



## Technical Report 10-14

### Wind statistics for stations 04360 Tasiilaq and 04361 Mittarfik Kulusuk.

Data December 2000 – August 2010.

Ellen Vaarby Laursen





# Colophon

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## Introduction

This DMI Technical report provides wind statistics relevant for consideration of automatic radiosonde launches from the area around Tasiilaq, Greenland. The statistics are made so as to make the statistics of the two sites, Tasiilaq and Mittarfik Kulusuk (Kulusuk Airport) directly comparable.

The autosonde requirements that define the threshold values of this report's statistics are listed in Table 1.

Autosonde demands	Balloon 700g	Balloon 300g	No launch
Wind speed (knots)	<40	<50	>65
Wind speed (m/s)	<20,8	<26	>33,8

**Table 1. Wind speed requirements for autosonde launch (From DMI/BSH August 23<sup>rd</sup> 2010).**

Please note that only a limited number of wind measurements are available for statistics, since the station regularity is varying. 04360 Tasiilaq had a regularity of 90,6% and 04361 Mittarfik Kulusuk had a regularity of 89,2% out of the expected number of 10 min. average wind measurements during the period December 2000 – August 2010. When selecting only the evenly spaced 3 hourly observations and only the instances of coinciding wind measurements the regularity of observations available for the statistics was down to 83%. Please have this natural cause for bias and inaccuracy in mind before making conclusions from the resulting statistics.

# Station information

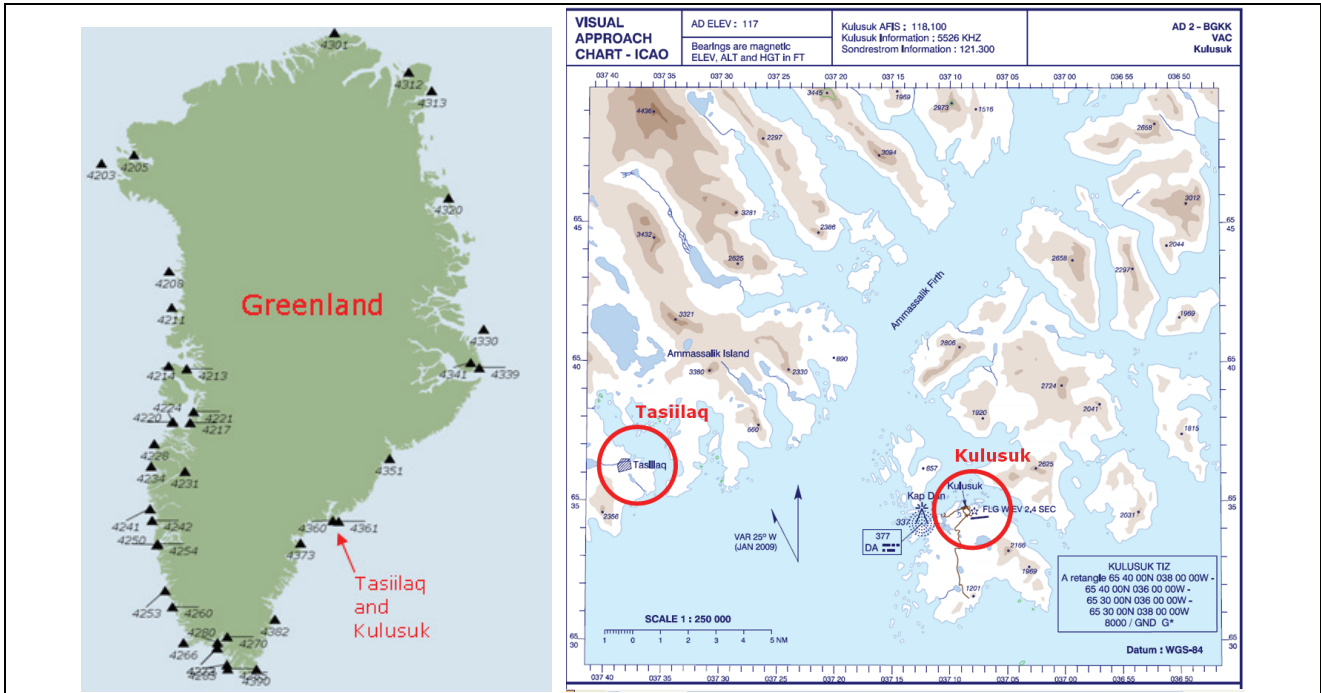


Figure 1. Station location. To the right, on top of the VAC for the airport Kulusuk (BGKK) ([http://www.slv.dk/Dokumenter/dsweb/Get/Document-815/BG\\_AD\\_2\\_BGKK-VAC\\_en.pdf](http://www.slv.dk/Dokumenter/dsweb/Get/Document-815/BG_AD_2_BGKK-VAC_en.pdf)) red circles mark the approximate position of the synoptical stations 04360 Tasiilaq and 04361 Kulusuk.

WMO station	Name	Start	End	latitude (decimal degrees N)	longitude (decimal degrees W)	Elevation (meters above sealevel)
04360	Tasiilaq	01-01-1958	01-04-1982	65,6	37,633	36
04360	Tasiilaq	01-04-1982	15-08-2005	65,6	37,617	50
04360	Tasiilaq	15-08-2005	-	65,611	37,637	54
04361	Mittarfik Kulusuk	28-11-2000	-	65,583	37,15	35

Table 2. Station positions.

WMO station	Name	Start	Observations frequency
04360	Tasiilaq	01-01-1958	Every 3 hours: 00, 03, 06, 09, 12, 15, 18, 21 UTC
04360	Tasiilaq	05-08-2005	Every hour
04361	Mittarfik Kulusuk	28-11-2000	Every hour

Table 3. Observations frequency.

WMO station	Name	Wind	Date of information
04360	Tasiilaq	Vaisala ultra sonic WS425	01-10-2007
04361	Mittarfik Kulusuk	cup anemometer and wind vane ?	-

Table 4. Measurement equipment





Figure 2. Station 04360 Tasilaq 25-07-2008, wind is measured 10 m above ground.



