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METEOROLOGICAL DATA SUMMARIES FOR THE TFTR
FROM JANUARY 1984 TO DECEMBER 1985

BY

J. KOLIBAL, L.P. KU, S.L. LIEW

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PLASMA
PHYSICS
LABORATORY

PRINCETON UNIVERSITY
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FROM JANUARY 1984 TO DECEMBER 1985

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Abstract

The first two years of meteorological data for the TFTR are reviewed and summarized.

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I. Introduction

This report reviews the first two years of meteorological data gathered for the Tokamak Fusion Test Reactor (TFTR) at Princeton Plasma Physics Laboratory (PPPL) from January 1, 1984 to December 31, 1985. The meteorological station at TFTR is located at D-Site, to the east of the motor generator building as shown in Fig. 1. The station consists of a 60 m tower which is instrumented at 10, 30, and 60 m along with the associated equipment for data acquisition and logging. Instruments on the tower measure the air temperature, wind speed, wind direction, dew point, and the standard deviation of the horizontal wind direction as shown in Table 1. The purpose of the station is to gather site specific meteorological data to assess atmospheric transport and dispersion for TFTR.

Although no specific DOE orders or regulatory requirements exist, the meteorological program has been designed to be consistent with the recommendations of DOE/EP-0023.¹ The instrumentation has been set up to meet Nuclear Regulatory Commission (NRC) Guide 1.23 (Rev. 1)² requirements for meteorological monitoring equipment and data acquisition devices. Data recording is accomplished using a digital data acquisition system which has an analog backup recording system. The data from each sensor are sampled every five seconds, and hourly averages are computed and logged on tapes. It is these averages which form the basis for the yearly and seasonally averaged meteorological data for PPPL. Instrument calibration was done by TRC Environmental Consultants.

II. Background for Analysis

The meteorological data analysis consists of three categories: 1) scatter diagrams of the hourly data from various sensors, 2) tabulated summaries of the joint frequency of the wind direction and wind speed by stability class, and 3) wind rose plots of the joint frequency by stability class data. The hourly data are processed using the codes TJFD,³ WROSE,⁴ and TSD⁵ which are available on the National Magnetic Fusion Energy Computer network.

The scatter diagrams of the hourly data are for the purpose of demonstrating characteristics for visual verification. While they serve as consistency checks on the data, this function is performed by TRC in order to assure a high data recovery rate. In addition, the hourly data also have been rechecked for consistency during processing for the report. These scatter diagrams show the hourly variation from March 1984 to February 1985 of 1) temperature at 10 m, 2) dew point at 10 m, 3) vertical lapse rate, 4) sigma theta at 30 and 60 m, 5) wind speed at 10, 30, and 60 m, and 6) the number of instrument failures. The vertical lapse rate is also examined on a three-hour basis from 00.00 h to 24.00 h in order to document its diurnal variation. The instrument failure at any hour accounts for the loss of data due to any malfunction from all instrumentation shown in Table 1 and for the loss of the calculated variables sigma theta at 30 m and 60 m and wind speed at 10 m. The number of failures is at most 10.

The joint frequency tables are provided for elevations of 10 m, 30 m, and 60 m. The 10 m data are based on extrapolating the data at 30 m to the 10 m height. This is done because at the location of the tower the 10 m elevation could be influenced by the wake of the buildings and tree line on the TFTR site. Thuiller's equations are used to extrapolate, which is consistent with the recommendations of the Final TRC Monitoring Plan.⁶ There is a separate table of each stability class and a summary table for all stability classes.

In each table is recorded the total number of events and frequency for each wind direction and wind speed. This frequency is normalized to the total number of events including calms which occurred for that stability class. The count of the total number of calms for each stability class, the total number of valid data, and the number of missing data for each stability class is provided. The number of missing data in a given stability class includes, of course, only those data which could not be used because of missing wind speed or wind direction. Those data which had no stability class do not show up in these tables but do show up in the number of missing data for all stability classes. The total fraction for each stability class is the total number of valid data, including calms divided by the total number of valid data for all stability classes. The stability classes were determined by the vertical

lapse rate measurement and not by the standard deviation of the horizontal wind direction. These classes were divided on the basis of Regulatory Guide 1.23, as shown in Table 2.

