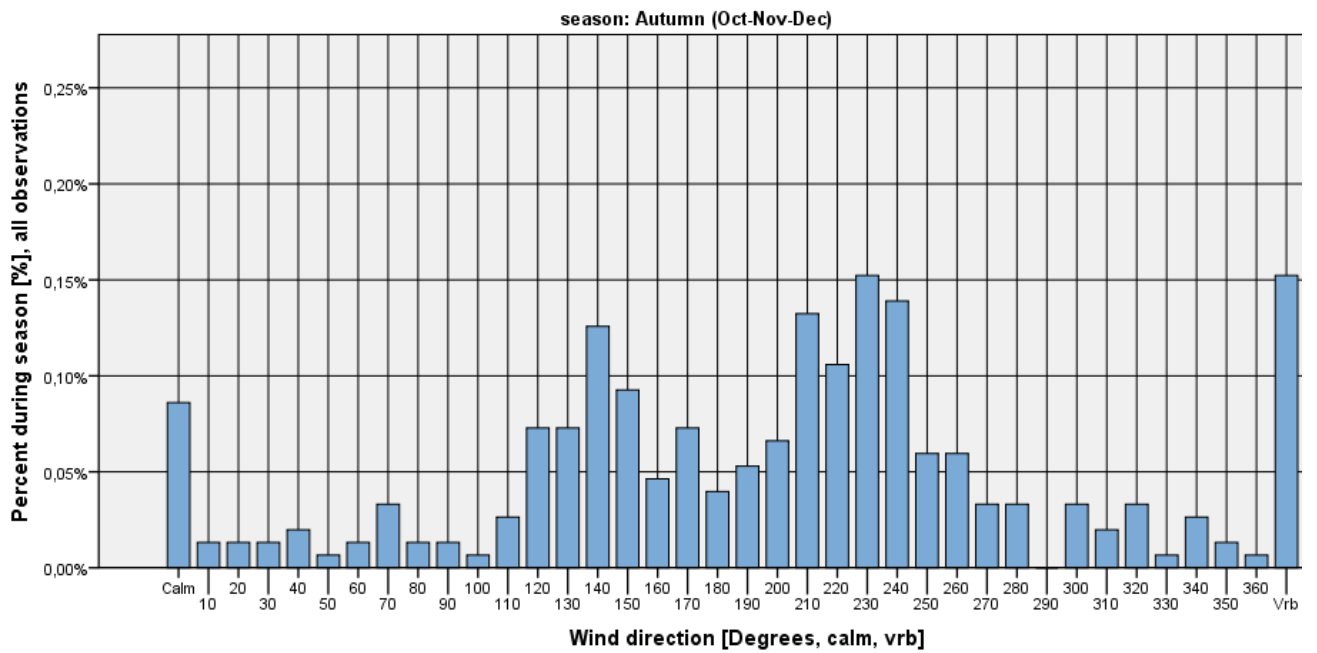


Figure 491

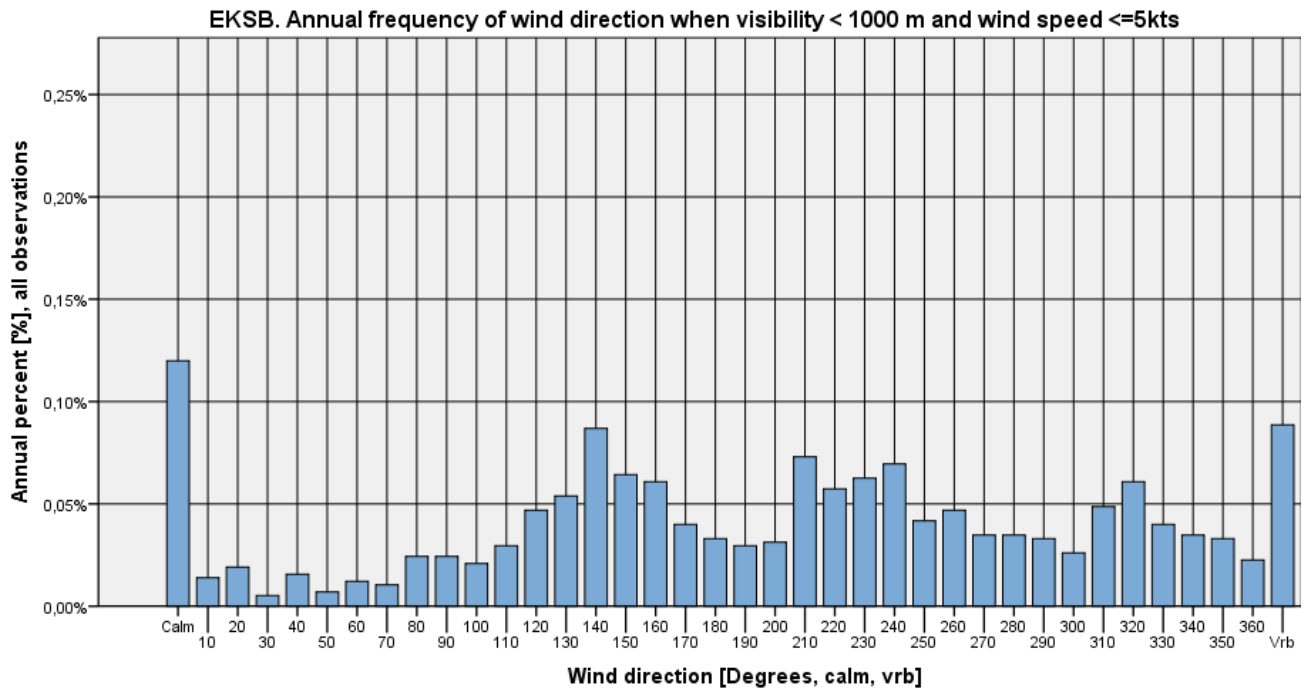


Figure 492



Visibility < 1000 m and wind speed > 5 kts

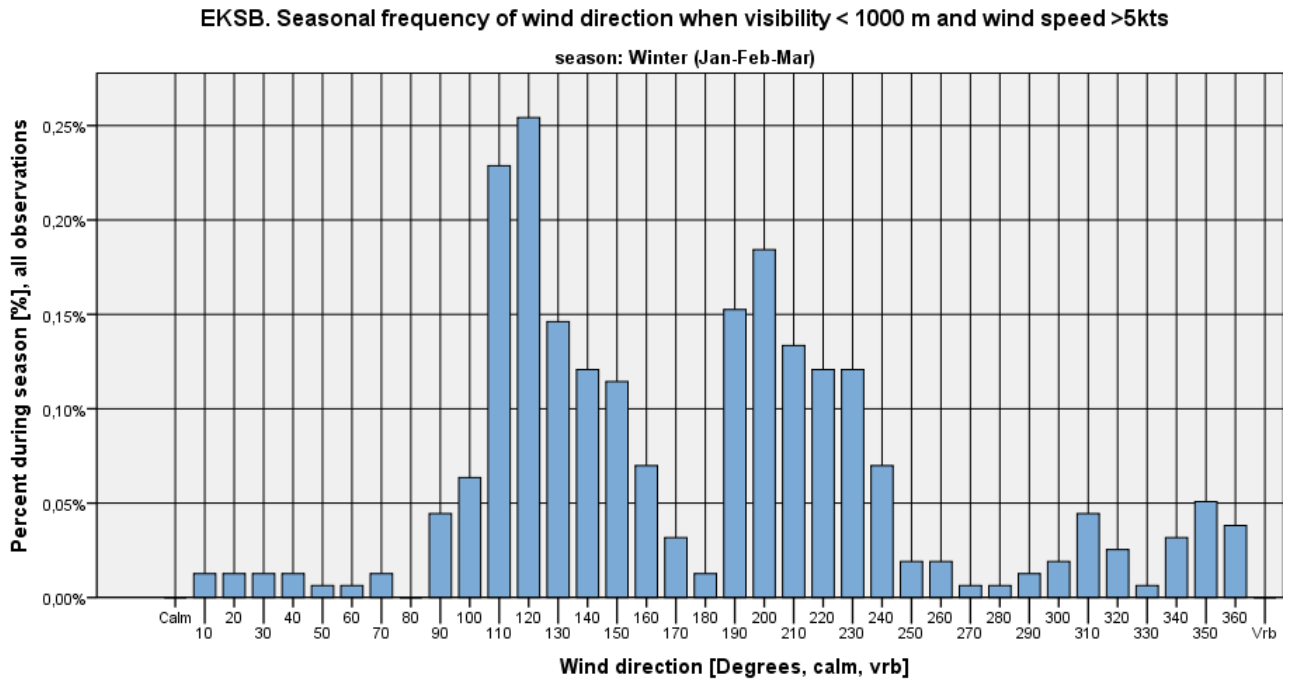


Figure 493

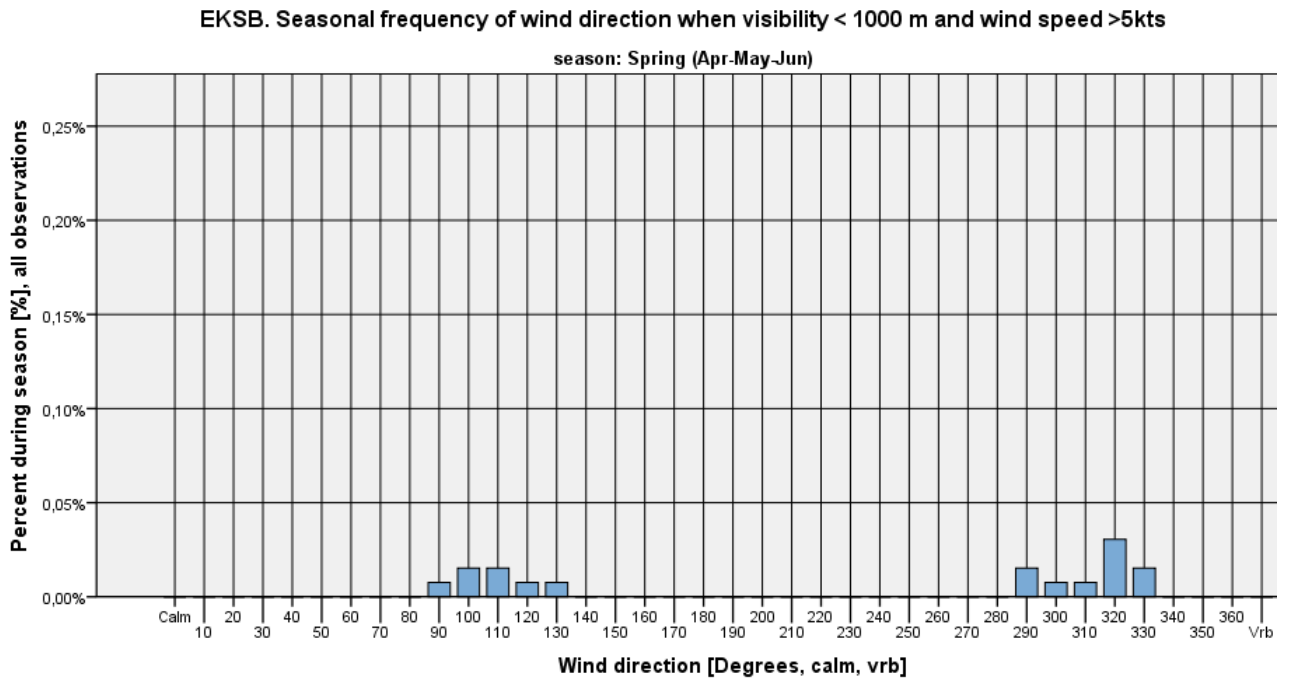


Figure 494

EKSB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

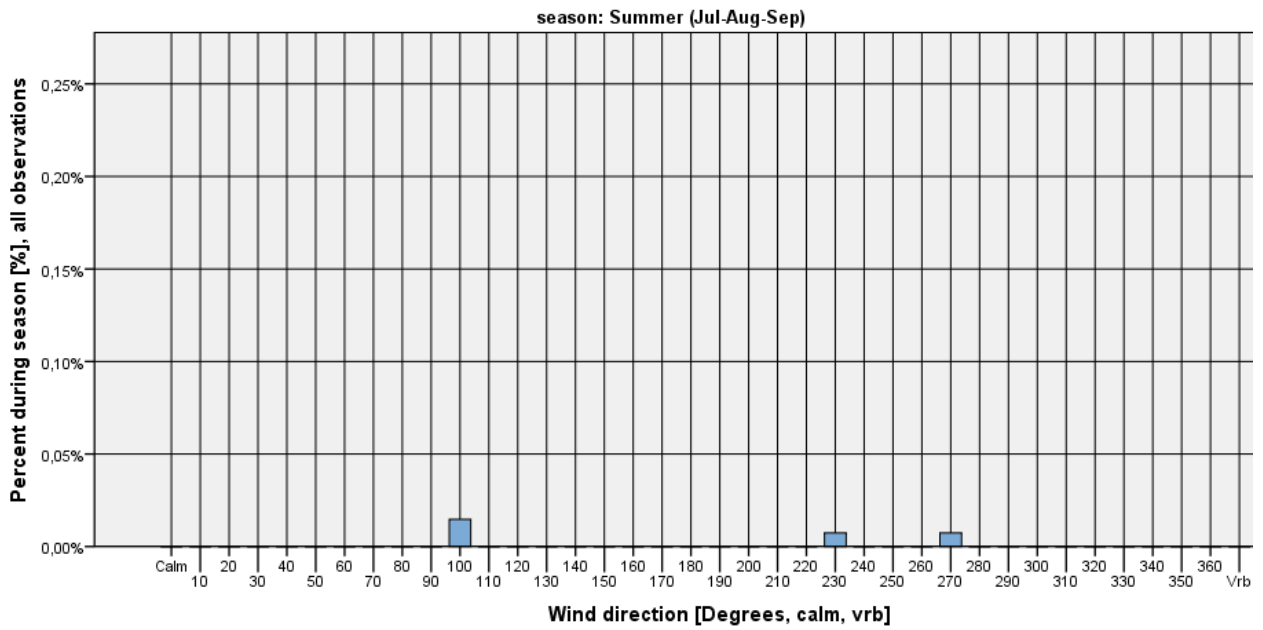


Figure 495

EKSB. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

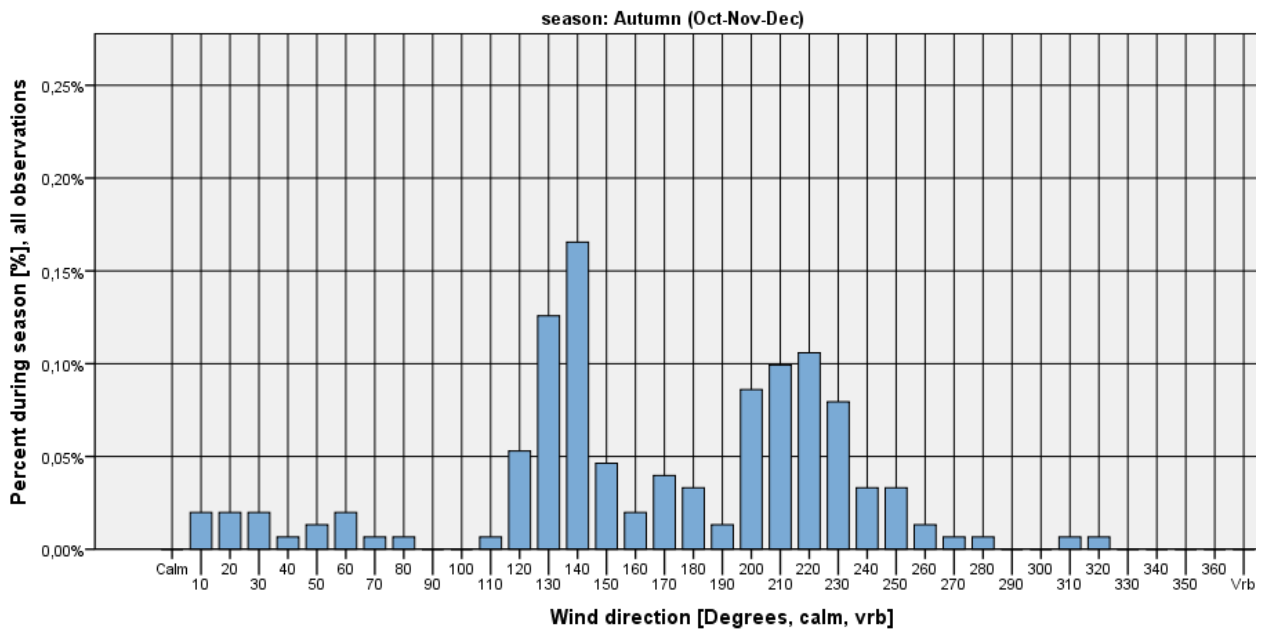


Figure 496

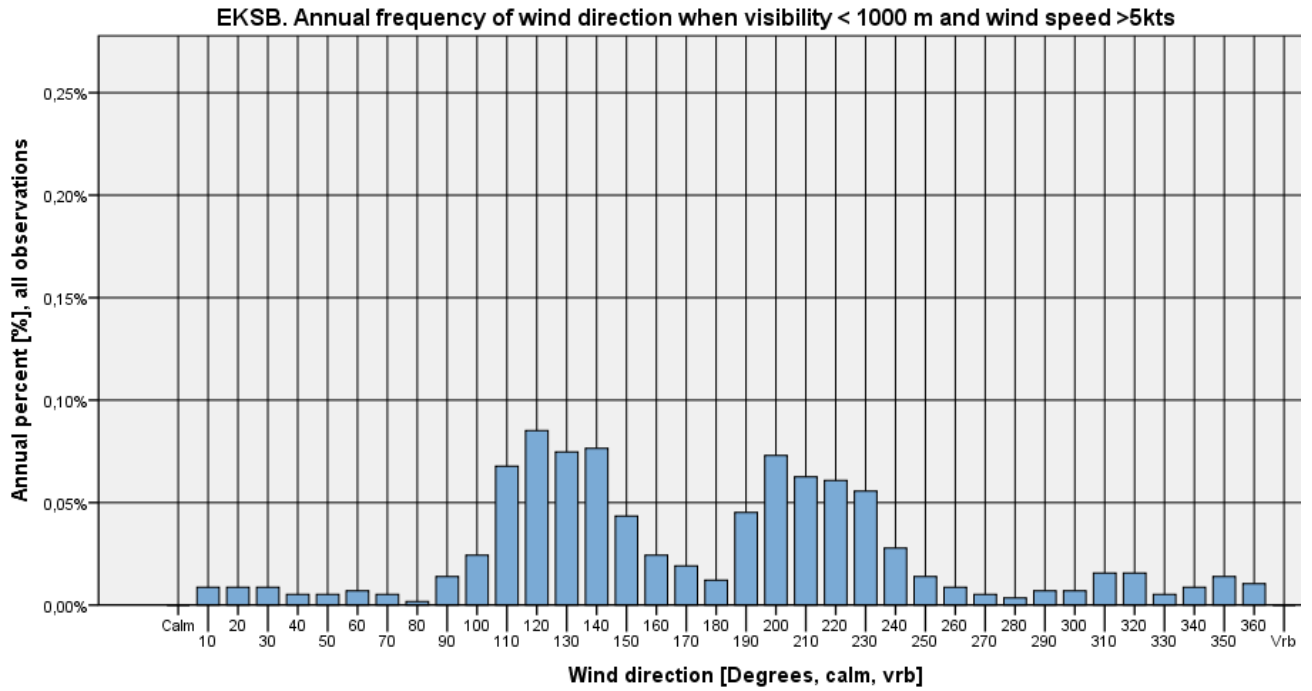


Figure 497



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

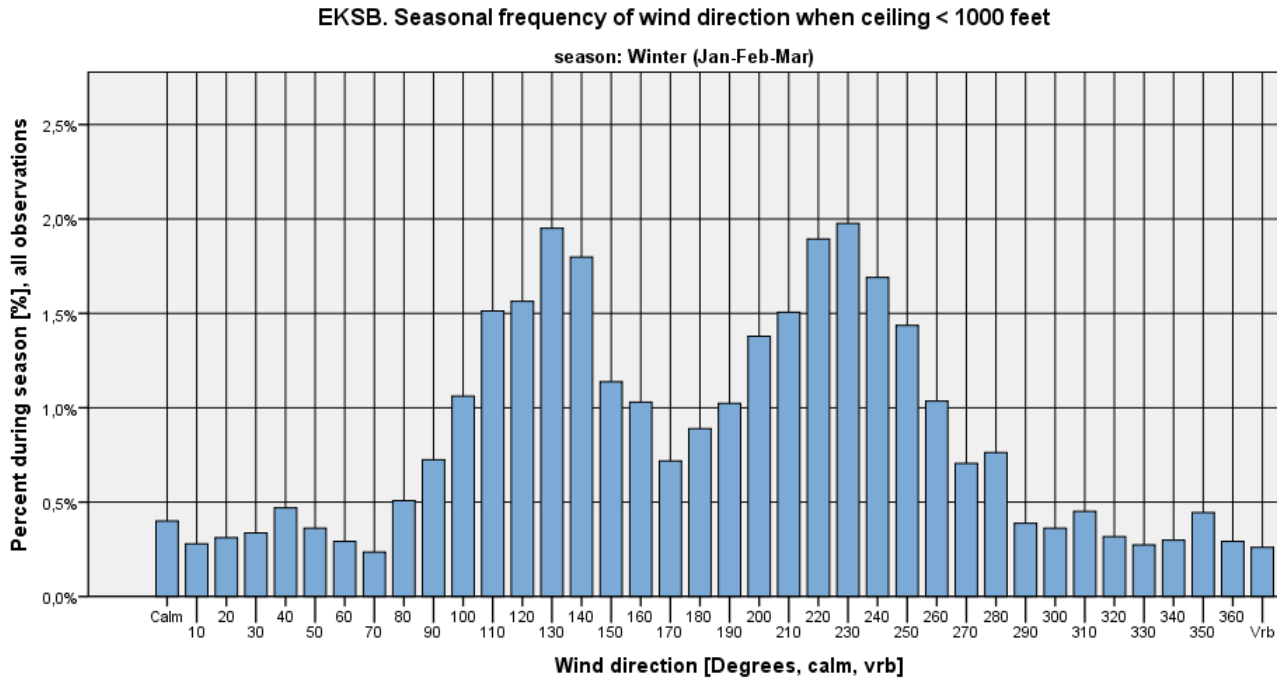


Figure 498

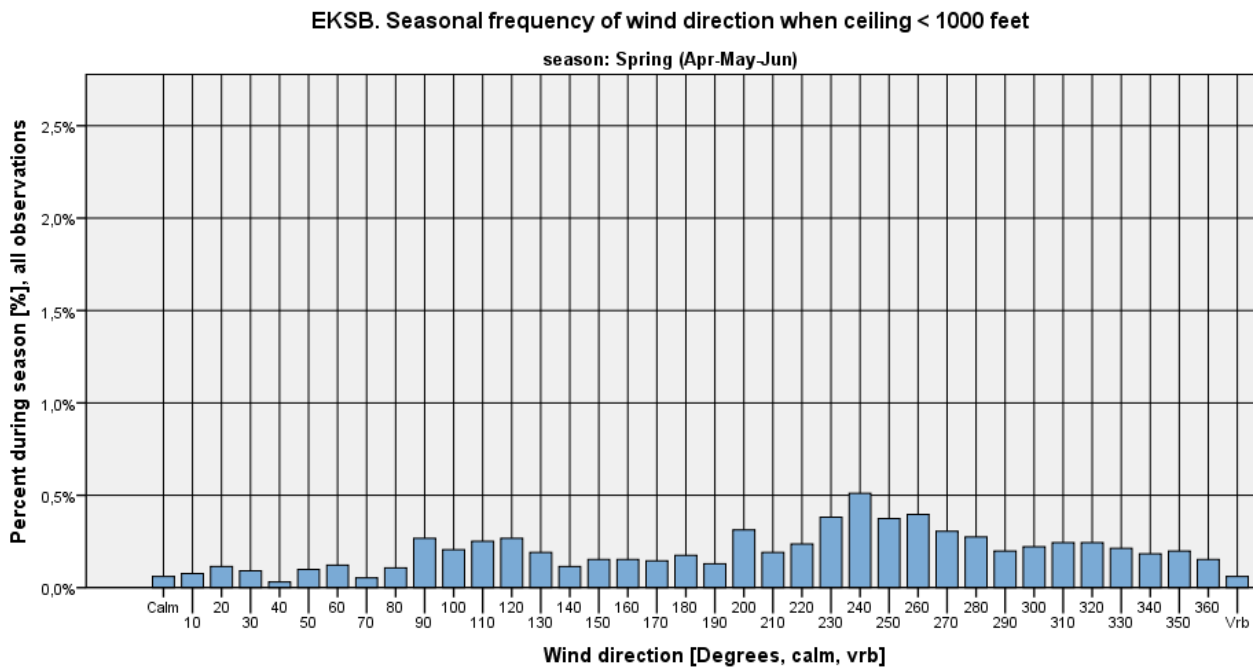


Figure 499



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

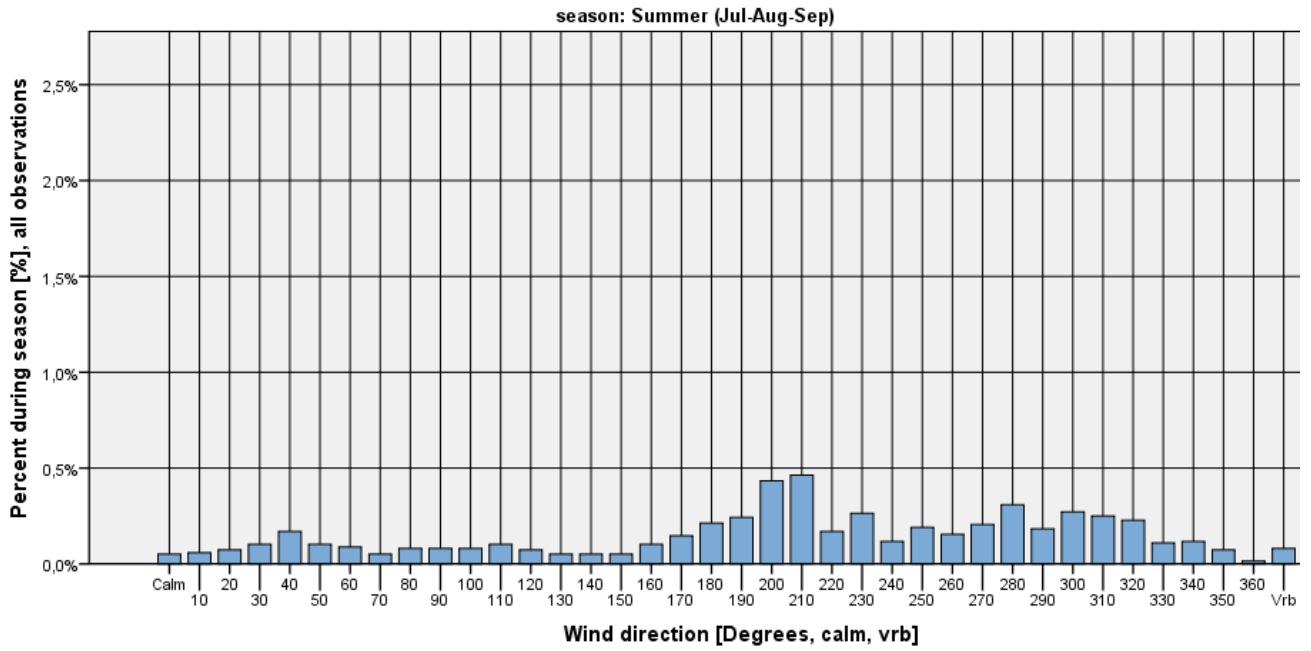


Figure 500

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

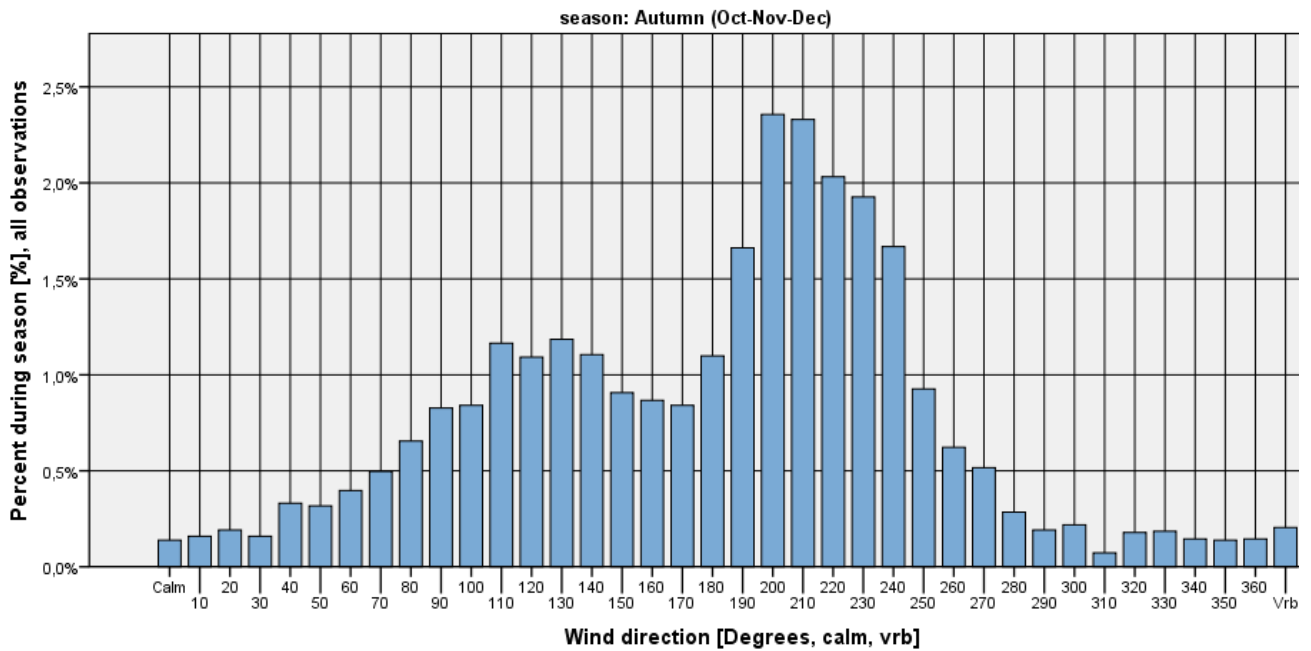


Figure 501

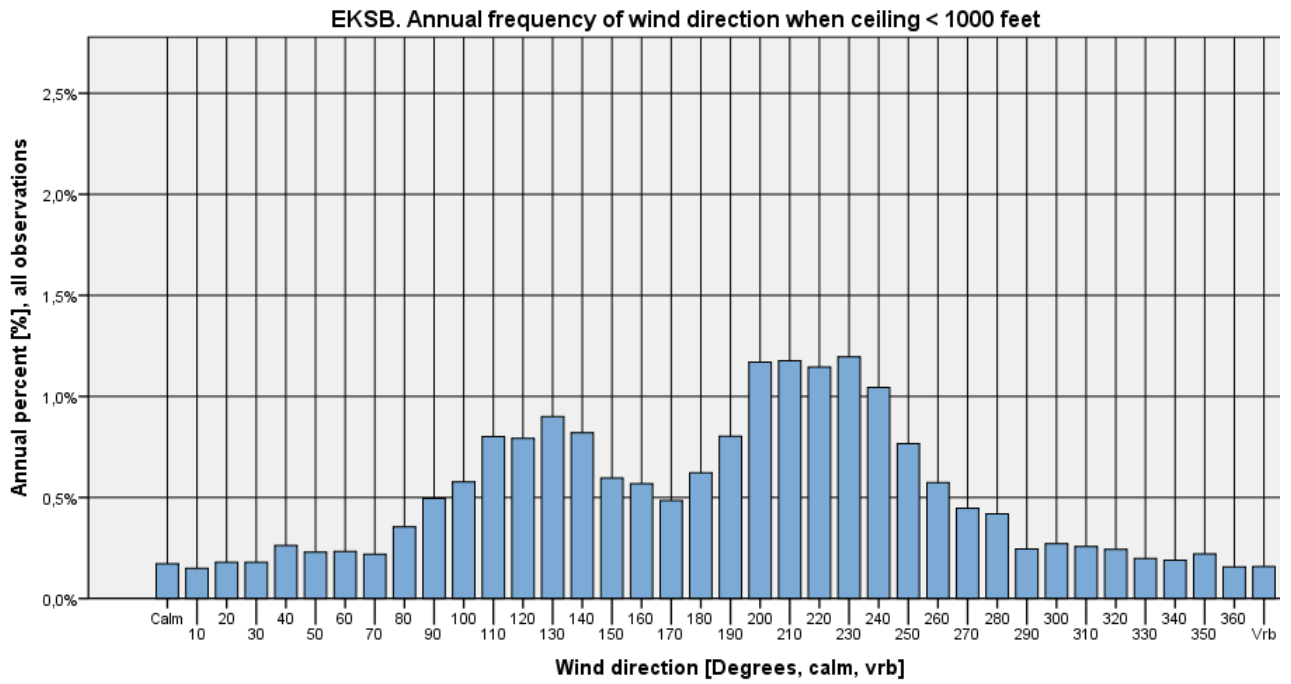


Figure 502



Ceiling < 1000 feet and wind speed <= 5 kts

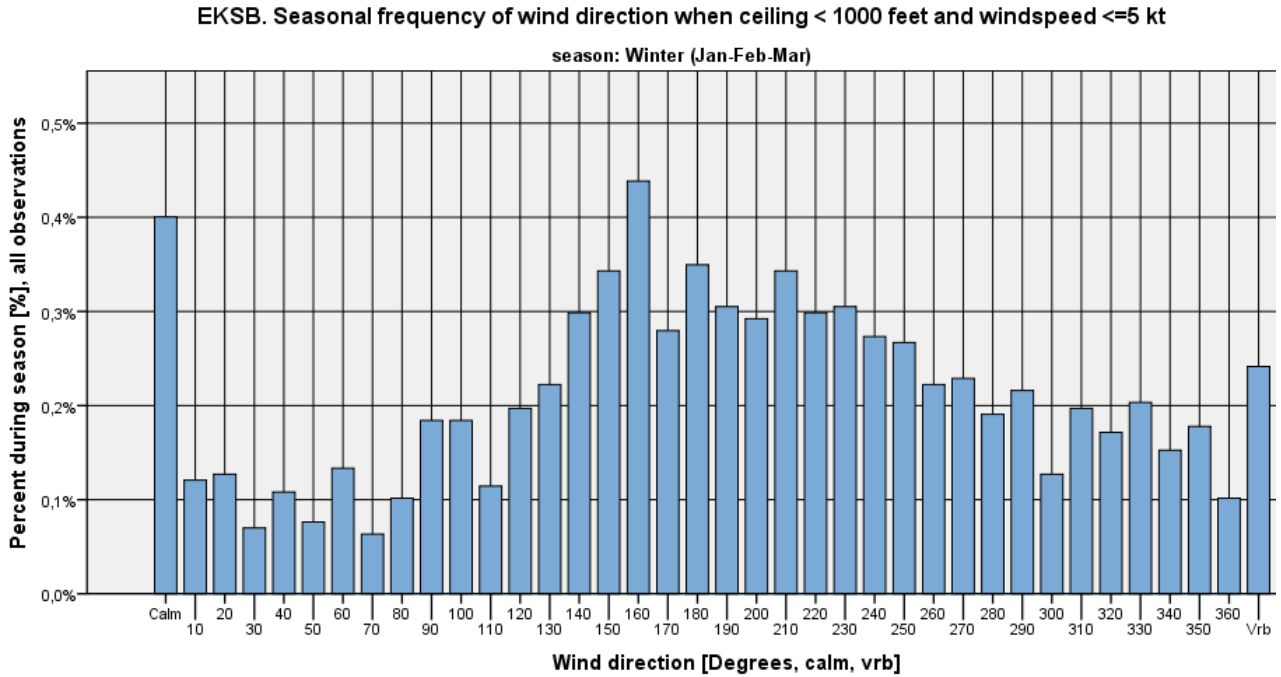


Figure 503

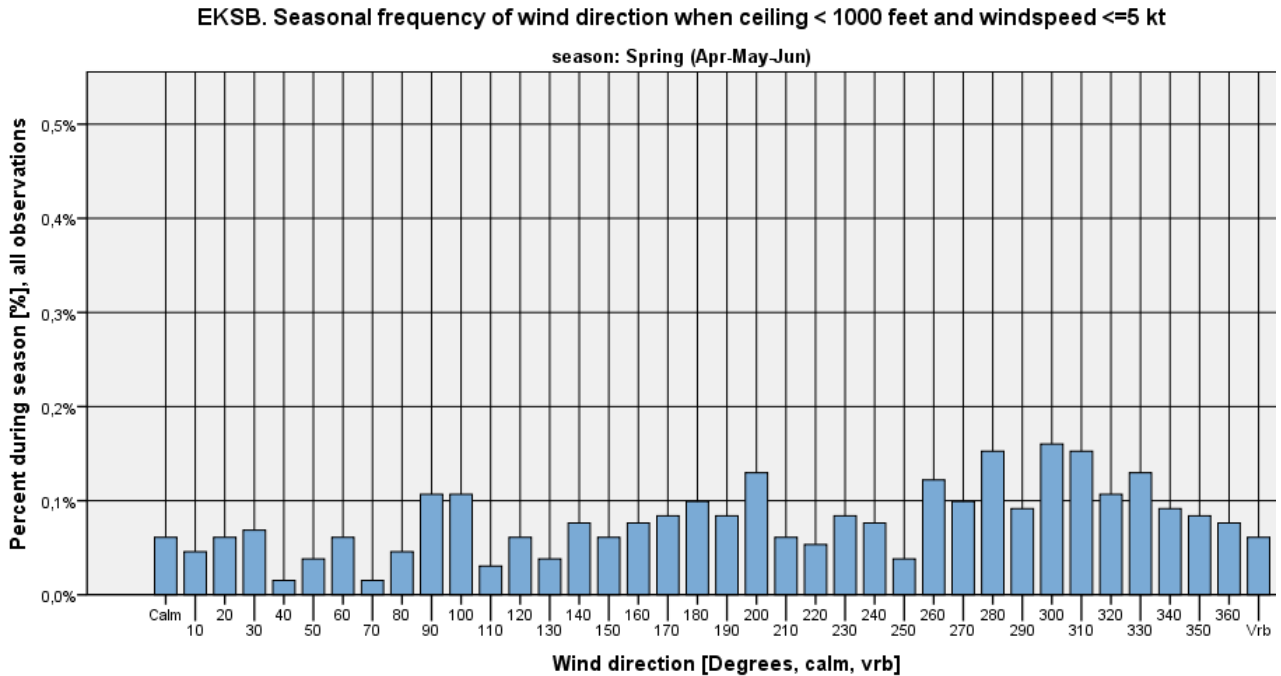


Figure 504



EKSB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

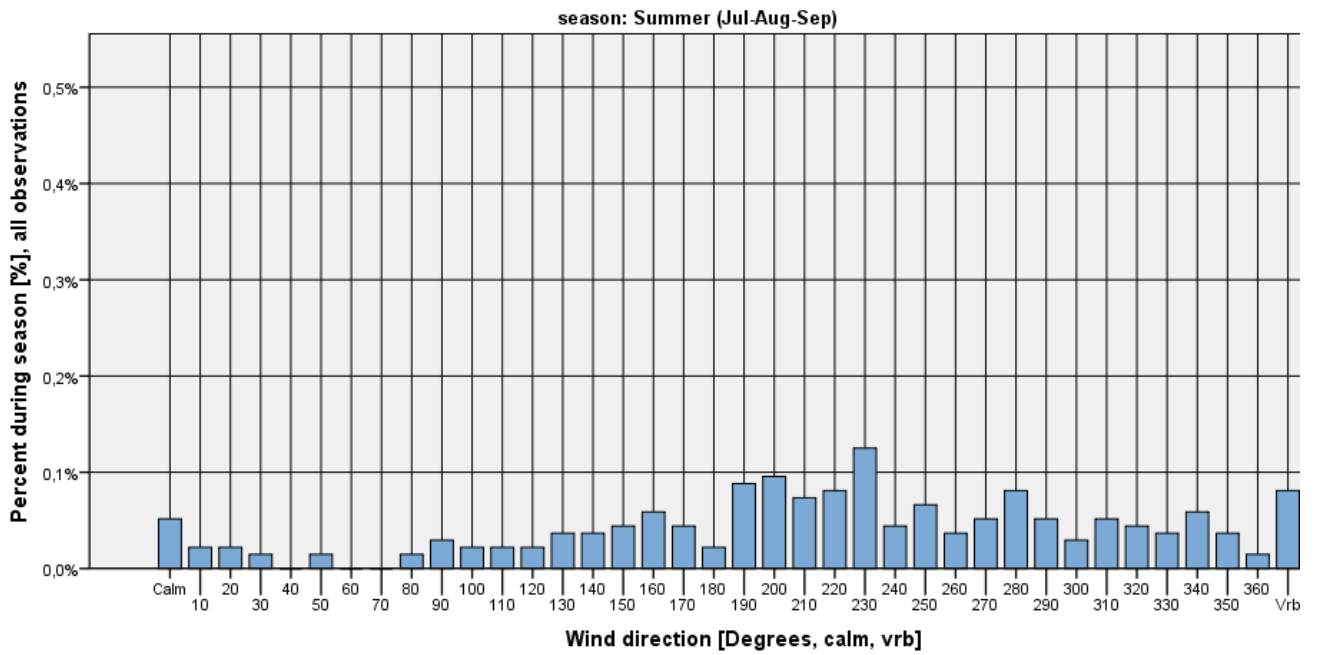


Figure 505

EKSB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

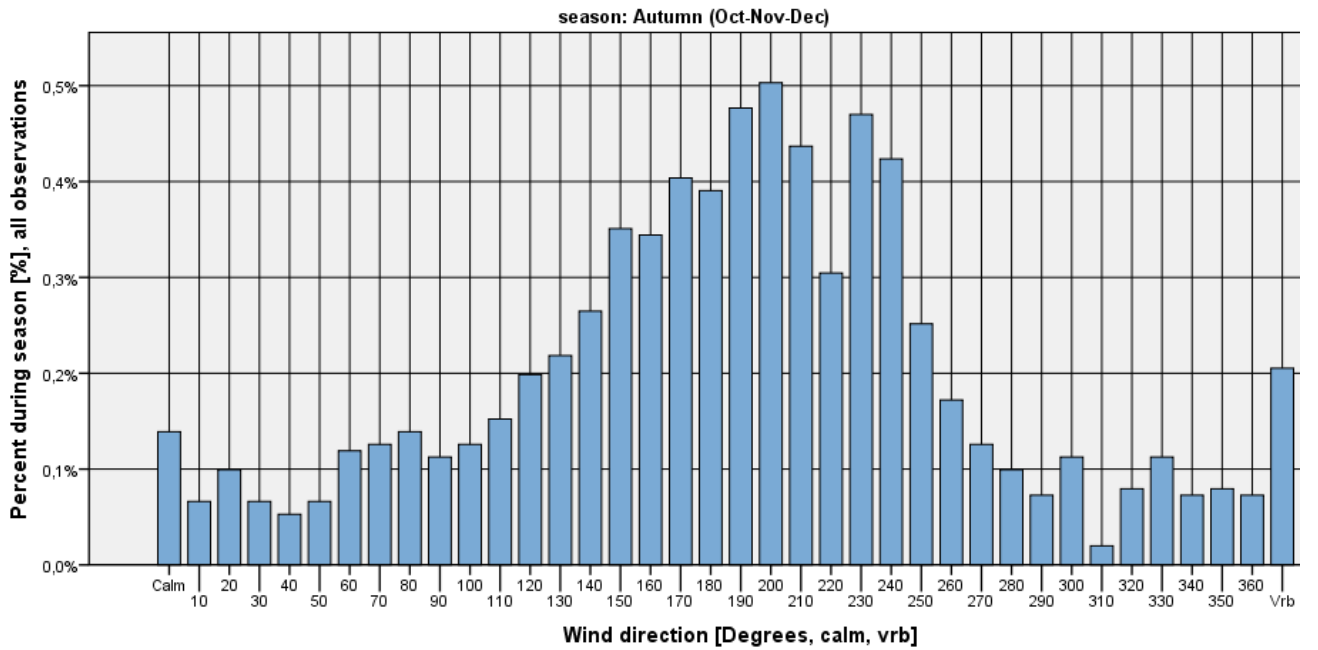


Figure 506

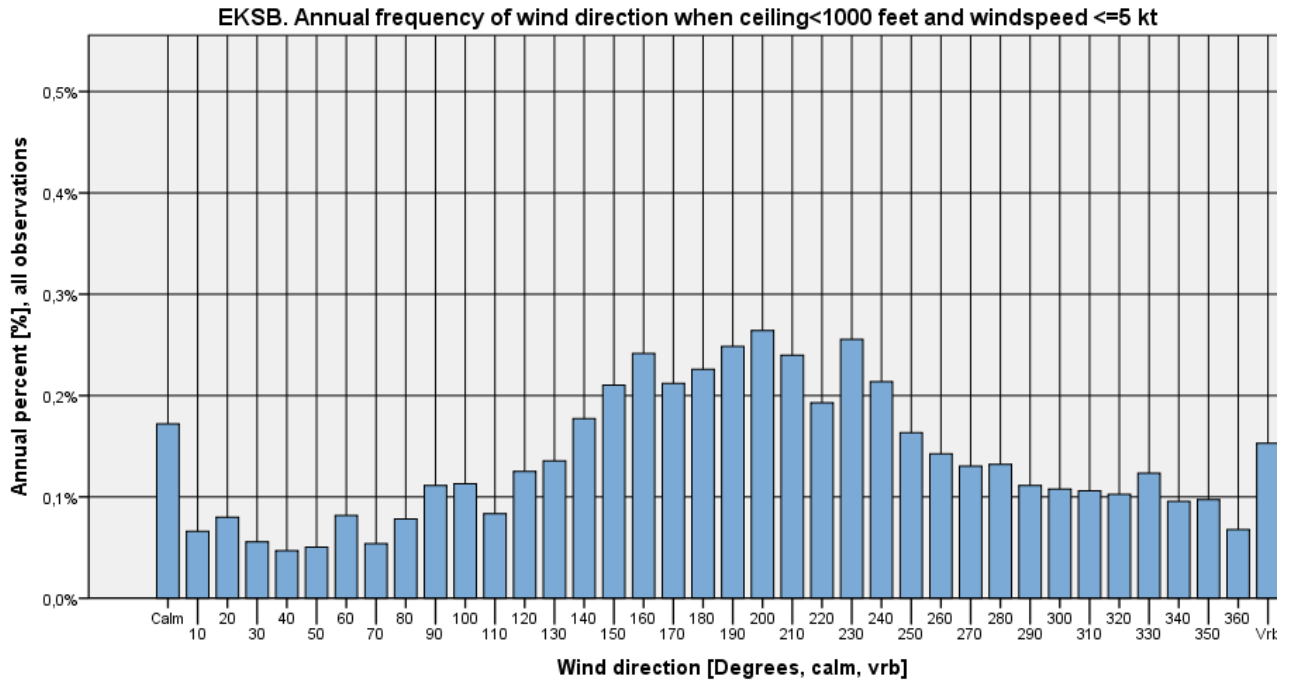


Figure 507



Ceiling < 1000 feet and wind speed > 5 kts

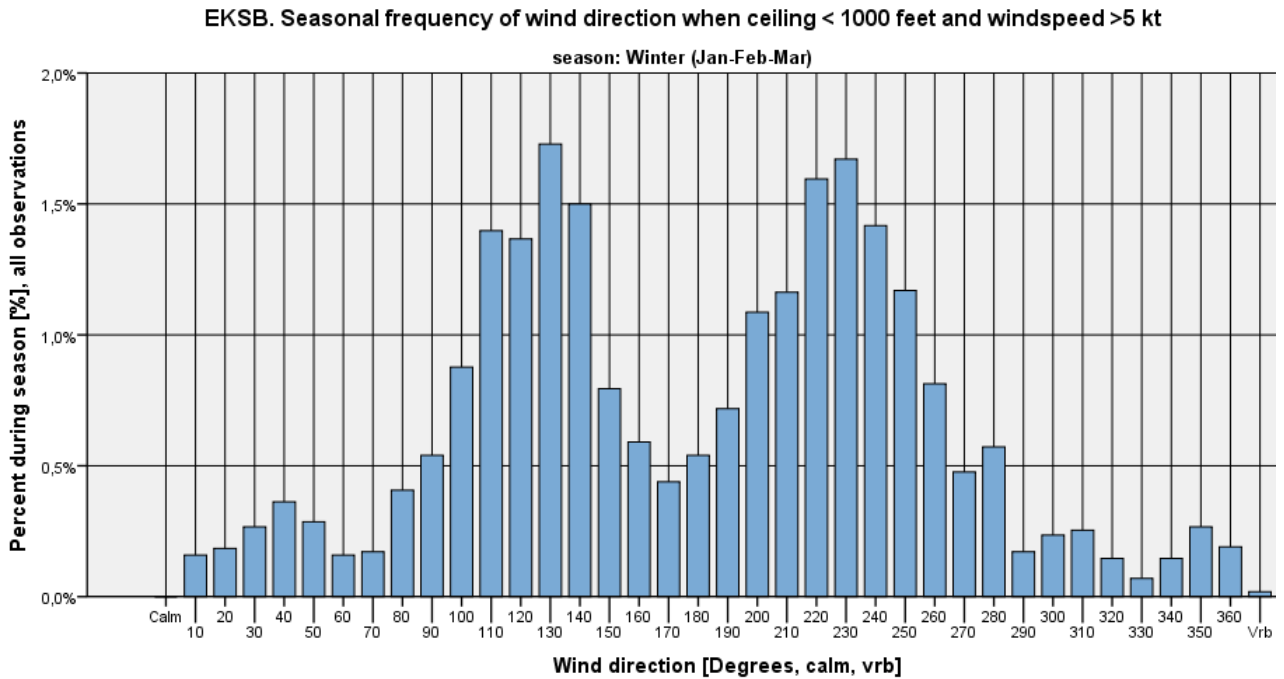


Figure 508

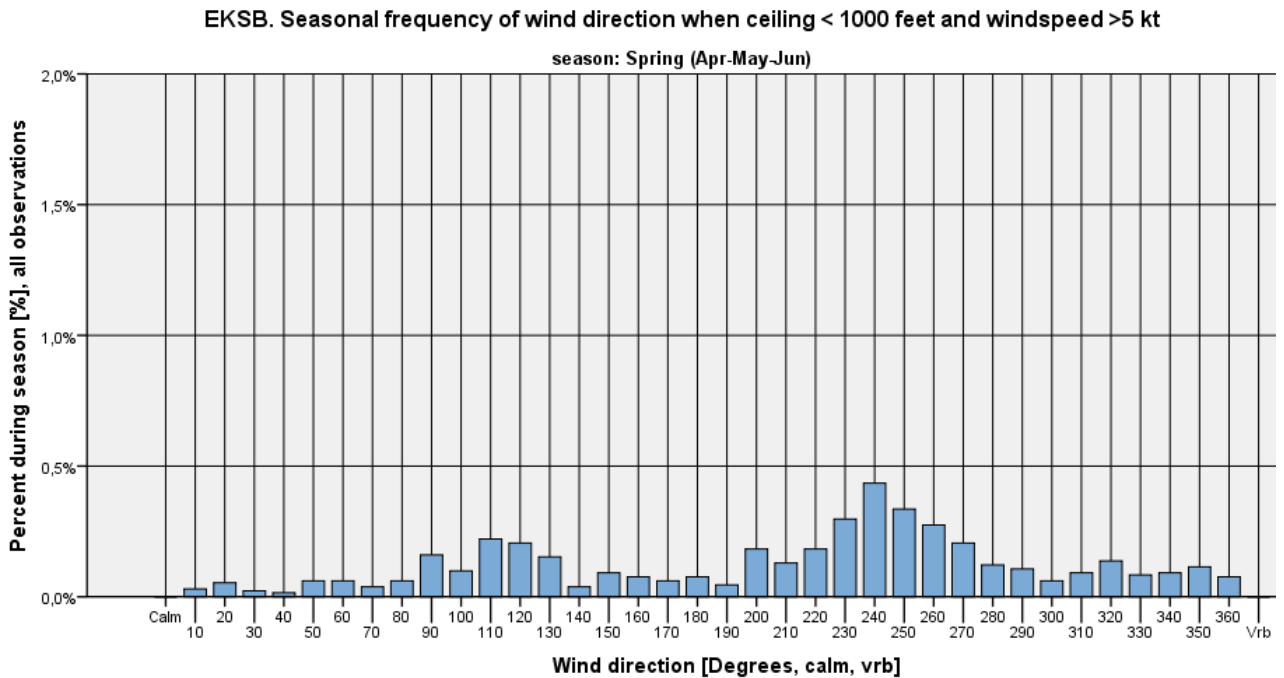


Figure 509



EKSB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

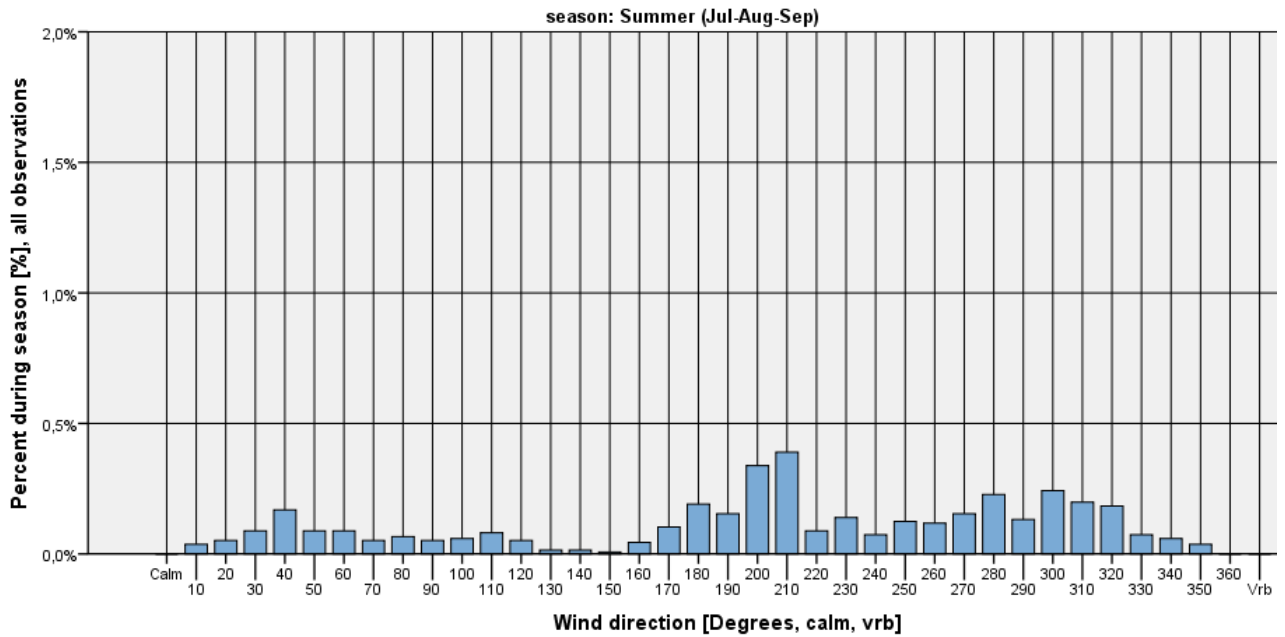


Figure 510

EKSB. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

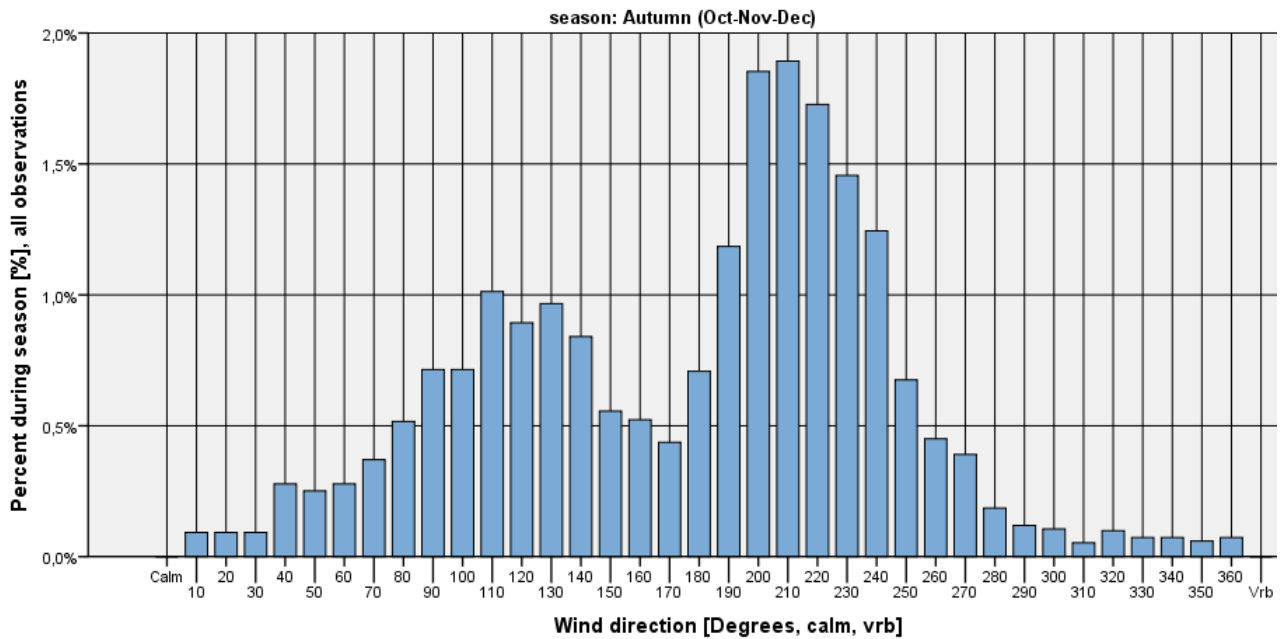


Figure 511

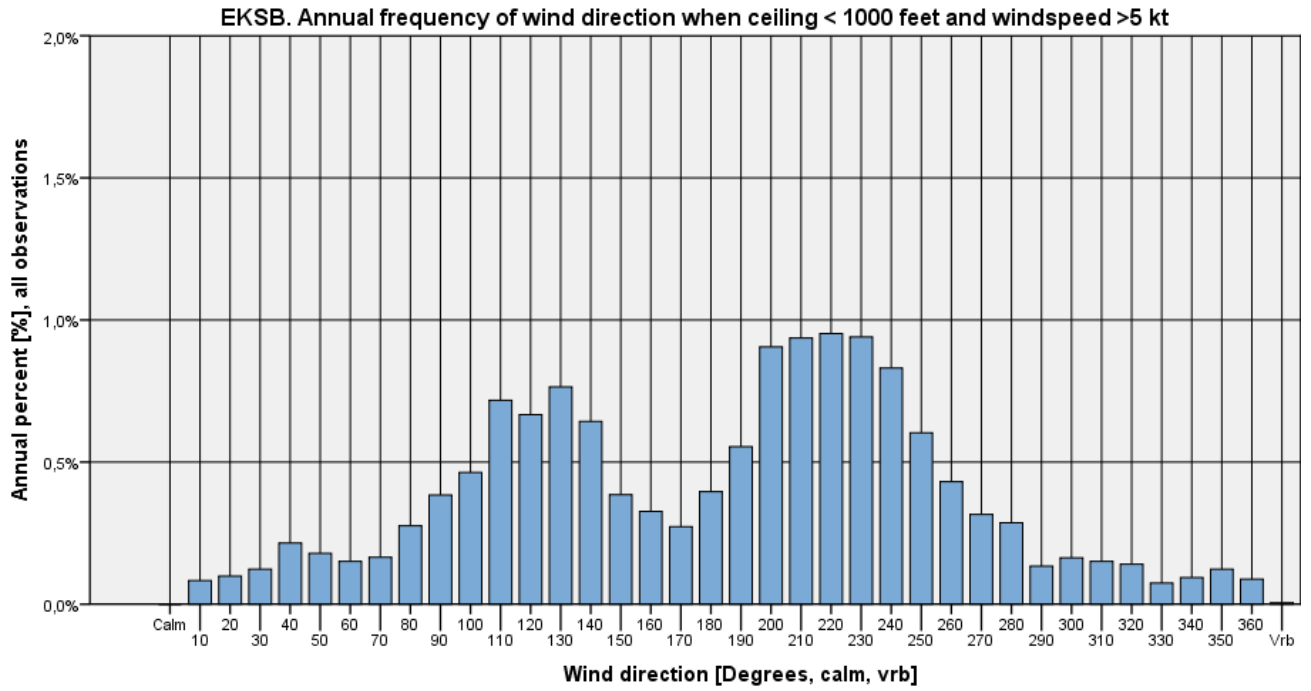


Figure 512



Ceiling<500 feet

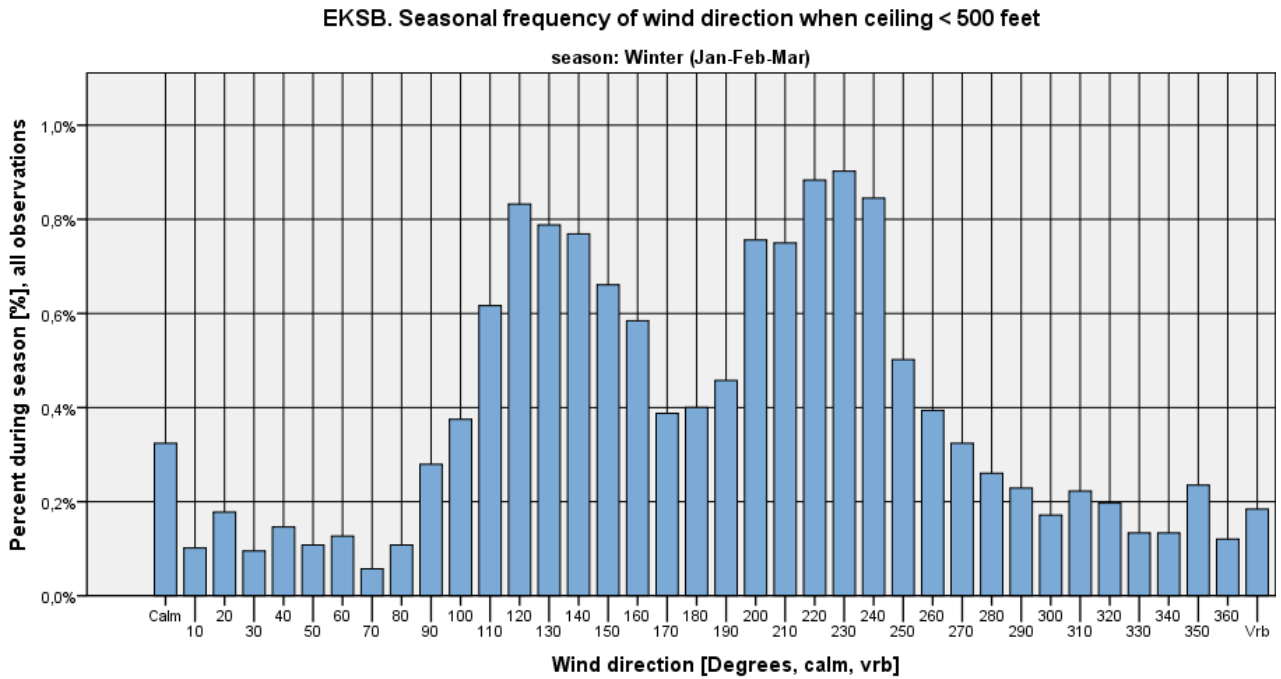


Figure 513

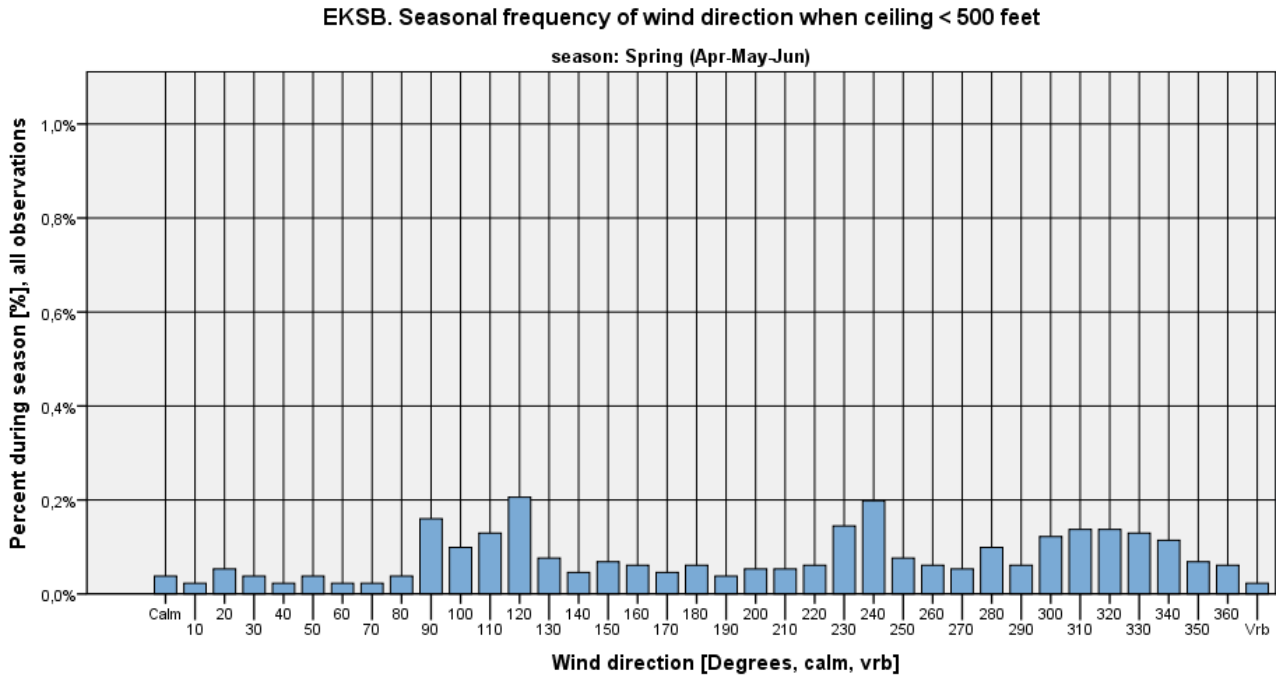


Figure 514

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

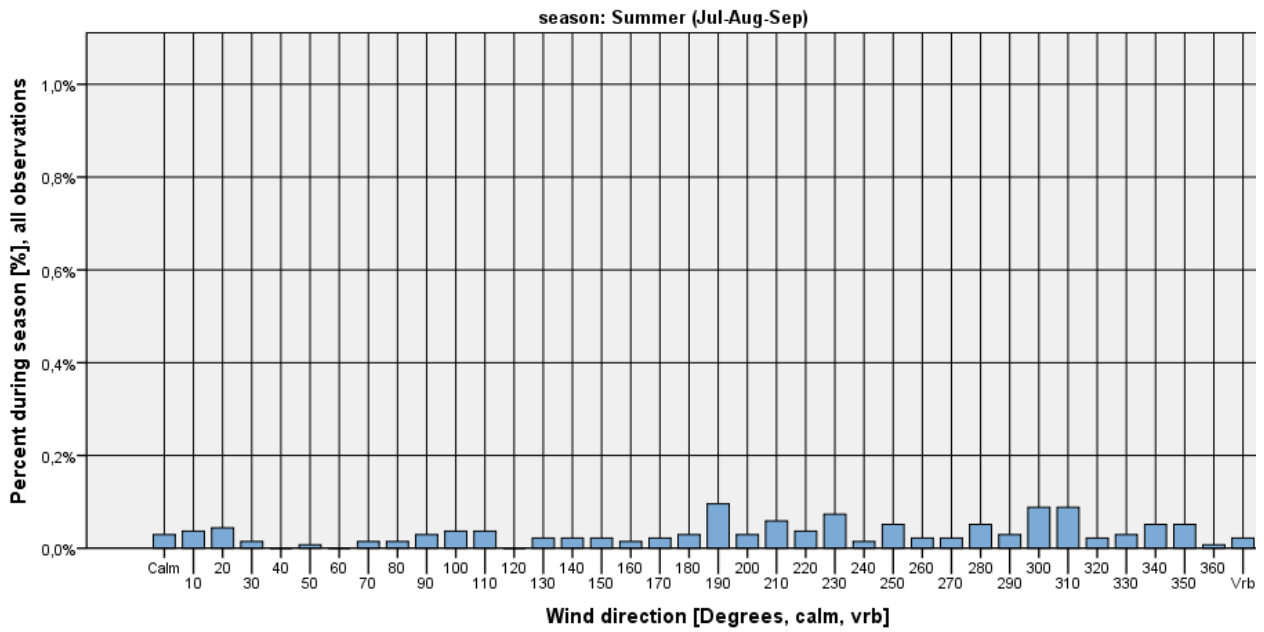


Figure 515

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

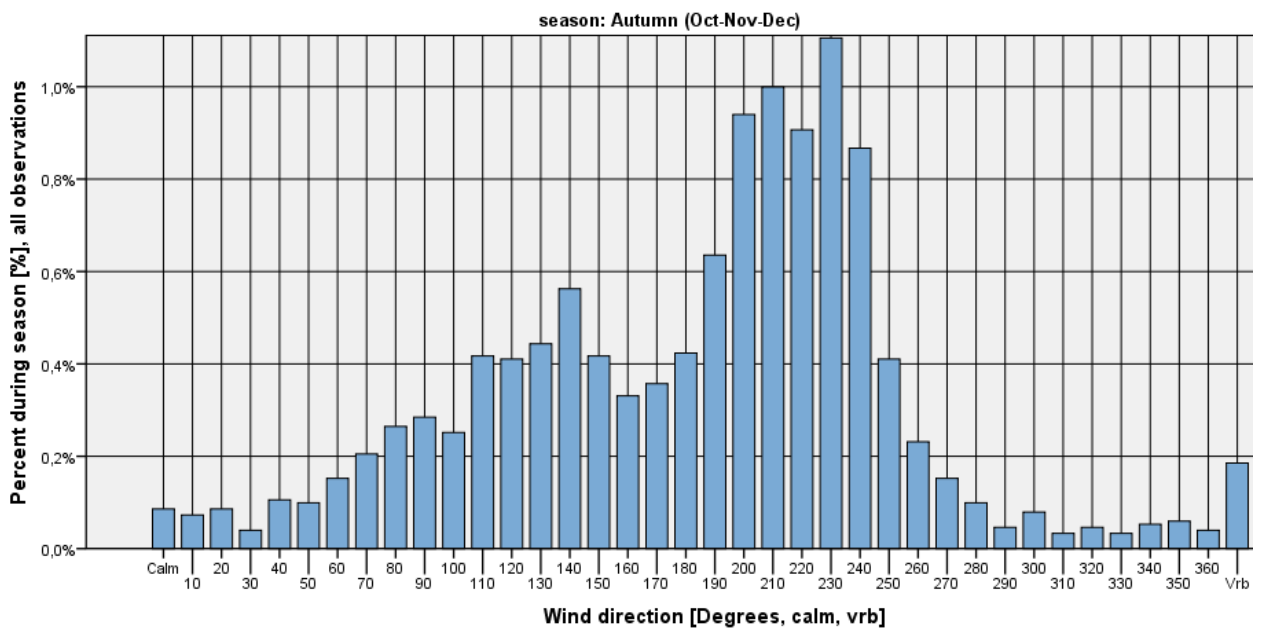


Figure 516

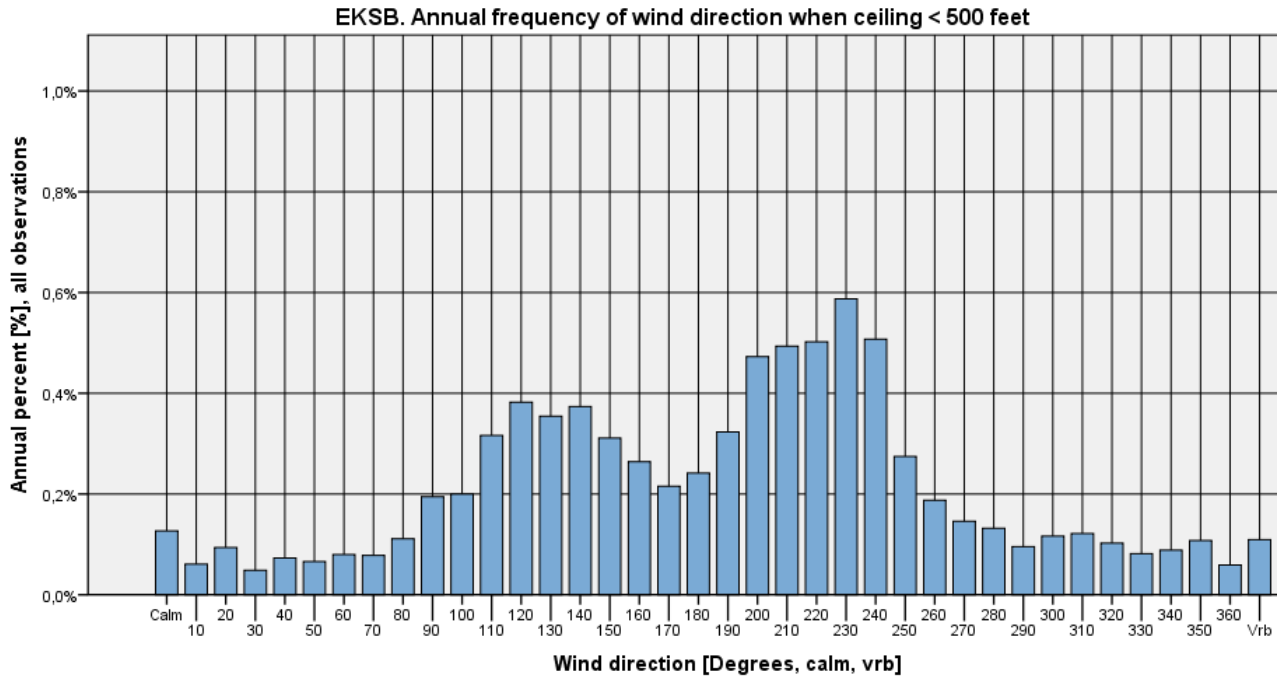


Figure 517



Ceiling < 500 feet and wind speed ≤ 5 kts

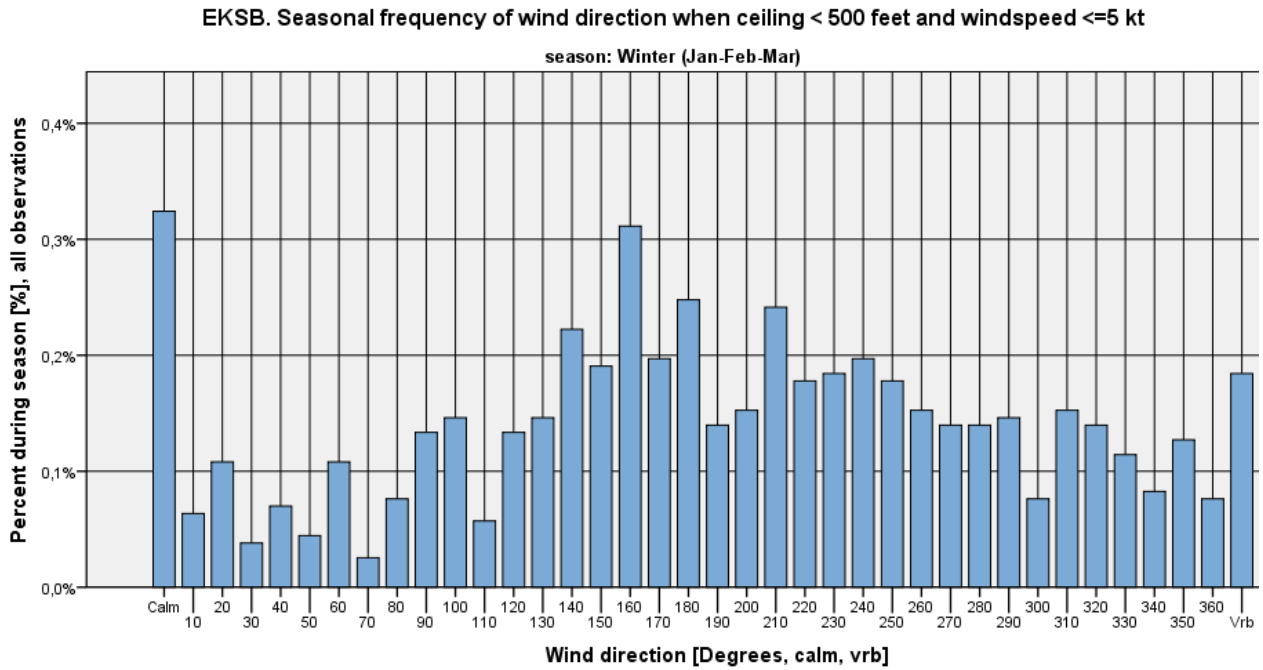


Figure 518

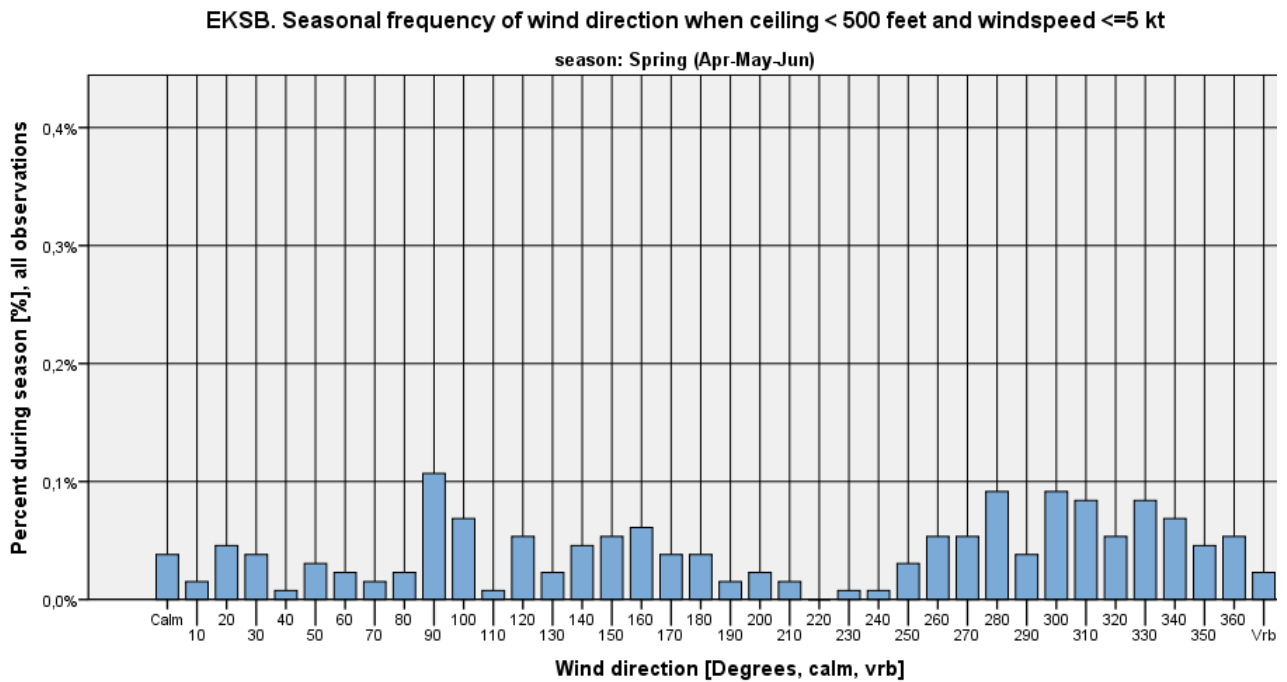


Figure 519



EKSB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

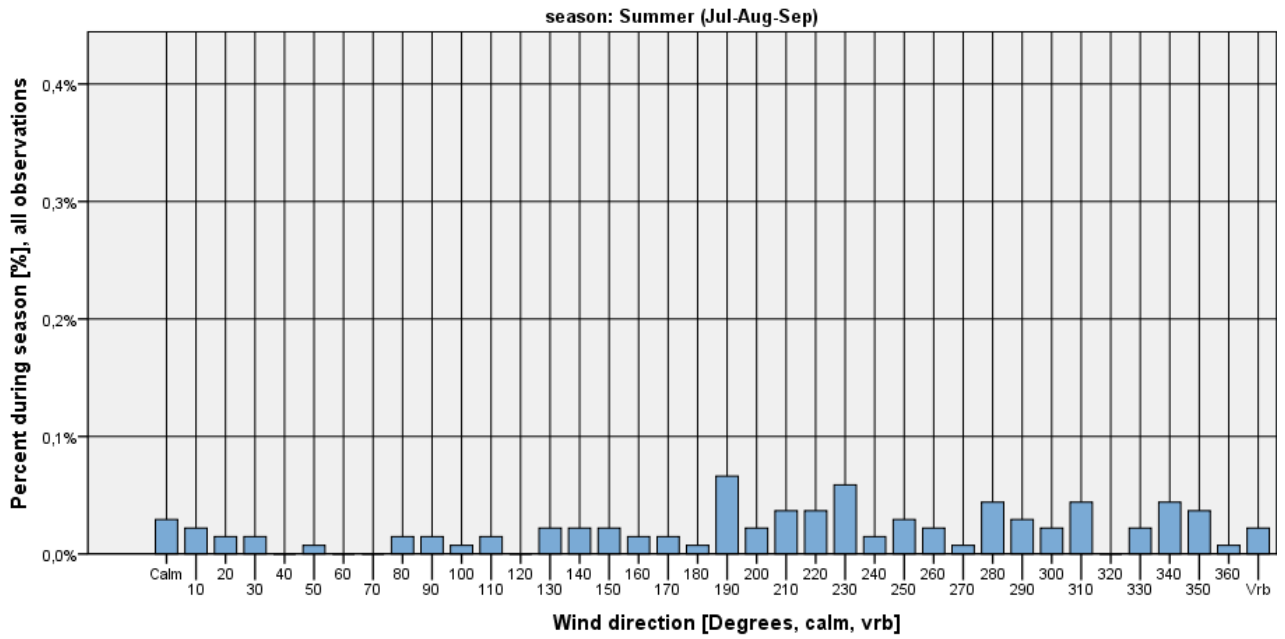


Figure 520

EKSB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

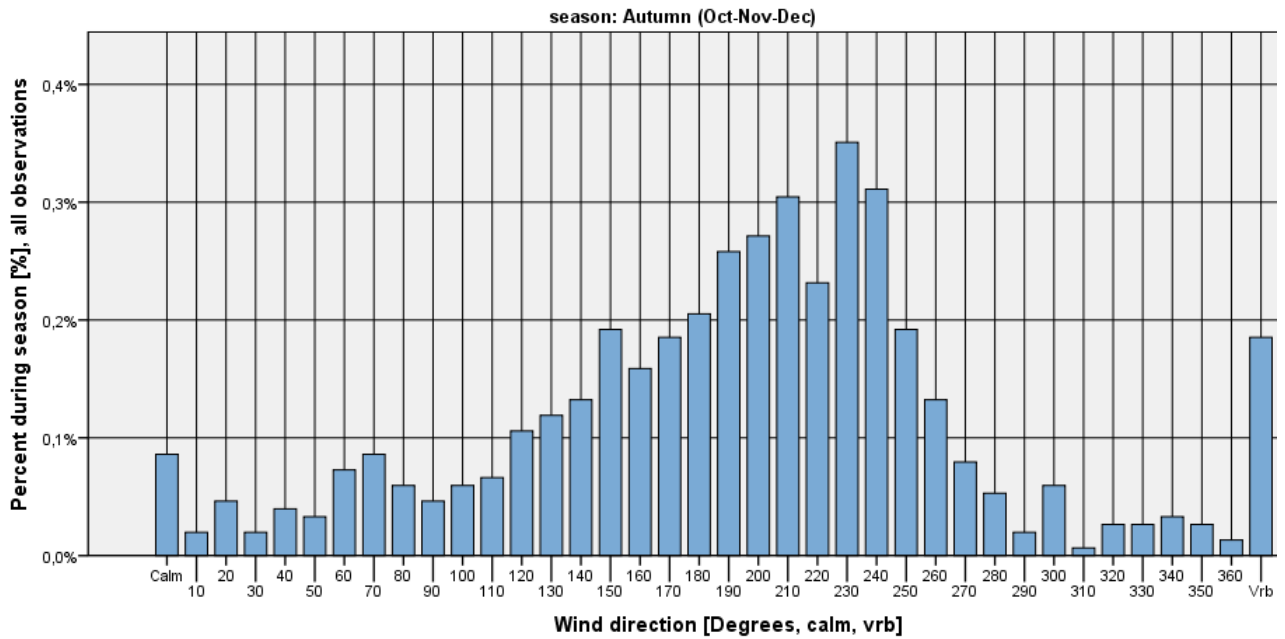


Figure 521

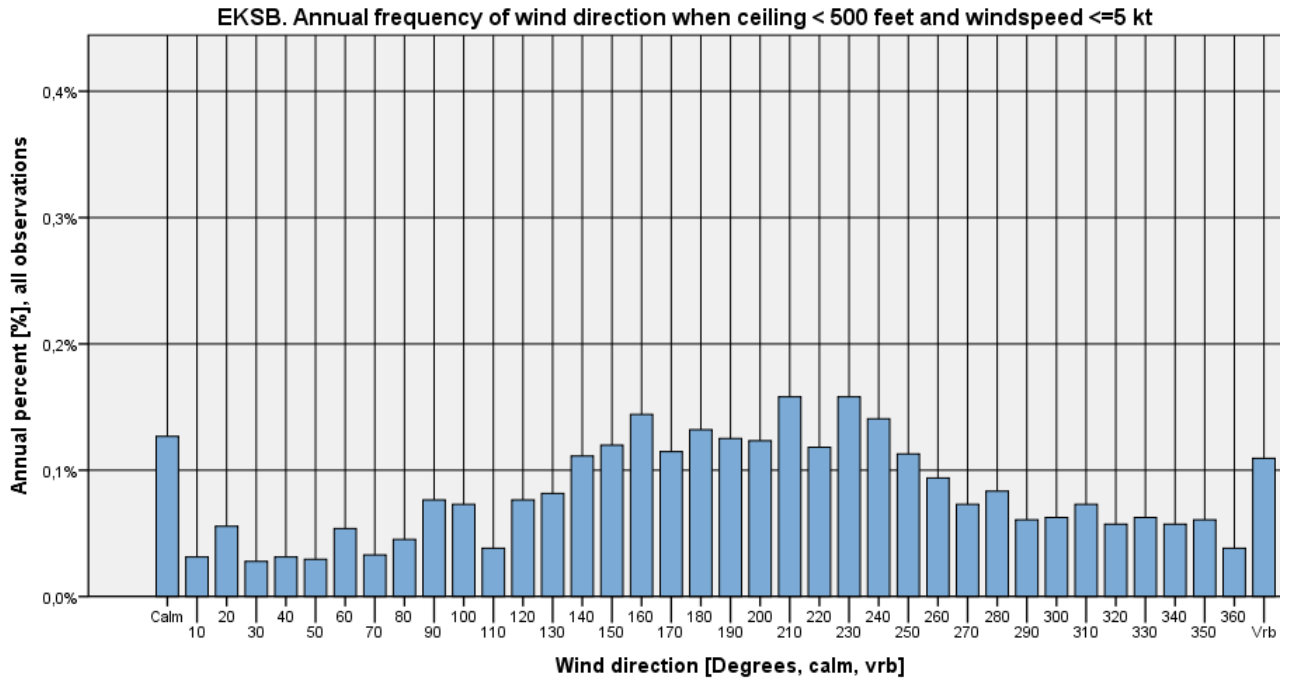


Figure 522



Ceiling < 500 feet and wind speed > 5 kts

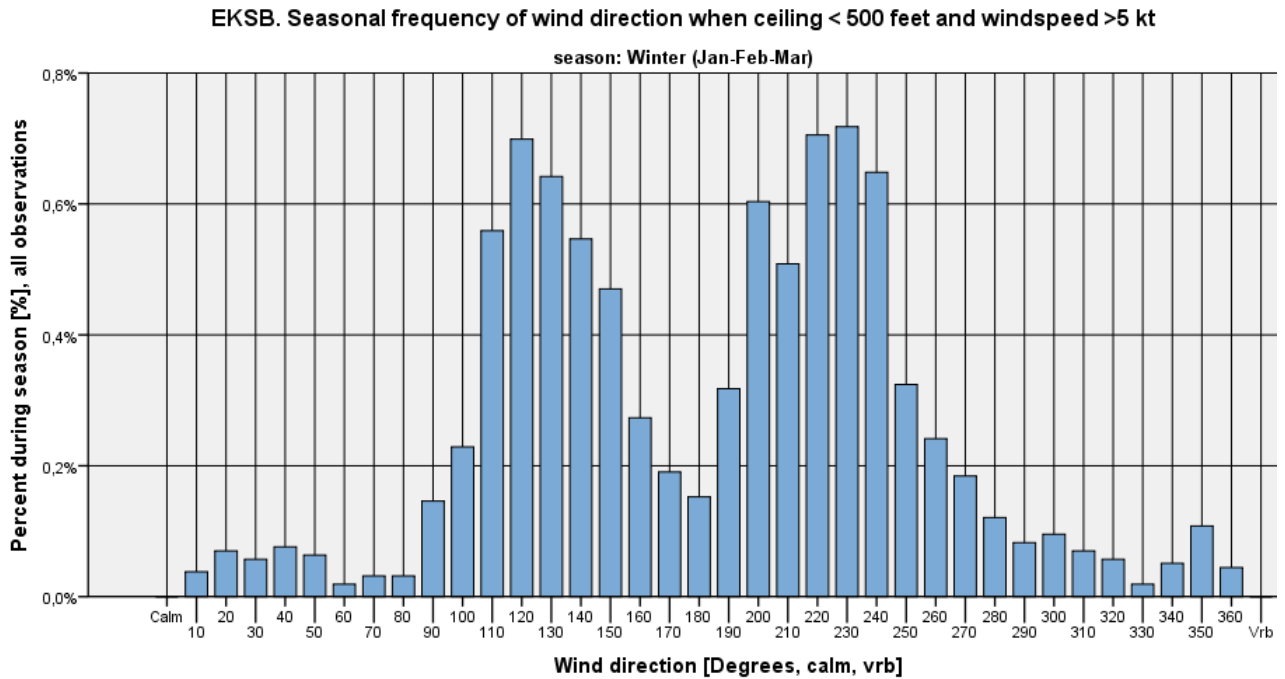


Figure 523

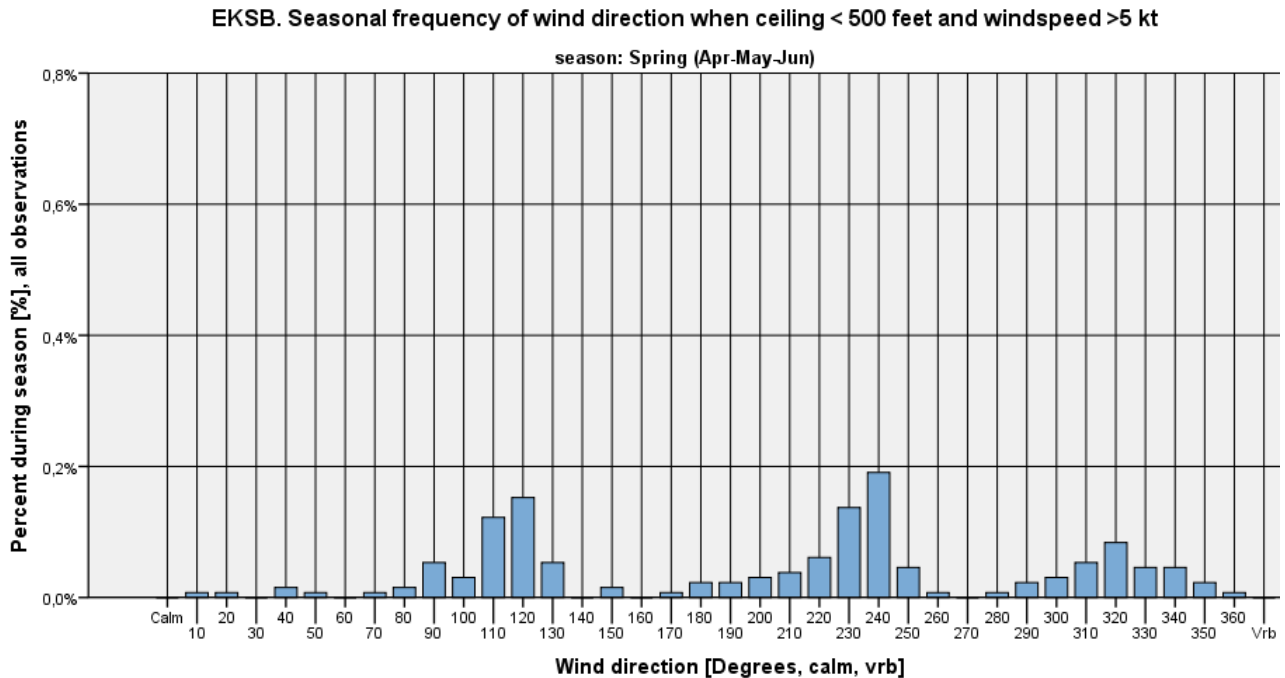


Figure 524



EKSB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

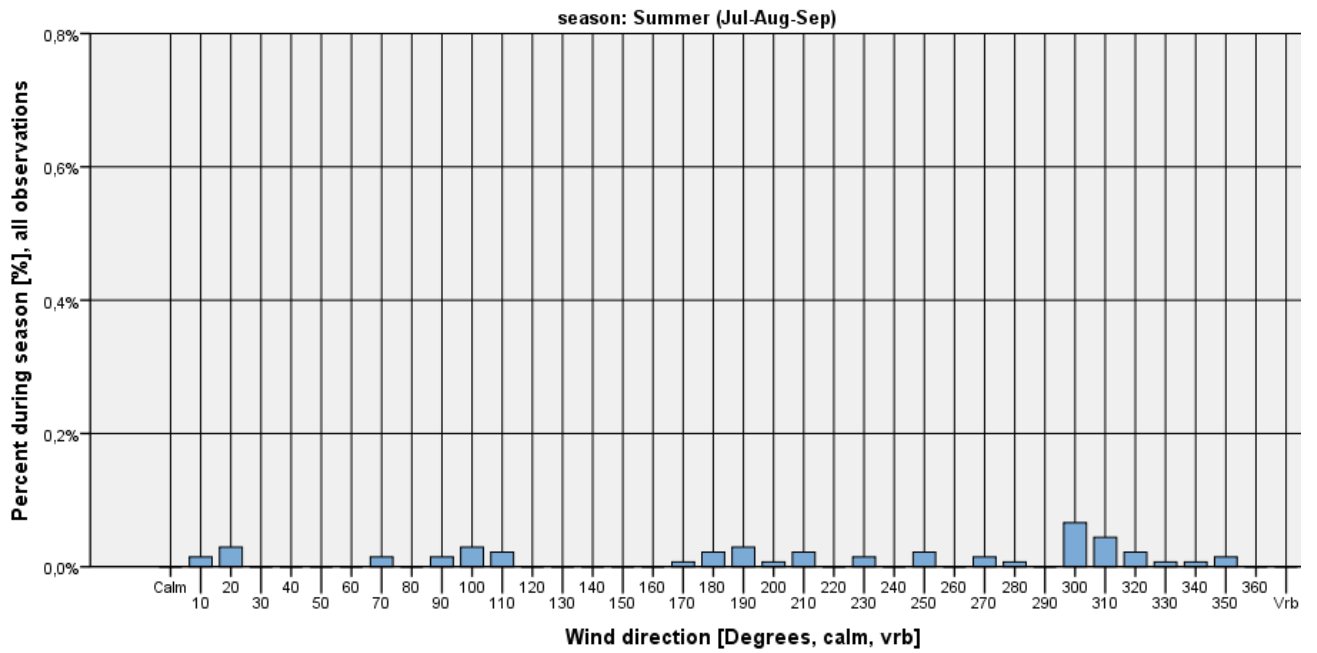


Figure 525

EKSB. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

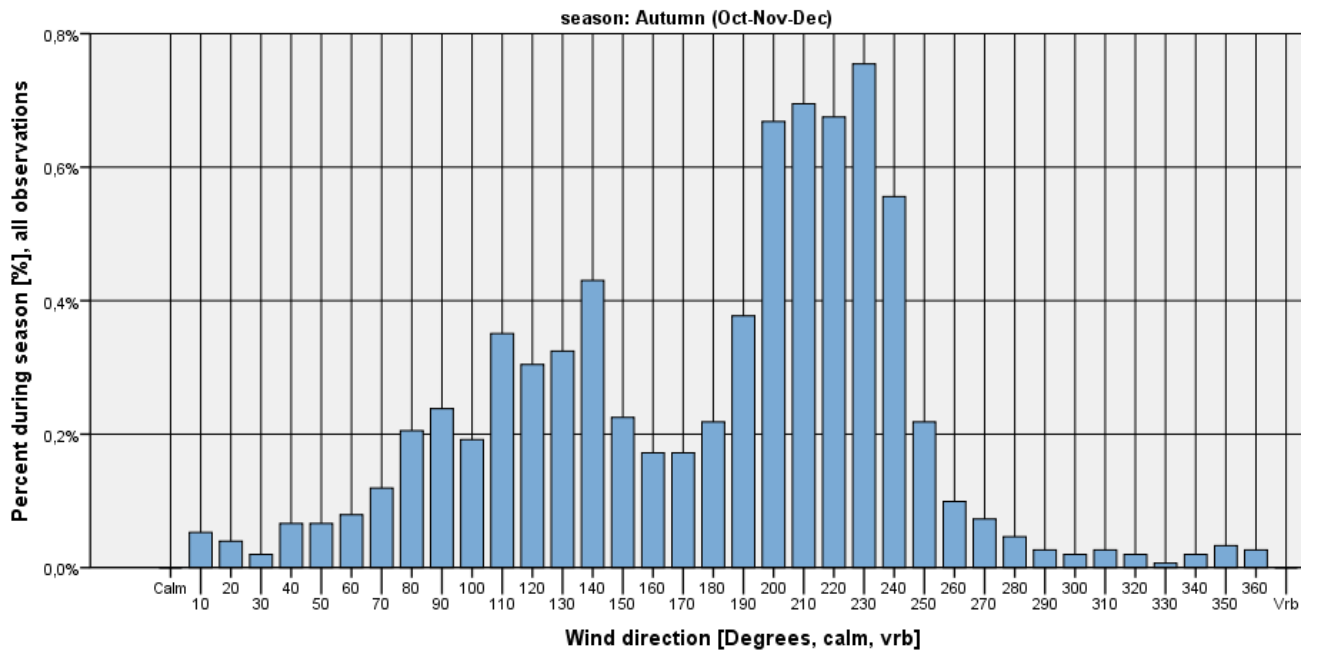


Figure 526

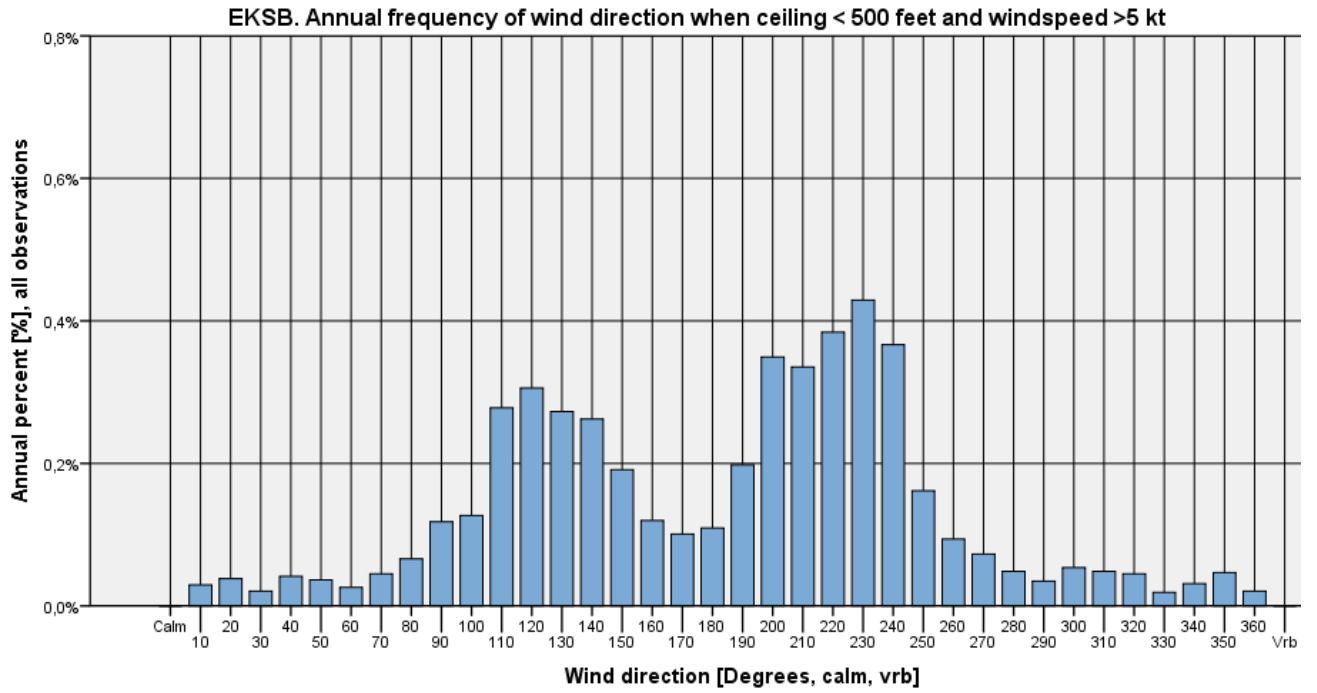


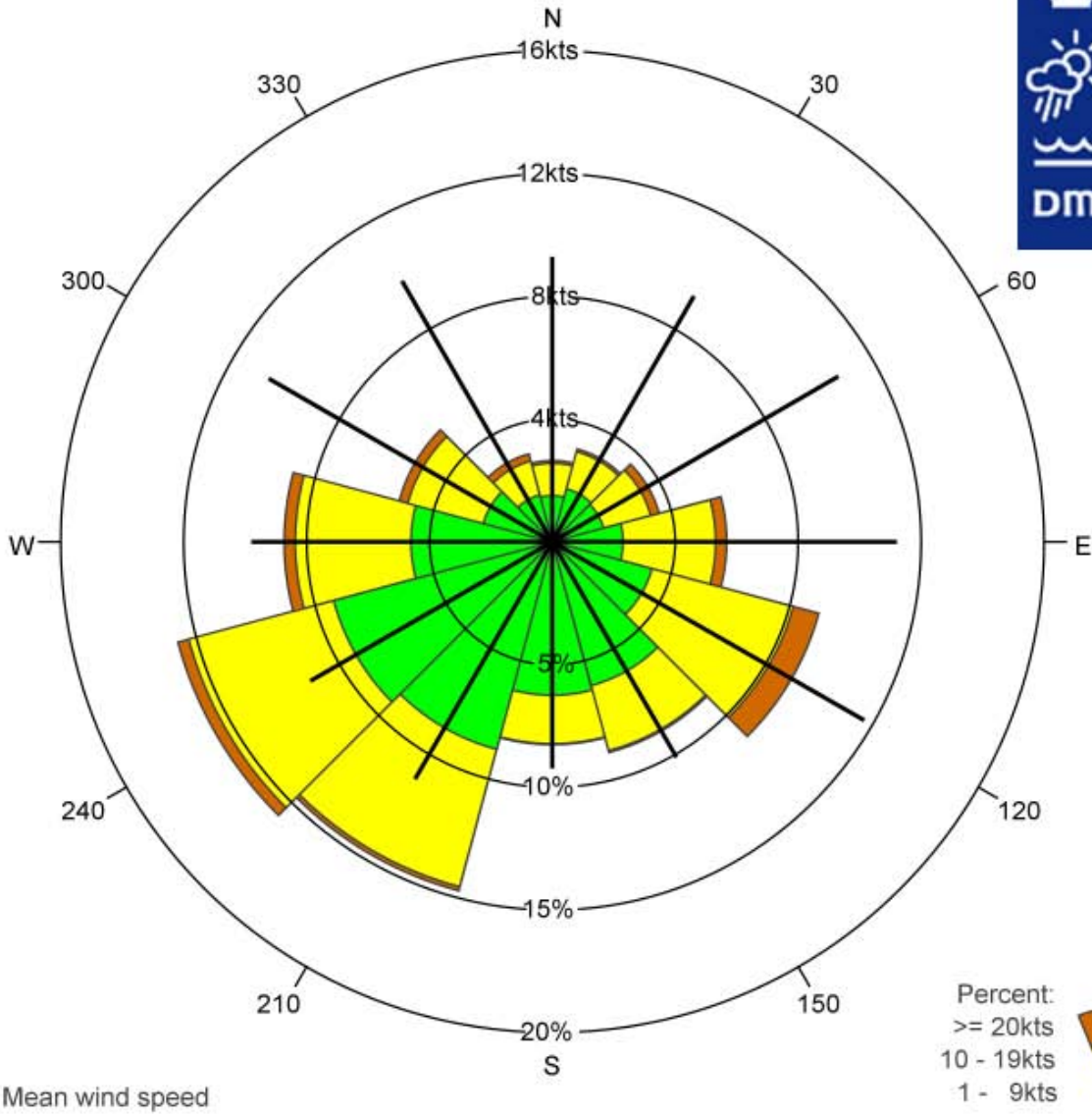
Figure 527



Wind roses

EKSB Sønderborg Lufthavn AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.3	3.9	4.5	7.1	11.2	8.9	8.3	14.7	15.8	10.9	6.5	3.7	98.7
% 1 - 9kts	1.9	2.2	2.2	2.9	4.2	6.1	6.3	8.8	9.2	5.8	2.9	2.0	54.3
% 10 - 19kts	1.3	1.6	2.0	3.8	5.9	2.8	2.0	5.8	6.1	4.7	3.2	1.4	40.5
% >= 20kts	0.1	0.1	0.4	0.4	1.1	0.1	0.0	0.2	0.4	0.5	0.4	0.3	3.9
Mean wind speed	9.3	9.3	10.7	11.2	11.7	8.1	7.4	8.9	9.1	9.8	10.6	9.8	9.6
Max wind speed	29.0	24.0	27.0	30.0	30.0	25.0	23.0	27.0	39.0	33.0	28.0	33.0	39.0