Figure 3. Station 04361 Mittarfik Kulusuk, wind is measured 6-10 m above ground. No picture available.

# Data material Dec. 2000 – Aug. 2010

Station 04360 Tasilaq

Total number of available observations during the period: 01-12-2000 – 31-08-2010

year	Obs	Hour (UTC)																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
2000	wind	31	0	0	31	0	0	30	0	0	31	0	31	0	0	31	0	0	0	31	0	0	31	0	0
	gust	1	0	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	0	1	0	0	1	0	0
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	wind	360	0	0	361	0	0	361	0	0	360	0	363	0	0	360	0	0	0	360	0	0	361	0	0
	gust	35	0	0	33	0	0	35	0	0	33	0	30	0	0	31	0	0	0	30	0	0	39	0	0
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	wind	354	0	0	357	0	0	355	0	0	354	0	362	0	0	356	0	0	0	357	0	0	355	0	0
	gust	29	0	0	22	0	0	27	0	0	26	0	31	0	0	32	0	0	0	23	0	0	23	0	0
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	wind	362	0	0	360	0	0	358	0	0	358	0	361	0	0	358	0	0	0	359	0	0	355	0	0
	gust	29	0	0	18	0	0	15	0	0	13	0	24	0	0	20	0	0	0	18	0	0	19	0	0
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	wind	362	0	0	361	0	0	360	0	0	359	0	364	0	0	363	0	0	0	365	0	0	363	0	0
	gust	22	0	0	20	0	0	16	0	0	11	0	23	0	0	22	0	0	0	18	0	0	22	0	0
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	wind	360	148	148	363	148	147	362	146	146	363	146	146	360	148	145	361	148	148	361	146	147	361	147	146
	gust	53	13	13	24	17	16	31	19	17	32	18	20	45	19	19	43	22	21	49	20	18	46	18	17
	max3sws	128	129	130	130	130	129	128	128	128	130	128	128	128	131	129	129	130	129	129	129	129	128	129	128
2006	wind	329	329	329	332	329	331	331	331	332	330	329	328	328	328	326	328	329	328	328	330	331	330	329	330
	gust	61	41	43	50	27	37	62	34	35	47	35	38	64	41	34	57	29	38	70	35	34	47	35	33
	max3sws	331	330	329	330	329	331	328	331	332	331	330	329	327	325	328	329	329	328	327	330	330	329	329	329
2007	wind	330	330	327	330	327	325	325	325	327	323	322	324	330	329	327	330	329	329	330	330	328	328	329	325
	gust	30	18	18	20	19	21	27	20	17	25	18	15	36	20	21	28	21	19	31	17	19	27	19	22
	max3sws	184	185	183	182	183	182	182	182	180	182	179	180	182	184	186	187	186	186	184	183	182	184	185	182
2008	wind	272	270	272	268	270	269	268	265	266	267	266	265	264	270	268	271	271	270	271	267	271	269	273	270
	gust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	wind	357	353	354	354	355	353	355	356	353	351	349	351	353	357	354	357	356	355	359	356	360	361	354	355
	gust	20	13	14	16	12	12	17	15	13	20	11	9	21	11	13	17	13	11	19	10	11	14	10	13
	max3sws	85	87	88	87	89	89	88	88	89	88	88	88	87	89	88	90	90	90	91	90	91	91	88	89
2010	wind	208	205	205	206	205	204	204	205	206	207	207	208	207	206	204	204	205	209	209	208	209	206	205	205
	gust	32	19	21	27	17	20	34	21	21	27	19	18	31	19	18	27	16	17	36	17	12	23	16	17
	max3sws	207	205	207	206	205	204	204	205	206	207	208	208	207	206	204	204	205	209	208	208	209	206	207	205

Table 5. Available wind parameters from 04360 Tasilaq during the period of overlap with station 04361 Mittarfik Kulusuk. 'wind' is observations of 10 min average wind speed and direction. 'Gust' is the maximum gust preceding period that is only recorded when the gust exceeds the 10 min average by at least 10 kt. 'Max3sws' is maximum 3 s wind speed preceding hour.

Station 04361 Mittarfik Kulusuk

Total number of available observations during the period: 01-12-2000 – 31-08-2010