The wind rose data are plotted on the basis of two yearly averages sorted by elevation. For ease of normalization, the frequency of the occurrence of a stability class is given on each wind rose plot. There are 10 wind speed categories, including calms, which have been reduced from the original 13 categories into which the hourly data are segregated. The wind direction shown on these plots is the direction from which the wind is blowing. The values are plotted on a logarithmic scale from 0.20% to 20%. Each increasing wind speed category is indicated by a thicker bar. The length of each bar of a given thickness in any direction represents the frequency of occurrence of that wind speed category for that direction. The total length of a bar from the center represents the cumulative frequency for that direction.

Throughout this report, the lower elevation refers to the 10 m and 30 m measurements and the upper elevation to 60 m.

III. Discussion

Examining the overall characteristics of the meteorological data for the year shows that the TFTR site can be characterized as predominantly neutral to moderately stable, with average winds of 2.8 m/s at the 30 m level, rising to 4.1 m/s at 60 m. From the joint frequency tables, it is evident that the atmospheric stability conditions can be classified as unstable less than 10.1 percent of the time and as extremely stable less than 3 percent of the time. Neutral to slightly stable conditions occur at the site about 69.6 percent of the time. Examining the scatter diagrams showing the diurnal variation of the vertical lapse rate shows the expected presence of inversions, that is, a positive lapse rate during nocturnal periods. The destruction of these inversions due to solar heating is evident from about 7.00 h, such that by 10.00 h to 15.00 h, the lapse rate is almost entirely adiabatic.

From the scatter diagrams for the wind speeds at 30 and 60 m shown in Figs. 15 and 16, the weakest winds occurred in summer. The incidence of

calms, that is those hours for which the average wind speed was less than 0.22 m/s, was less than 0.018 percent at 30 m, and less than 0.006 percent at 60 m. Wind speeds above 8.0 m/s at 30 m, and above 10 m/s at 60 m were relatively rare. No hourly averaged wind speed occurred above 18.0 m/s. Extrapolating down to 10 m, the incidence of calms was less than 0.15 percent with the incidence of winds above 7.0 m/s relatively rare. The average yearly wind speed at this elevation is about 2.1 m/s.

The occurrence of instrument failures shown in Figs. 18 and 35 demonstrates an excellent data recovery rate with only a minimal occurrence of consecutive loss of data. From the joint frequency tables, for each year the annual data recovery exceeds 92.6 percent at the lower and upper elevations for 1984 and exceeds 98.8% for 1985. This is above the requirement set by Regulatory Guide 1.23 (Rev. 1) that the annual joint data recovery at each elevation be at least 90.0 percent.

Looking at the two yearly averaged wind roses, the usual prevalence of westerly winds is apparent with winds from the NNW occurring slightly more often at the lower elevations. At the upper elevation winds from the west and southwest were slightly more frequent. Winds from the southeast direction occurred least often in the distributions.

There is a close relationship between the lapse rate of the atmosphere and the wind speed. At the lower elevations the occurrence of winds below 3.0 m/s when the lapse rate is less than $-1.9^{\circ}\text{C}/100\text{ m}$ is negligible while the occurrence of winds above 3.0 m/s is relatively infrequent when the lapse rate is greater than $1.5^{\circ}\text{C}/100\text{ m}$. At the upper elevation, the trend is the same, although the spread in the wind speeds with stability class is less notable.

The data for the period from January 1984 to December 1985 is consistent with the period from March 1984 to February 1985. The values of the data averages were very similar to those in the first year of data.⁷

IV. Conclusion

The first two years of meteorological data for TFTR have been analyzed. The yearly average site meteorology can be summarized as stable to neutral conditions with light winds blowing at about 2.1 m/s at ground level rising to about 4.1 m/s at 60 m, most often from a westerly direction.