Number of observations = 30844

Source: DMI

Calm defined a wind speed = 0kts

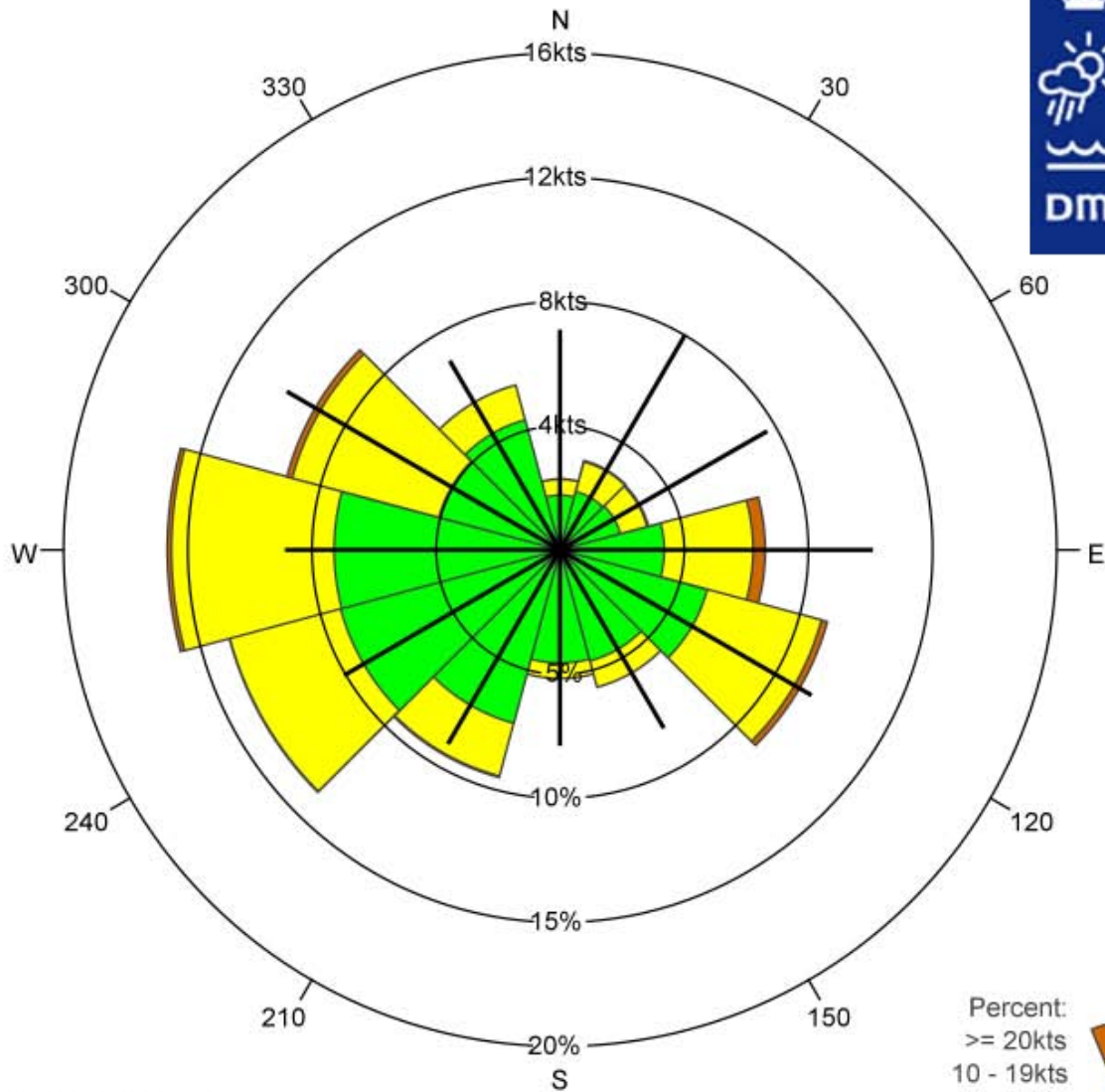
Number of observations with calm/varying wind direction: 391=1.3%

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



EKSB Sønderborg Lufthavn SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	2.9	3.7	3.7	8.3	11.1	5.7	5.2	9.5	13.8	15.8	11.4	6.9	98.0
% 1 - 9kts	2.2	2.4	2.5	4.2	6.1	4.6	4.6	7.2	9.2	9.1	5.1	5.4	62.6
% 10 - 19kts	0.6	1.2	1.1	3.6	4.8	1.1	0.6	2.2	4.6	6.6	6.1	1.5	34.0
% >= 20kts	0.0	0.0	0.1	0.5	0.2	0.0	0.0	0.0	0.0	0.2	0.2	0.0	1.3
Mean wind speed	7.1	8.1	7.7	10.1	9.3	6.7	6.3	7.2	8.1	8.9	10.2	7.1	8.4
Max wind speed	22.0	22.0	23.0	27.0	28.0	19.0	17.0	25.0	21.0	27.0	27.0	22.0	28.0

Number of observations = 26706

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 546=2.0%

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

Availability

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

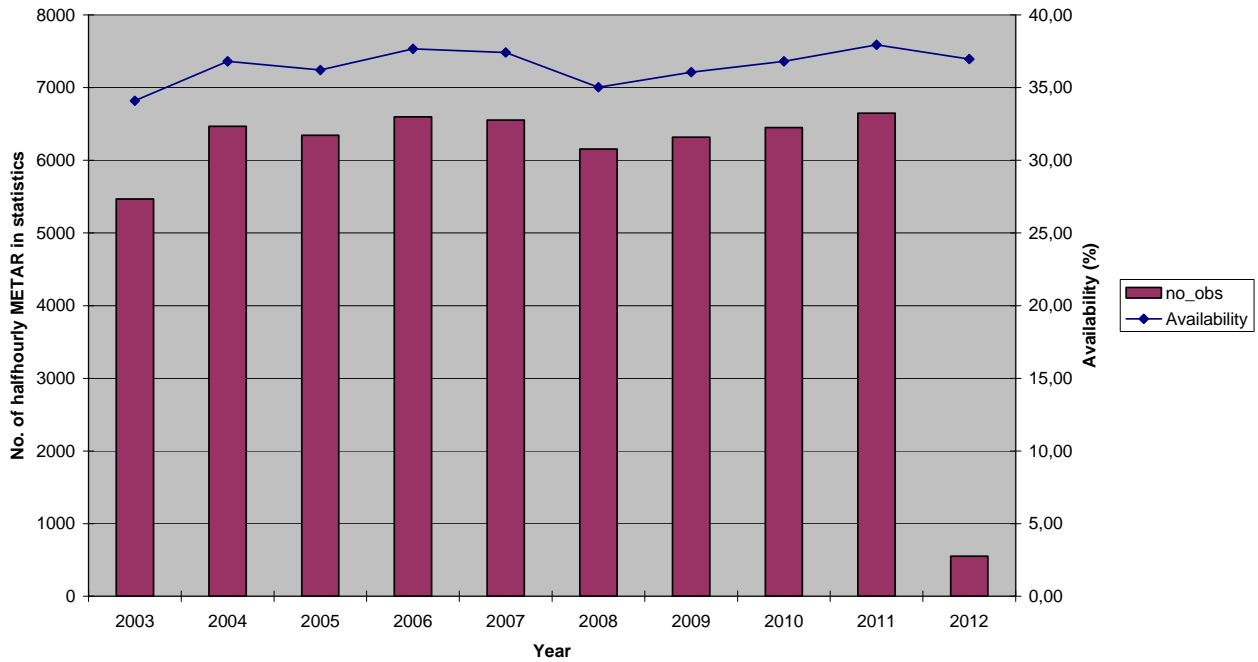


Figure 528

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

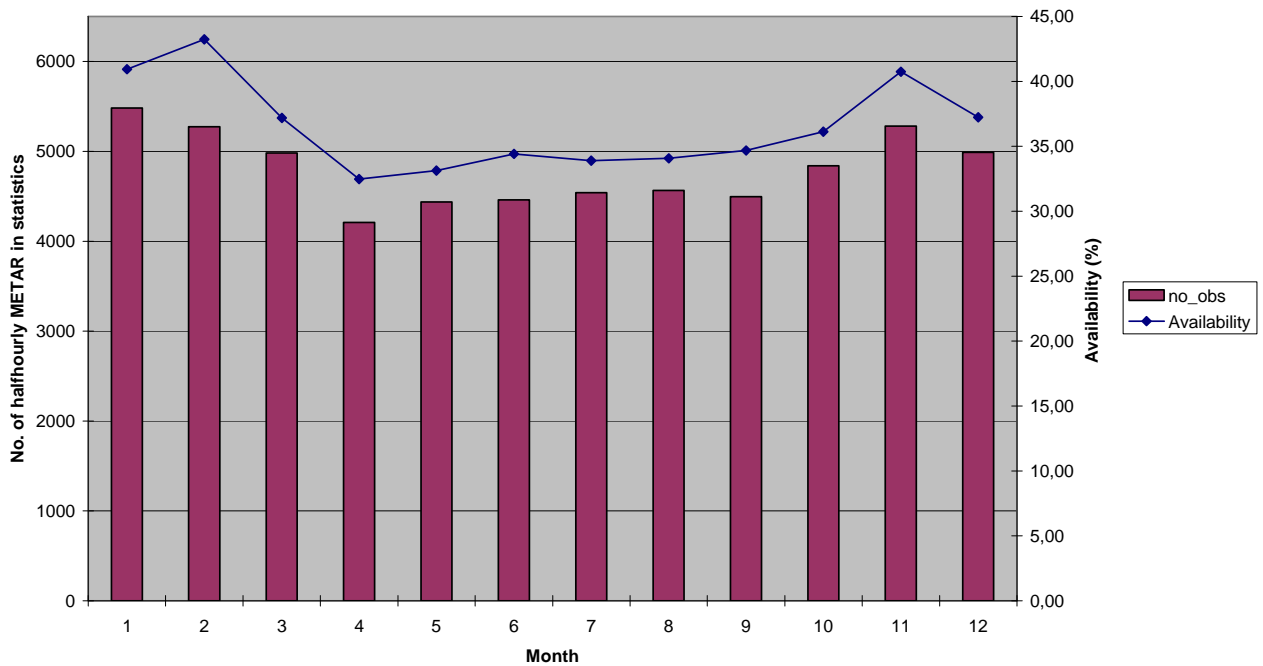


Figure 529

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

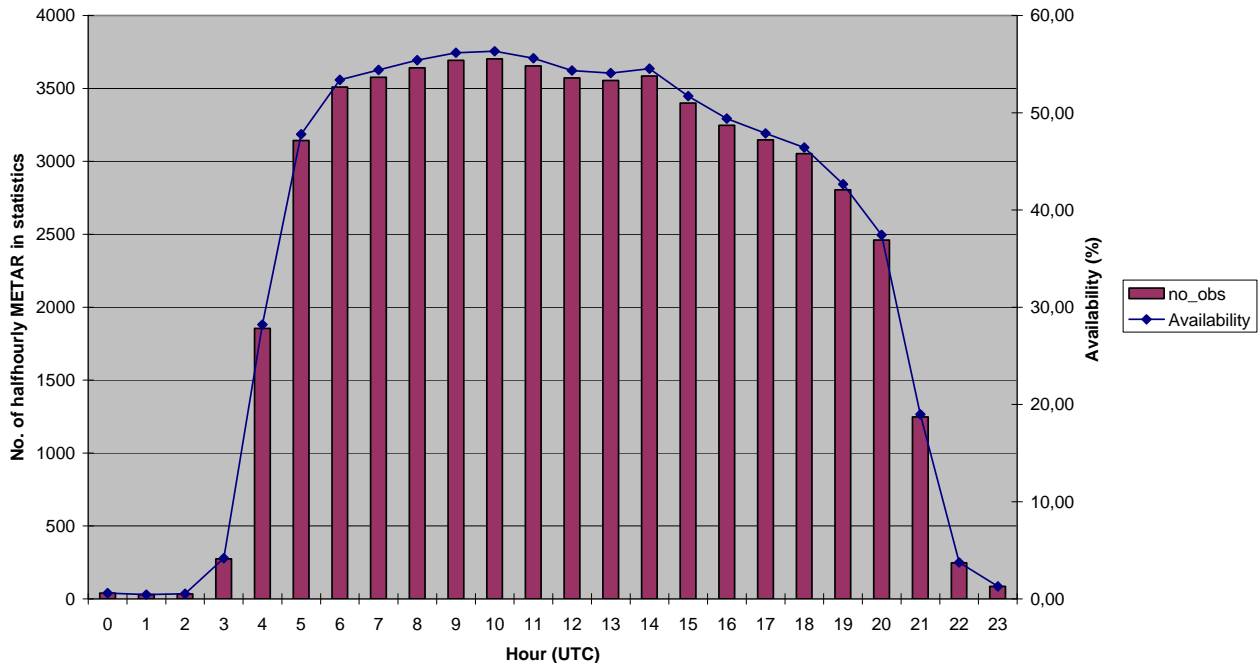


Figure 530

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

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

Table 61



EKSP Vojens/Skrydstrup - mil

Skrydstrup Airport – Flyvestation Skrydstrup

Airport location: 55,225°N 9,263°E Elevation: 43 m above msl.

EKSP observations in statistics: 155.895 half hourly METAR¹¹ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 98,8%.

All EKSP METAR are manual.

Cross tables Visibility – Ceiling

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

No. Obs = 38.515	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,23	5,01	5,74	5,79	5,81	0,69	6,50
<1 km	0,23	5,38	6,49	6,57	6,61	0,83	7,44
<1.5 km	0,23	5,73	7,94	8,43	8,54	1,17	9,72
<3.0 km	0,23	5,90	11,36	14,06	14,66	2,56	17,22
< 5.0 km	0,23	5,92	13,38	20,18	21,89	5,05	26,93
>= 5,0 km or CAVOK	0	0	0,73	8,06	16,23	56,84	73,07
Total	0,23	5,92	14,10	28,24	38,12	61,88	100

Table 62

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

No. Obs = 38.899	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,028	0,75	0,83	0,84	0,85	0,62	1,47
<1 km	0,028	0,80	0,94	0,96	0,97	0,74	1,71
<1.5 km	0,028	0,83	1,13	1,16	1,16	0,92	2,08
<3.0 km	0,028	0,88	2,00	2,38	2,49	1,60	4,09
< 5.0 km	0,028	0,88	2,64	4,06	4,50	2,86	7,36
>= 5,0 km or CAVOK	0	0	0,38	3,58	7,03	85,61	92,64
Total	0,028	0,88	3,02	7,64	11,53	88,47	100

Table 63

¹¹ For every half hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.

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

No. Obs = 39.255	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,013	0,56	0,61	0,62	0,63	1,28	1,91
<1 km	0,013	0,60	0,65	0,67	0,68	1,64	2,33
<1.5 km	0,013	0,62	0,75	0,78	0,79	1,95	2,75
<3.0 km	0,013	0,65	1,10	1,57	1,71	2,91	4,62
< 5.0 km	0,013	0,65	1,42	2,83	3,39	4,92	8,31
>= 5,0 km or CAVOK	0	0	0,20	2,27	4,98	86,71	91,69
Total	0,013	0,65	1,62	5,10	8,37	91,63	100

Table 64

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

No. Obs = 39.226	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,061	3,14	3,48	3,52	3,53	1,84	5,38
<1 km	0,061	3,31	3,90	3,98	4,00	2,29	6,29
<1.5 km	0,061	3,53	4,83	5,08	5,13	2,77	7,90
<3.0 km	0,061	3,60	8,26	10,23	10,65	4,02	14,68
< 5.0 km	0,061	3,61	10,33	17,10	18,63	6,78	25,41
>= 5,0 km or CAVOK	0	0	0,51	6,21	13,07	61,52	74,59
Total	0,061	3,61	10,85	23,31	31,70	68,30	100

Table 65

Annual: EKSP – Frequencies (%) Visibility - Ceiling

No. Obs = 155.895	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,083	2,36	2,66	2,68	2,69	1,11	3,81
<1 km	0,083	2,51	2,98	3,03	3,05	1,38	4,43
<1.5 km	0,083	2,67	3,65	3,84	3,89	1,71	5,60
<3.0 km	0,083	2,75	5,66	7,04	7,35	2,78	10,13
< 5.0 km	0,083	2,75	6,92	11,02	12,07	4,91	16,98
>= 5,0 km or CAVOK	0	0	0,45	5,02	10,31	72,72	83,02
Total	0,083	2,75	7,37	16,03	22,38	77,62	100