year	Obs	Hour (UTC)																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
2000	wind	27	27	27	31	31	31	31	30	30	30	31	31	31	31	31	31	31	30	30	29	28	27	27	26
	gust	11	4	3	5	4	6	3	3	4	3	3	5	3	3	4	5	4	3	7	5	3	7	5	4
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	wind	311	322	315	330	330	323	333	336	337	335	330	321	333	331	332	330	330	317	328	328	328	328	325	324
	gust	73	50	48	71	51	84	46	47	67	40	48	71	53	45	74	42	42	73	49	47	62	47	46	
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2002	wind	316	316	318	318	316	316	314	316	316	317	319	318	317	319	316	317	320	321	321	319	318	318	317	317
	gust	113	82	67	95	76	74	115	76	80	100	81	114	77	73	91	72	79	112	70	70	96	75	77	
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2003	wind	332	336	337	341	339	338	340	338	340	339	341	335	337	338	334	338	341	340	341	337	339	334	333	331
	gust	96	55	61	83	58	60	96	61	71	85	57	58	97	56	55	77	54	97	56	58	79	54	58	
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2004	wind	344	344	342	347	348	348	351	349	349	352	353	353	355	356	353	354	349	350	349	349	347	345	344	
	gust	83	41	45	62	39	34	77	45	48	72	49	42	83	47	45	60	45	83	46	43	67	48	40	
	max3sws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2005	wind	343	342	343	351	351	350	347	348	347	348	347	349	350	346	348	349	346	345	346	346	342	340	339	
	gust	85	50	48	65	50	52	83	51	53	75	48	50	94	47	43	69	52	88	45	37	60	44	46	
	max3sws	35	35	35	35	35	35	35	35	34	35	36	36	36	36	36	36	35	35	35	35	34	35	35	
2006	wind	268	266	266	268	266	264	266	266	265	268	274	272	270	276	276	276	274	275	272	271	273	272	271	272
	gust	52	30	24	43	22	26	61	17	21	30	21	24	49	27	21	38	25	27	52	27	28	45	27	
	max3sws	269	266	266	268	266	264	265	266	266	271	275	273	274	276	276	276	275	275	273	271	273	272	271	272
2007	wind	273	274	272	273	272	273	272	272	270	273	272	276	275	275	276	275	276	274	275	273	274	274	273	273
	gust	65	34	37	49	37	35	61	36	39	52	33	40	62	38	35	46	36	40	64	38	37	54	33	42
	max3sws	273	274	272	273	270	272	271	271	271	273	274	276	275	275	276	276	275	275	273	276	275	274	274	273
2008	wind	345	344	344	343	342	344	346	345	345	343	341	344	337	341	342	345	346	342	341	342	344	344	345	345
	gust	104	59	65	89	64	64	115	57	54	79	61	61	95	52	56	77	53	95	51	54	84	57	57	
	max3sws	345	344	344	343	345	345	346	345	345	344	341	345	343	344	347	347	347	342	343	344	346	346	345	345
2009	wind	350	349	350	349	351	349	348	350	351	351	350	349	347	350	349	350	350	350	351	352	352	351	350	352
	gust	92	61	58	70	59	56	90	64	59	85	67	66	105	67	62	88	61	106	62	55	75	58	59	
	max3sws	350	353	352	352	351	349	353	354	354	355	356	353	352	353	354	354	353	356	352	354	354	354	353	353
2010	wind	232	232	232	232	230	230	230	228	227	228	226	233	233	231	230	232	231	231	232	232	233	234	234	234
	gust	59	34	31	48	28	30	60	36	34	51	30	26	62	36	29	48	36	33	59	35	38	49	31	28
	max3sws	232	232	233	231	232	231	230	229	227	231	234	237	237	238	237	234	236	236	234	234	235	233	232	232

Table 6. Available wind parameters from 04361 Mittarfik Kulusuk during the period of overlap with station 04360 Tasilaq. 'wind' is observations of 10 min average wind speed and direction. 'Gust' is the maximum gust preceding period that is only recorded when the gust exceeds the 10 min average by at least 10 kt. 'Max3sws' is maximum 3 s wind speed preceding hour.

**A**

Number of wind (10 min average) observations available for statistics.  
Number of observation hours with coinciding wind observations (10 min average wind speed and wind direction) from 04360 Tasilaq and 04361 Mittafik Kulusuk

Year	Hour (UTC)																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
2000	27	0	0	31	0	0	30	0	0	30	0	0	31	0	0	31	0	0	30	0	0	27	0	0
2001	308	0	0	328	0	0	322	0	0	335	0	0	321	0	0	330	0	0	314	0	0	325	0	0
2002	311	0	0	314	0	0	310	0	0	310	0	0	316	0	0	311	0	0	315	0	0	311	0	0
2003	330	0	0	337	0	0	333	0	0	333	0	0	333	0	0	333	0	0	336	0	0	325	0	0
2004	340	0	0	343	0	0	345	0	0	347	0	0	353	0	0	351	0	0	349	0	0	344	0	0
2005	339	141	142	349	144	143	345	141	142	347	141	143	347	143	142	345	144	142	342	141	140	339	137	136
2006	247	244	245	247	243	244	243	243	241	244	249	246	246	250	250	253	251	251	249	250	251	250	247	249
2007	255	256	253	256	253	251	251	251	251	250	249	255	257	256	258	257	256	256	255	257	251	254	255	252
2008	254	251	253	248	249	251	251	248	247	246	246	246	237	248	245	251	253	251	249	247	254	251	256	253
2009	343	337	339	338	341	337	339	341	339	337	334	336	338	344	339	343	342	340	346	343	347	347	340	342
2010	199	196	196	197	197	196	196	197	196	197	200	204	200	198	196	195	197	201	200	199	202	200	198	198

**B**

Number of wind (10 min average) observations available for statistics.  
Number of observation hours per month with coinciding wind observations (10 min average wind speed and wind direction) from 04360 Tasilaq and 04361 Mittafik Kulusuk

Year	Month												
	1	2	3	4	5	6	7	8	9	10	11	12	
2000	0	0	0	0	0	0	0	0	0	0	0	0	237
2001	108	206	229	214	246	235	240	213	236	246	238	238	172
2002	237	222	238	233	241	238	239	0	141	225	238	246	246
2003	244	218	239	234	243	223	237	242	213	106	233	228	228
2004	241	207	243	234	244	223	242	230	234	231	235	208	208
2005	221	212	234	239	244	200	237	653	693	666	681	735	735
2006	541	291	726	709	701	714	735	734	576	206	0	0	0
2007	0	0	113	669	733	683	738	738	714	723	675	309	309
2008	58	609	660	659	693	0	150	684	645	653	491	683	683
2009	713	644	727	704	670	596	607	731	618	738	708	716	716
2010	677	639	643	142	574	656	741	683	0	0	0	0	0

**Table 7. No. of obs. with coinciding wind measurements at Tasilaq and Mittafik Kulusuk, sum per hour (A) and per month (B).**



Number of GUST measurements at 04360 Tasiilaq												
year	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
2000	0	0	0	0	0	0	0	0	0	0	0	2
2001	3	14	8	1	2	2	1	0	3	4	17	1
2002	15	9	8	4	2	0	0	0	4	7	4	5
2003	4	9	7	9	2	0	0	0	3	2	9	3
2004	0	3	12	2	3	0	0	0	1	5	7	9
2005	8	13	3	3	4	1	4	8	5	7	18	21
2006	20	4	6	15	8	5	5	6	7	2	0	0
2007	0	0	0	15	2	9	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	13	8	19
2010	11	13	10	0	7	11	2	3	0	0	0	0