Acknowledgement

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List of Tables

	Page
Table 1 Instrumentation for the Tower	11
Table 2 Classification of Atmospheric Stability	11
Table 3 Joint Frequency Data for Stability Class A, 84/1 to 85/12, 10 m	13
Table 4 Joint Frequency Data for Stability Class B, 84/1 to 85/12, 10 m	14
Table 5 Joint Frequency Data for Stability Class C, 84/1 to 85/12, 10 m	15
Table 6 Joint Frequency Data for Stability Class D, 84/1 to 85/12, 10 m	16
Table 7 Joint Frequency Data for Stability Class E, 84/1 to 85/12, 10 m	17
Table 8 Joint Frequency Data for Stability Class F, 84/1 to 85/12, 10 m	18
Table 9 Joint Frequency Data for Stability Class G, 84/1 to 85/12, 10 m	19
Table 10 Joint Frequency Data for All Stability Classes, 84/1 to 85/12, 10 m	20
Table 11 Joint Frequency Data for Stability Class A, 84/1 to 85/12, 30 m	21

Table 12	Joint Frequency Data for Stability Class B, 84/1 to 85/12, 30 m	22
Table 13	Joint Frequency Data for Stability Class C, 84/1 to 85/12, 30 m	23
Table 14	Joint Frequency Data for Stability Class D, 84/1 to 85/12, 30 m	24
Table 15	Joint Frequency Data for Stability Class E, 84/1 to 85/12, 30 m	25
Table 16	Joint Frequency Data for Stability Class F, 84/1 to 85/12, 30 m	26
Table 17	Joint Frequency Data for Stability Class G, 84/1 to 85/12, 30 m	27
Table 18	Joint Frequency Data for All Stability Classes, 84/1 to 85/12, 60 m	28
Table 19	Joint Frequency Data for Stability Class A, 60 m	29
Table 20	Joint Frequency Data for Stability Class B, 84/1 to 85/12, 60 m	30
Table 21	Joint Frequency Data for Stability Class C, 84/1 to 85/12, 60 m	31
Table 22	Joint Frequency Data for Stability Class D, 84/1 to 85/12, 60 m	32
Table 23	Joint Frequency Data for Stability Class E, 84/1 to 85/12, 60 m	33

Table 24	Joint Frequency Data for Stability Class F, 84/1 to 85/12, 60 m	34
Table 25	Joint Frequency Data for Stability Class G, 84/1 to 85/12, 60 m	35
Table 26	Joint Frequency Data for All Stability Classes 84/1 to 85/12, 60 m	36a

List of Figures

		Page
Fig. 1	Location of Meteorological Station	36b
Fig. 2	Scatter Diagram for Temperature at 10 m, 1984	37
Fig. 3	Scatter Diagram for Dew Point at 10 m, 1984	38
Fig. 4	Scatter Diagram for 10 to 60 m Temperature Difference, 1984	39
Fig. 5	Scatter Diagram for 10 to 60 m Temperature Difference, 0.00 to 3.00 h, 1984	40
Fig. 6	Scatter Diagram for 10 to 60 m Temperature Difference, 4.00 to 6.00 h, 1984	41
Fig. 7	Scatter Diagram for 10 to 60 m Temperature Difference, 7.00 to 9.00 h, 1984	42
Fig. 8	Scatter Diagram for 10 to 60 m Temperature Difference, 10.00 to 12.00 h, 1984	43
Fig. 9	Scatter Diagram for 10 to 60 m Temperature Difference, 13.00 to 15.00 h, 1984	44
Fig. 10	Scatter Diagram for 10 to 60 m Temperature Difference, 16.00 to 18.00 h, 1984	45
Fig. 11	Scatter Diagram for 10 to 60 m Temperature Difference, 19.00 to 21.00 h, 1984	46
Fig. 12	Scatter Diagram for 10 to 60 m Temperature Difference, 22.00 to 24.00 h 1984	47
Fig. 13	Scatter Diagram for Standard Deviation of the Horizontal Wind Speed (Sigma Theta), 30 m, 1984	48
Fig. 14	Scatter Diagram for Standard Deviation of the Horizontal Wind Speed (Sigma Theta), 60 m, 1984	49
Fig. 15	Scatter Diagram for Wind Speed at 10 m, 1984	50
Fig. 16	Scatter Diagram for Wind Speed at 30 m, 1984	51
Fig. 17	Scatter Diagram for Wind Speed at 60 m, 1984	52
Fig. 18	Scatter Diagram for Instrument Failure, 1984	53