Table 66

Wind direction histograms

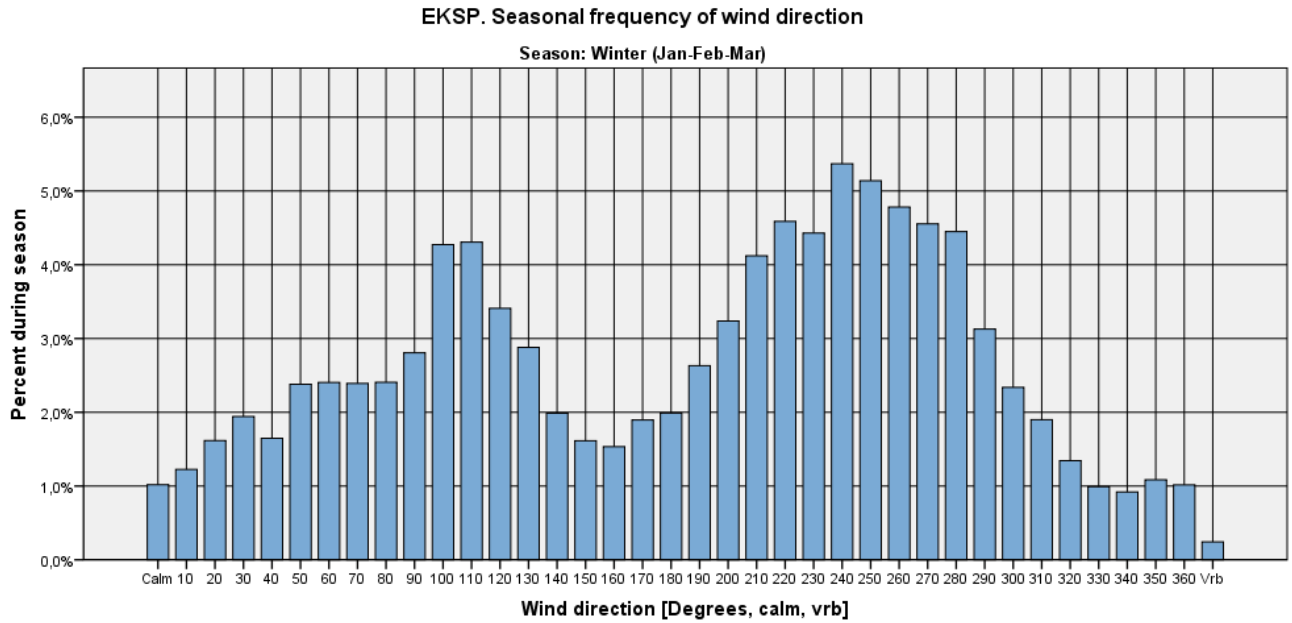


Figure 531

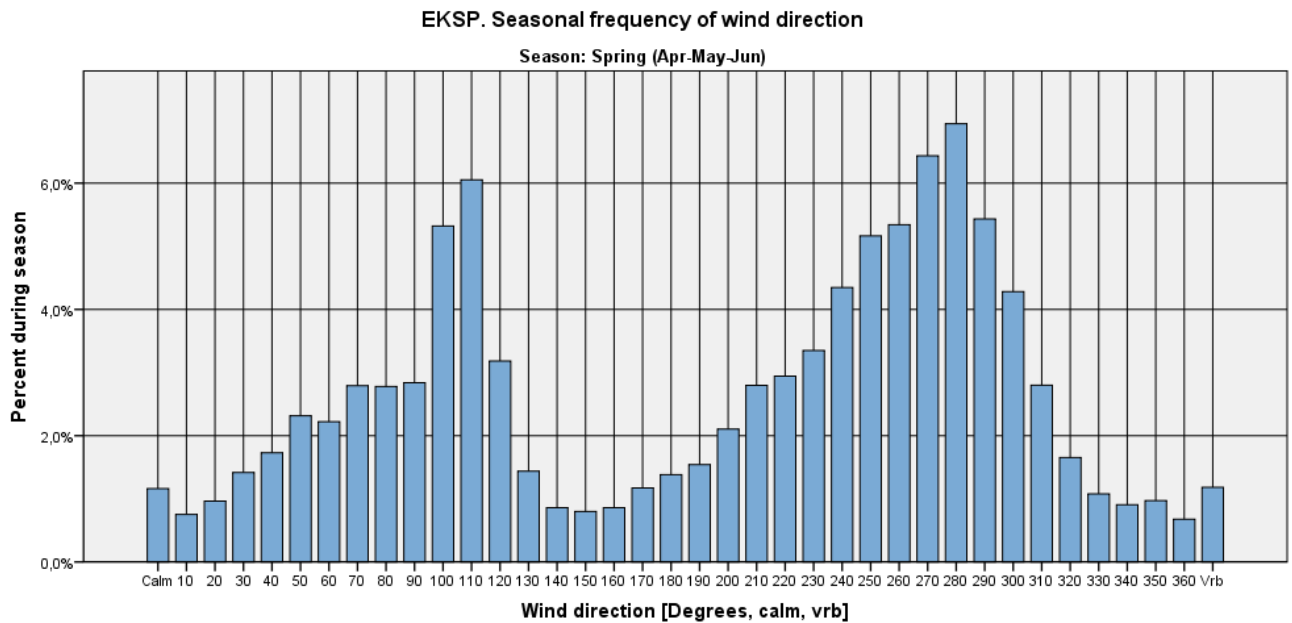


Figure 532

EKSP. Seasonal frequency of wind direction

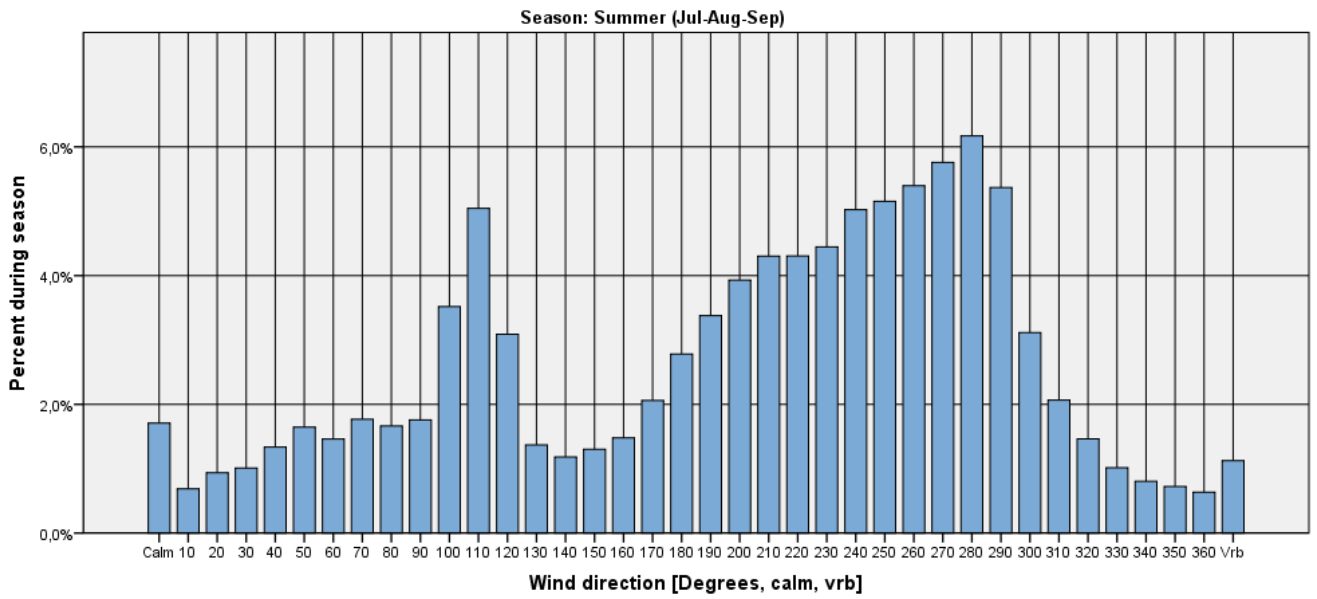


Figure 533

EKSP. Seasonal frequency of wind direction

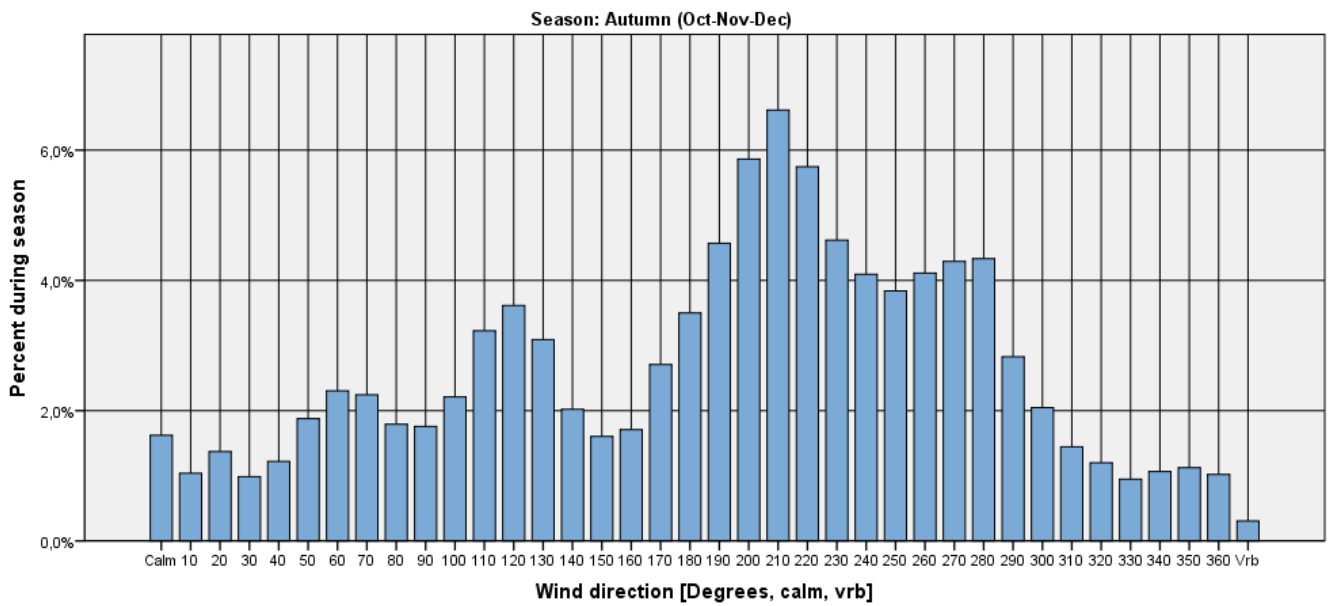


Figure 534

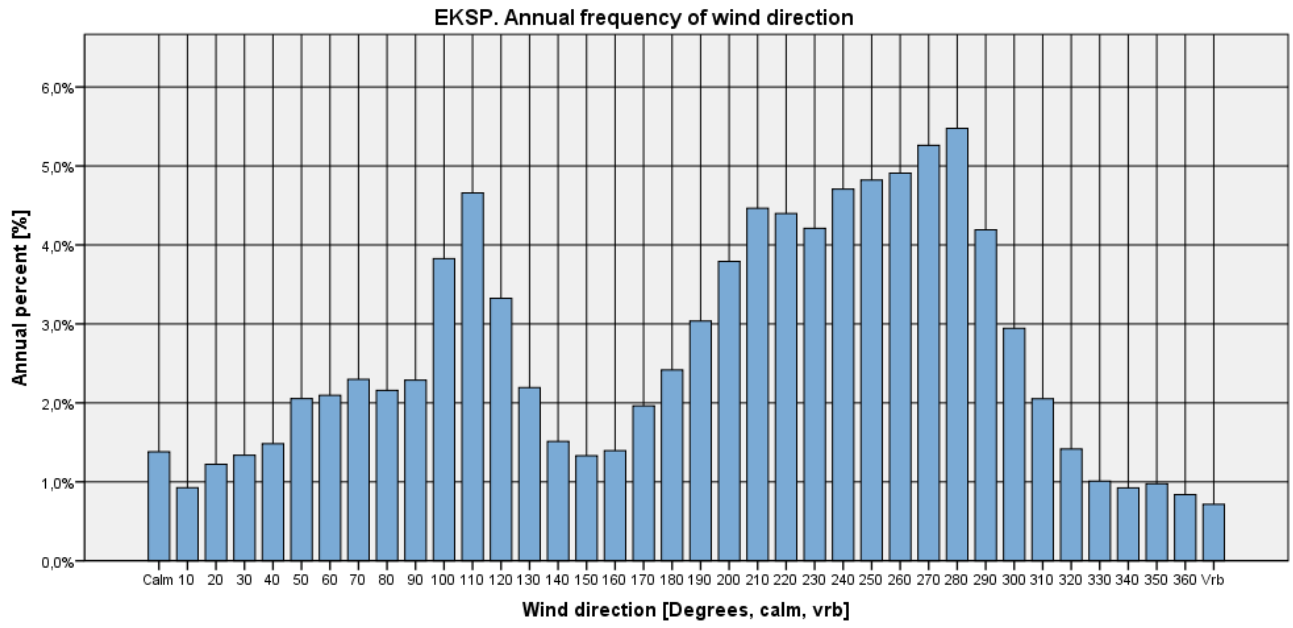


Figure 535

Visibility criteria on wind direction histograms

Visibility < 1000 m

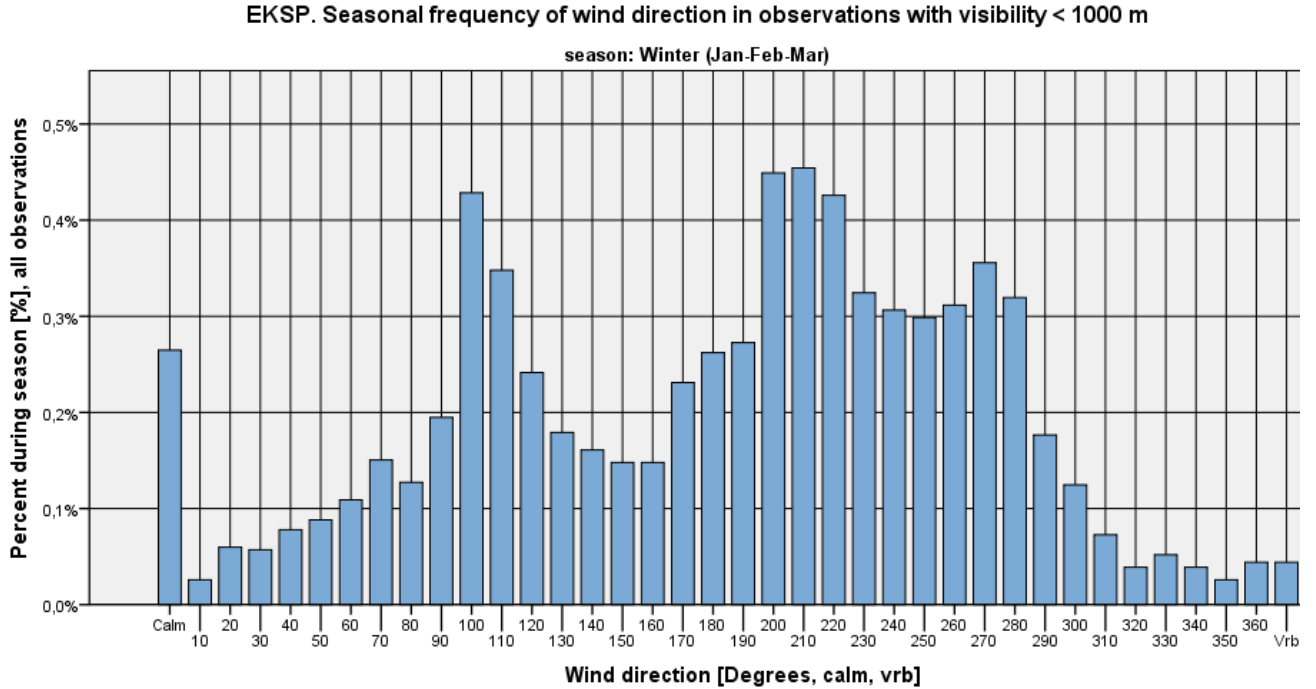


Figure 536

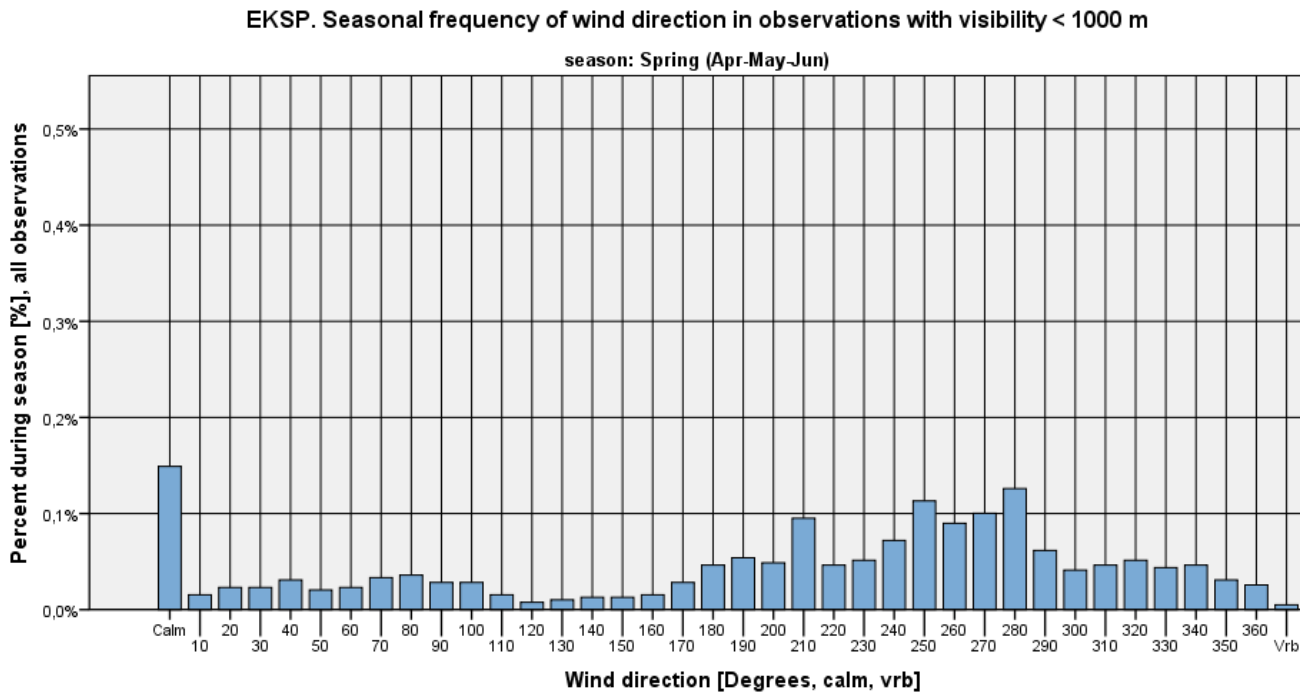


Figure 537

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

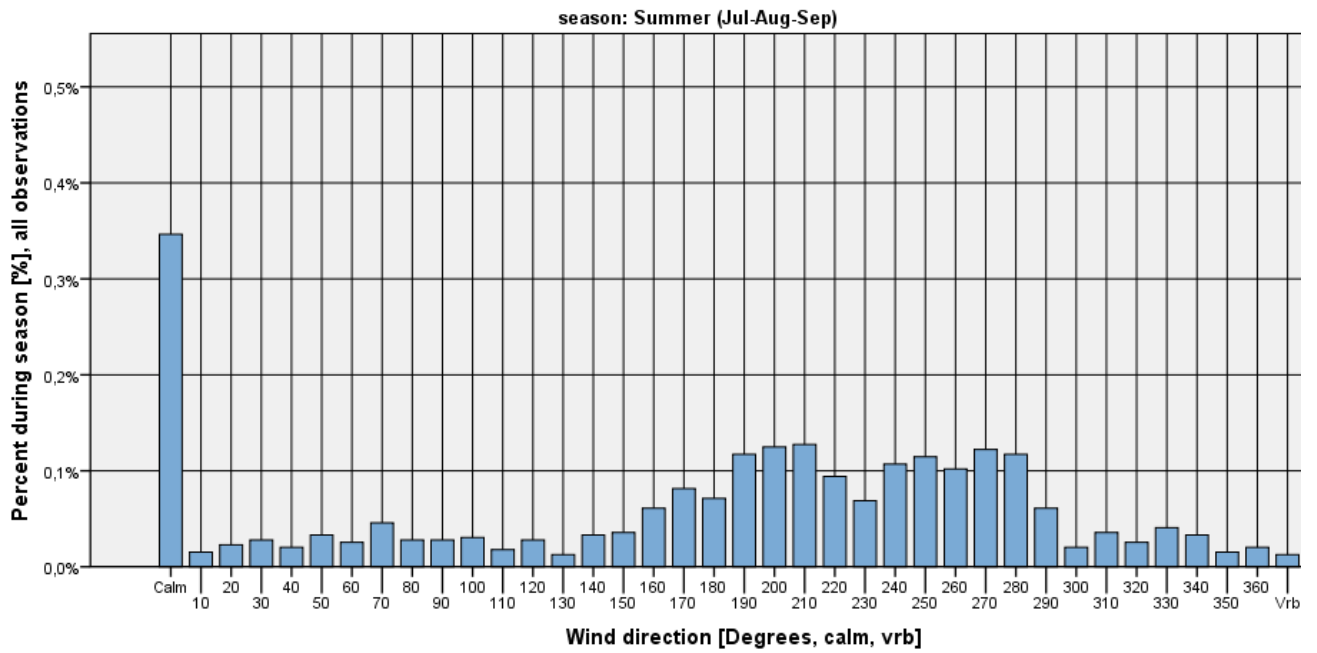


Figure 538

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

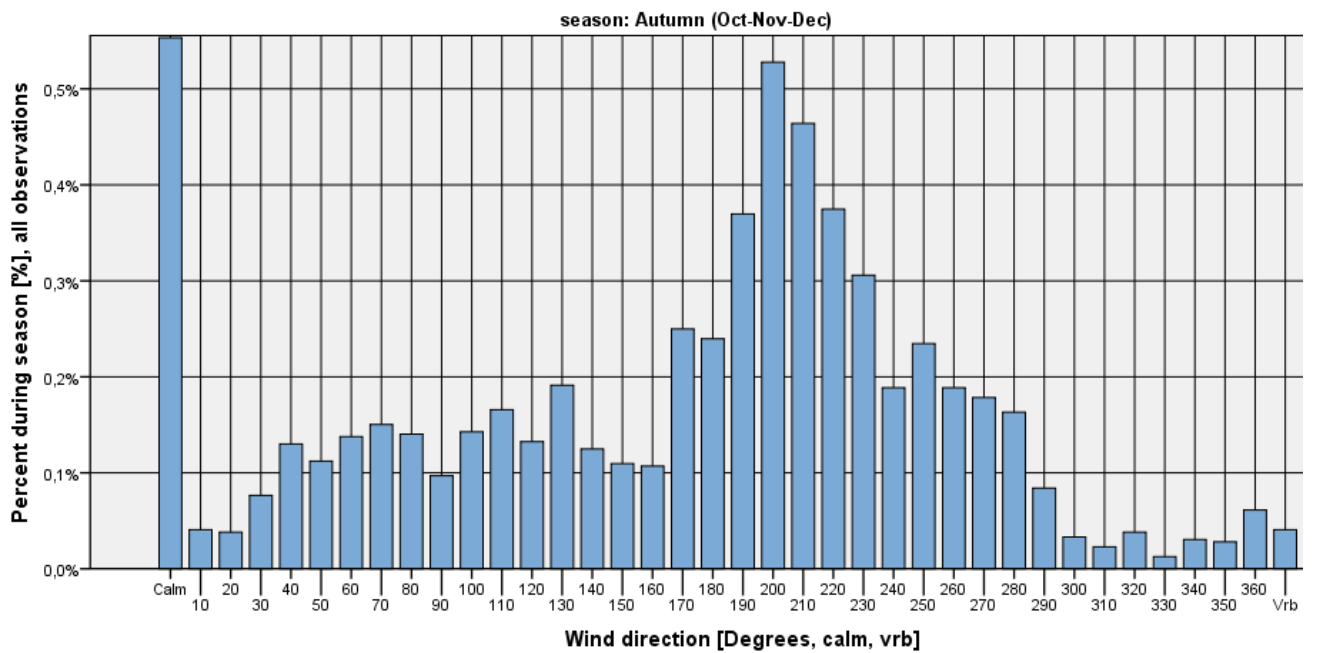


Figure 539

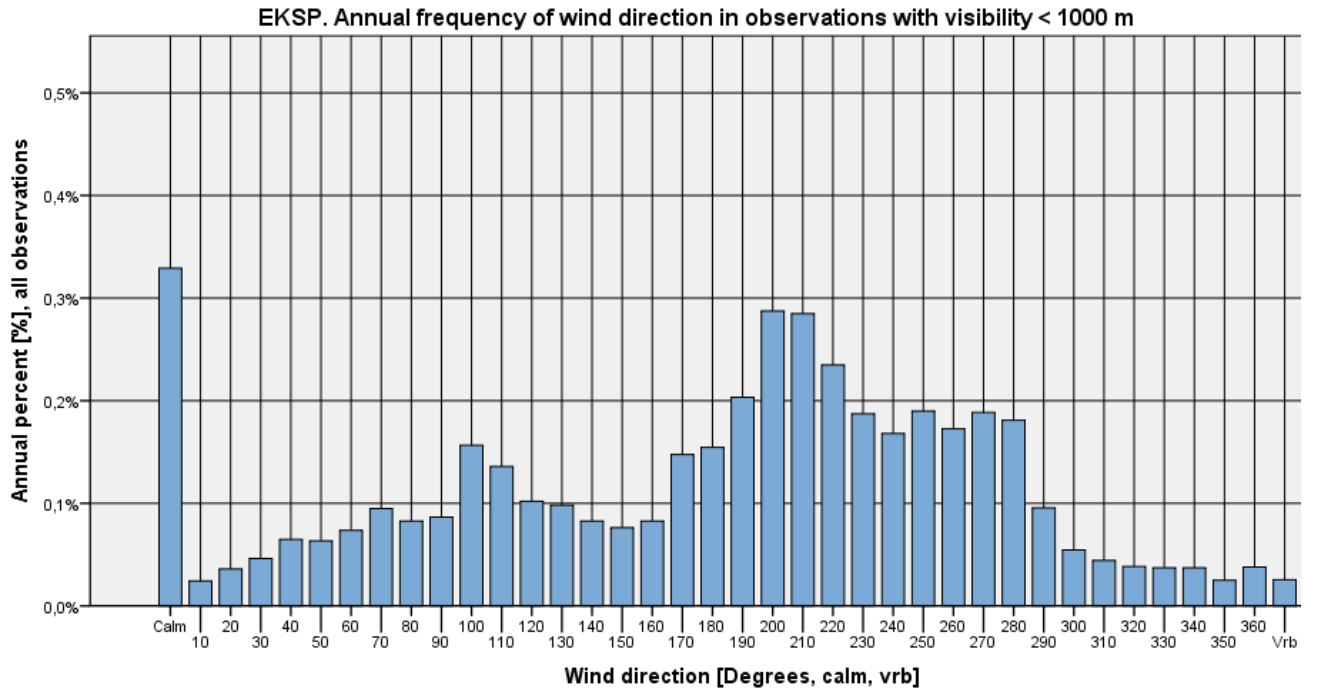


Figure 540



Visibility < 1000 m and wind speed <= 5 kts

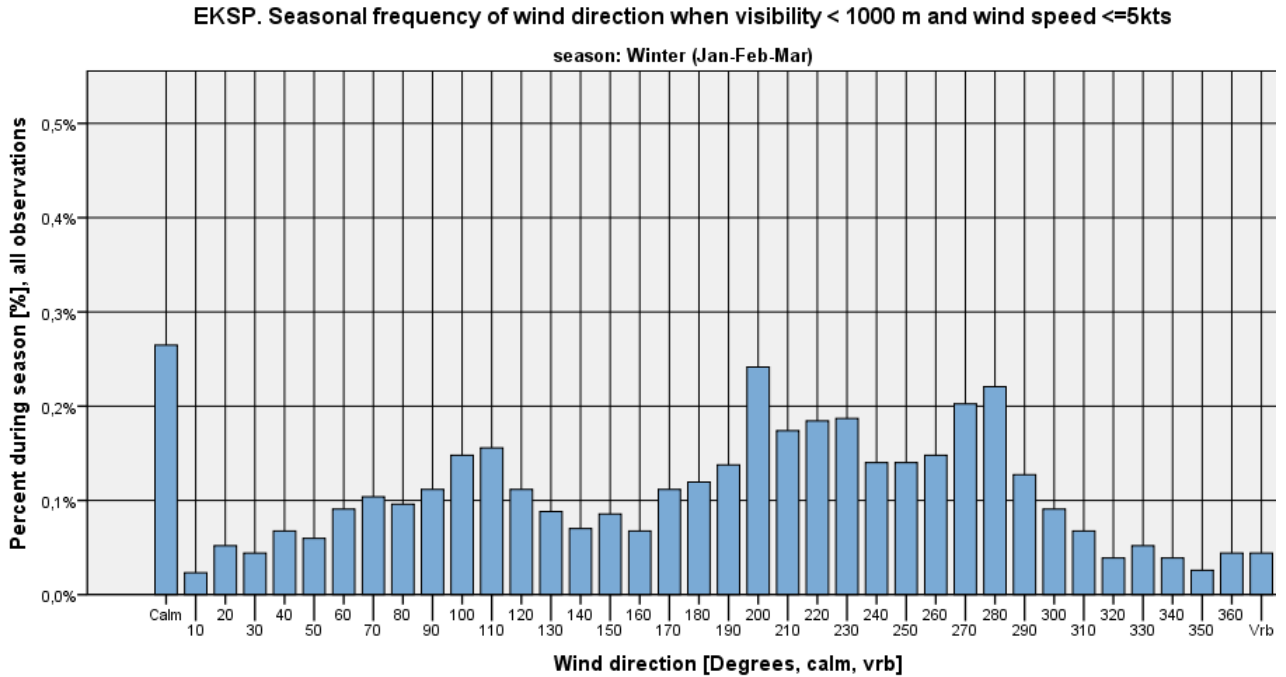


Figure 541

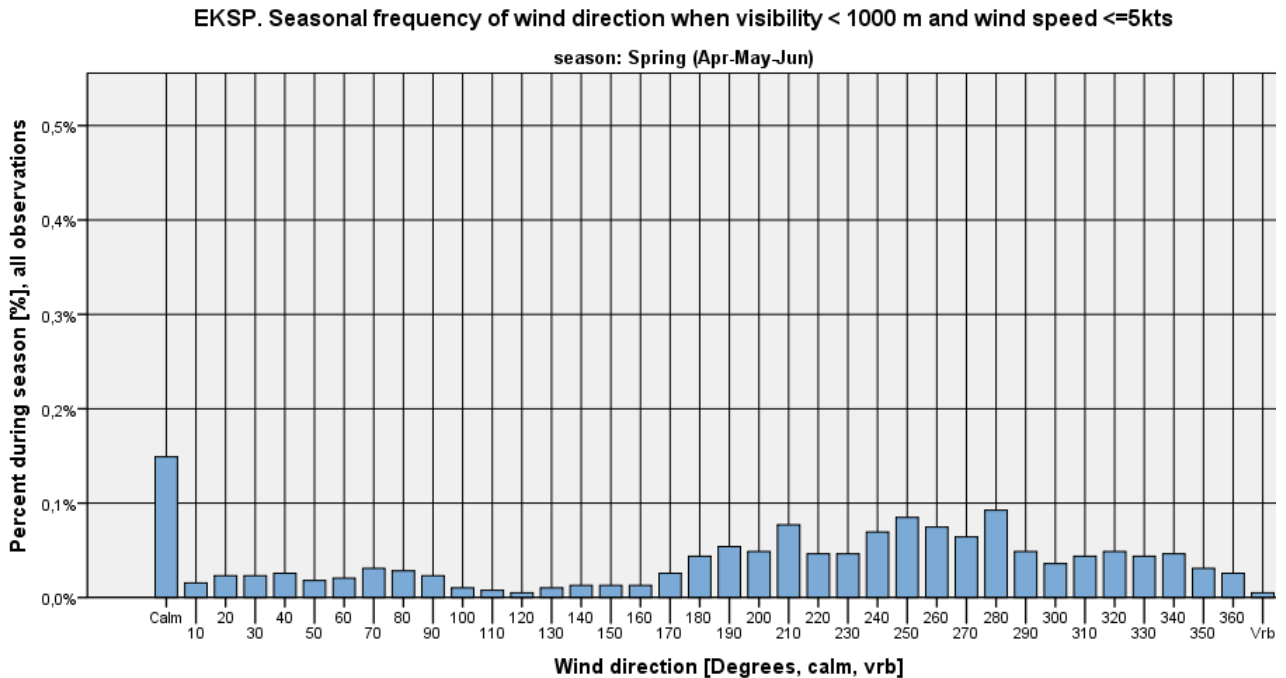


Figure 542



EKSP. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

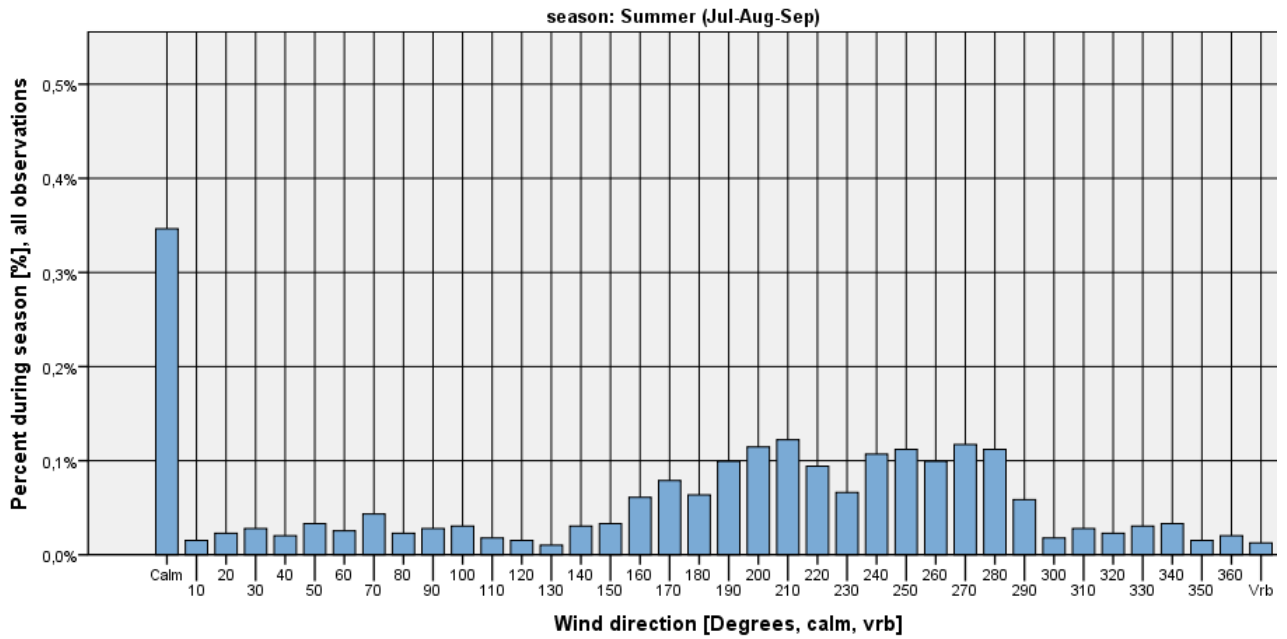


Figure 543

EKSP. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

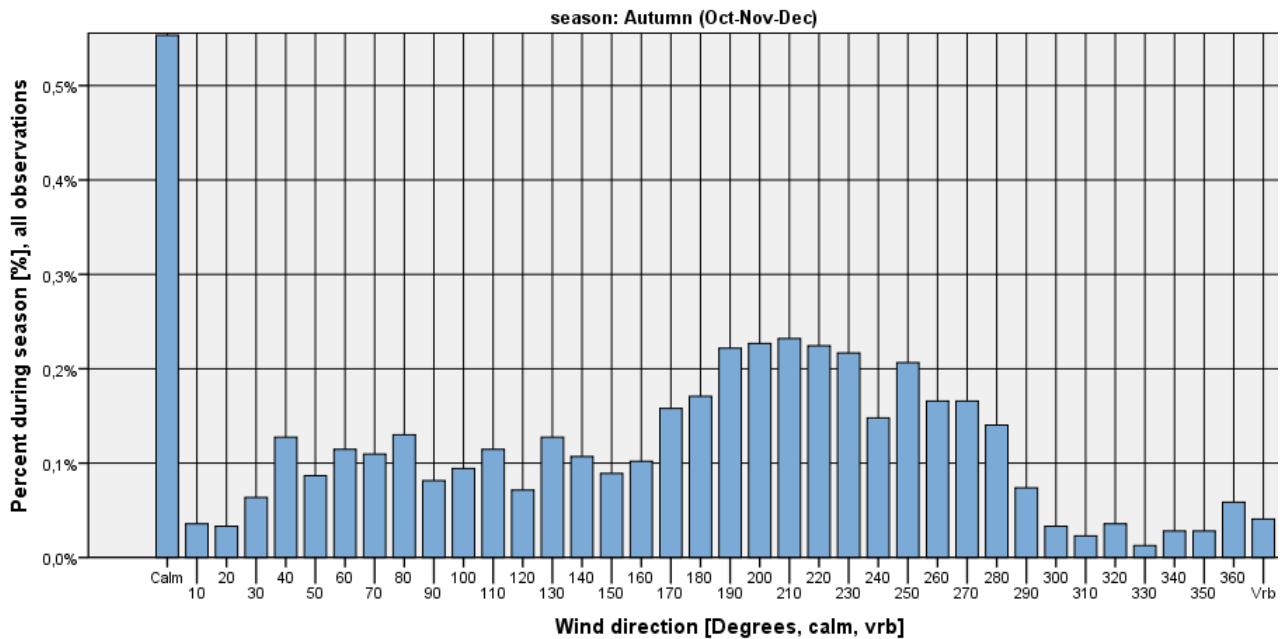


Figure 544

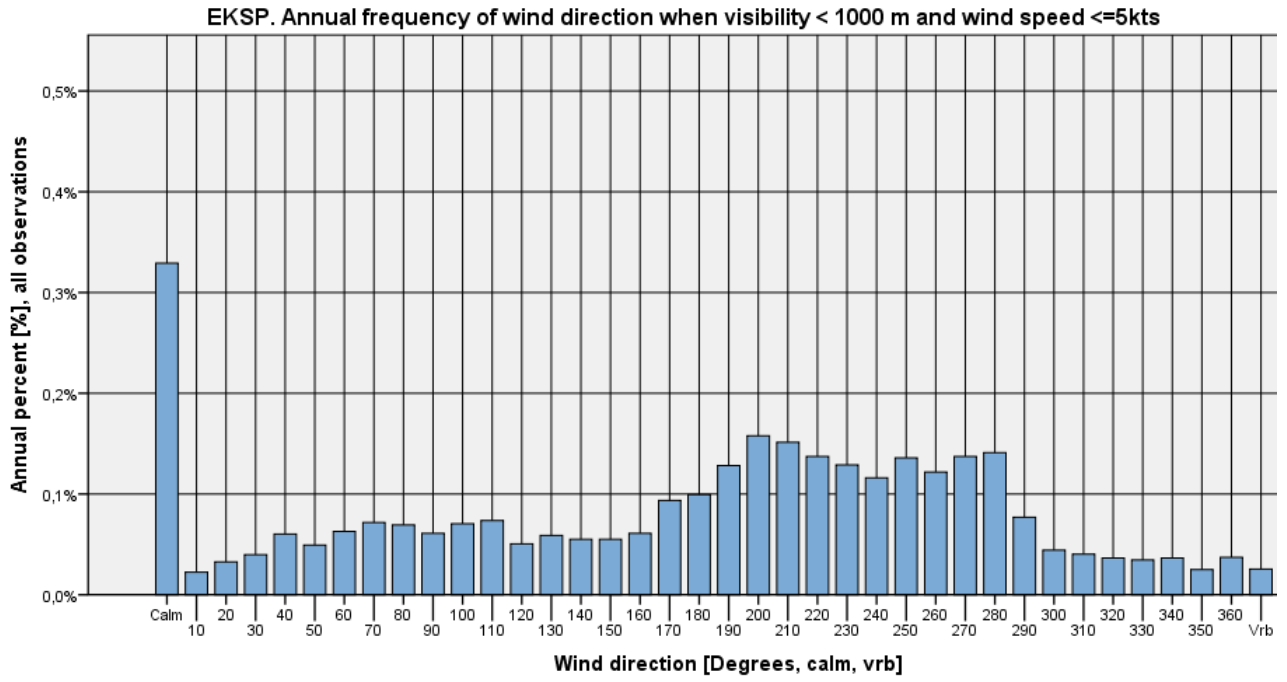


Figure 545



Visibility < 1000 m and wind speed > 5 kts

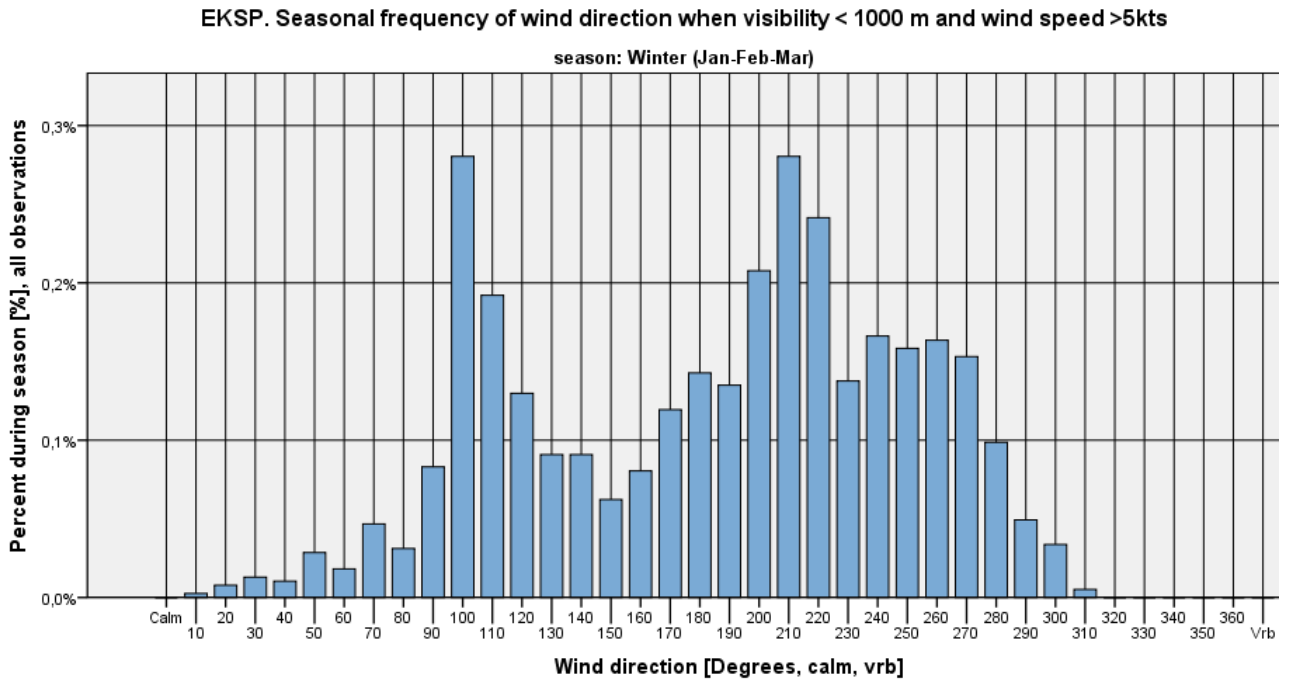


Figure 546

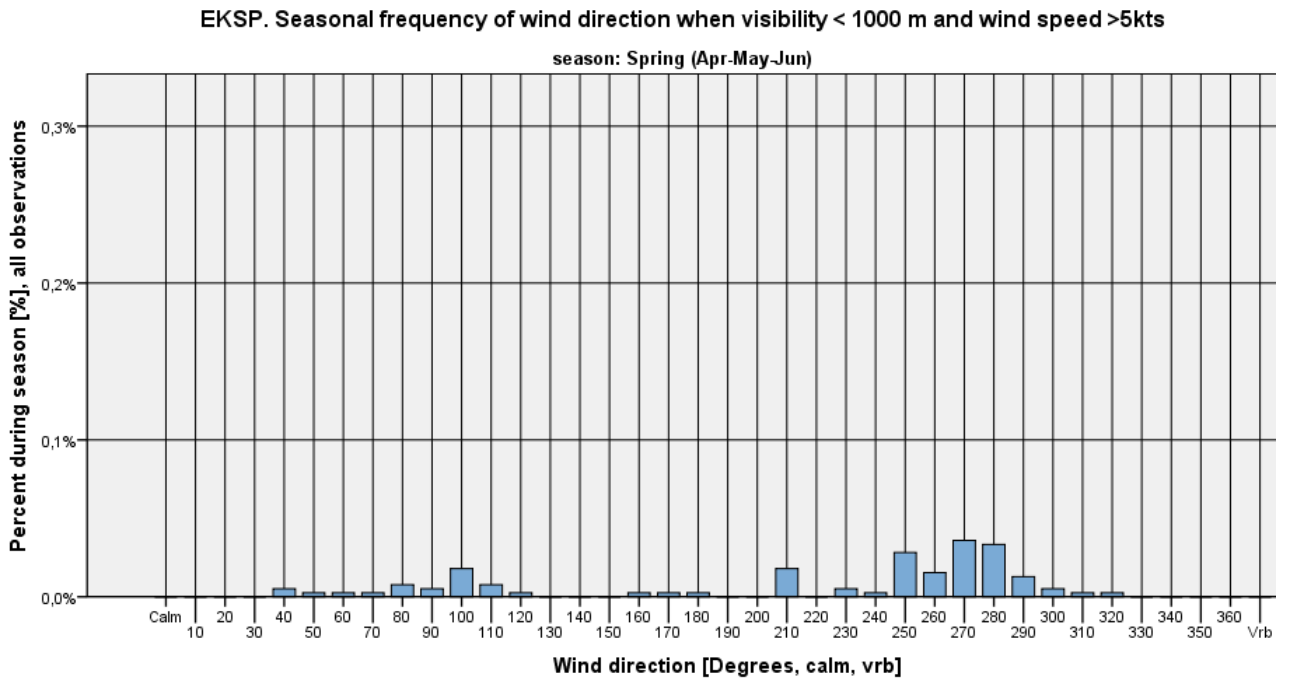


Figure 547



EKSP. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

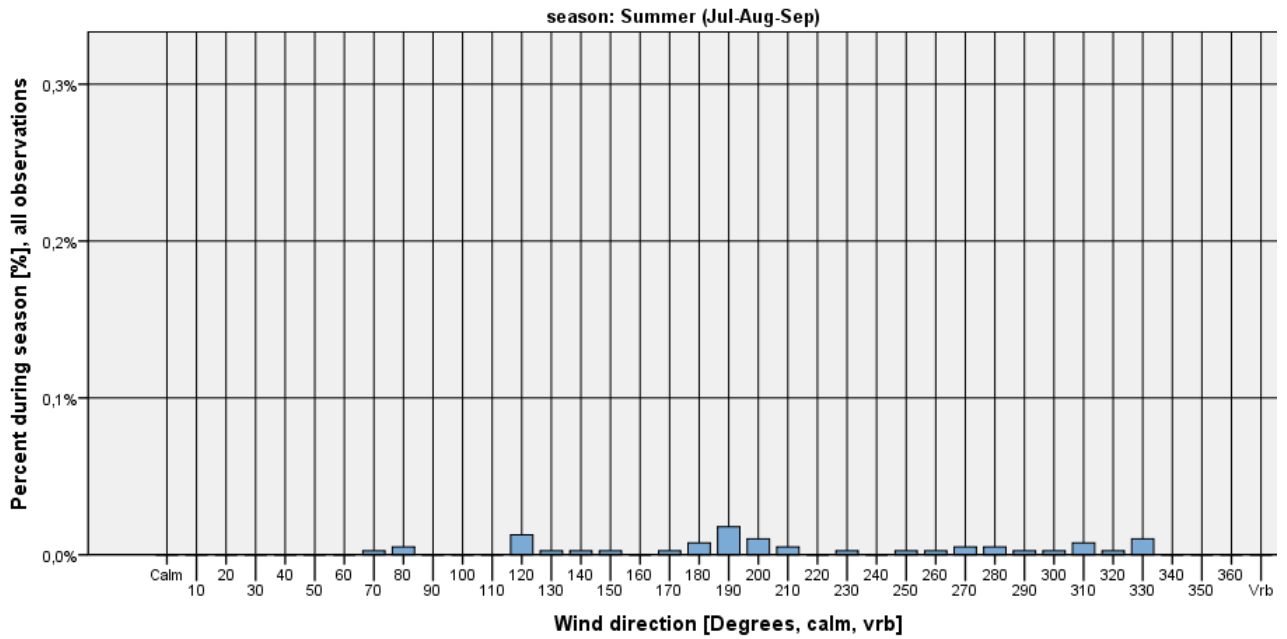


Figure 548

EKSP. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

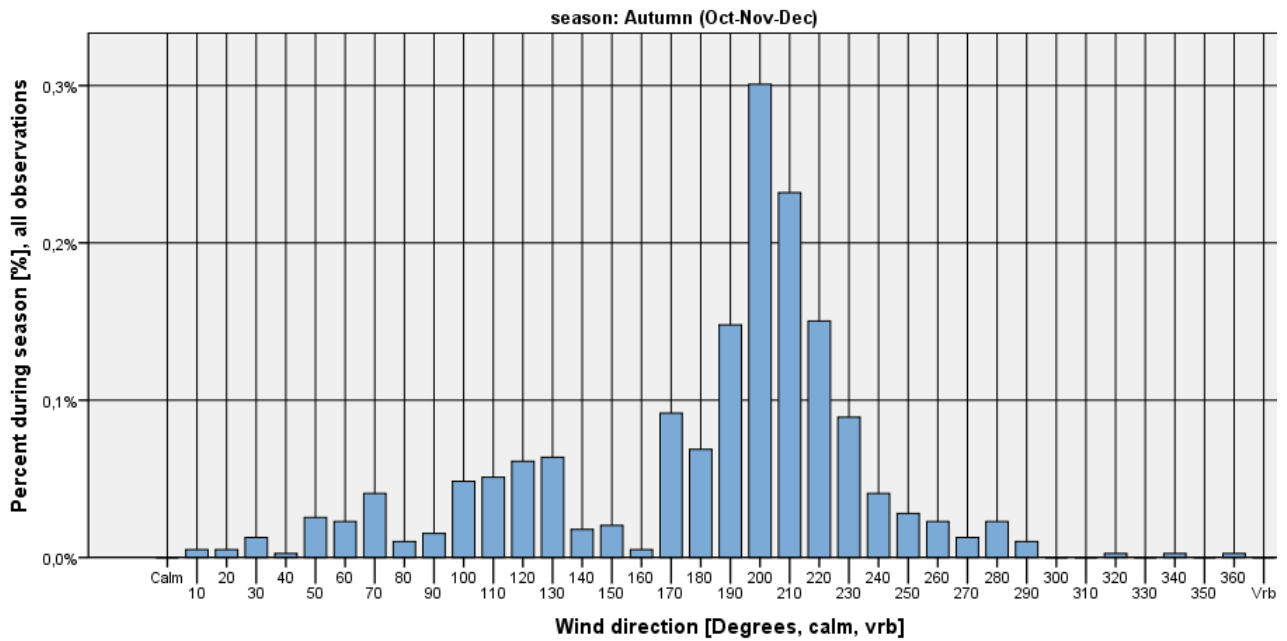


Figure 549

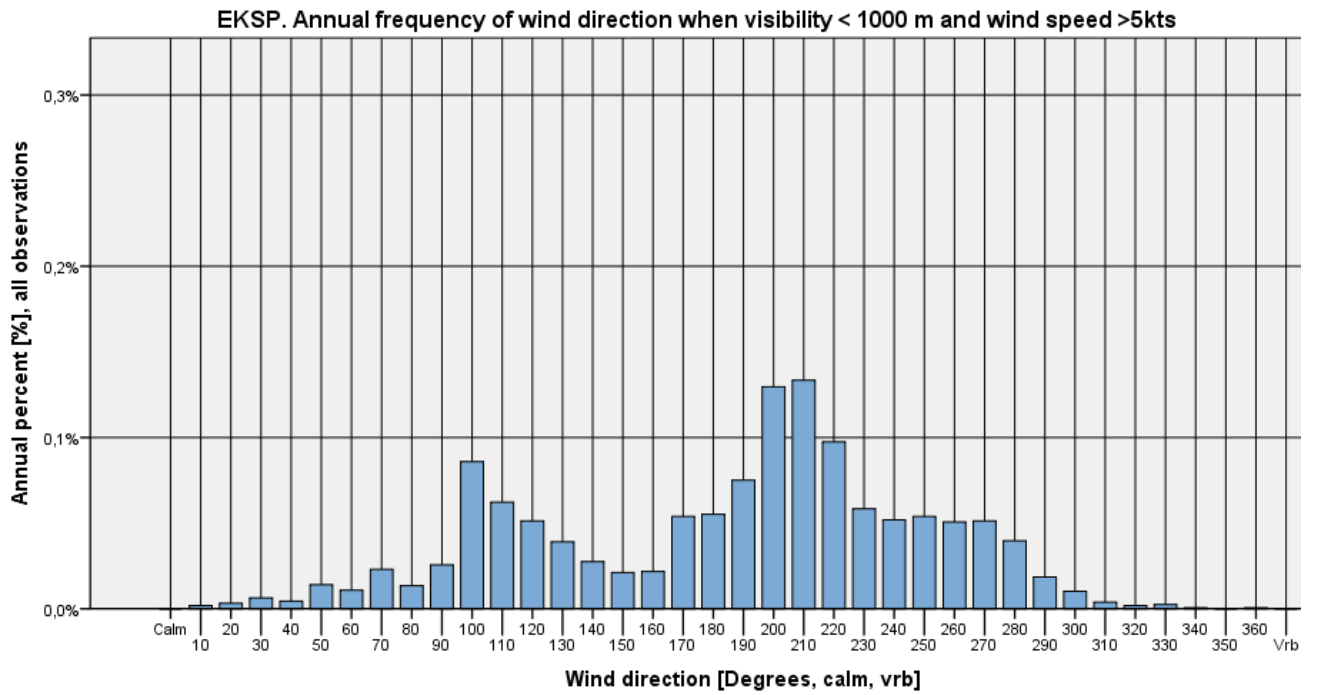


Figure 550



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

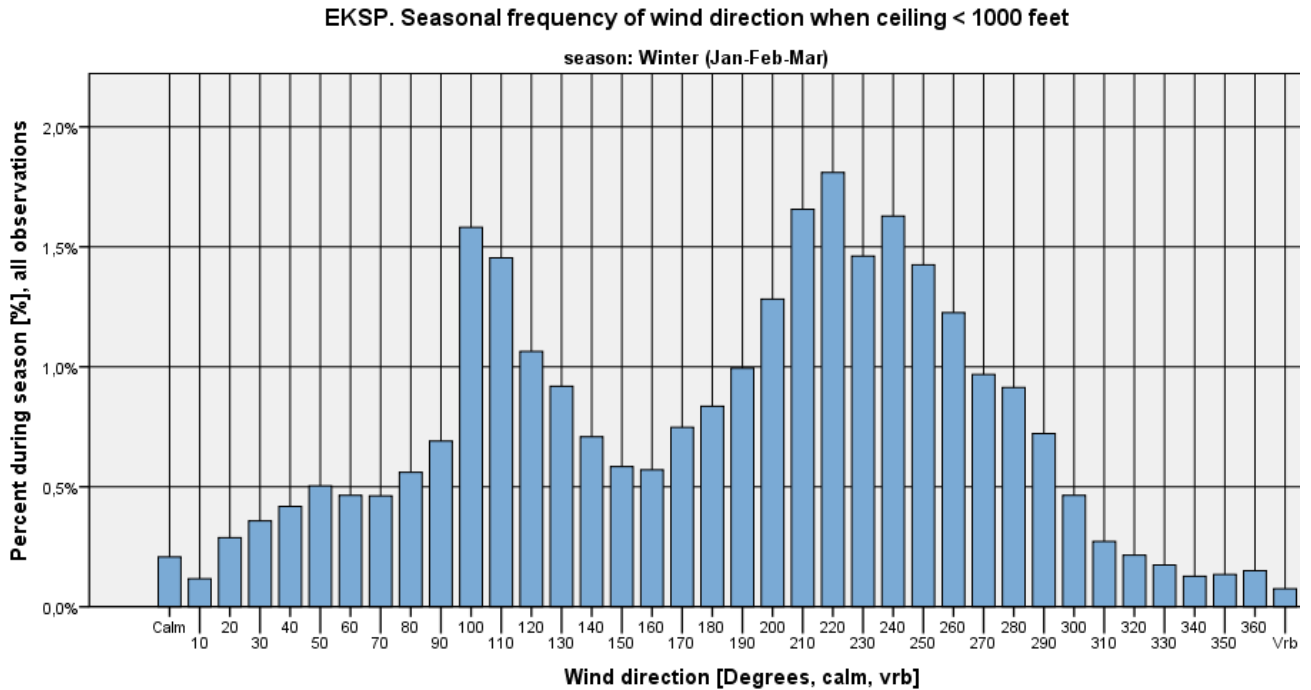


Figure 551

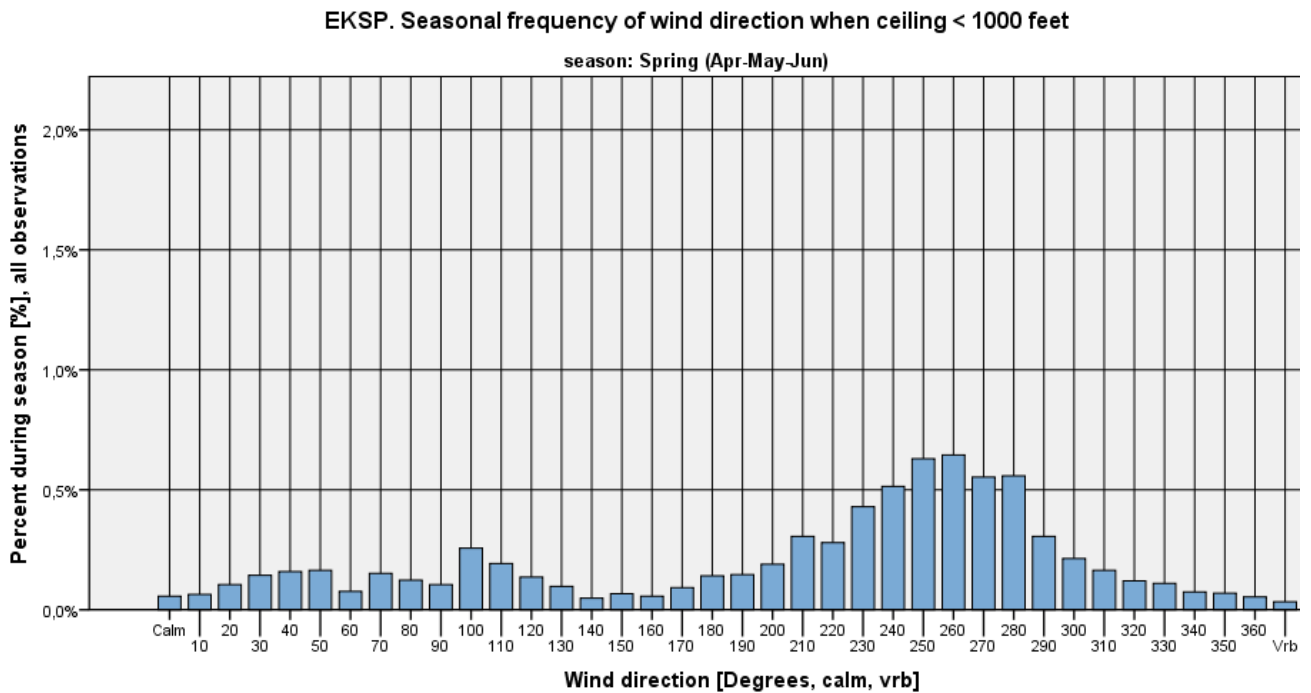


Figure 552



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

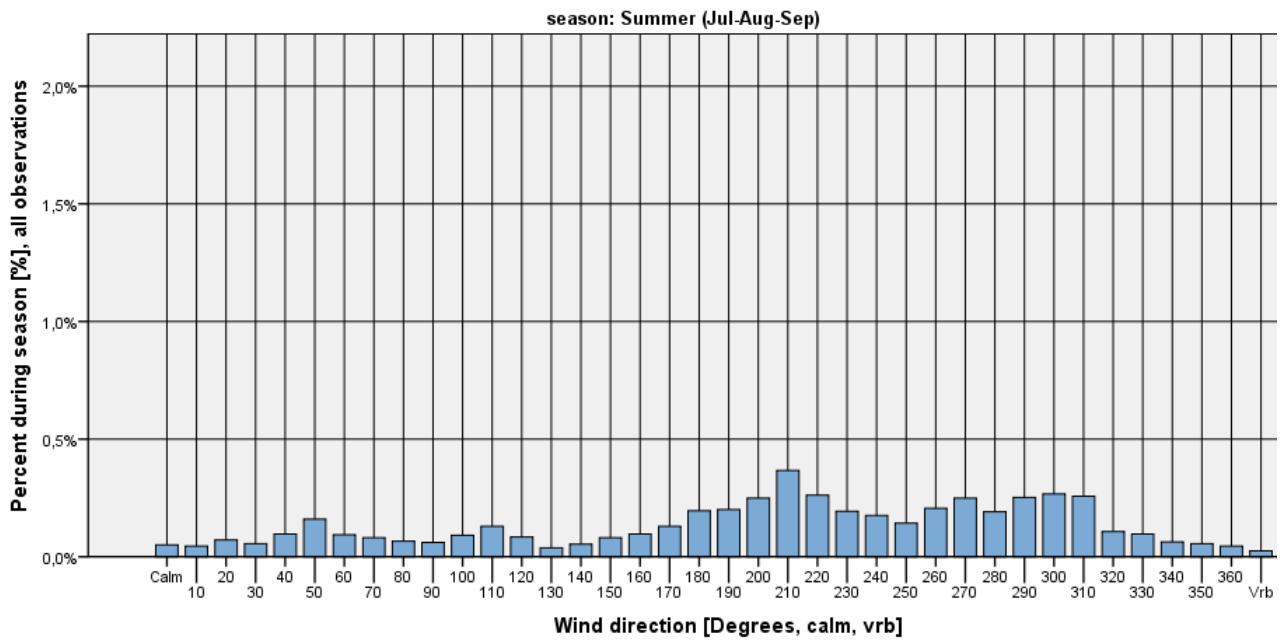


Figure 553

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

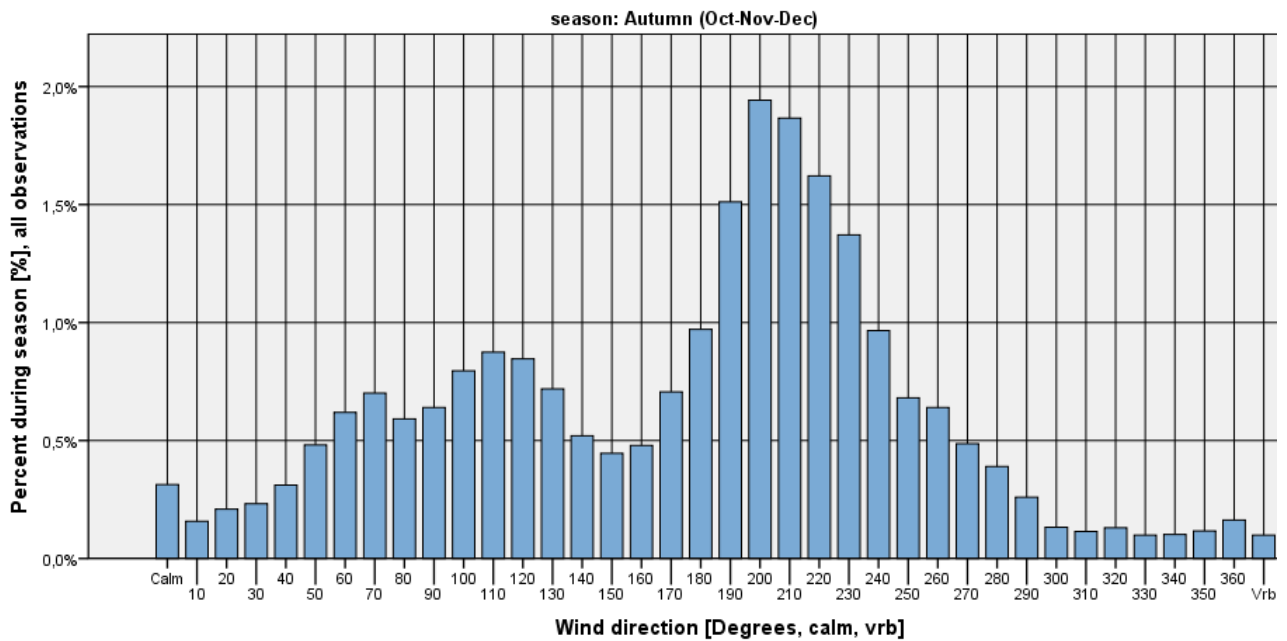


Figure 554

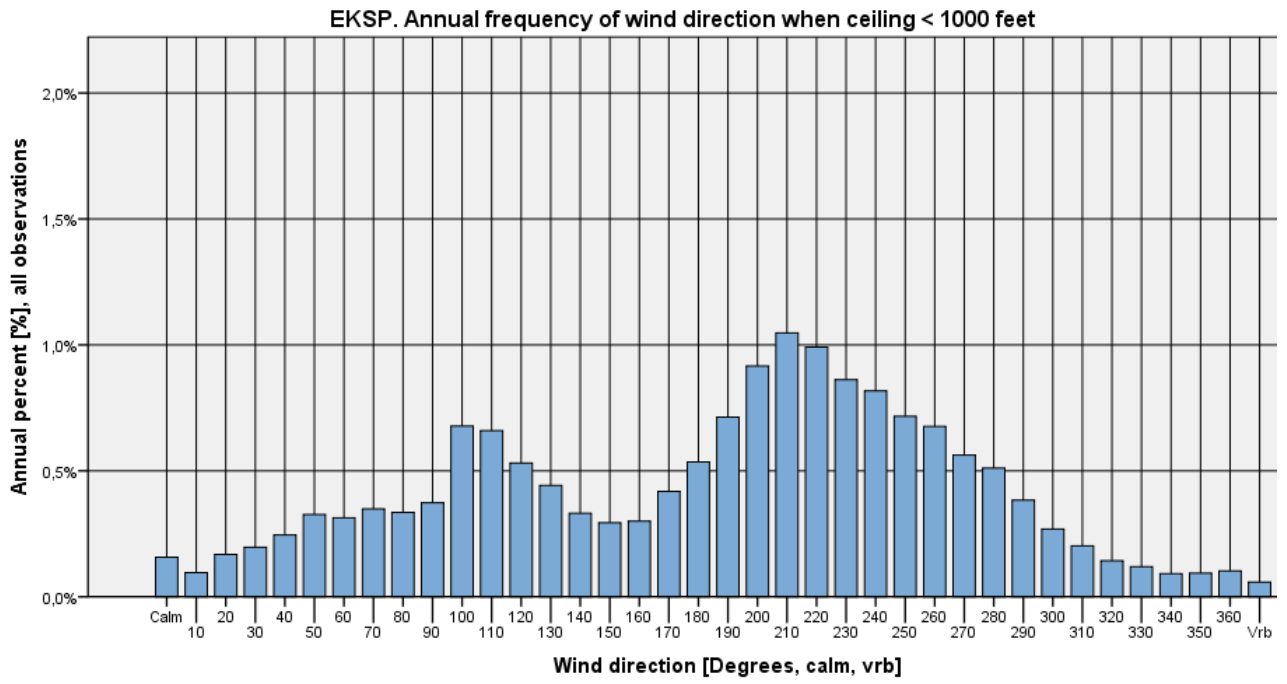


Figure 555



Ceiling < 1000 feet and wind speed ≤ 5 kts

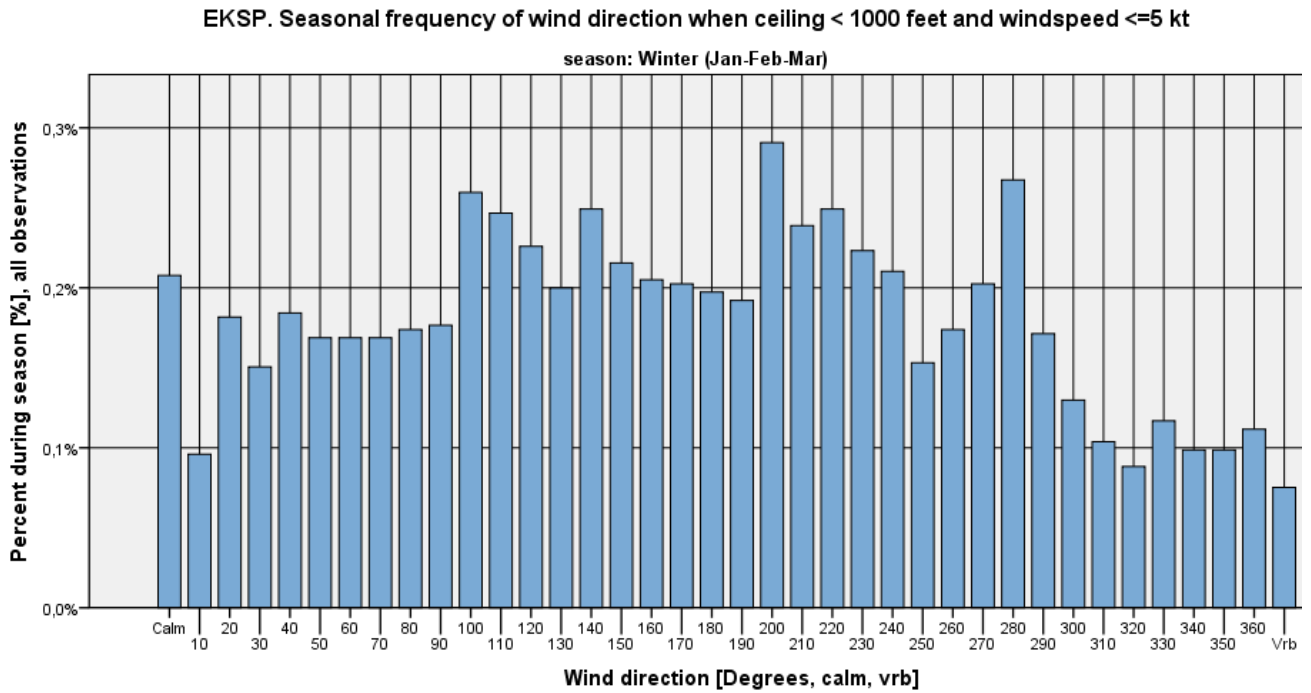


Figure 556

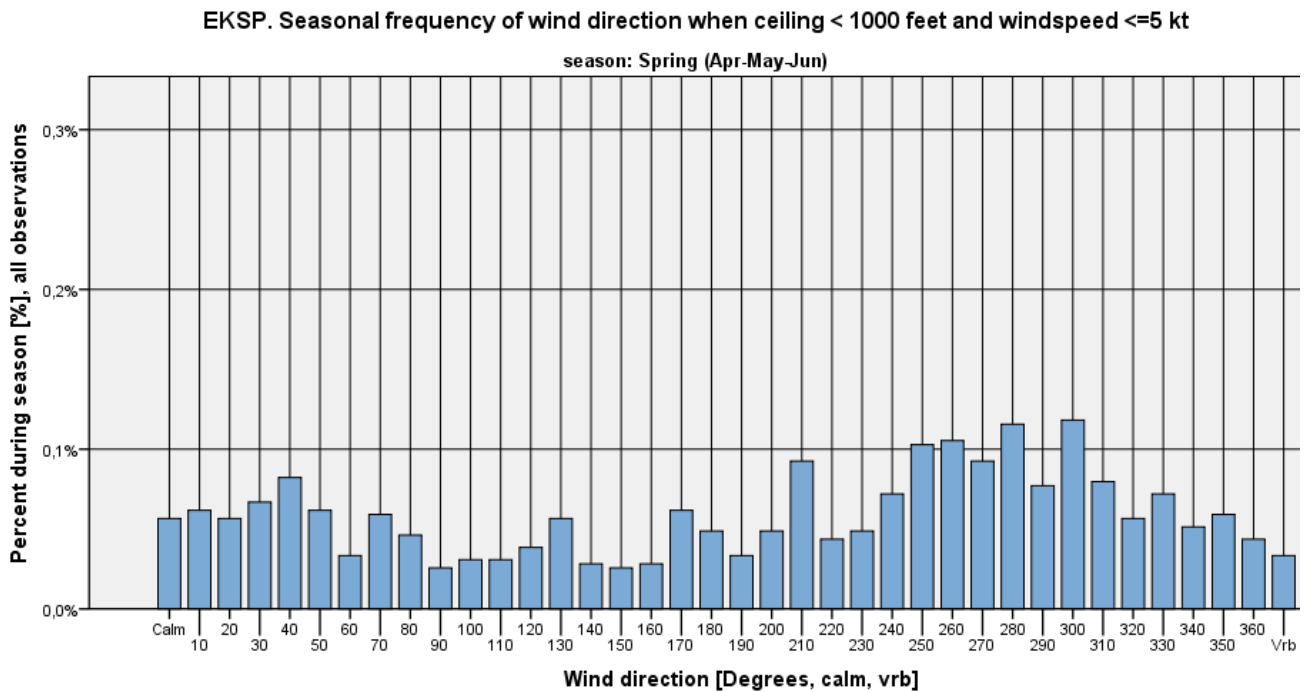


Figure 557



EKSP. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

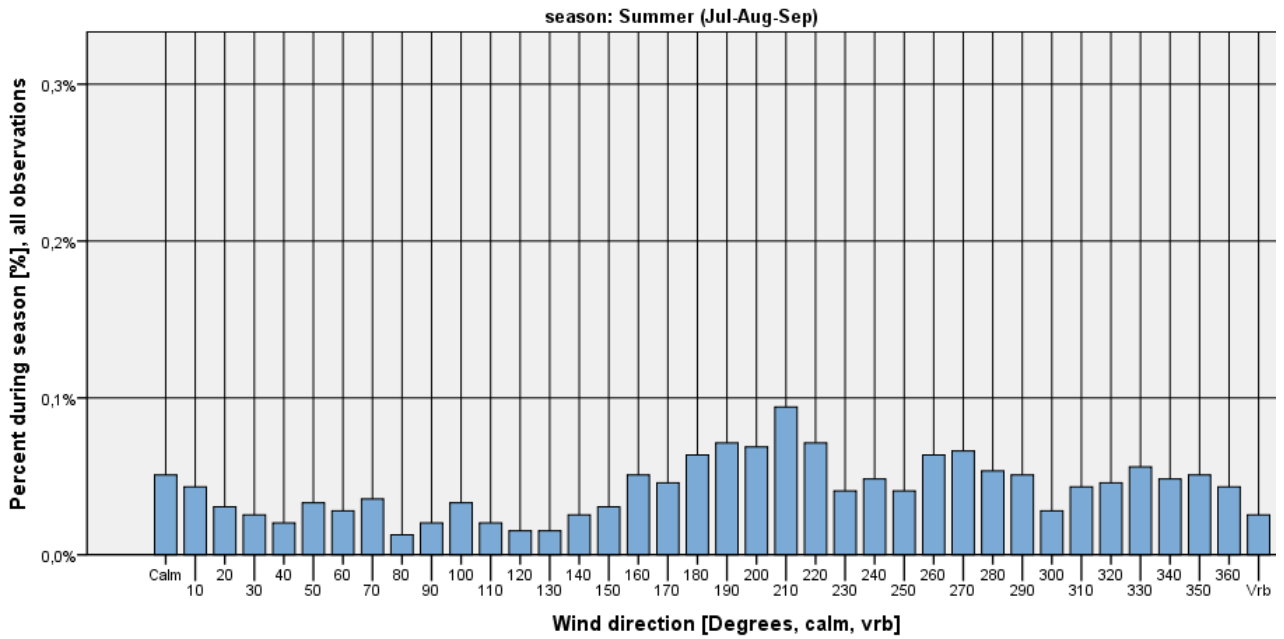


Figure 558

EKSP. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

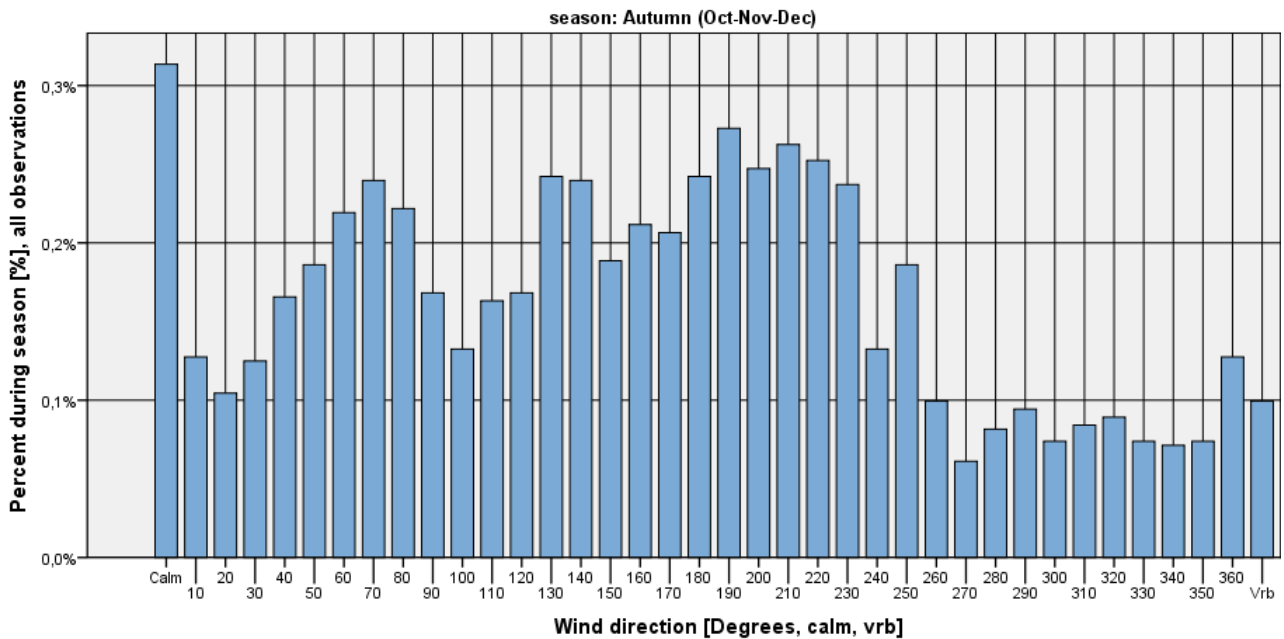


Figure 559

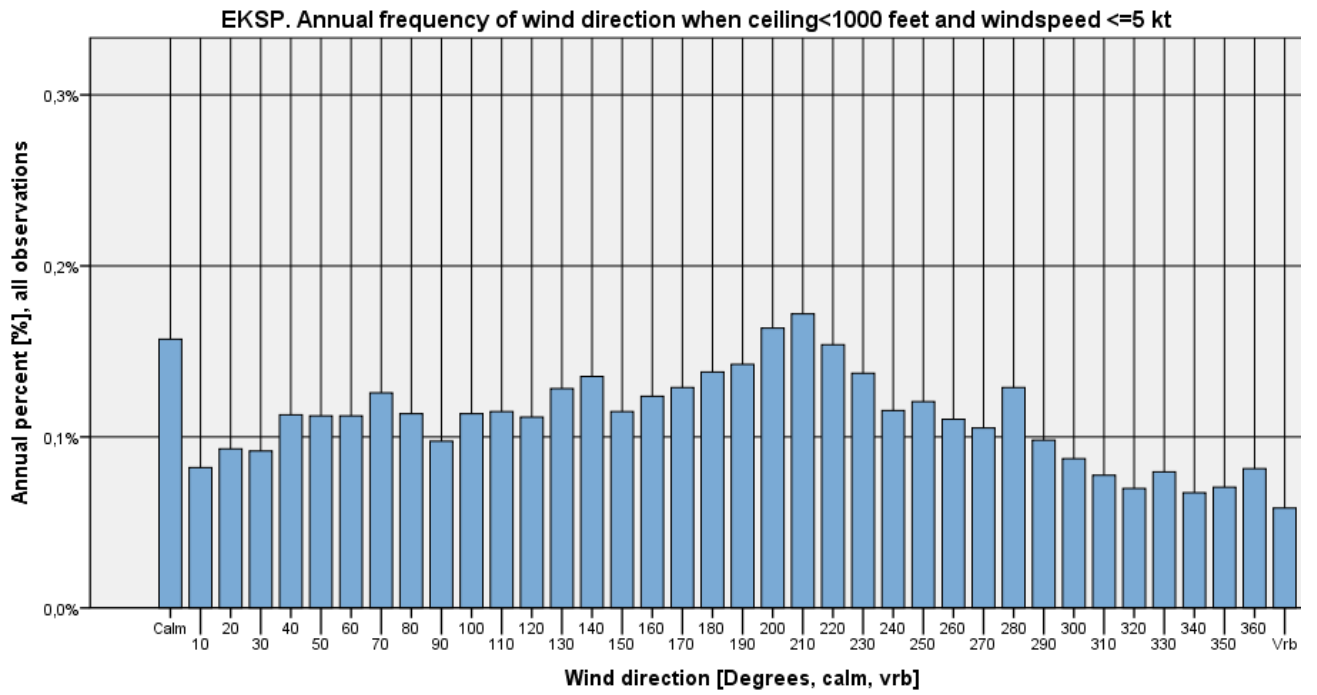


Figure 560



Ceiling < 1000 feet and wind speed > 5 kts

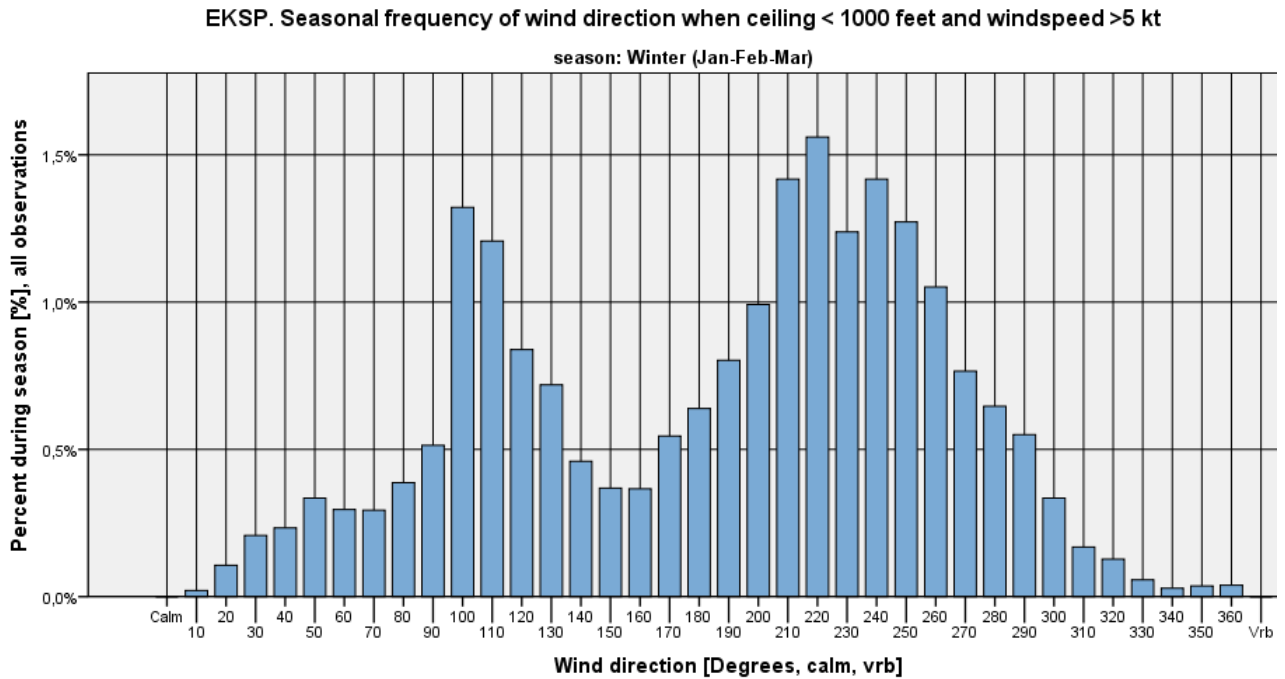


Figure 561

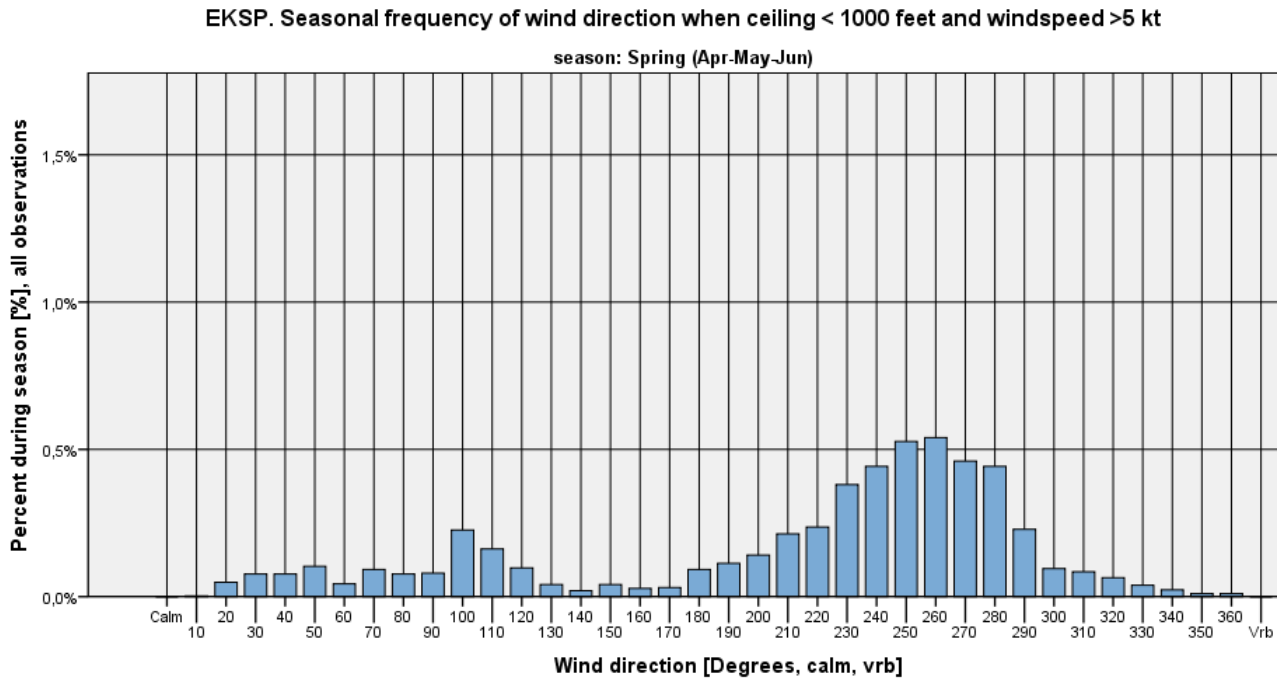


Figure 562



EKSP. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

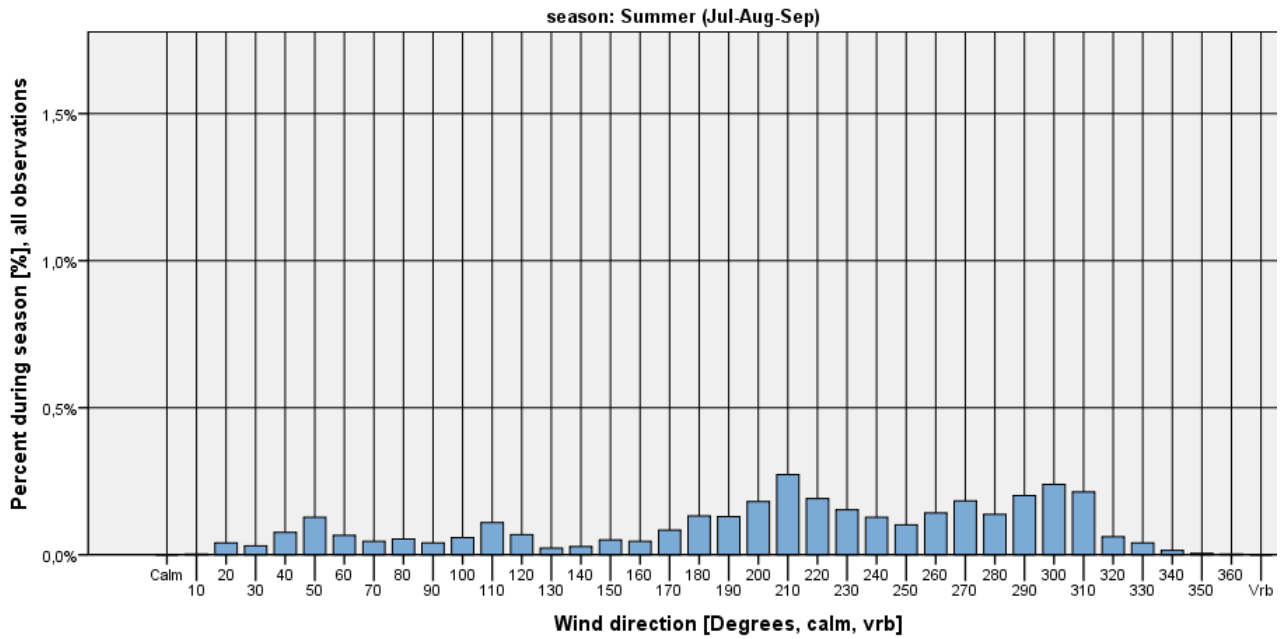


Figure 563

EKSP. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

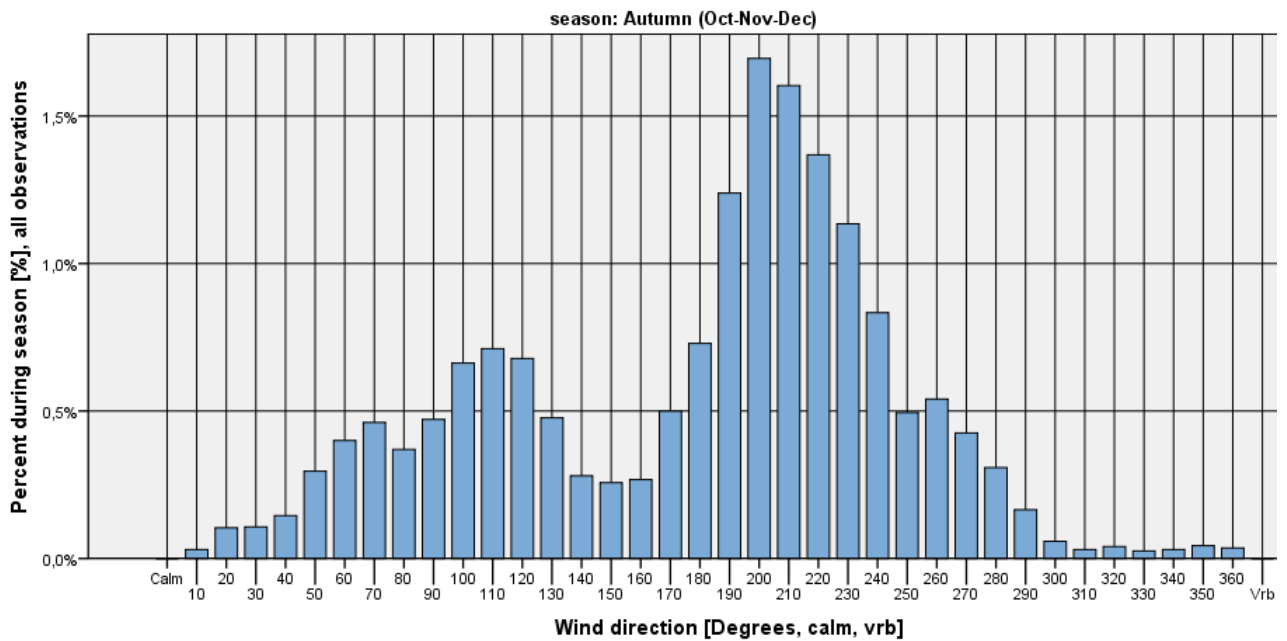


Figure 564

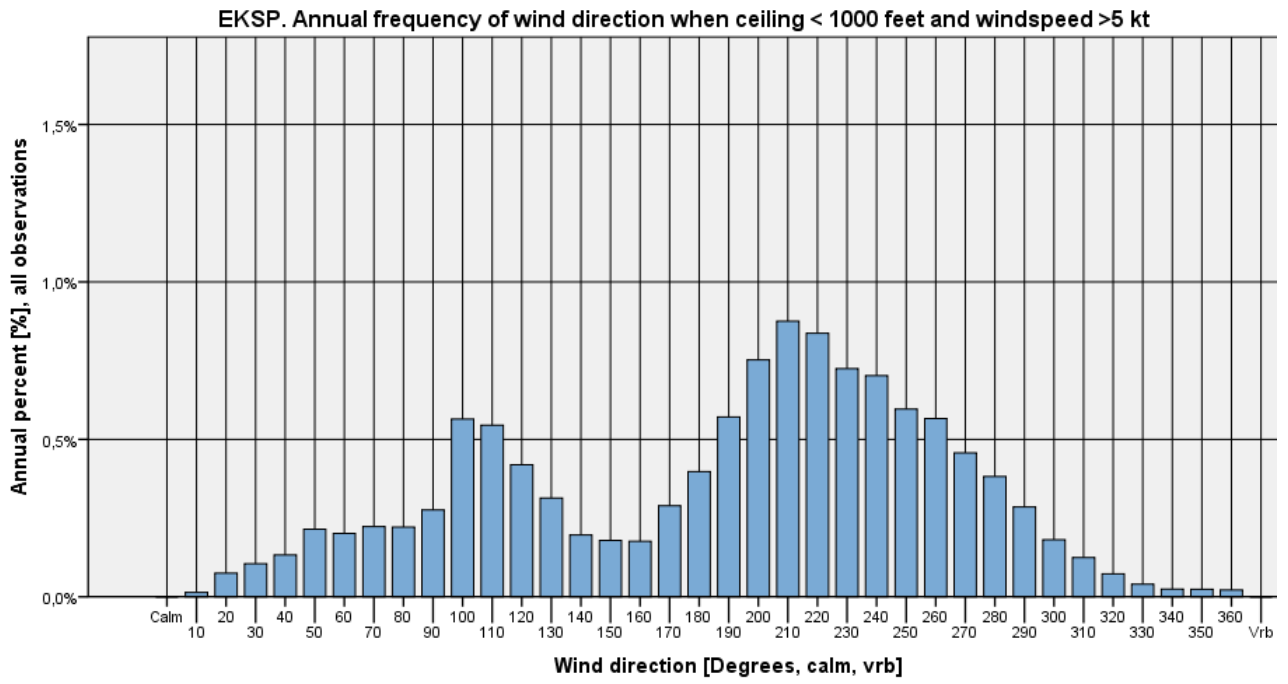


Figure 565



Ceiling < 500 feet

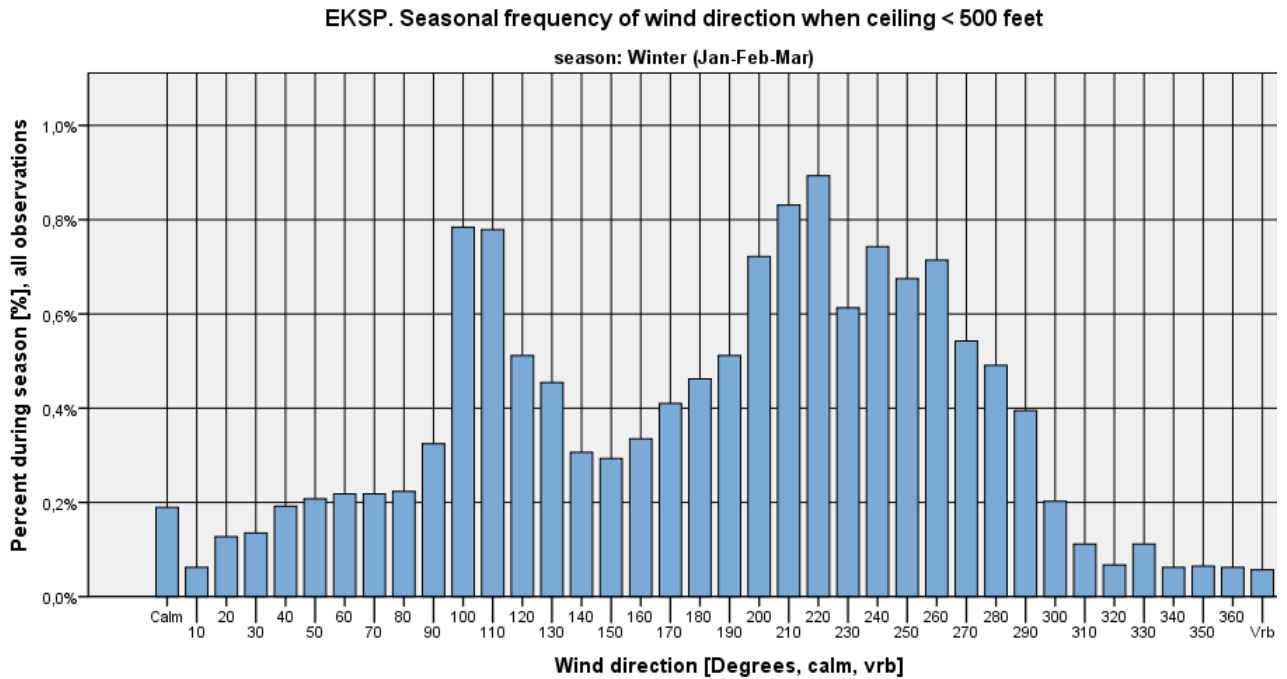


Figure 566

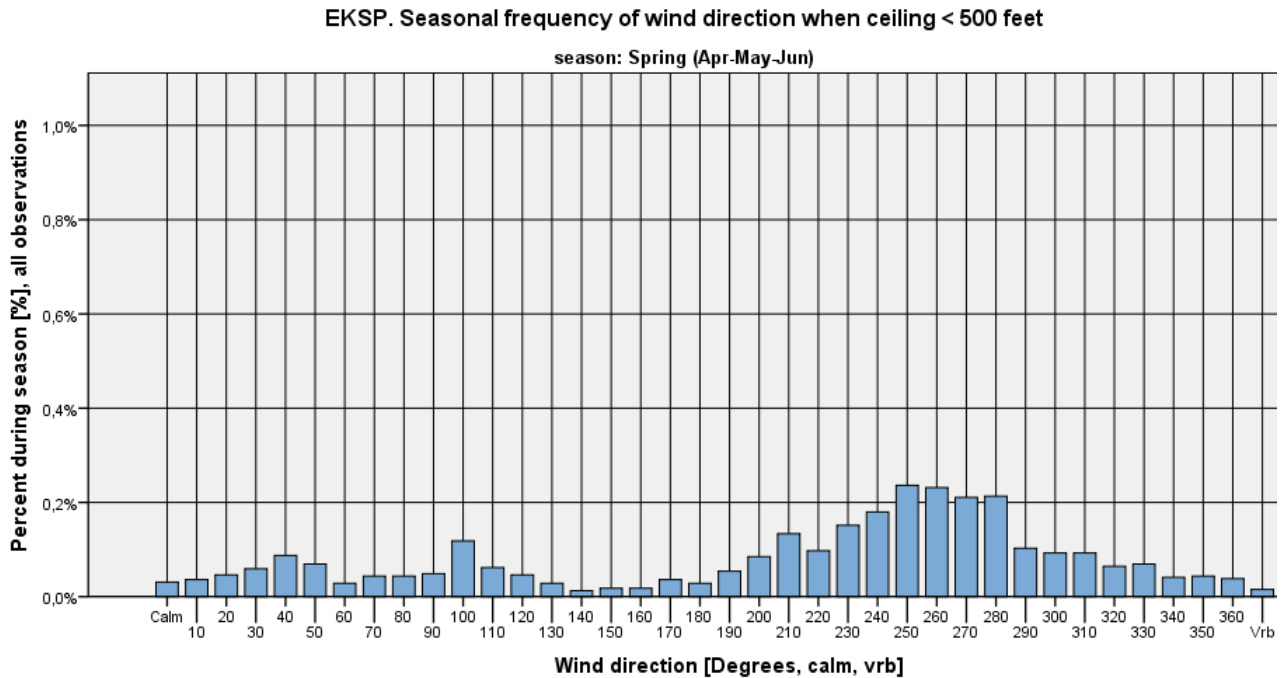


Figure 567



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

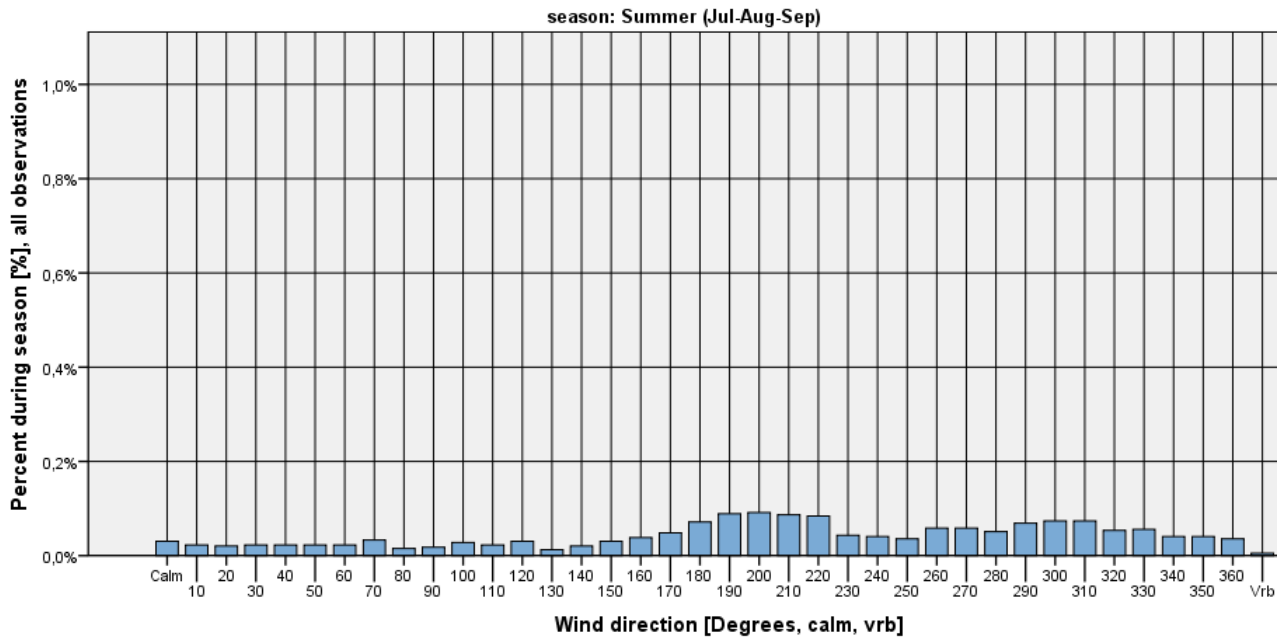


Figure 568

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

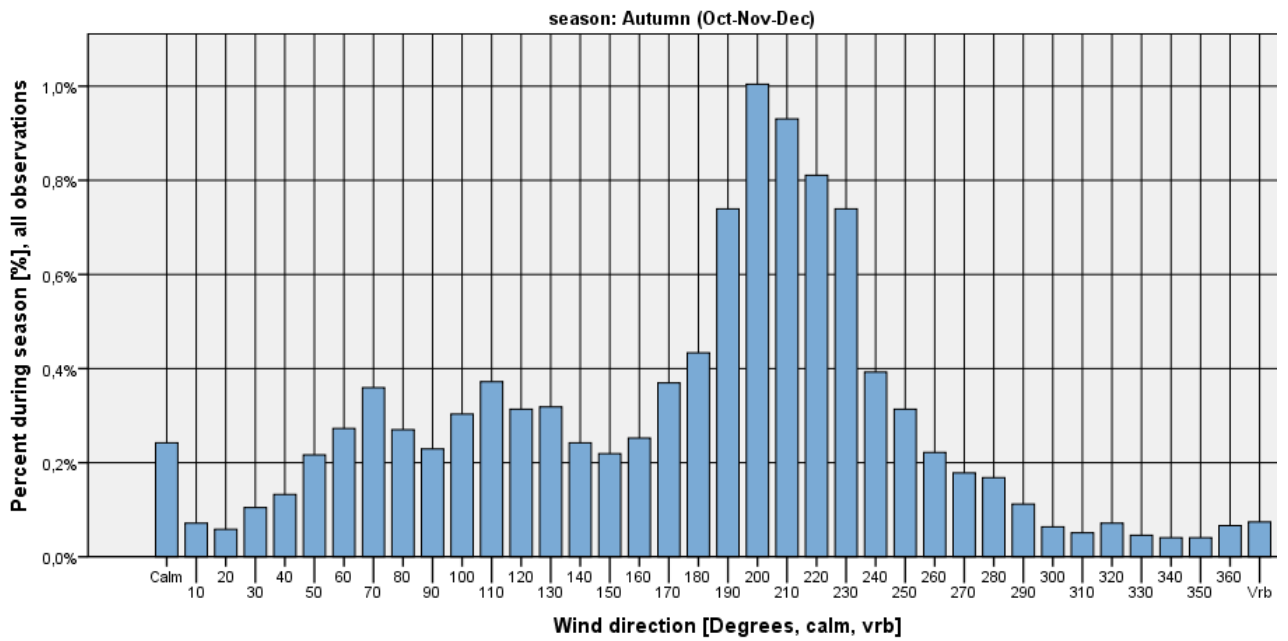


Figure 569

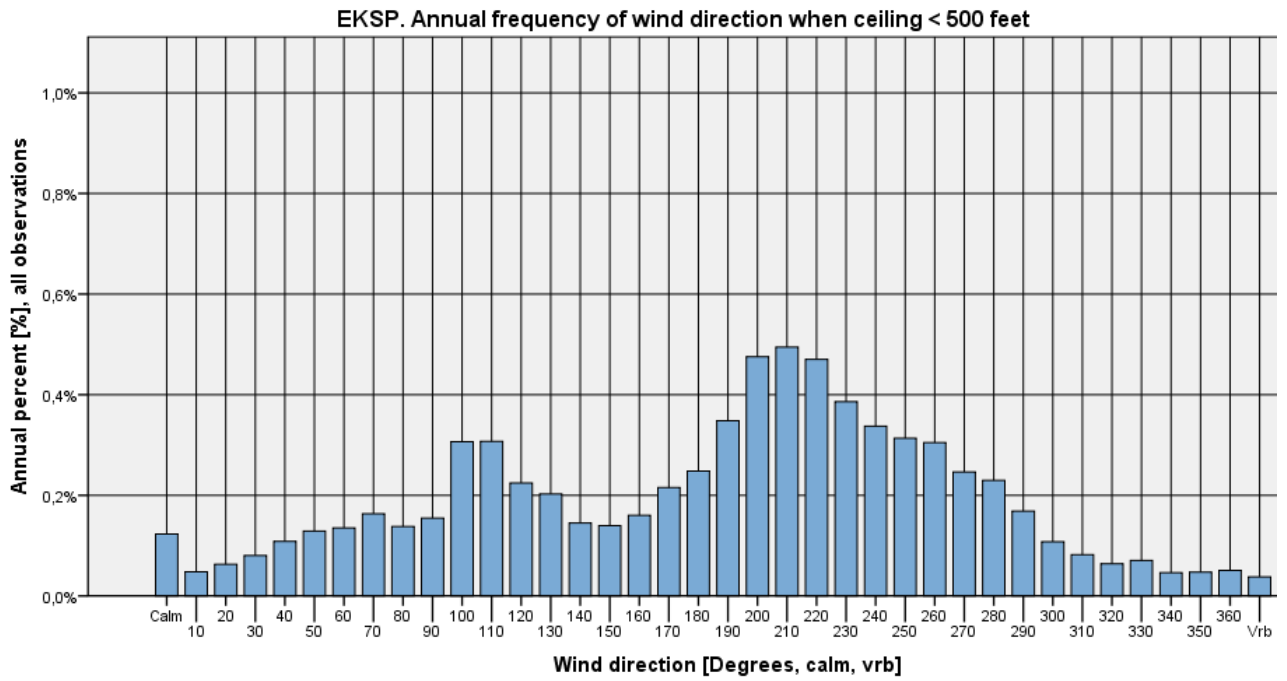


Figure 570



Ceiling < 500 feet and wind speed <= 5 kts

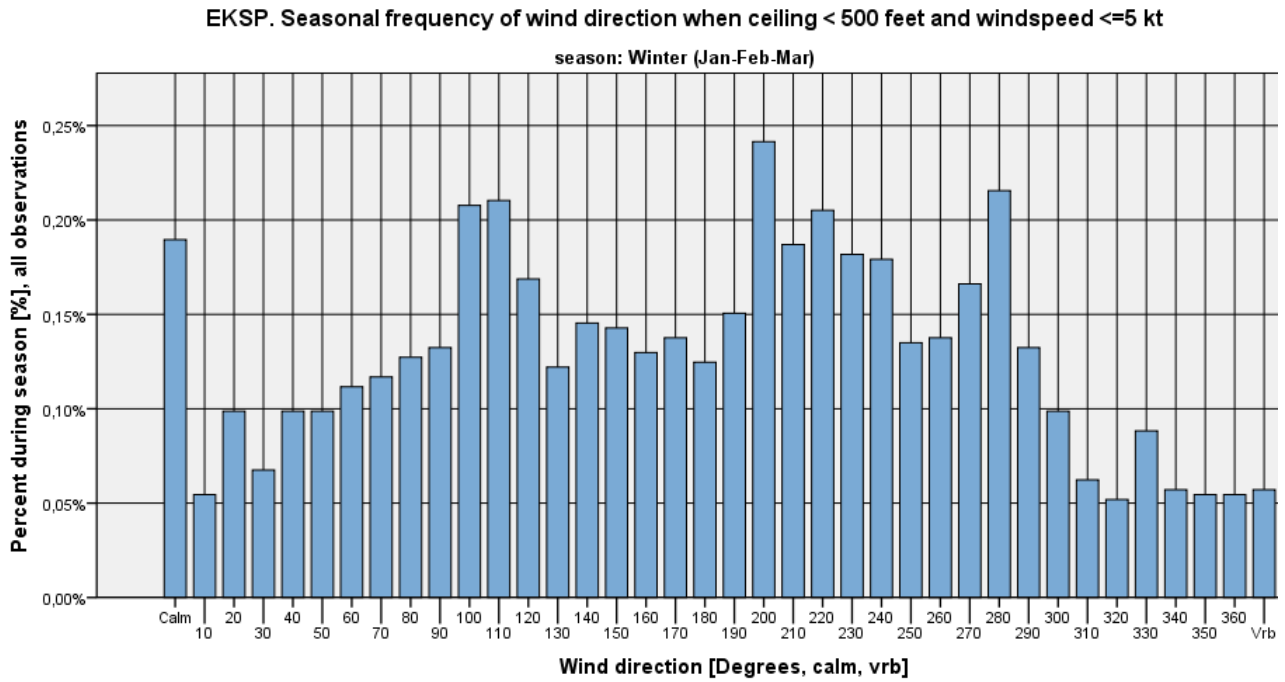


Figure 571

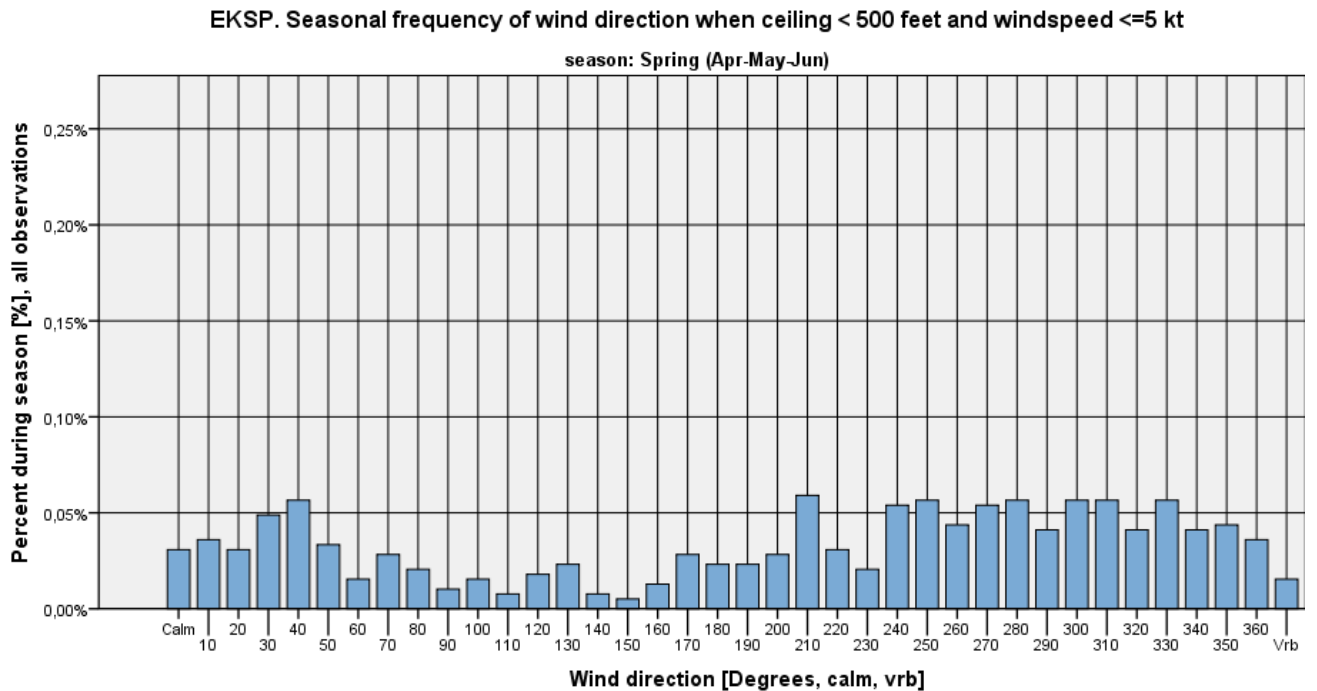


Figure 572



EKSP. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

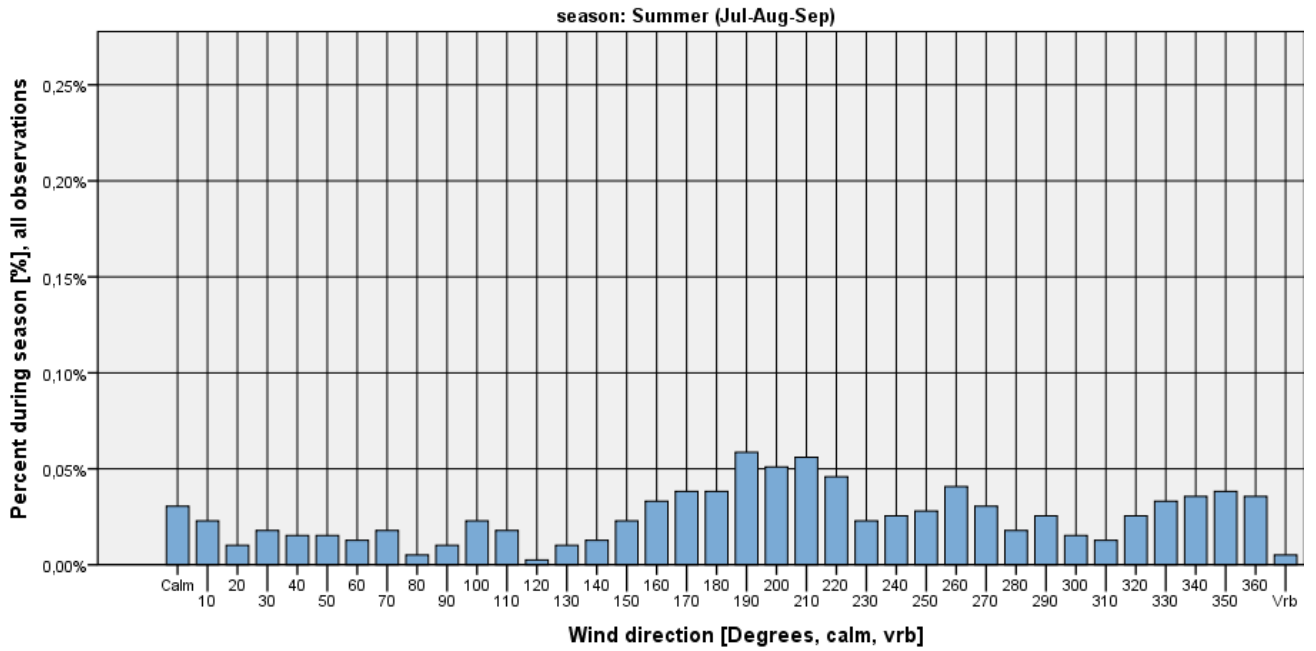


Figure 573

EKSP. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

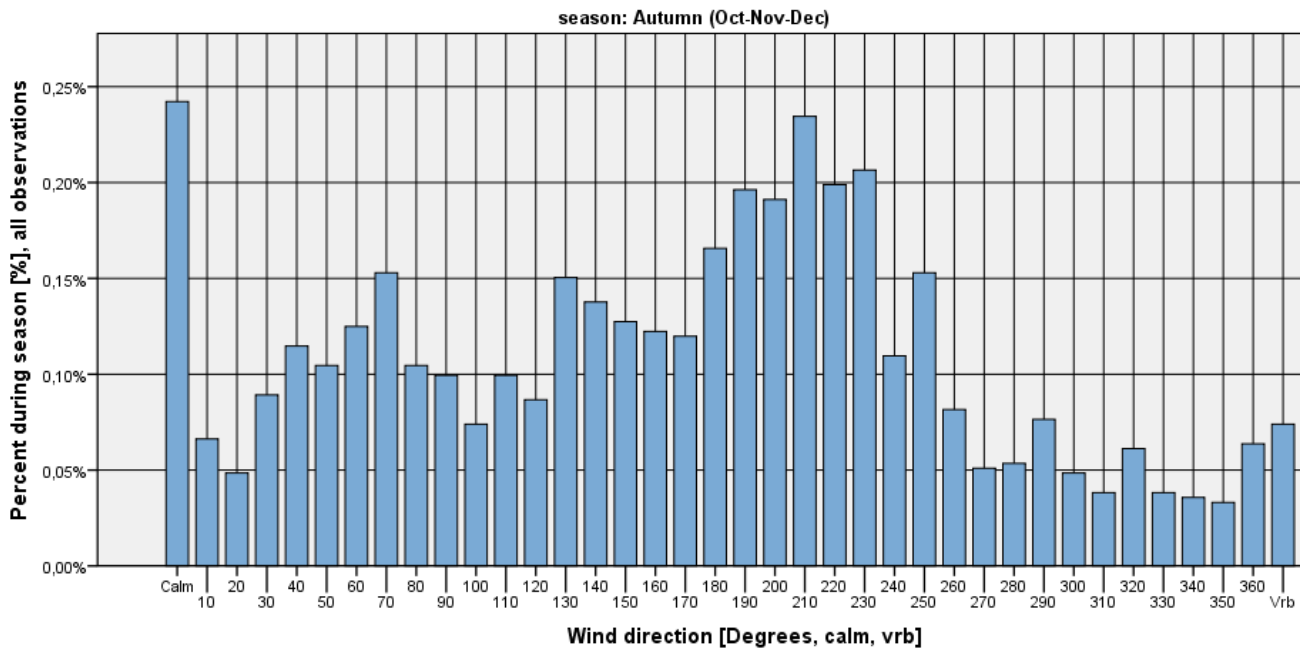


Figure 574

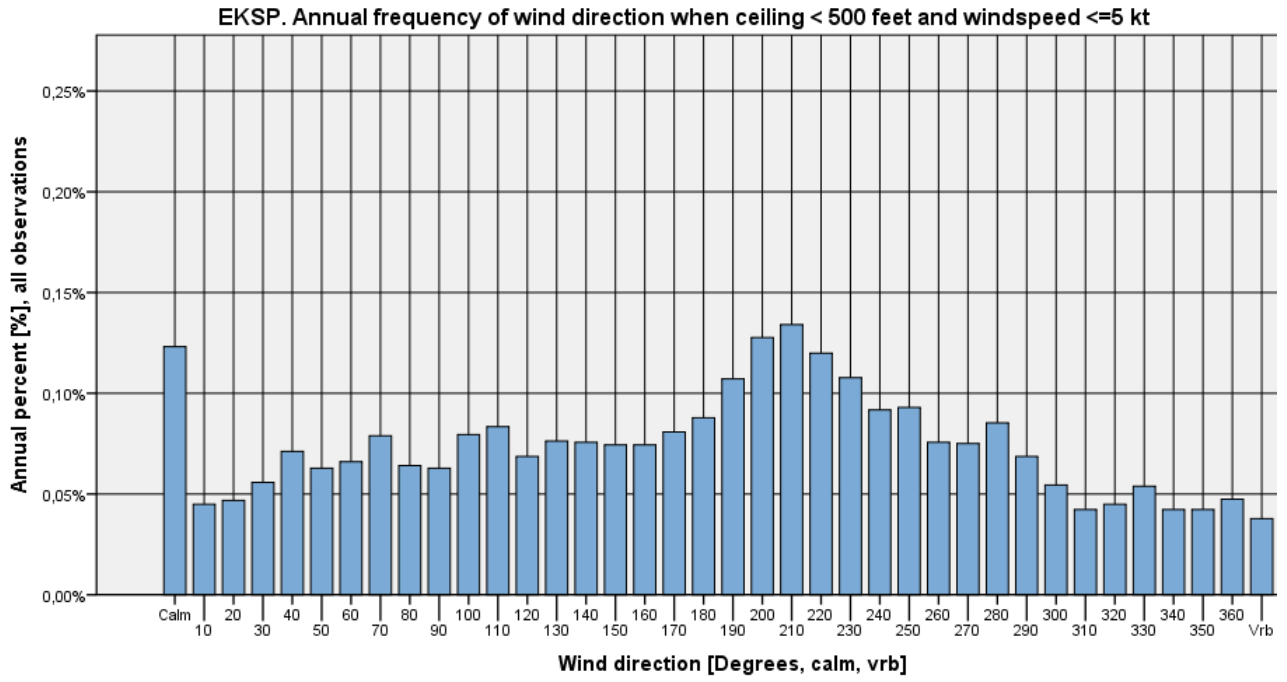


Figure 575



Ceiling < 500 feet and wind speed > 5 kts

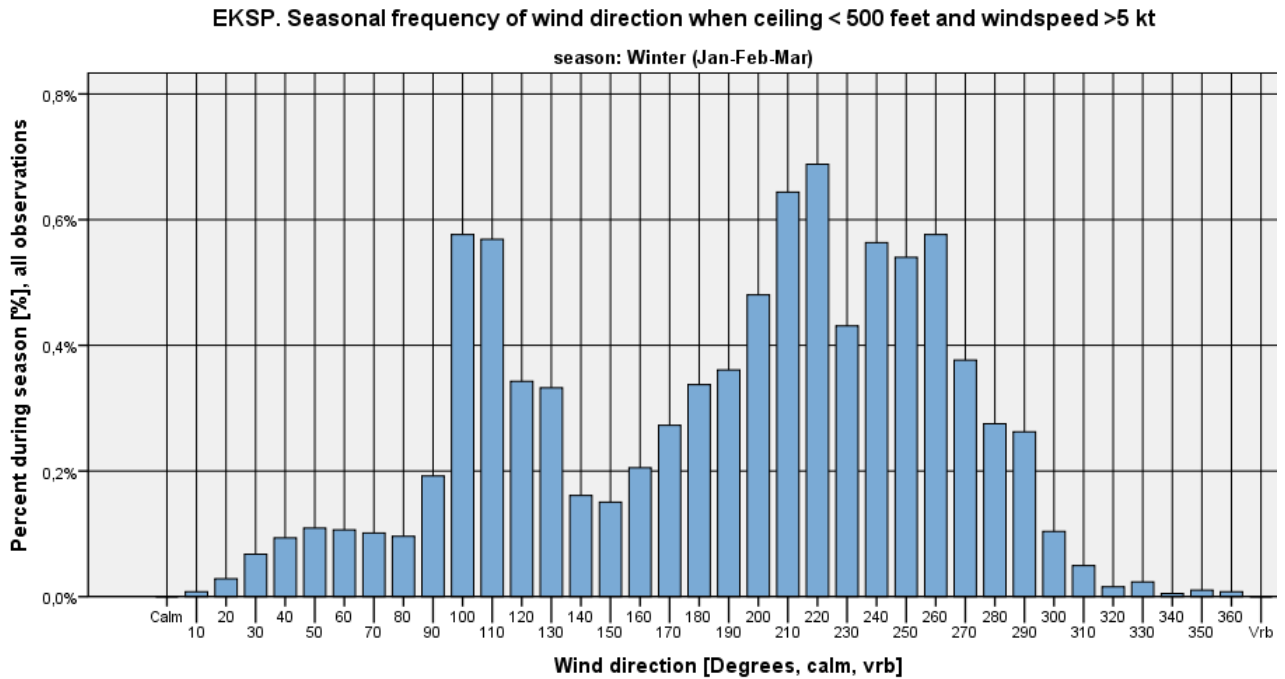


Figure 576

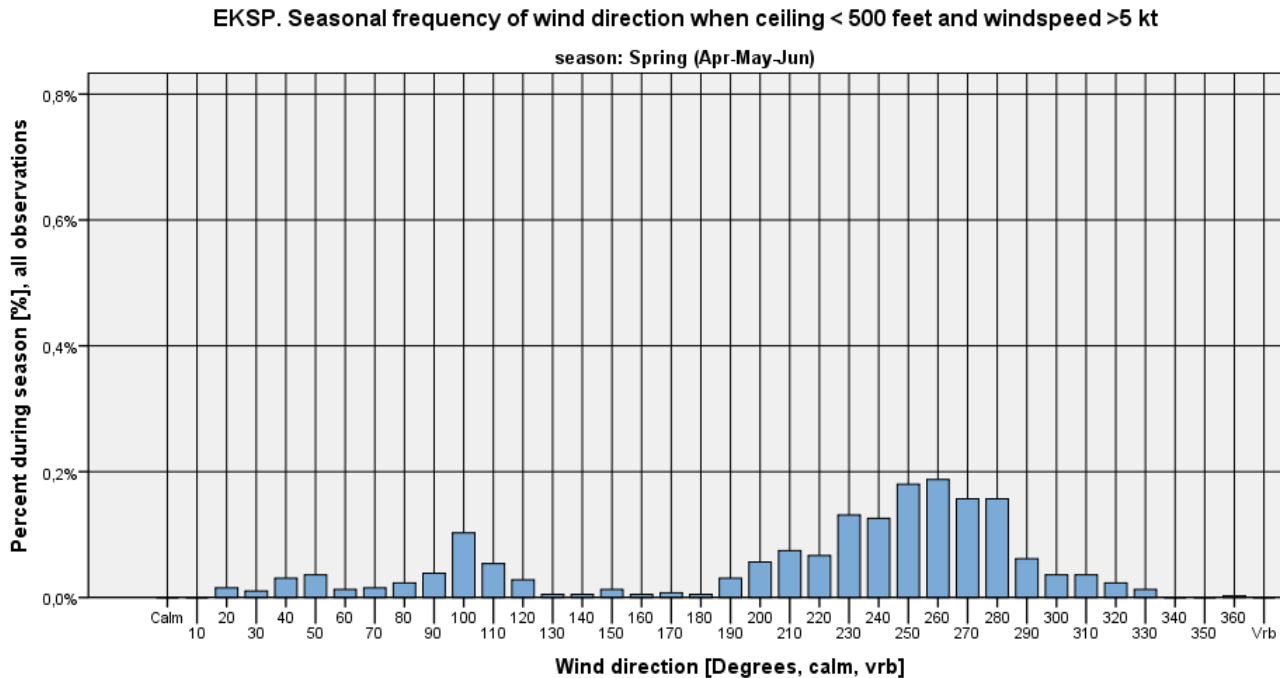


Figure 577



EKSP. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

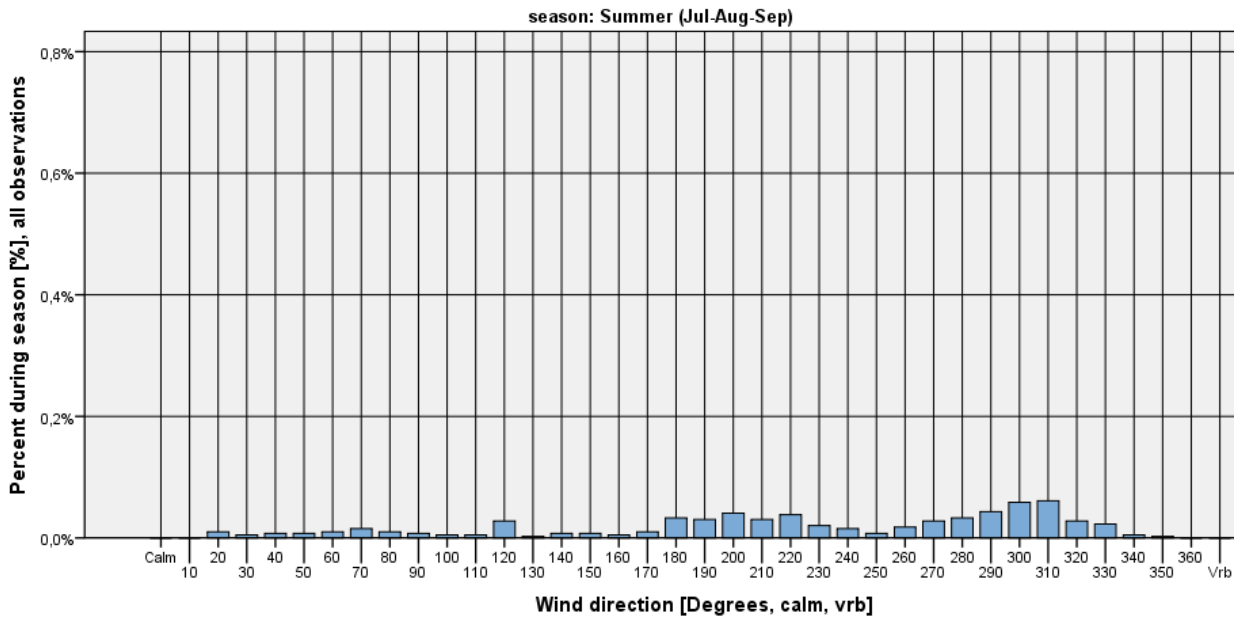


Figure 578

EKSP. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

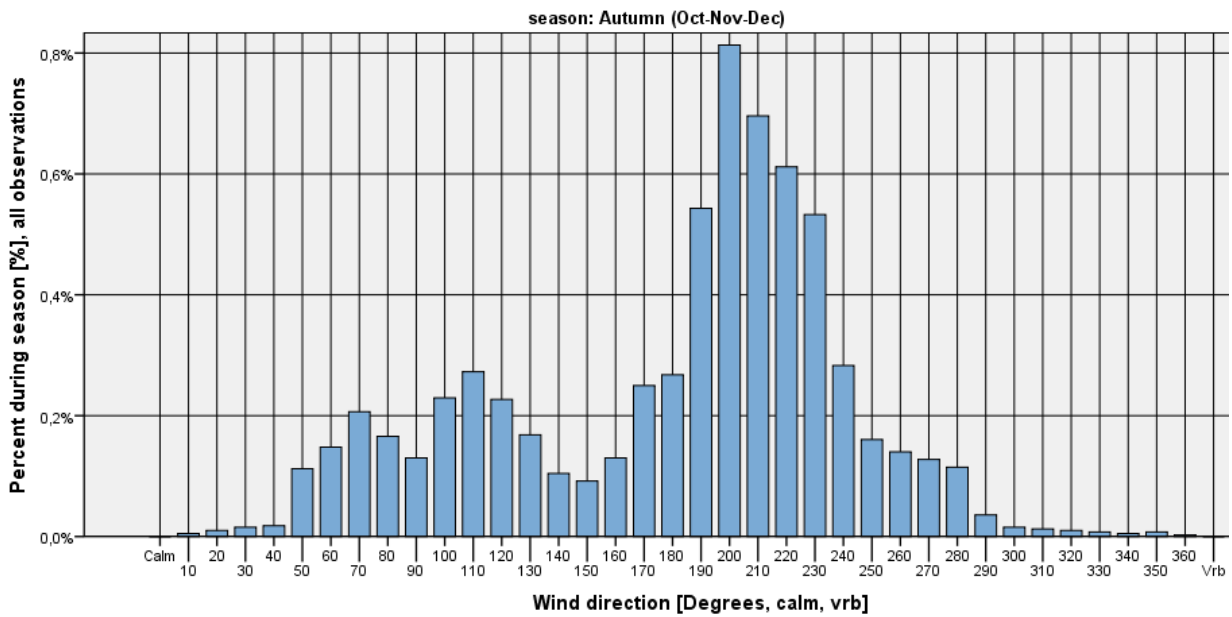


Figure 579

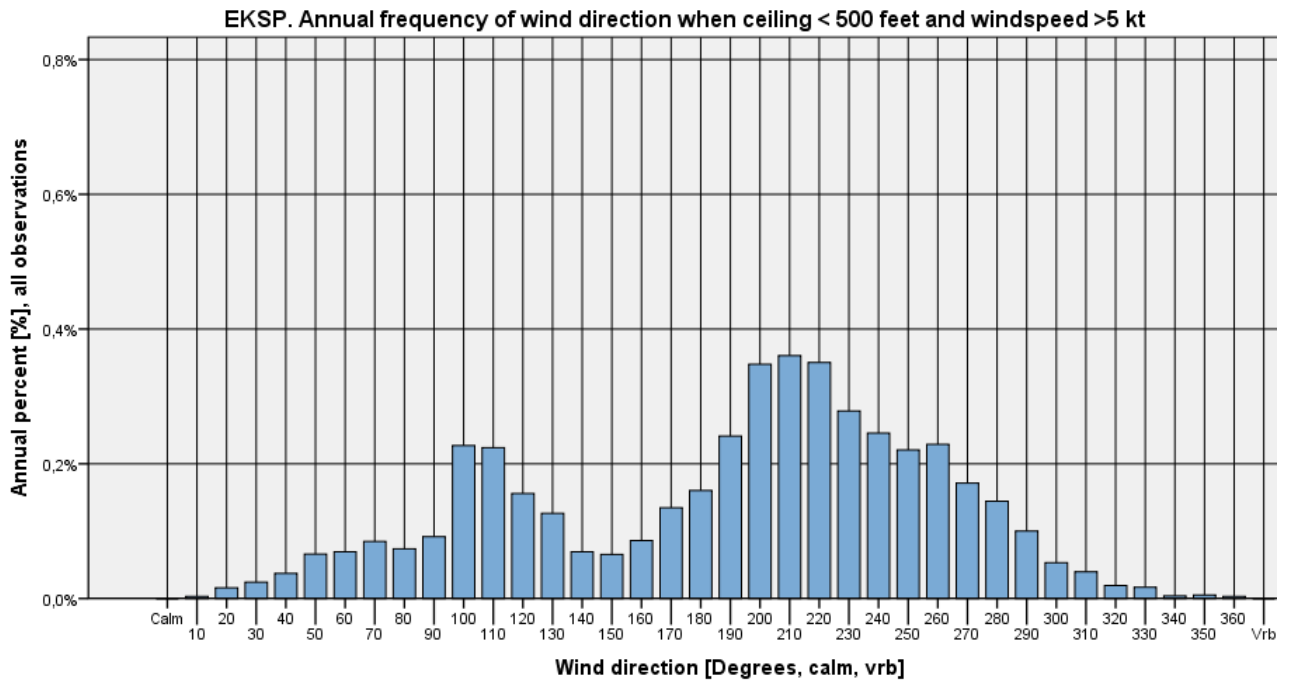


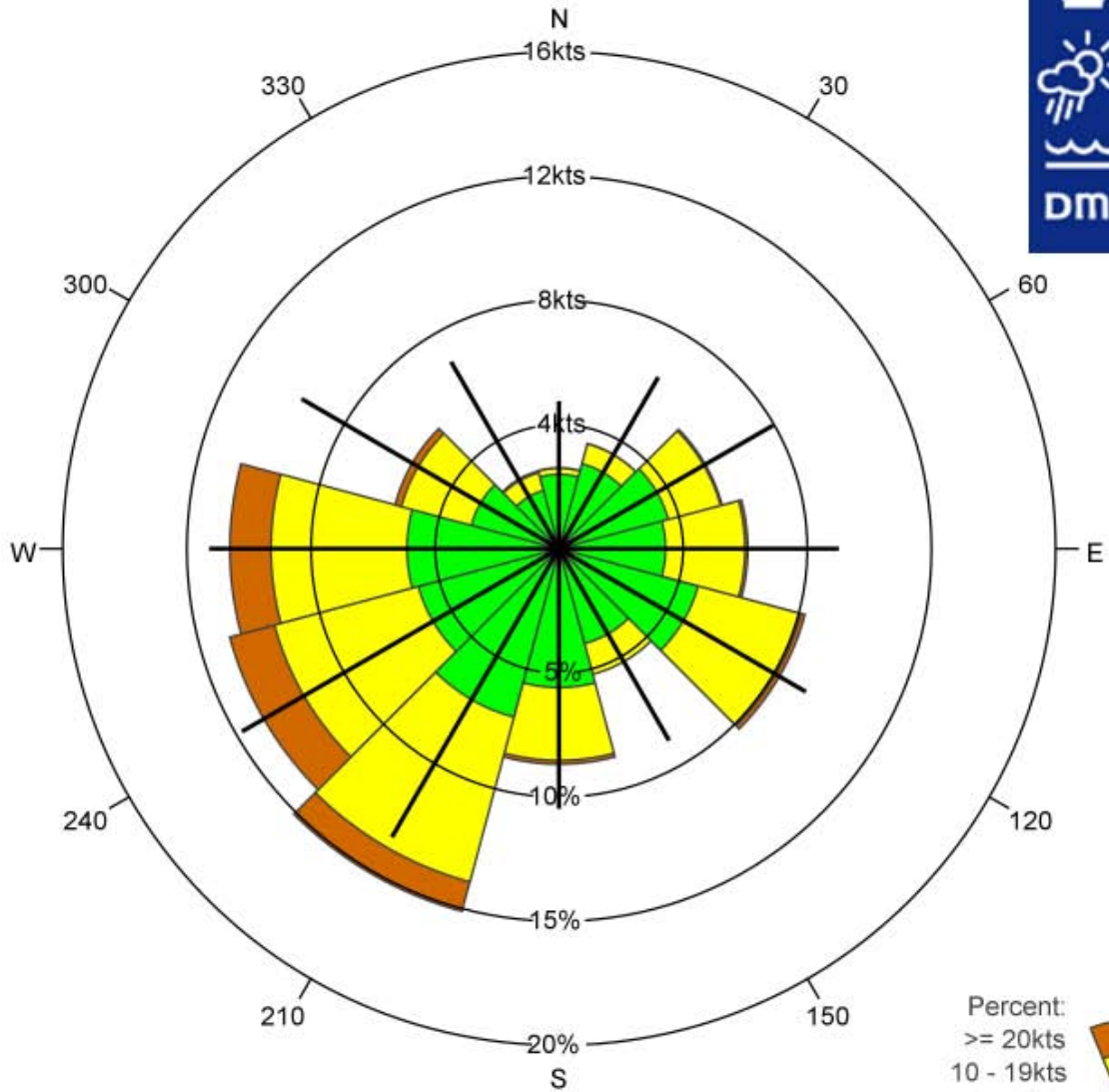
Figure 580



Wind roses

EKSP Vojens - Skrydstrup -mil AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:
—— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.3	4.4	6.8	7.6	10.3	5.2	8.7	15.1	13.7	13.3	6.8	3.2	98.4
% 1 - 9kts	3.0	3.5	4.6	4.3	5.8	4.0	5.6	7.0	5.9	6.1	3.7	2.4	55.8
% 10 - 19kts	0.3	0.8	2.2	3.2	4.3	1.3	2.9	6.9	6.0	5.5	2.9	0.7	37.0
% >= 20kts	0.0	0.0	0.1	0.1	0.2	0.0	0.2	1.2	1.9	1.7	0.3	0.1	5.6
Mean wind speed	4.7	6.4	8.0	9.0	9.2	7.2	8.4	10.7	11.8	11.3	9.6	7.0	9.5
Max wind speed	26.0	24.0	26.0	26.0	24.0	22.0	30.0	39.0	46.0	40.0	38.0	24.0	46.0

Number of observations = 77741

Source: DMI

Calm defined a wind speed = 0kts

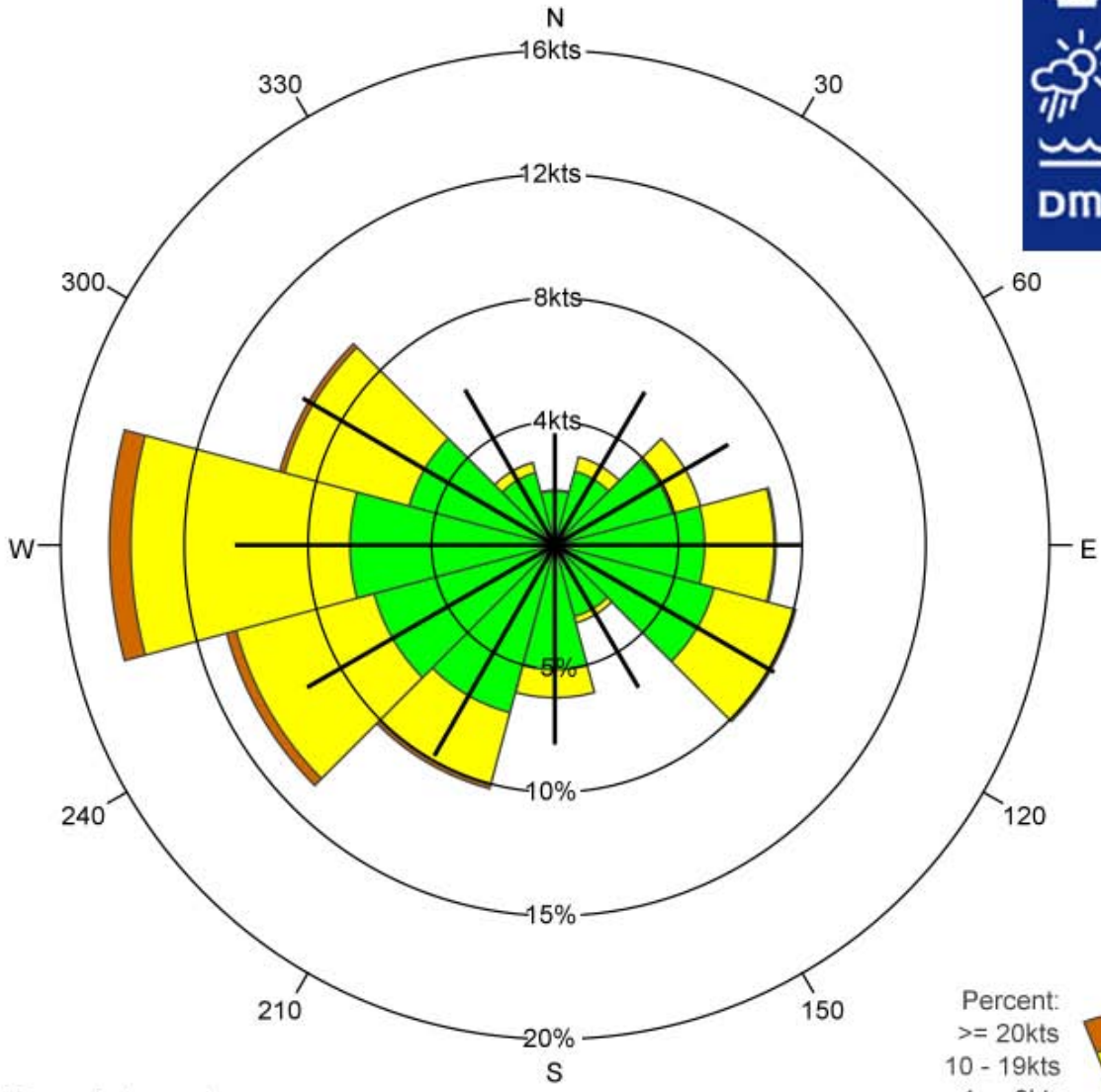
Number of observations with calm/varying wind direction: 1244=1.6%

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



EKSP Vojens - Skrydstrup -mil SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	2.2	3.7	6.1	8.9	10.1	3.2	6.2	10.2	13.7	18.0	11.5	3.5	97.4
% 1 - 9kts	2.2	3.1	4.9	6.1	6.6	3.0	5.0	7.0	7.6	8.3	6.1	3.0	62.9
% 10 - 19kts	0.0	0.6	1.2	2.8	3.4	0.3	1.1	3.0	5.8	8.9	5.2	0.4	32.7
% >= 20kts	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.4	0.9	0.2	0.0	1.7
Mean wind speed	3.6	5.8	6.5	8.0	8.2	5.4	6.5	7.8	9.3	10.4	9.5	5.8	8.3
Max wind speed	14.0	20.0	22.0	25.0	23.0	19.0	21.0	27.0	28.0	33.0	27.0	20.0	33.0

Number of observations = 78154

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 2025=2.6%

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

Availability

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

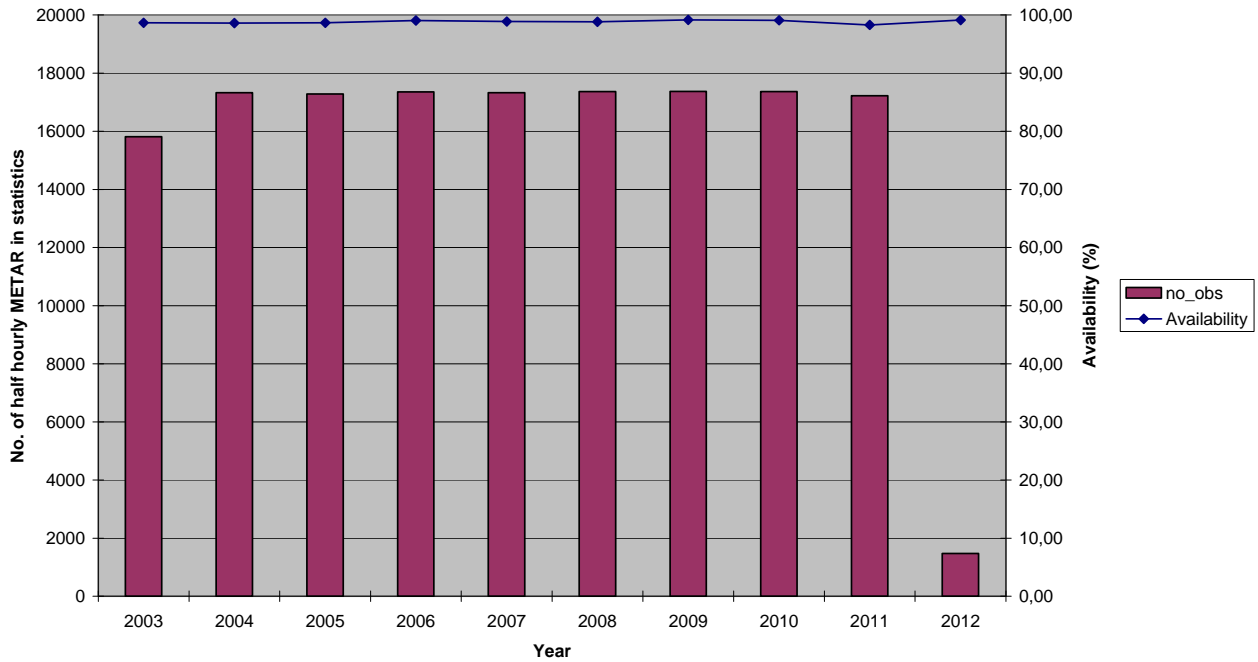


Figure 581

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

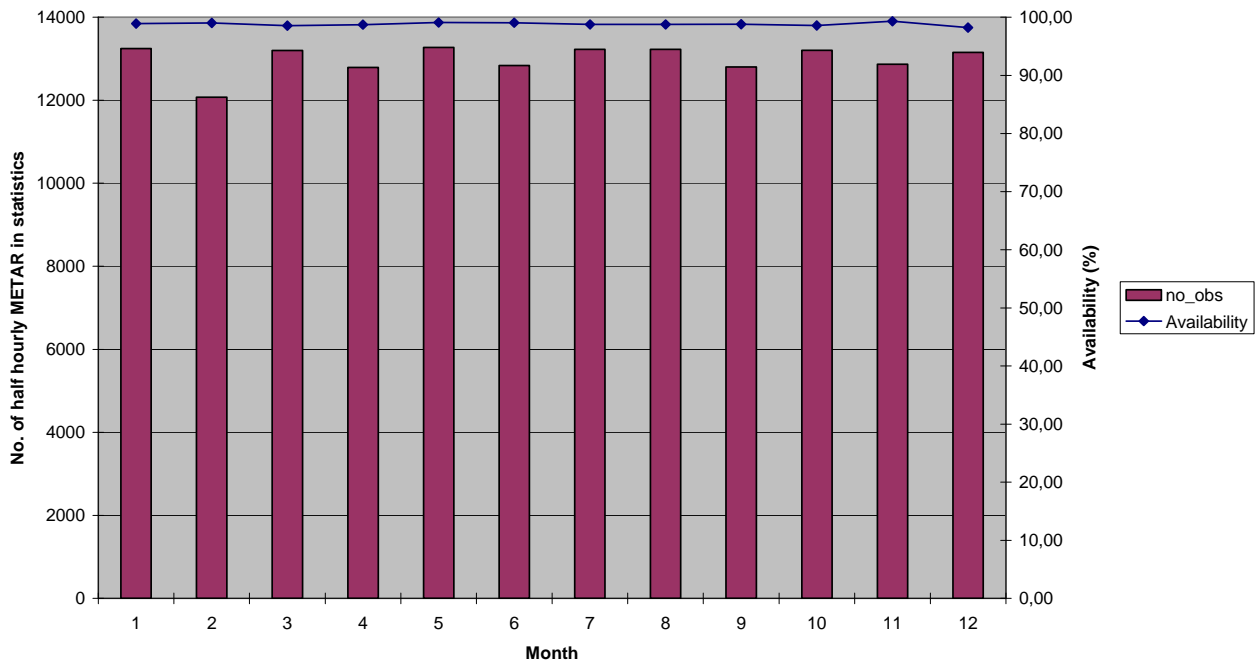


Figure 582

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

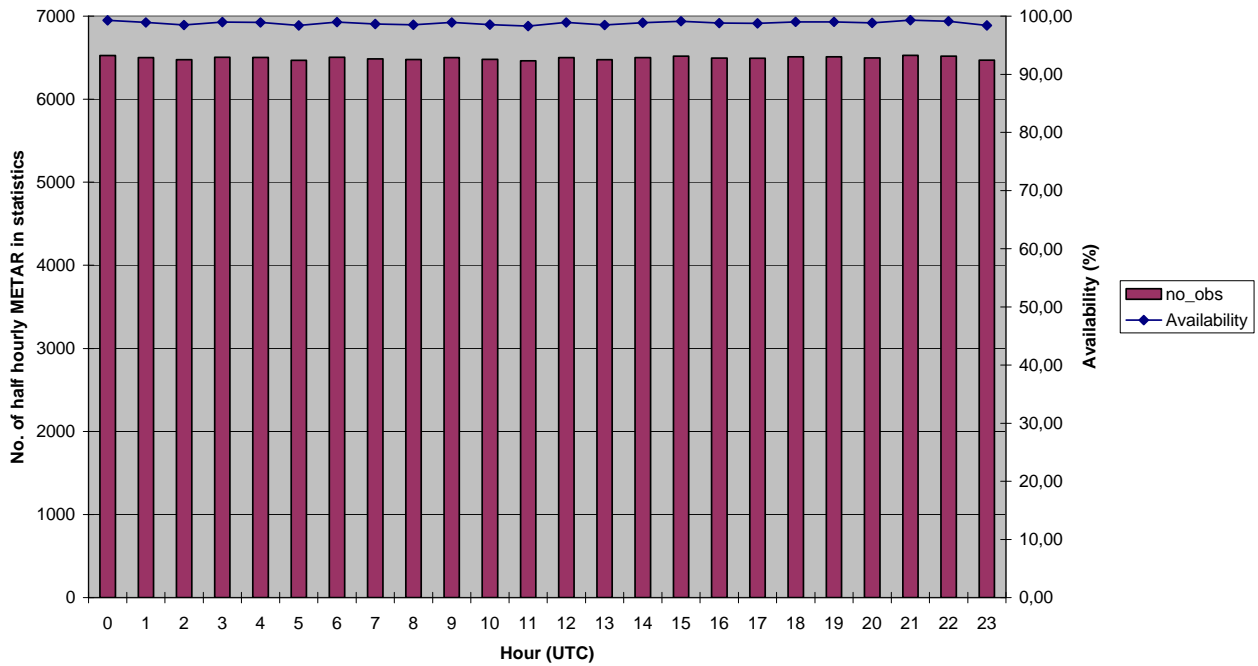


Figure 583

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

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

Table 67



EKVD Kolding/Vamdrup

Koldingegnen Airport/Vamdrup

Airport location: 55,433°N 9,333°E Elevation: 44 m above msl.

EKVD observations in statistics: 30.330 half hourly METAR¹² covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 19,2% .

The availability is low because EKVD mainly issues hourly METAR during day time, and a little less often during weekends than mid-week. Look for more details in the Availability Section.

EKVD METAR are manual until 29-Dec-2005 and partly AUTO METAR since then.

Cross tables Visibility – Ceiling

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

No. Obs = 6.975	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,49	4,07	5,73	5,78	5,78	0,30	6,08
<1 km	0,49	4,27	7,35	7,43	7,47	0,42	7,89
<1.5 km	0,50	4,36	9,45	9,68	9,73	0,54	10,28
<3.0 km	0,50	4,57	14,80	18,77	19,21	1,29	20,50
< 5.0 km	0,50	4,59	16,09	24,86	26,84	3,87	30,71
>= 5,0 km or CAVOK	0	0	0,52	7,46	18,28	51,01	69,29
Total	0,50	4,59	16,60	32,32	45,12	54,88	100

Table 68

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

No. Obs = 7.760	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,052	0,30	0,54	0,55	0,55	0,18	0,73
<1 km	0,052	0,32	0,72	0,73	0,73	0,22	0,95
<1.5 km	0,052	0,32	0,80	0,81	0,81	0,24	1,06
<3.0 km	0,052	0,32	2,01	2,76	2,81	0,46	3,27
< 5.0 km	0,052	0,32	2,54	5,05	5,61	1,42	7,02
>= 5,0 km or CAVOK	0	0	0,15	4,61	10,32	82,65	92,98
Total	0,052	0,32	2,69	9,66	15,93	84,07	100

Table 69

¹² For every half hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.