**Table 8. Number of available gust observations at 00 UTC or 12 UTC from 04360 Tasiilaq in the instance of available coinciding wind measurements (10 min. average wind direction and wind speed) at stations 04360 Tasiilaq and 04361 Mittarfik Kulusuk. Please note that ‘gust’ may only be reported at 00 UTC or 12 UTC when a gust during the preceding 6 hours has exceed the 10 min. average wind speed at the time of that gust by 10 knots or more.**

Number of GUST measurements at 04361 Mittarfik Kulusuk												
year	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
2000	0	0	0	0	0	0	0	0	0	0	0	16
2001	12	20	17	13	12	9	4	5	15	8	23	6
2002	43	23	28	16	16	10	3	0	13	18	29	23
2003	27	33	25	29	9	5	6	1	10	12	17	17
2004	20	15	28	9	18	4	9	6	14	6	20	17
2005	25	18	23	19	7	11	5	14	3	11	20	23
2006	11	6	17	10	6	9	3	5	10	1	0	0
2007	0	0	1	25	4	15	4	3	8	18	30	5
2008	0	17	17	16	13	0	3	5	15	13	21	30
2009	28	19	26	20	15	4	5	11	10	15	11	22
2010	24	23	28	4	5	12	4	4	0	0	0	0

**Table 9. Number of available gust observations at 00 UTC or 12 UTC from 04361 Mittarfik Kulusuk in the instance of available coinciding wind measurements (10 min. average wind direction and wind speed) at stations 04360 Tasiilaq and 04361 Mittarfik Kulusuk.**



Number of observations hours 00 UTC or 12 UTC with coinciding 04360 and 04361 wind measurements												
year	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
2000	0	0	0	0	0	0	0	0	0	0	0	58
2001	26	52	56	54	61	58	59	53	59	62	59	30
2002	60	56	59	58	62	60	60	0	36	55	60	61
2003	59	56	59	59	62	54	61	60	52	27	57	57
2004	61	52	60	59	60	58	60	57	58	58	58	52
2005	55	53	59	60	61	49	58	59	59	54	57	62
2006	45	23	58	58	58	60	62	61	50	18	0	0
2007	0	0	9	57	62	57	62	62	60	61	57	25
2008	4	48	55	55	59	0	12	57	54	51	41	55
2009	60	53	62	60	58	51	49	61	52	62	56	57
2010	56	53	55	12	49	56	62	56	0	0	0	0

**Table 10. Number of observation hours 00 UTC or 12 UTC with coinciding 04360 and 04361 wind measurements.**

Number of coinciding max3sws at 04360 Tasiilaq and 04361 Mittarfik Kulusuk												
year	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
2005	0	0	0	0	0	0	0	0	0	0	101	733
2006	540	293	716	712	704	715	735	736	578	207	0	0
2007	0	0	113	669	736	682	538	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	699	708	714
2010	672	641	646	144	579	670	740	687	0	0	0	0

**Table 11. Number of observations hours per month during the period December 2000 – August 2010 with coinciding measurements of max3sws (3 s maximum wind speed preceding hour) at the two stations 04360 Tasiilaq and 04361 Mittarfik Kulusuk.**

## Wind statistics

### Plots of wind speed vs. wind direction

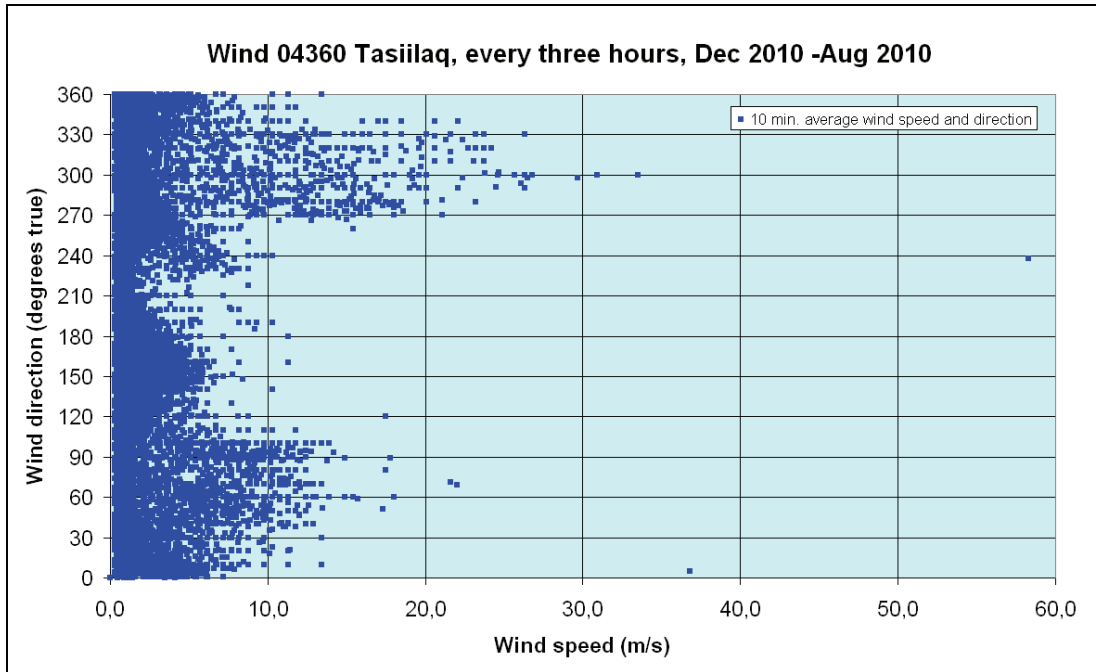


Figure 4. Station 04360 Tasiilaq Wind speed vs. Wind direction. The shown 23819 available observations with coinciding 10 min average wind measurement at 04360 Tasiilaq and 04361 Mittarfik Kulusuk during the period December 2000 – August 2010 at observations hours 00, 03, 06, 09, 12, 15, 18 or 21 UTC represent a regularity of 83,6%.