Fig. 19	Scatter Diagram for Temperature at 10 m, 1985	54
Fig. 20	Scatter Diagram for Dew Point at 10 m, 1985	55
Fig. 21	Scatter Diagram for 10 to 60 m Temperature Difference, 1985	56
Fig. 22	Scatter Diagram for 10 to 60 m Temperature Difference, 0.00 to 3.00 h, 1985	57
Fig. 23	Scatter Diagram for 10 to 60 m Temperature Difference, 4.00 to 6.00 h, 1985	58
Fig. 24	Scatter Diagram for 10 to 60 m Temperature Difference, 7.00 to 9.00 h, 1985	59
Fig. 25	Scatter Diagram for 10 to 60 m Temperature Difference, 10.00 to 12.00 h, 1985	60
Fig. 26	Scatter Diagram for 10 to 60 m Temperature Difference, 13.00 to 15.00 h, 1985	61
Fig. 27	Scatter Diagram for 10 to 60 m Temperature Difference, 16.00 to 18.00 h, 1985	62
Fig. 28	Scatter Diagram for 10 to 60 m Temperature Difference, 19.00 to 21.00 h, 1985	63
Fig. 29	Scatter Diagram for 10 to 60 m Temperature Difference, 22.00 to 24.00 h 1985	64
Fig. 30	Scatter Diagram for Standard Deviation of the Horizontal Wind Speed (σ_{θ}), 30 m, 1985	65
Fig. 31	Scatter Diagram for Standard Deviation of the Horizontal Wind Speed (σ_{θ}), 60 m, 1985	66
Fig. 32	Scatter Diagram for Wind Speed at 10 m, 1985	67
Fig. 33	Scatter Diagram for Wind Speed at 30 m, 1985	68
Fig. 34	Scatter Diagram for Wind Speed at 60 m, 1985	69
Fig. 35	Scatter Diagram for Instrument Failure, 1985	70
Fig. 36	Wind Rose, 10 m, 84/1 to 85/12	71
Fig. 37	Wind Rose, 30 m, 84/1 to 85/12	72
Fig. 38	Wind Rose, 60 m, 84/1 to 85/12	73

TABLE 1. Instrumentation for the Meteorological Tower

Sensor	Elevation (m)		
	<u>10</u>	<u>30</u>	<u>60</u>
Wind Speed		x	x
Wind Direction		x	x
Temperature	x		
Dew Point	x		
Δ Temperature			x

TABLE 2. Classification of Atmospheric Stability by Temperature Change with Height from USNRC Reg. Guide 1.23 (Rev. 1)

Stability Class	Temperature change	
	Pasquill Category	with height °C/100m
Extremely unstable	A	$\Delta T/\Delta Z < -1.9$
Moderately unstable	B	$-1.9 < \Delta T/\Delta Z < -1.7$
Slightly unstable	C	$-1.7 < \Delta T/\Delta Z < -1.5$
Neutral	D	$-1.5 < \Delta T/\Delta Z < -0.5$
Slightly stable	E	$-0.5 < \Delta T/\Delta Z < 1.5$
Moderately stable	F	$1.5 < \Delta T/\Delta Z < 4.0$
Extremely stable	G	$4.0 < \Delta T/\Delta Z$