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

No. Obs = 8.224	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,061	0,34	0,43	0,43	0,43	0,26	0,68
<1 km	0,061	0,34	0,49	0,49	0,49	0,35	0,84
<1.5 km	0,061	0,40	0,74	0,81	0,81	0,43	1,24
<3.0 km	0,061	0,44	1,43	2,12	2,19	0,79	2,98
< 5.0 km	0,061	0,44	1,81	3,90	4,39	2,13	6,52
>= 5,0 km or CAVOK	0	0	0,26	4,02	9,50	83,99	93,48
Total	0,061	0,44	2,07	7,93	13,89	86,11	100

Table 70

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

No. Obs = 7.371	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,38	2,46	3,51	3,53	3,53	0,75	4,27
<1 km	0,38	2,56	4,65	4,75	4,78	0,85	5,63
<1.5 km	0,38	2,60	5,97	6,16	6,24	0,90	7,14
<3.0 km	0,38	2,67	10,74	14,39	14,95	1,61	16,56
< 5.0 km	0,38	2,67	12,33	21,39	23,29	3,61	26,90
>= 5,0 km or CAVOK	0	0,014	0,24	7,43	15,78	57,32	73,10
Total	0,38	2,69	12,58	28,83	39,07	60,93	100

Table 71

Annual: EKVD – Frequencies (%) Visibility - Ceiling

No. Obs = 30.330	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,23	1,70	2,43	2,44	2,44	0,37	2,81
<1 km	0,23	1,78	3,14	3,18	3,20	0,45	3,65
<1.5 km	0,24	1,83	4,03	4,15	4,18	0,52	4,70
<3.0 km	0,24	1,90	6,92	9,09	9,36	1,02	10,39
< 5.0 km	0,24	1,91	7,84	13,27	14,46	2,71	17,16
>= 5,0 km or CAVOK	0	0,0033	0,29	5,79	13,25	69,58	82,84
Total	0,24	1,91	8,12	19,06	27,71	72,29	100