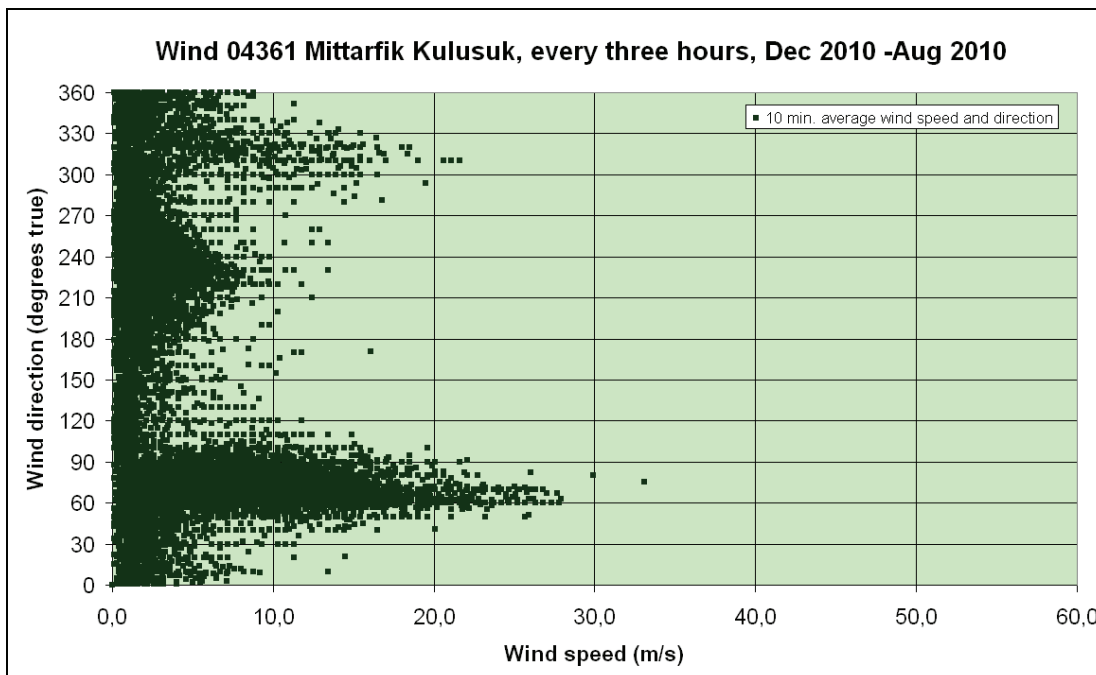


Figure 5. Station 04361 Mittarfik Kulusuk Wind speed vs. Wind direction. The shown 23819 available observations with coinciding 10 min average wind measurement at 04360 Tasiilaq and 04361 Mittarfik Kulusuk during the period December 2000 – August 2010 at observations hours 00, 03, 06, 09, 12, 15, 18 or 21 UTC represent a regularity of 83,6%.

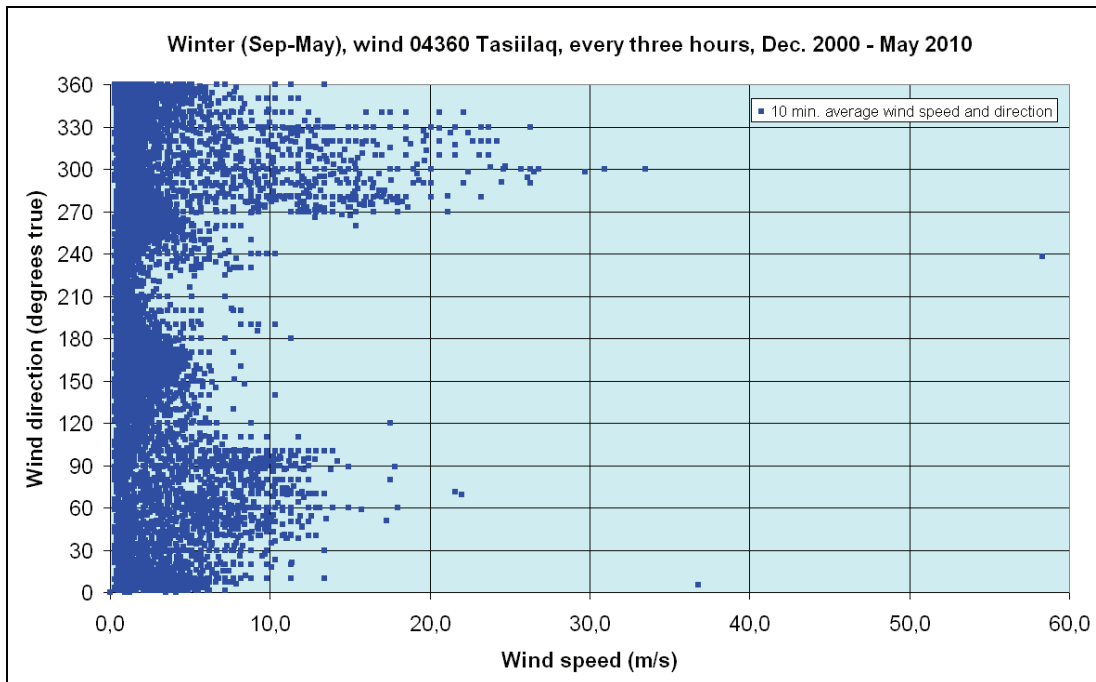


Figure 6. Winter values, Station 04360 Tasiilaq Wind speed vs. Wind direction. Available observations with coinciding 10 min average wind measurement at 04360 Tasiilaq and 04361 Mittarfik Kulusuk during the period December 2000 – August 2010 at observations hours 00, 03, 06, 09, 12, 15, 18 or 21 UTC and in months September, October, November, December, January, February, March, April or May.