Joint Frequency Data for TFTR
Elevation = 10 m

Pasquill stability class A

From 84/ 1 to 85/12

Wind Direction	Wind Speed (m/s)												Total
	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	
	0	0	0	0	0	6	15	3	1	0	0	0	
N	0.000000 0	0.000000 0	0.000000 0	0.000000 1	0.000000 1	0.012245 4	0.030612 13	0.006122 0	0.002041 0	0.000000 0	0.000000 0	0.000000 0	0.051020 10
NNE	0.000000 0	0.000000 0	0.000000 0	0.002041 0	0.002041 0	0.008163 1	0.008163 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.020408 2
NE	0.000000 0	0.000000 0	0.000000 0	0.000000 2	0.000000 0	0.002041 6	0.002041 11	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.004082 19
ENE	0.000000 0	0.000000 0	0.000000 0	0.004082 0	0.000000 0	0.012245 9	0.022449 6	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.058776 15
E	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 2	0.018367 8	0.012245 17	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.030612 27
ESE	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.004082 2	0.016327 1	0.034694 2	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.055102 5
SE	0.000000 0	0.000000 0	0.000000 1	0.000000 0	0.004082 0	0.002041 2	0.004082 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.010204 3
SSE	0.000000 0	0.000000 0	0.002041 0	0.000000 0	0.000000 0	0.004082 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.006122 0
S	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 7	0.000000 15	0.000000 2	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 24
SSW	0.000000 0	0.000000 0	0.000000 0	0.000000 1	0.000000 2	0.014286 19	0.030612 25	0.004082 5	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.048980 52
SW	0.000000 0	0.000000 0	0.000000 0	0.002041 0	0.004082 2	0.038776 7	0.051020 7	0.010204 1	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.106122 17
WSW	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.004082 1	0.014286 2	0.014286 27	0.002041 4	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.034694 34
W	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.002041 0	0.004082 4	0.055102 23	0.008163 12	0.000000 2	0.000000 0	0.000000 0	0.000000 0	0.069388 41
WNW	0.000000 0	0.000000 1	0.000000 0	0.000000 1	0.000000 2	0.008163 6	0.046939 45	0.024490 1	0.004082 0	0.000000 0	0.000000 0	0.000000 0	0.083573 73
NW	0.000000 0	0.002041 0	0.000000 0	0.002041 1	0.004082 1	0.012245 24	0.091837 93	0.034694 24	0.002041 0	0.000000 0	0.000000 0	0.000000 0	0.148980 143
NNW	0.000000 0	0.000000 0	0.000000 0	0.002041 0	0.002041 0	0.048980 0	0.189796 0	0.048980 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.291837 490
Total	0.000000	0.002041	0.002041	0.012245	0.026531	0.216327	0.593878	0.138776	0.008163	0.000000	0.000000	0.000000	1.000000

The number of calms this period = 0
The number of valid data = 490, total fraction = 2.91580e-02
The number of missing data = 3

Elevation = 10 m

Pasquill stability class B

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	0	0	0	1	3	15	8	0	0	0	0	0	27
NNE	0.000000	0.000000	0.000000	0.002037	0.006110	0.030550	0.016293	0.000000	0.000000	0.000000	0.000000	0.000000	0.054990
NE	0	0	0	2	2	9	8	0	0	0	0	0	21
ENE	0.000000	0.000000	0.000000	0.004073	0.004073	0.018330	0.016293	0.000000	0.000000	0.000000	0.000000	0.000000	0.042770
E	0	0	0	1	2	5	1	0	0	0	0	0	9
ESE	0.003000	0.000000	0.000000	0.002037	0.004073	0.010183	0.002037	0.000000	0.000000	0.000000	0.000000	0.000000	0.018330
SE	0	0	0	0	0	16	6	0	0	0	0	0	22
SSE	0.000000	0.000000	0.000000	0.000000	0.000000	0.032587	0.022200	0.000000	0.000000	0.000000	0.000000	0.000000	0.044807
S	0	0	1	3	0	10	1	0	0	0	0	0	15
SSW	0.000000	0.000000	0.002037	0.006110	0.000000	0.020367	0.02037	0.000000	0.000000	0.000000	0.000000	0.000000	0.030550
SW	0	0	1	0	2	6	5	0	0	0	0	0	14
WSW	0.000000	0.000000	0.002037	0.000000	0.004073	0.012220	0.010183	0.000000	0.000000	0.000000	0.000000	0.000000	0.028513
W	0	0	0	1	1	1	0	0	0	0	0	0	3
WNW	0.000000	0.000000	0.000000	0.002037	0.002037	0.002037	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.006110
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

The number of calms this period = 0
The number of valid data = 491, total fraction = 2.92175e-02
The number of missing data = 3