Table 72



Wind direction histograms

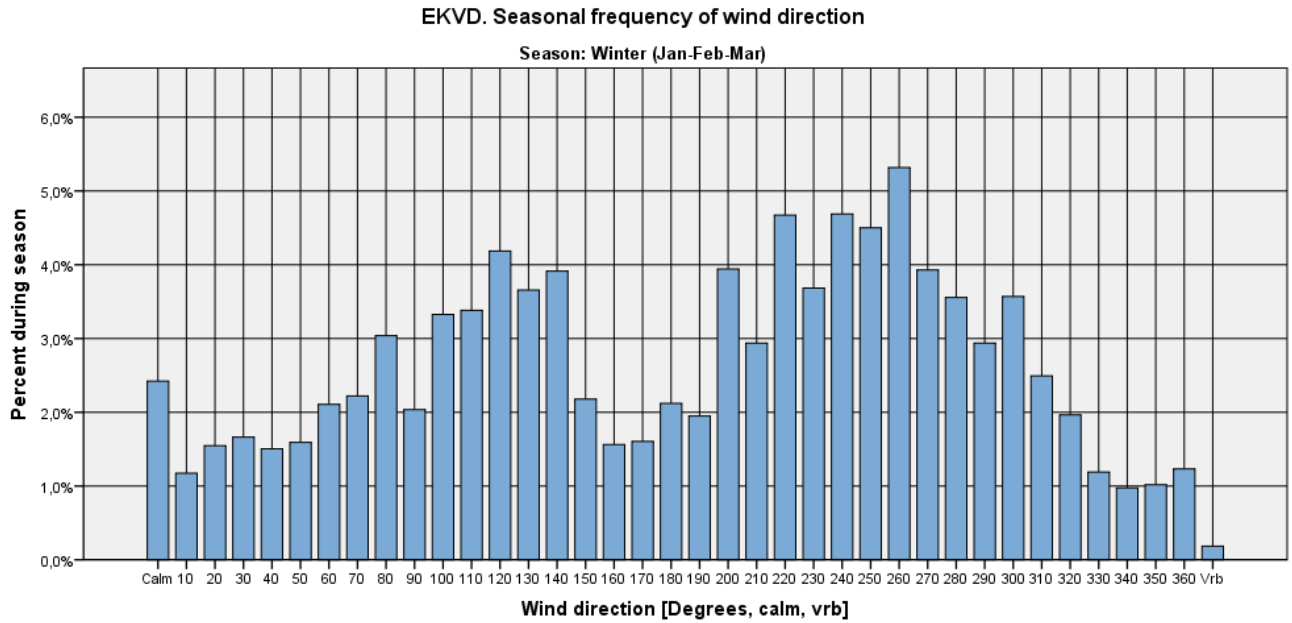


Figure 584

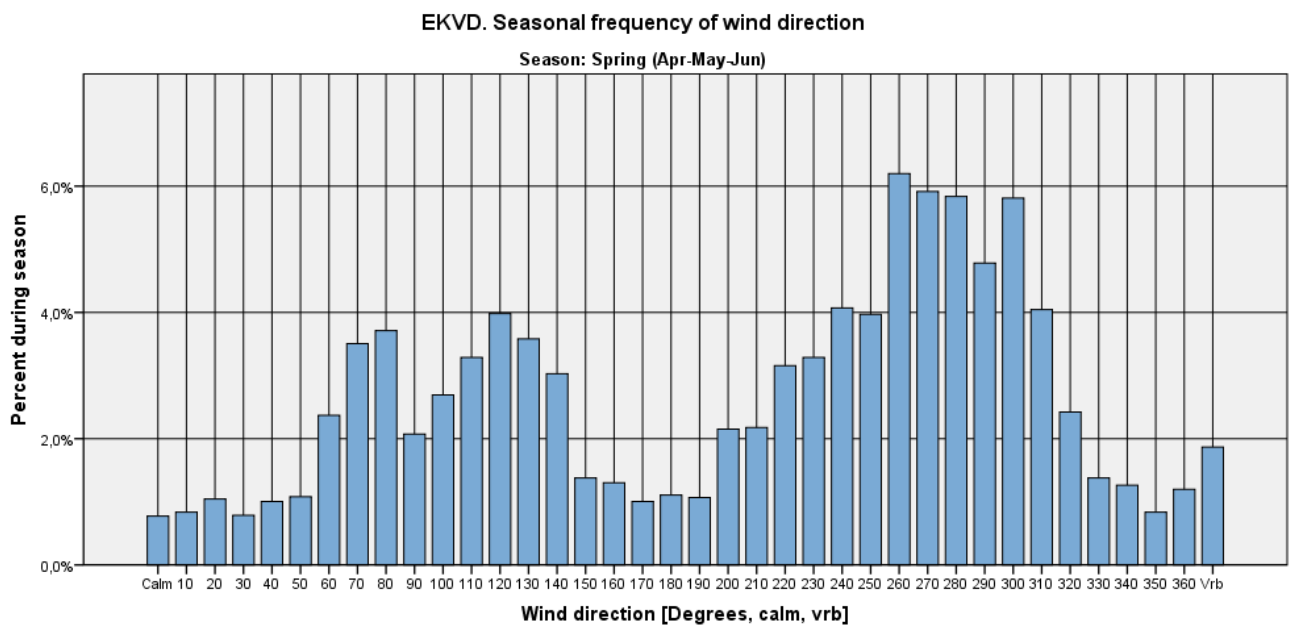


Figure 585

EKVD. Seasonal frequency of wind direction

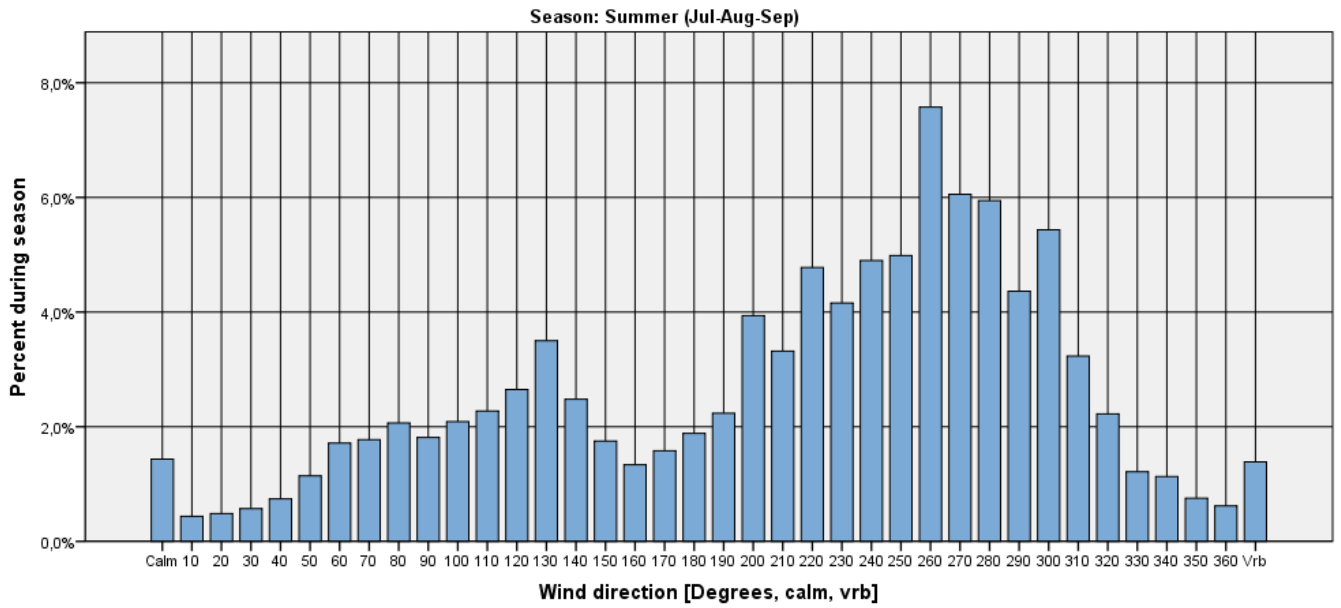


Figure 586

EKVD. Seasonal frequency of wind direction

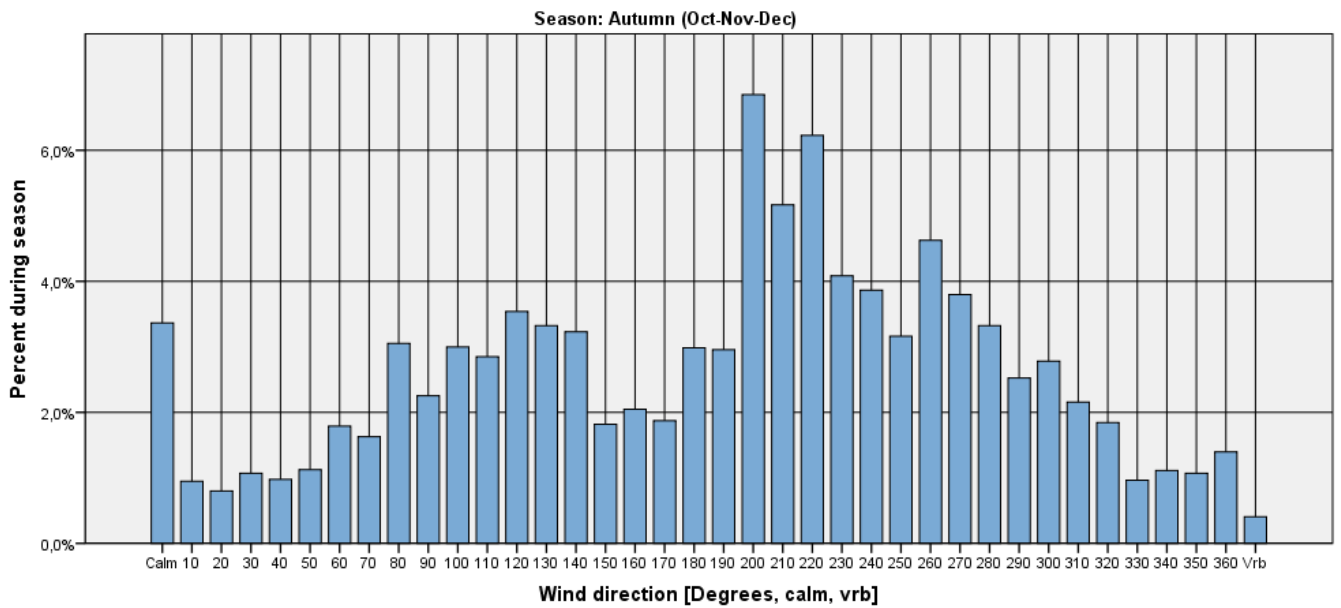


Figure 587

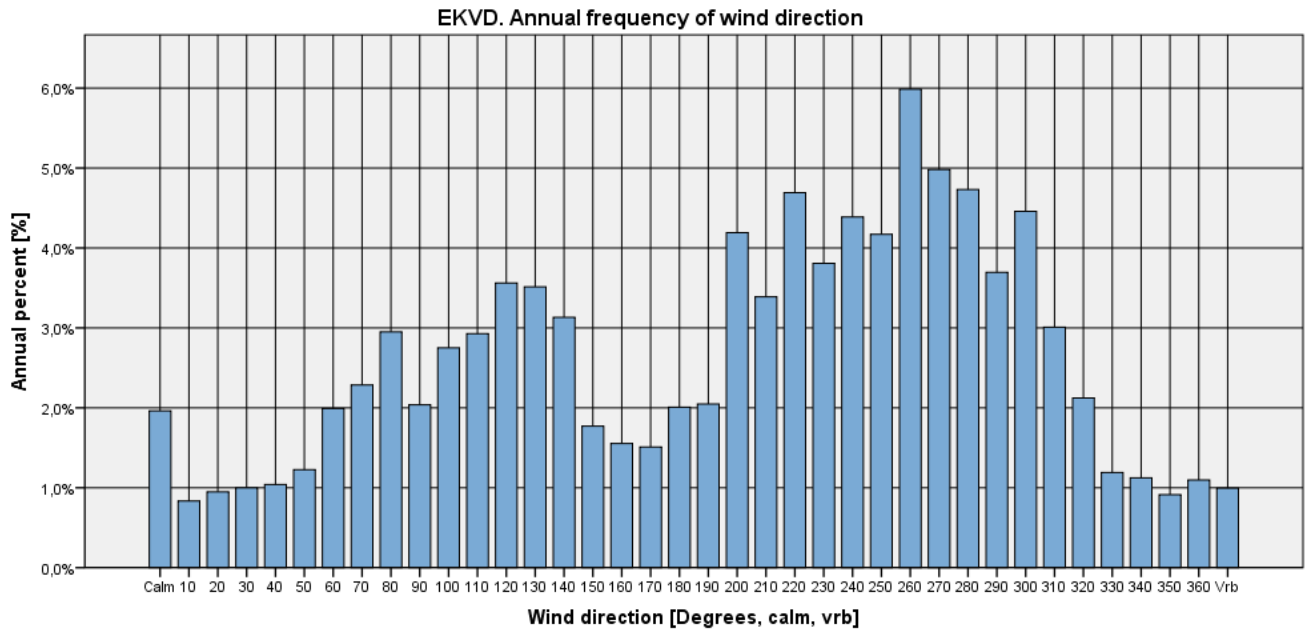


Figure 588



Visibility criteria on wind direction histograms

Visibility < 1000 m

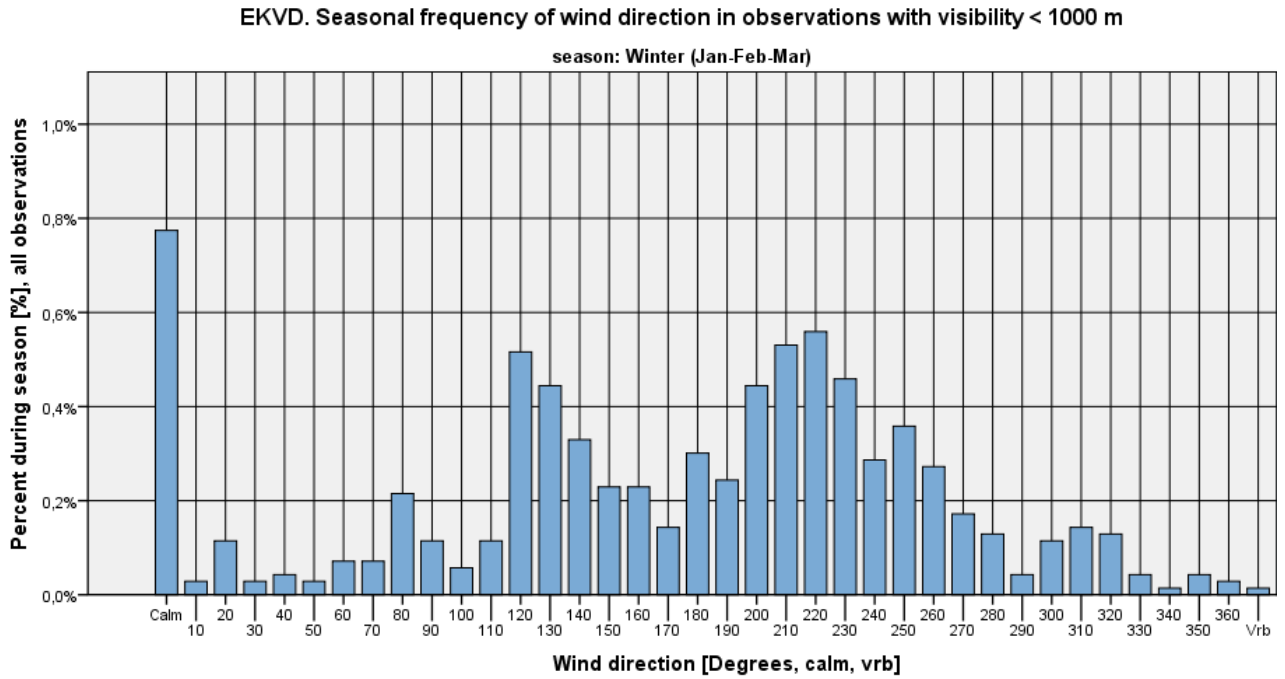


Figure 589

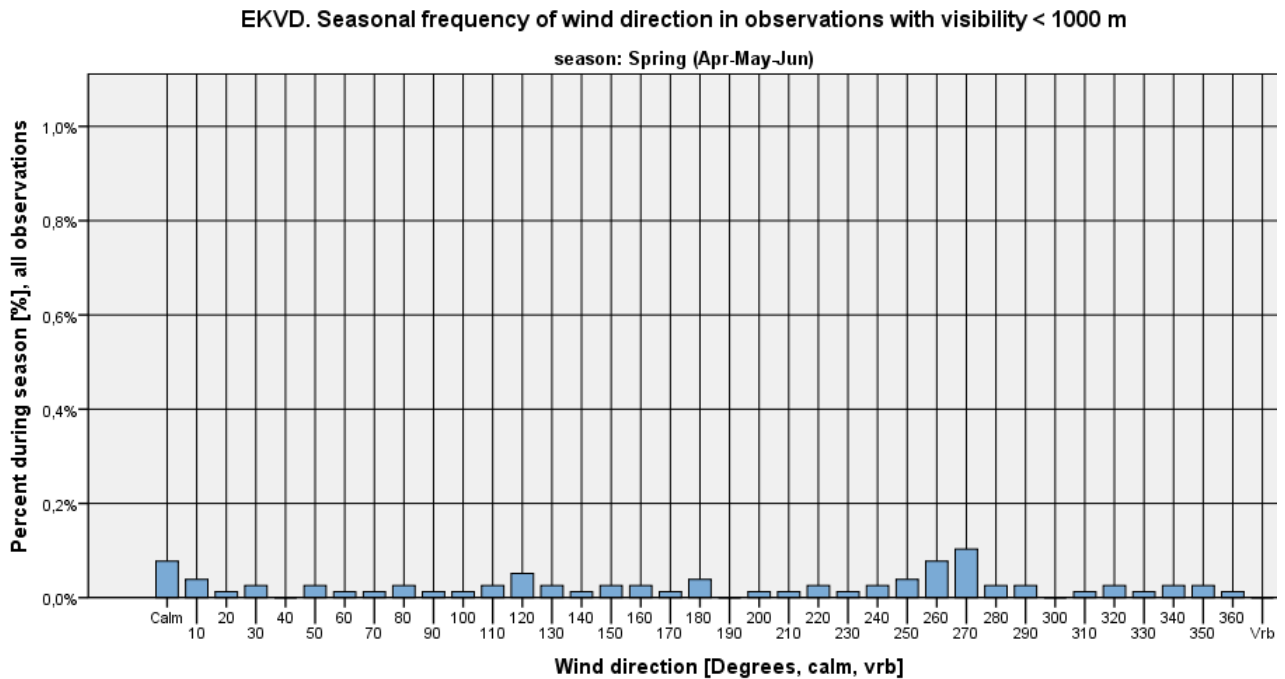


Figure 590

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

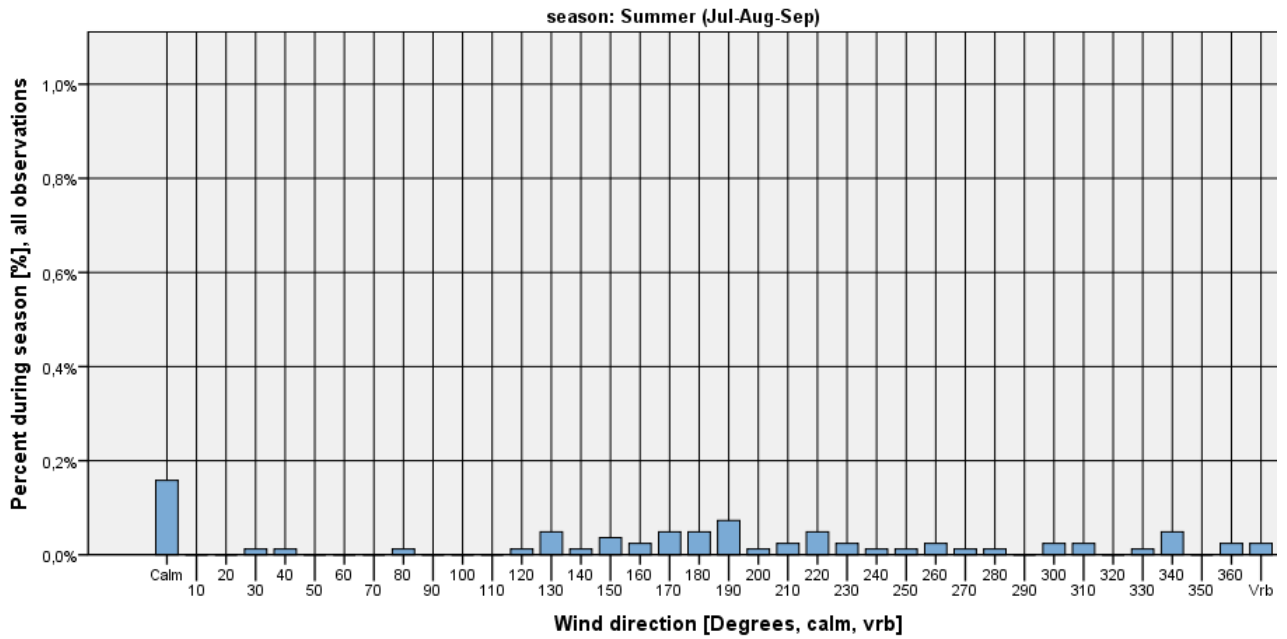


Figure 591

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

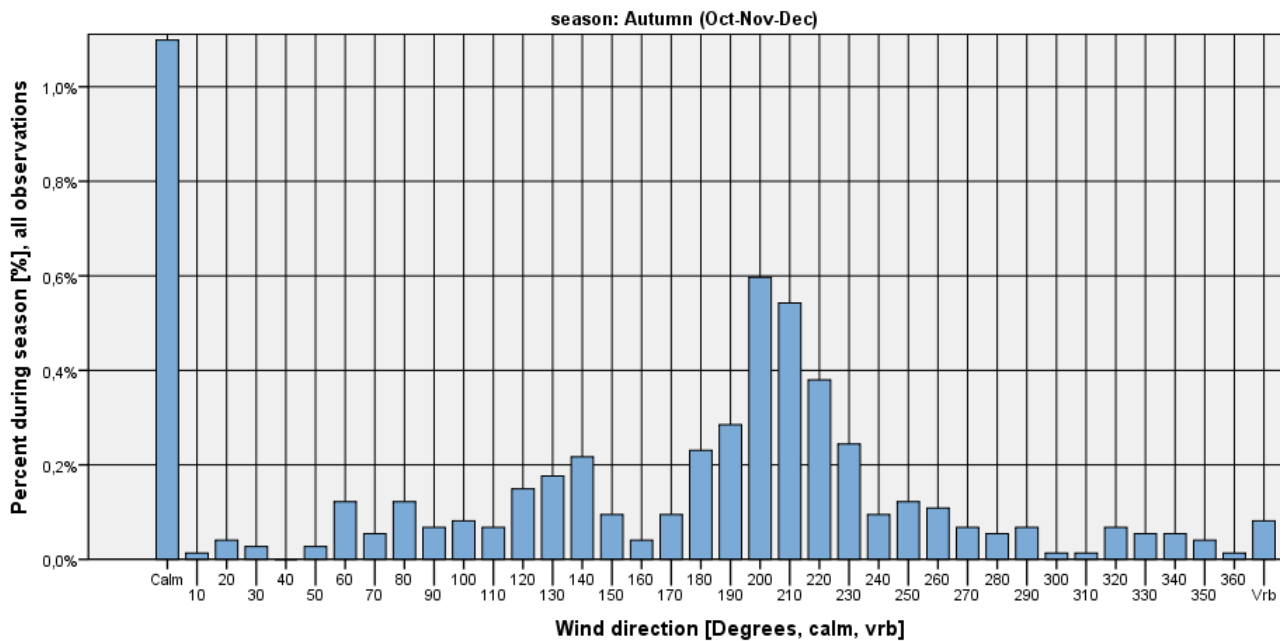


Figure 592

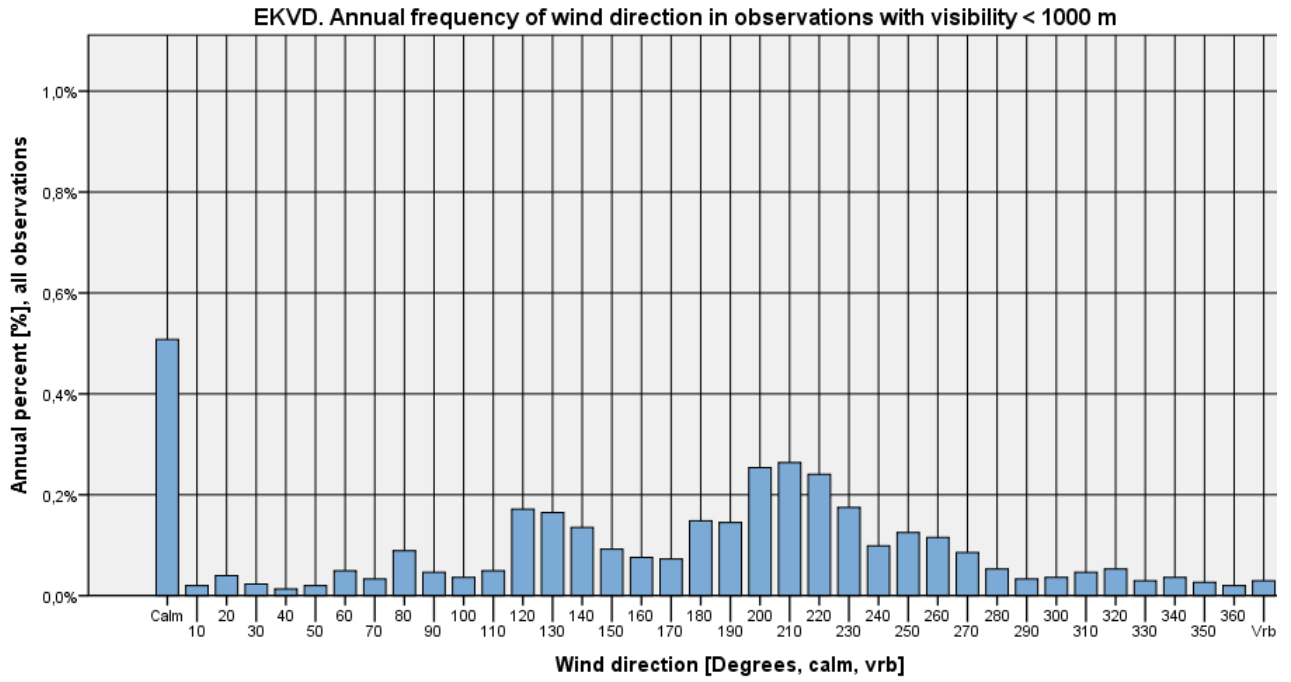


Figure 593



Visibility < 1000 m and wind speed <= 5 kts

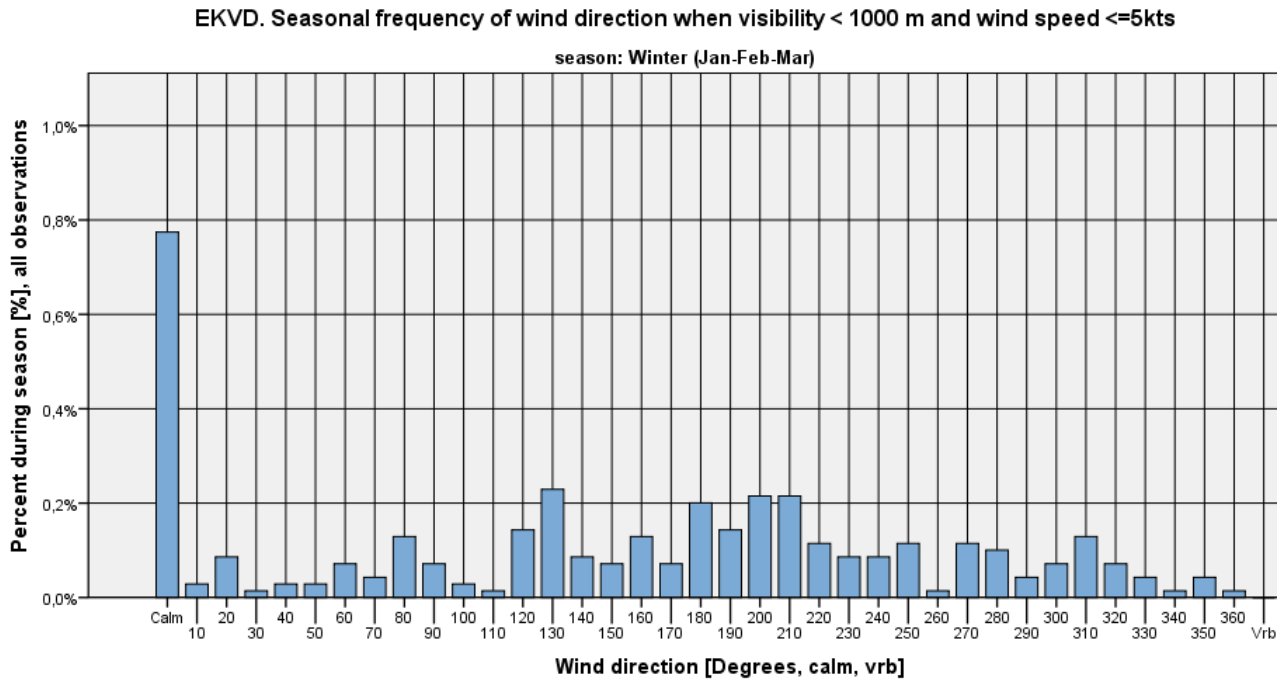


Figure 594

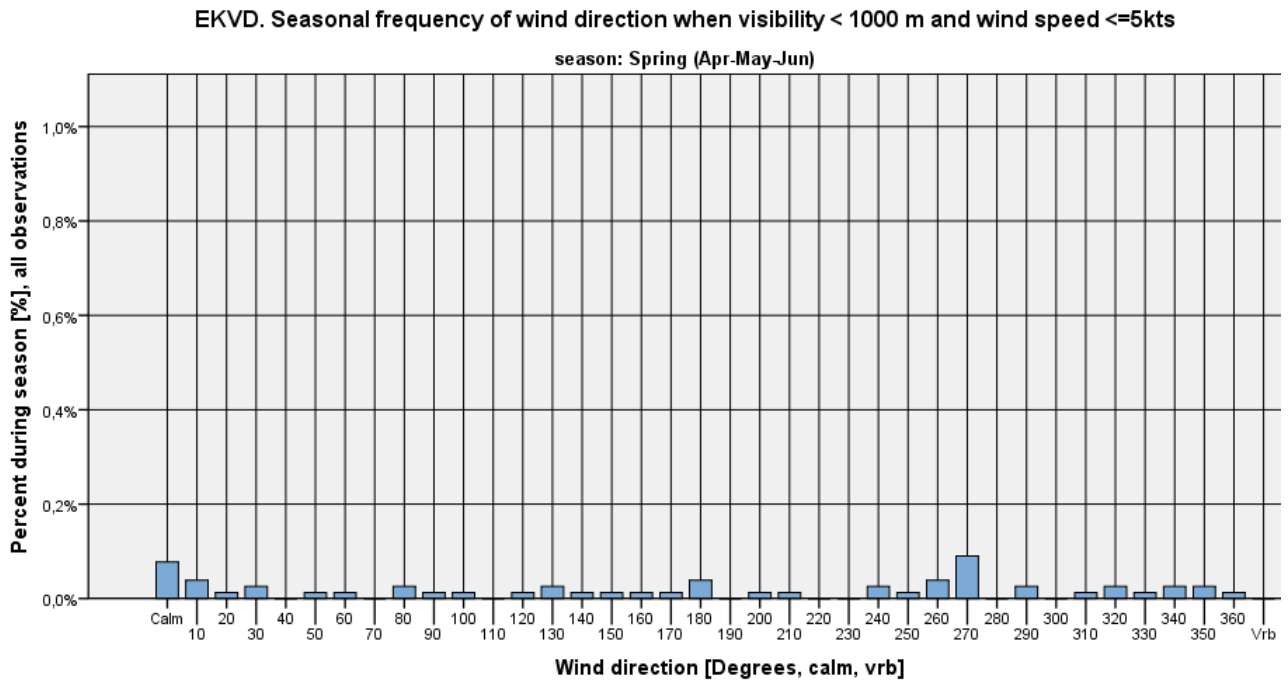


Figure 595



EKVD. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

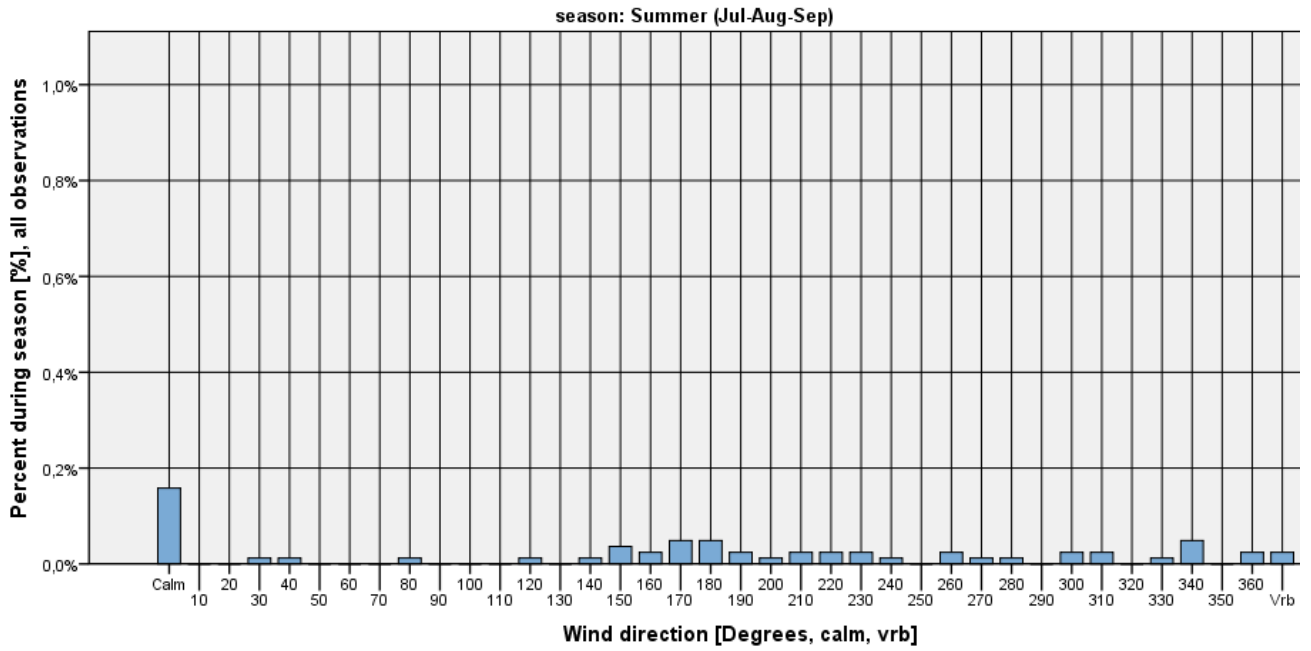


Figure 596

EKVD. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

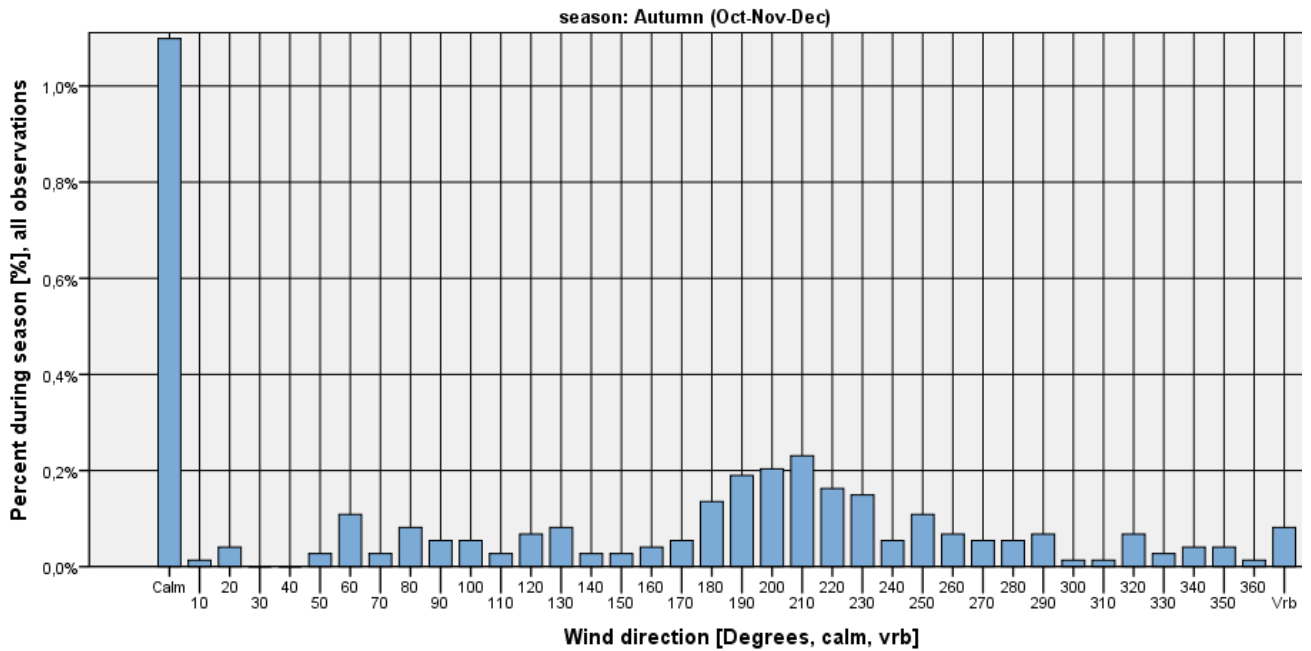


Figure 597

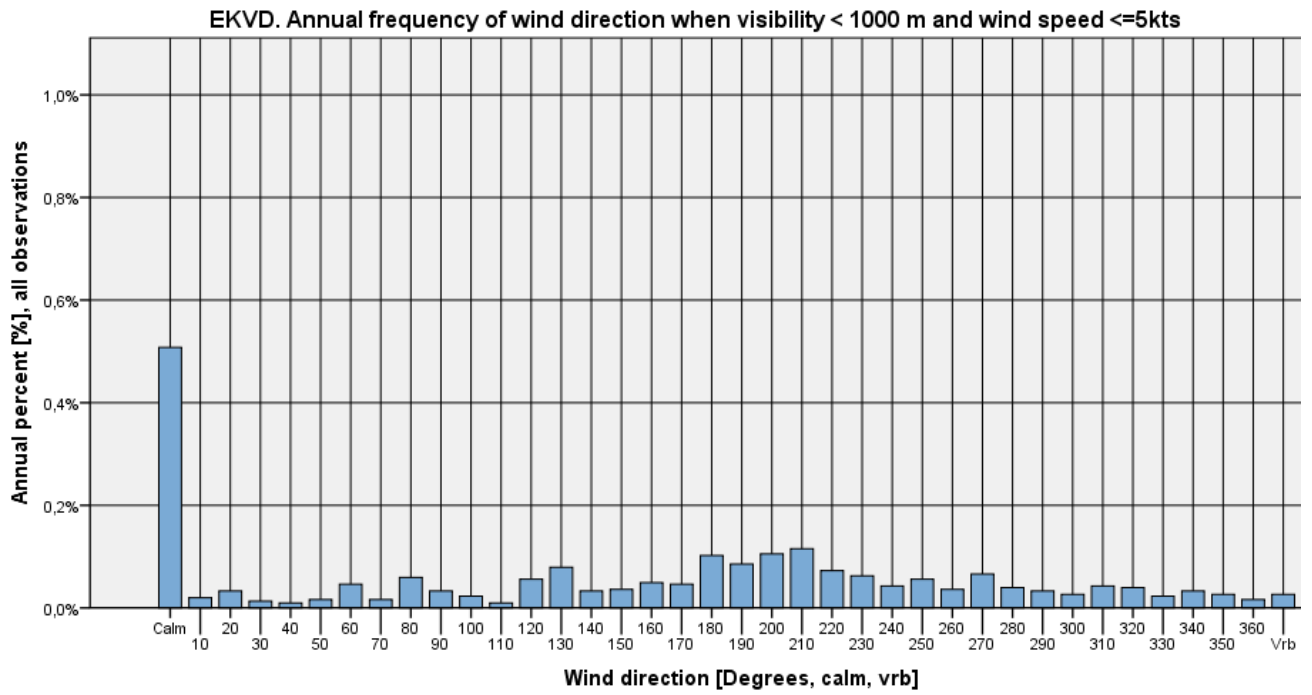


Figure 598



Visibility < 1000 m and wind speed > 5 kts

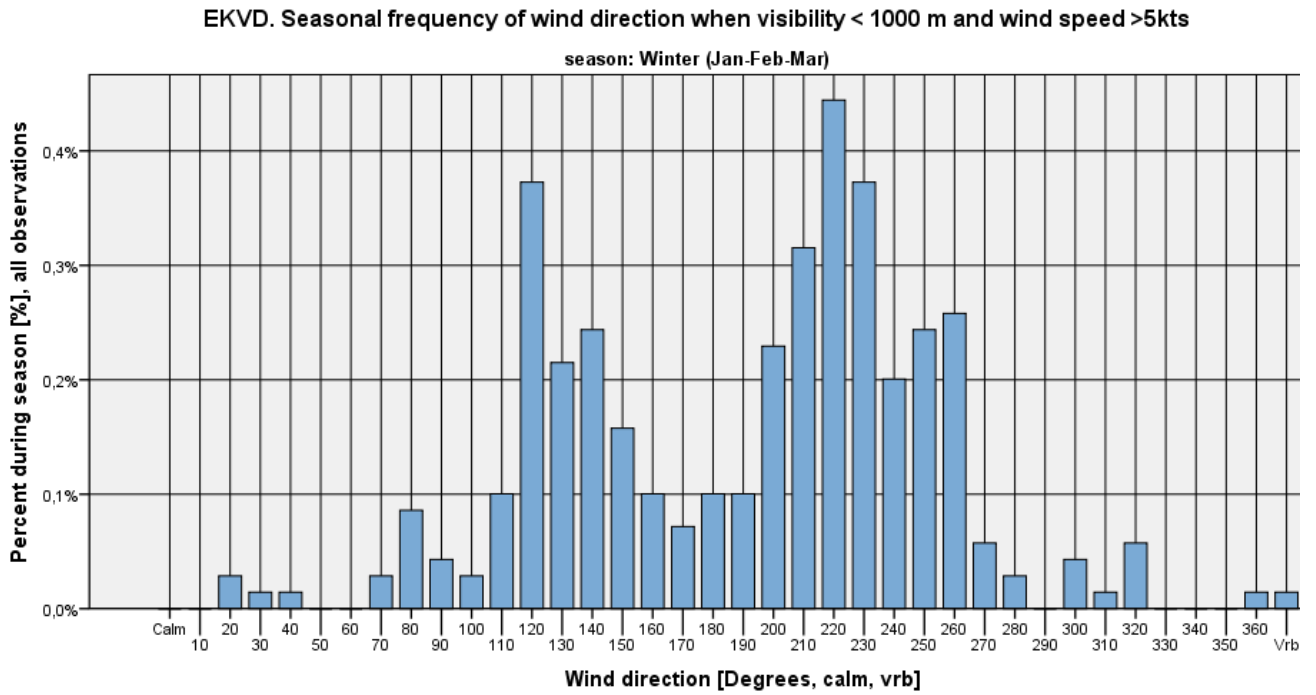


Figure 599

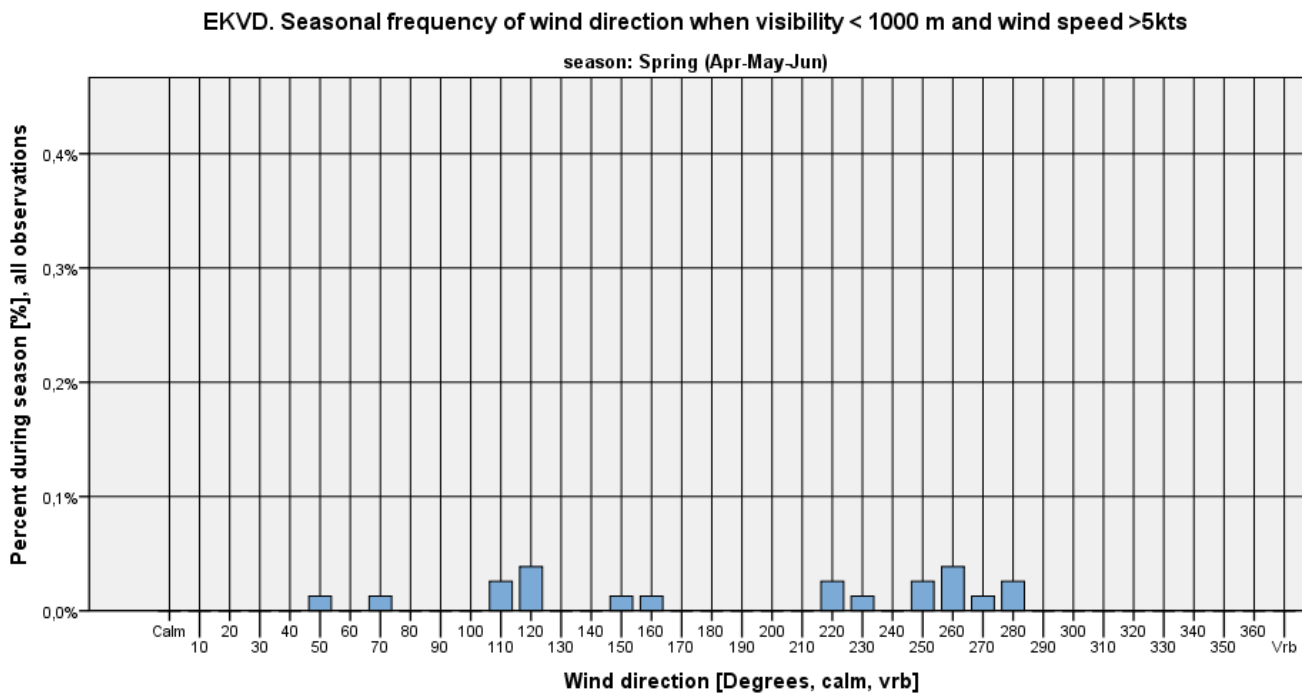


Figure 600



EKVD. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

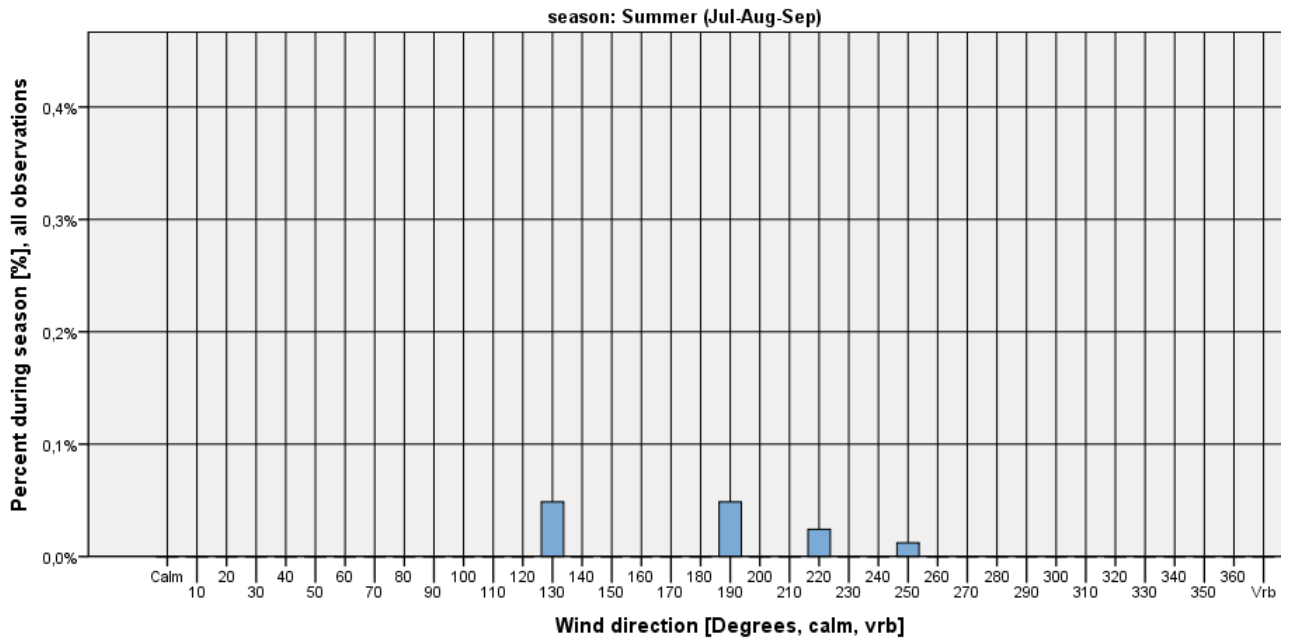


Figure 601

EKVD. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

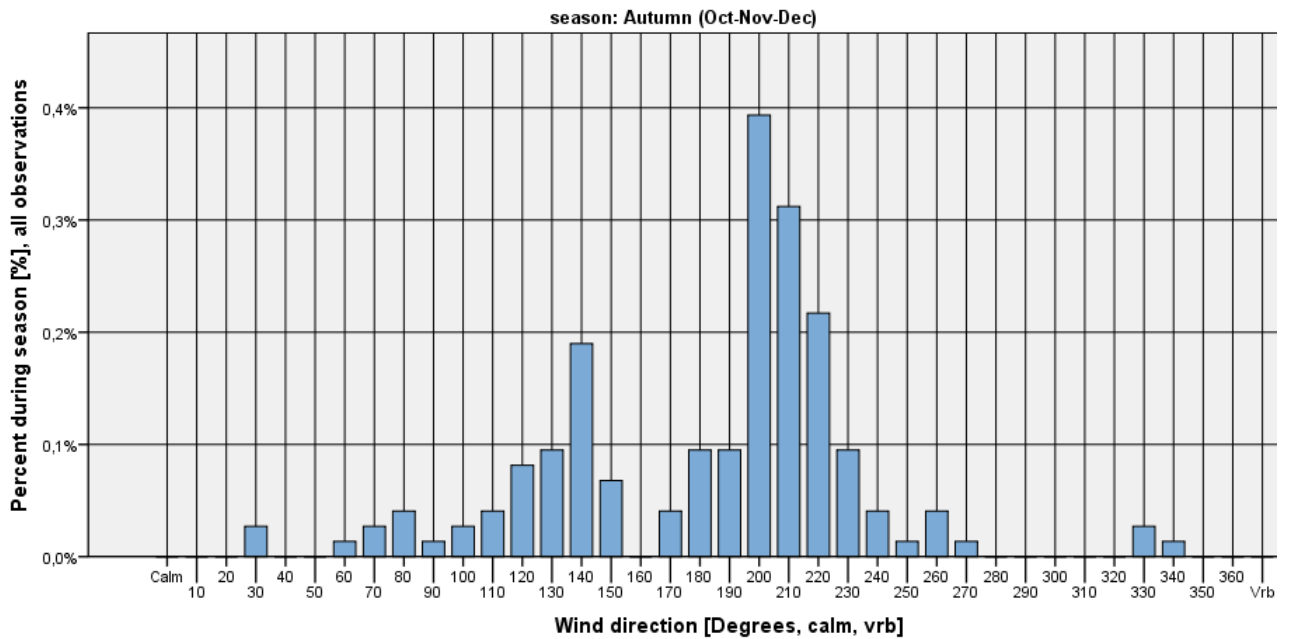


Figure 602

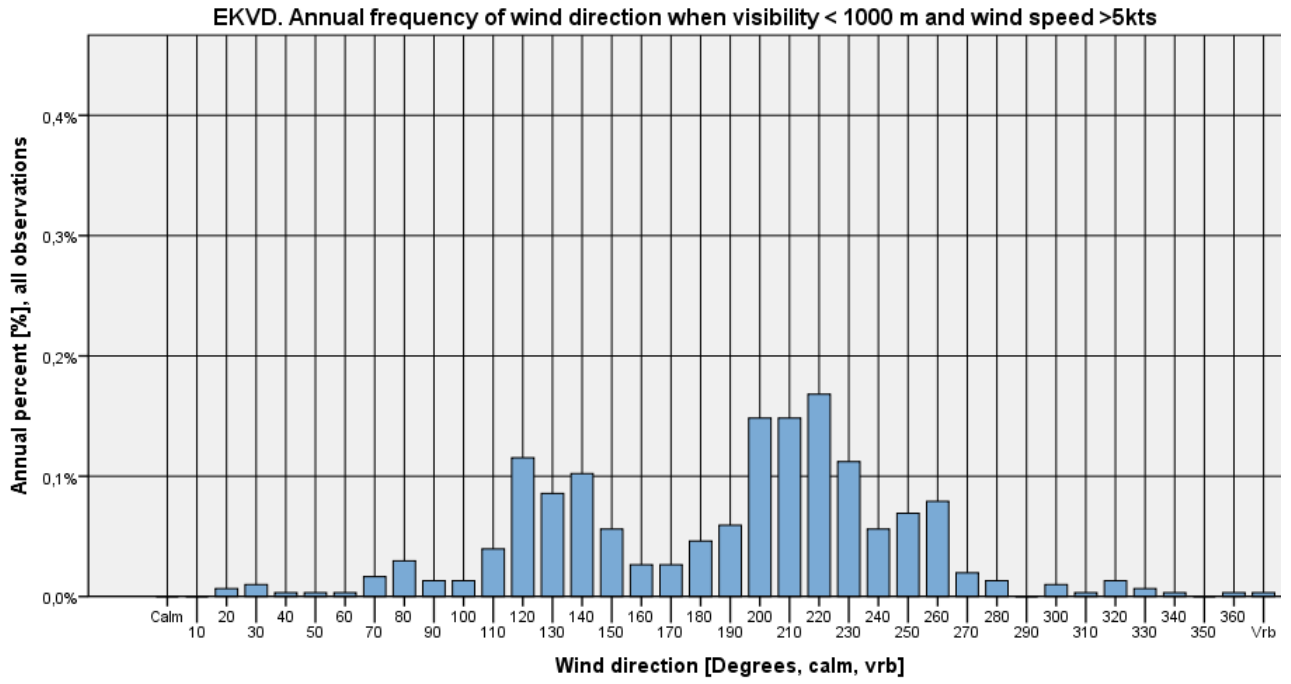


Figure 603



Ceiling criteria on wind direction histograms

Ceiling<1000 feet

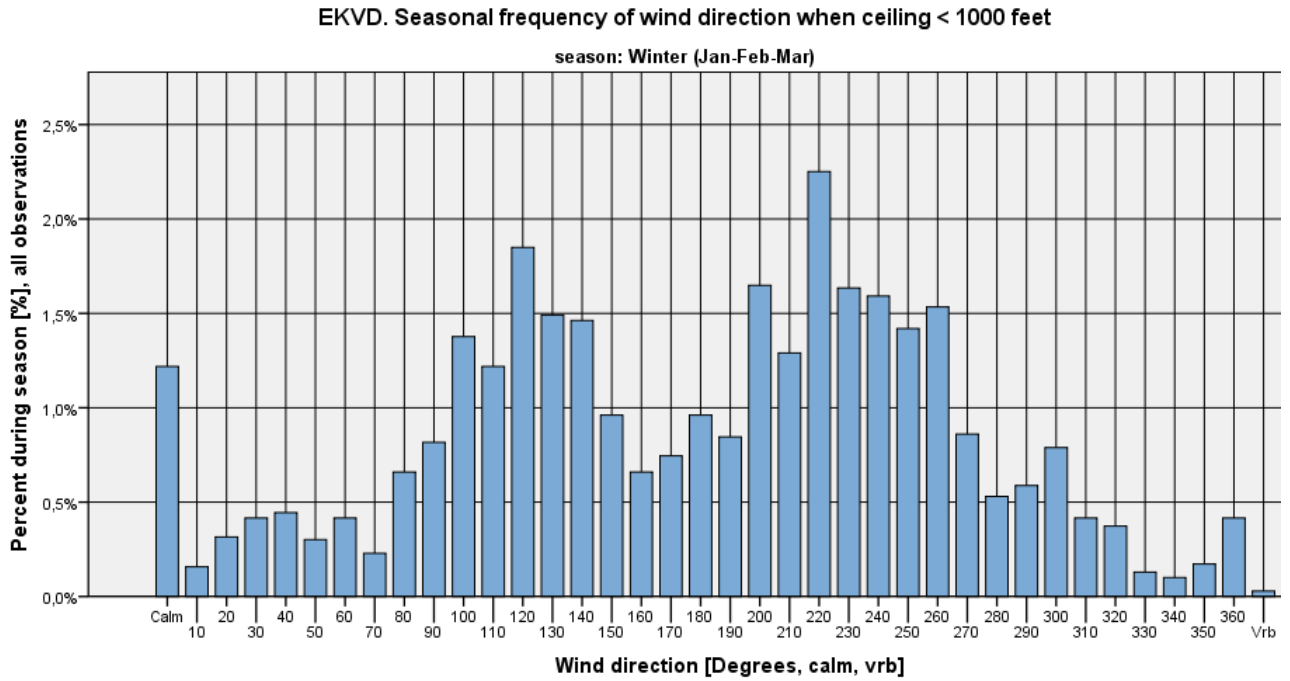


Figure 604

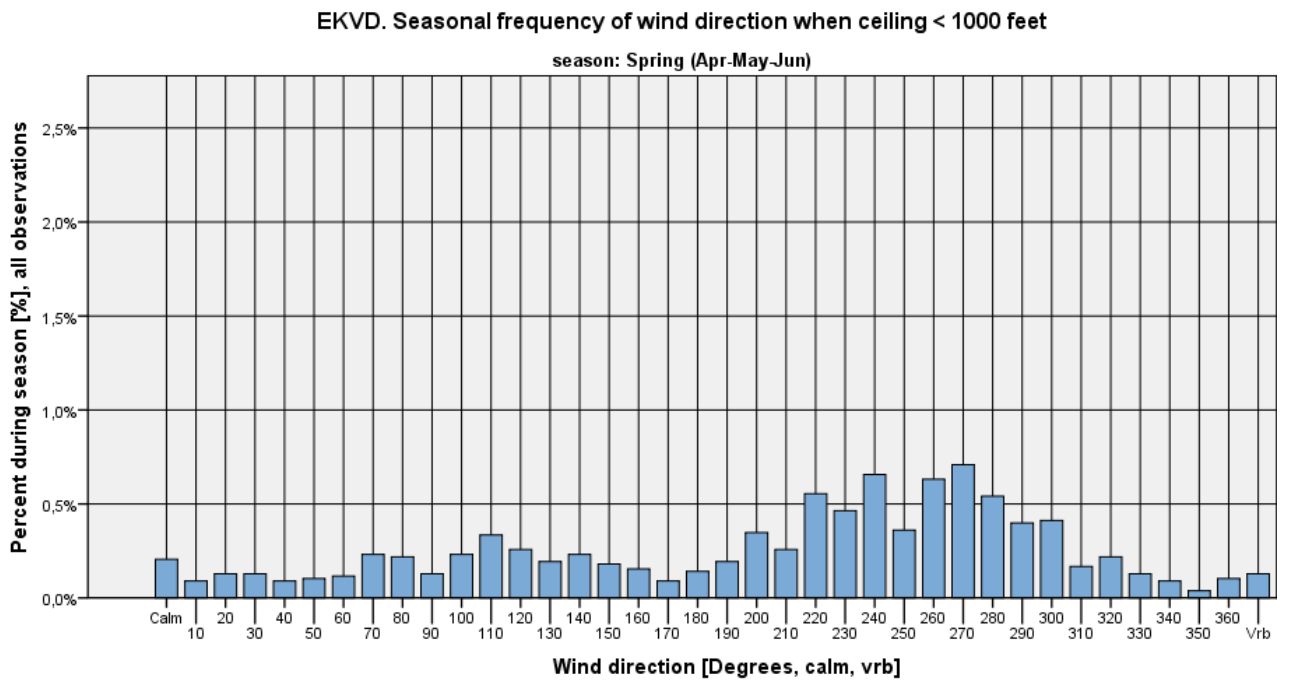


Figure 605

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

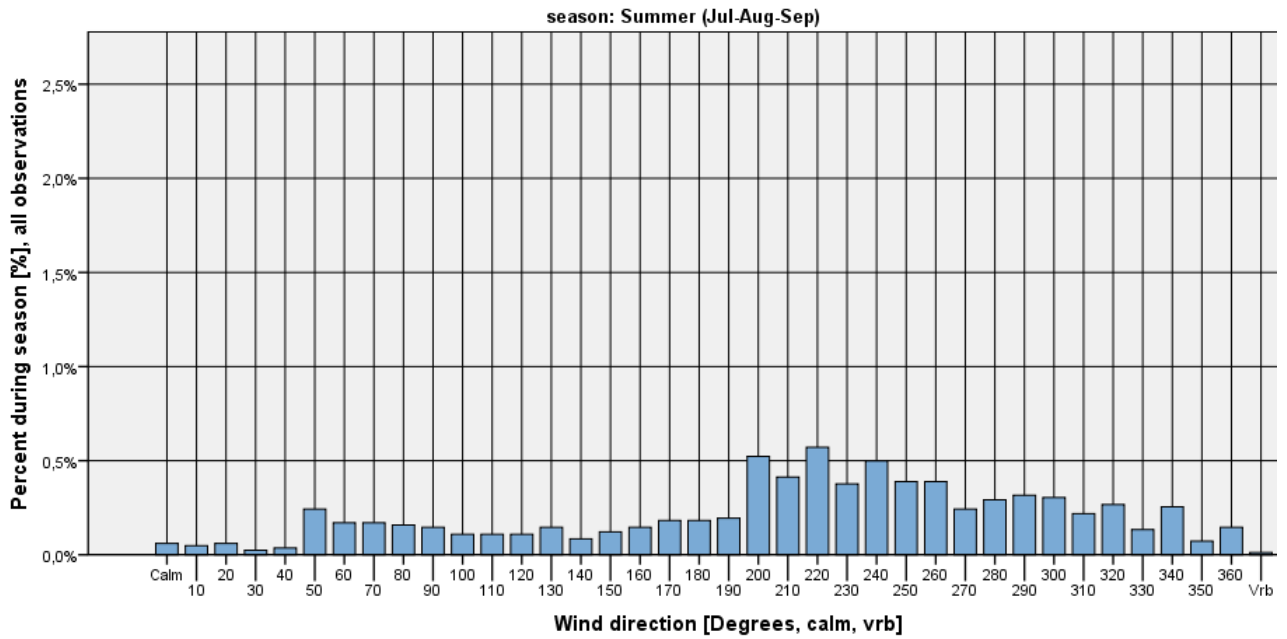


Figure 606

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

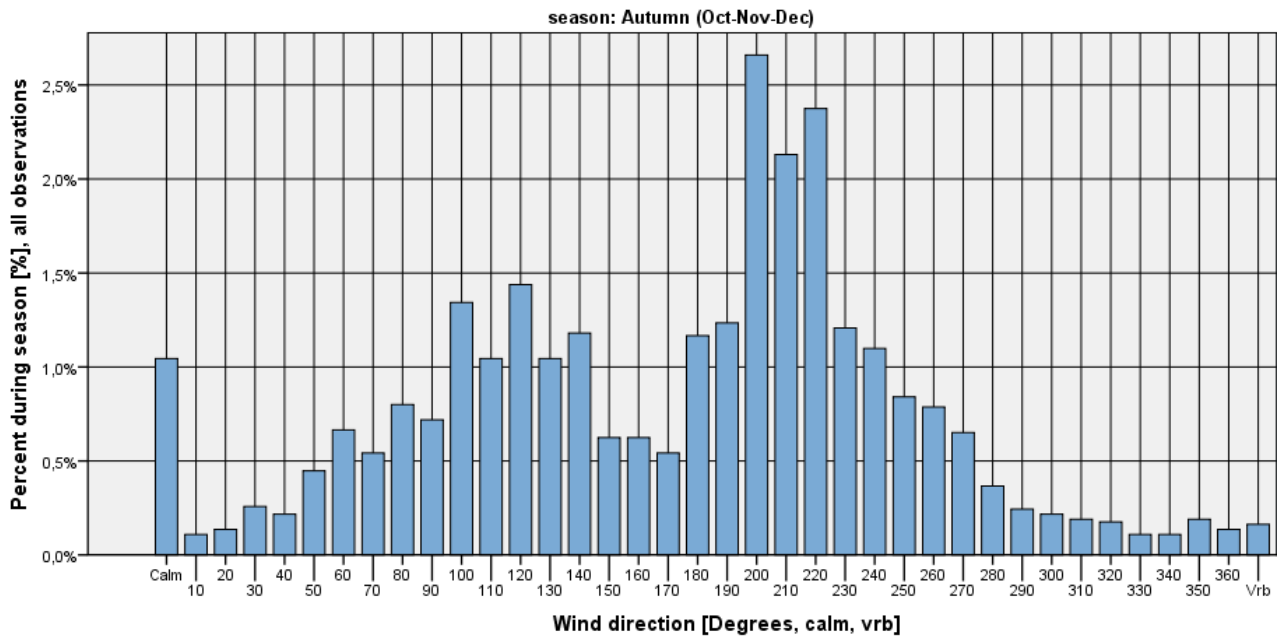


Figure 607

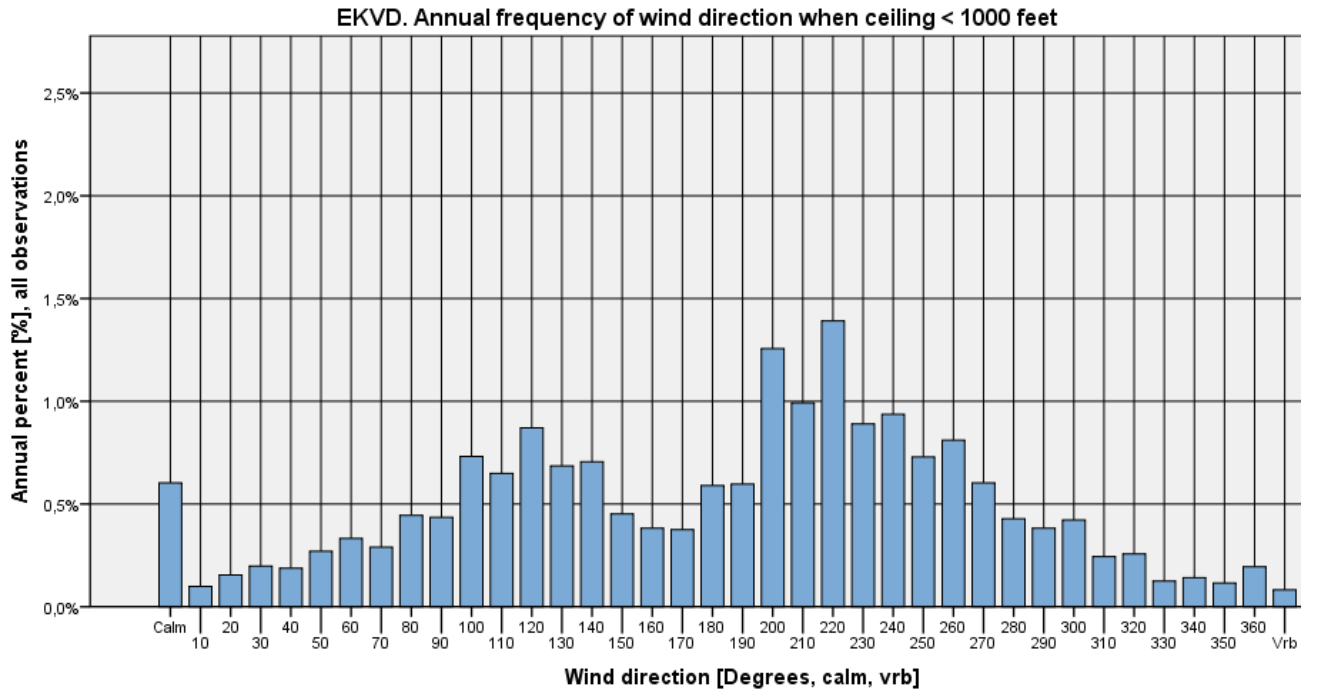


Figure 608



Ceiling < 1000 feet and wind speed ≤ 5 kts

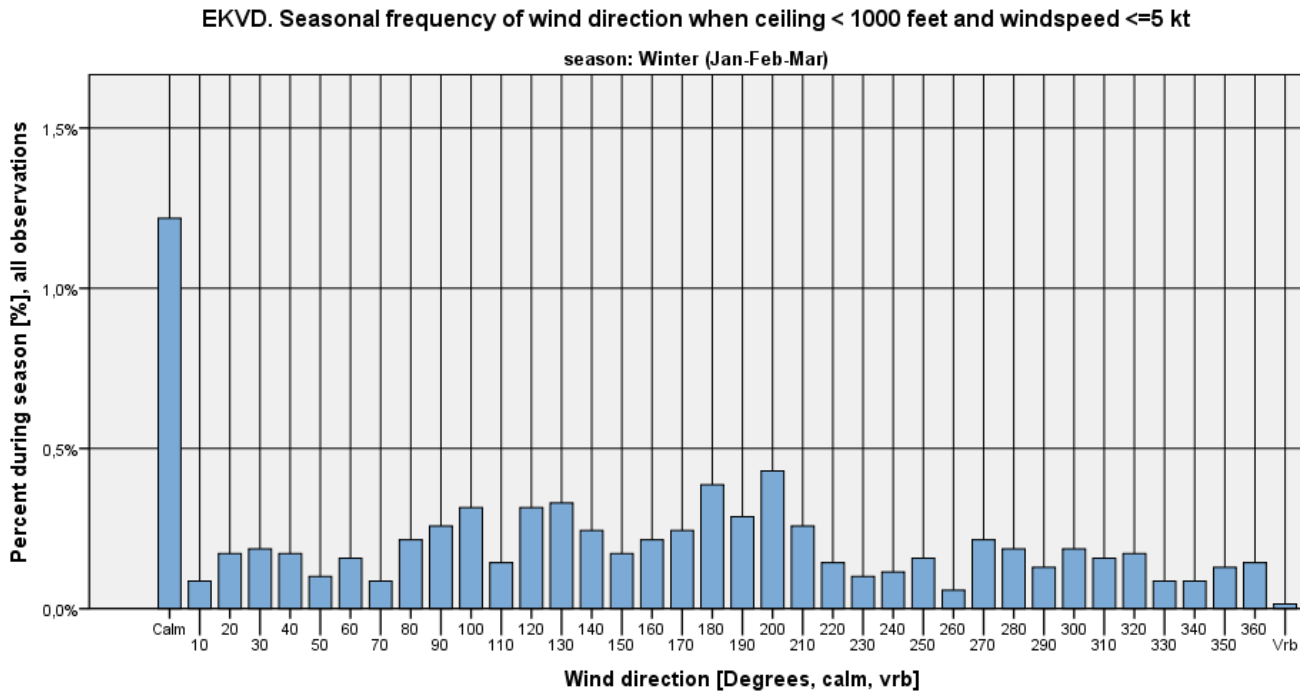


Figure 609

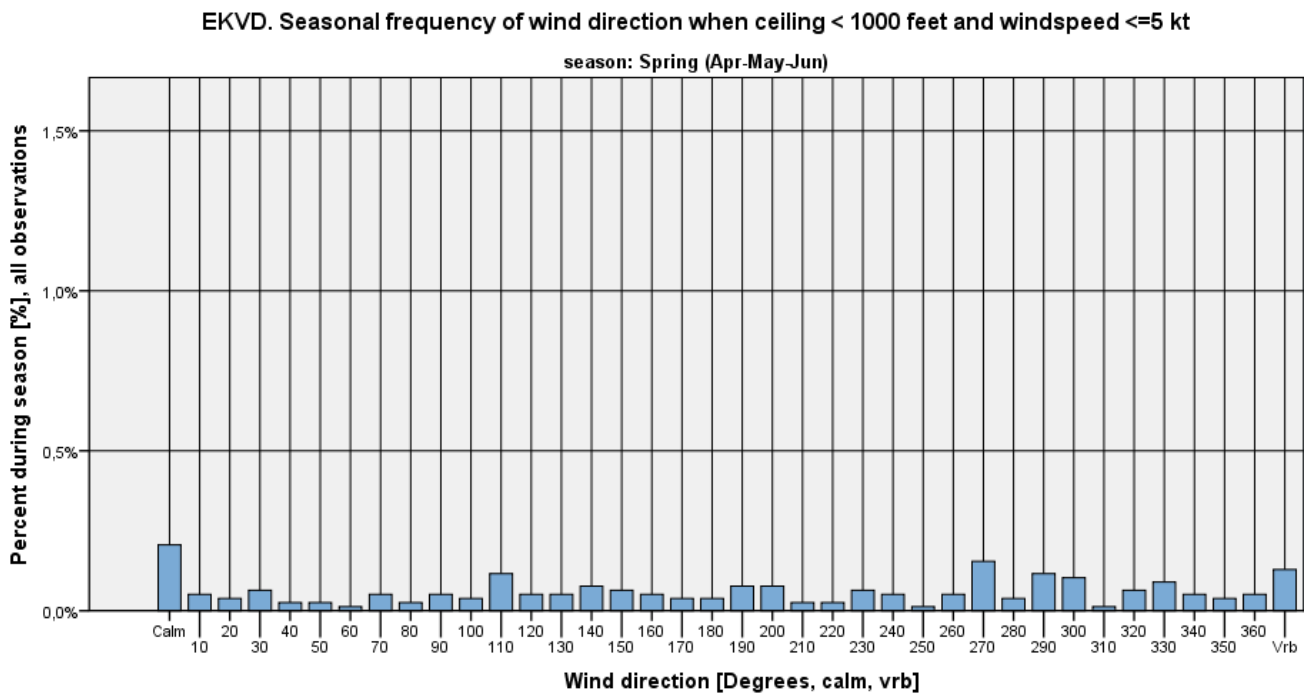


Figure 610



EKVD. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

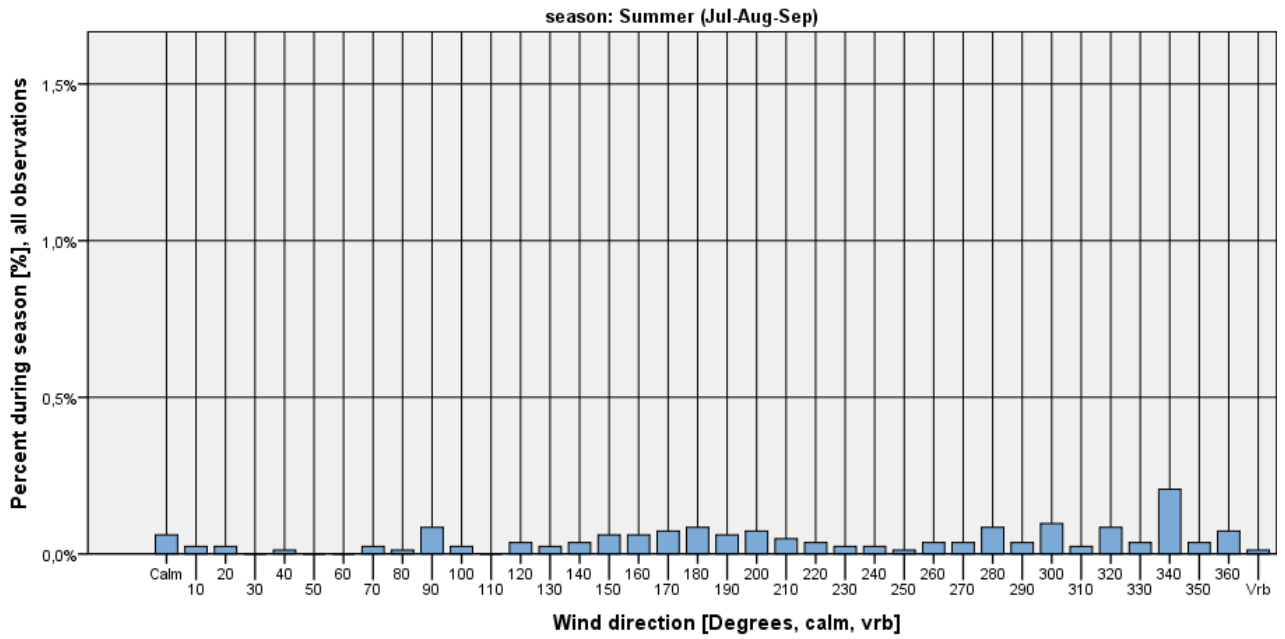


Figure 611

EKVD. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

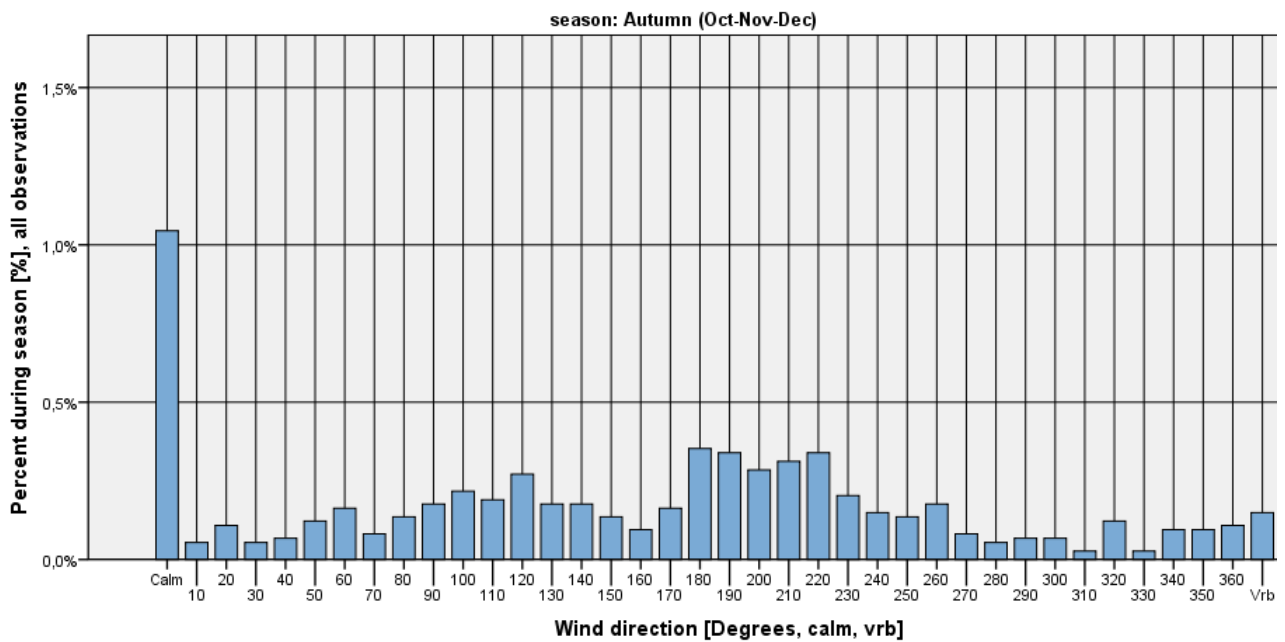


Figure 612

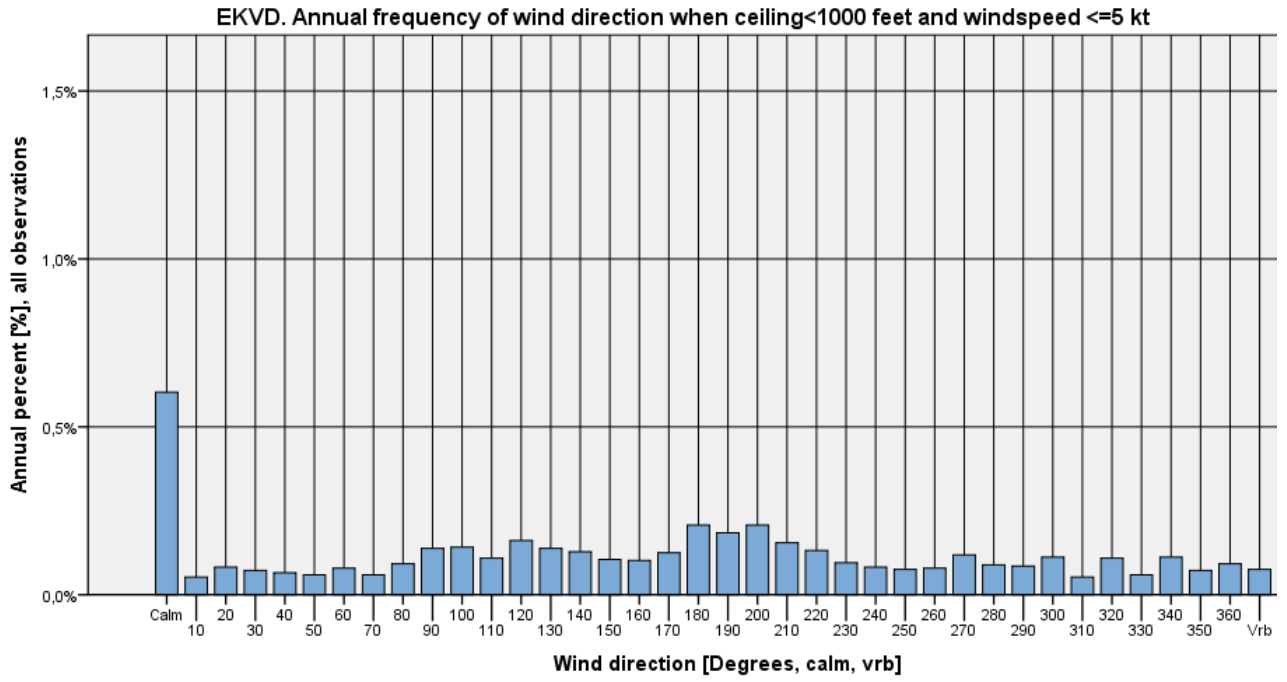


Figure 613



Ceiling < 1000 feet and wind speed > 5 kts

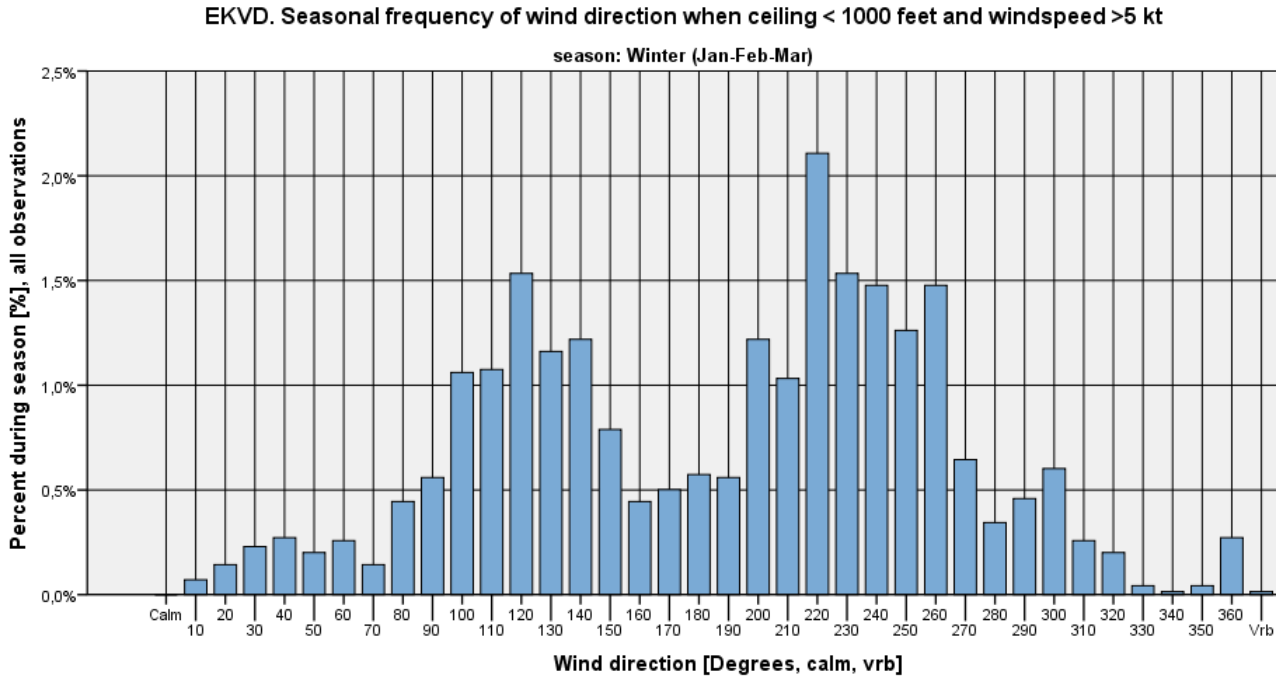


Figure 614

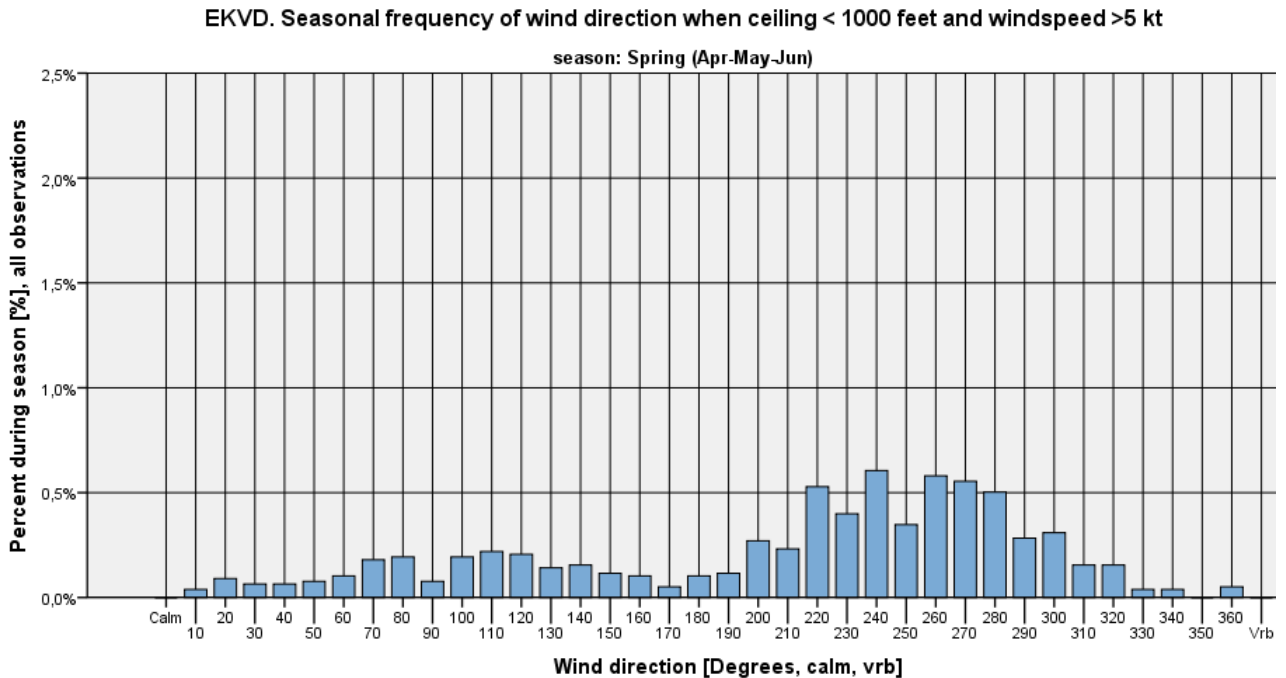


Figure 615



EKVD. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

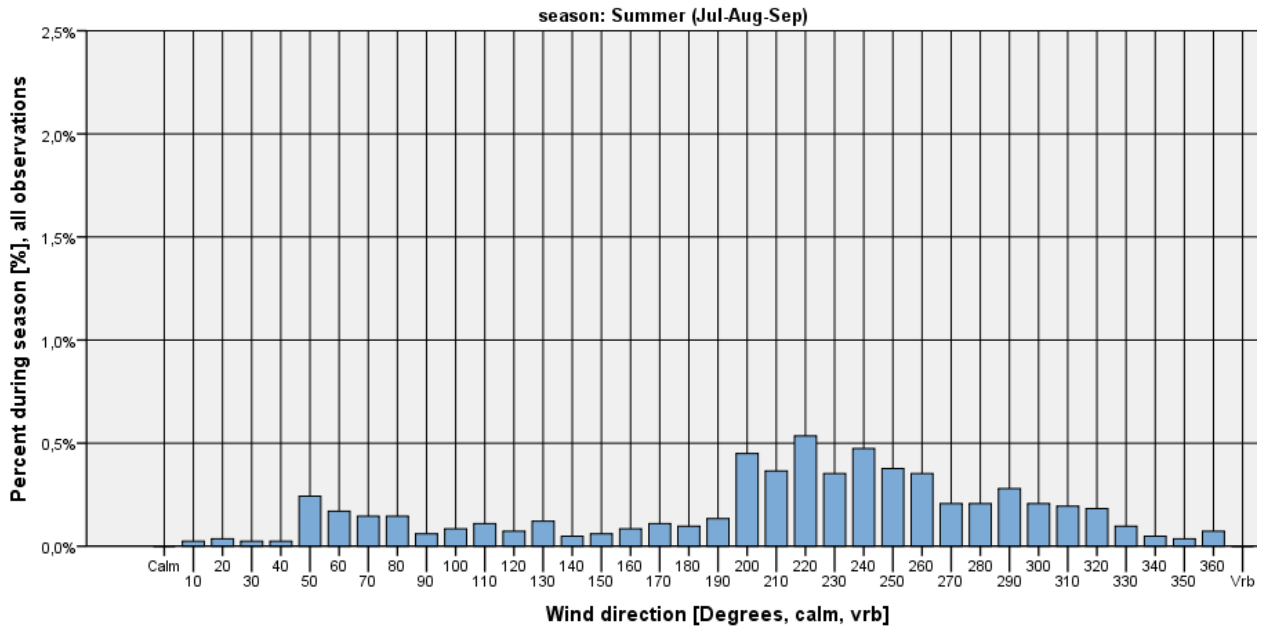


Figure 616

EKVD. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

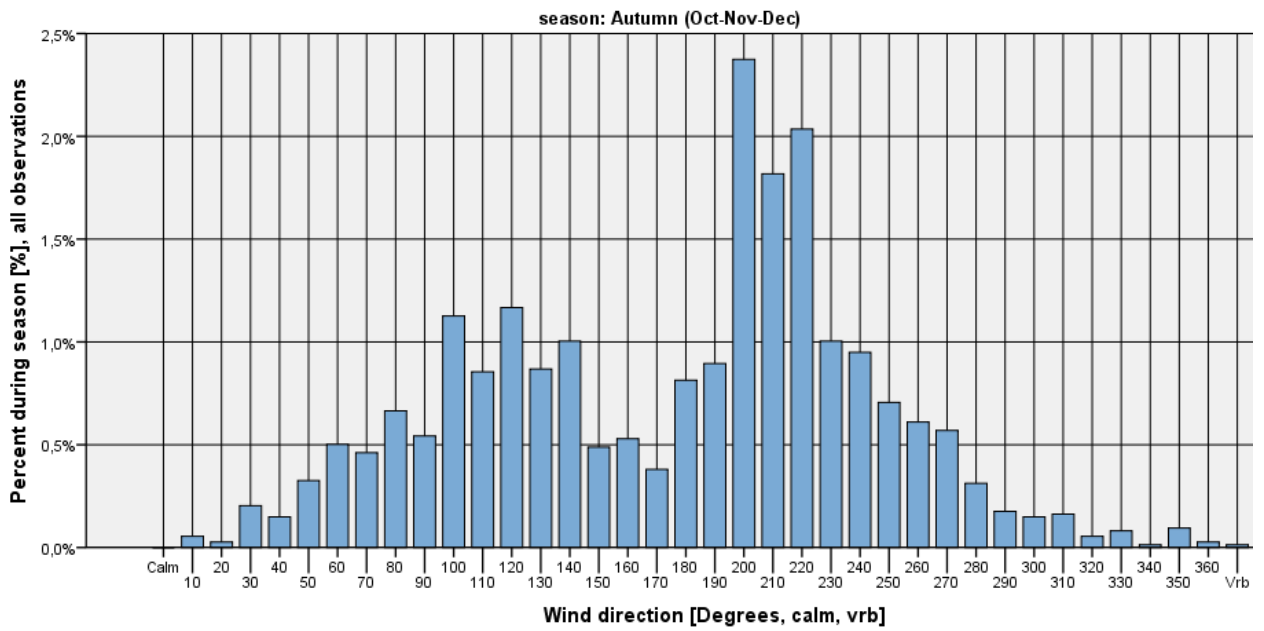


Figure 617

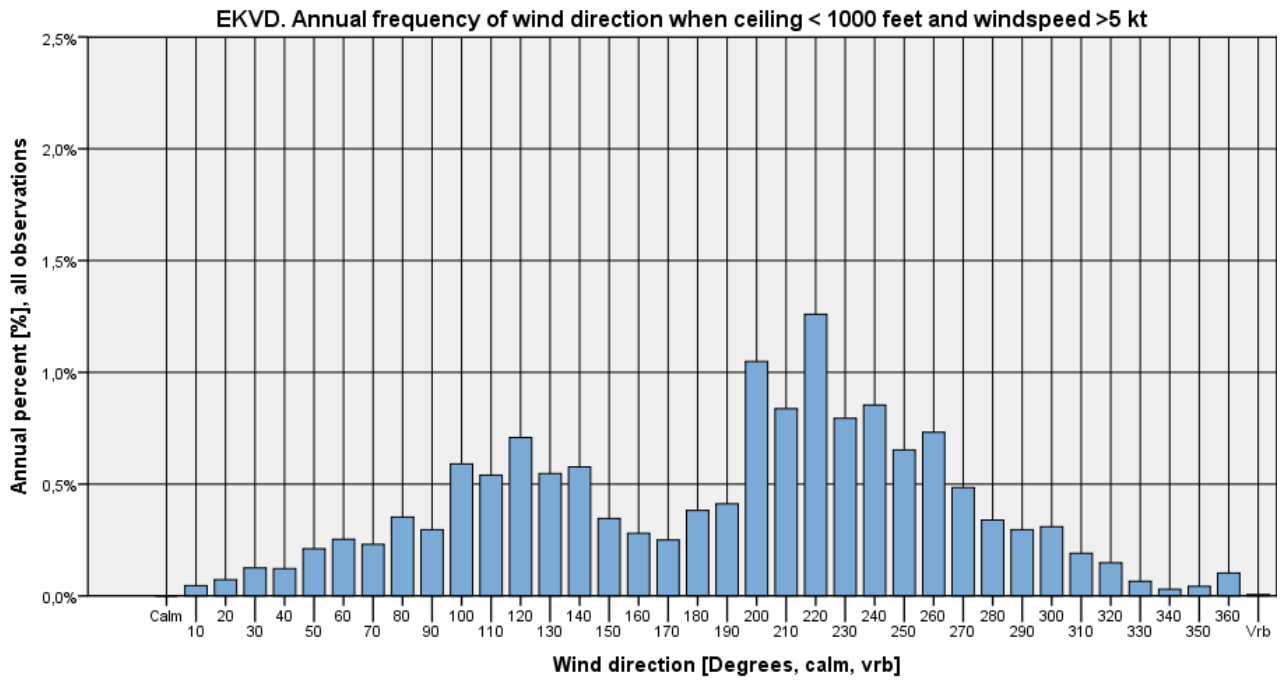


Figure 618



Ceiling < 500 feet

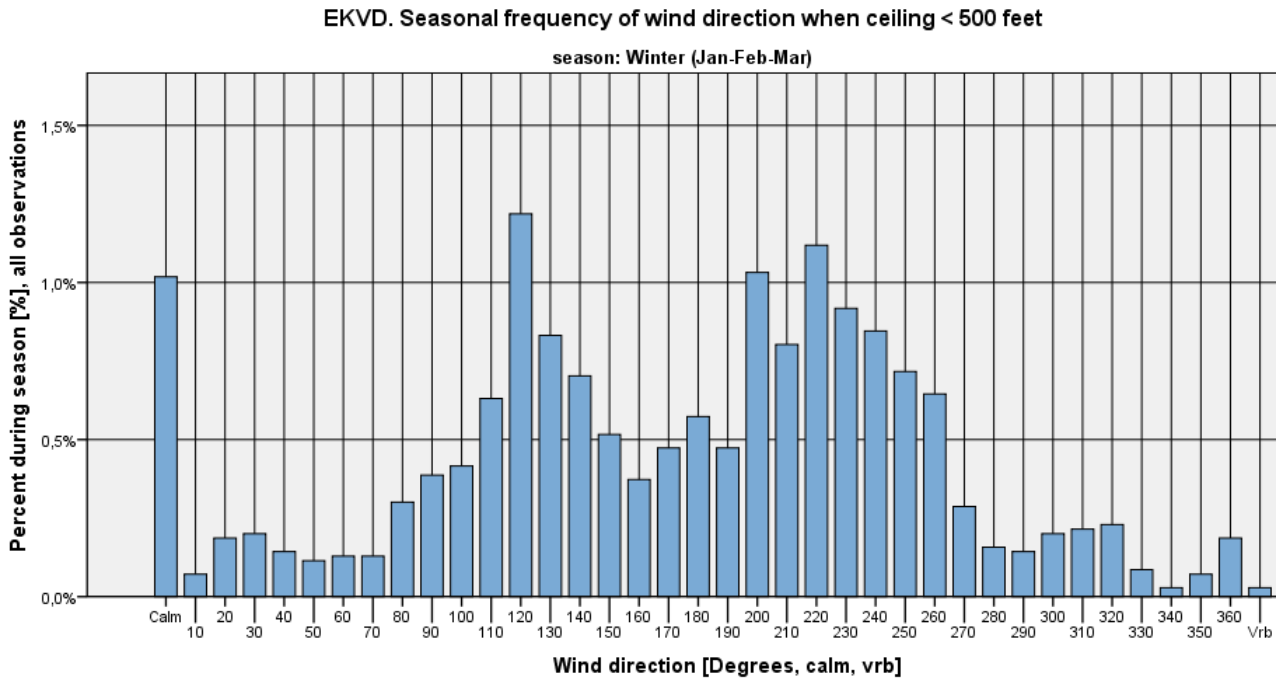


Figure 619

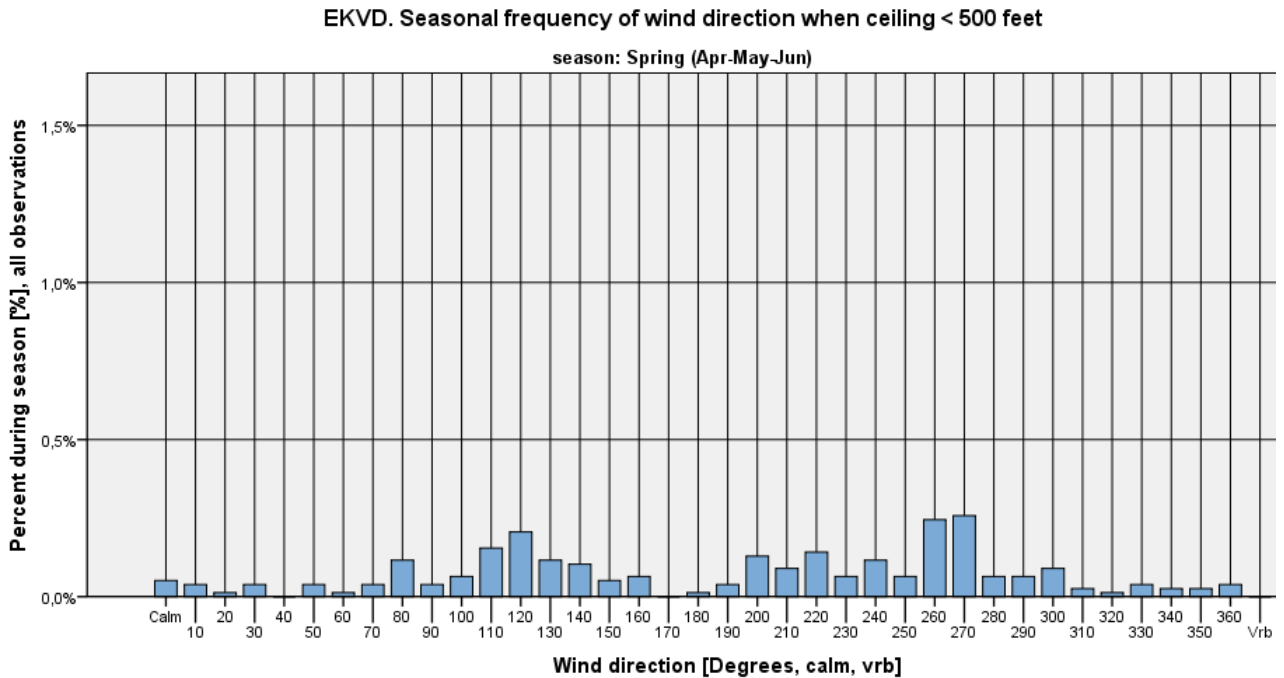


Figure 620



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

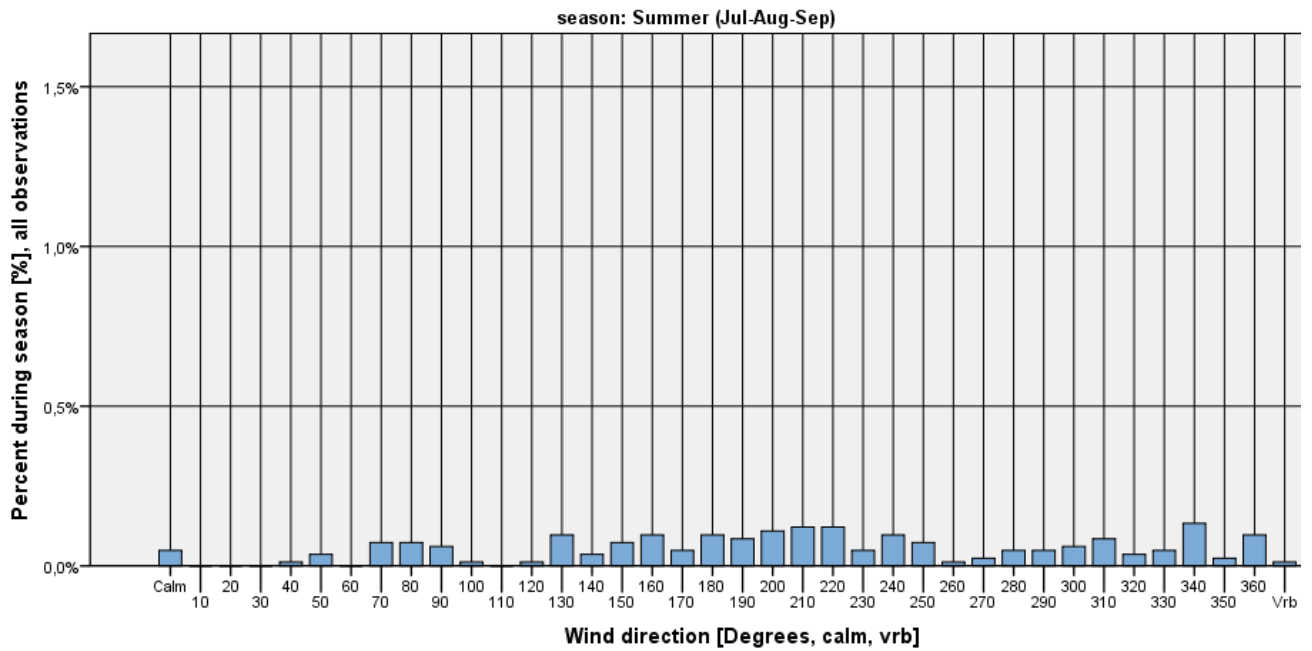


Figure 621

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

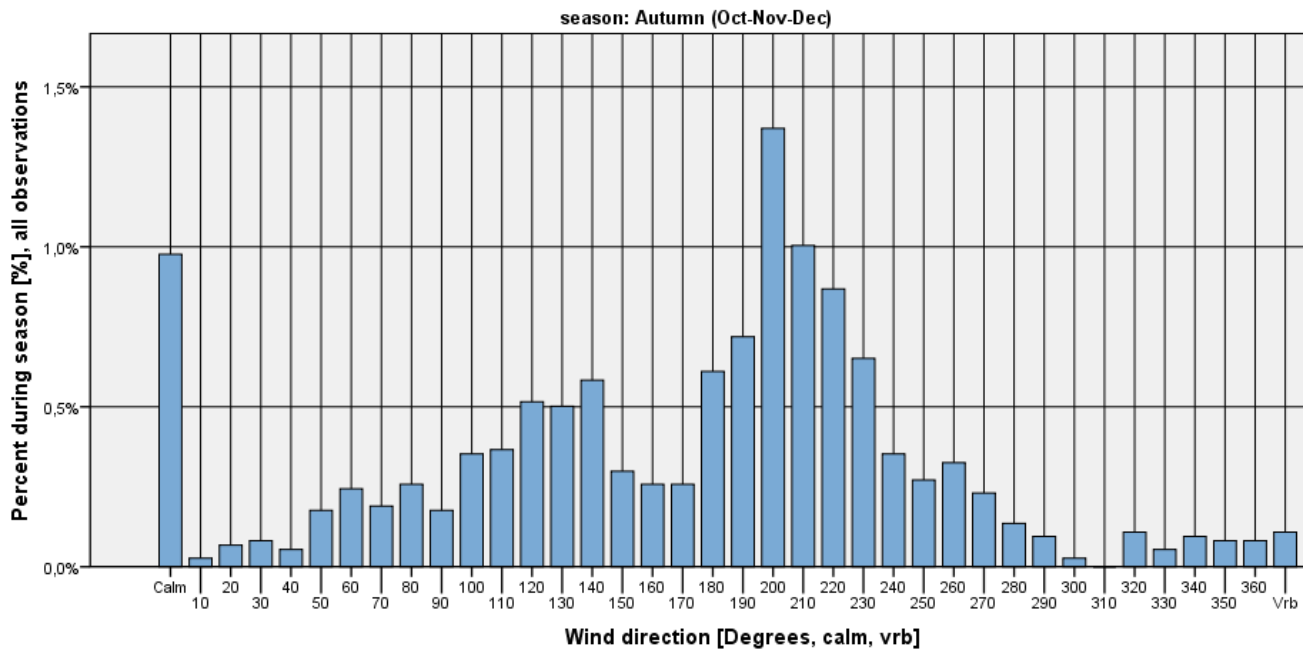


Figure 622

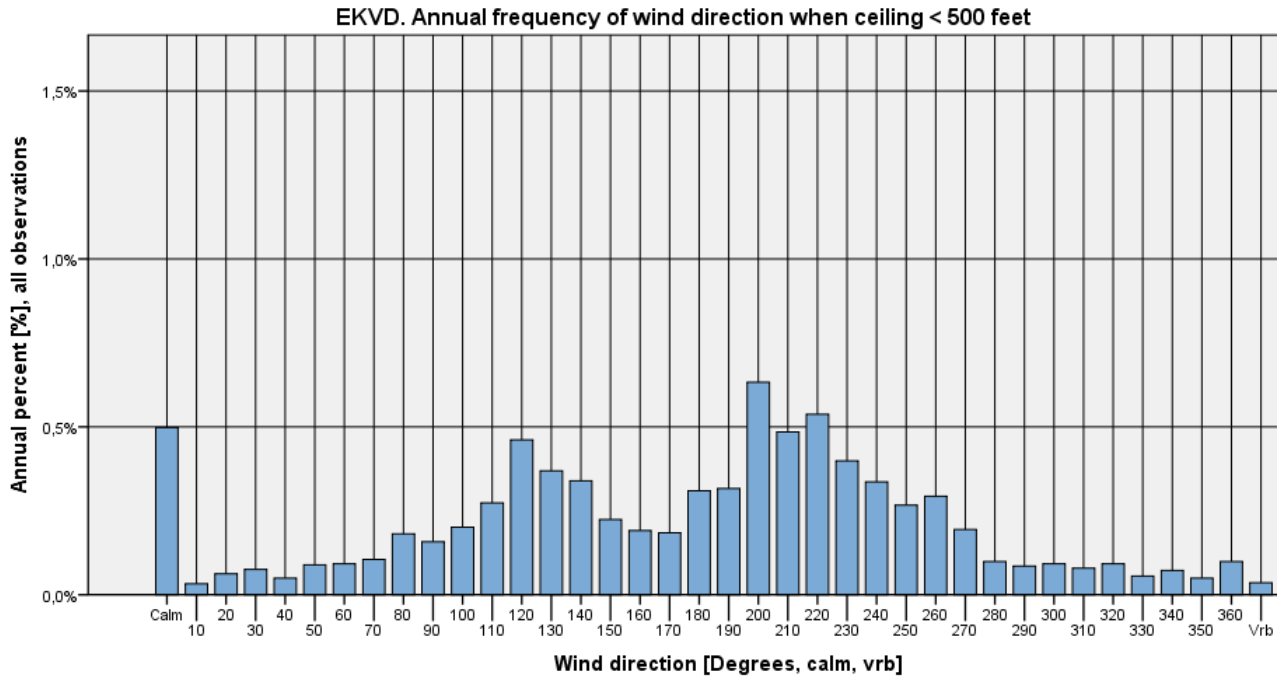


Figure 623



Ceiling < 500 feet and wind speed ≤ 5 kts

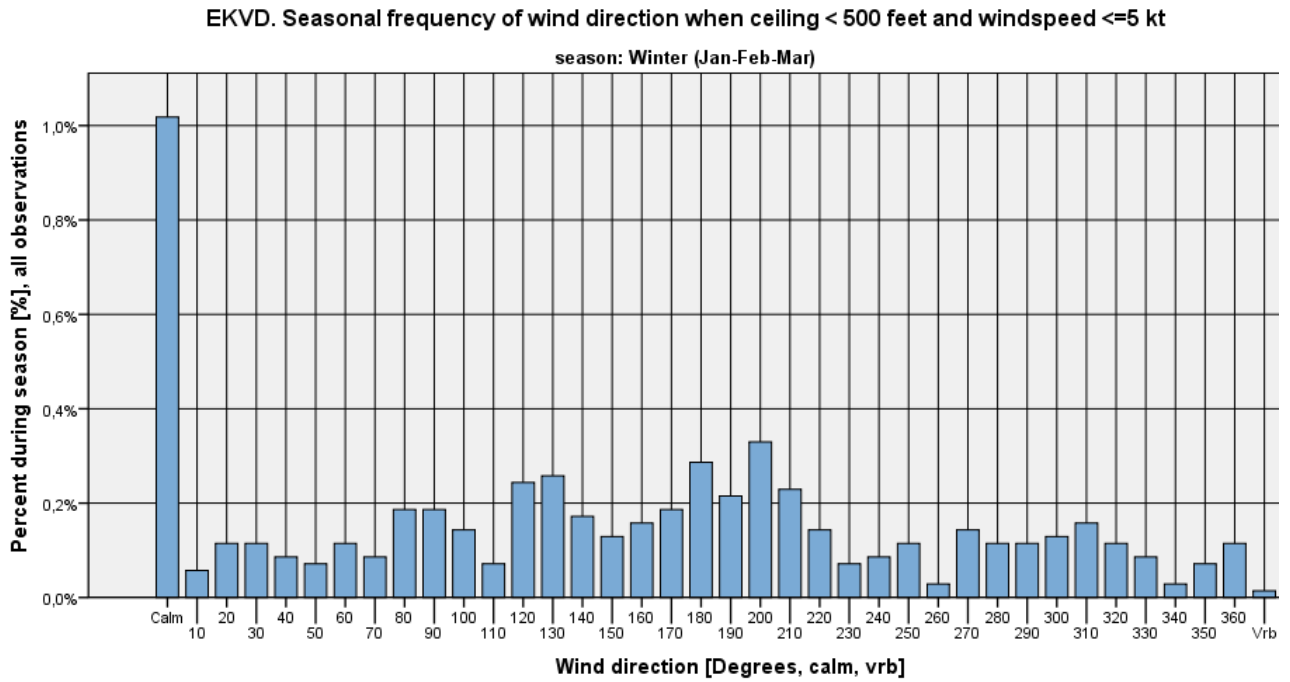


Figure 624

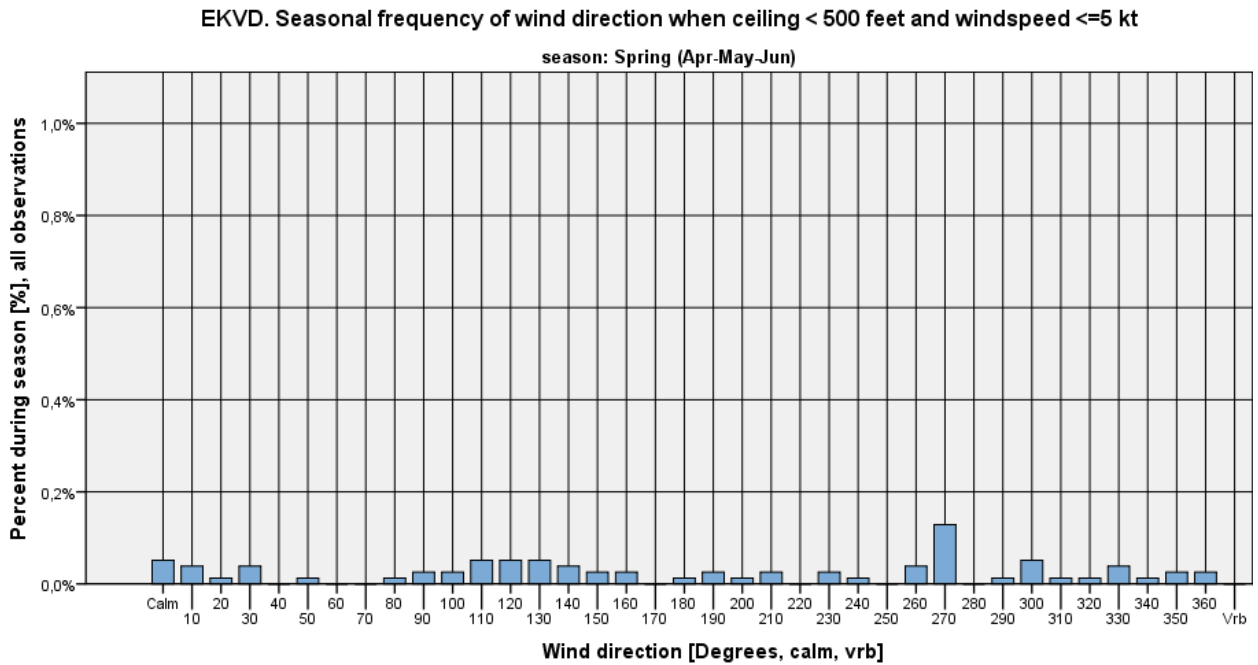


Figure 625



EKVD. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

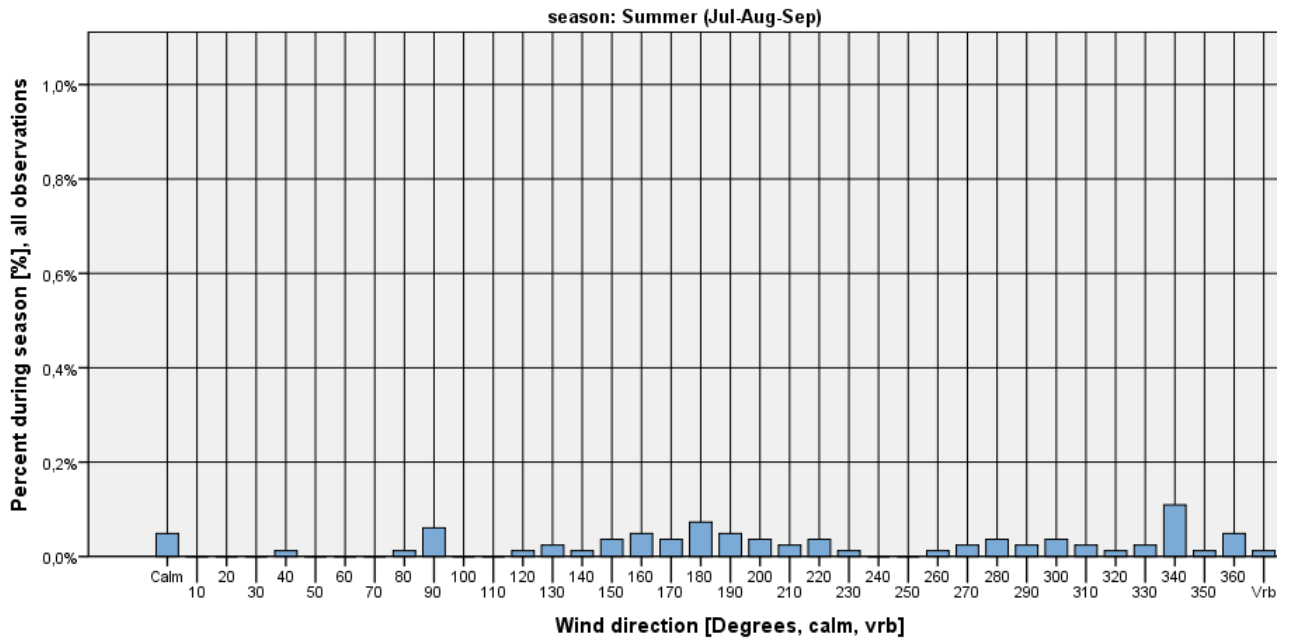


Figure 626

EKVD. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

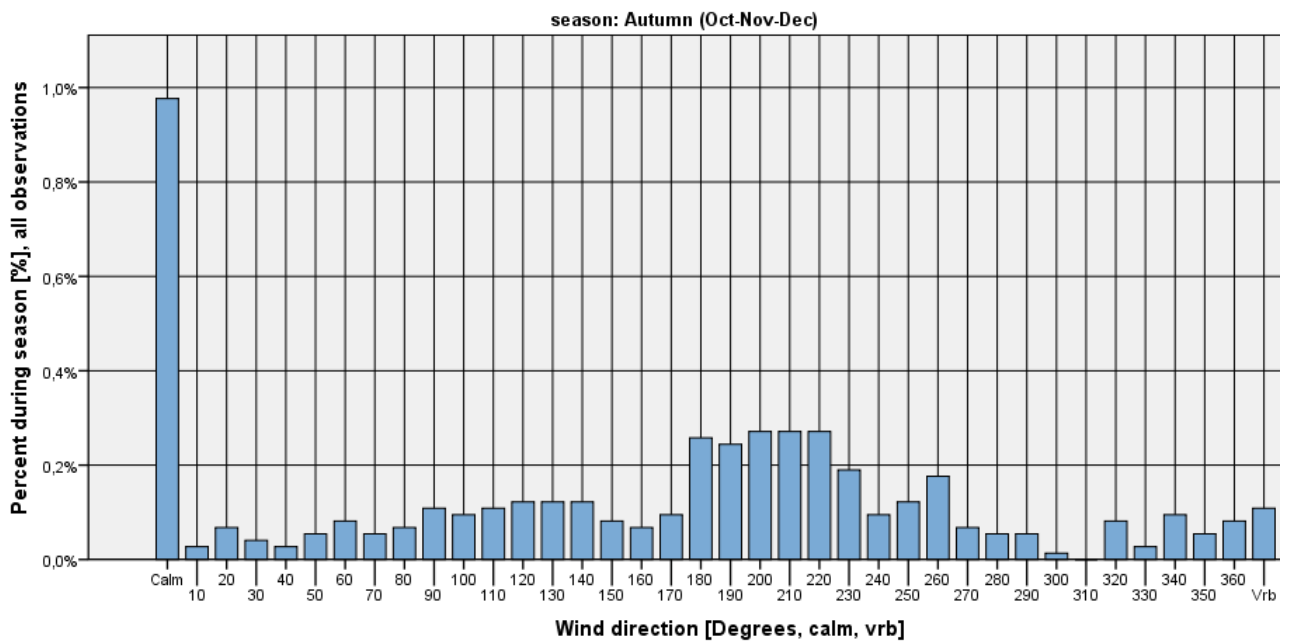


Figure 627

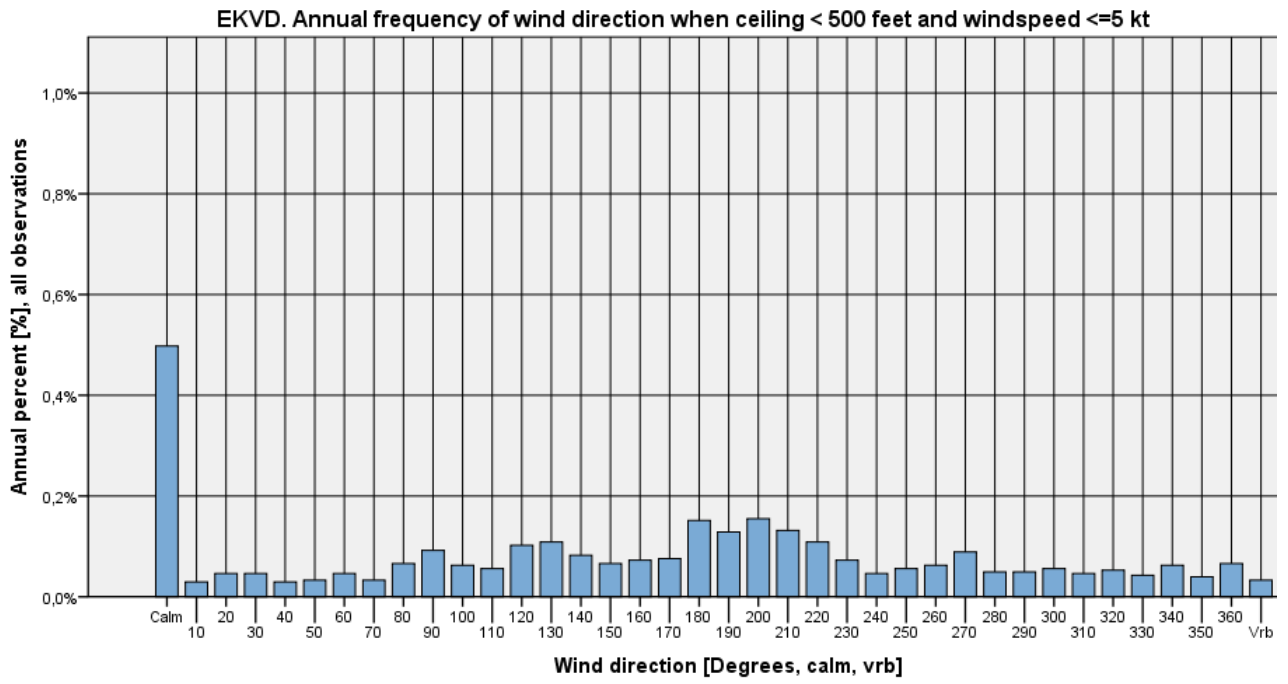


Figure 628



Ceiling < 500 feet and wind speed > 5 kts

EKVD. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

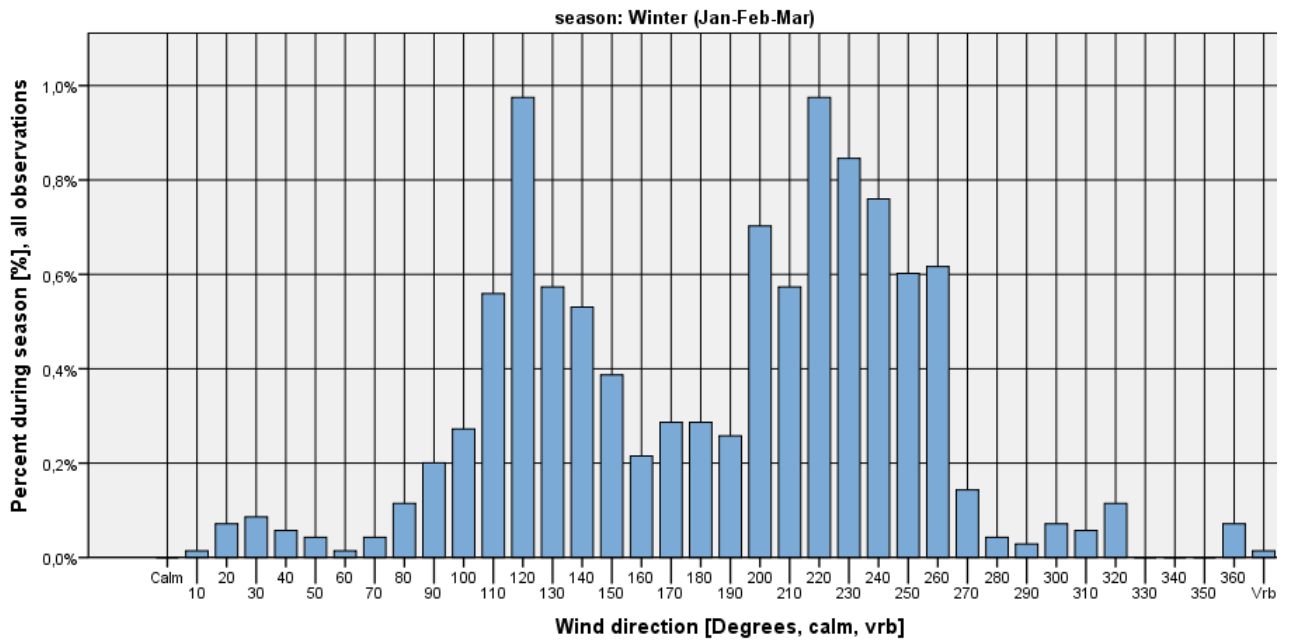


Figure 629

EKVD. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

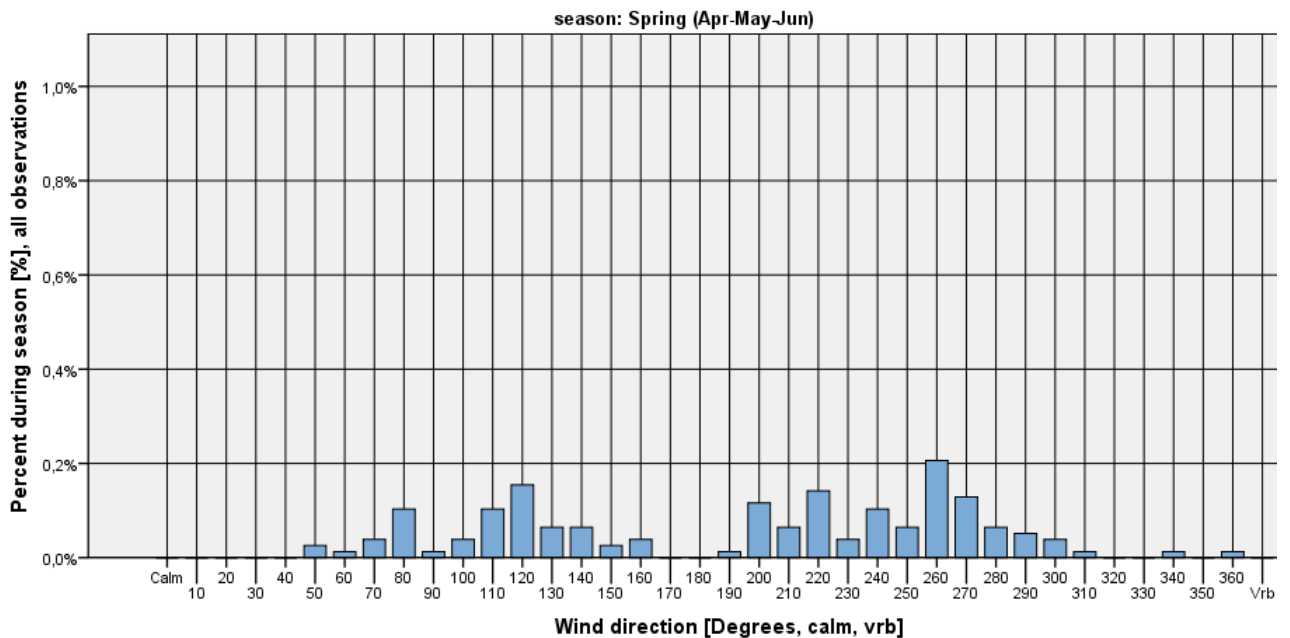


Figure 630



EKVD. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

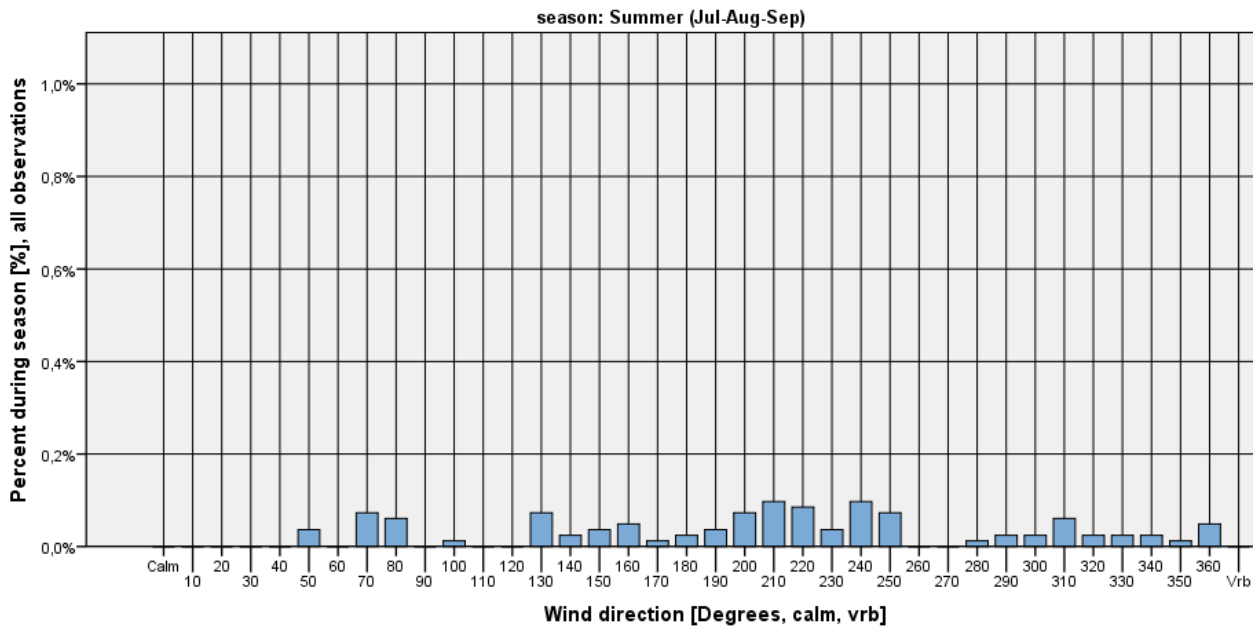


Figure 631

EKVD. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

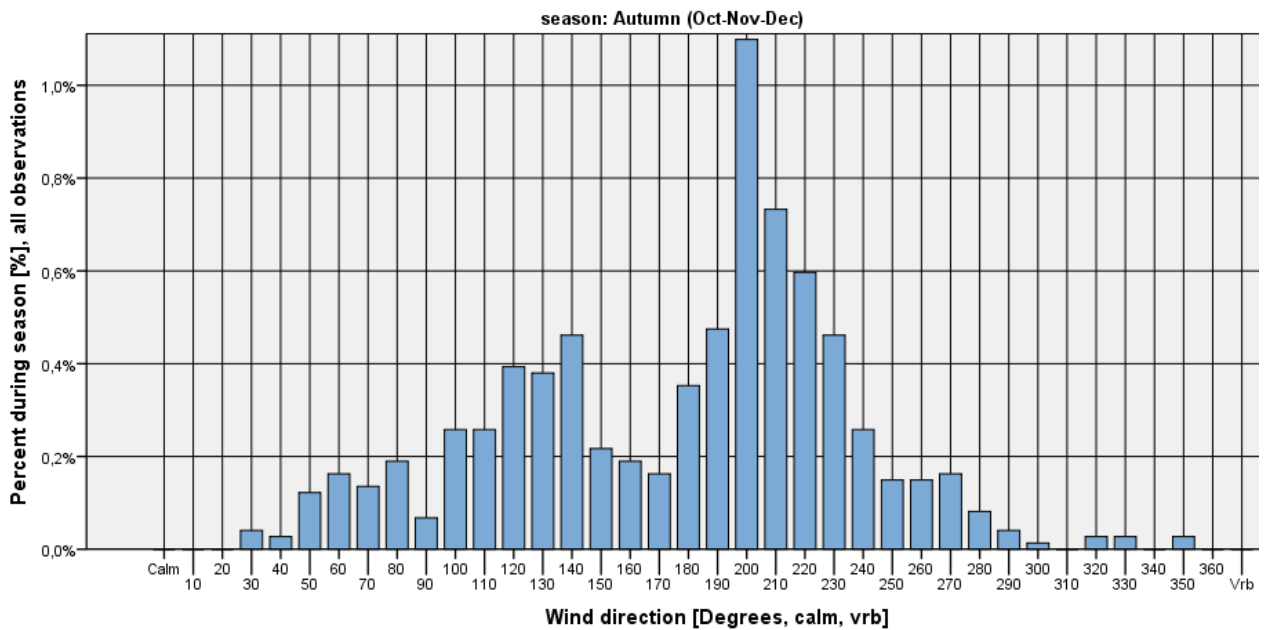


Figure 632

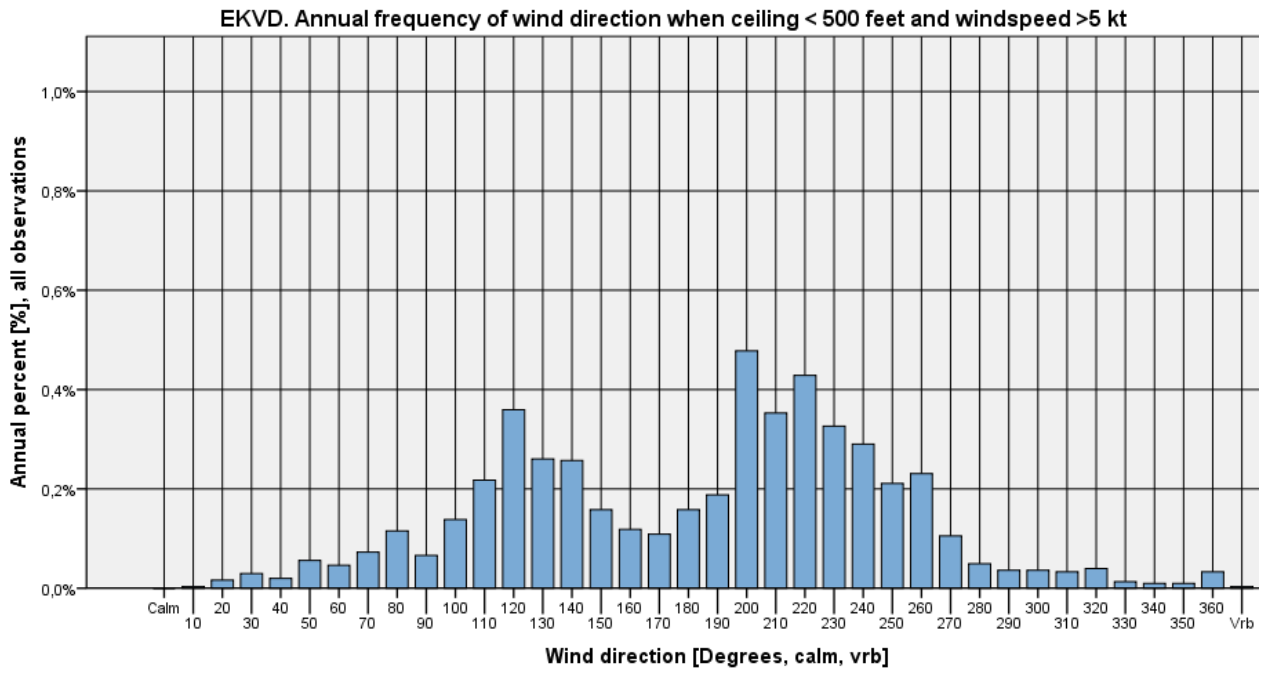


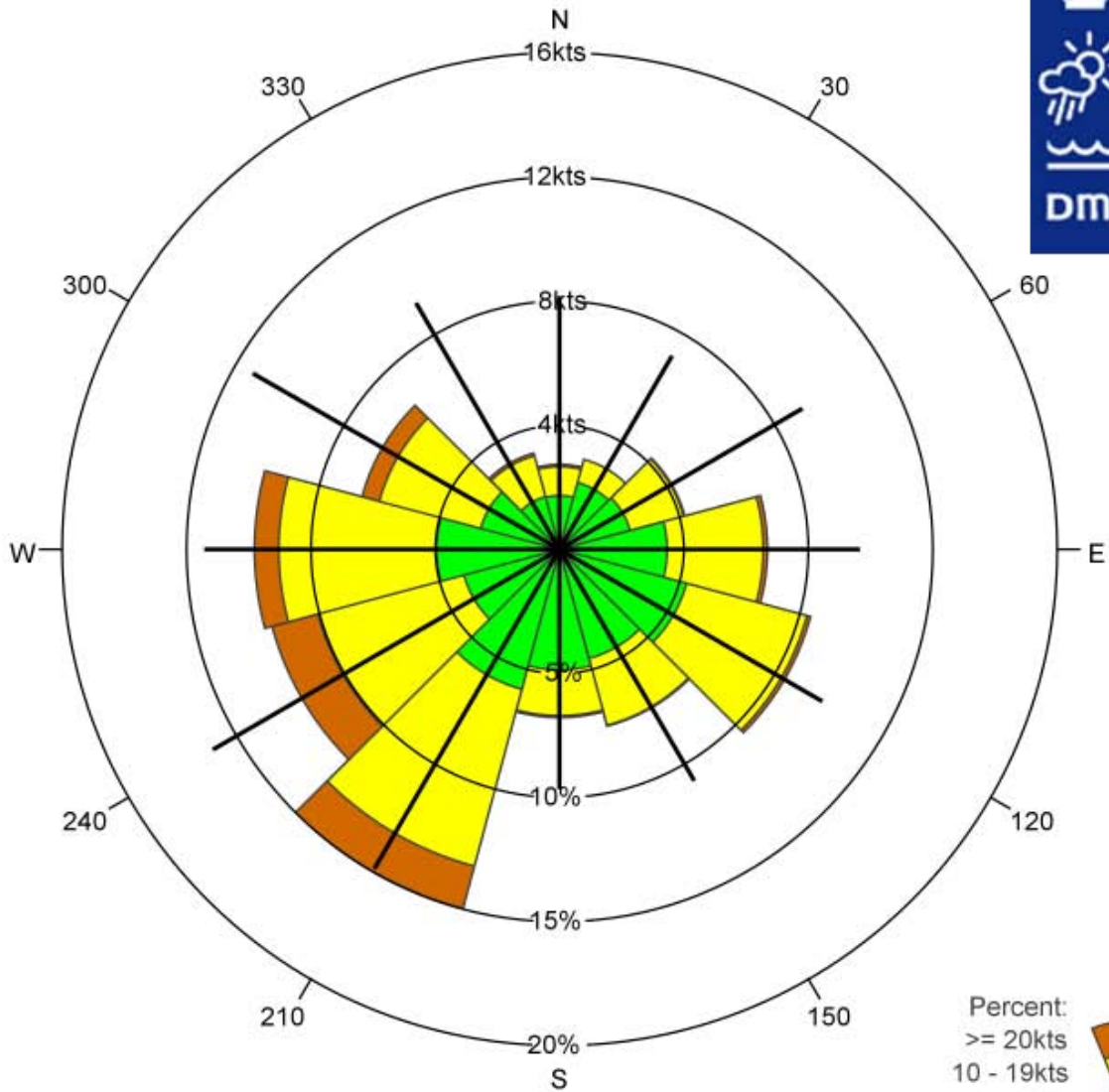
Figure 633



Wind roses

EKVD Kolding - Vamdrup AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.4	3.8	5.2	8.4	10.4	7.4	6.8	15.0	12.0	12.3	8.2	4.0	96.8
% 1 - 9kts	2.2	2.8	2.9	4.3	5.3	4.6	4.8	5.8	4.0	4.9	3.3	2.2	47.1
% 10 - 19kts	1.2	1.0	2.2	3.9	5.0	2.8	1.8	7.4	6.1	6.3	4.2	1.7	43.6
% >= 20kts	0.1	0.0	0.1	0.2	0.1	0.0	0.1	1.8	1.9	1.0	0.7	0.1	6.1
Mean wind speed	8.2	7.2	9.0	9.6	9.8	8.6	7.8	11.9	12.9	11.4	11.4	9.2	10.4
Max wind speed	25.0	21.0	22.0	25.0	24.0	23.0	30.0	36.0	36.0	30.0	37.0	27.0	37.0

Number of observations = 14346

Source: DMI

Calm defined a wind speed = 0kts

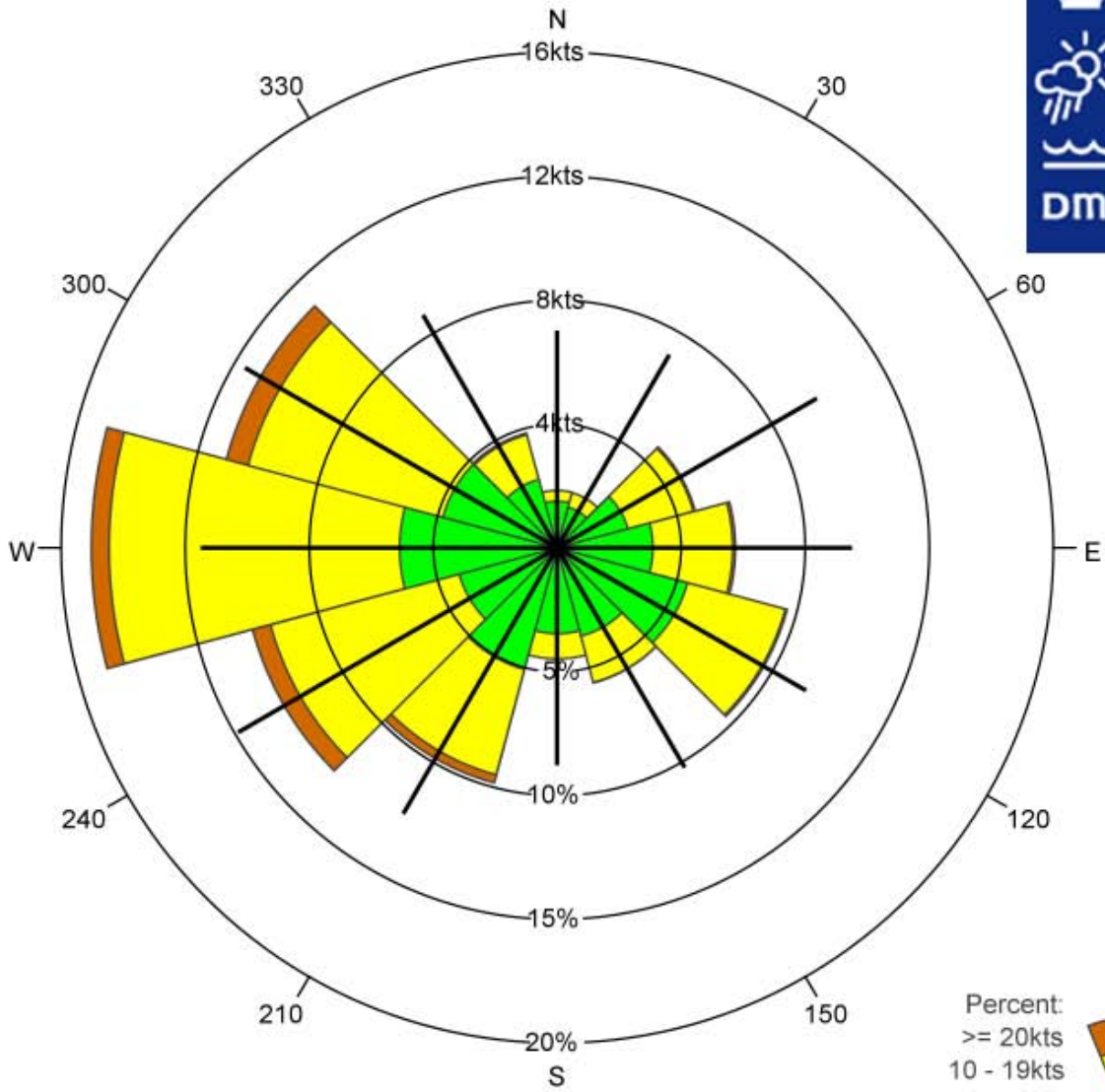
Number of observations with calm/varying wind direction: 460=3.2%

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



EKVD Kolding - Vamdrup SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	2.3	2.3	5.8	7.2	9.6	5.6	4.5	9.8	12.7	18.8	13.8	4.8	97.3
% 1 - 9kts	1.9	1.7	2.9	3.9	5.4	3.7	3.5	5.1	4.1	6.4	4.8	2.9	46.1
% 10 - 19kts	0.4	0.6	2.7	3.2	4.1	1.9	1.0	4.4	7.9	11.7	8.1	1.9	48.0
% >= 20kts	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.3	0.8	0.7	0.9	0.1	3.1
Mean wind speed	7.0	7.2	9.7	9.5	9.3	8.2	7.1	9.9	11.9	11.5	11.6	8.7	10.2
Max wind speed	20.0	20.0	24.0	24.0	24.0	20.0	18.0	31.0	27.0	29.0	31.0	26.0	31.0

Number of observations = 15984

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 437=2.7%

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

Availability

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

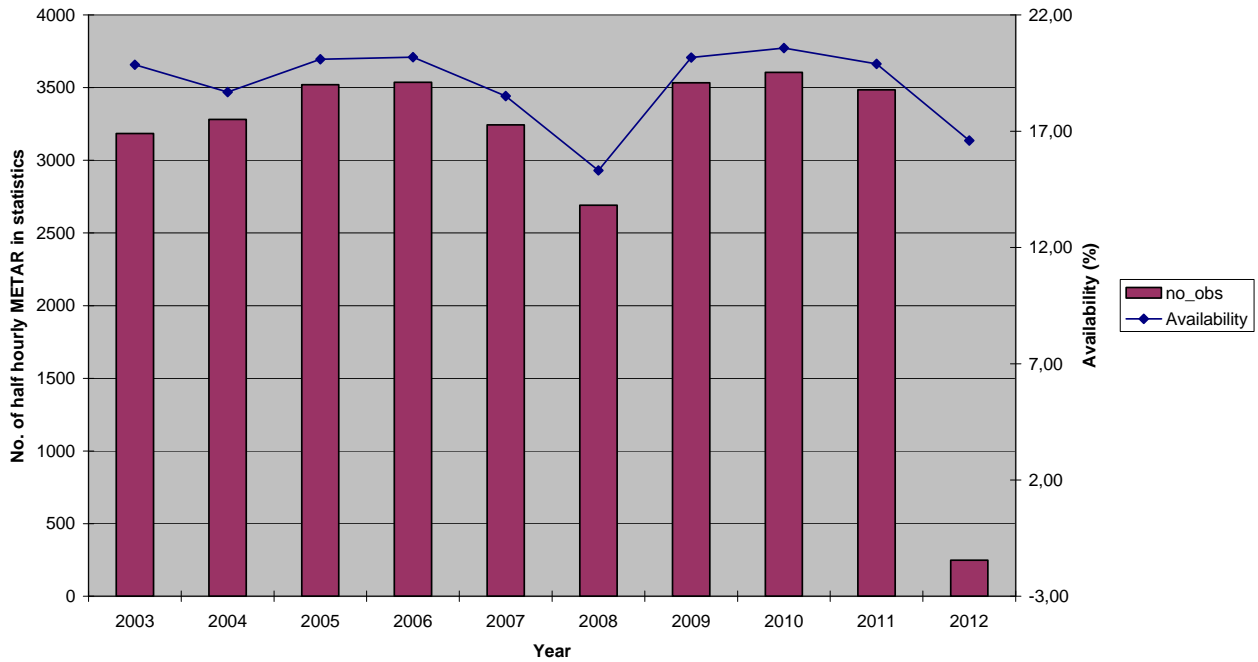


Figure 634

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

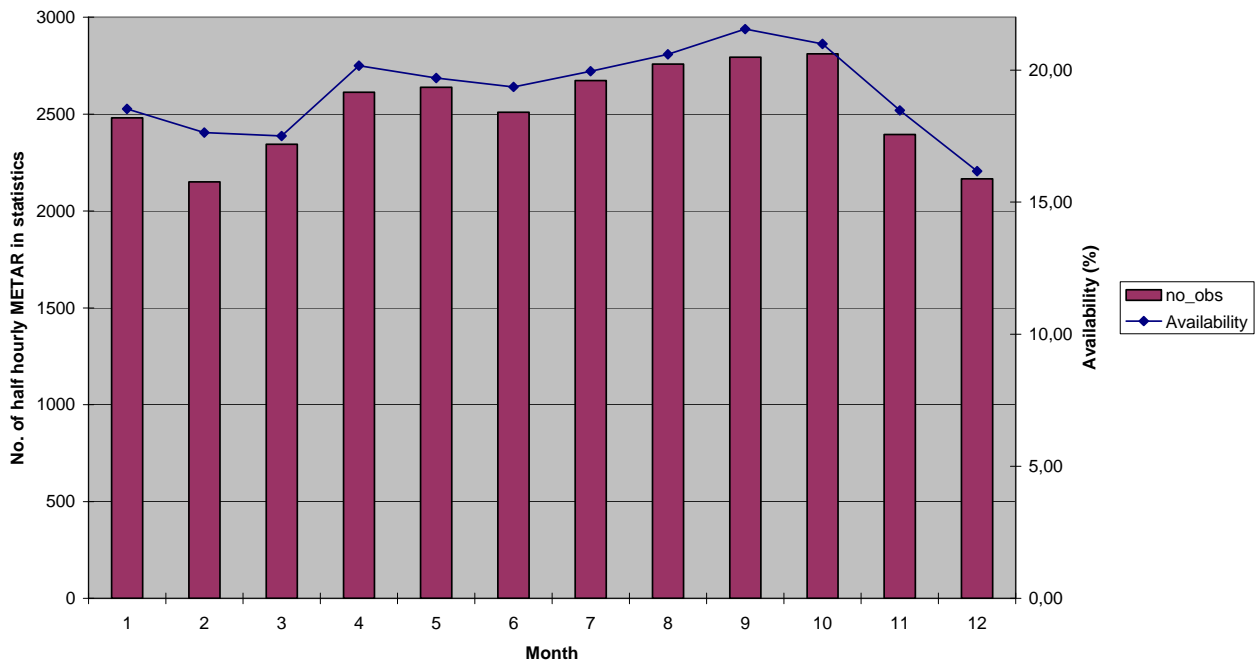


Figure 635

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

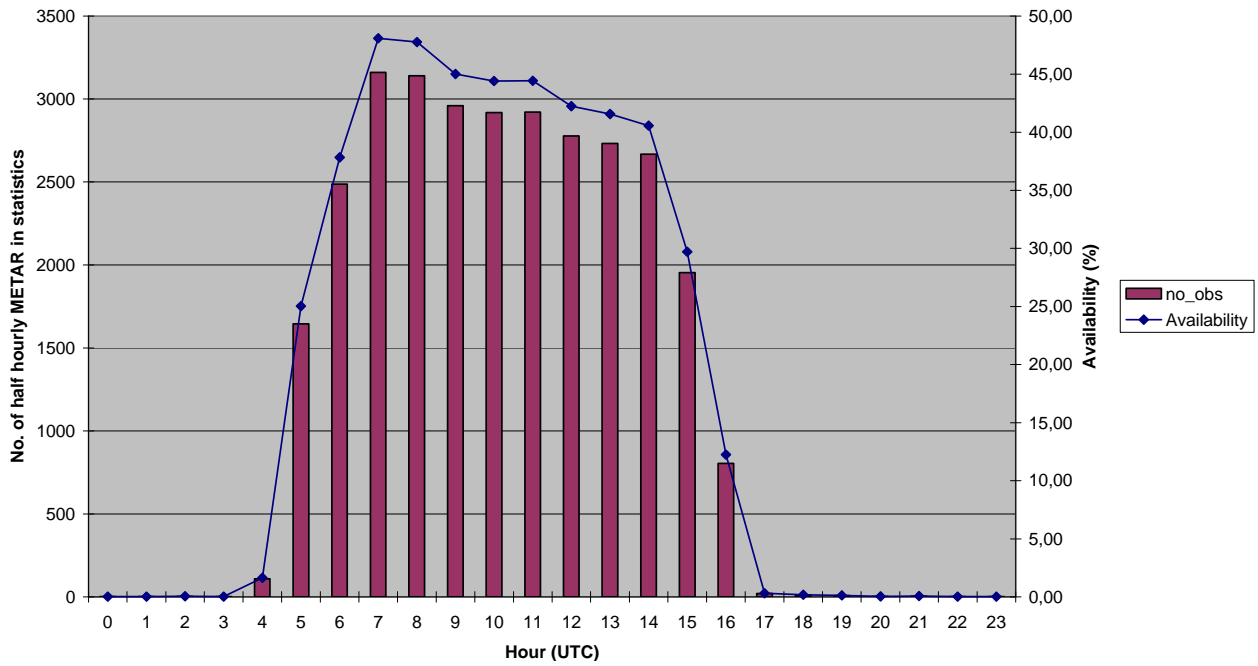


Figure 636

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

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

Table 73



EKYT Aalborg

Aalborg Airport – Flyvestation Ålborg

Airport location: 57,100°N 9,850°E Elevation: 3 m above msl.

EKYT observations in statistics: 155.139 half hourly METAR¹³ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 98,3%.

EKYT METAR are all manual.

Cross tables Visibility – Ceiling

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

No. Obs = 38.158	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,039	3,47	3,90	4,13	4,20	1,01	5,21
<1 km	0,039	3,65	4,33	4,69	4,78	1,19	5,97
<1.5 km	0,039	3,74	4,99	5,67	5,90	1,39	7,29
<3.0 km	0,039	3,83	6,99	9,70	10,59	3,05	13,64
< 5.0 km	0,042	3,85	8,02	13,99	15,95	5,58	21,53
>= 5,0 km or CAVOK	0	0,0052	0,47	6,24	13,60	64,86	78,47
Total	0,042	3,85	8,49	20,23	29,56	70,44	100

Table 74

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

No. Obs = 38.708	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,58	0,63	0,64	0,64	0,42	1,06
<1 km	0	0,62	0,74	0,74	0,75	0,49	1,23
<1.5 km	0	0,65	0,85	0,86	0,86	0,55	1,41
<3.0 km	0	0,67	1,25	1,55	1,66	1,06	2,72
< 5.0 km	0	0,67	1,70	2,99	3,44	2,62	6,07
>= 5,0 km or CAVOK	0	0	0,23	3,06	6,54	87,40	93,93
Total	0	0,67	1,93	6,05	9,98	90,02	100

Table 75

¹³ For every half hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.



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

No. Obs = 39.175	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0	0,46	0,51	0,53	0,53	0,81	1,35
<1 km	0	0,49	0,57	0,59	0,60	0,94	1,54
<1.5 km	0	0,51	0,63	0,66	0,68	1,08	1,76
<3.0 km	0	0,53	0,75	0,94	1,03	1,72	2,75
< 5.0 km	0	0,54	0,97	1,55	1,94	3,20	5,14
>= 5,0 km or CAVOK	0	0,0026	0,14	1,70	4,29	90,57	94,86
Total	0	0,54	1,11	3,25	6,23	93,77	100

Table 76

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

No. Obs = 39.098	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,010	1,78	1,96	1,99	2,02	1,61	3,63
<1 km	0,010	1,87	2,19	2,27	2,32	1,84	4,16
<1.5 km	0,010	1,94	2,53	2,75	2,83	2,02	4,85
<3.0 km	0,010	2,03	3,65	5,18	5,79	3,53	9,32
< 5.0 km	0,010	2,04	4,38	8,55	10,47	6,73	17,20
>= 5,0 km or CAVOK	0	0,0026	0,32	4,70	10,99	71,81	82,80
Total	0,010	2,04	4,69	13,25	21,46	78,54	100

Table 77

Annual: EKYT – Frequencies (%) Visibility - Ceiling

No. Obs = 155.139	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,012	1,56	1,74	1,81	1,84	0,97	2,80
<1 km	0,012	1,65	1,95	2,06	2,10	1,11	3,21
<1.5 km	0,012	1,70	2,24	2,47	2,55	1,26	3,81
<3.0 km	0,012	1,75	3,14	4,32	4,74	2,34	7,08
< 5.0 km	0,013	1,76	3,74	6,73	7,91	4,53	12,44
>= 5,0 km or CAVOK	0	0,0026	0,29	3,91	8,83	78,73	87,56
Total	0,013	1,77	4,03	10,65	16,74	83,26	100