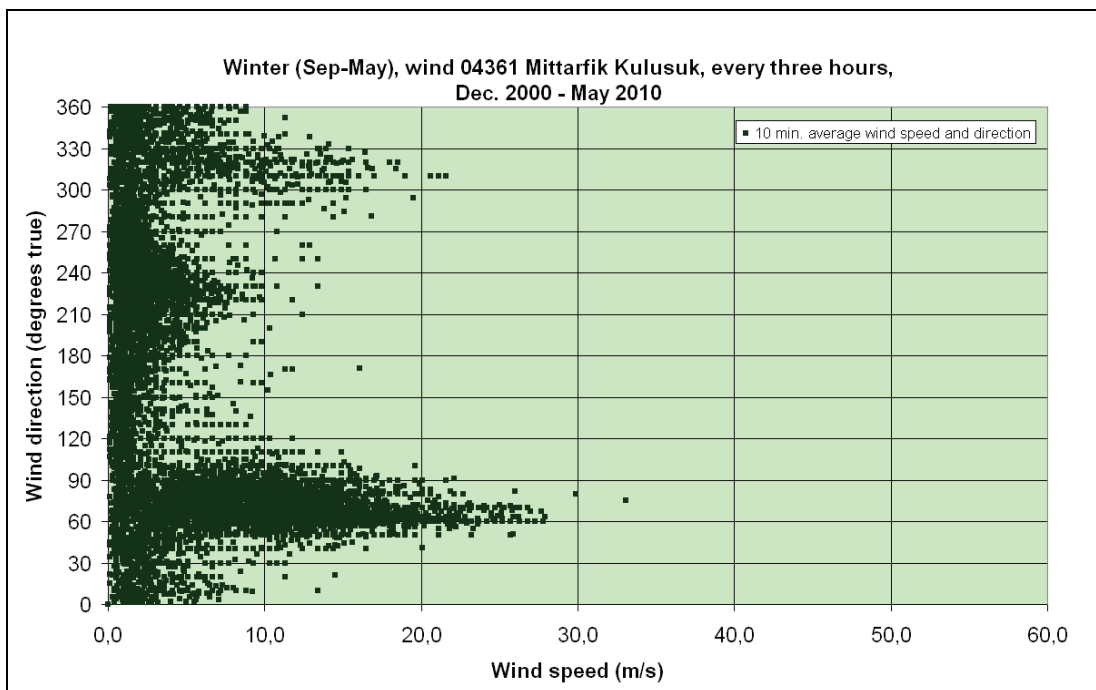


Figure 7. Winter values, Station 04361 Mittarfik Kulusuk Wind speed vs. Wind direction. Available observations with coinciding 10 min average wind measurement at 04360 Tasiilaq and 04361 Mittarfik Kulusuk during the period December 2000 – August 2010 at observations hours 00, 03, 06, 09, 12, 15, 18 or 21 UTC and in months September, October, November, December, January, February, March, April or May.

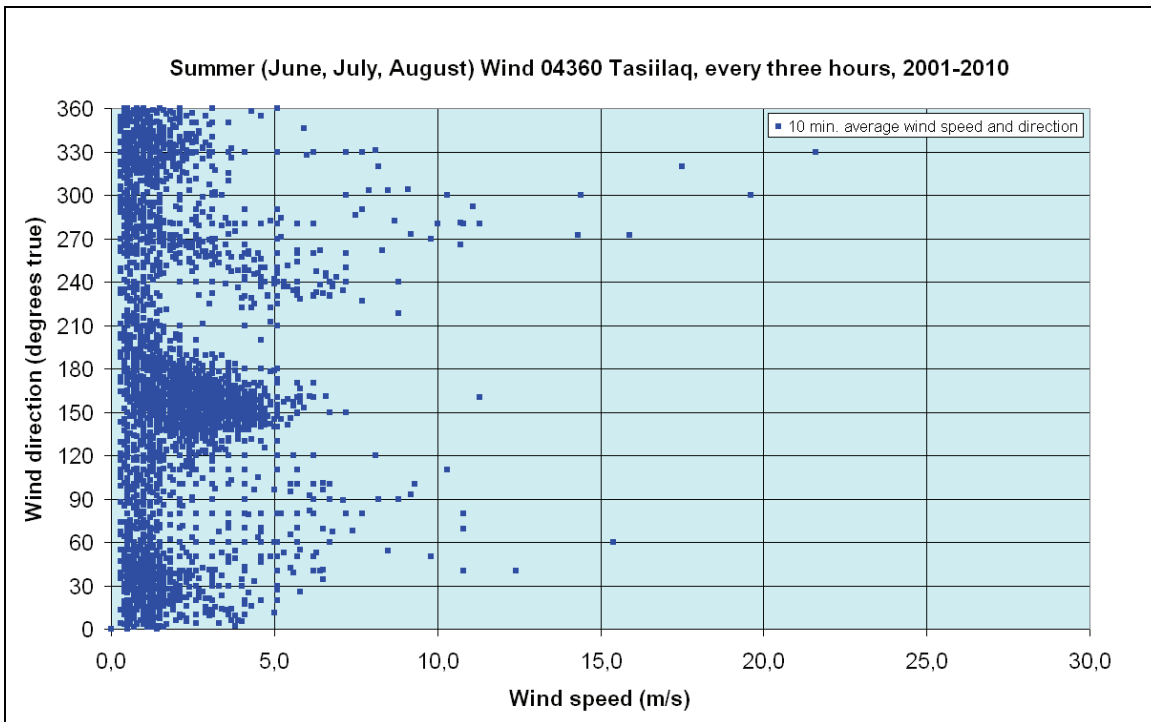


Figure 8. Summer values, Station 04360 Tasiilaq Wind speed vs. Wind direction. Available observations with coinciding 10 min average wind measurement at 04360 Tasiilaq and 04361 Mittarfik Kulusuk during the period December 2000 – August 2010 at observations hours 00, 03, 06, 09, 12, 15, 18 or 21 UTC and in months June, July or August.