Elevation = 10 m

Pasquill stability class C

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	0	0	1	5	6	17	8	0	0	0	0	0	37
	0.00000	0.00000	0.001399	0.006993	0.008392	0.023776	0.011189	0.000000	0.000000	0.000000	0.000000	0.000000	0.051748
NNE	0	0	0	2	4	15	4	0	0	0	0	0	25
	0.000000	0.000000	0.000000	0.002797	0.005594	0.020979	0.005594	0.000000	0.000000	0.000000	0.000000	0.000000	0.034965
NE	0	1	1	3	4	4	0	0	0	0	0	0	13
	0.000000	0.001399	0.001399	0.004196	0.005594	0.005594	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.018182
ENE	1	0	2	1	4	15	2	0	0	0	0	0	25
	0.001399	0.000000	0.002797	0.001399	0.005594	0.020979	0.002797	0.000000	0.000000	0.000000	0.000000	0.000000	0.034965
E	1	0	1	3	6	6	3	0	0	0	0	0	20
	0.001399	0.000000	0.001399	0.004196	0.008392	0.008392	0.004196	0.000000	0.000000	0.000000	0.000000	0.000000	0.027972
ESE	0	2	0	2	3	7	1	0	0	0	0	0	15
	0.000000	0.002797	0.000000	0.002797	0.004196	0.009790	0.001399	0.000000	0.000000	0.000000	0.000000	0.000000	0.020979
SE	0	0	0	0	3	4	1	0	0	0	0	0	8
	0.000000	0.000000	0.000000	0.000000	0.004196	0.005594	0.001399	0.000000	0.000000	0.000000	0.000000	0.000000	0.011189
SSE	0	1	0	0	1	2	0	0	0	0	0	0	4
	0.000000	0.001399	0.000000	0.000000	0.001399	0.002797	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005594
S	1	0	1	1	0	3	1	0	0	0	0	0	7
	0.001399	0.000000	0.001399	0.001399	0.000000	0.004196	0.001399	0.000000	0.000000	0.000000	0.000000	0.000000	0.009790
SSW	0	0	0	2	3	10	9	1	0	0	0	0	25
	0.000000	0.000000	0.000000	0.002797	0.004196	0.013986	0.012587	0.001399	0.000000	0.000000	0.000000	0.000000	0.034965
SW	0	0	2	4	9	18	14	0	0	0	0	0	47
	0.000000	0.000000	0.002797	0.005594	0.012587	0.025175	0.019580	0.000000	0.000000	0.000000	0.000000	0.000000	0.065734
WSW	0	0	2	5	7	22	14	2	0	0	0	0	52
	0.000000	0.000000	0.002797	0.006993	0.009790	0.030769	0.019580	0.002797	0.000000	0.000000	0.000000	0.000000	0.072727
W	0	2	1	4	10	23	42	8	0	0	0	0	90
	0.000000	0.002797	0.001399	0.005594	0.013986	0.032168	0.058741	0.011189	0.000000	0.000000	0.000000	0.000000	0.125874
WNW	1	0	1	2	3	26	48	24	0	0	0	0	105
	0.001399	0.000000	0.001399	0.002797	0.004196	0.036364	0.067133	0.033566	0.000000	0.000000	0.000000	0.000000	0.146853
NW	0	0	0	4	8	32	60	27	2	0	0	0	133
	0.000000	0.000000	0.000000	0.005594	0.011189	0.044755	0.083916	0.037762	0.002797	0.000000	0.000000	0.000000	0.186814
NNW	0	1	2	5	8	47	41	4	1	0	0	0	109
	0.000000	0.001399	0.002797	0.006993	0.011189	0.065734	0.057343	0.005594	0.001399	0.000000	0.000000	0.000000	0.152448
Total	4	7	14	43	75	251	248	66	3	0	0	0	715
	0.005594	0.009790	0.019580	0.060140	0.110490	0.351049	0.346853	0.092308	0.004196	0.000000	0.000000	0.000000	1.000000