Table 78



Wind direction histograms

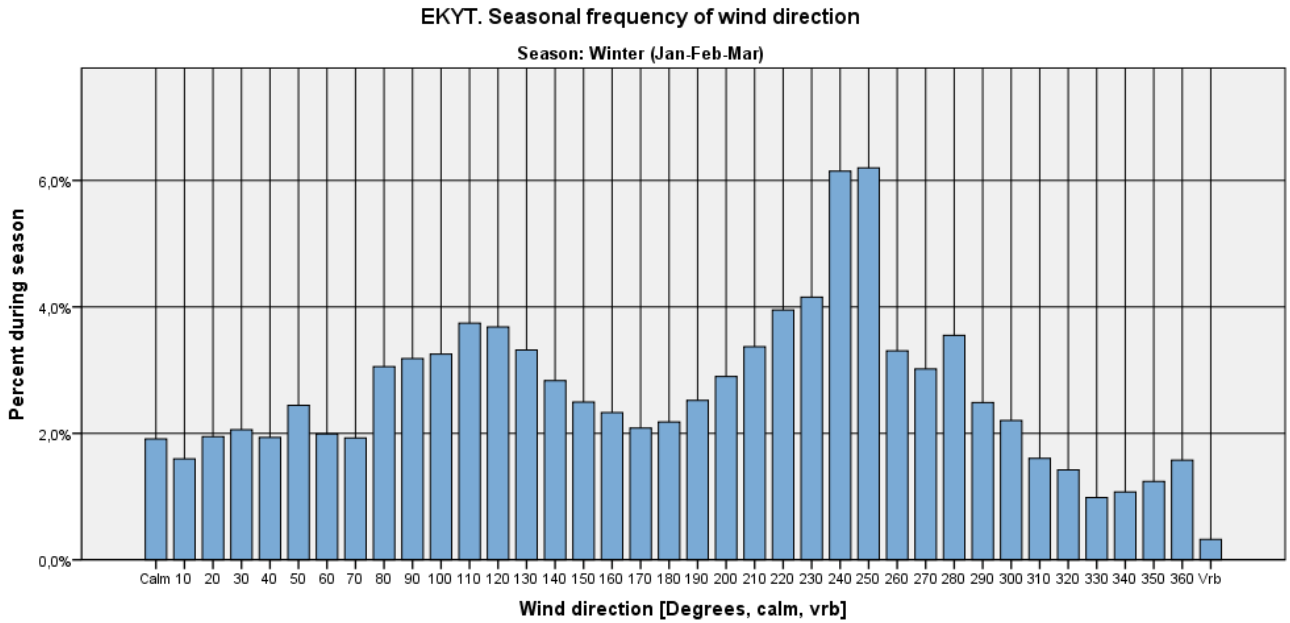


Figure 637

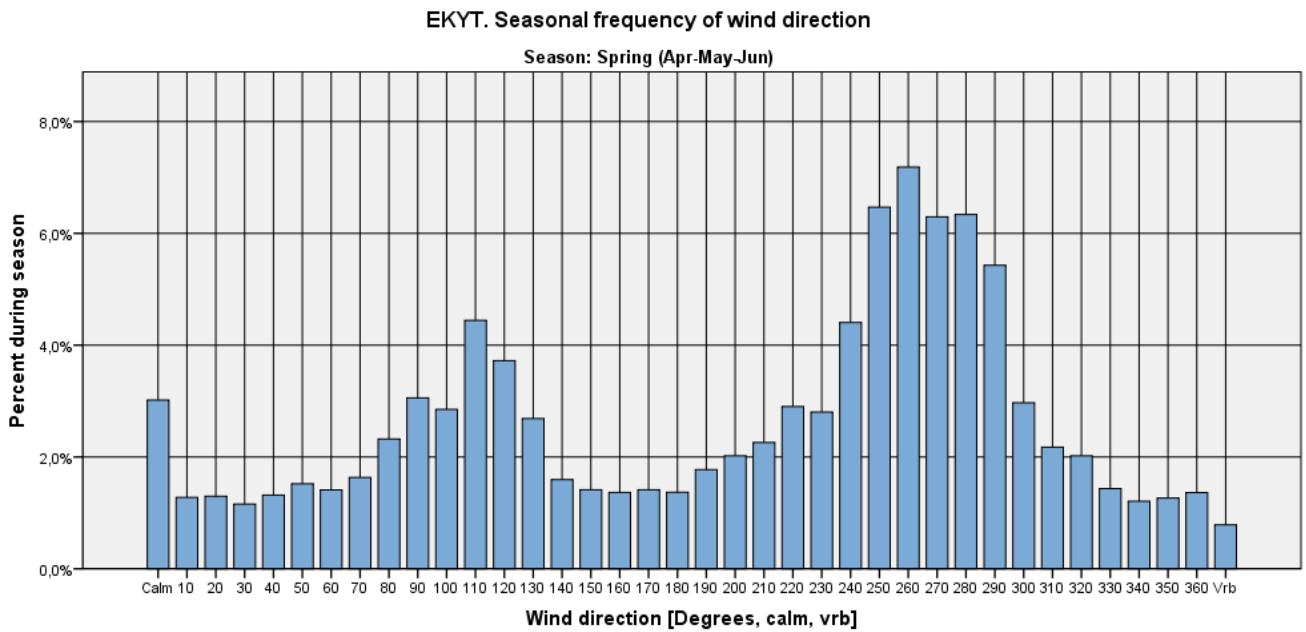


Figure 638

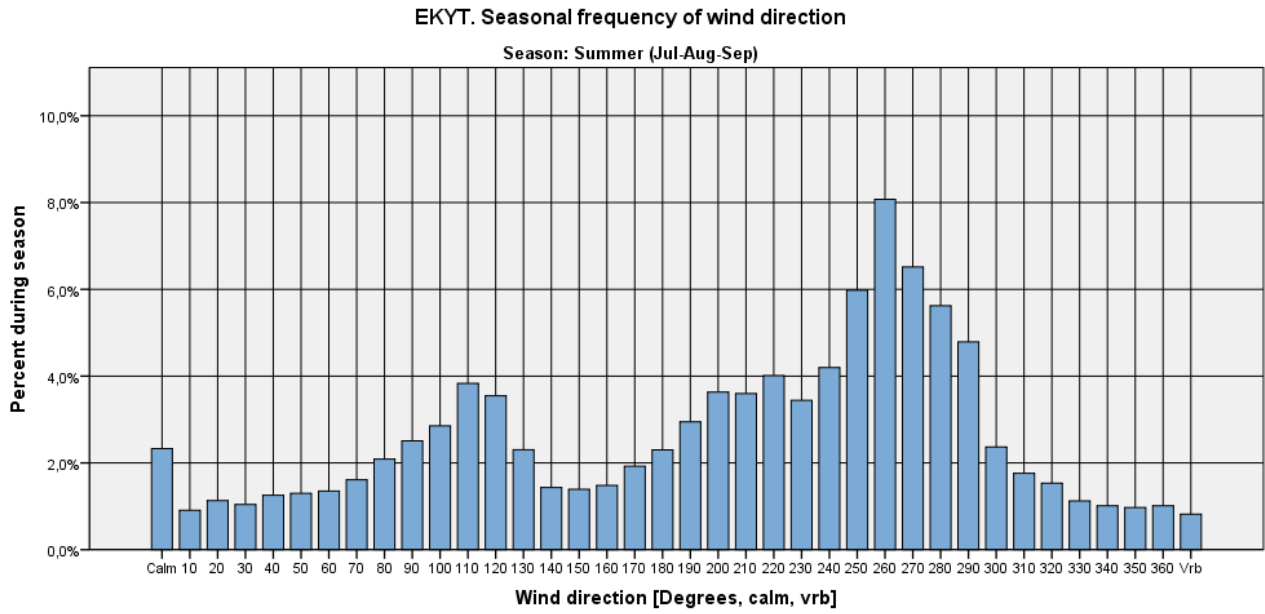


Figure 639

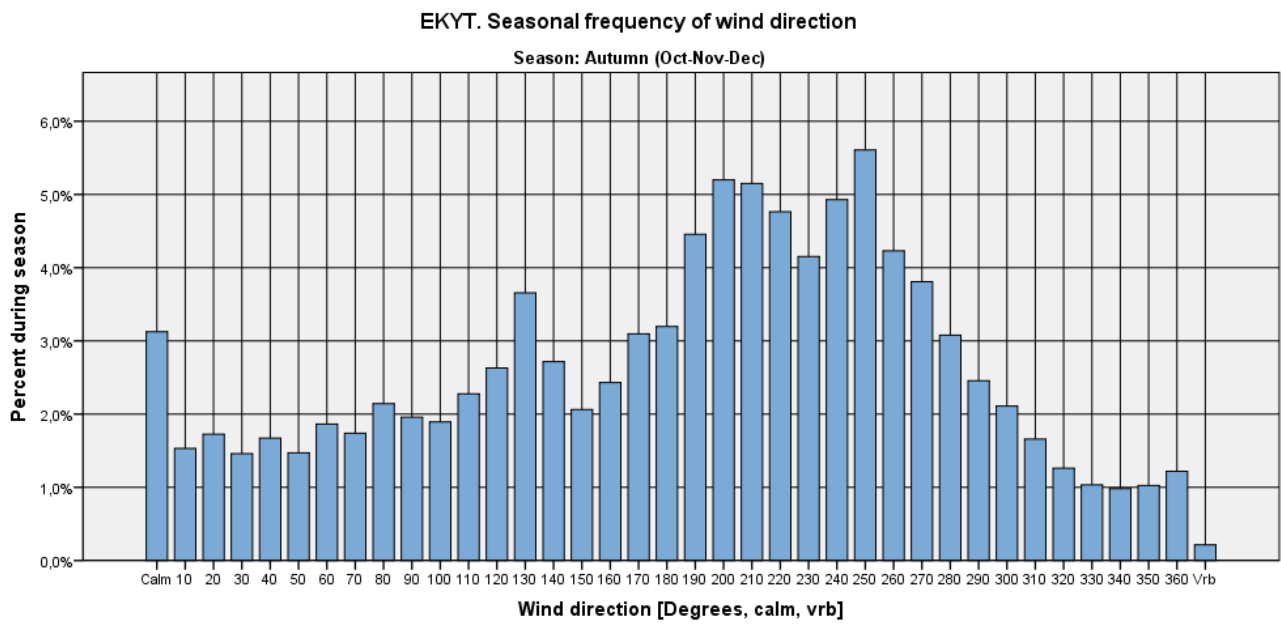


Figure 640

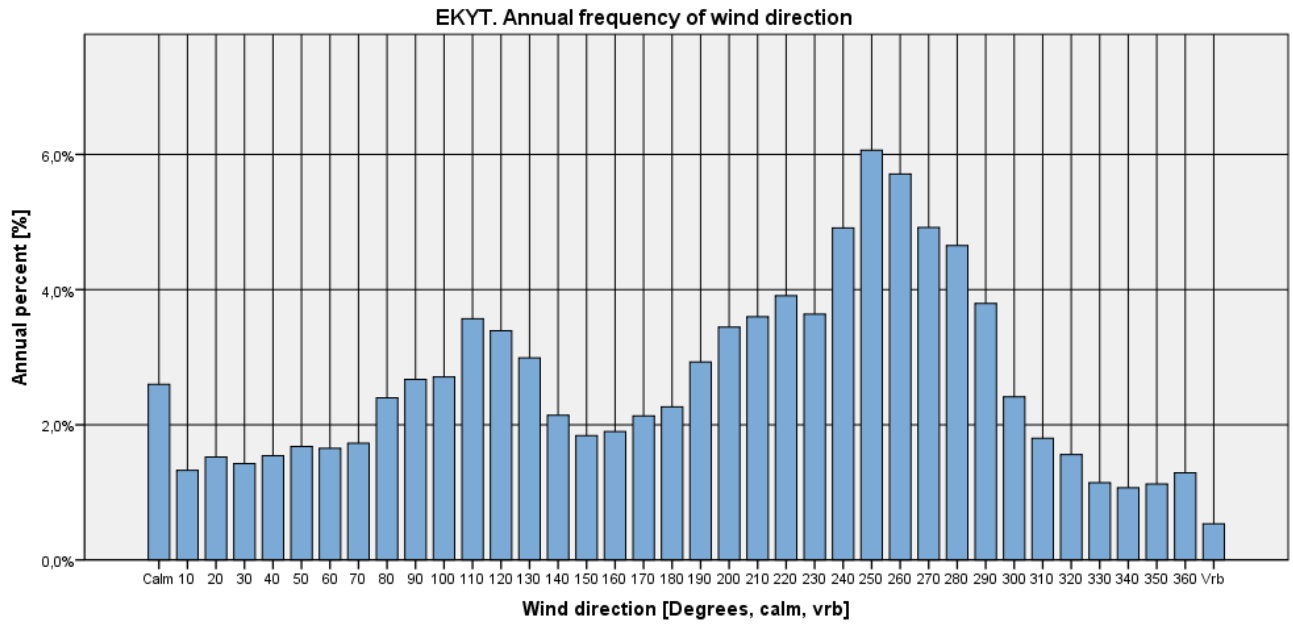


Figure 641

Visibility criteria on wind direction histograms

Visibility < 1000 m

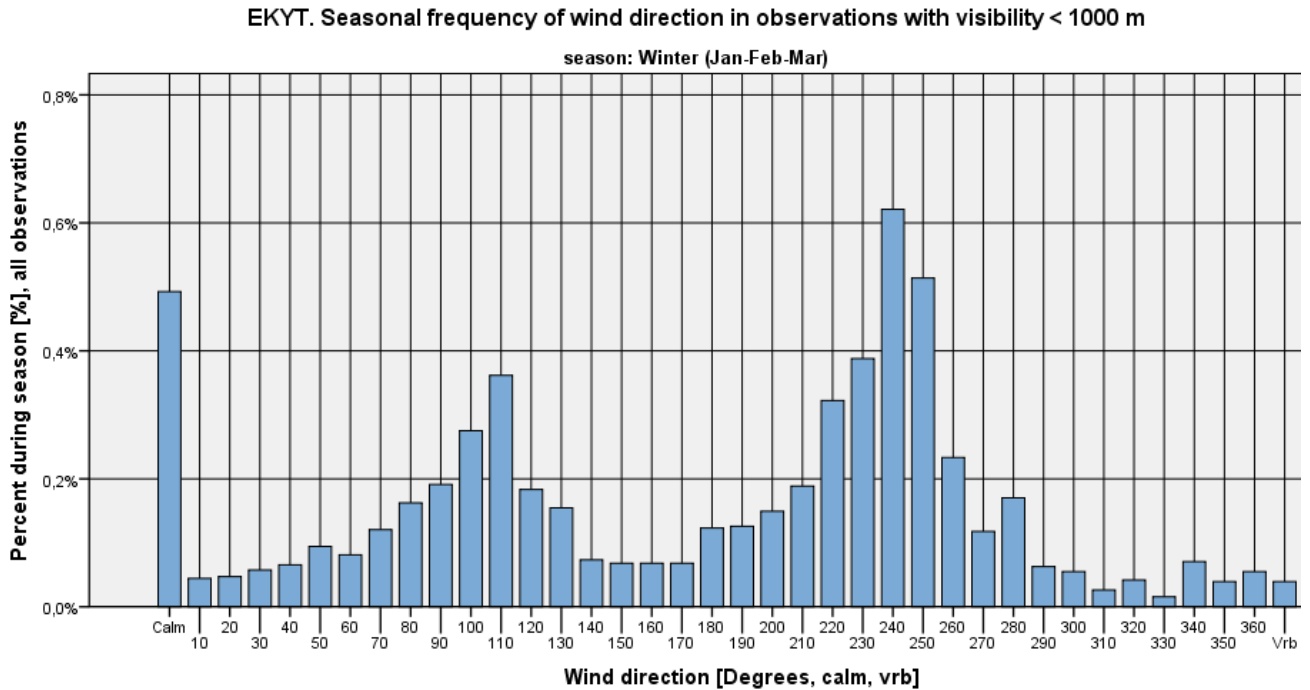


Figure 642

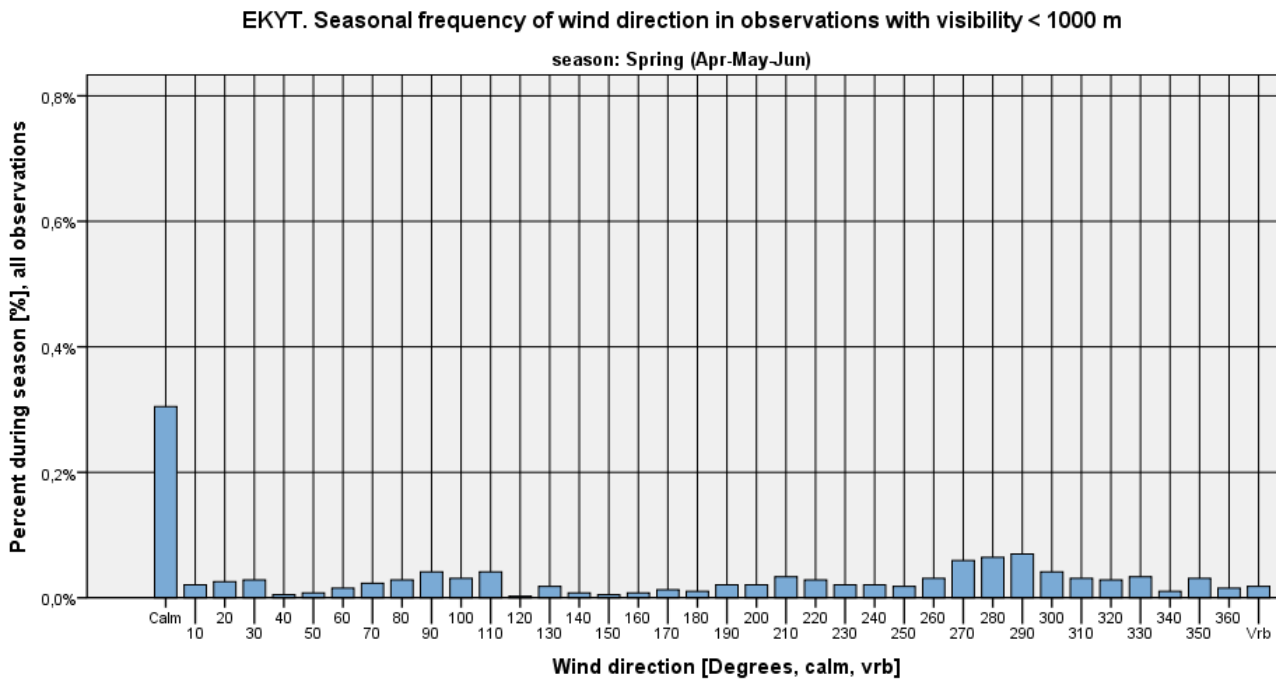


Figure 643

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

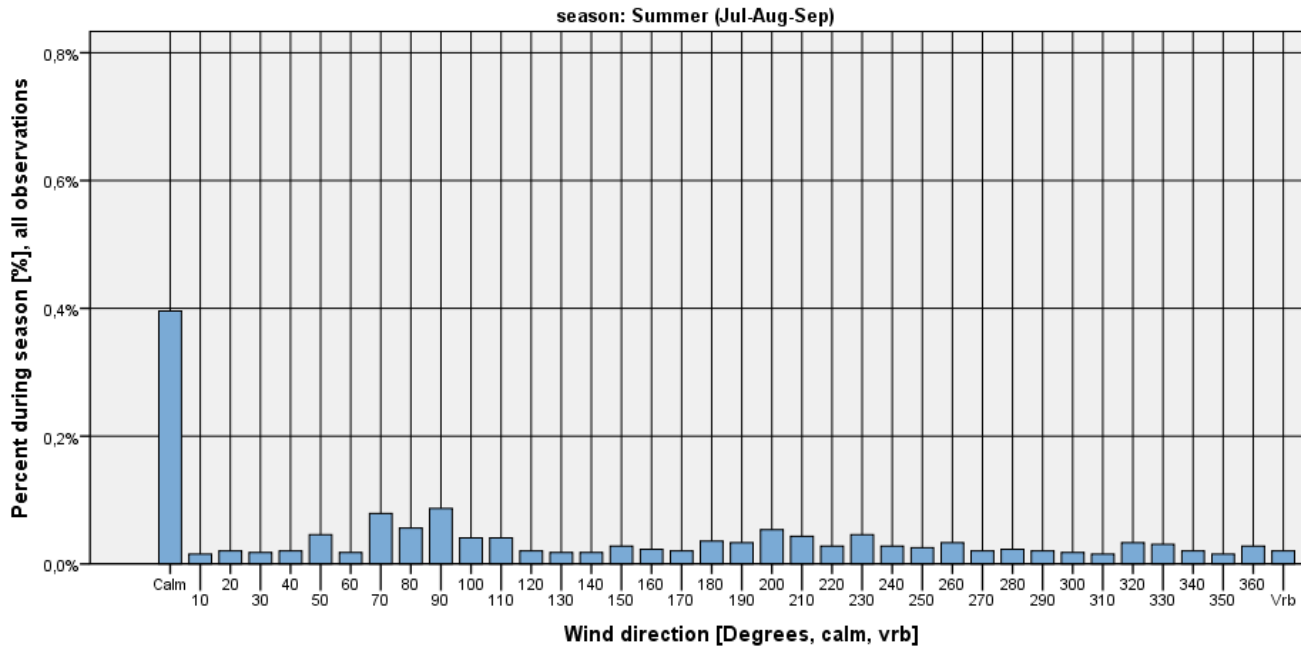


Figure 644

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

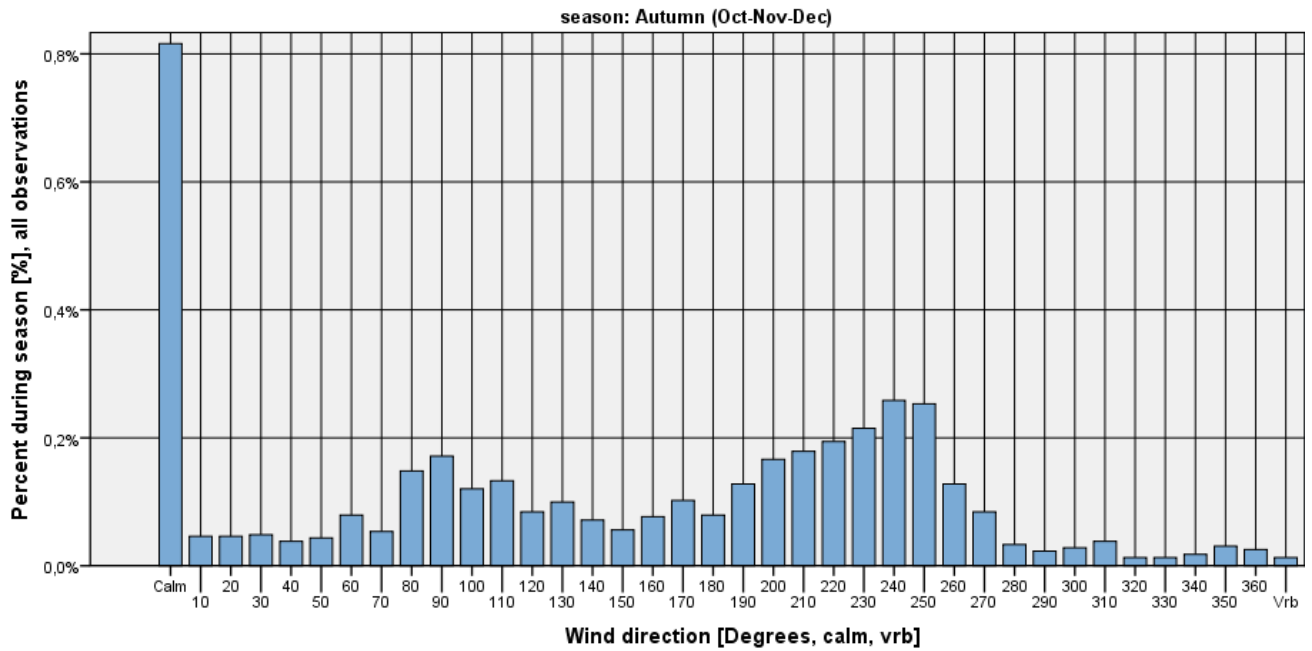


Figure 645

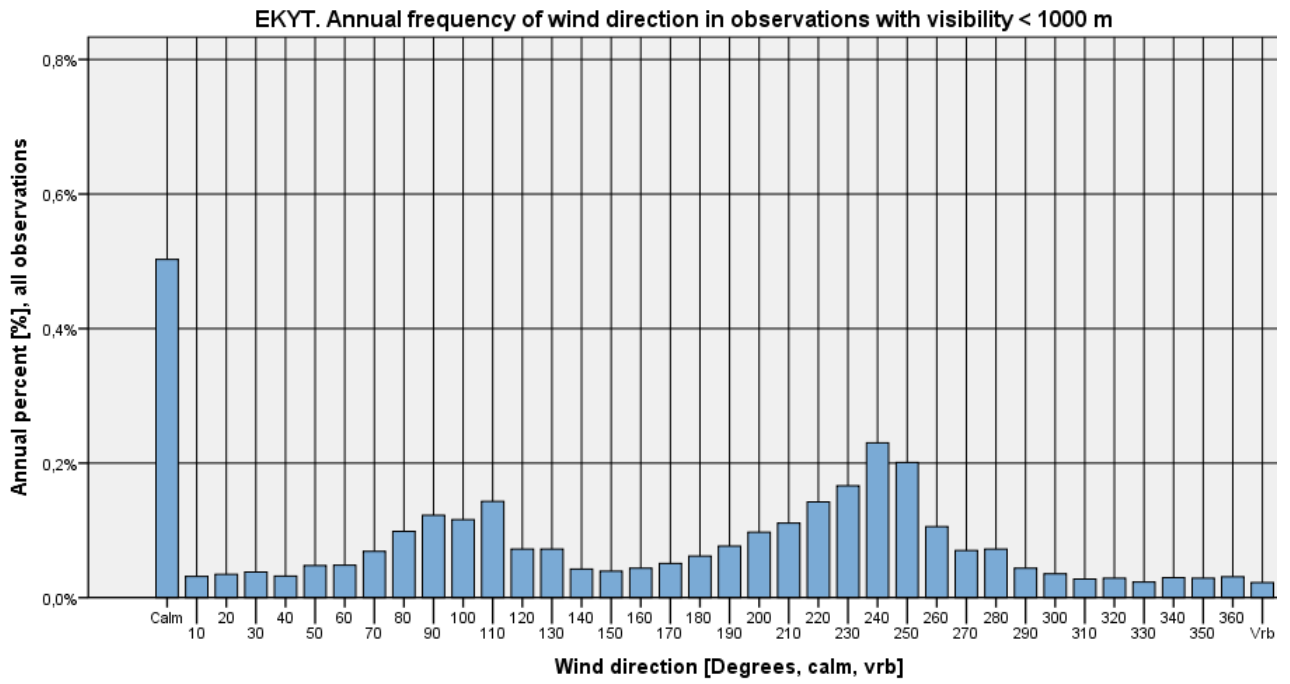


Figure 646



Visibility < 1000 m and wind speed <= 5 kts

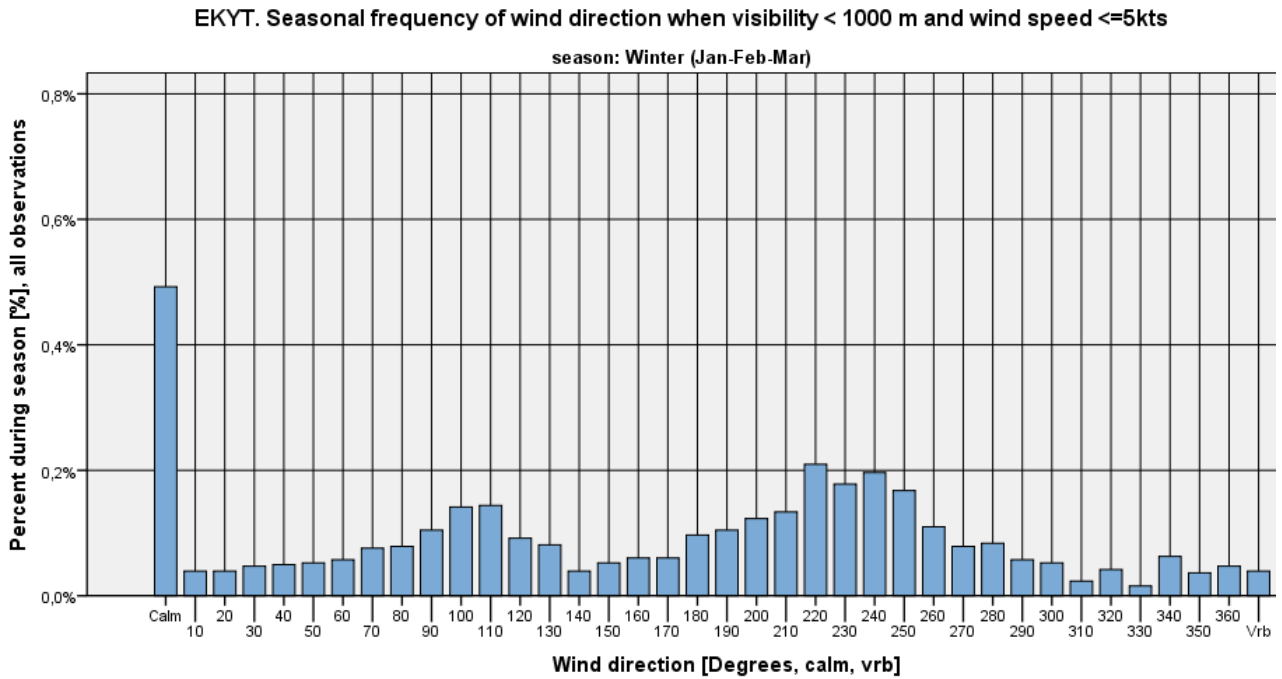


Figure 647

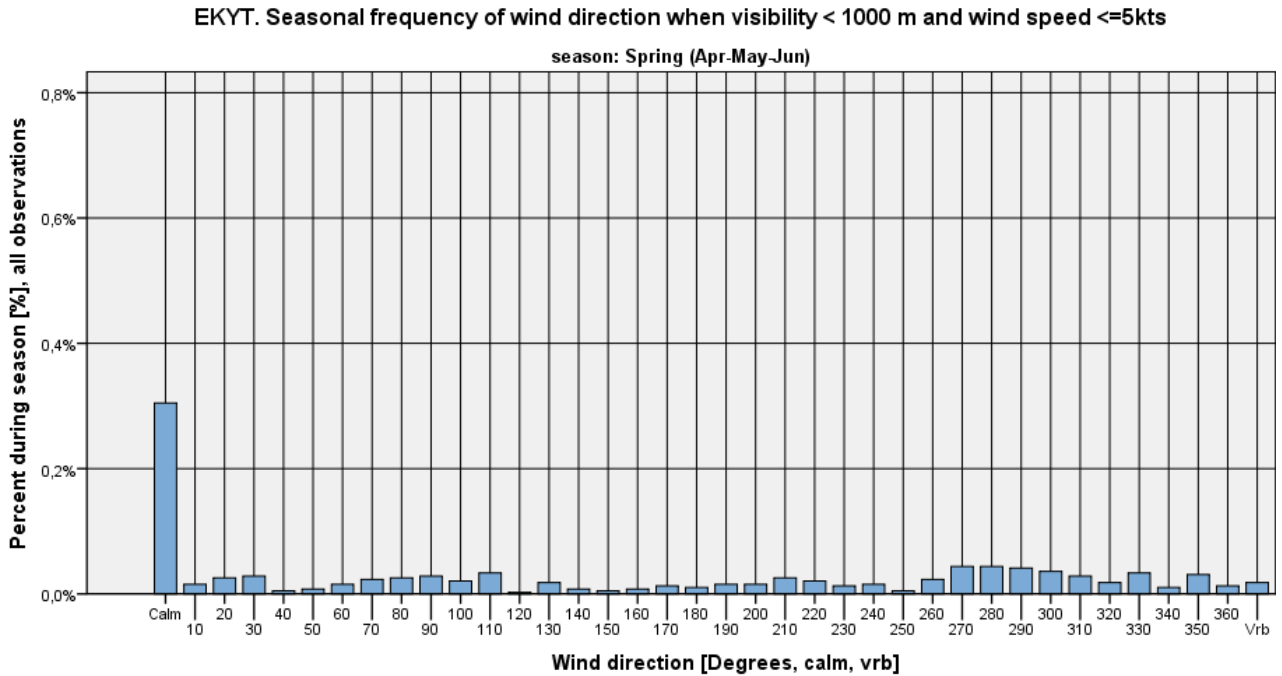


Figure 648



EKYT. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

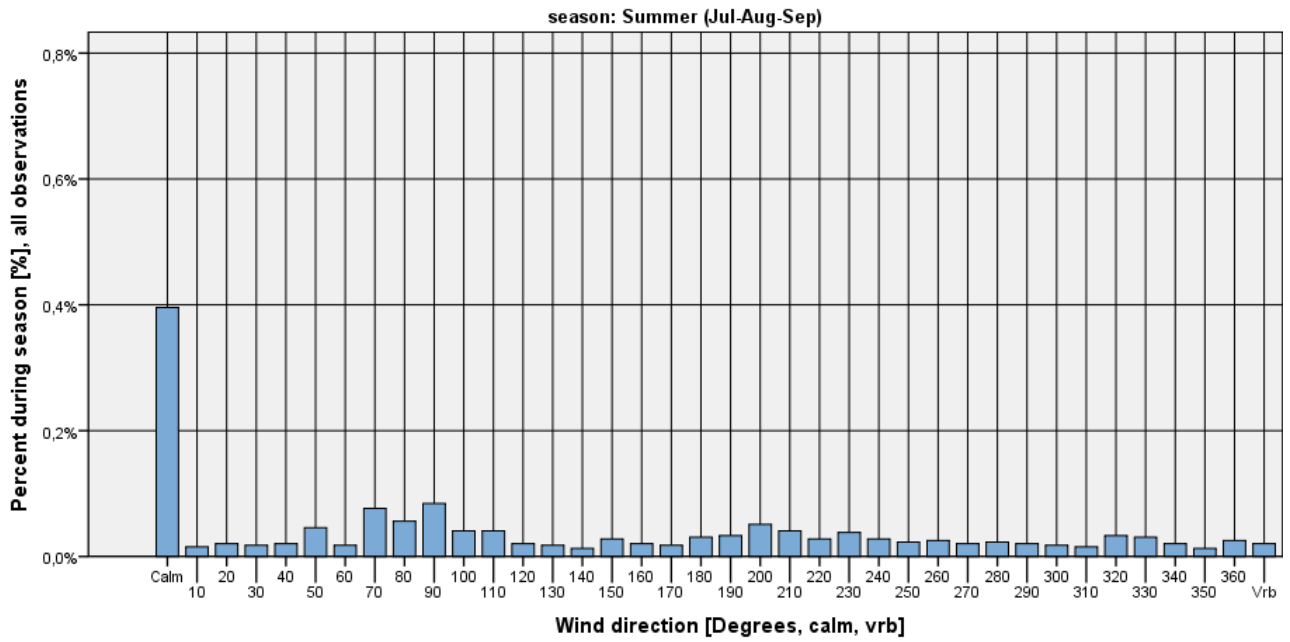


Figure 649

EKYT. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

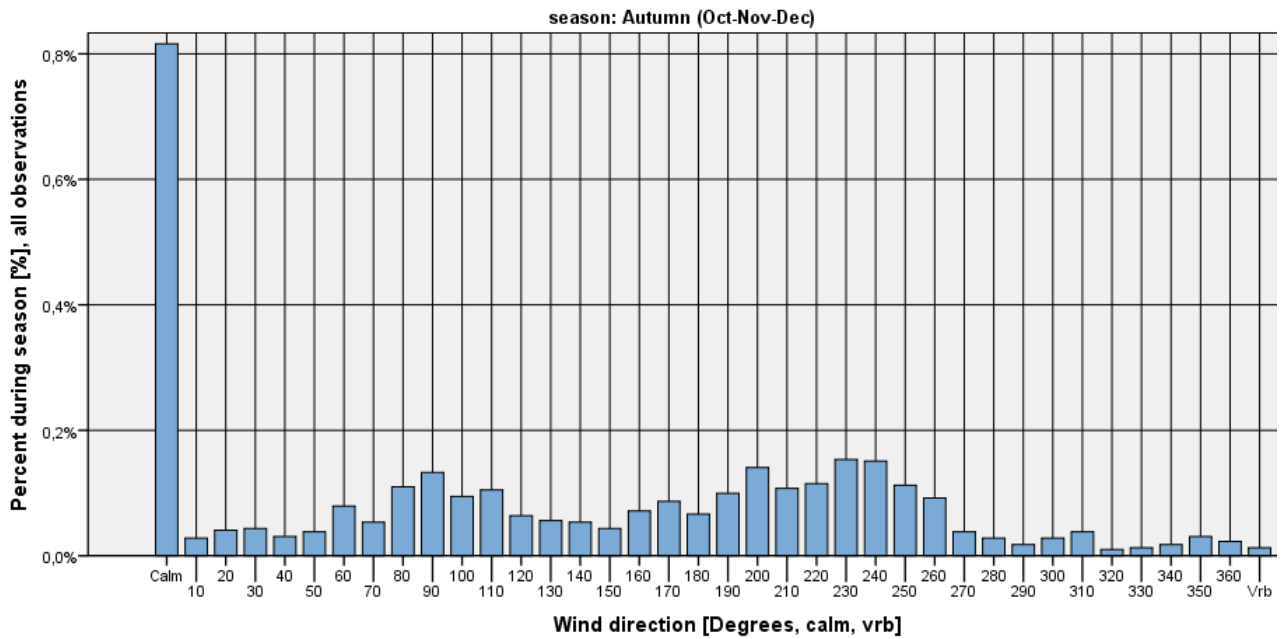


Figure 650

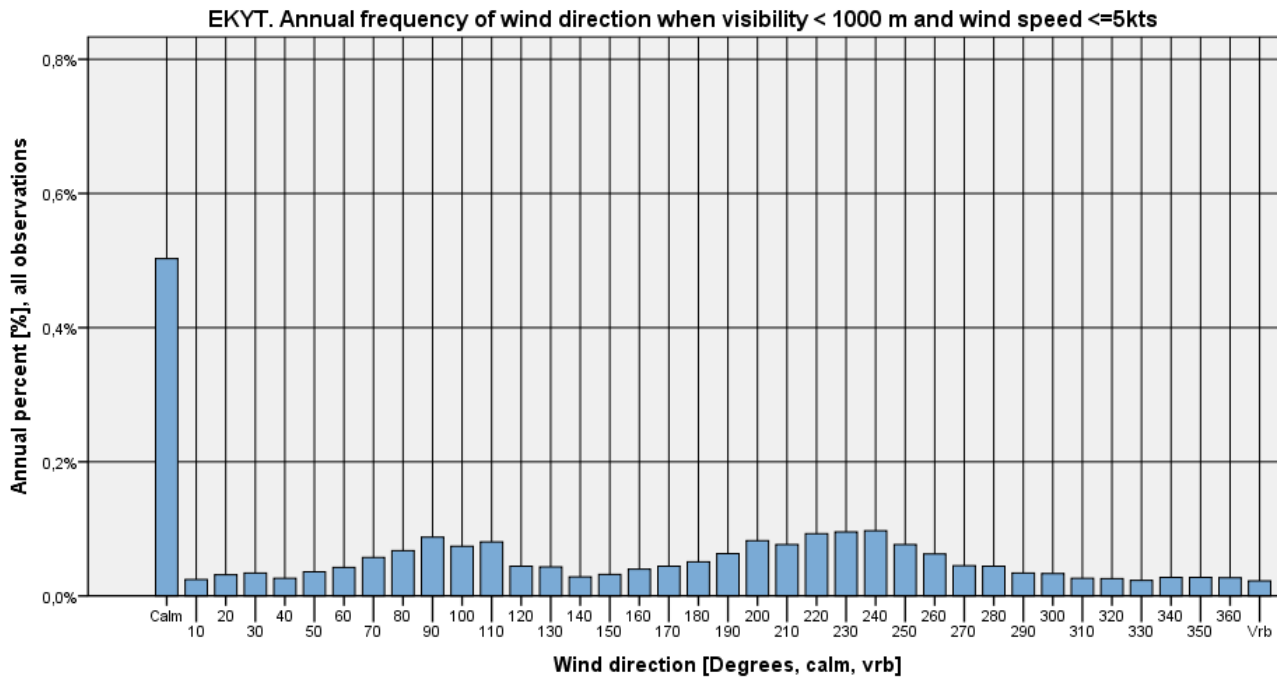


Figure 651



Visibility < 1000 m and wind speed > 5 kts

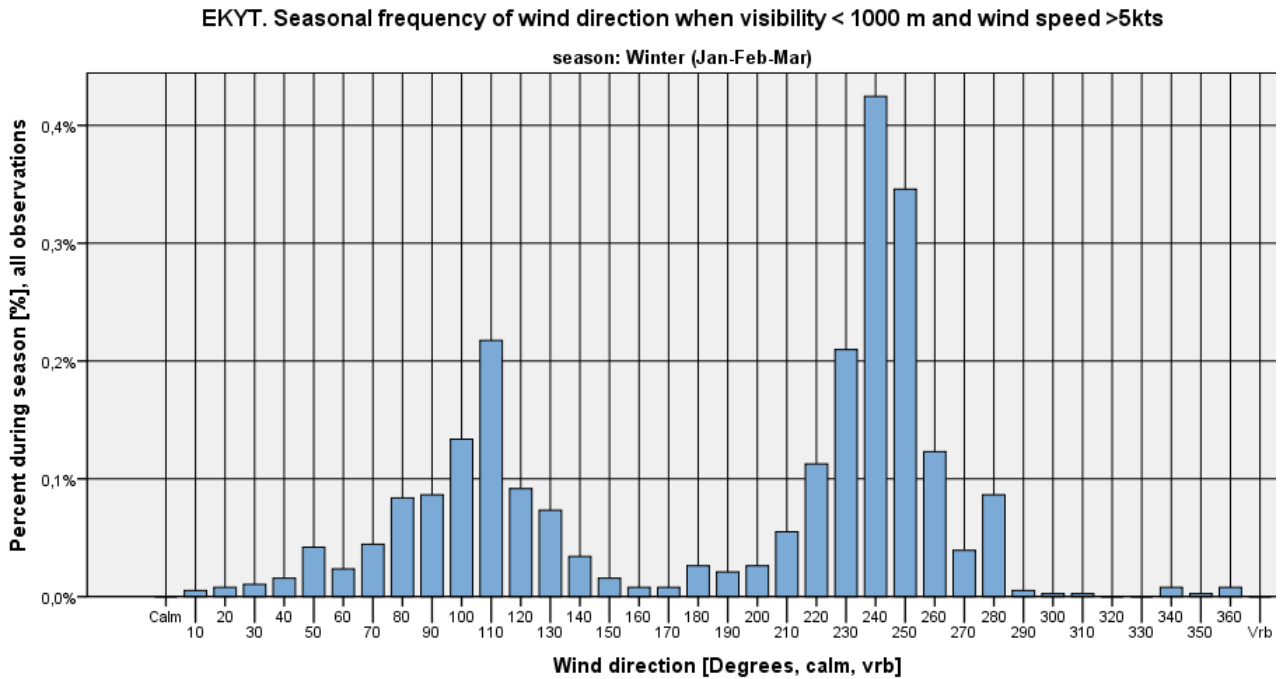


Figure 652

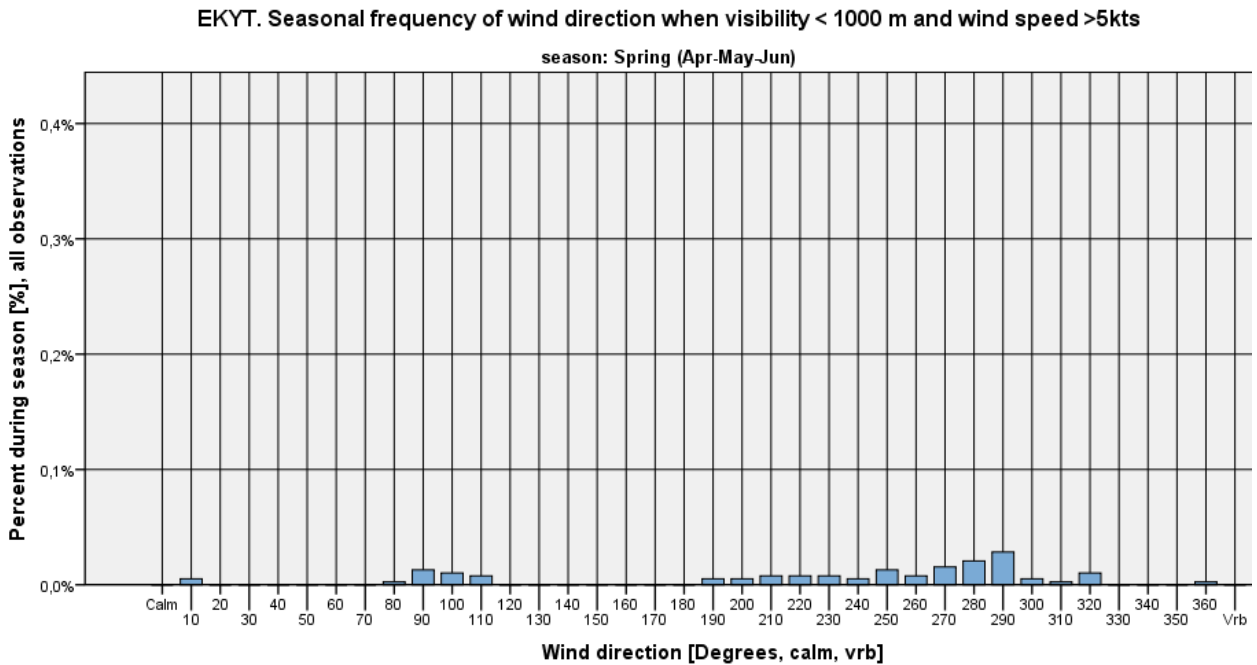


Figure 653



EKYT. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

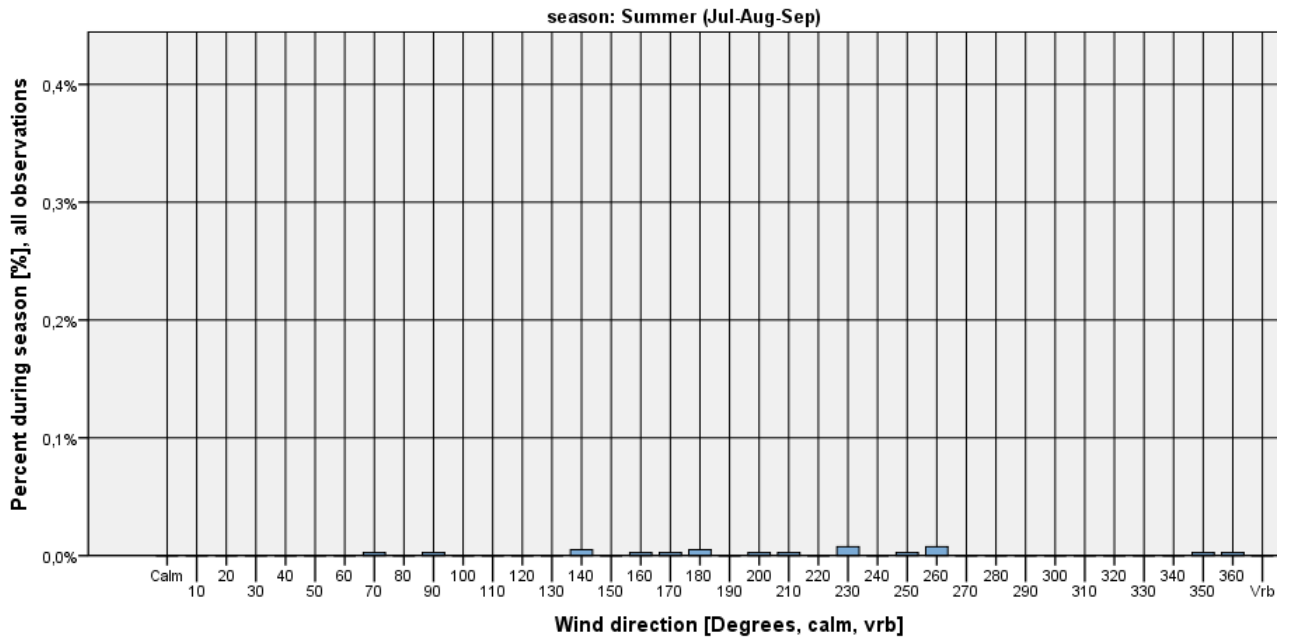


Figure 654

EKYT. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

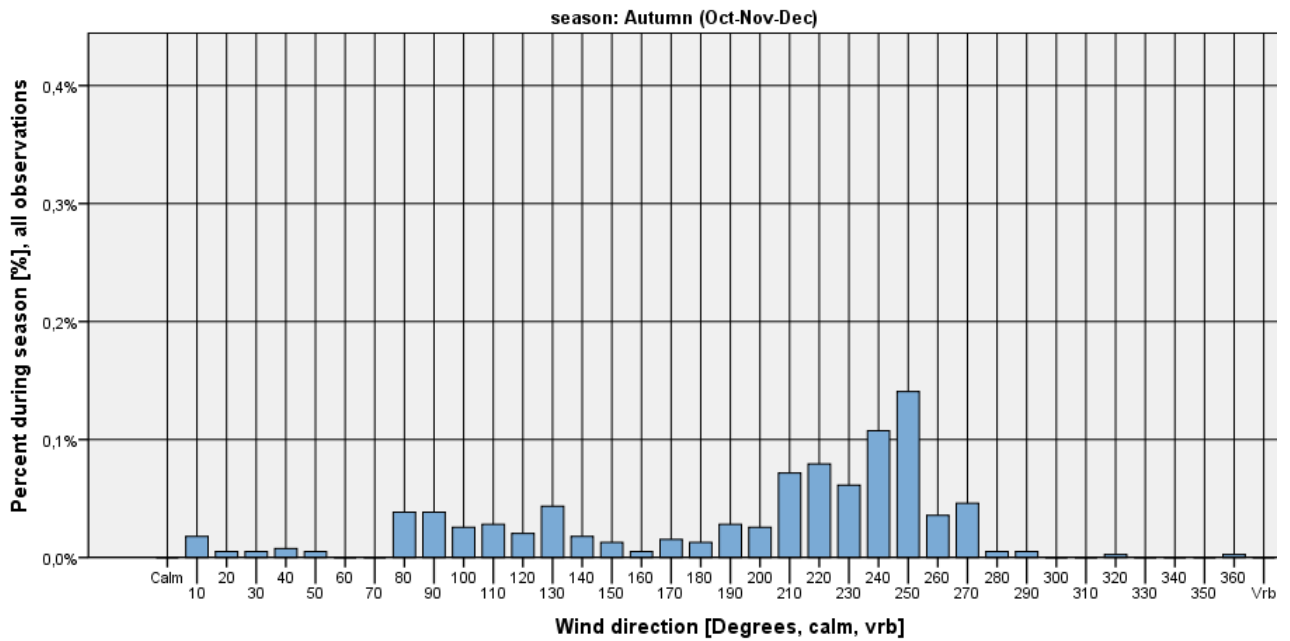


Figure 655

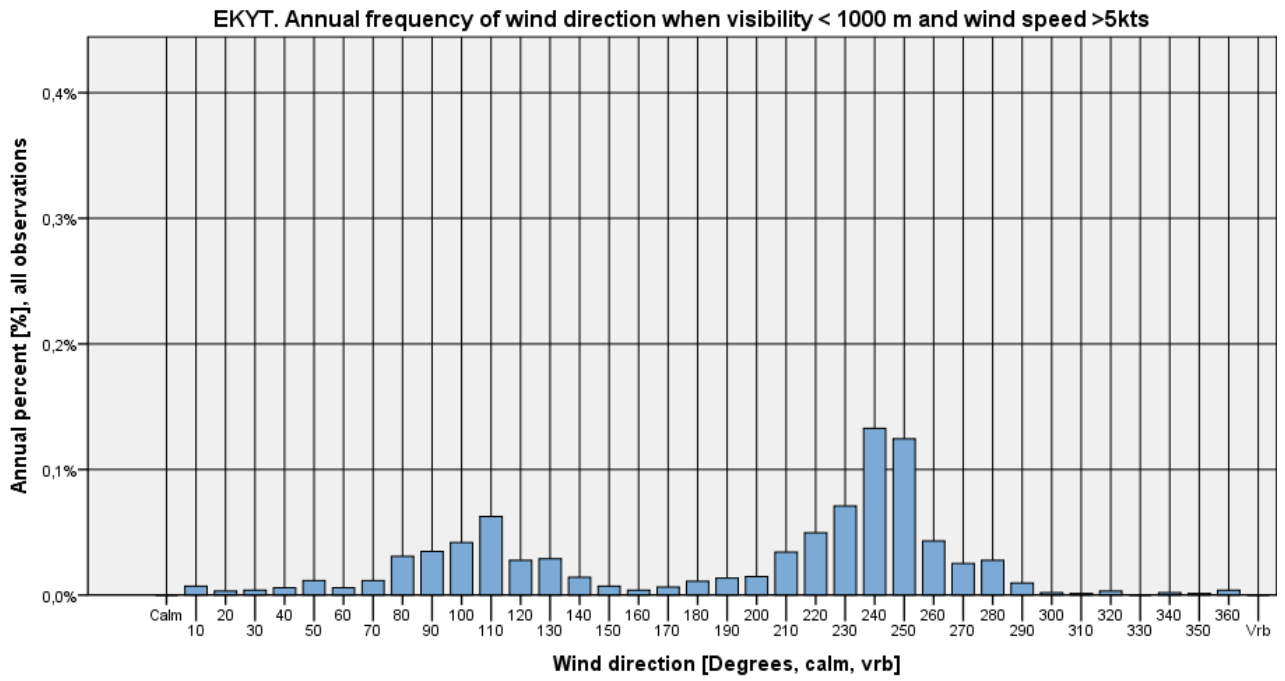


Figure 656



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

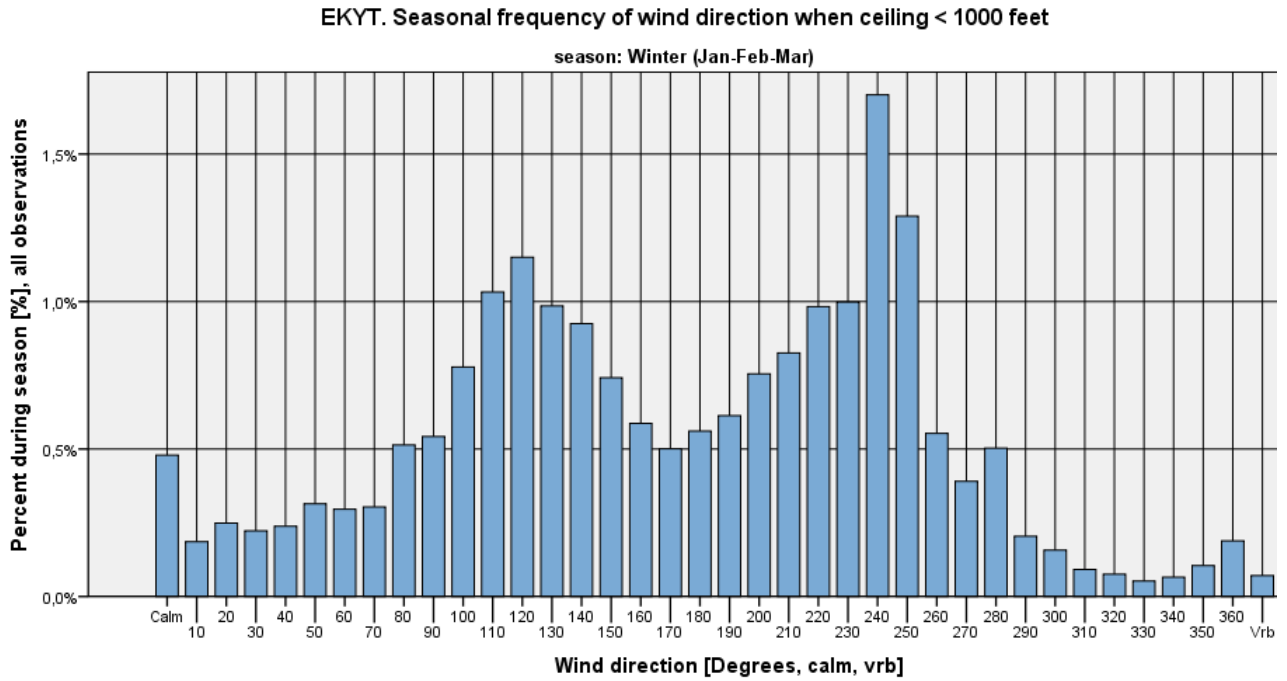


Figure 657

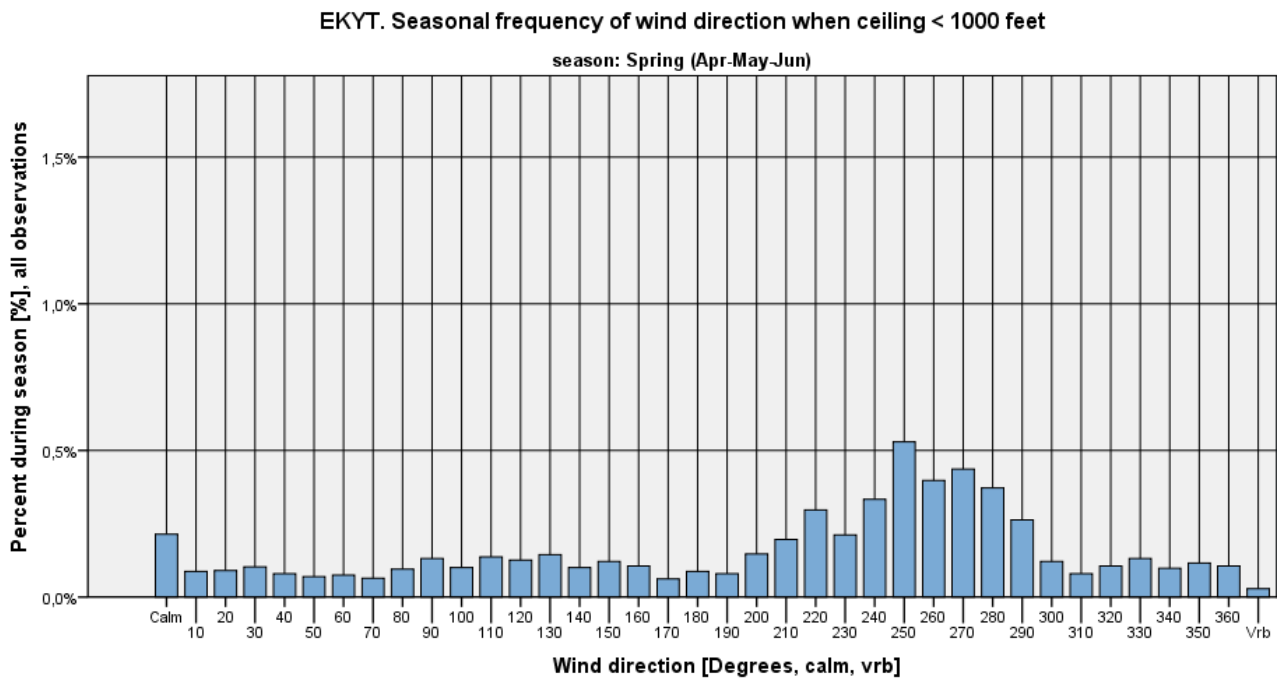


Figure 658



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

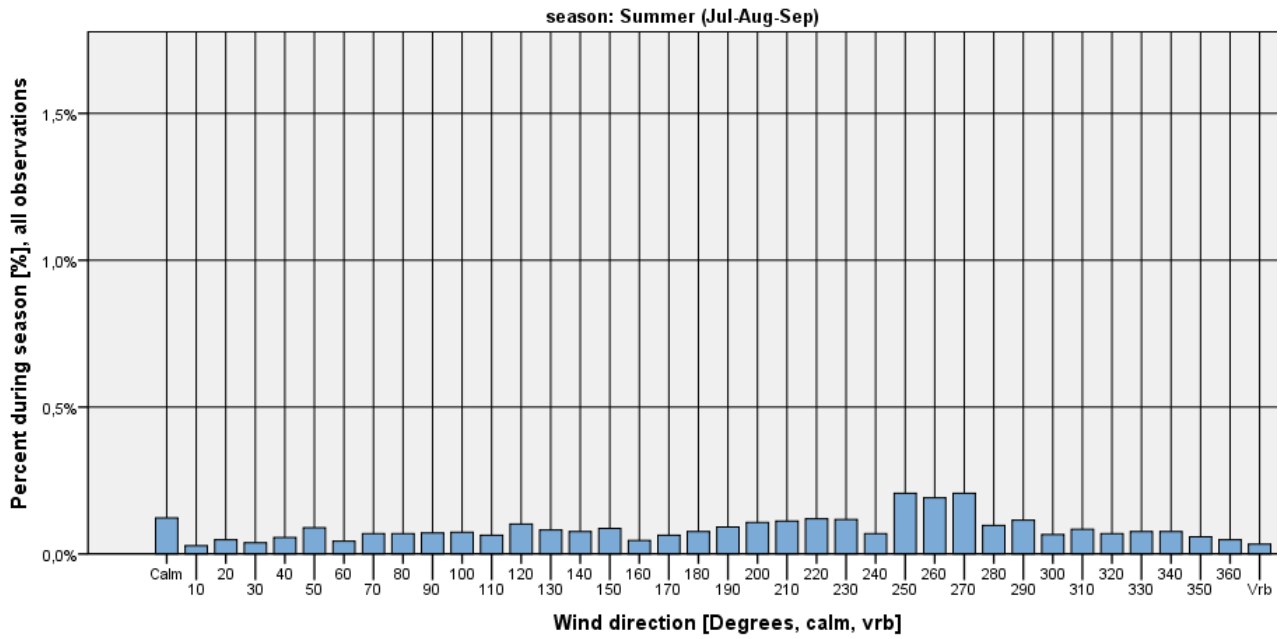


Figure 659

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

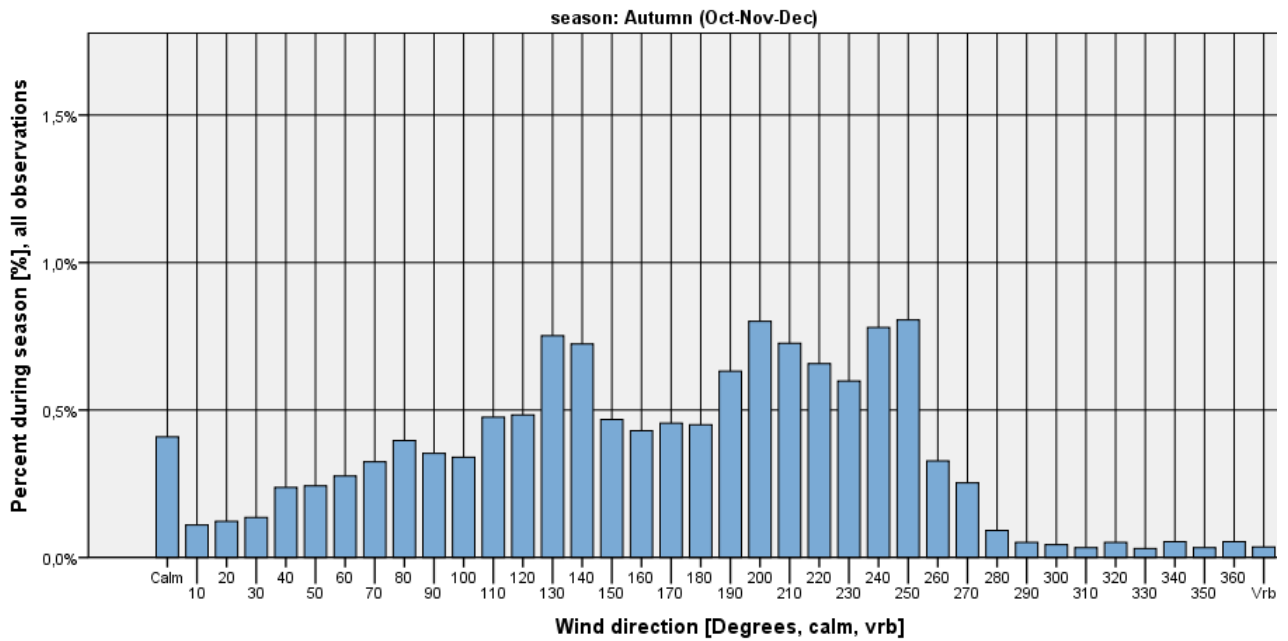


Figure 660

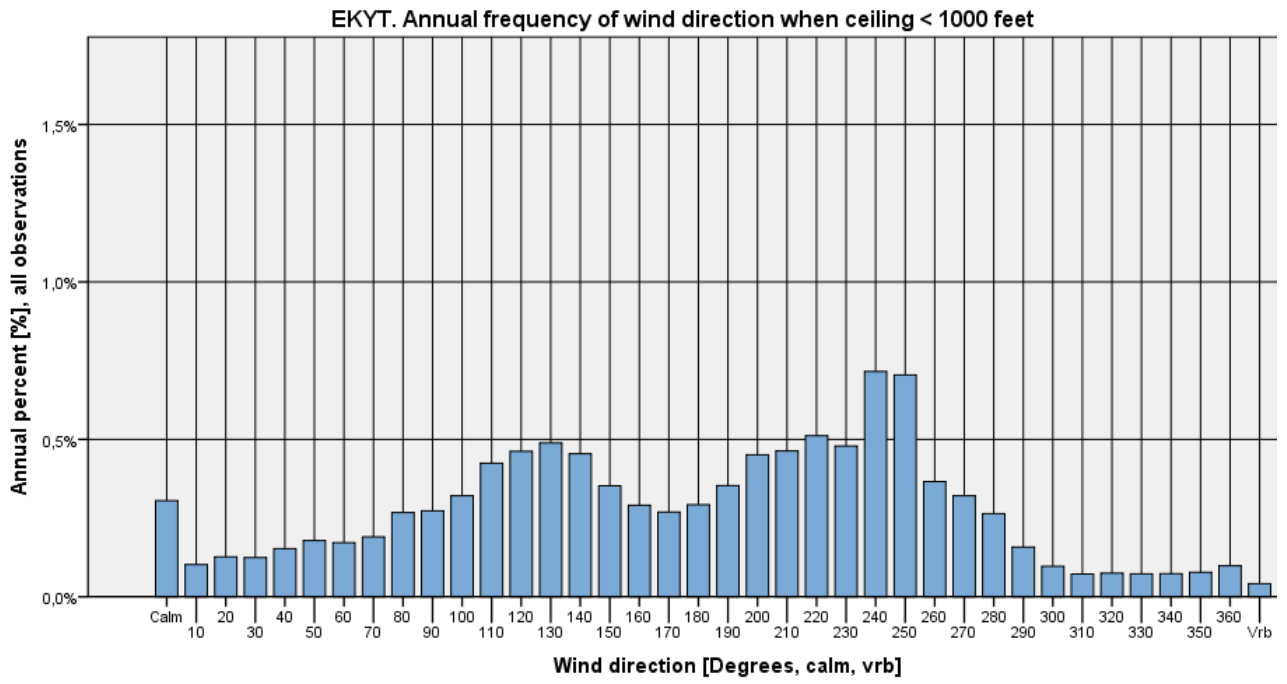


Figure 661



Ceiling < 1000 feet and wind speed ≤ 5 kts

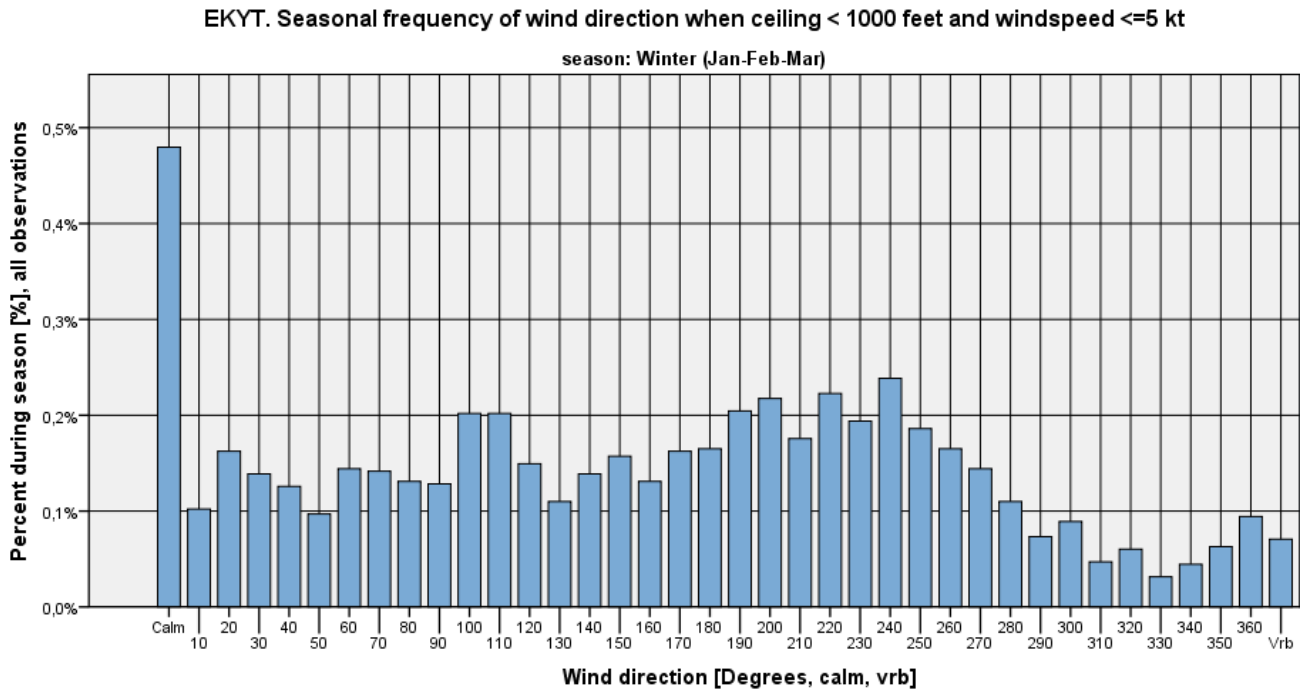


Figure 662

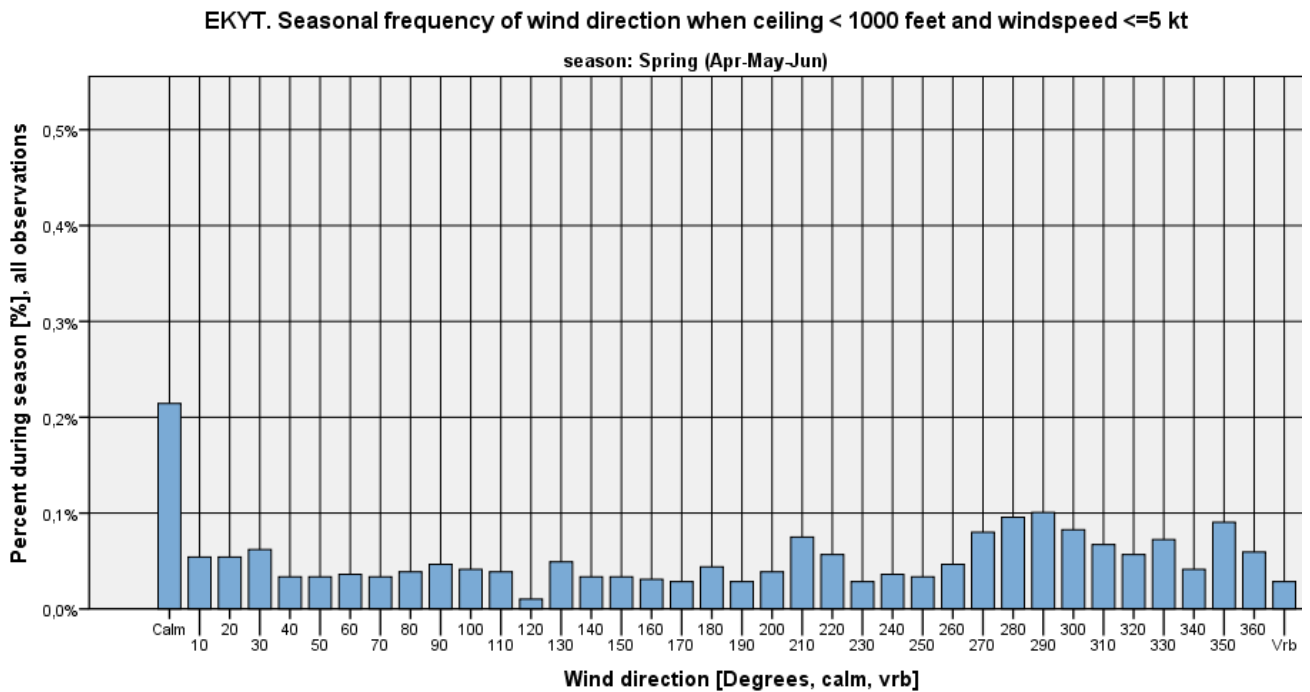


Figure 663



EKYT. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

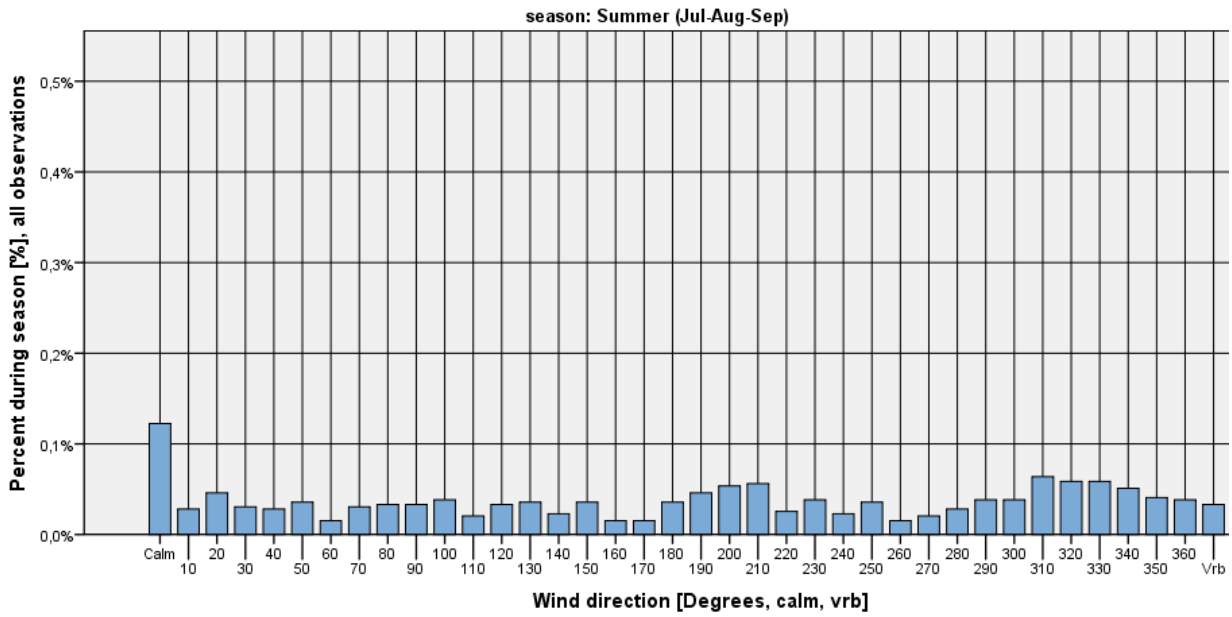


Figure 664

EKYT. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

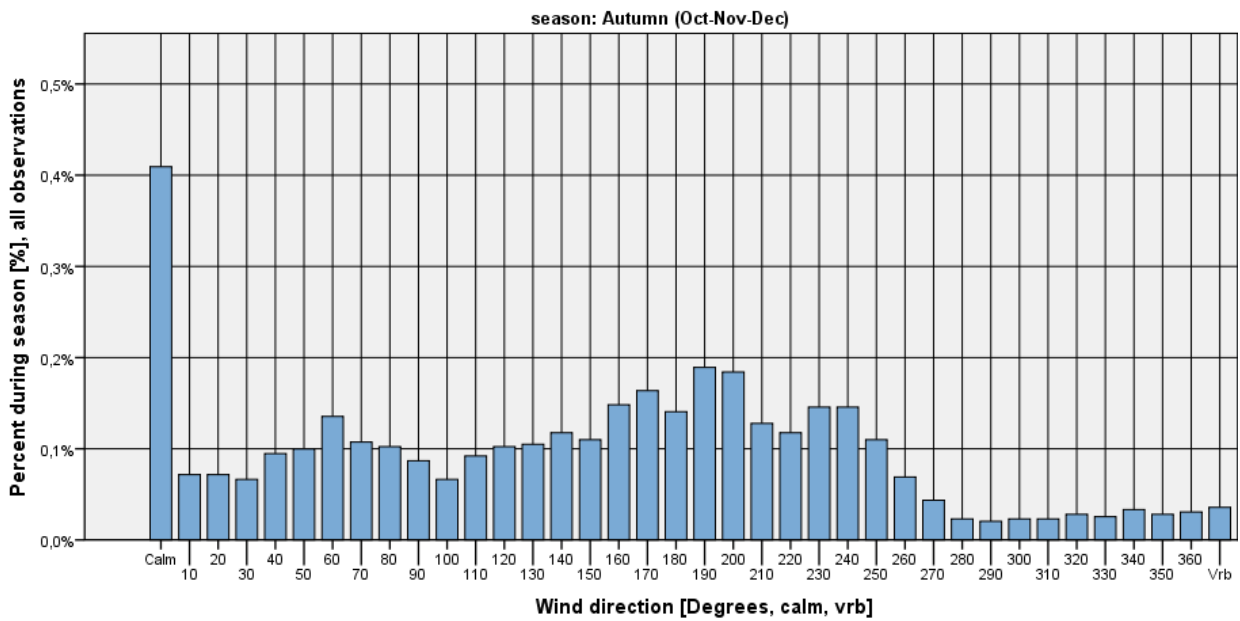


Figure 665

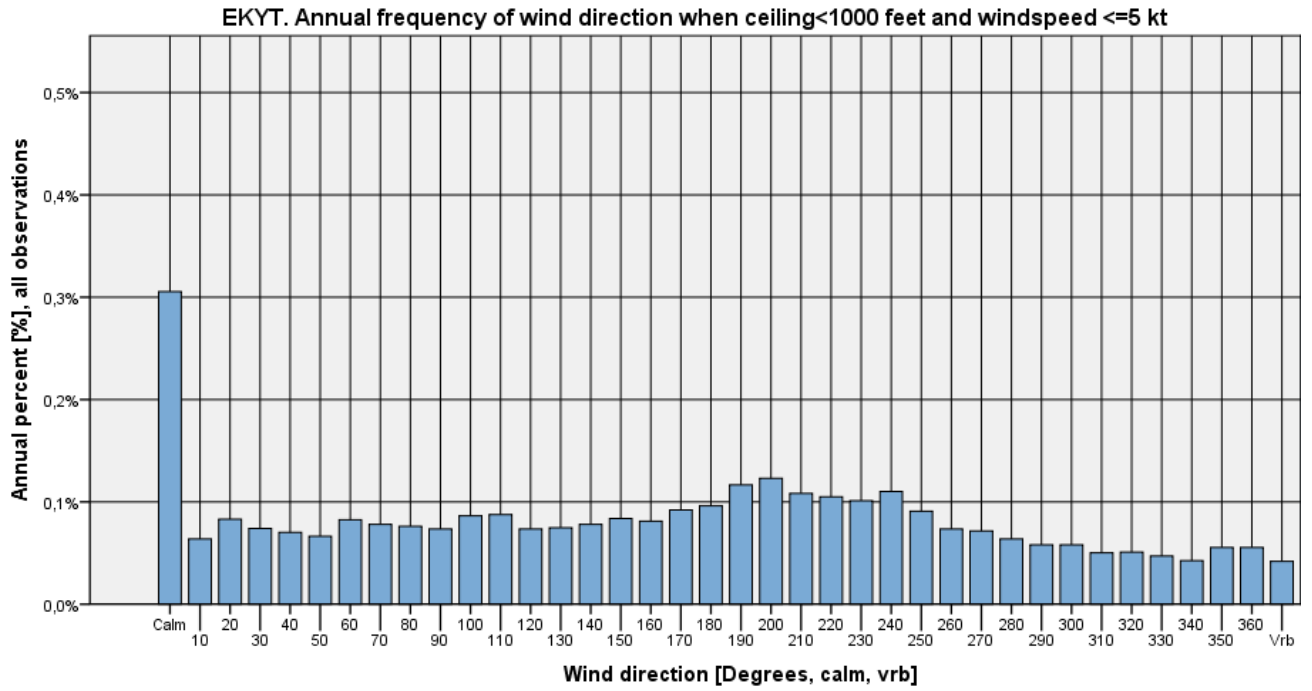


Figure 666



Ceiling < 1000 feet and wind speed > 5 kts

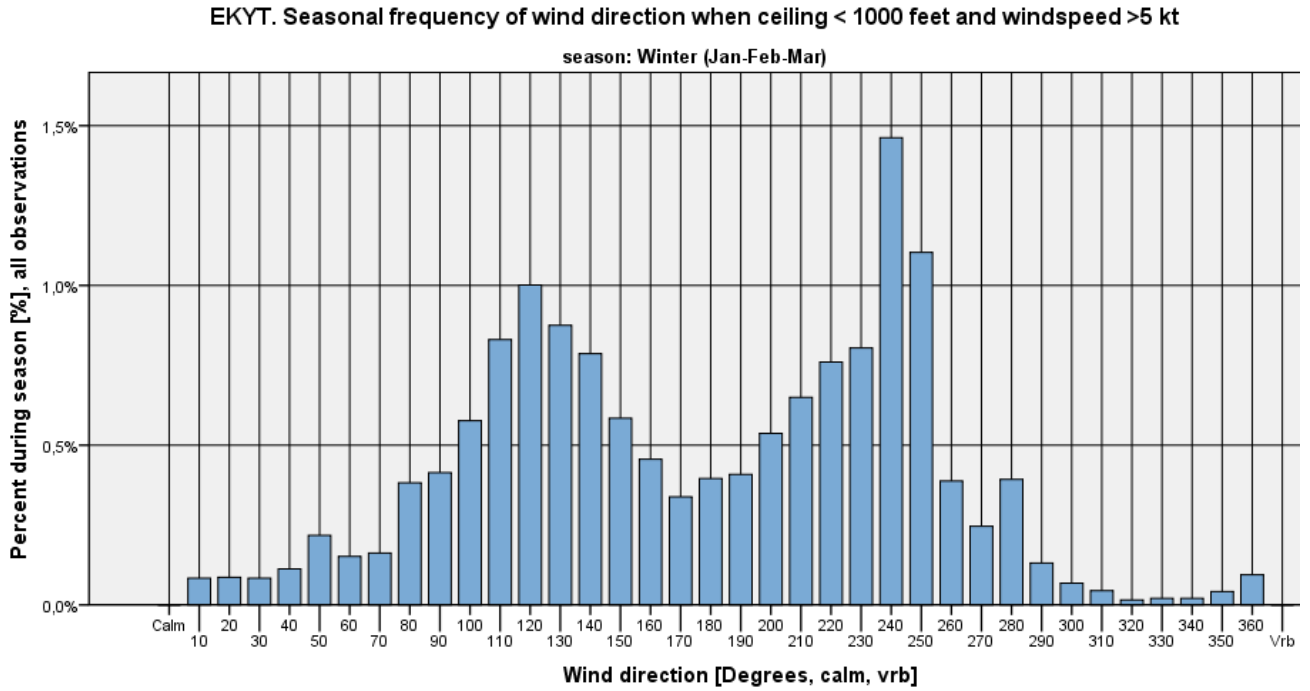


Figure 667

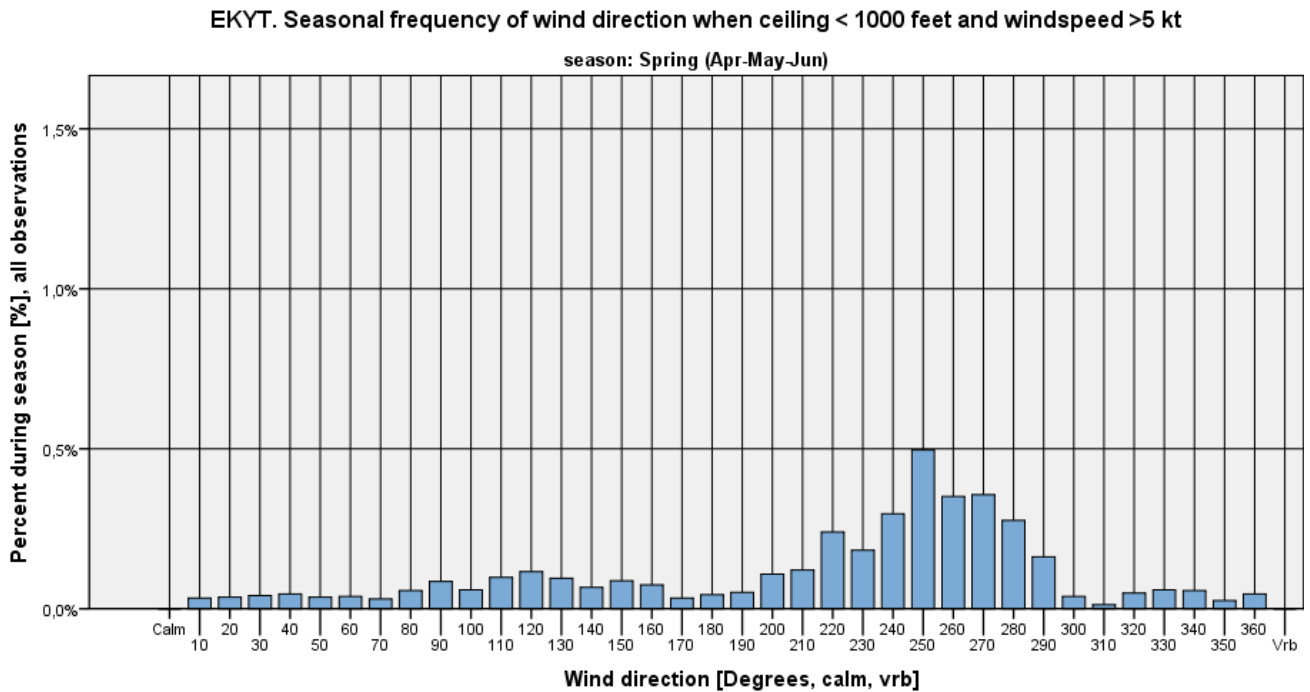


Figure 668



EKYT. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

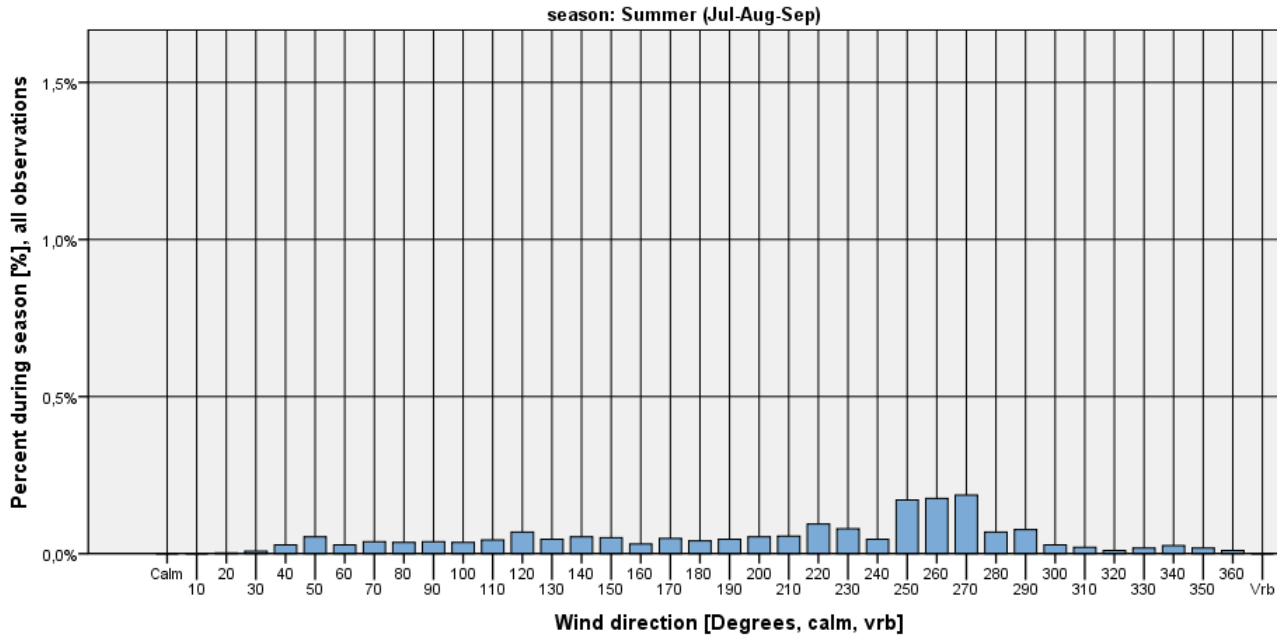


Figure 669

EKYT. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

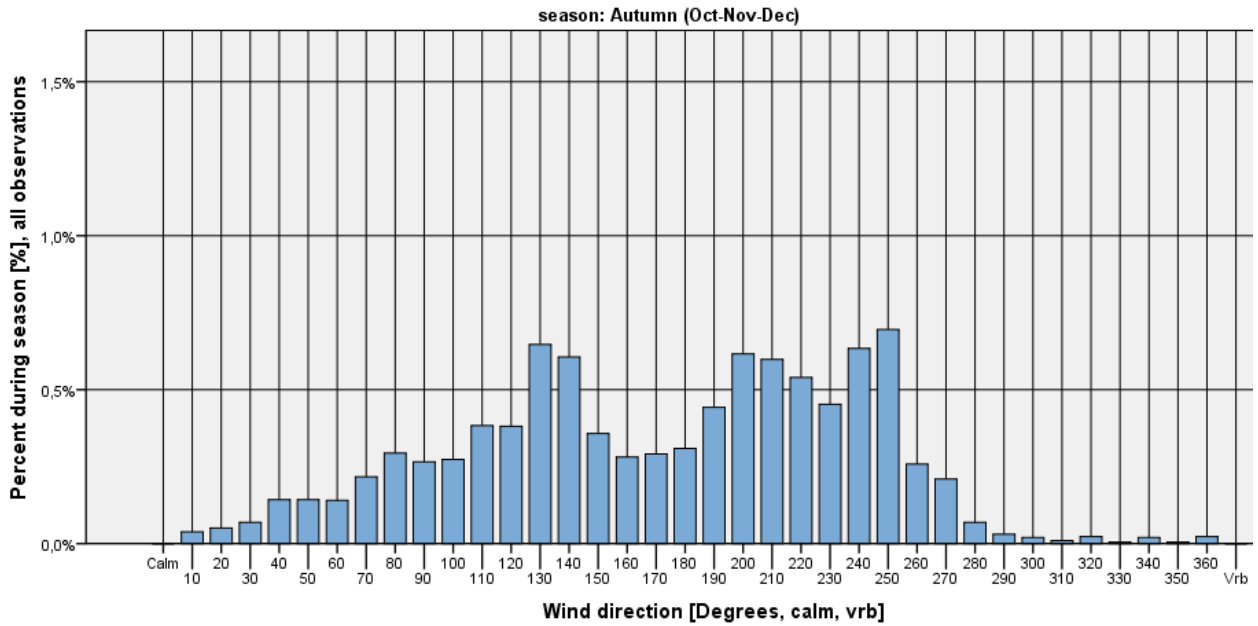


Figure 670

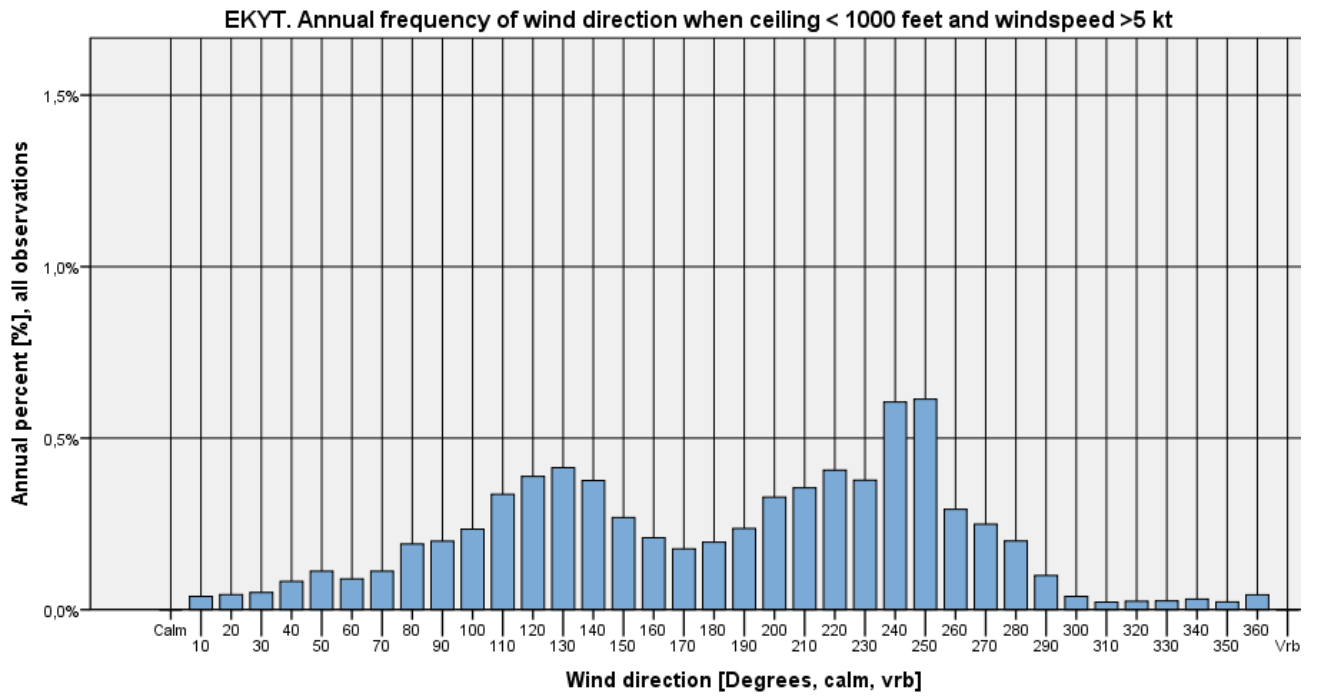


Figure 671



Ceiling < 500 feet

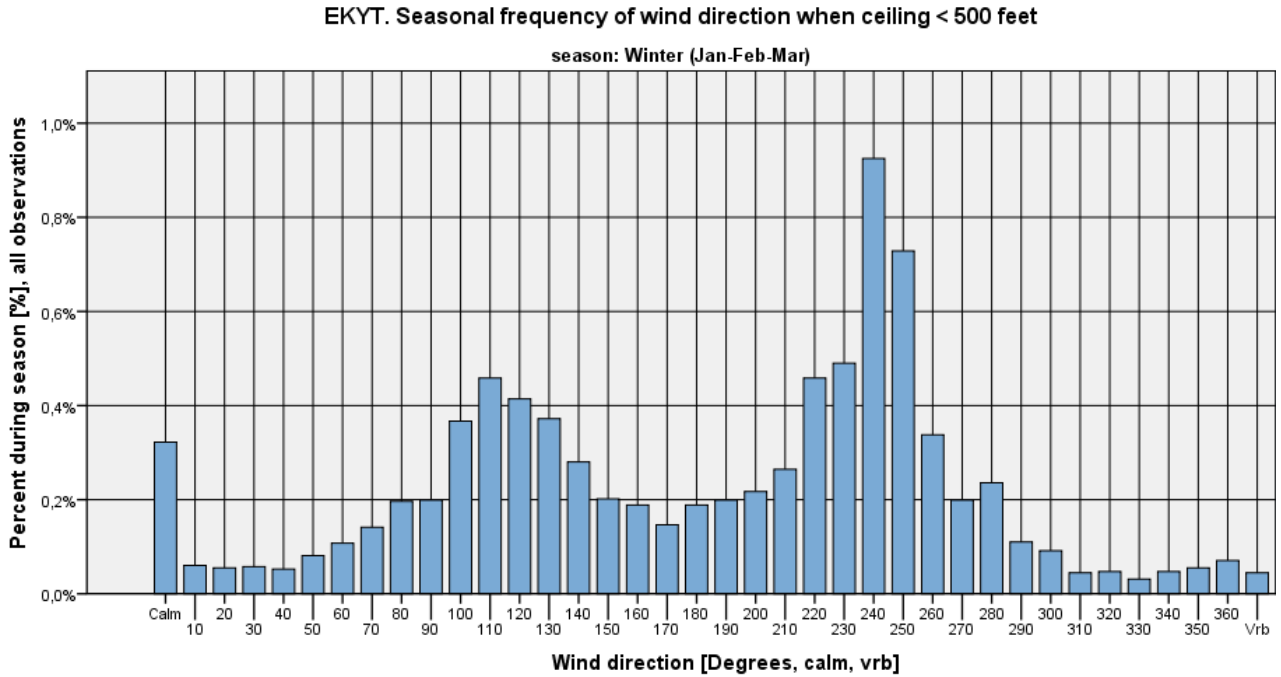


Figure 672

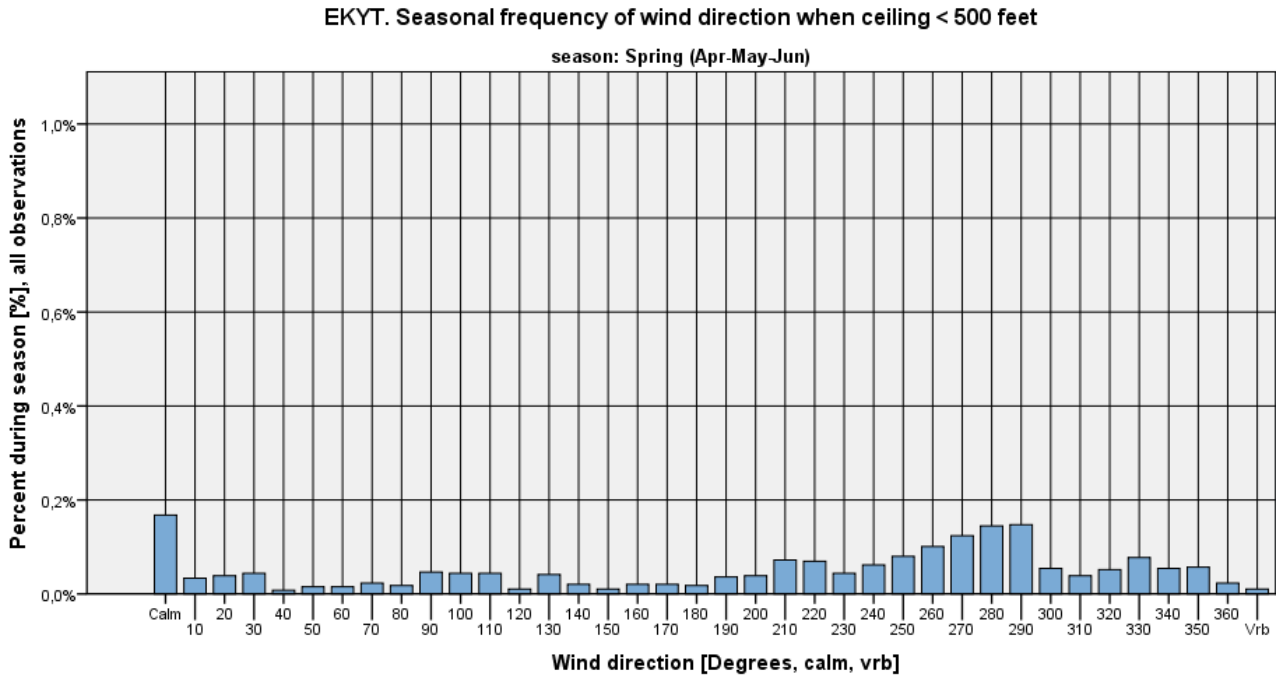


Figure 673



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

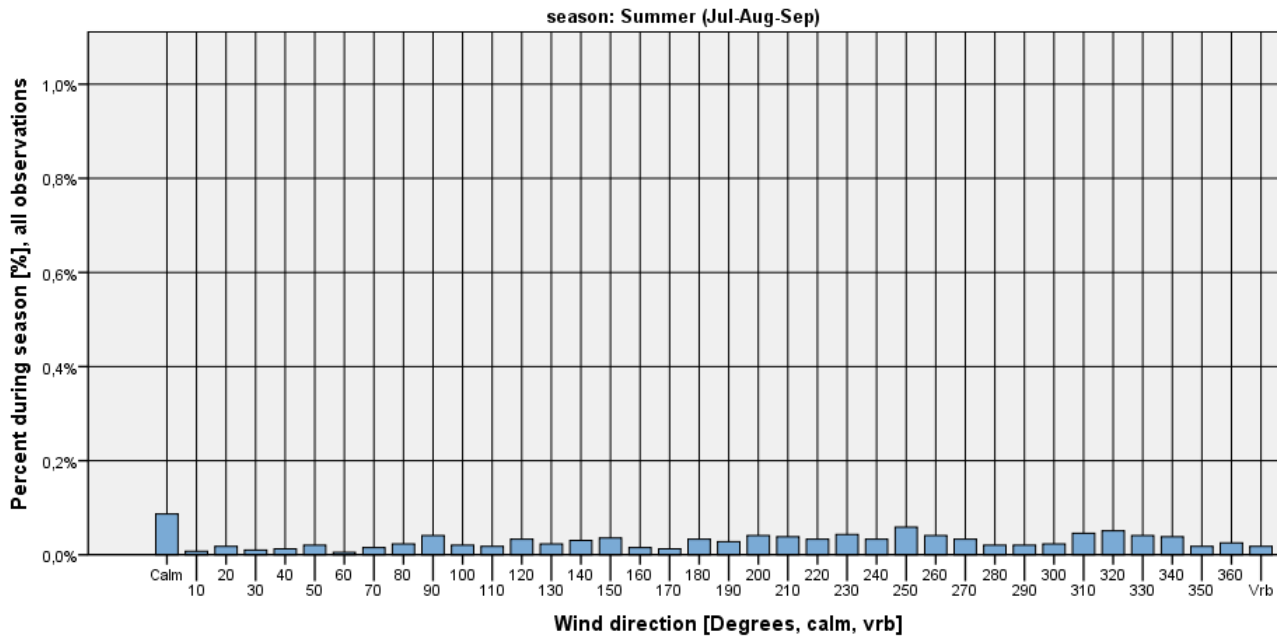


Figure 674

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

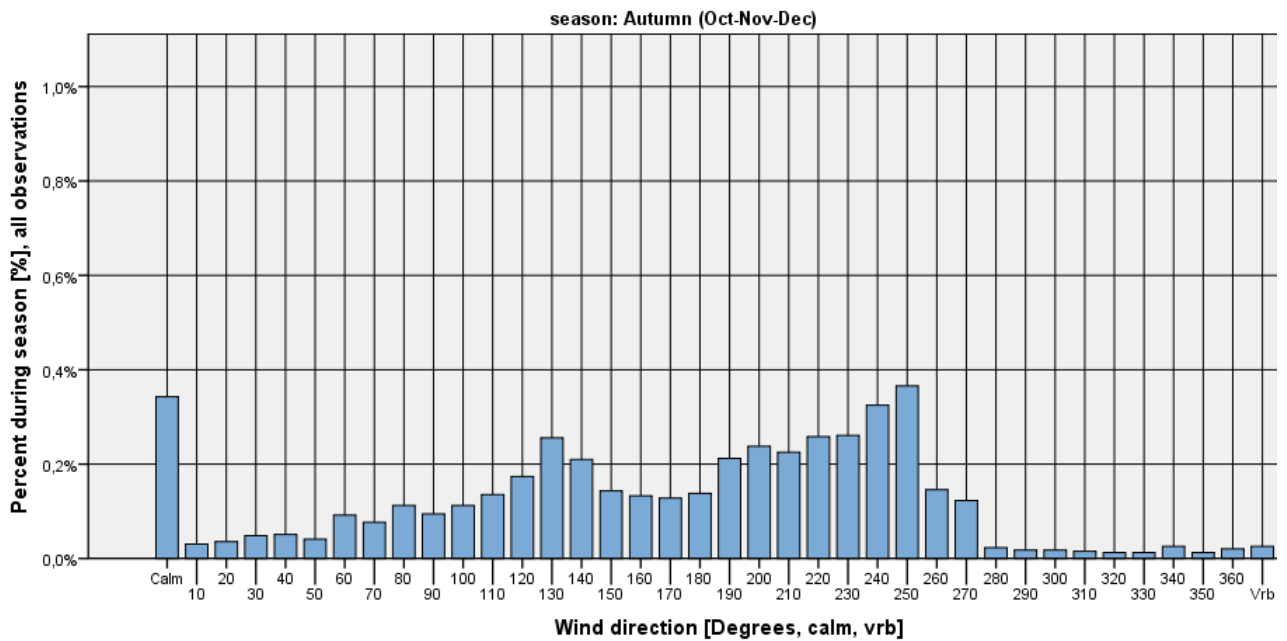


Figure 675

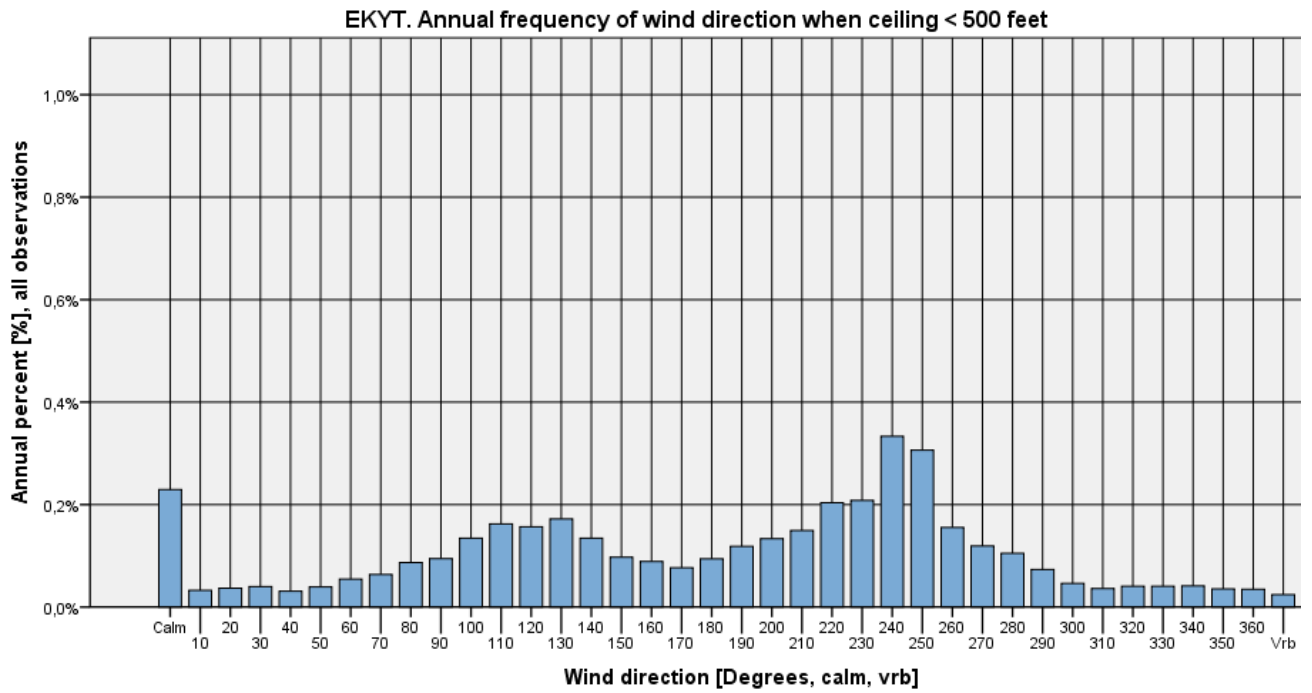


Figure 676



Ceiling < 500 feet and wind speed ≤ 5 kts

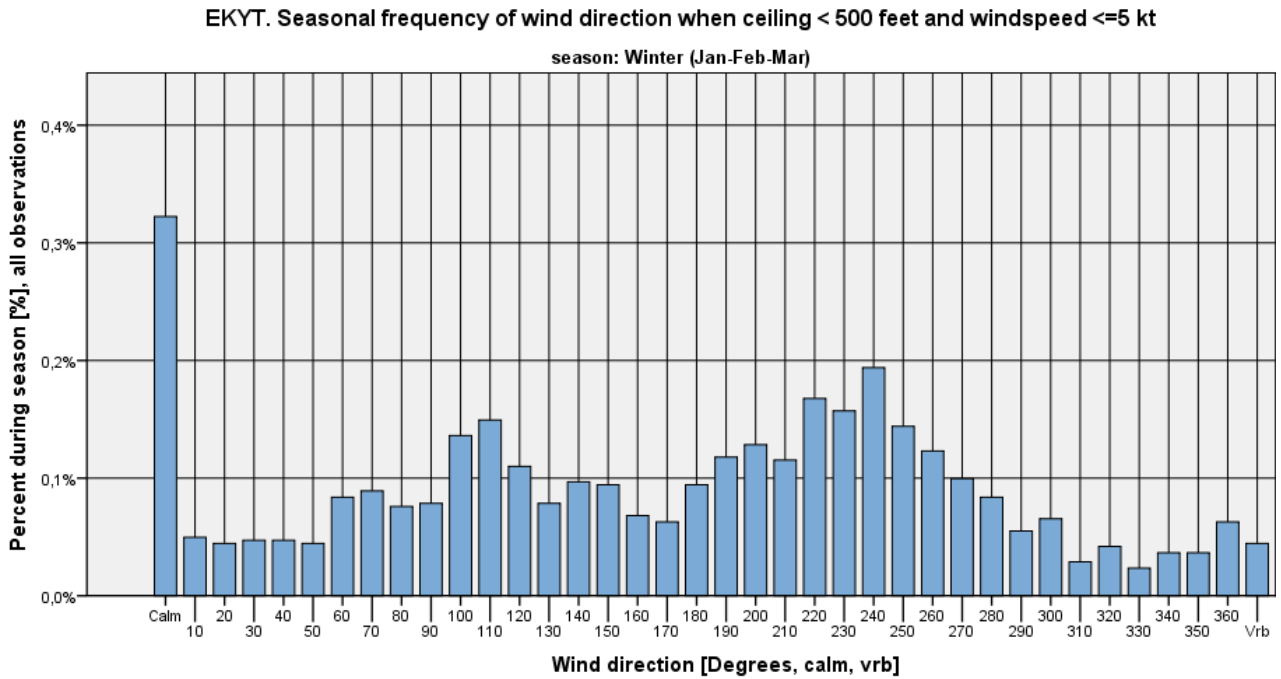


Figure 677

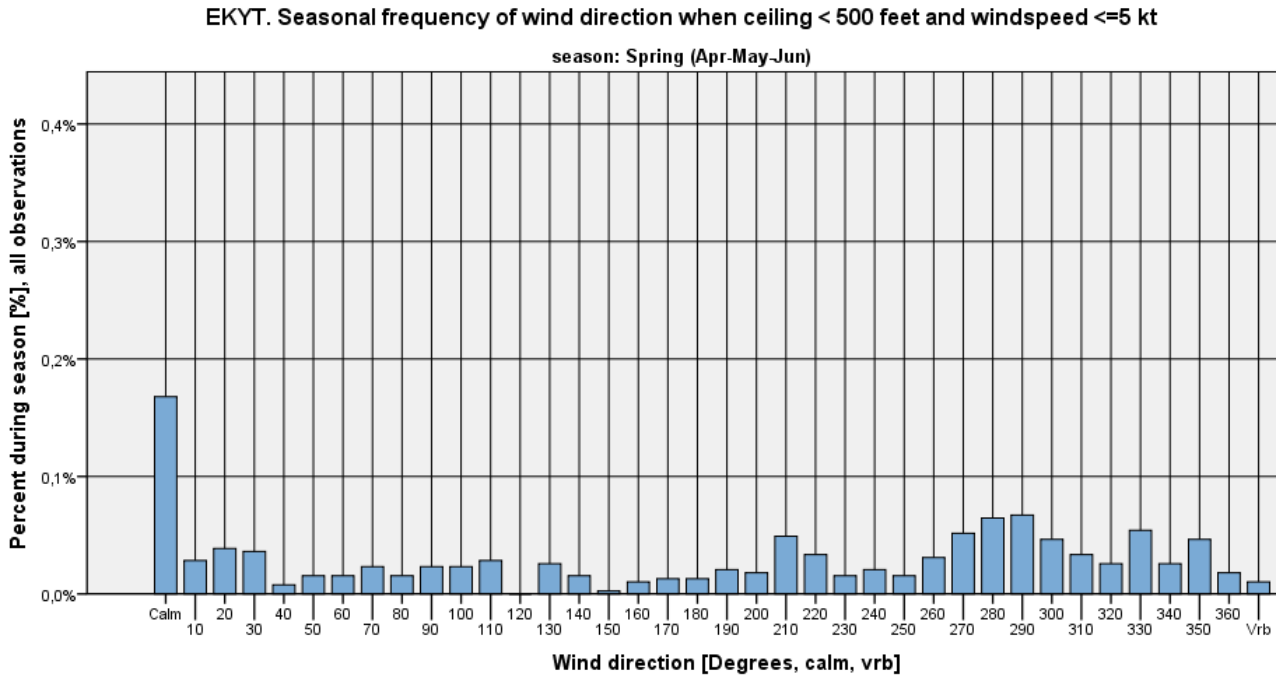


Figure 678



EKYT. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

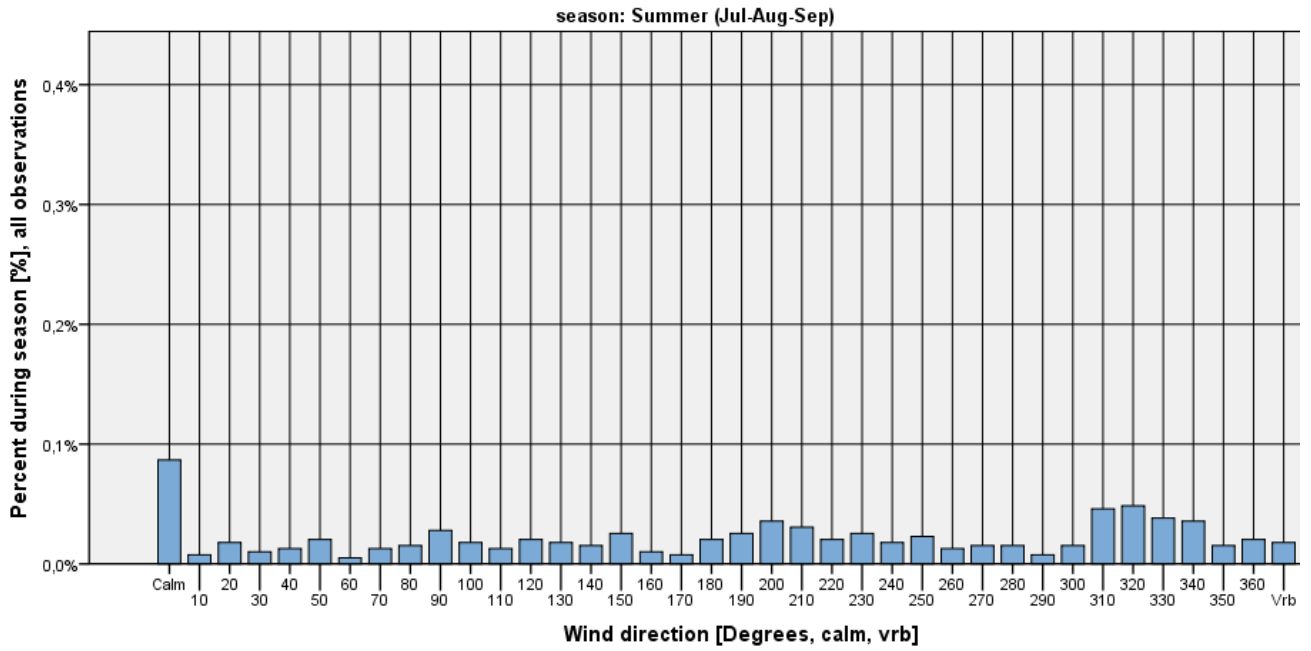


Figure 679

EKYT. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

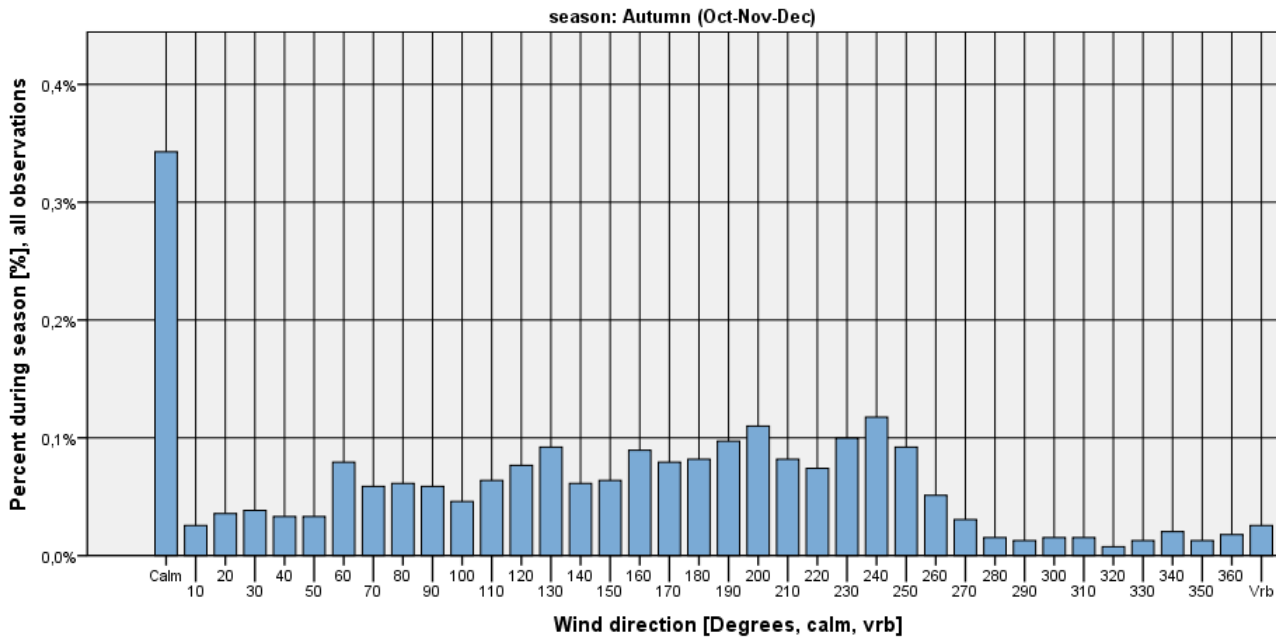


Figure 680

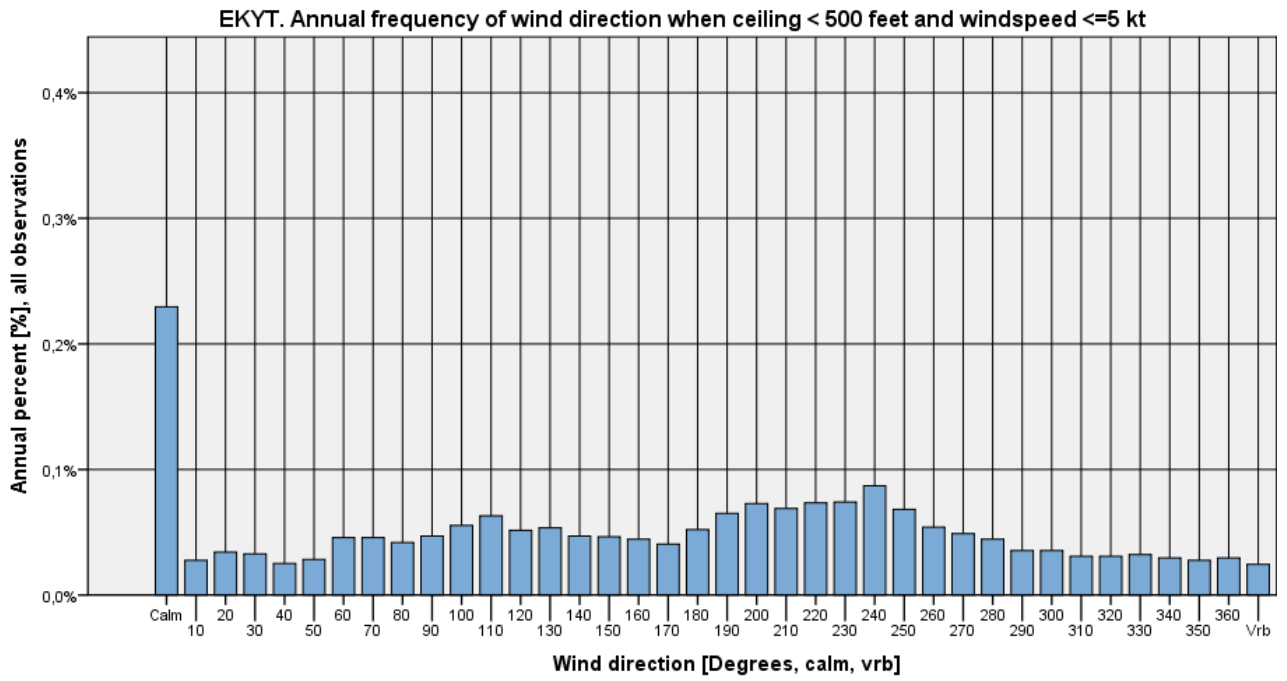


Figure 681



Ceiling < 500 feet and wind speed > 5 kts

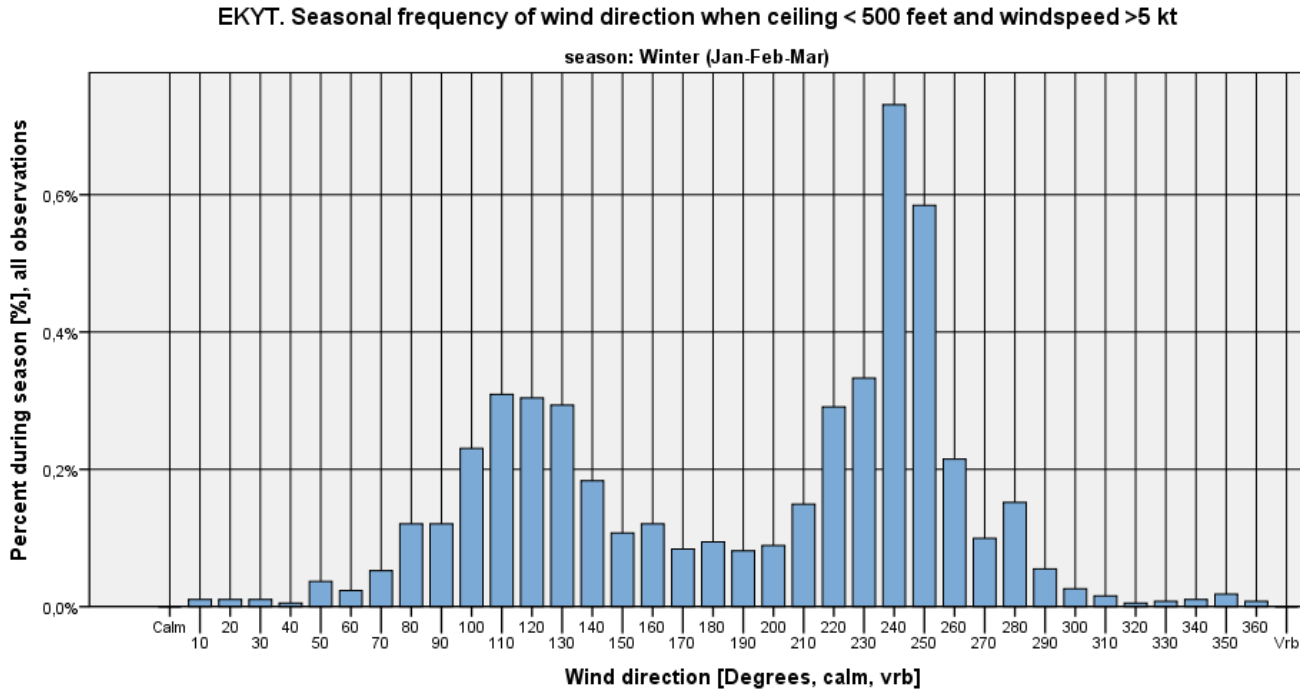


Figure 682

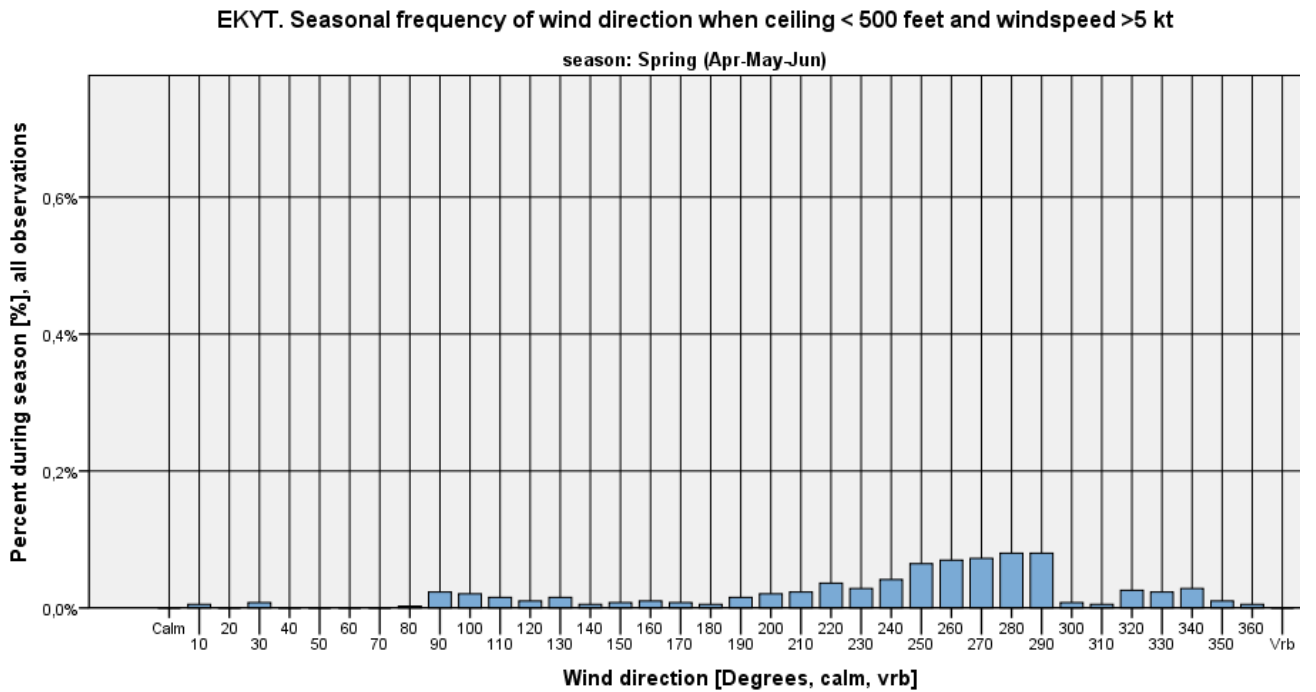


Figure 683



EKYT. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

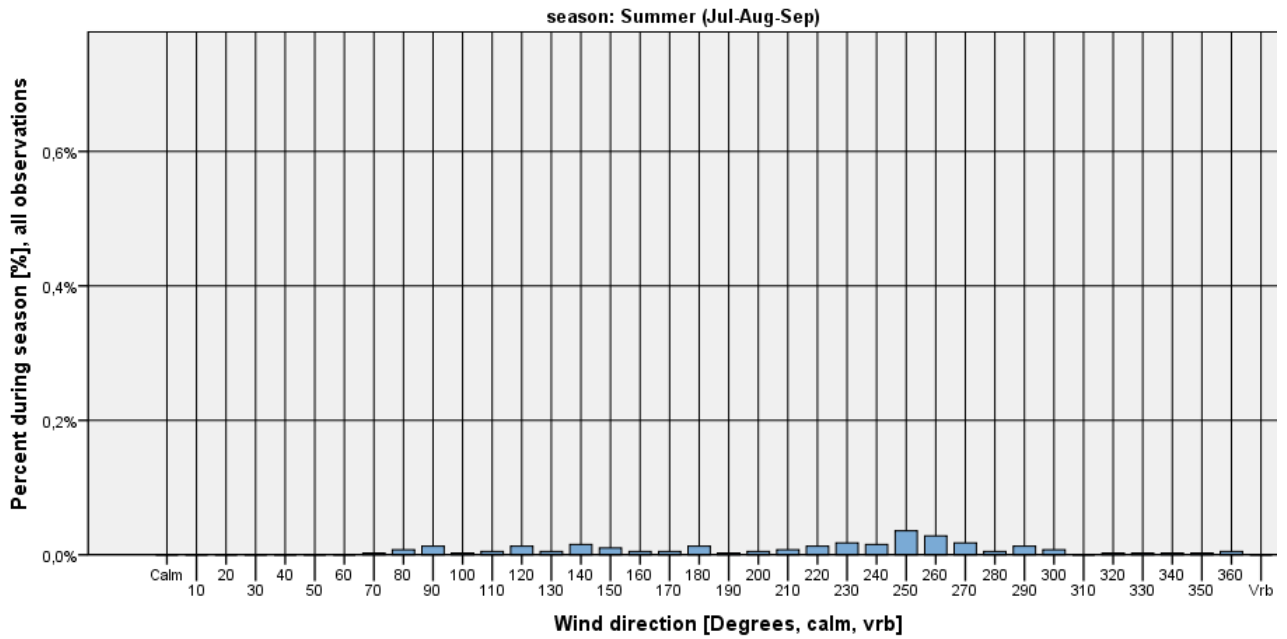


Figure 684

EKYT. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

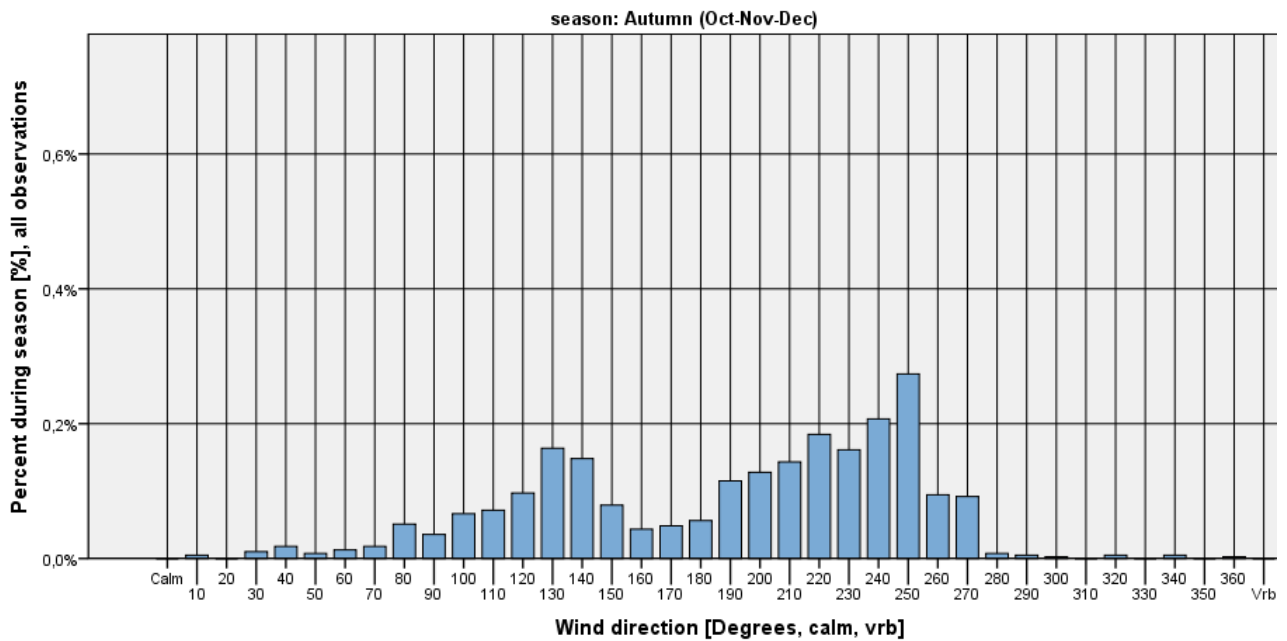


Figure 685

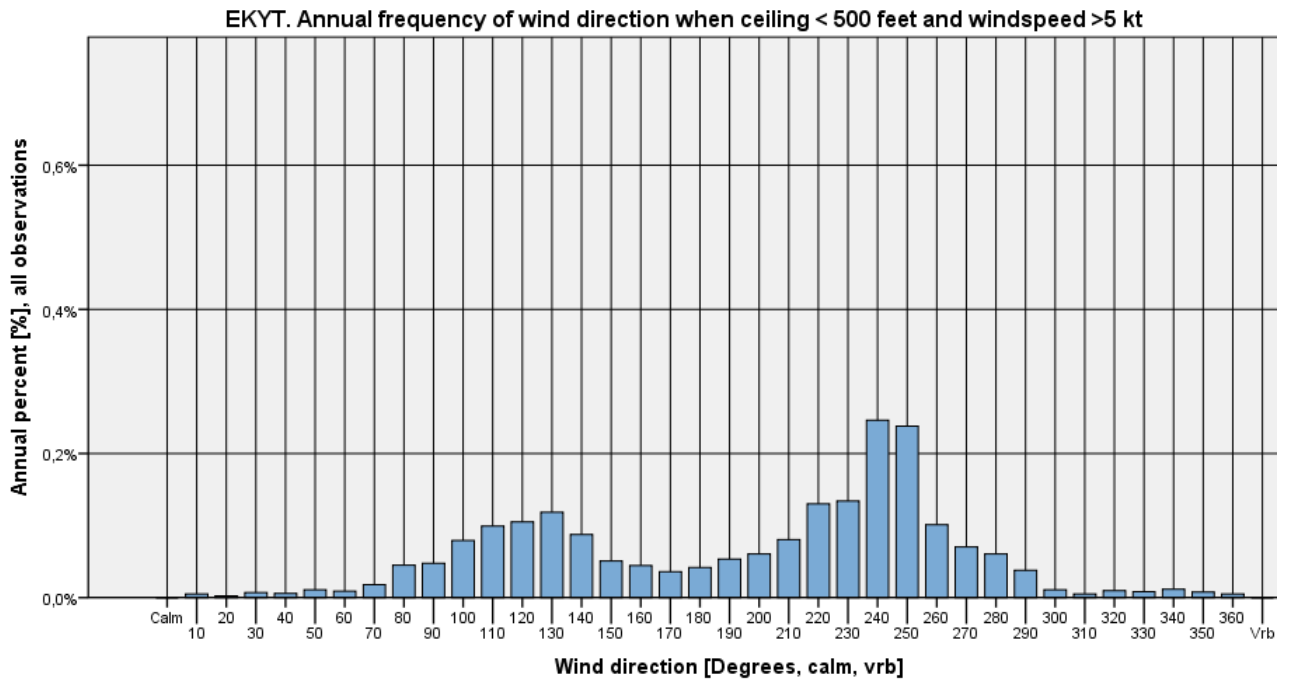


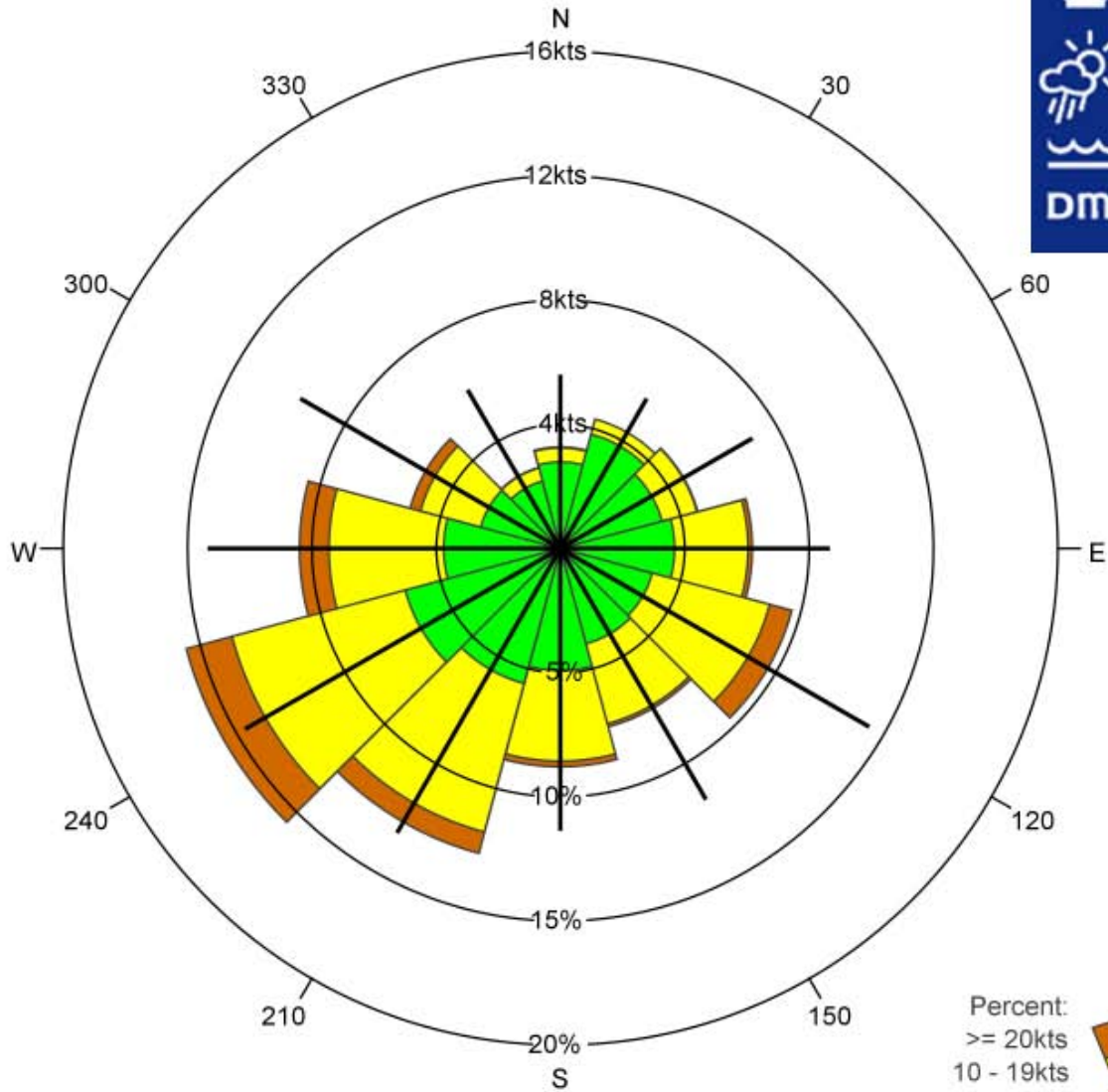
Figure 686



Wind roses

EKYT Aalborg AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:

— Mean wind speed

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



	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	4.1	5.4	5.7	7.7	9.6	7.4	8.8	12.7	15.6	10.5	6.3	3.4	97.2
% 1 - 9kts	3.5	4.8	4.2	4.6	3.8	4.0	4.9	5.6	6.5	4.7	3.3	2.8	52.7
% 10 - 19kts	0.6	0.6	1.4	3.0	4.9	3.3	3.7	6.2	7.2	4.6	2.5	0.5	38.5
% >= 20kts	0.0	0.0	0.0	0.2	0.9	0.1	0.2	0.9	1.9	1.2	0.4	0.0	5.9
Mean wind speed	5.6	5.6	7.2	8.7	11.4	9.4	9.1	10.6	11.7	11.4	9.7	5.9	9.7
Max wind speed	25.0	22.0	22.0	32.0	33.0	26.0	33.0	43.0	49.0	52.0	41.0	24.0	52.0

Number of observations = 77256

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 2159=2.8%

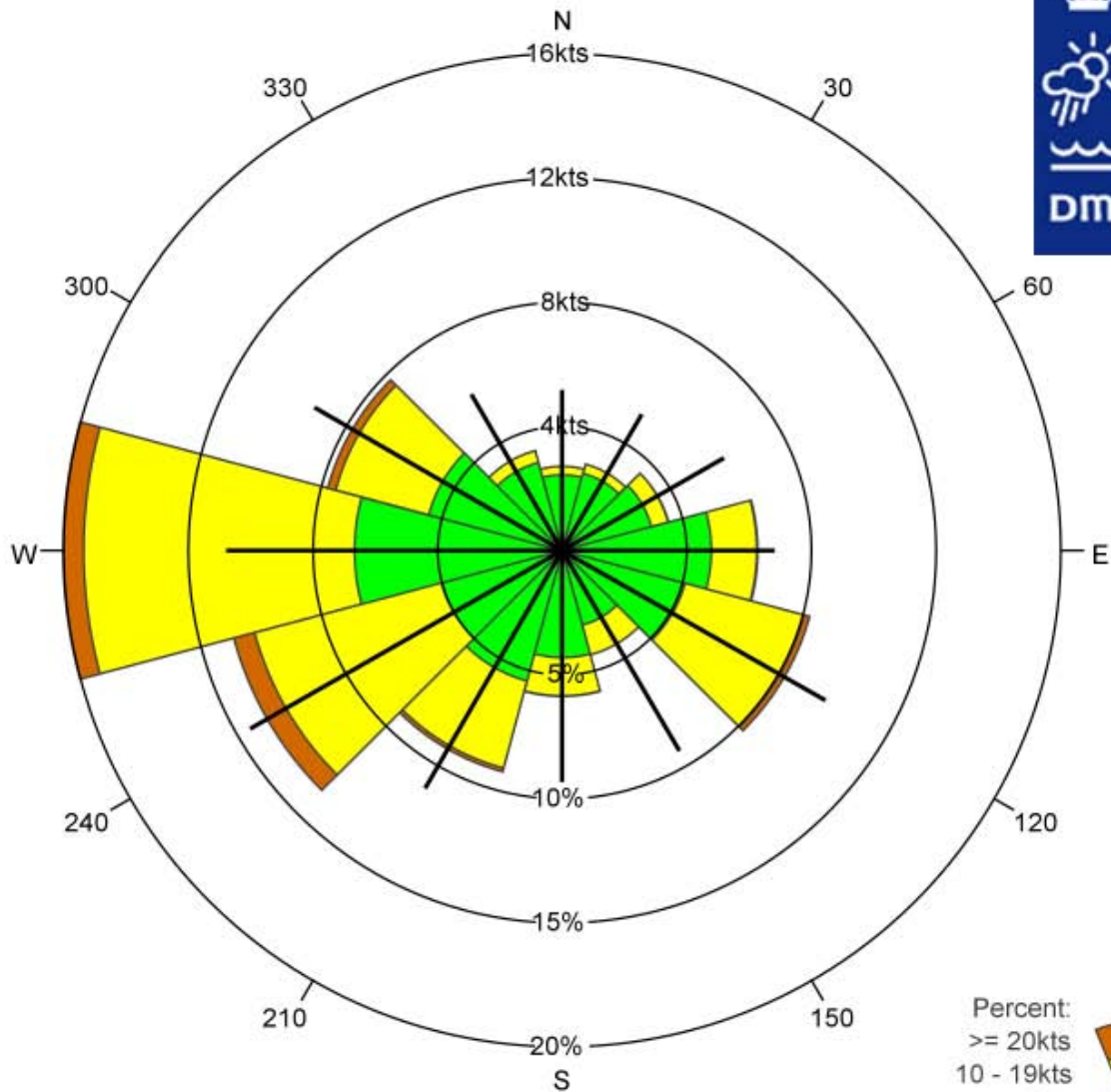
Observations with calm/varying wind direction are not used in the statistics



EKYT Aalborg

SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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



	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	3.4	3.6	4.4	7.8	10.3	4.3	5.9	9.2	13.6	20.0	9.7	4.2	96.5
% 1 - 9kts	3.1	3.2	3.7	6.0	5.1	3.1	4.3	5.4	5.0	8.3	5.6	3.7	56.5
% 10 - 19kts	0.3	0.4	0.7	1.8	5.0	1.2	1.5	3.6	7.8	10.9	3.9	0.5	37.5
% >= 20kts	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.9	0.8	0.3	0.0	2.5