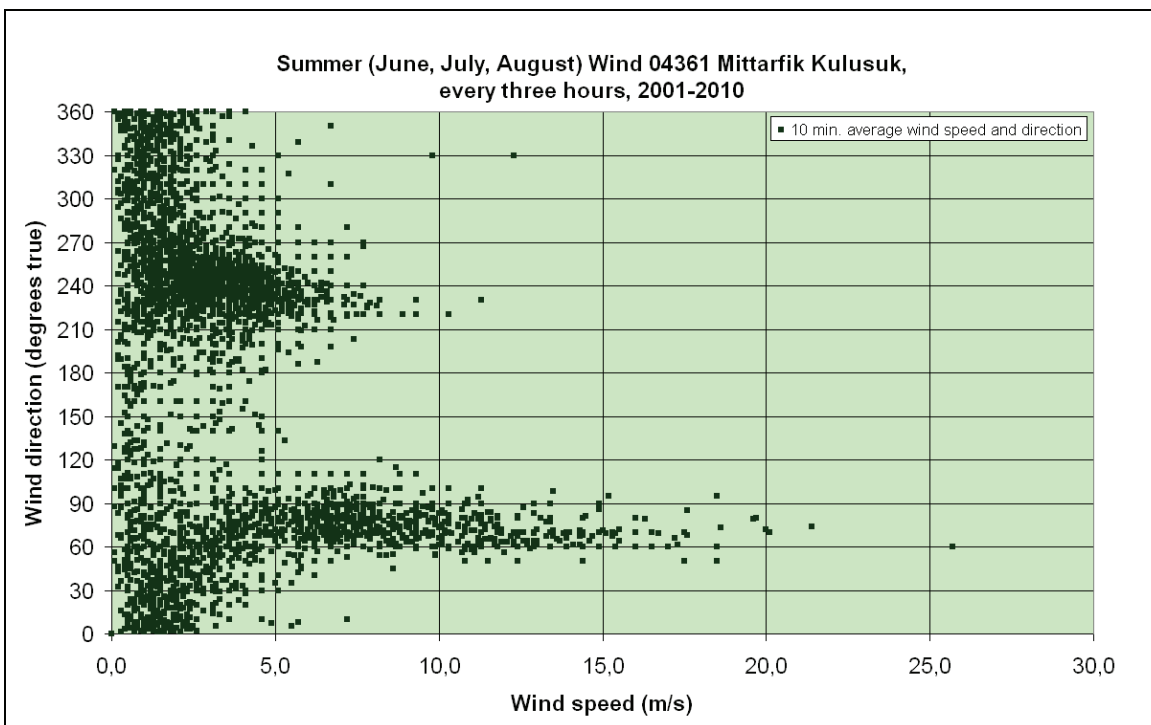


Figure 9. Summer values, Station 04361 Mittarfik Kulusuk Wind speed vs. Wind direction. Available observations with coinciding 10 min average wind measurement at 04360 Tasiilaq and 04361 Mittarfik Kulusuk during the period December 2000 – August 2010 at observations hours 00, 03, 06, 09, 12, 15, 18 or 21 UTC and in months June, July or August.



## 10 min. average wind speed and wind direction frequencies

04360 Tasilaq	N	30	60	E	120	150	S	210	240	V	300	330	Total
0,1 -20,7 m/s (%)	7,842	6,759	5,840	4,946	3,514	14,400	10,559	3,044	4,182	15,332	7,125	7,439	90,982
20,8-25,9 m/s (%)	-	-	,008	-	-	-	-	-	-	,013	,042	,050	0,113
26-33,7 m/s (%)	-	-	-	-	-	-	-	-	-	-	,034	,008	0,042
>=33,8 m/s (%)	,004	-	-	-	-	-	-	-	,004	-	-	-	0,008
Mean wind speed (m/s)	2,7	2,5	3,9	4,4	2,3	2,4	2,0	1,2	2,1	2,6	3,3	2,9	2,4
Number of observations = 23819.													
Calm defined as wind speed = 0 m/s													
Number of observations with calm/varying wind direction: 2109 = 8,9%.													

**Table 12. Frequencies (%) 10 min. average wind speed and direction from 04360 Tasilaq. Based on 3 hourly observations coinciding with observations from 04361 Mittarfik Kulusuk during the period December 2000 – August 2010 (regularity 83,6%).**

04361 Mittarfik Kulusuk	N	30	60	E	120	150	S	210	240	V	300	330	Total
0,1 -20,7 m/s (%)	4,152	3,787	21,617	18,116	2,569	2,305	2,972	8,644	17,410	6,348	4,652	5,084	97,657
20,8-25,9 m/s (%)	-	-	,764	,025	-	-	-	-	-	-	,008	-	0,798
26-33,7 m/s (%)	-	-	,071	,008	-	-	-	-	-	-	-	-	0,080
>=33,8 m/s (%)	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean wind speed (m/s)	2,4	2,7	9,6	7,4	3,1	1,9	1,9	2,6	2,8	2,2	3,4	3,7	5,1
Number of observations = 23819.													
Calm defined as wind speed = 0 m/s													
Number of observations with calm/varying wind direction: 349 = 1,5%.													