Mean wind speed	5.2	5.1	6.0	6.8	9.7	7.5	7.5	8.8	11.5	10.8	9.2	5.8	8.9
Max wind speed	19.0	18.0	21.0	25.0	26.0	22.0	23.0	33.0	32.0	30.0	30.0	20.0	33.0

Number of observations = 77883

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 2706=3.5%

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



Availability

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

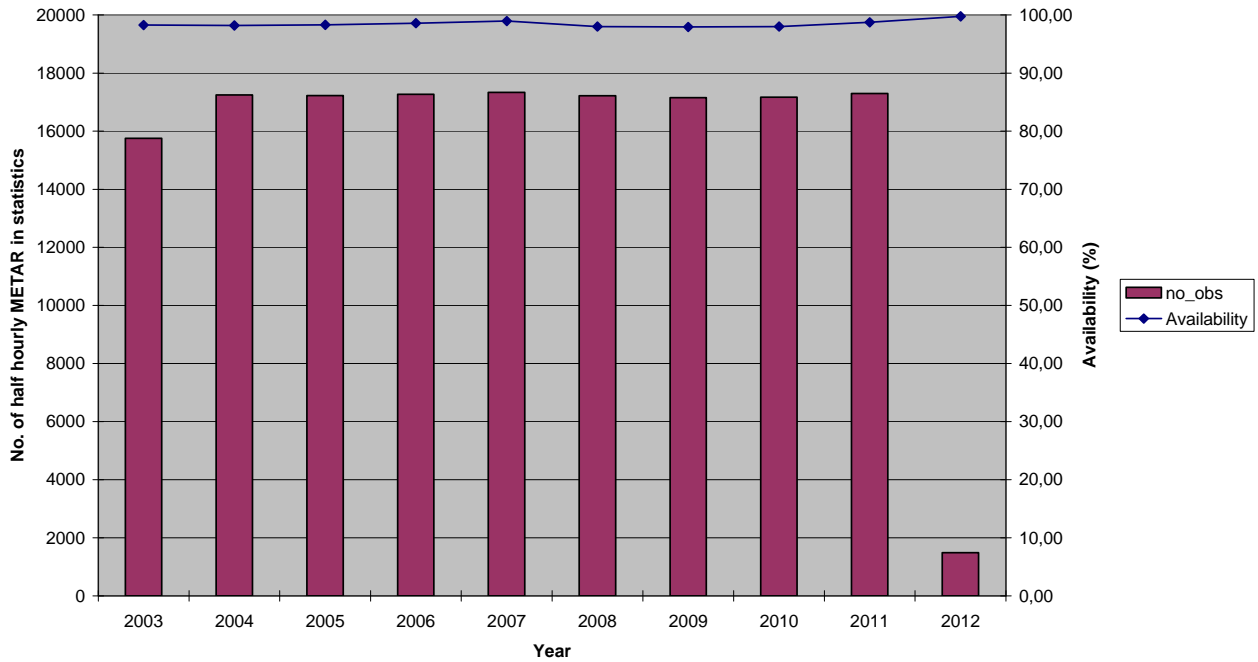


Figure 687

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

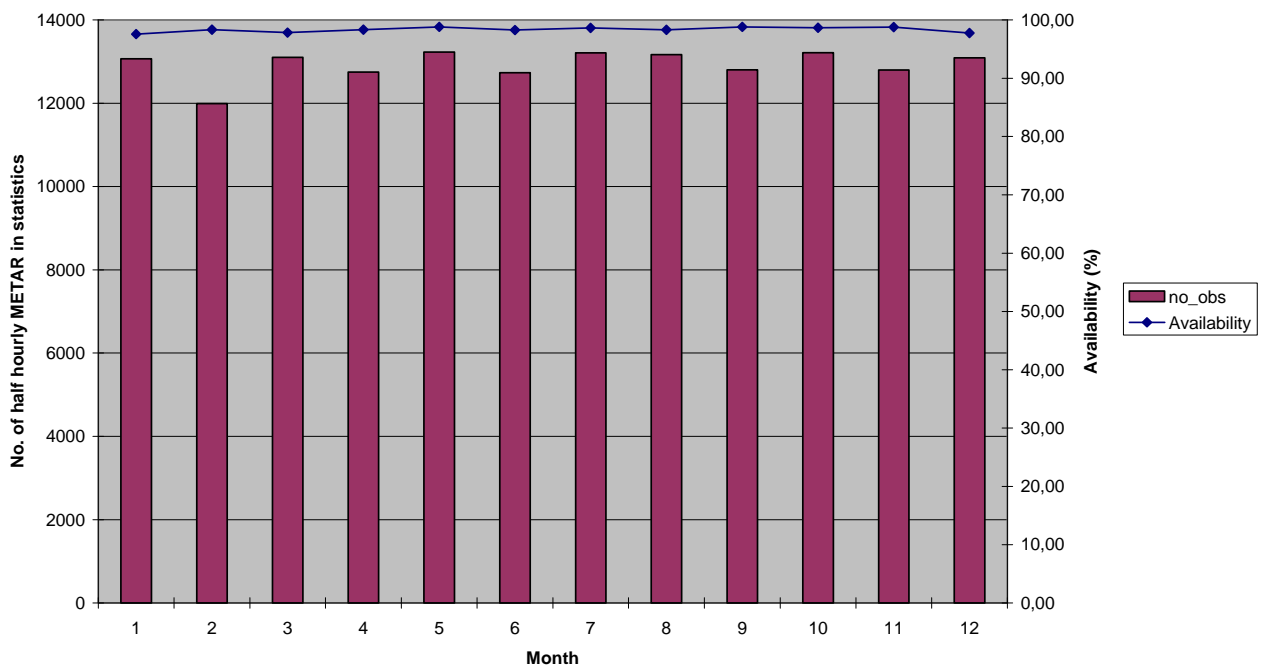


Figure 688

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

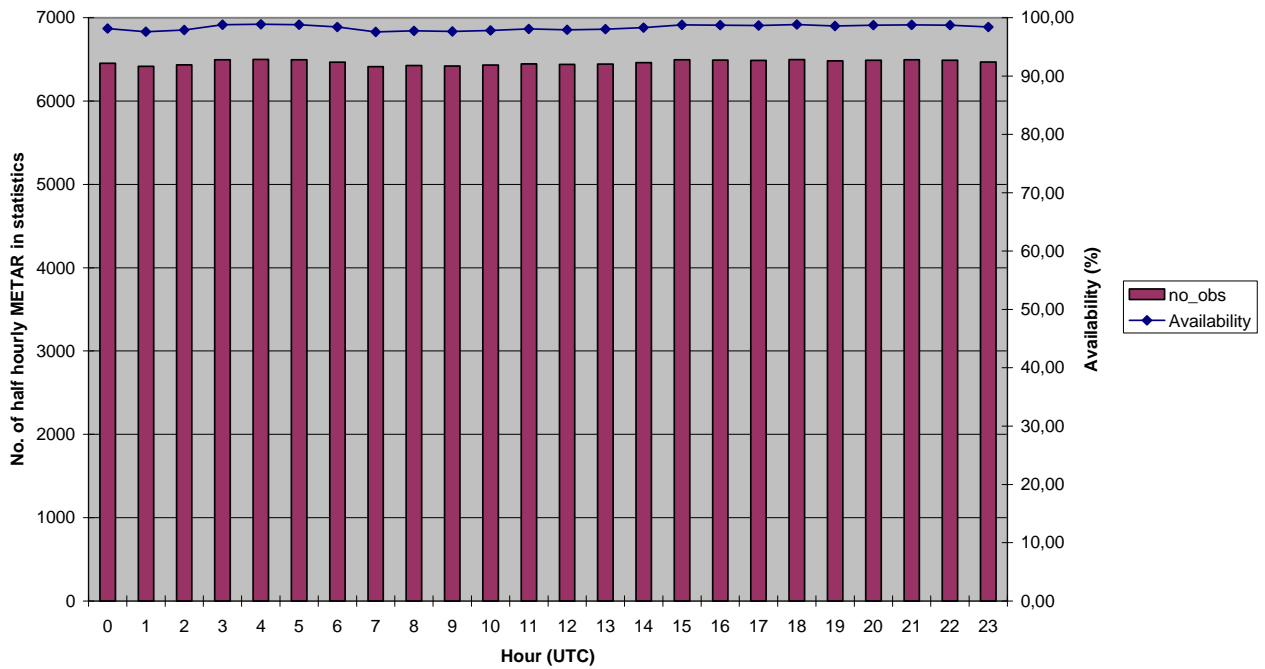


Figure 689

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

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

Table 79



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Faroe Islands, seasonal and annual statistics

1 February 2003 – 31 January 2012



EKVG Vaga-Floghavn

Vága Airport

Airport location: 62,067°N 7,283°W Elevation: 85 m above msl.

EKVG observations in statistics: 69.469 half hourly METAR¹⁴ covering the 9 years period 01-Feb-2003 – 31-Jan-2012, yielding an overall availability of 44,0%.

The availability is mainly lowered by lack of night observations until the last years of the period, look for details in the availability section.

EKVG METAR are manual until 26-Nov-2009 and partly auto metar since then.

Cross tables Visibility – Ceiling

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

No. Obs = 15.688	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,057	0,25	0,89	1,07	1,13	0,04	1,18
<1 km	0,057	0,29	1,06	1,38	1,48	0,08	1,56
<1.5 km	0,057	0,36	1,27	1,70	2,00	0,15	2,15
<3.0 km	0,064	0,66	2,59	3,59	4,35	0,65	5,00
< 5.0 km	0,076	0,78	4,75	6,76	8,17	1,58	9,75
>= 5,0 km or CAVOK	0	0,076	2,79	9,31	18,03	72,21	90,25
Total	0,076	0,86	7,53	16,07	26,20	73,80	100

Table 80

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

No. Obs = 16.875	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,21	0,83	2,25	2,31	2,33	0,04	2,37
<1 km	0,26	0,95	2,64	2,73	2,74	0,07	2,81
<1.5 km	0,35	1,13	2,98	3,09	3,12	0,09	3,21
<3.0 km	0,50	1,69	4,98	5,27	5,37	0,20	5,56
< 5.0 km	0,55	2,03	7,07	8,09	8,34	0,43	8,77
>= 5,0 km or CAVOK	0,083	0,30	4,82	12,69	20,94	70,29	91,23
Total	0,63	2,32	11,89	20,78	29,28	70,72	100

Table 81

¹⁴ For every half hourly period max one observation (METAR or SPECI) is included, selected as the available METAR or SPECI with lowest visibility.

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

No. Obs = 19.320	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,24	1,17	3,45	3,49	3,50	0,08	3,58
<1 km	0,25	1,28	3,98	4,04	4,05	0,10	4,16
<1.5 km	0,28	1,41	4,32	4,40	4,42	0,14	4,55
<3.0 km	0,33	1,85	6,77	7,19	7,27	0,25	7,53
< 5.0 km	0,36	2,11	9,67	11,08	11,45	0,45	11,90
>= 5,0 km or CAVOK	0,062	0,38	6,80	19,05	28,81	59,29	88,10
Total	0,42	2,48	16,46	30,12	40,26	59,74	100

Table 82

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

No. Obs = 17.586	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,063	0,32	0,88	0,99	1,03	0,08	1,11
<1 km	0,068	0,35	1,10	1,25	1,32	0,13	1,45
<1.5 km	0,11	0,45	1,37	1,62	1,78	0,18	1,96
<3.0 km	0,15	0,90	3,11	3,77	4,22	0,57	4,80
< 5.0 km	0,15	1,14	5,66	7,56	8,49	1,27	9,76
>= 5,0 km or CAVOK	0,011	0,18	3,92	12,63	22,29	67,95	90,24
Total	0,16	1,31	9,58	20,19	30,78	69,22	100

Table 83

Annual: EKVG – Frequencies (%) Visibility - Ceiling

No. Obs = 69.469	<100 feet	<200 feet	<500 feet	<1000 feet	<1500 feet	>=1500 feet, CAVOK or no ceiling	Total
< 800 m	0,15	0,67	1,93	2,03	2,06	0,06	2,12
<1 km	0,16	0,74	2,27	2,41	2,46	0,10	2,56
<1.5 km	0,20	0,86	2,56	2,77	2,89	0,14	3,03
<3.0 km	0,26	1,30	4,47	5,05	5,38	0,41	5,79
< 5.0 km	0,29	1,54	6,91	8,49	9,20	0,91	10,11
>= 5,0 km or CAVOK	0,040	0,24	4,68	13,68	22,82	67,07	89,89
Total	0,33	1,78	11,59	22,17	32,02	67,98	100

Table 84



Wind direction histograms

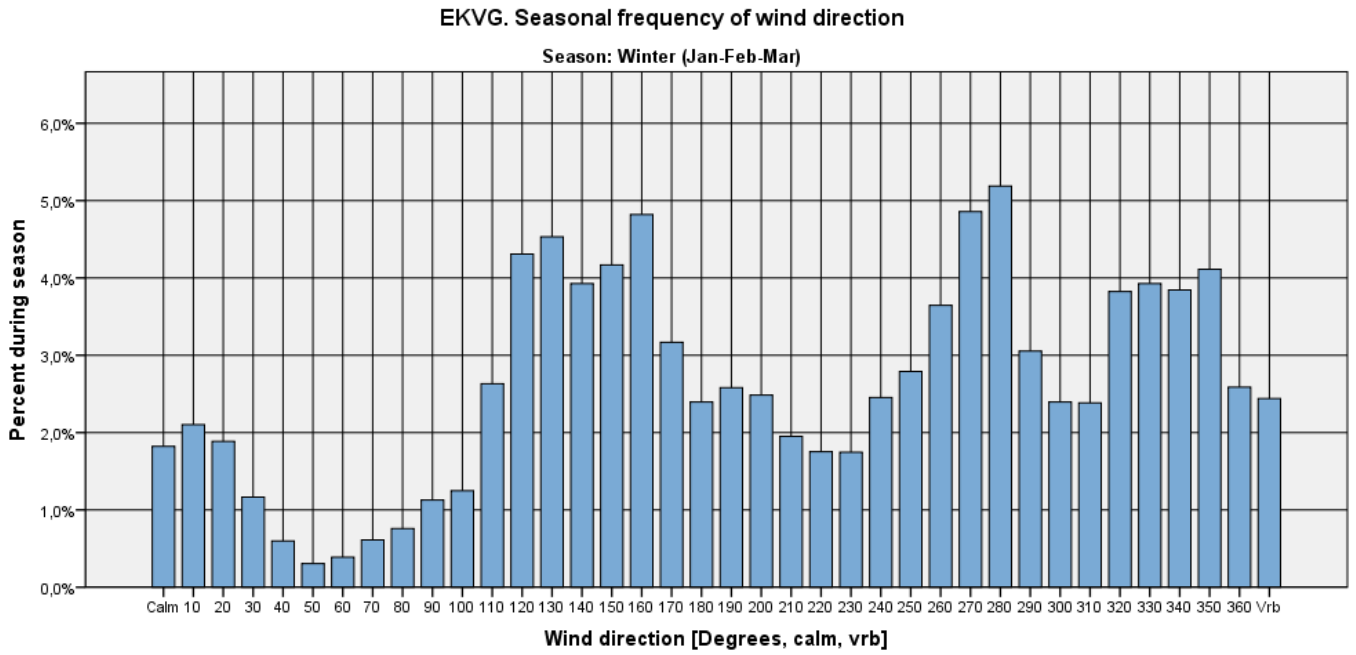


Figure 690

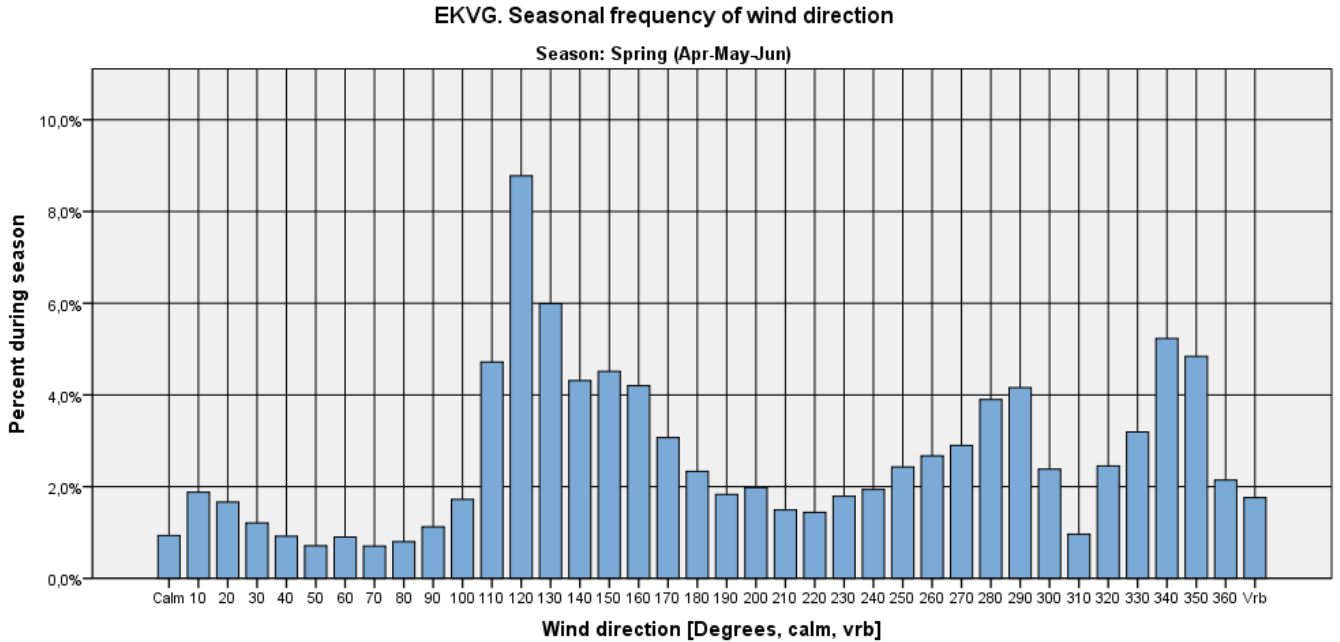


Figure 691

EKVG. Seasonal frequency of wind direction

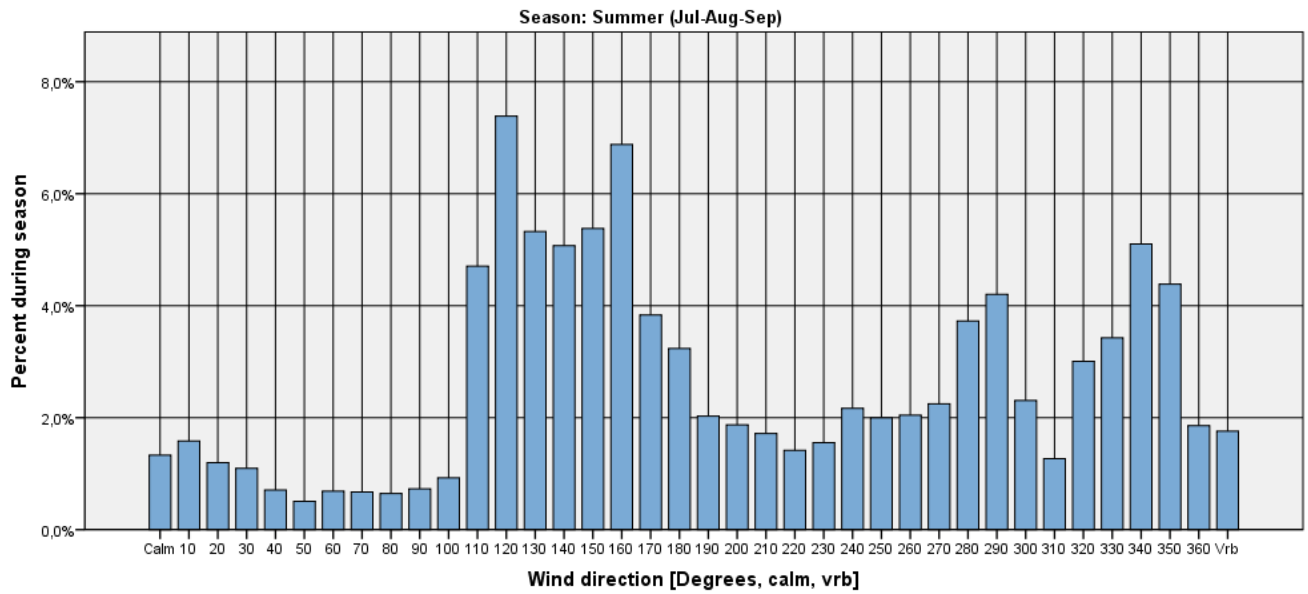


Figure 692

EKVG. Seasonal frequency of wind direction

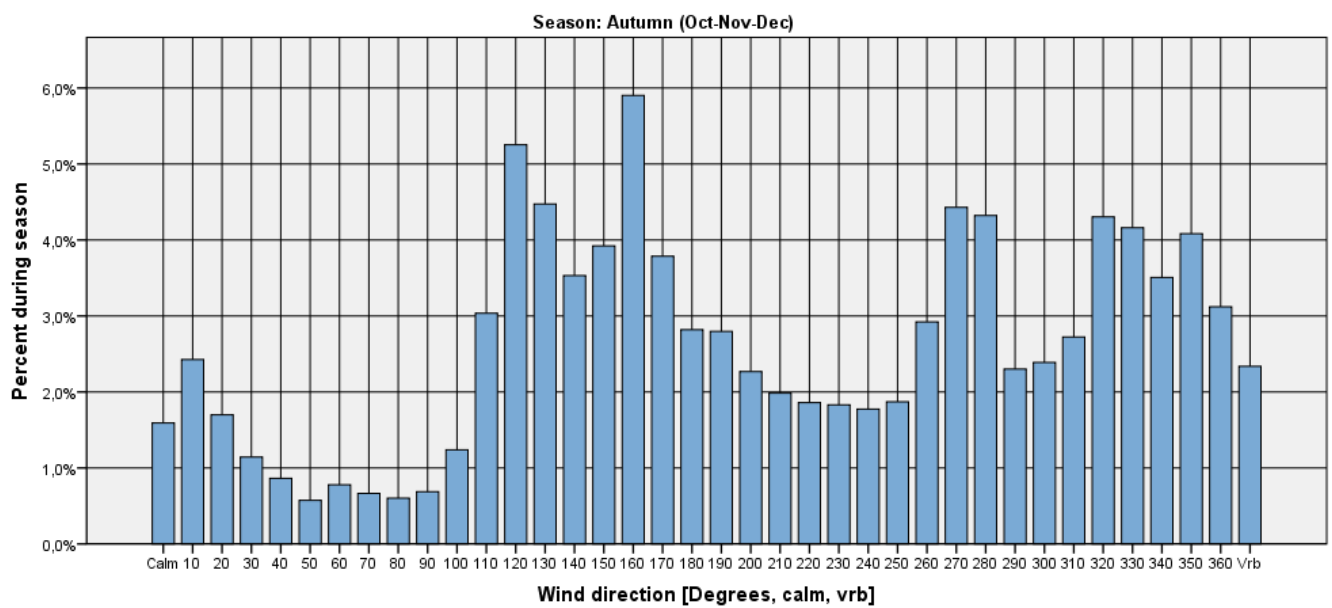


Figure 693

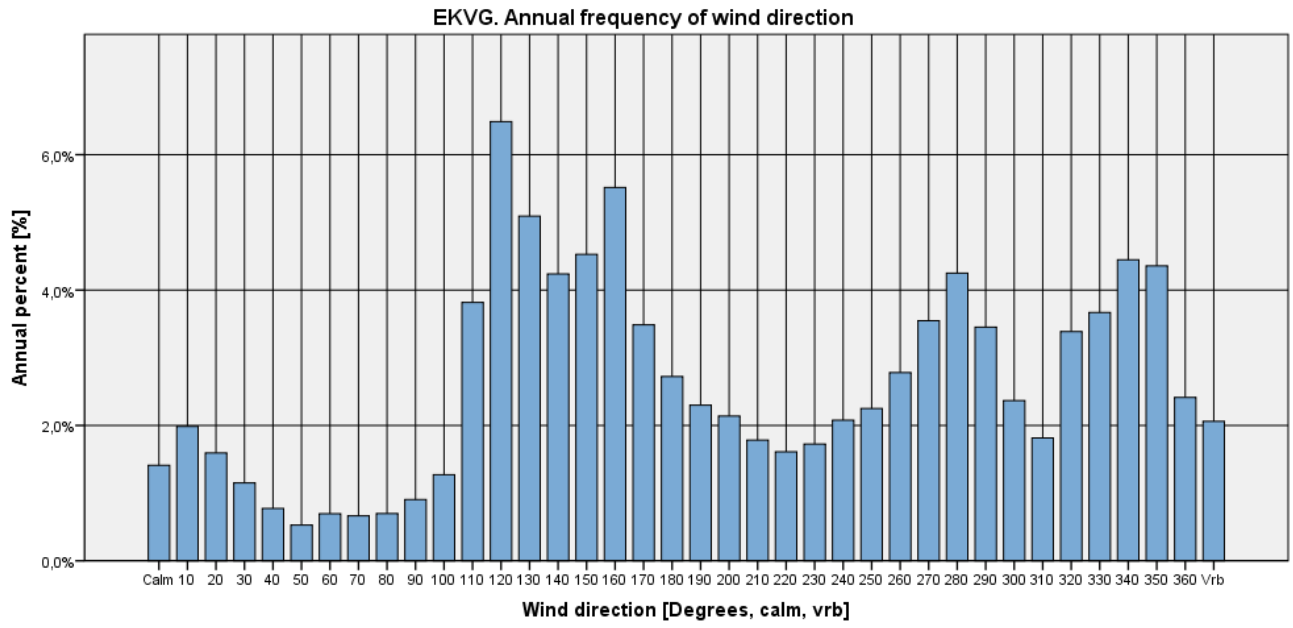


Figure 694



Visibility criteria on wind direction histograms

Visibility < 1000 m

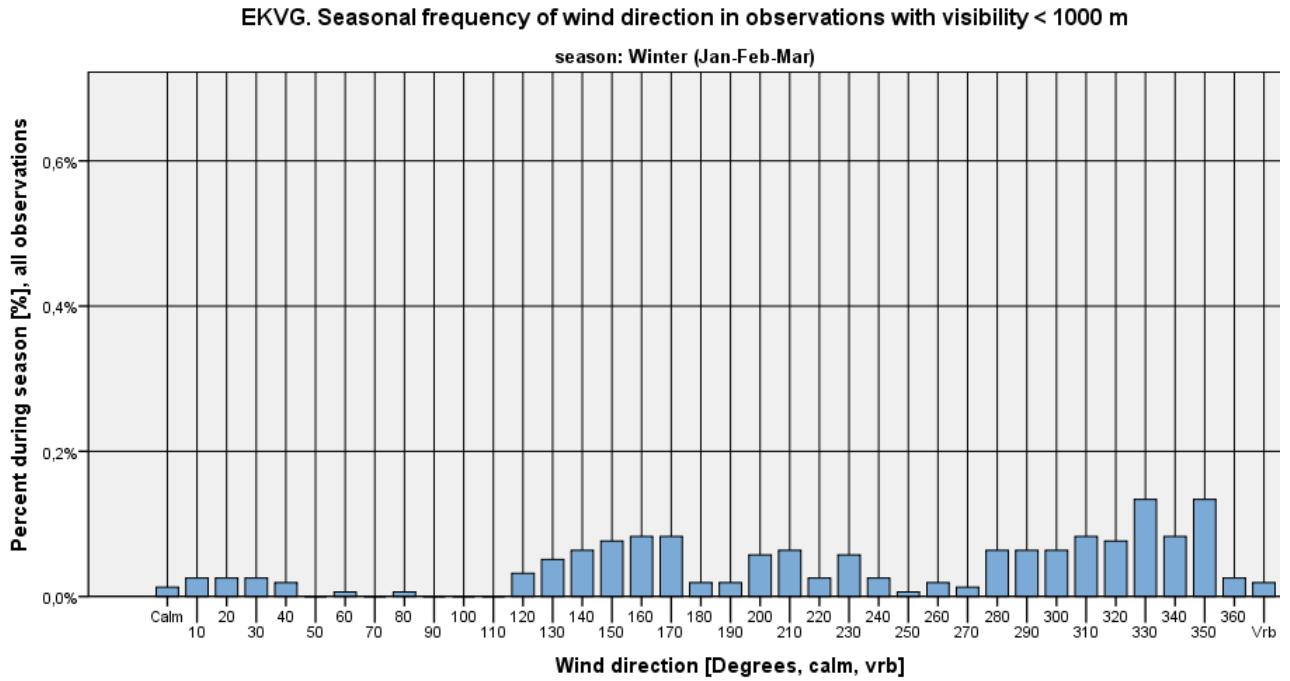


Figure 695

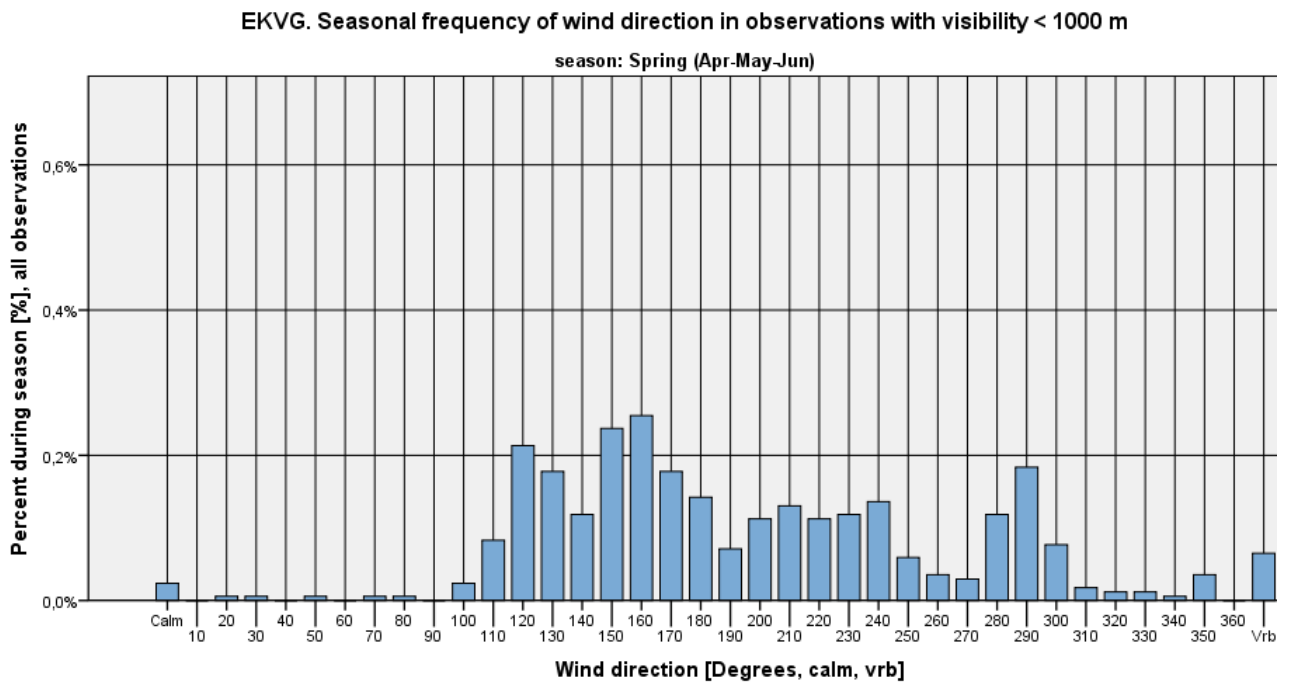


Figure 696



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

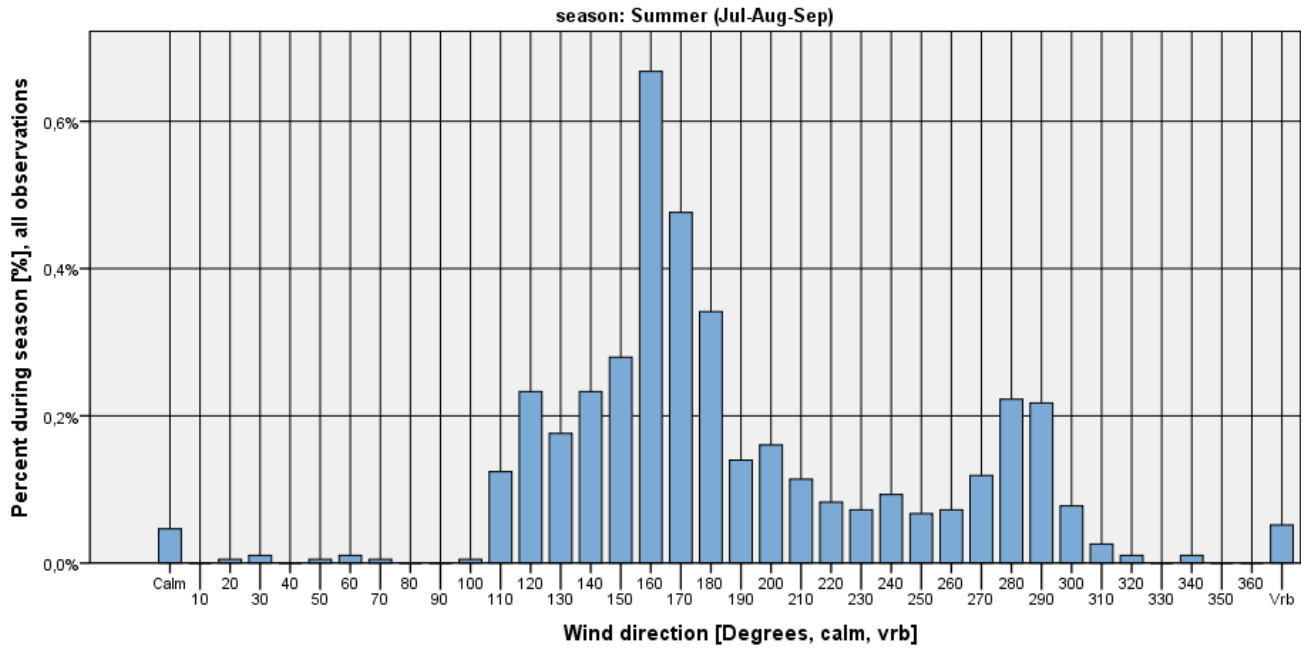


Figure 697

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

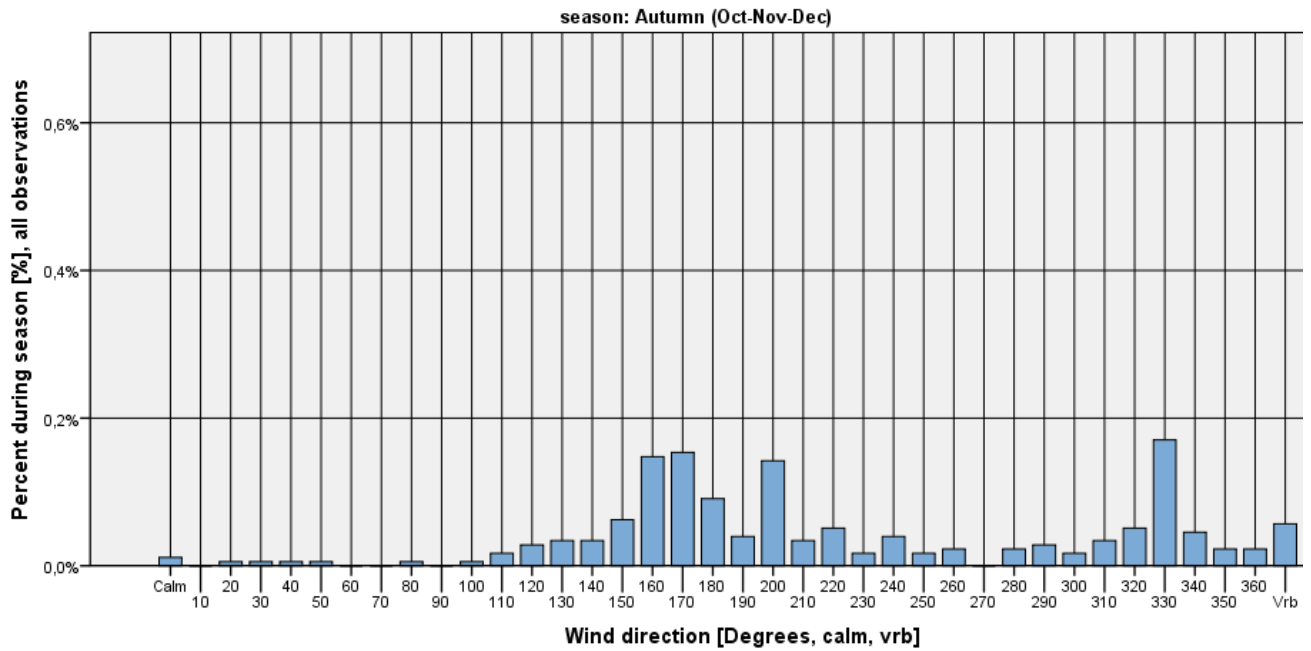


Figure 698

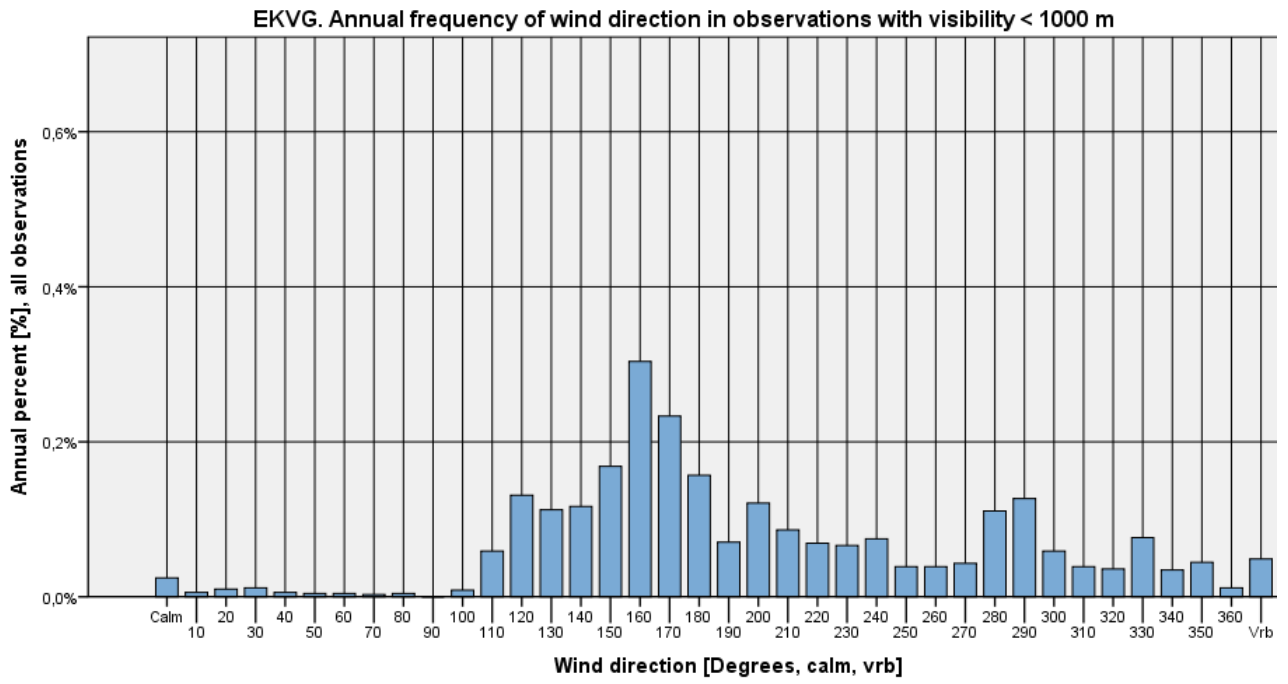


Figure 699



Visibility < 1000 m and wind speed <= 5 kts

EKVG. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

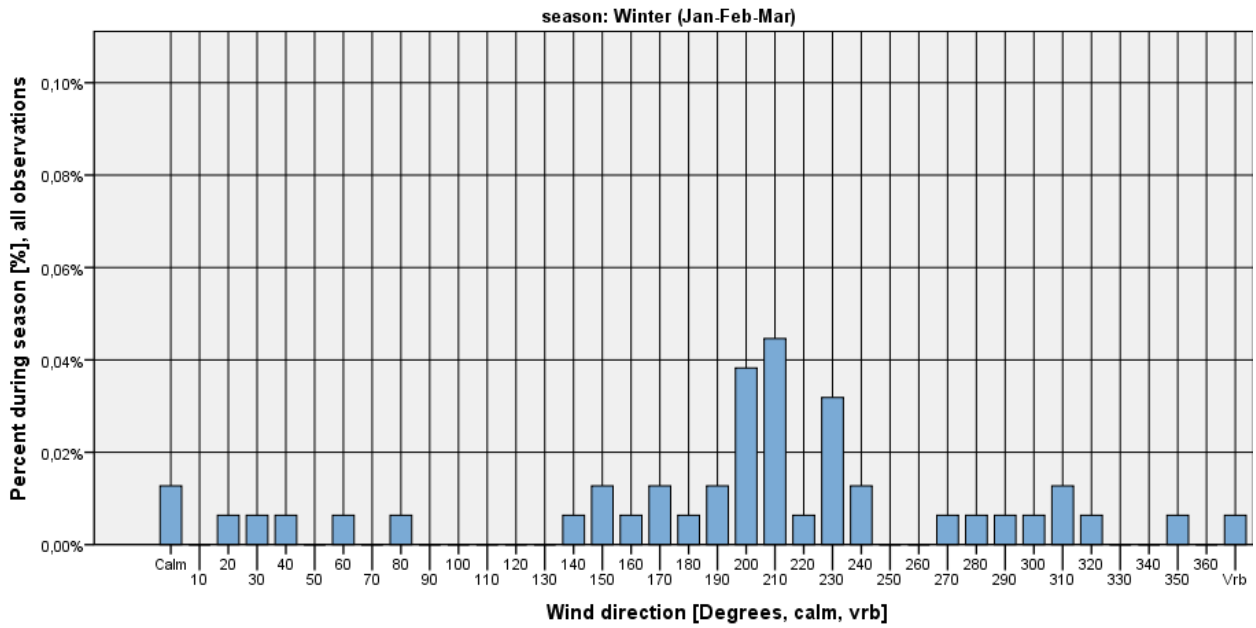


Figure 700

EKVG. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

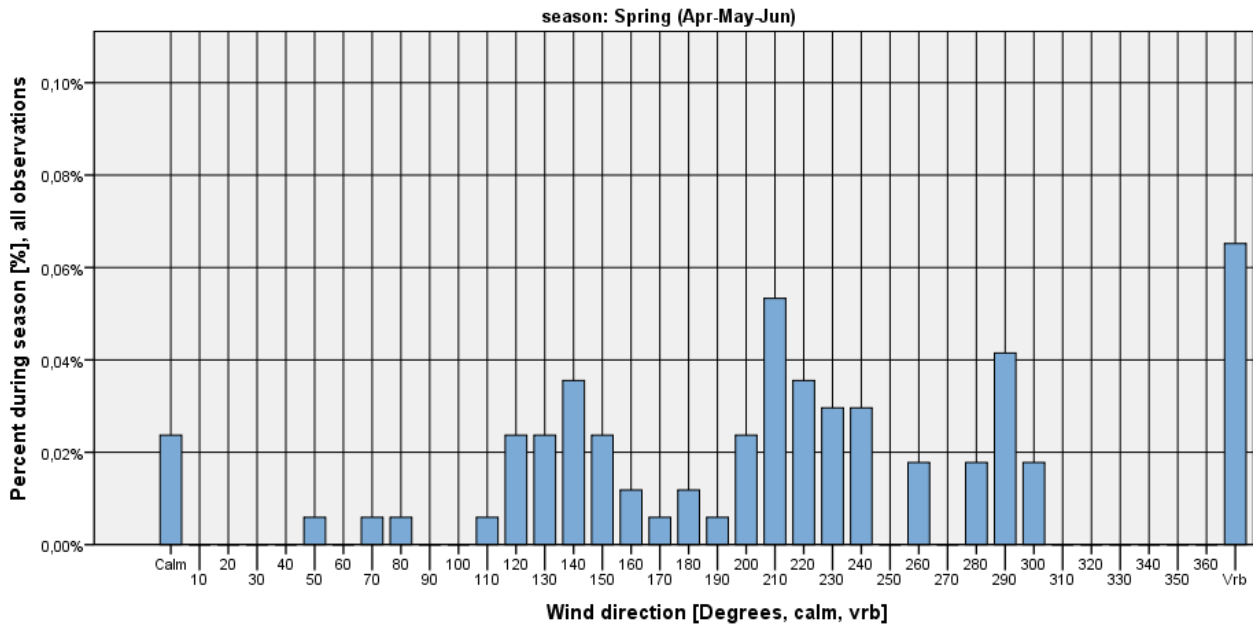


Figure 701



EKVG. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

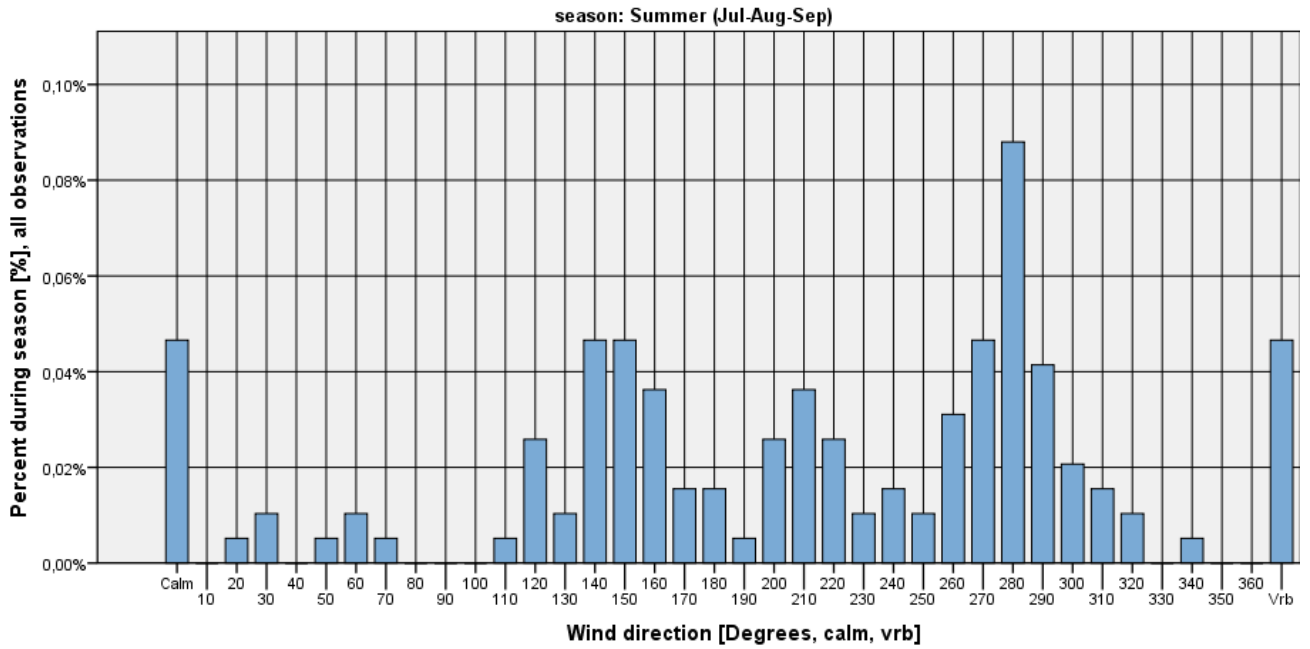


Figure 702

EKVG. Seasonal frequency of wind direction when visibility < 1000 m and wind speed <=5kts

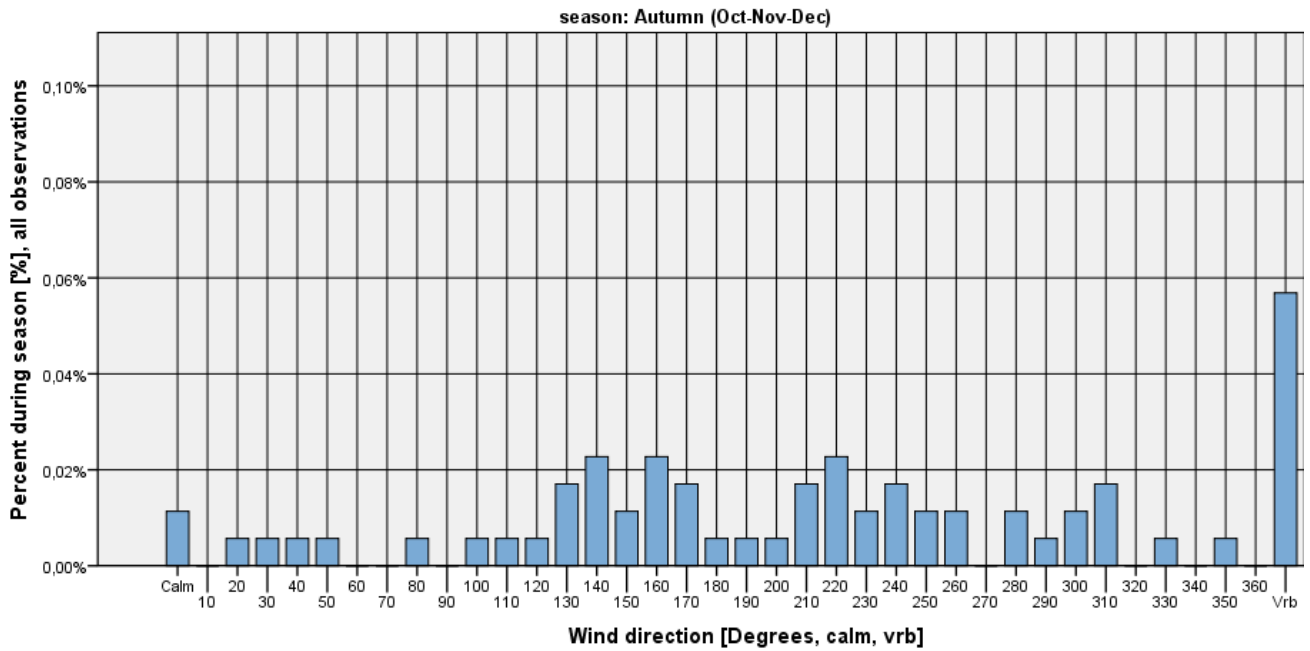


Figure 703

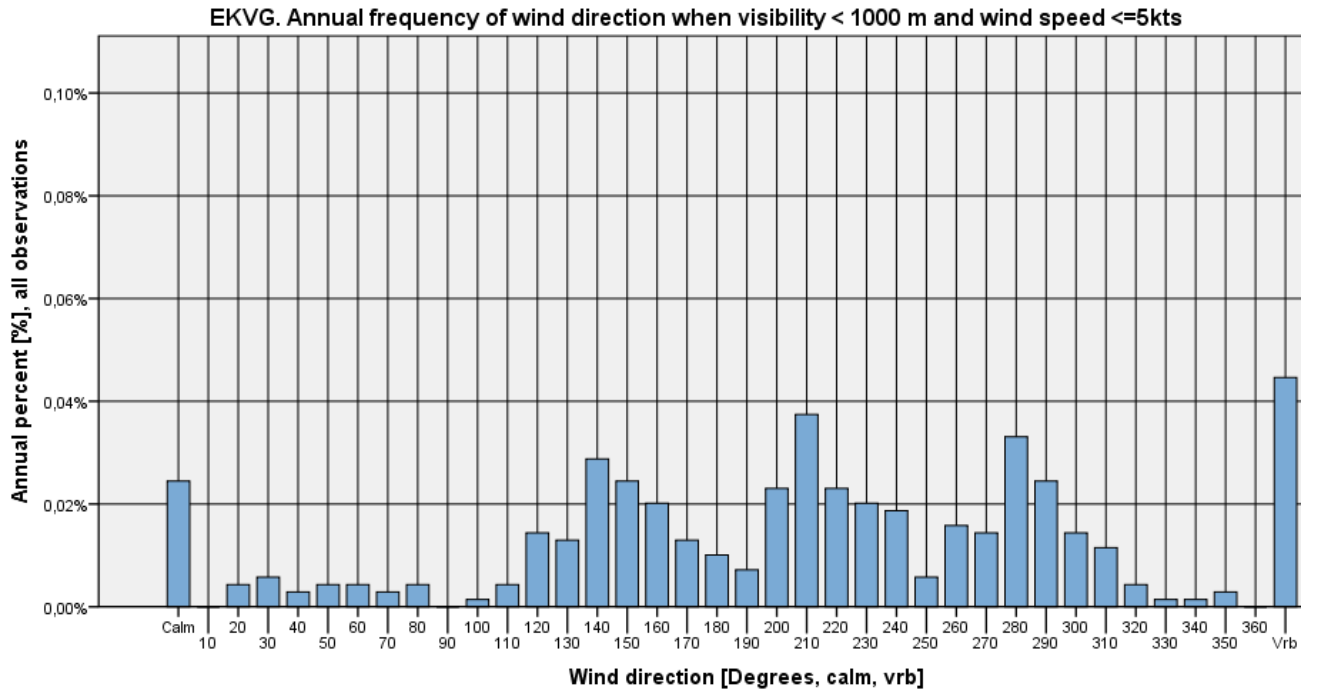


Figure 704



Visibility < 1000 m and wind speed > 5 kts

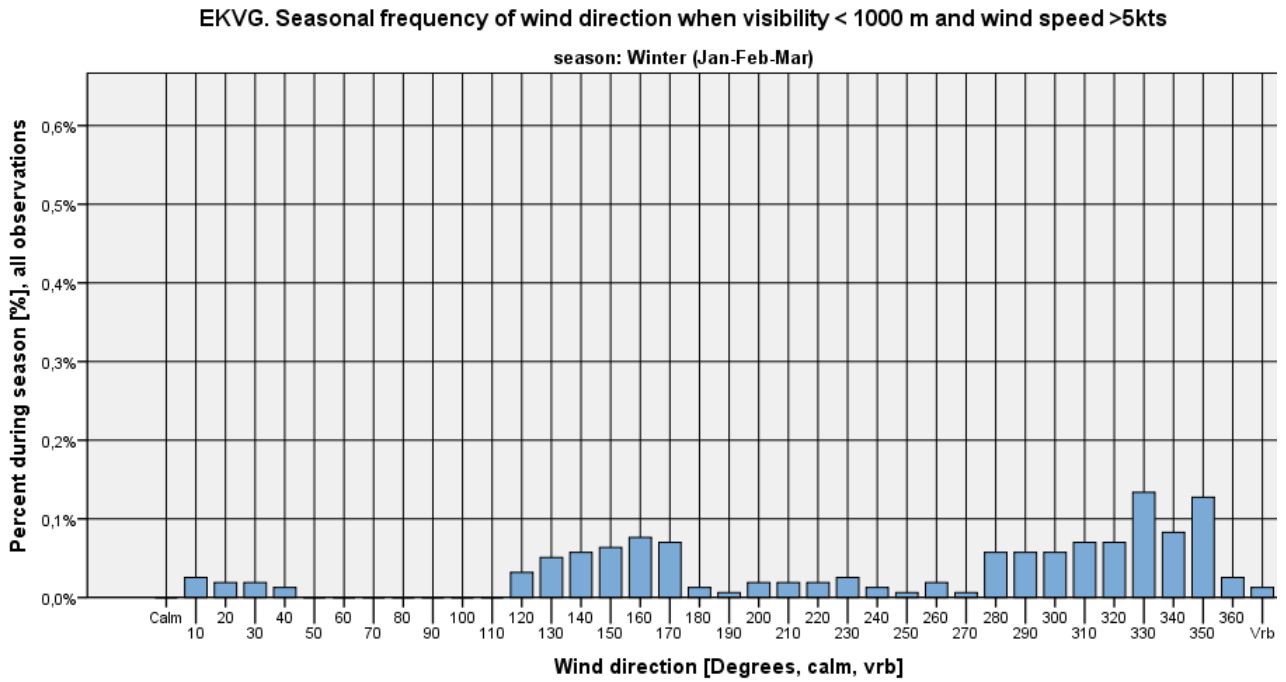


Figure 705

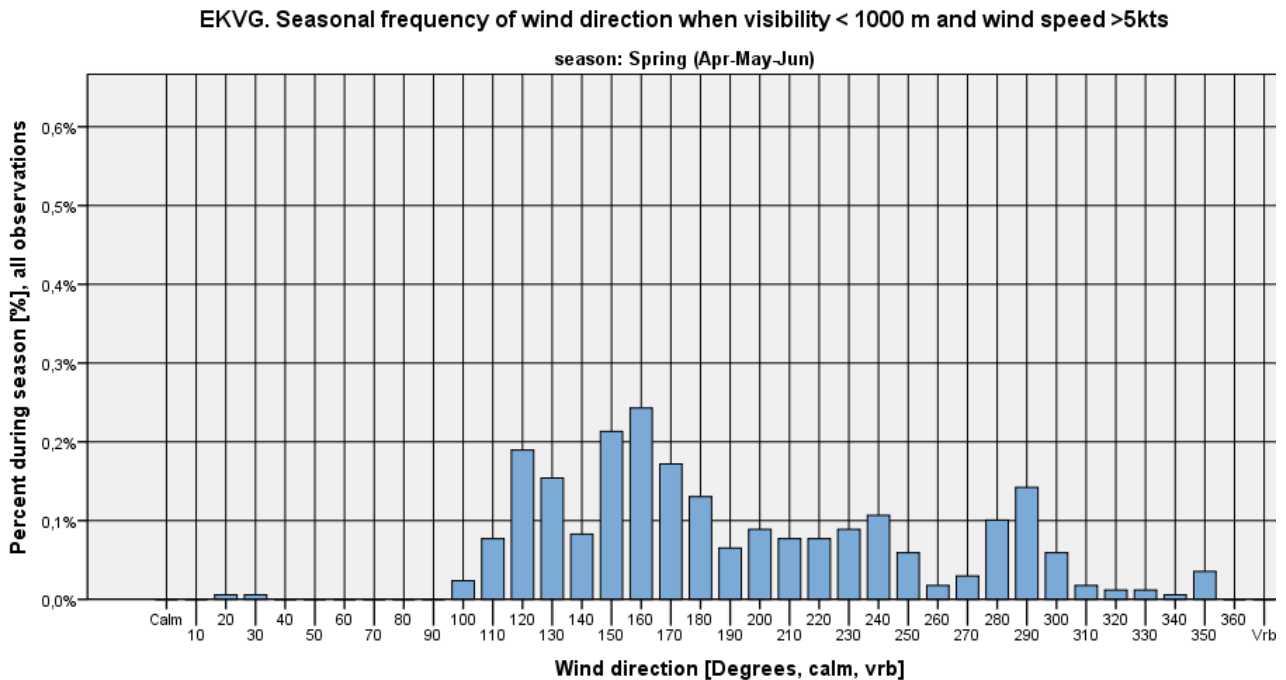


Figure 706



EKVG. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

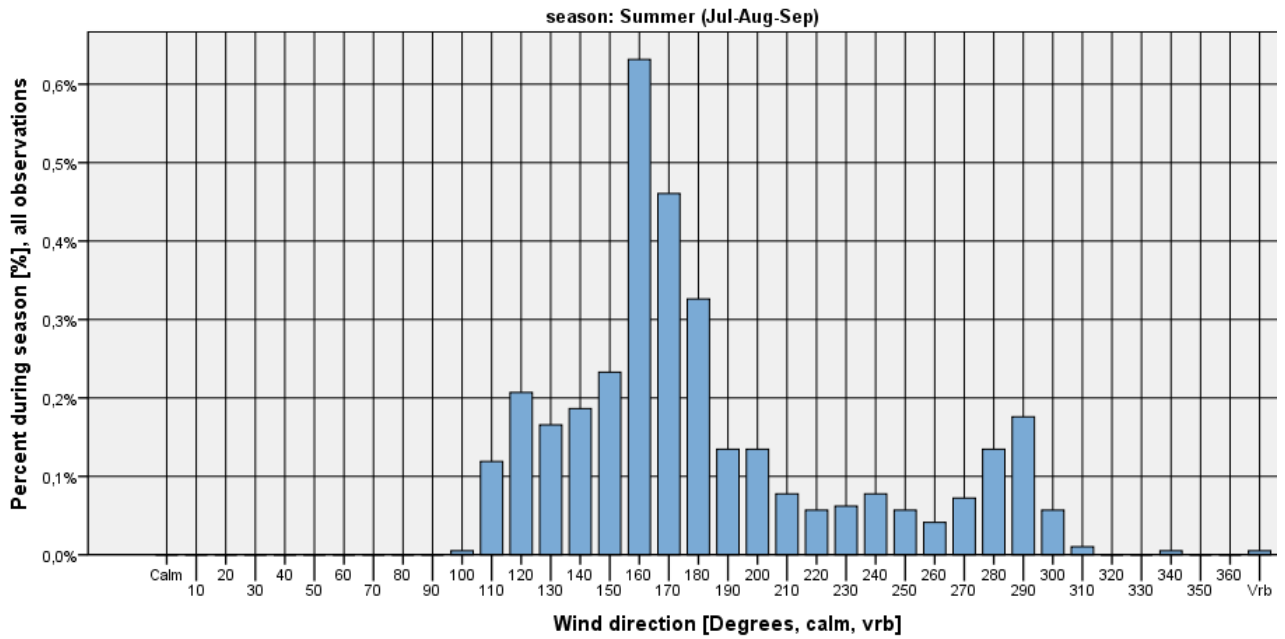


Figure 707

EKVG. Seasonal frequency of wind direction when visibility < 1000 m and wind speed >5kts

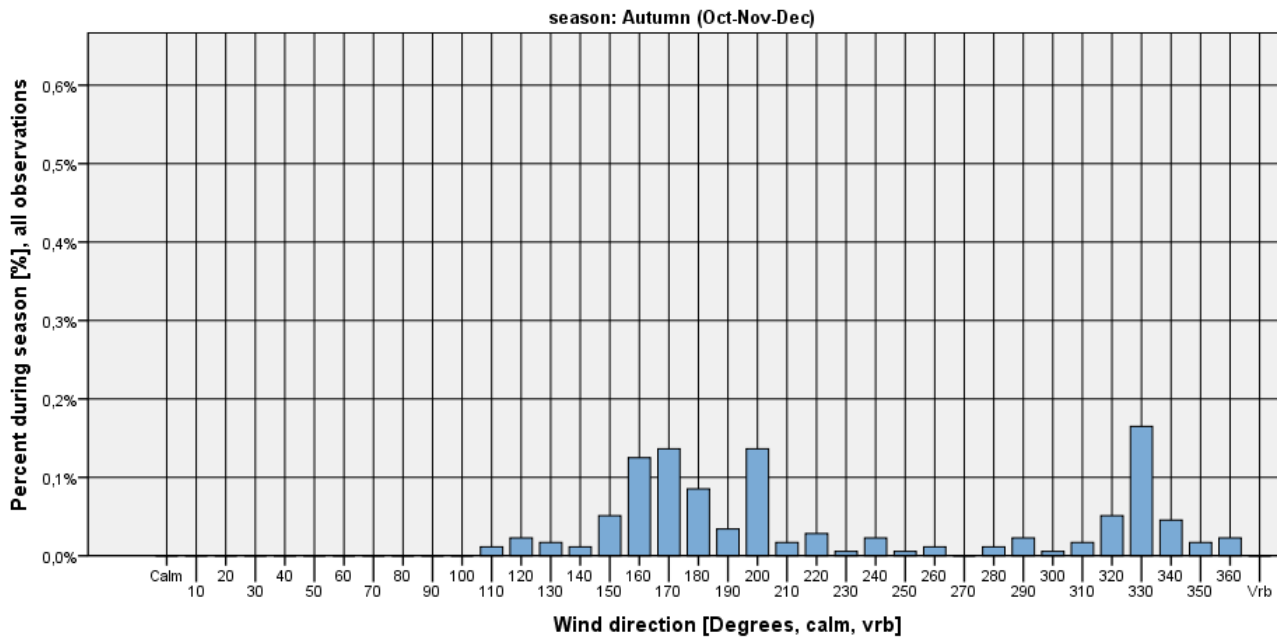


Figure 708

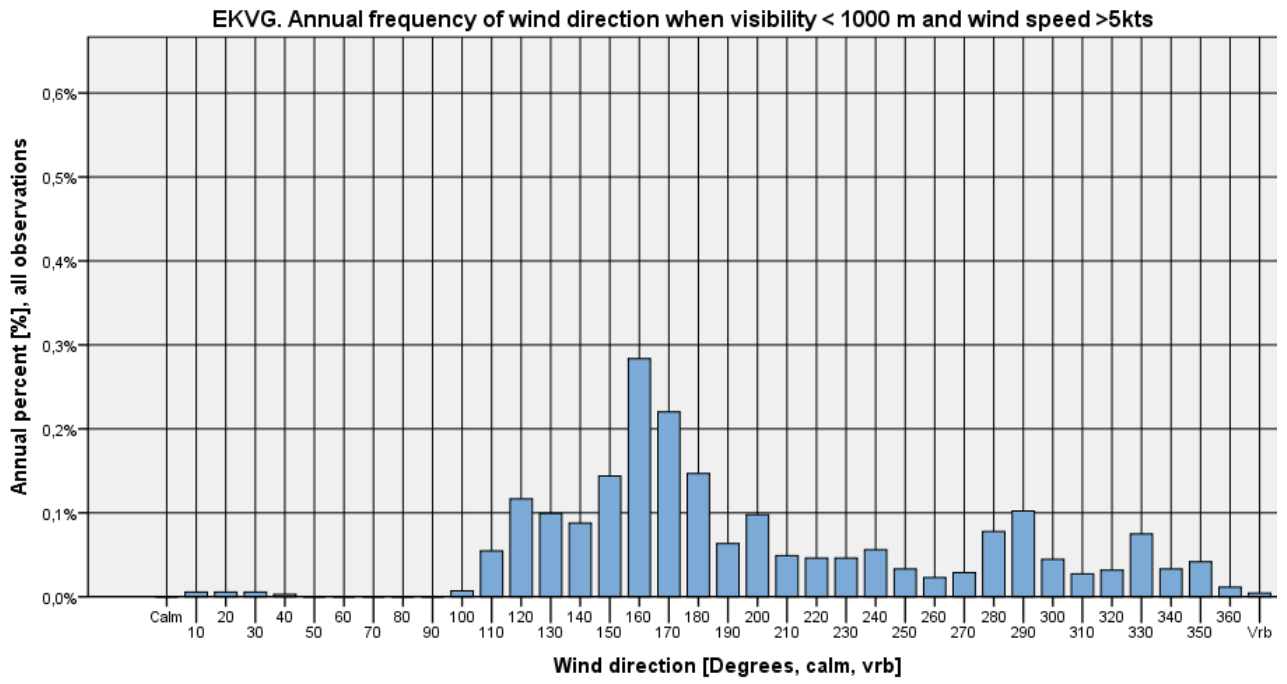


Figure 709



Ceiling criteria on wind direction histograms

Ceiling < 1000 feet

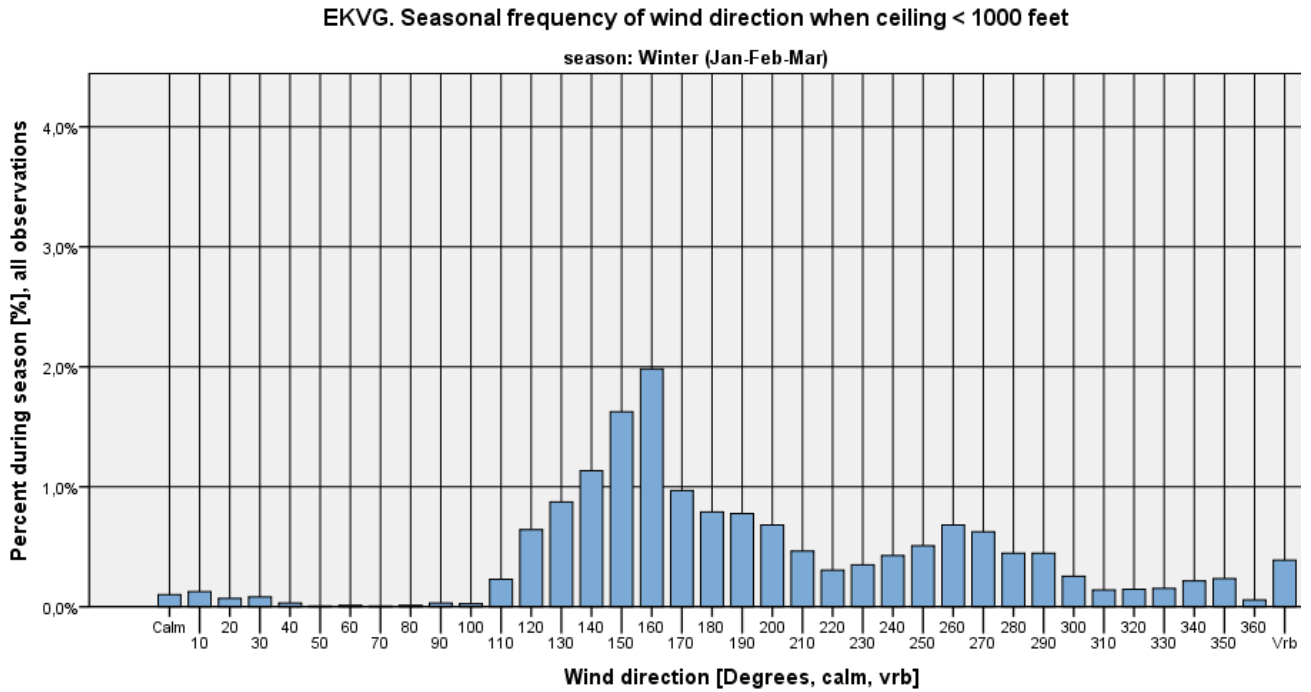


Figure 710

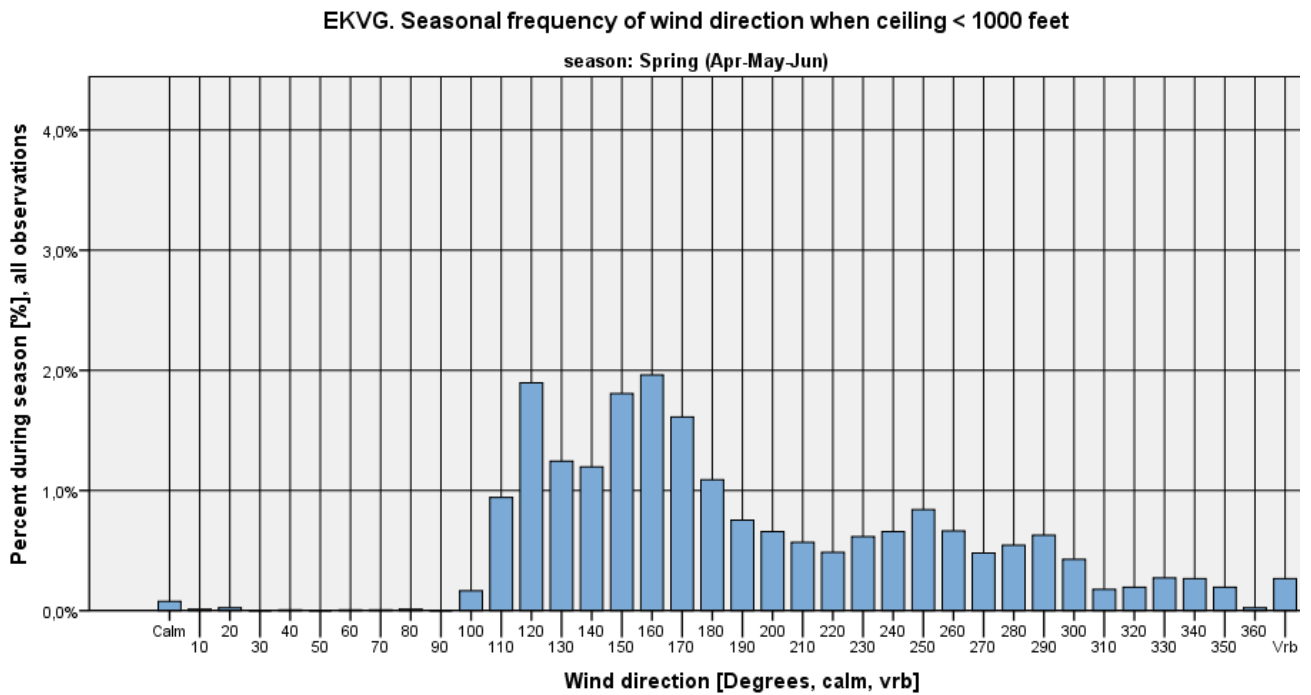


Figure 711



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

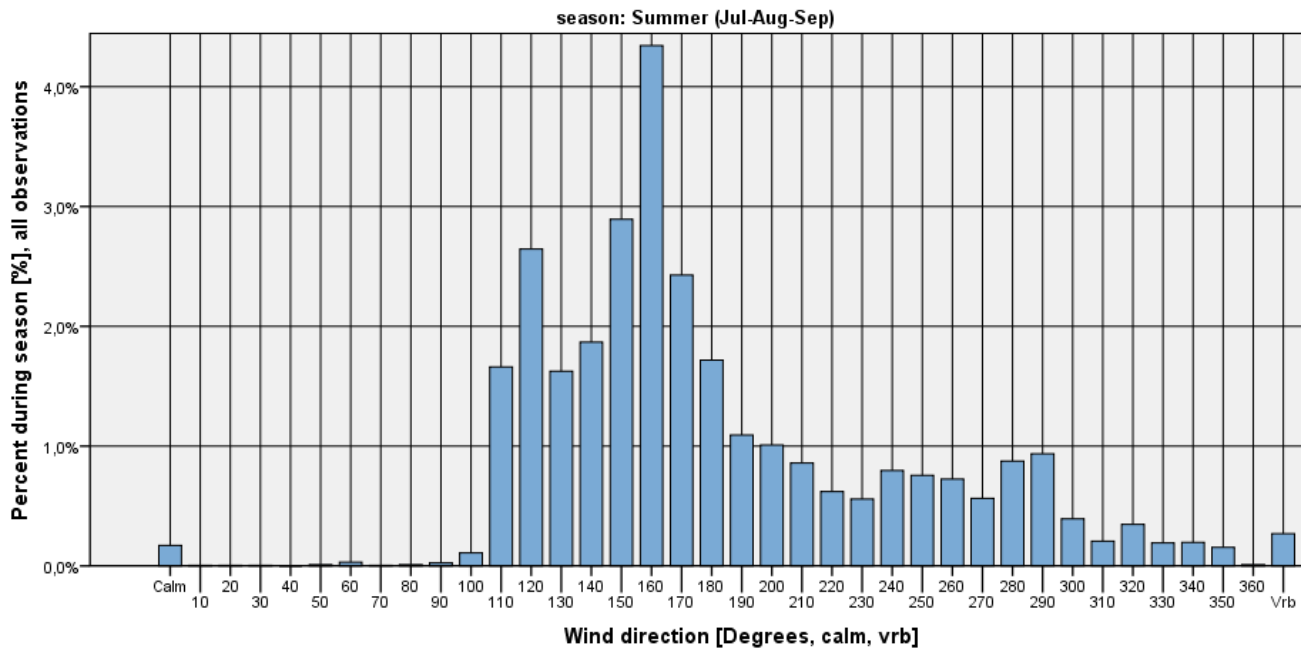


Figure 712

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

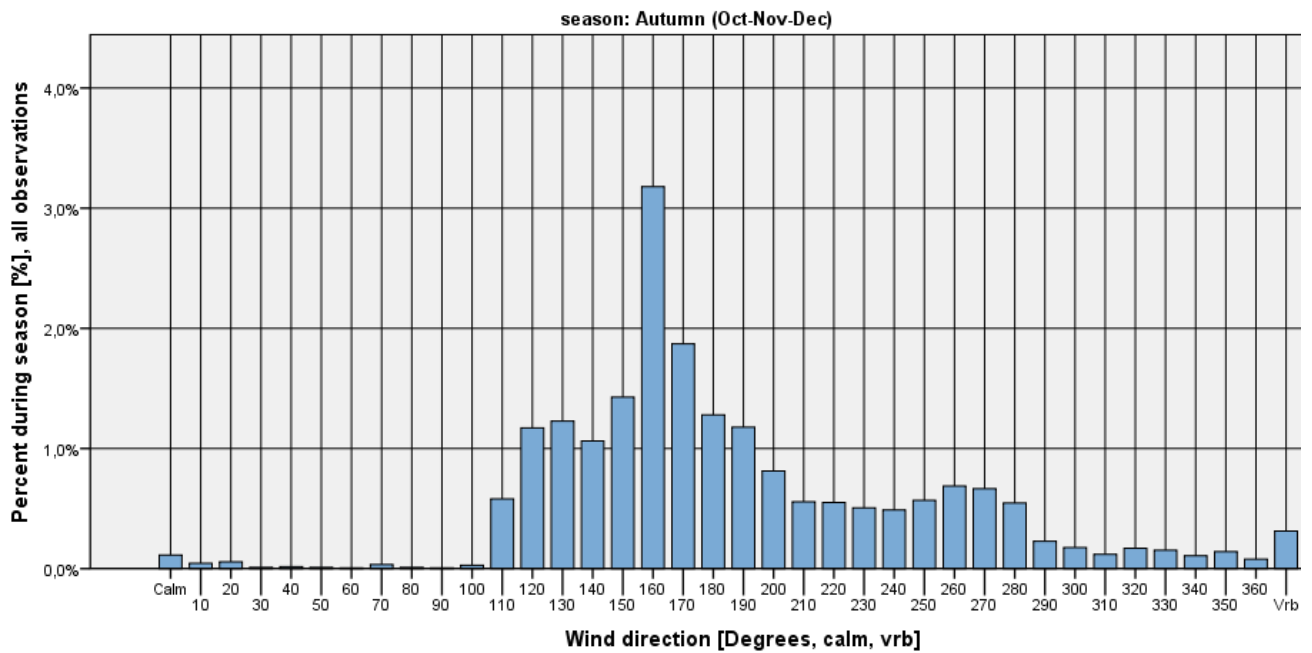


Figure 713

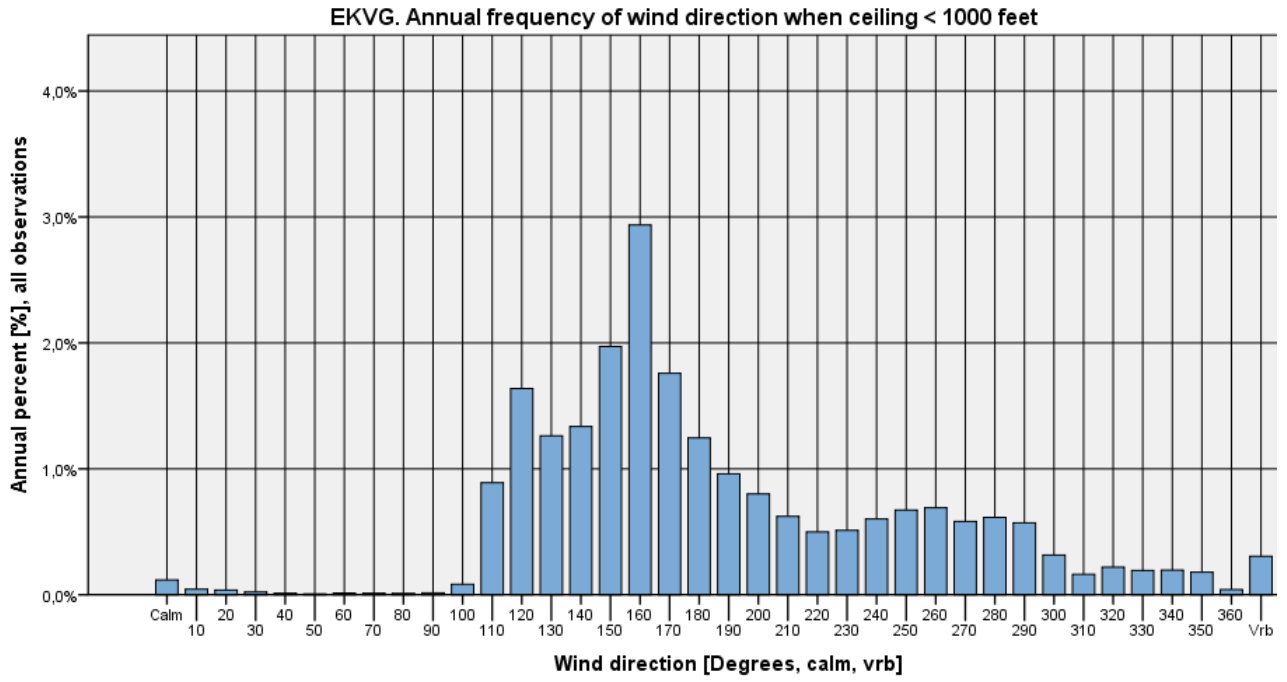


Figure 714



Ceiling < 1000 feet and wind speed <= 5 kts

EKVG. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

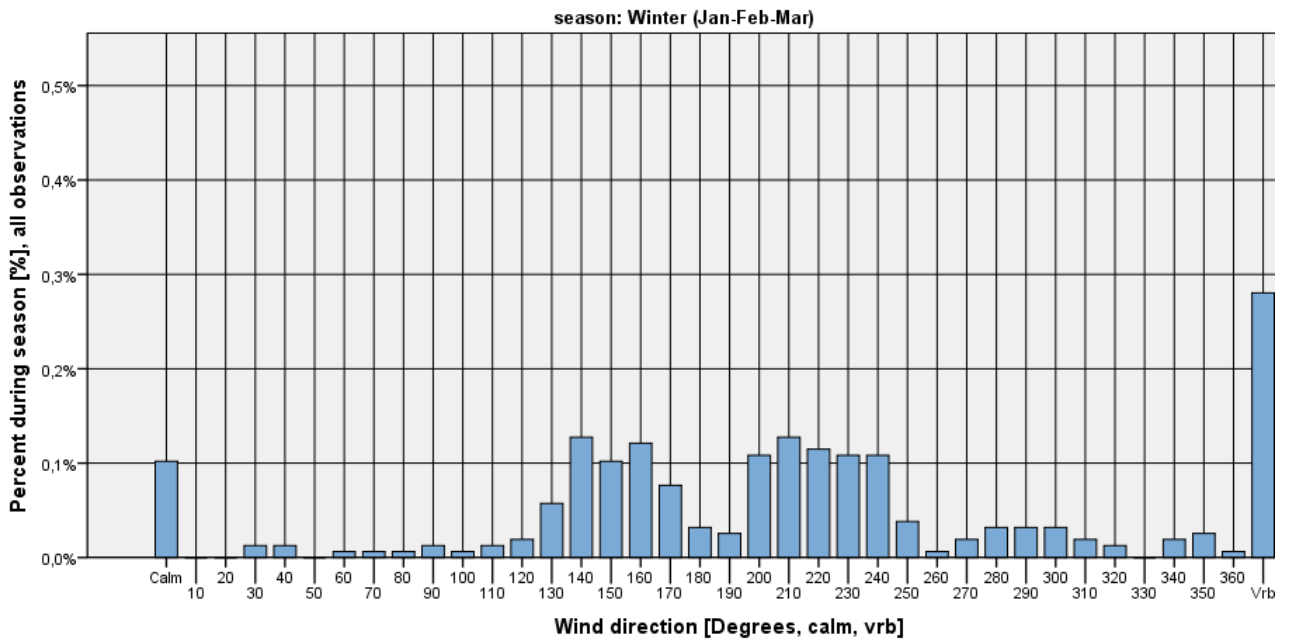


Figure 715

EKVG. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

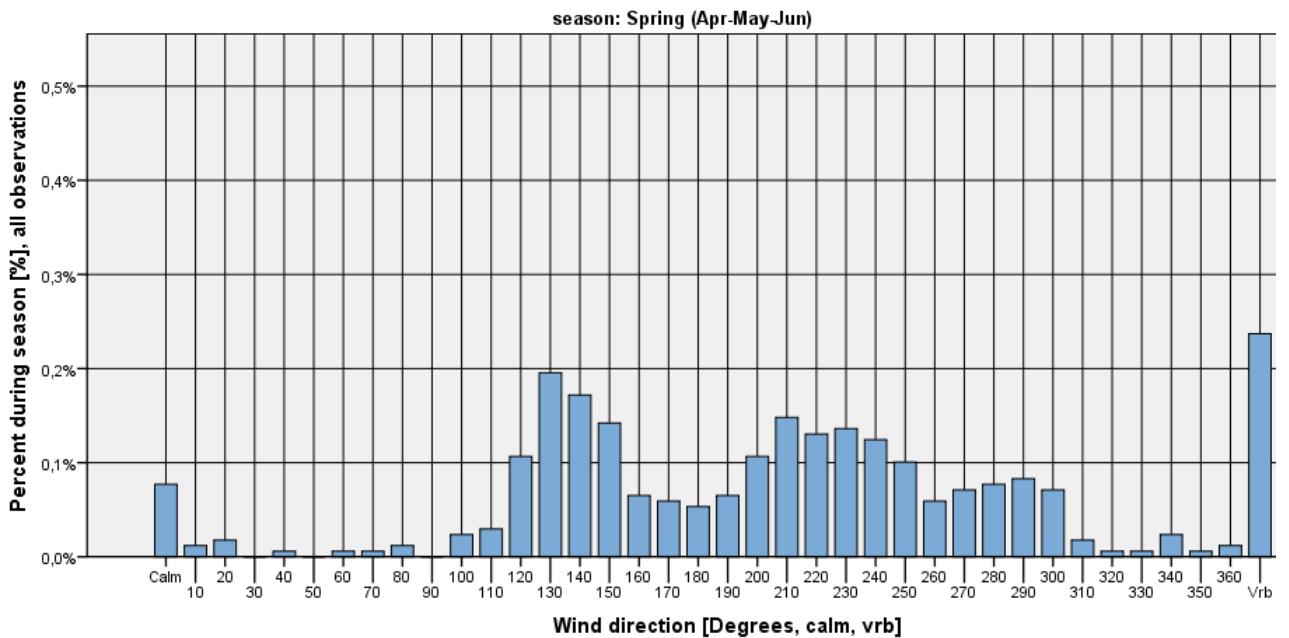


Figure 716



EKVG. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

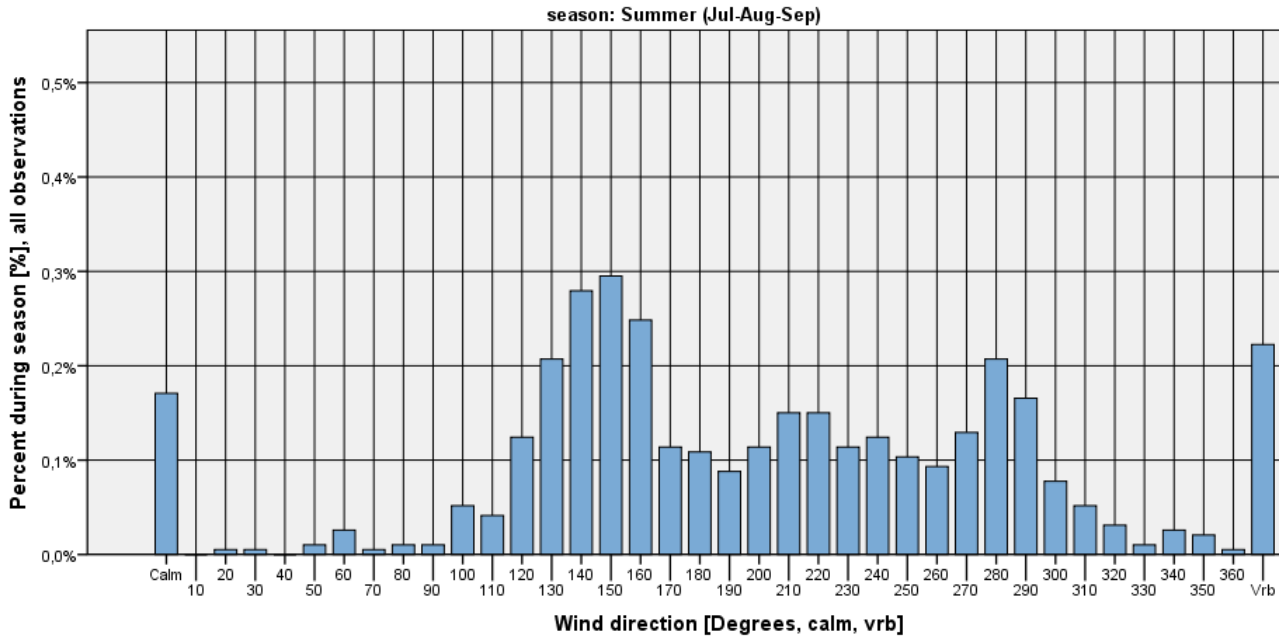


Figure 717

EKVG. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed <=5 kt

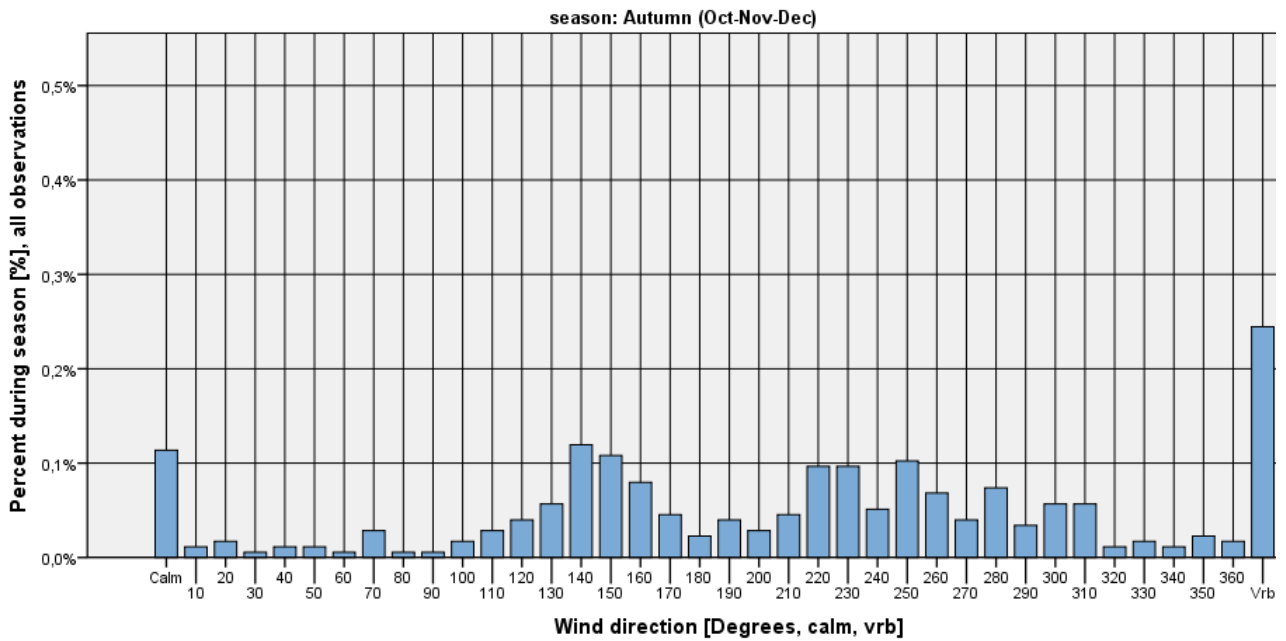


Figure 718

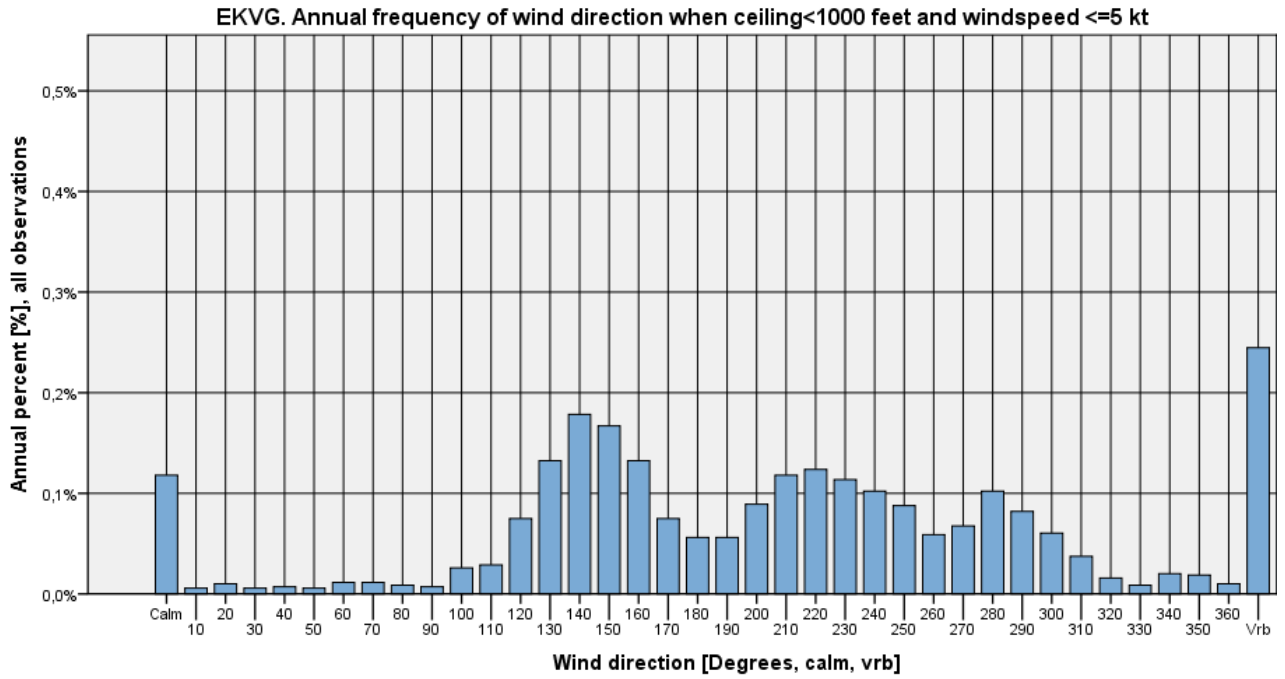


Figure 719



Ceiling < 1000 feet and wind speed > 5 kts

EKVG. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed > 5 kt

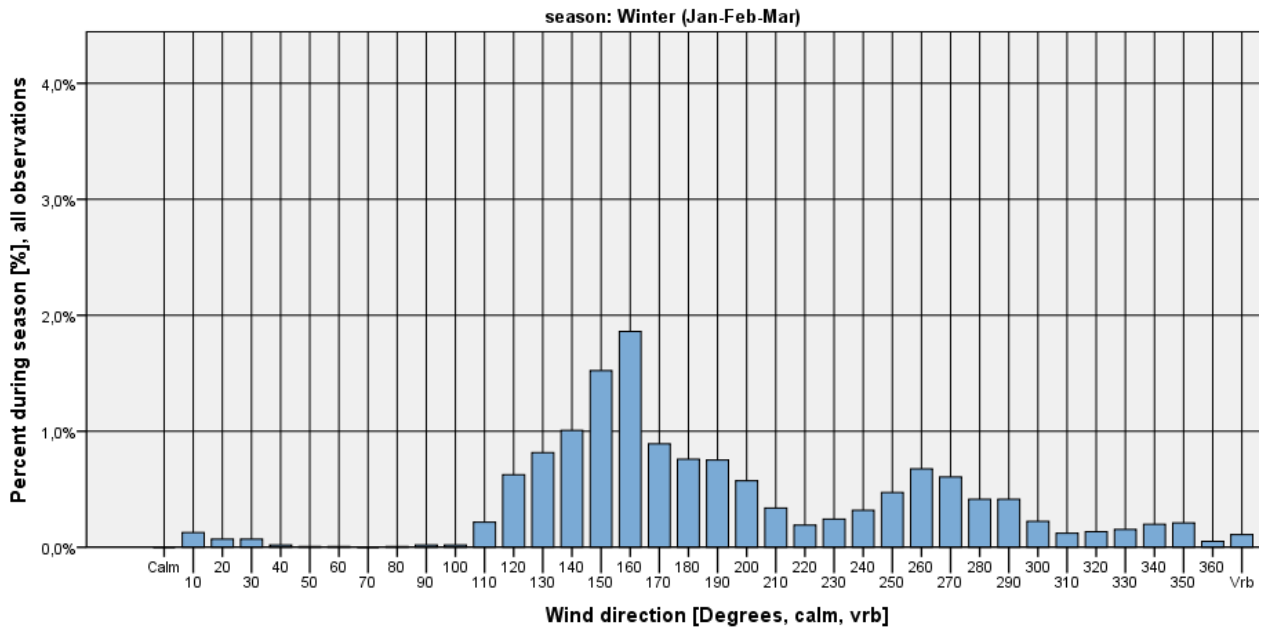


Figure 720

EKVG. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed > 5 kt

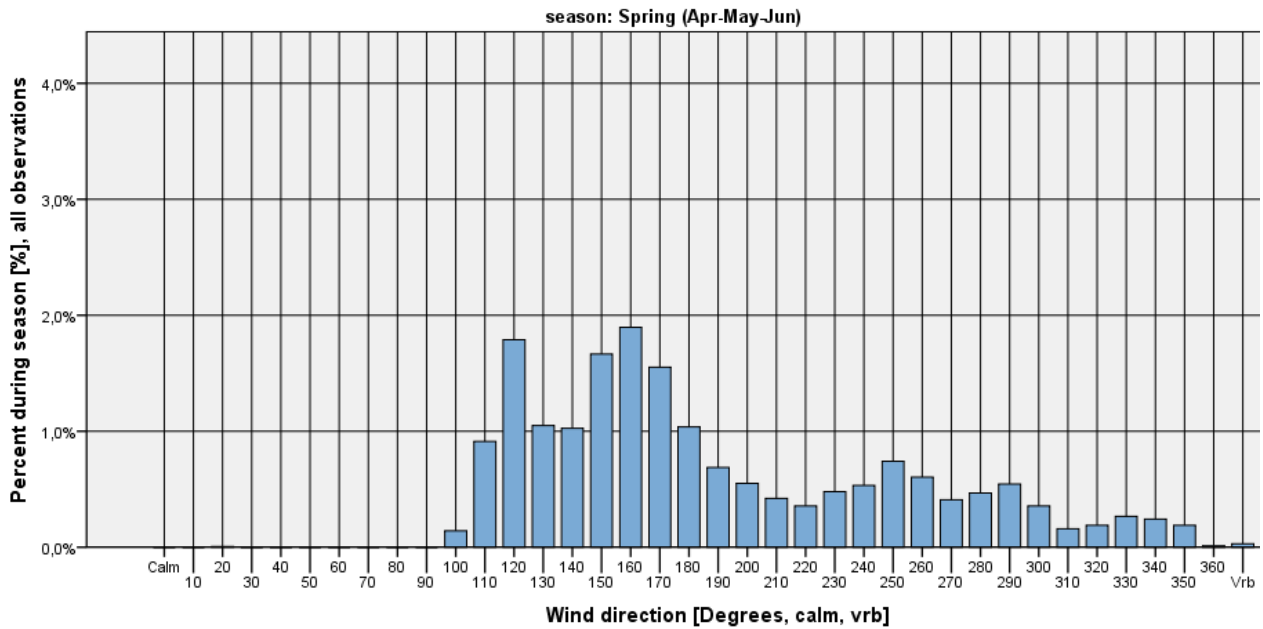


Figure 721



EKVG. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

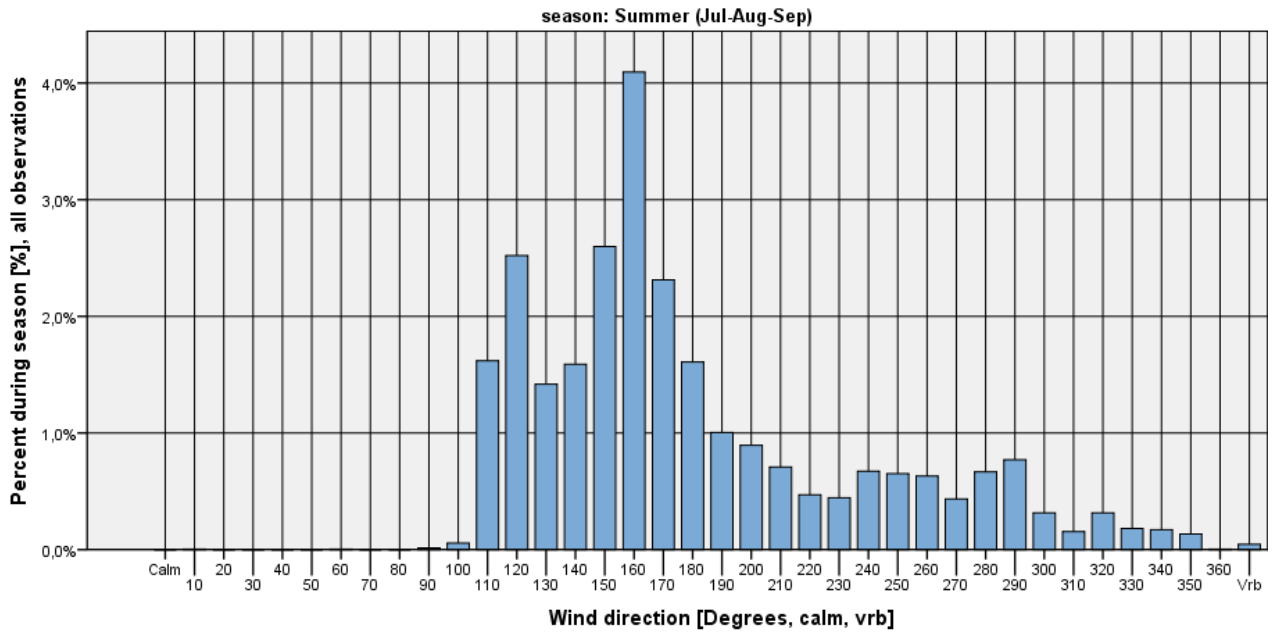


Figure 722

EKVG. Seasonal frequency of wind direction when ceiling < 1000 feet and windspeed >5 kt

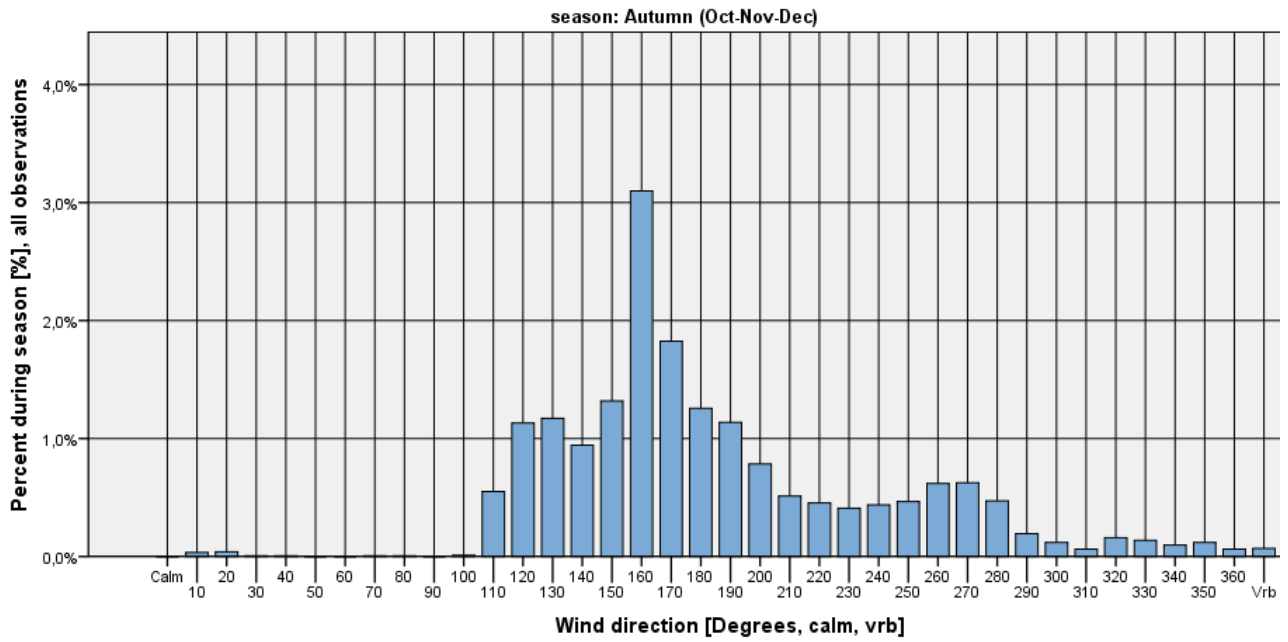


Figure 723

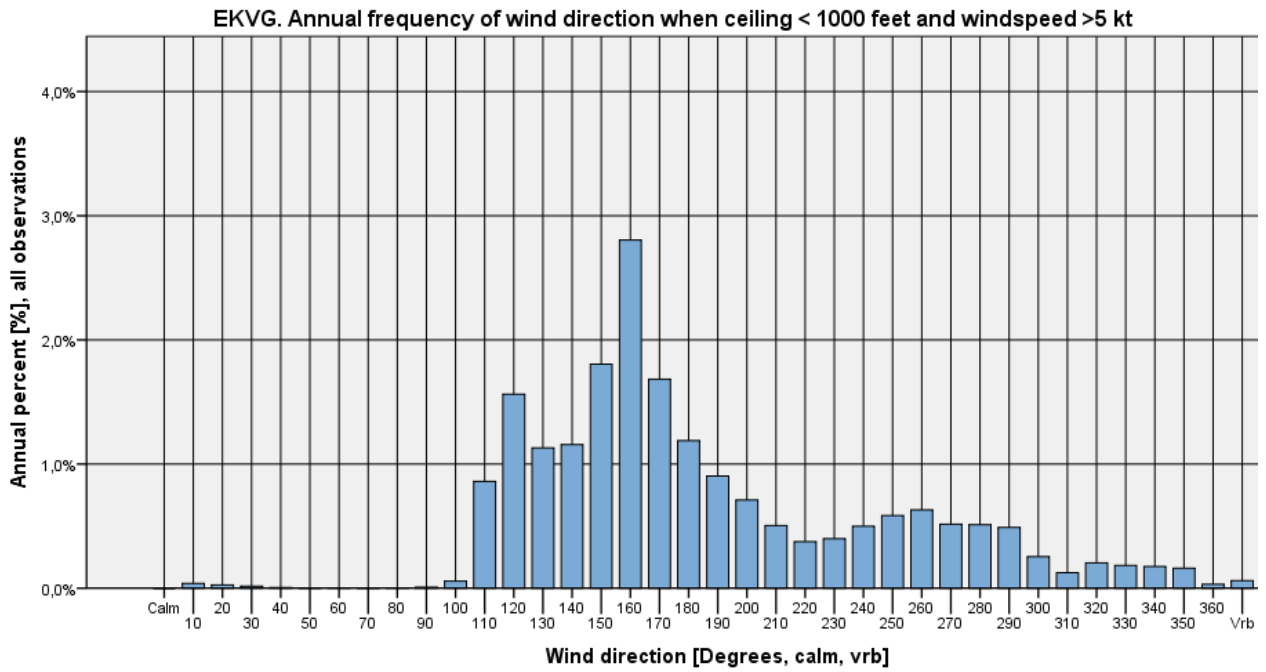


Figure 724



Ceiling<500 feet

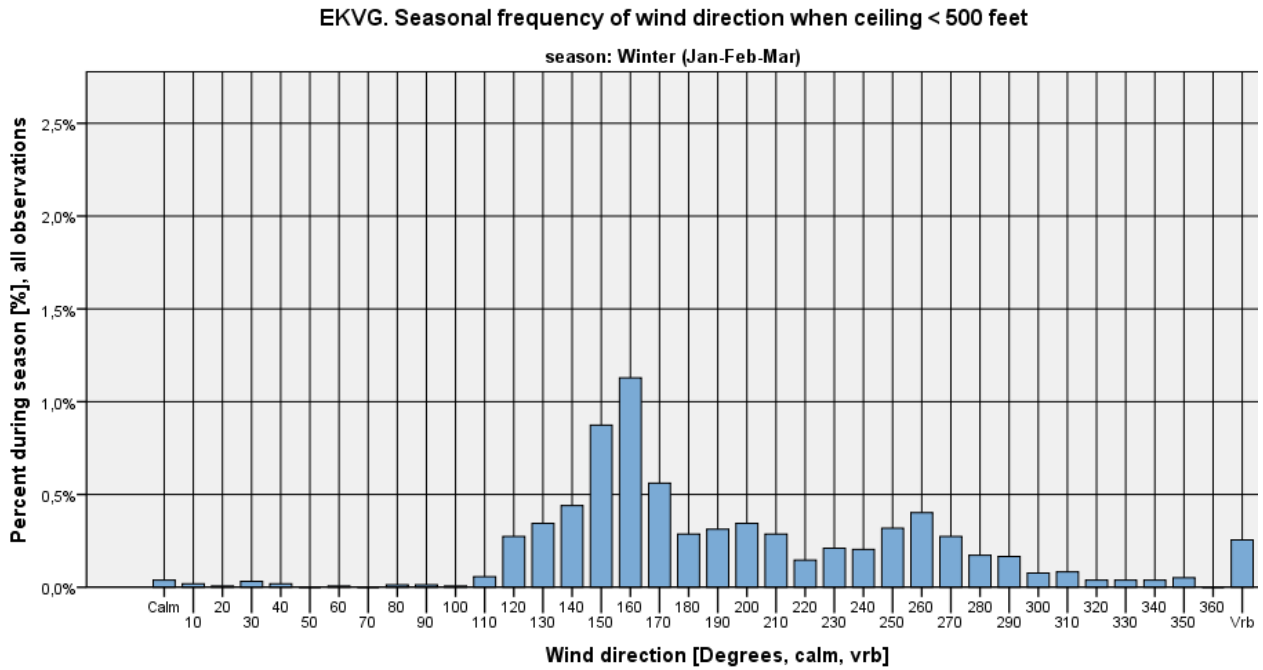


Figure 725

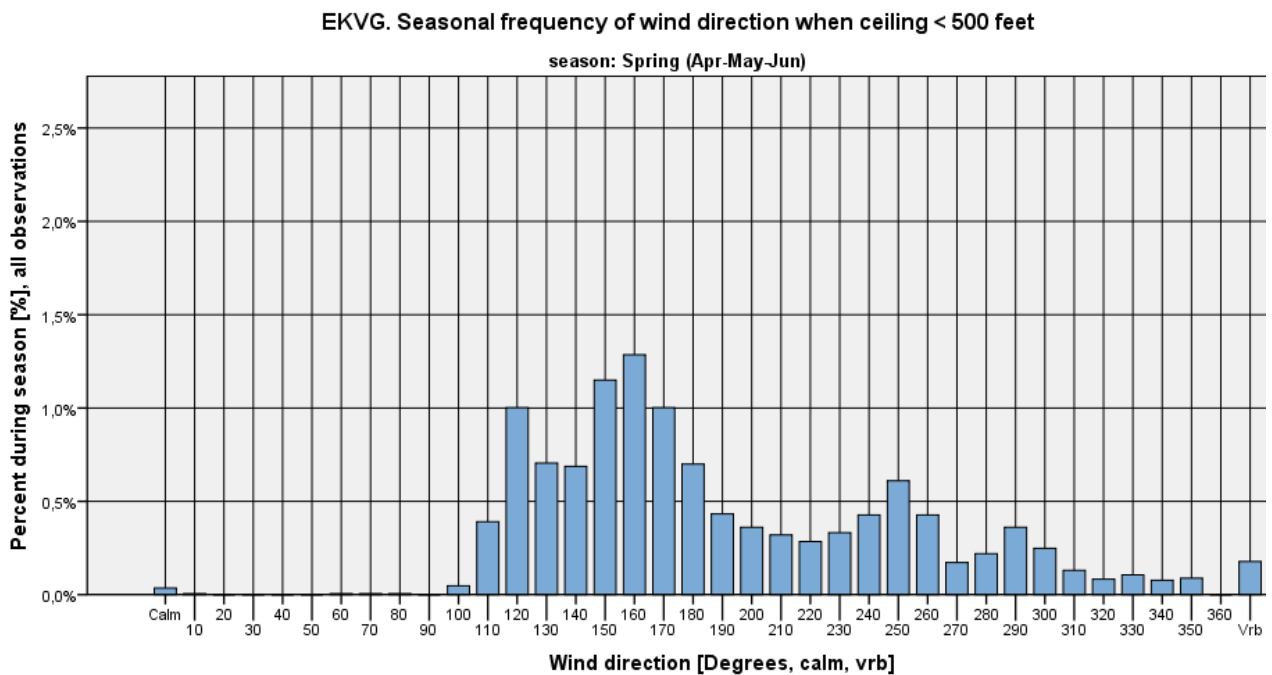


Figure 726



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

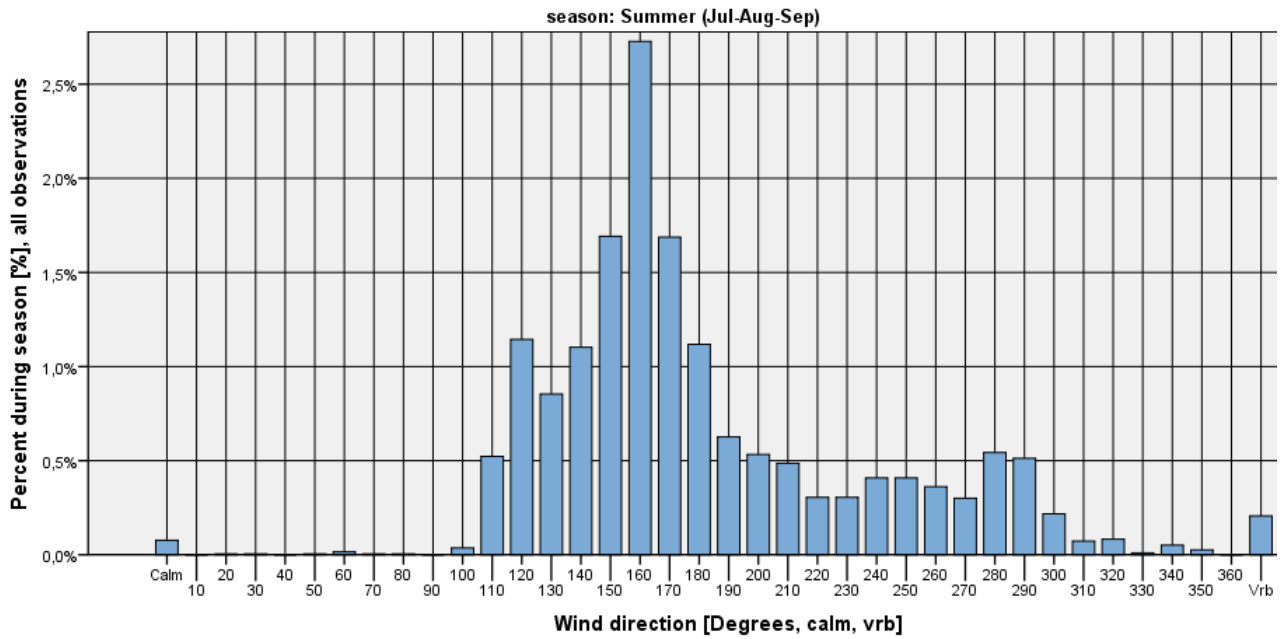


Figure 727

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

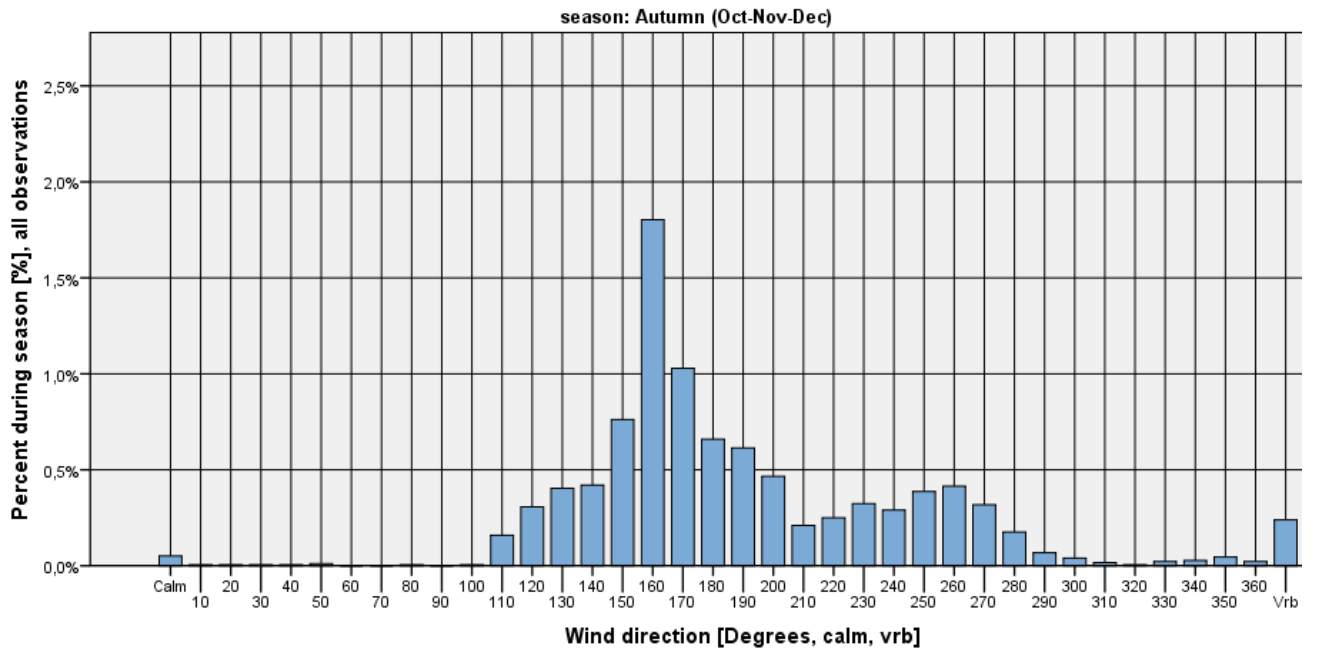


Figure 728

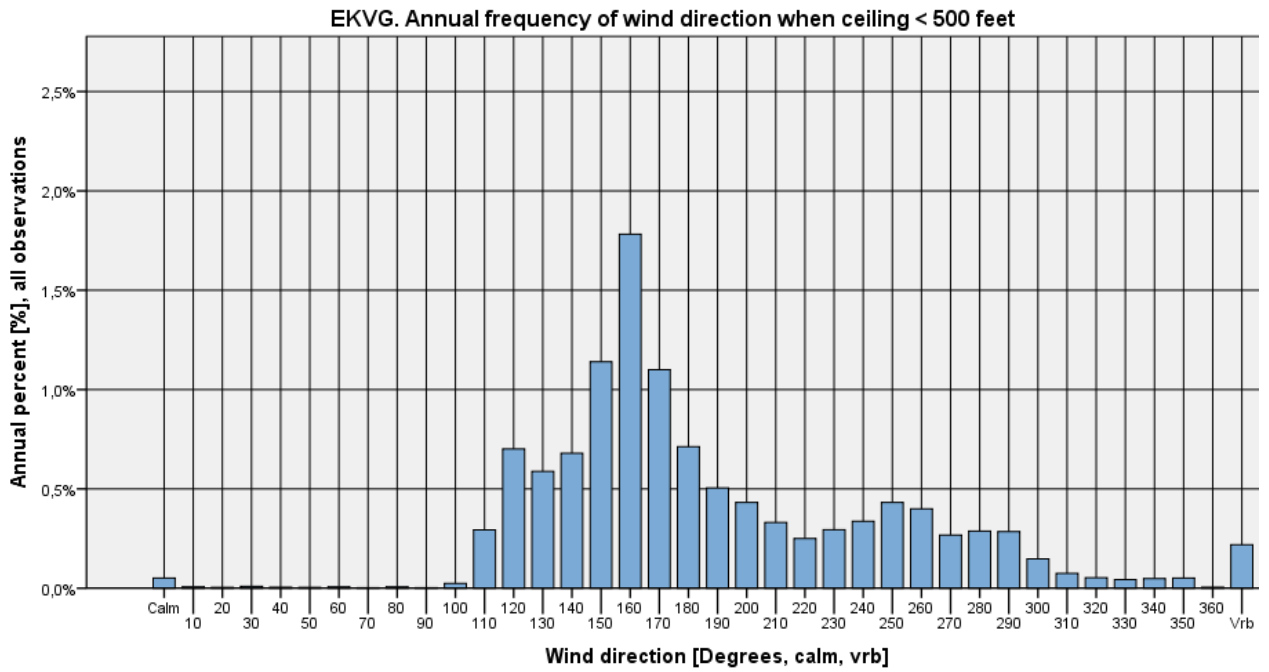


Figure 729



Ceiling < 500 feet and wind speed ≤ 5 kts

EKVG. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed ≤ 5 kt

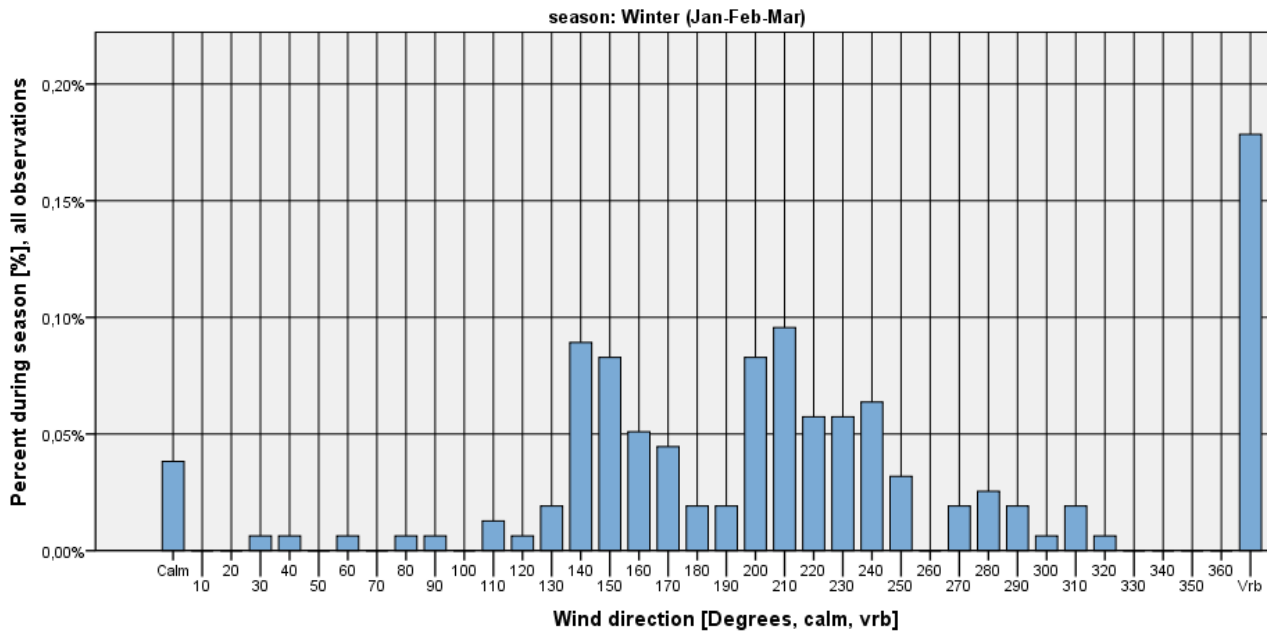


Figure 730

EKVG. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed ≤ 5 kt

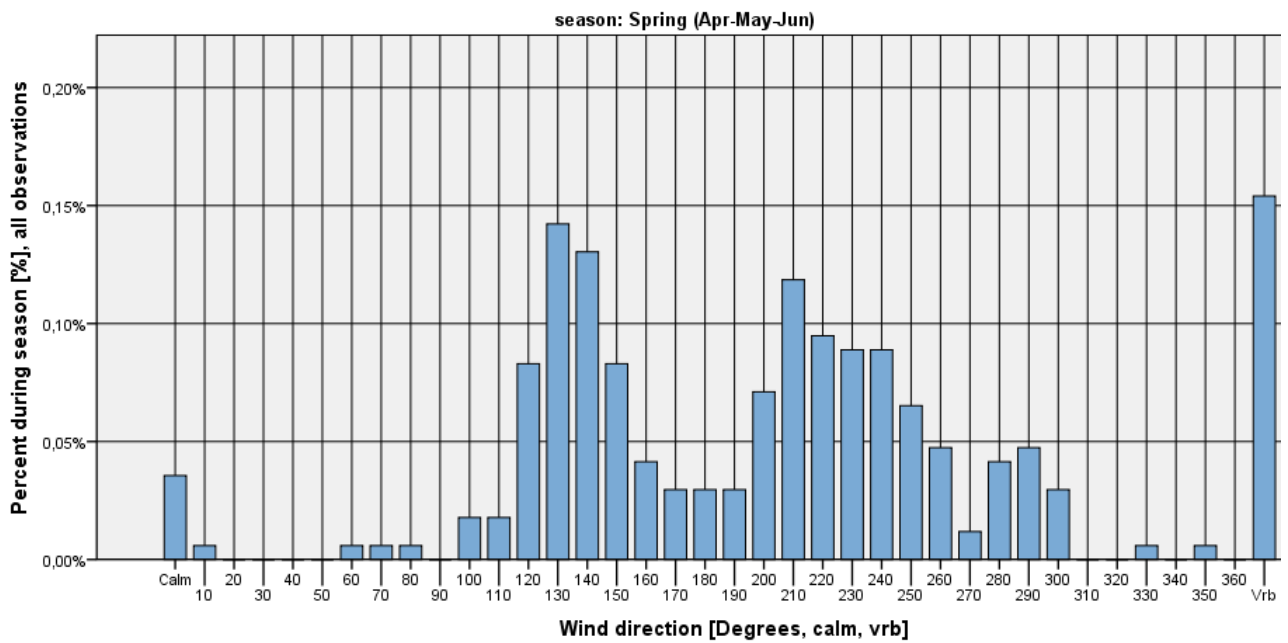


Figure 731



EKVG. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

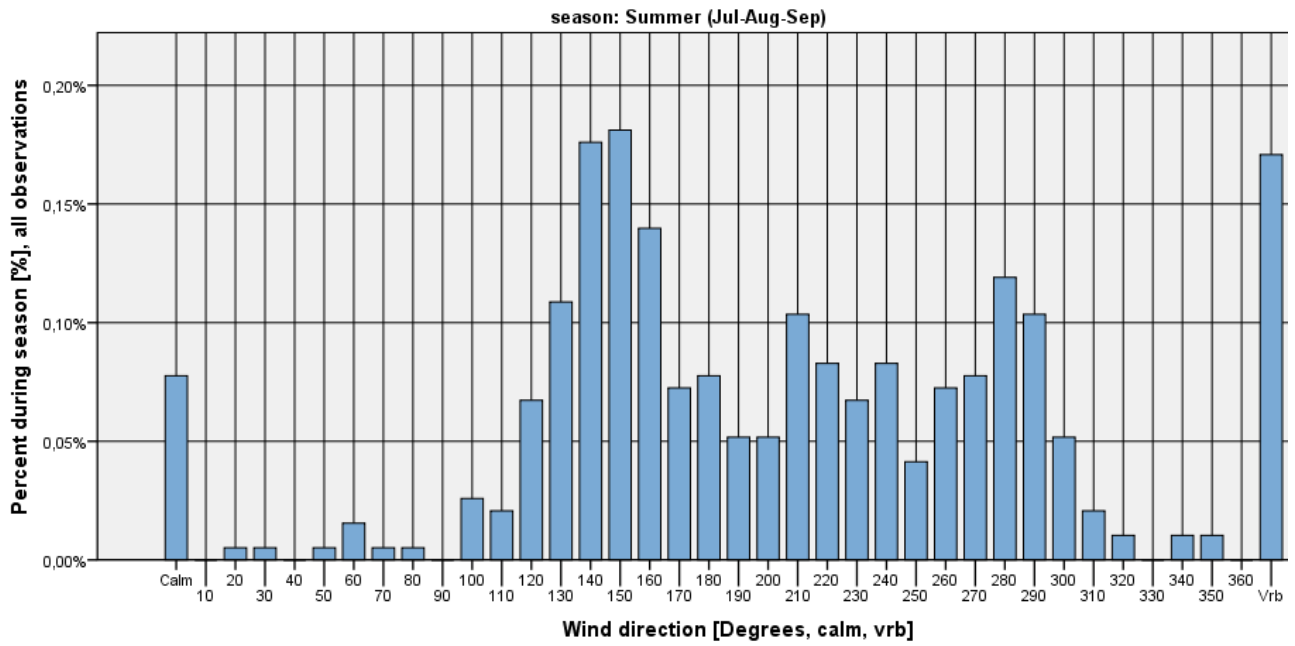


Figure 732

EKVG. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed <=5 kt

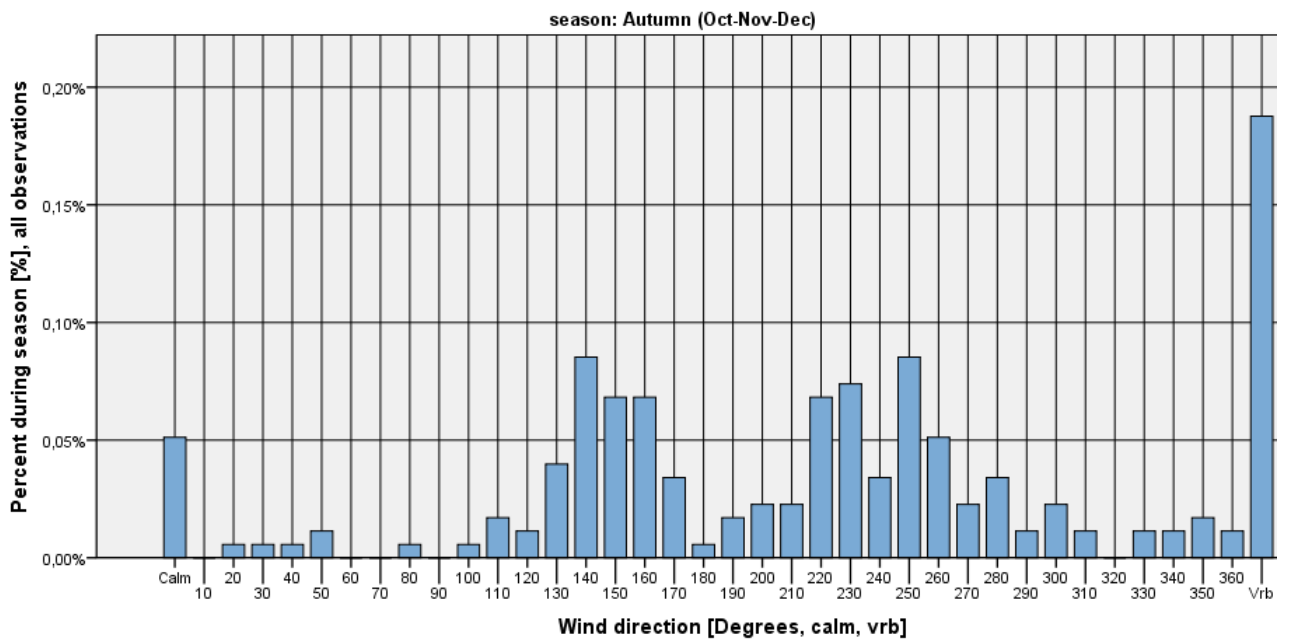


Figure 733

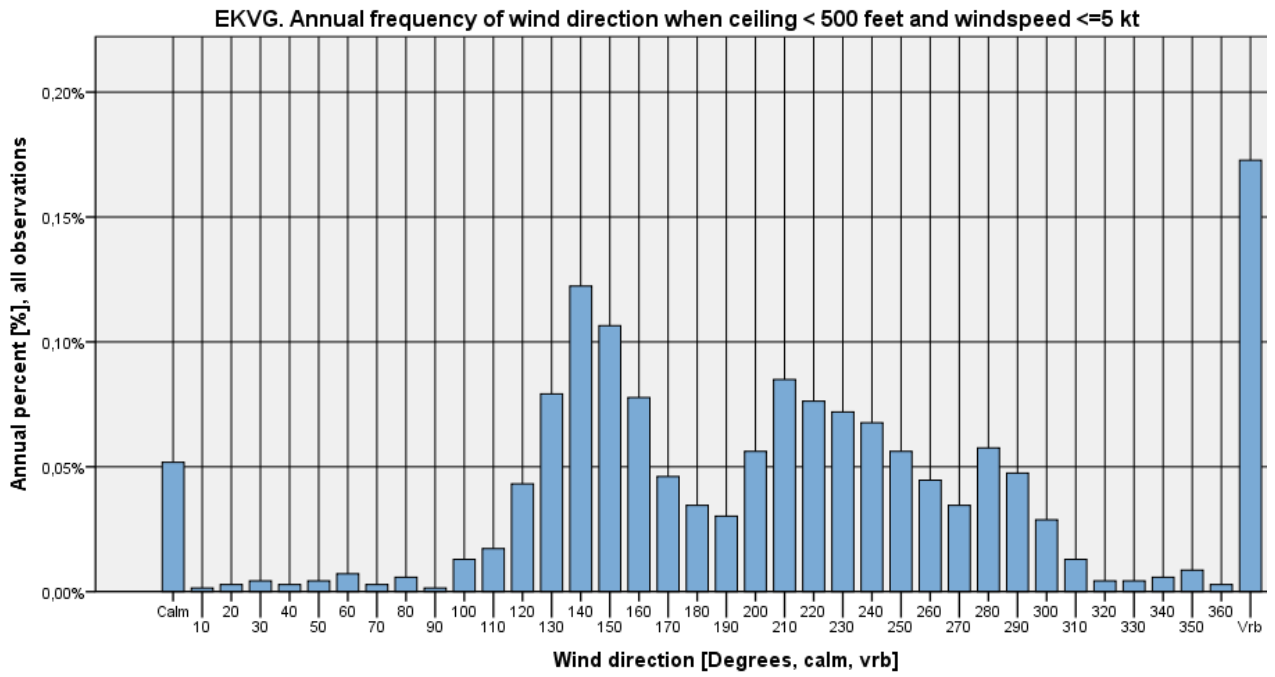


Figure 734



Ceiling < 500 feet and wind speed > 5 kts

EKVG. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

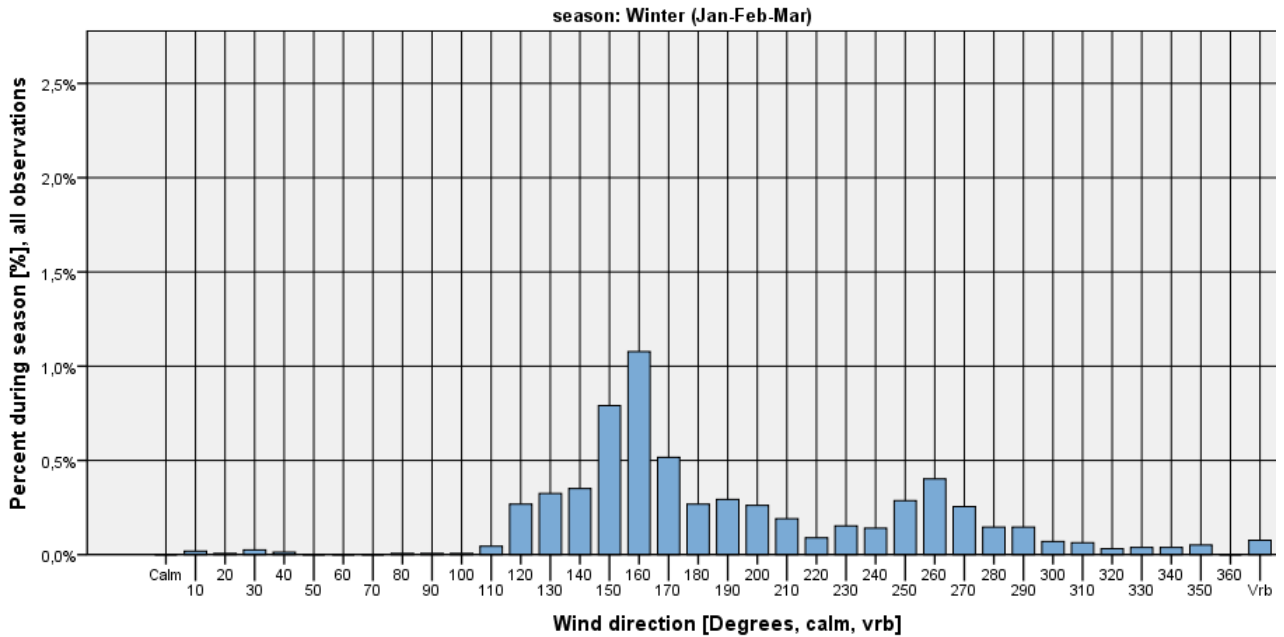


Figure 735

EKVG. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed > 5 kt

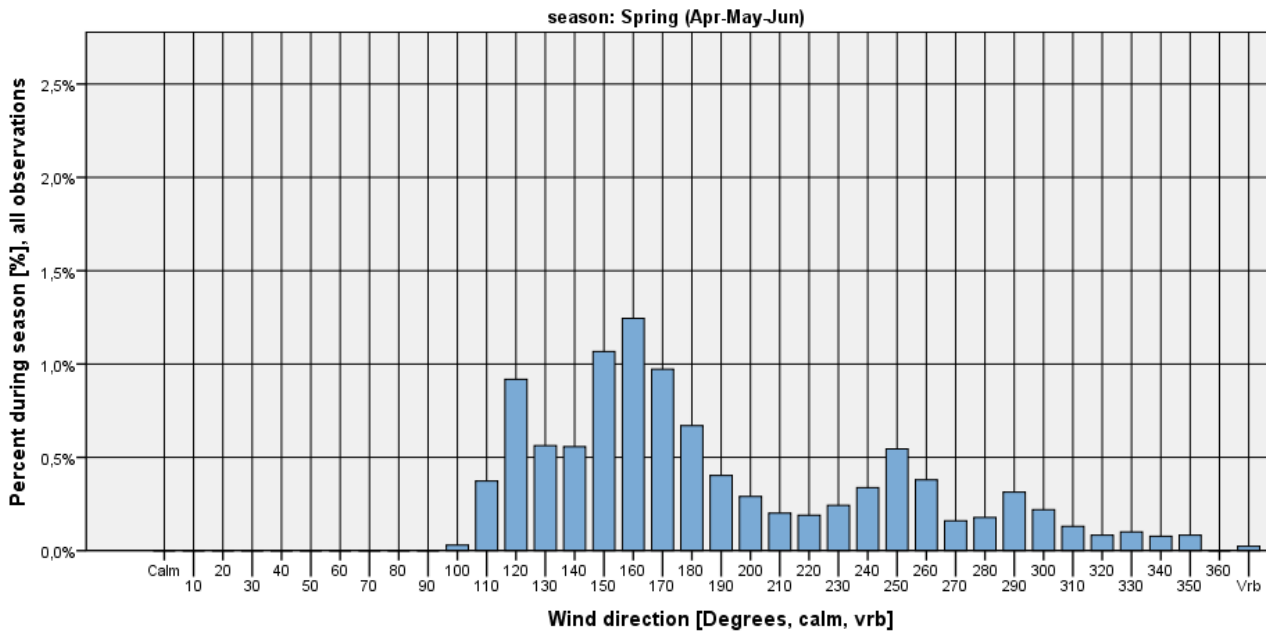


Figure 736



EKVG. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

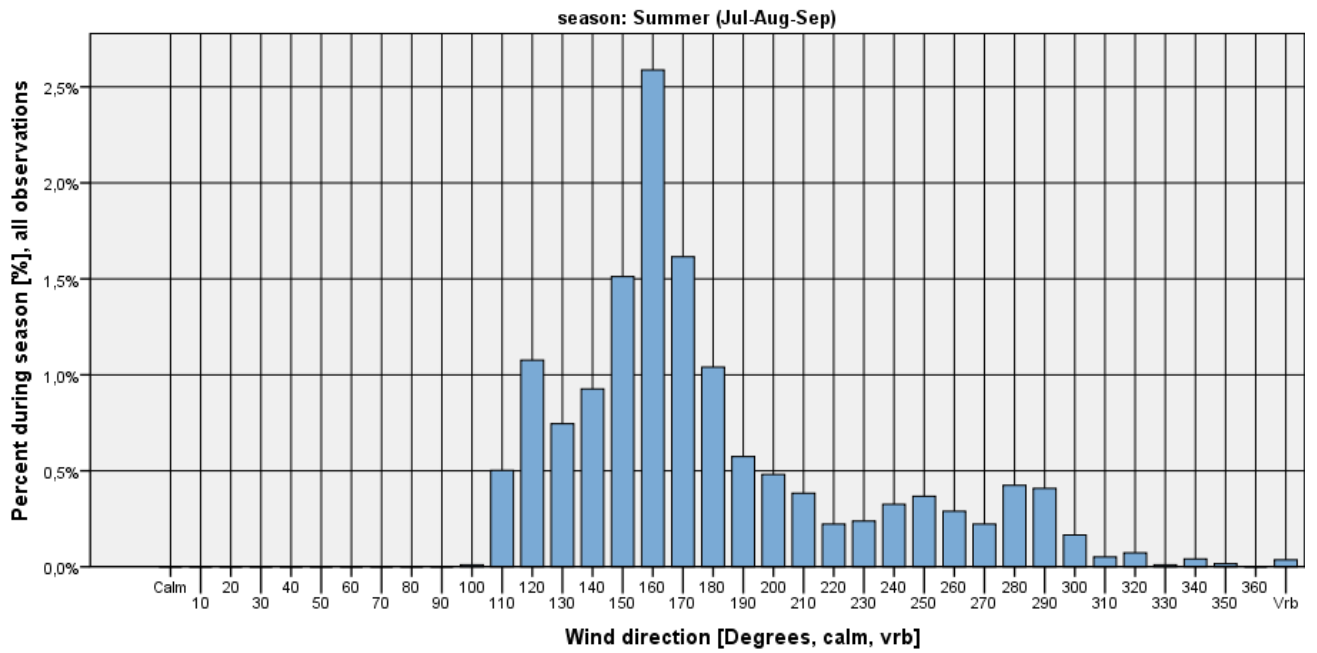


Figure 737

EKVG. Seasonal frequency of wind direction when ceiling < 500 feet and windspeed >5 kt

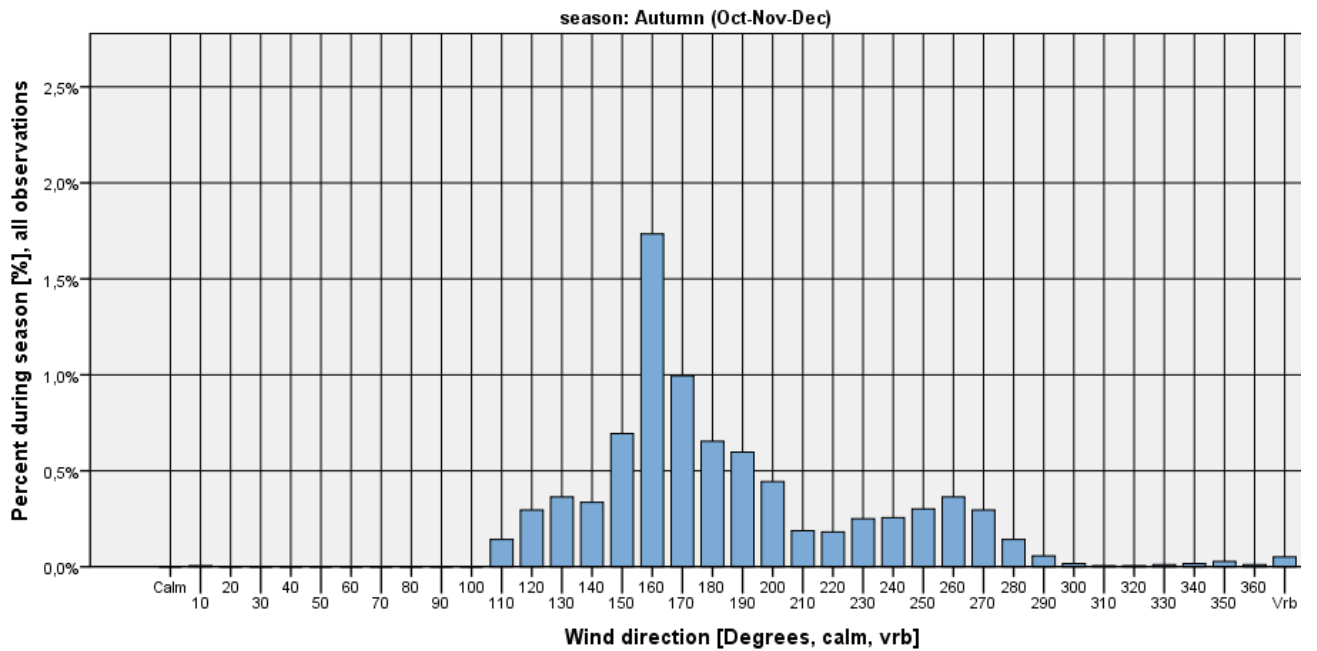


Figure 738

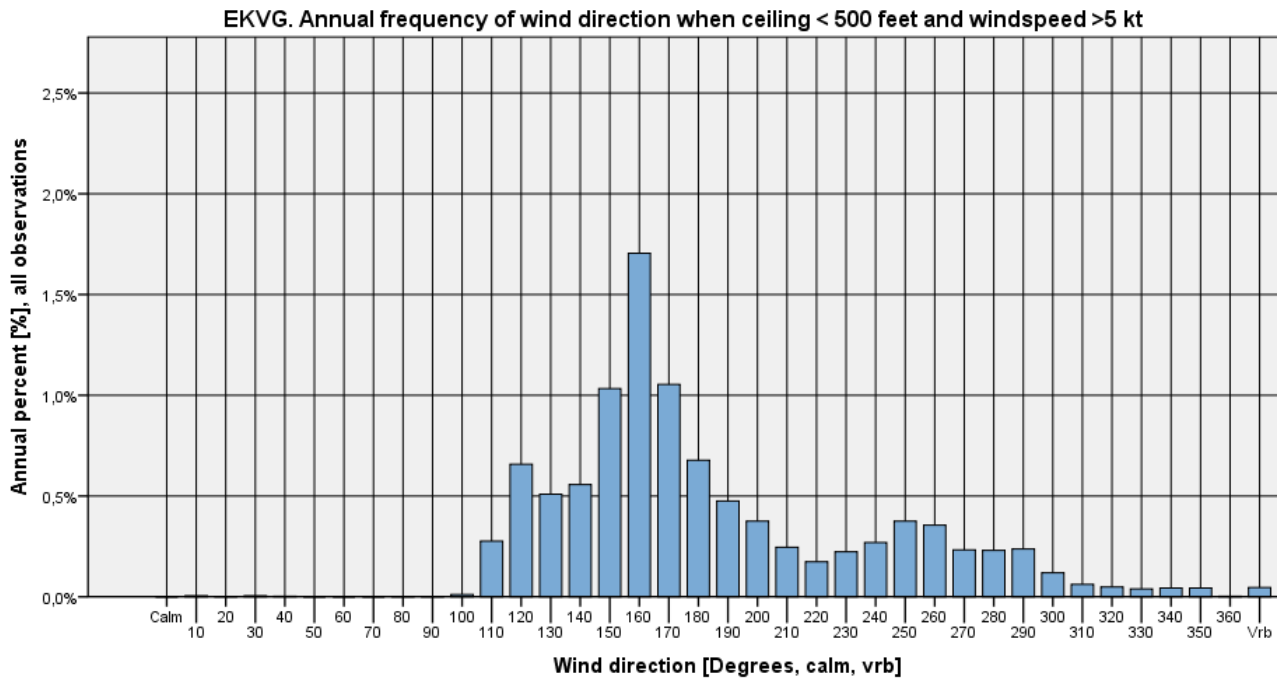


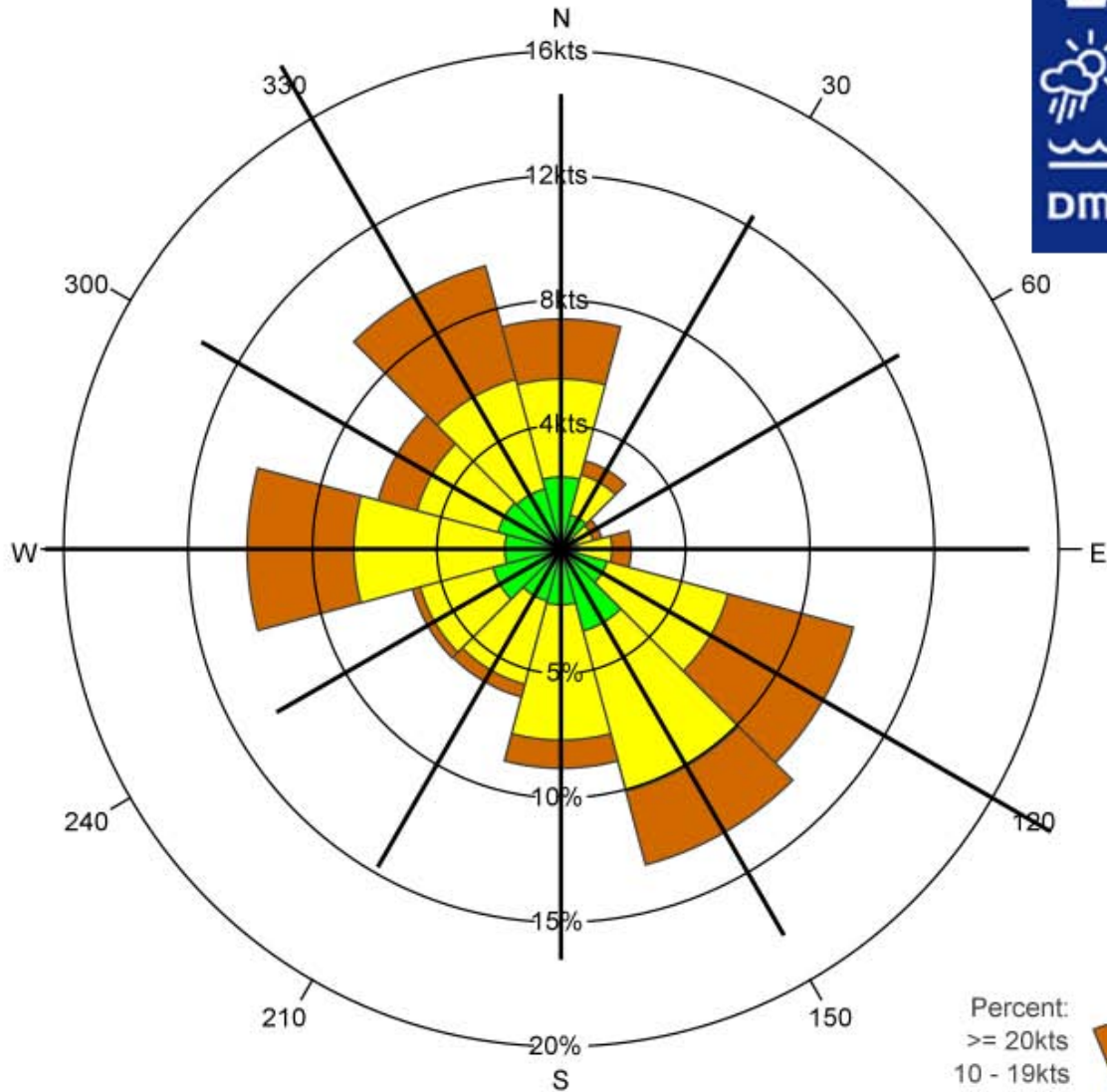
Figure 739



Wind roses

EKVG Vaga-Floghavn AUTUMN & WINTER: OCTOBER - MARCH

01-02-2003 - 01-02-2012



Legend:

— Mean wind speed

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



	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	9.2	3.7	1.7	2.8	12.2	13.1	8.8	6.1	6.2	12.6	7.6	11.8	95.9
% 1 - 9kts	2.9	1.4	0.6	0.7	1.9	3.4	2.2	2.2	2.8	2.3	2.6	2.5	25.6
% 10 - 19kts	3.9	1.7	0.7	1.4	5.0	6.7	5.4	3.5	3.0	6.1	3.4	4.5	45.3
% >= 20kts	2.4	0.6	0.4	0.8	5.2	3.1	1.1	0.5	0.3	4.3	1.6	4.7	25.1
Mean wind speed	14.6	12.4	12.5	15.0	18.2	14.4	13.2	11.8	10.6	16.6	13.4	18.0	14.9
Max wind speed	56.0	40.0	39.0	48.0	47.0	38.0	42.0	36.0	34.0	46.0	40.0	51.0	56.0

Number of observations = 33274

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 1360=4.1%

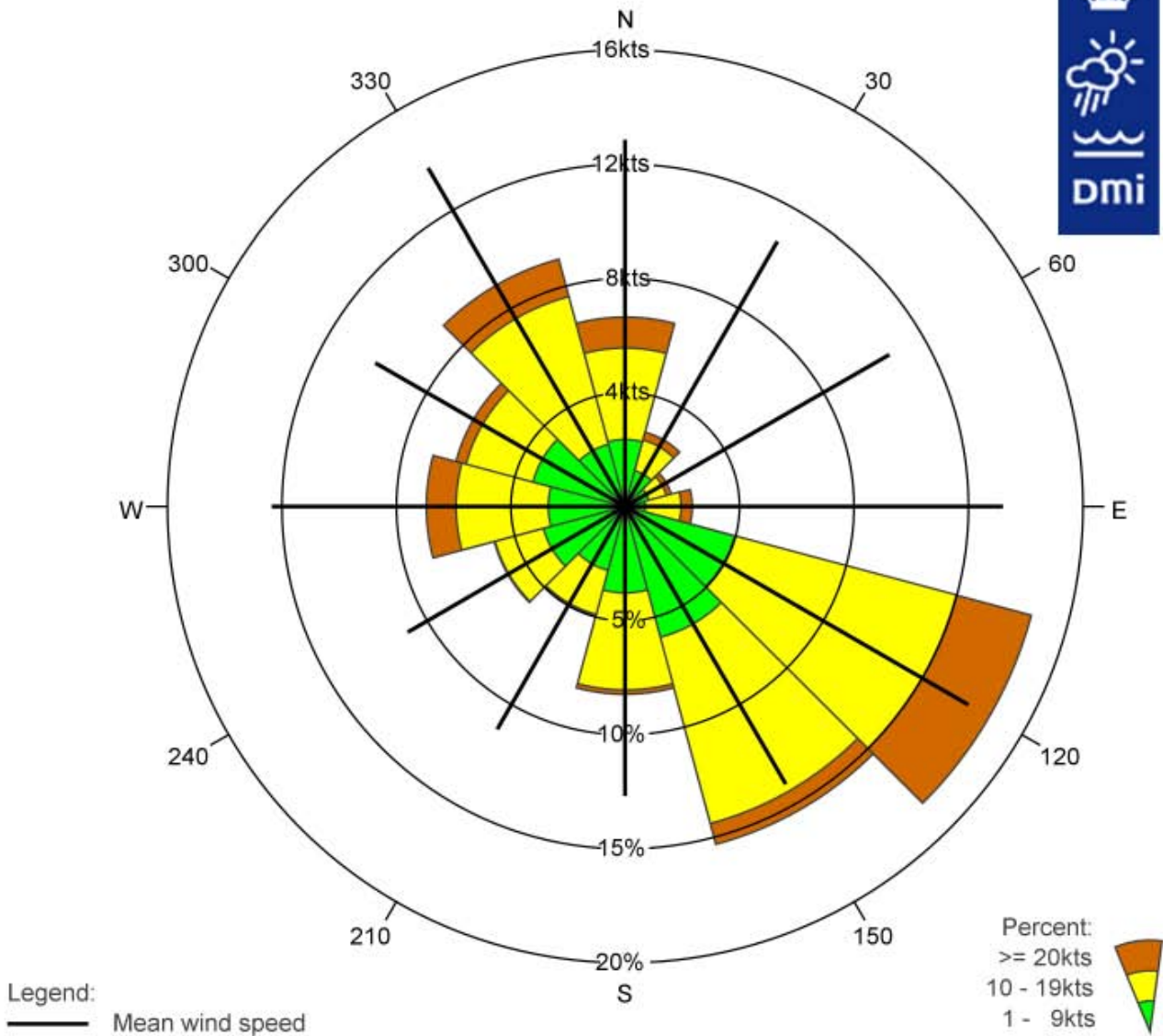
Observations with calm/varying wind direction are not used in the statistics

Source: DMI



EKVG Vaga-Floghavn SPRING & SUMMER: APRIL - SEPTEMBER

01-02-2003 - 01-02-2012



Legend:
— Mean wind speed

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

	N	30	60	E	120	150	S	210	240	W	300	330	Total
%	8.3	3.4	2.1	2.9	18.4	15.3	8.2	5.0	5.9	8.7	7.7	11.2	97.1
% 1 - 9kts	2.9	1.6	1.1	0.9	4.9	5.9	3.8	2.9	3.7	3.4	4.2	2.8	38.1
% 10 - 19kts	4.0	1.4	0.8	1.6	10.0	8.5	4.3	2.0	2.2	4.0	3.0	6.7	48.4
% >= 20kts	1.4	0.4	0.2	0.5	3.4	0.9	0.2	0.1	0.0	1.3	0.5	1.7	10.6
Mean wind speed	12.8	10.7	10.7	13.2	13.9	11.3	10.1	9.0	8.7	12.3	10.0	13.7	11.8
Max wind speed	39.0	33.0	39.0	40.0	40.0	34.0	28.0	26.0	24.0	37.0	42.0	45.0	45.0

Number of observations = 36195

Source: DMI

Calm defined a wind speed = 0kts

Number of observations with calm/varying wind direction: 1052=2.9%

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

Availability

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

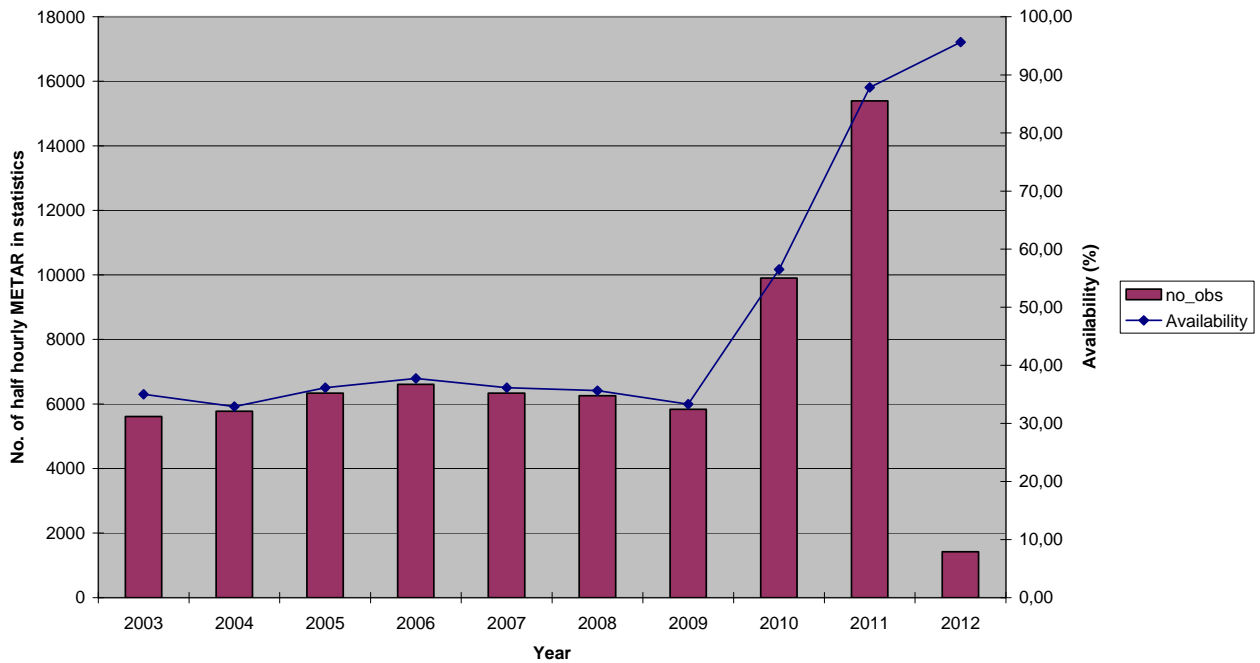


Figure 740

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

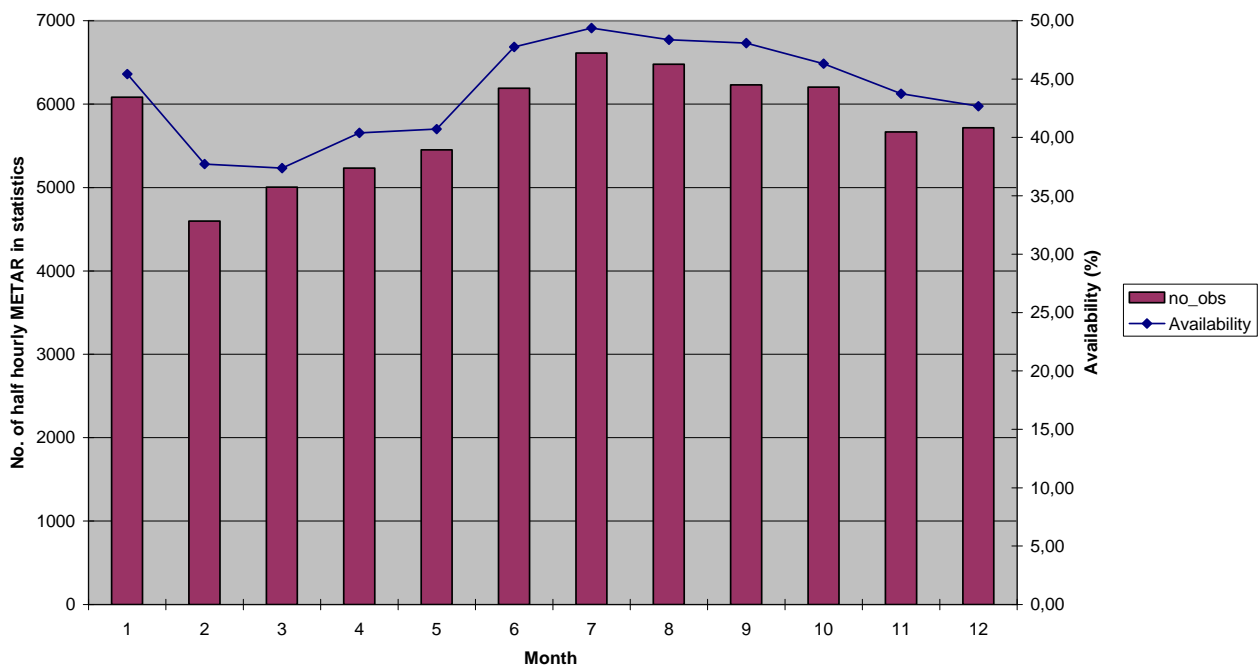


Figure 741

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

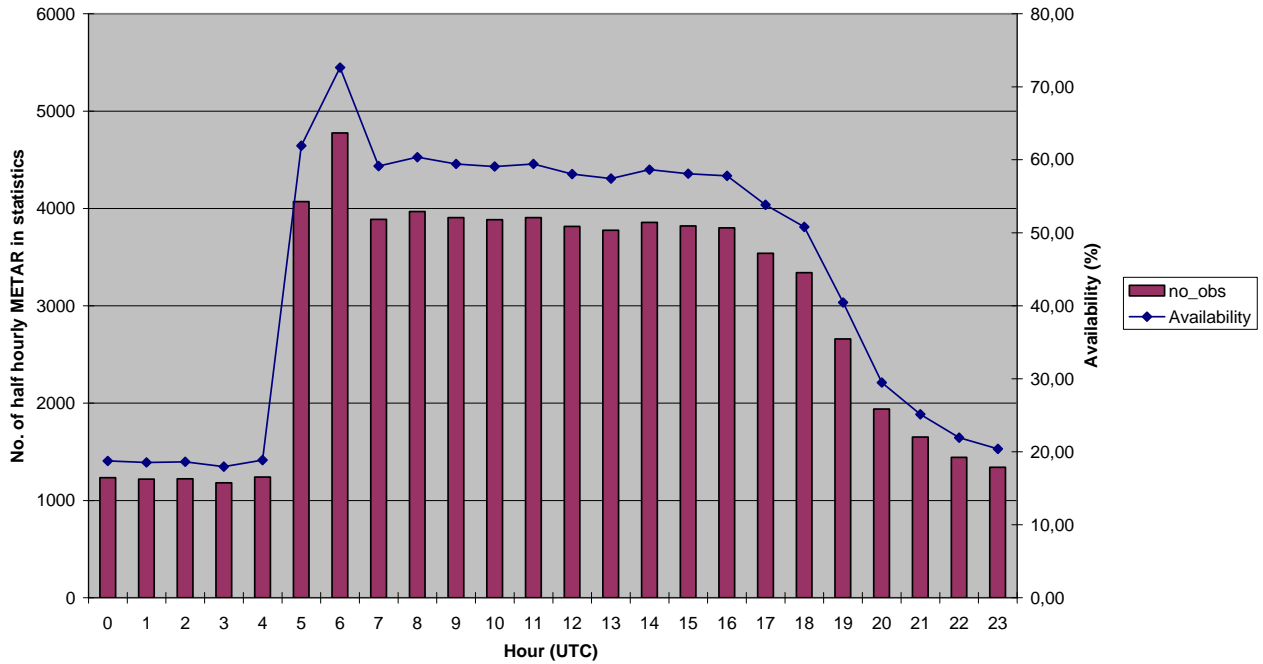


Figure 742

EKVG. Average no. of half 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	,1	,1	,1	,0	1,1	1,9	1,9	
1	,0	,0	,0	,0	,0	,0	,0	1,1	1,9	1,9	
2	,0	,0	,0	,0	,0	,0	,0	1,1	1,9	1,9	
3	,0	,0	,0	,0	,0	,0	,0	1,1	1,9	1,9	
4	,0	,0	,0	,0	,0	,0	,0	1,1	1,9	1,9	
5	,6	,6	,6	,6	,6	,5	,5	1,2	1,8	2,0	
6	1,1	1,1	1,1	1,1	1,0	1,1	,9	1,1	1,9	2,0	
7	1,1	1,1	1,2	1,2	1,1	1,1	1,0	1,1	1,7	1,9	
8	1,1	1,1	1,1	1,2	1,1	1,1	1,1	1,1	1,7	1,9	
9	1,2	1,1	1,1	1,1	1,1	1,1	1,1	1,2	1,6	1,9	
10	1,1	1,1	1,1	1,2	1,1	1,1	1,1	1,1	1,7	1,9	
11	1,1	1,1	1,2	1,2	1,1	1,1	1,1	1,1	1,6	1,9	
12	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,7	1,9	
13	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,6	1,8	
14	1,2	1,1	1,1	1,2	1,1	1,1	1,1	1,1	1,6	1,8	
15	1,1	1,1	1,1	1,1	1,1	1,1	1,0	1,1	1,7	1,8	
16	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,7	1,8	
17	1,0	,9	1,1	1,1	1,1	1,0	1,0	1,1	1,7	1,9	
18	,8	,7	1,1	1,1	1,1	1,0	1,0	1,1	1,7	2,0	
19	,7	,5	1,0	1,1	1,0	1,0	1,0	1,1	1,7	2,0	
20	,4	,4	,6	,7	,7	,7	,5	1,2	1,8	2,0	
21	,3	,3	,3	,3	,4	,3	,2	1,1	1,9	1,9	
22	,2	,2	,1	,2	,2	,2	,1	1,1	1,9	2,0	
23	,1	,1	,1	,1	,1	,1	,0	1,2	1,9	2,0	

Table 85.



References

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

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

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