**Table 13. Frequencies (%) 10 min. average wind speed and direction from 04361 Mittarfik Kulusuk. Based on 3 hourly observations coinciding with observations from 04360 Tasilaq during the period December 2000 – August 2010 (regularity 83,6%).**

## 10 min. average wind speed, monthly frequencies

Average wind speed (10 min. mean) frequencies						
	04360 Tasiilaq	04360 Tasiilaq	04360 Tasiilaq	04361 Mittarfik Kulusuk	04361 Mittarfik Kulusuk	04361 Mittarfik Kulusuk
	freq (%)	freq (%)	freq (%)	freq (%)	freq (%)	freq (%)
month	< 20.8 m/s	< 26 m/s	< 33,8 m/s	< 20.8 m/s	< 26 m/s	< 33,8 m/s
1	99,77	100,00	100,00	97,55	99,82	100,00
2	99,27	99,67	100,00	98,16	99,78	100,00
3	99,72	99,81	99,95	99,07	99,86	100,00
4	99,95	99,95	99,95	98,82	99,91	100,00
5	100,00	100,00	100,00	99,87	100,00	100,00
6	100,00	100,00	100,00	100,00	100,00	100,00
7	99,95	100,00	100,00	100,00	100,00	100,00
8	100,00	100,00	100,00	99,91	100,00	100,00
9	99,90	100,00	100,00	99,63	99,95	100,00
10	99,89	100,00	100,00	99,28	99,94	100,00
11	99,55	99,94	100,00	98,33	99,78	100,00
12	99,89	100,00	100,00	98,21	99,95	100,00
annual	99,84	99,95	99,99	99,12	99,92	100,00

Table 14. Based on all available coinciding 04360 Tasiilaq and 04361 Mittarfik Kulusuk observations of 10 min. average wind speed at hours 00, 03, 06, 09, 12, 15, 18 or 21 UTC during the period December 2000 – August 2010. Please confer Table 7 for availability.

## Gust, monthly frequencies

	Average number of 6-hours periods before radiosonde launch with maximum gust exceeding limits												
	Month												Annual
	1	2	3	4	5	6	7	8	9	10	11	12	
04360 Tasiilaq No. of gust $\geq$ 20.8 m/s	3,17	2,40	1,80	3,25	1,67	0	2,00	1,00	1,33	1,00	2,80	2,20	22,6
04360 Tasiilaq No. of gust $\geq$ 26 m/s	2,33	2,67	2,00	2,00	2,00	0	2,00	1,00	0	1,00	2,00	1,00	17,9
04360 Tasiilaq No. of gust $\geq$ 33,8 m/s	2,00	2,50	1,50	0	1,00	0	0	0	0	1,00	1,50	1,00	10,5
04361 Mittarfik Kulusuk No. of gust $\geq$ 20.8 m/s	10,57	9,86	9,57	6,43	2,75	4,00	2,00	1,80	4,20	7,00	7,50	8,43	65,2
04361 Mittarfik Kulusuk No. of gust $\geq$ 26 m/s	7,00	6,00	3,71	4,20	2,60	2,33	1,50	1,00	1,40	6,00	3,67	6,67	45,6
04361 Mittarfik Kulusuk No. of gust $\geq$ 33,8 m/s	3,60	3,25	1,33	4,00	1,50	1,00	1,00	.	1,00	3,50	1,33	2,80	24,9
Number of years in statistics	7	7	7	7	8	4	4	6	6	4	7	8	-

Table 15. Average number per month of time periods 18-00 UTC or 06-12 UTC with the maximum gust exceeding the said limits. Based on all available gust observations, in the instances of coinciding 04360 and 04361 wind observations at hours 00 or 12 UTC during the period December 2000 – August 2010, excluding months with less than 20 coinciding wind observations at 00 or 12 UTC and excluding the period July 2007 – September 2009 where station 04360 Tasiilaq did not make gust observations. Please confer Table 10 for availability.



### 3 s max wind, monthly frequencies

Average max wind frequencies						
	Tasiilaq	Tasiilaq	Tasiilaq	Kulusuk	Kulusuk	Kulusuk
	freq (%)	freq (%)	freq (%)	freq (%)	freq (%)	freq (%)
	max3sws	max3sws	max3sws	max3sws	max3sws	max3sws
month	< 20.8 m/s	< 26 m/s	< 33,8 m/s	< 20.8 m/s	< 26 m/s	< 33,8 m/s
1	92,90	97,28	98,35	91,42	95,63	99,26
2	97,97	99,57	99,57	87,79	94,33	100
3	97,76	98,17	99,66	92,95	98,51	99,86
4	95,80	98,49	99,87	92,98	98,03	99,93
5	98,86	99,36	99,80	99,16	99,95	99,95
6	99,90	100	100	97,00	98,84	99,95
7	99,95	100	100	98,81	99,50	100
8	99,79	100	100	99,51	99,65	100
9	99,65	99,83	100	96,37	98,96	100
10	99,56	99,78	100	91,83	95,70	98,79
11	97,16	99,75	100	90,36	94,56	97,03
12	98,00	99,86	100	82,24	89,29	98,20
annual	98,24	99,35	99,79	94,09	97,31	99,54

**Table 16. Based on all coinciding measurements of max3sws (maximum 3 s wind speed past hour), please confer Table 11 for data availability.**



## How to order wind data

Data requests are handled by:

The DMI Data & Climate Information

Phone +45 39157500, Monday -Friday hours 9-15 (UTC +1, summer: UTC +2),  
or use the contact formula (in Danish) at [www.dmi.dk](http://www.dmi.dk).

A guide to data directly available from the DMI website is found in:

DMI Technical report No. 09-07

John Cappelen (ed)

Guide to Climate Data and Information from the Danish Meteorological Institute  
Updated July 2009

Link to pdf-version: <http://www.dmi.dk/dmi/tr09-07.pdf>

For research purposes a copy of Greenland SYNOP data may be borrowed, see conditions and procedure in:

DMI Technical Report No. 10-08

Lone Seir Carstensen and Bent Vraae Jørgensen

Weather and Climate Data from Greenland 1958-2009

Dataset available for research and educational purposes

Descriptions and Documentation of Observations of Temperature, Precipitation, Wind, Cloud Cover, Air Pressure, Humidity and Depth of Snow

Link to pdf-version: <http://www.dmi.dk/dmi/tr10-08.pdf>

## Previous reports

Previous reports from the Danish Meteorological Institute can be found on:

<http://www.dmi.dk/dmi/dmi-publikationer.htm>