The number of calms this period = 0

The number of valid data = 715, total fraction = 4.25469e-02

The number of missing data = 8

Elevation = 10 m

Pasquill stability class D

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	0.00375 0	0.00938 5	0.003002 13	0.009007 37	0.010696 57	0.018953 92	0.004316 29	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	252 0.047288
NNE	0.000000 4	0.00938 4	0.002439 15	0.006943 55	0.012573 66	0.017264 73	0.005442 8	0.000000 1	0.000000 0	0.000000 0	0.000000 0	0.000000 0	243 0.045600
NE	0.000751 2	0.000751 7	0.002815 8	0.010321 40	0.012385 65	0.013699 124	0.001501 70	0.000188 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	226 0.042409
ENE	0.000375 3	0.001314 7	0.001501 12	0.007506 44	0.012197 51	0.023269 84	0.013136 45	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	316 0.059298
E	0.000563 4	0.001314 7	0.002252 9	0.008257 30	0.009570 29	0.015763 35	0.008444 1	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	246 0.046163
ESE	0.000751 7	0.001314 4	0.001689 14	0.005630 35	0.005442 25	0.005508 27	0.000188 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	115 0.021580
SE	0.001314 1	0.000751 6	0.002627 7	0.006568 31	0.004691 26	0.005067 24	0.000000 11	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	112 0.021017
SSE	0.000188 8	0.001126 5	0.001314 19	0.005817 33	0.003879 35	0.004504 35	0.002064 17	0.000000 0	0.000000 0	0.000000 0	0.000000 0	0.000000 0	106 0.019891
S	0.001501 6	0.000938 6	0.003565 17	0.006193 54	0.006568 80	0.006568 96	0.003190 54	0.000000 3	0.000000 0	0.000000 0	0.000000 0	0.000000 0	152 0.028523
SSW	0.001126 10	0.001126 4	0.003190 18	0.010133 84	0.015012 79	0.018015 134	0.010133 82	0.000563 1	0.000000 0	0.000000 0	0.000000 0	0.000000 0	316 0.059298
SW	0.001877 6	0.000751 5	0.003378 15	0.015763 69	0.014825 78	0.025145 176	0.015388 79	0.000188 5	0.000000 0	0.000000 0	0.000000 0	0.000000 0	412 0.077313
WSW	0.001126 7	0.000938 3	0.002815 12	0.012948 38	0.014637 73	0.033027 189	0.014825 231	0.000938 57	0.000000 2	0.000000 0	0.000000 0	0.000000 0	433 0.081254
W	0.001314 2	0.000563 4	0.002252 7	0.007131 37	0.013699 70	0.035466 147	0.043348 283	0.010696 69	0.00375 6	0.000000 0	0.000000 0	0.000000 0	612 0.114843
WNW	0.000375 5	0.000751 6	0.001314 15	0.006943 42	0.013136 57	0.027585 167	0.053186 285	0.012948 70	0.001126 5	0.000000 0	0.000000 0	0.000000 0	625 0.117283
NW	0.000938 3	0.001126 14	0.002815 14	0.007881 48	0.010696 92	0.031338 202	0.053481 134	0.013136 11	0.000938 1	0.000000 0	0.000000 0	0.000000 0	508 0.122349
NNW	0.000563 70	0.000563 81	0.002627 211	0.009007 725	0.017264 950	0.037906 1706	0.025145 1352	0.002064 217	0.000188 14	0.000000 0	0.000000 0	0.000000 0	5326 0.999437
Total	0.013136	0.015200	0.039595	0.136048	0.178270	0.320135	0.253706	0.040721	0.002627	0.000000	0.000000	0.000000	0.999437

The number of cols this period = 3
The number of valid data = 5329, total fraction = 3.17108e-01
The number of missing data = 83

Elevation = 10 m

Pasquill stability class E

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	5 0.000787	15 0.002362	37 0.005827	106 0.016693	113 0.017795	123 0.019370	12 0.001890	3 0.000472	0 0.000000	0 0.000000	0 0.000000	0 0.000000	414 0.065197
NNE	7 0.001102	11 0.001732	26 0.004094	91 0.014331	100 0.015748	98 0.015433	15 0.002362	1 0.000157	0 0.000000	0 0.000000	0 0.000000	0 0.000000	349 0.054961
NE	7 0.001102	8 0.001260	38 0.005984	90 0.014173	94 0.014803	108 0.017008	10 0.001575	3 0.000472	0 0.000000	0 0.000000	0 0.000000	0 0.000000	358 0.056378
ENE	5 0.000787	13 0.002047	30 0.004724	75 0.011811	69 0.010866	113 0.017795	44 0.006929	18 0.002835	3 0.000472	0 0.000000	0 0.000000	0 0.000000	370 0.058268
E	1 0.000157	11 0.001732	27 0.004252	67 0.010551	46 0.007244	41 0.006457	19 0.002992	2 0.000315	0 0.000000	0 0.000000	0 0.000000	0 0.000000	120 0.033701
ESE	4 0.000630	13 0.002047	13 0.002047	32 0.005039	34 0.005354	18 0.002835	6 0.000945	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	175 0.018890
SE	9 0.001417	9 0.001417	33 0.005197	48 0.007559	31 0.004882	25 0.003937	16 0.002520	4 0.000630	0 0.000000	0 0.000000	0 0.000000	0 0.000000	211 0.027559
SSE	9 0.001417	11 0.001732	22 0.003465	57 0.008976	69 0.010866	38 0.005984	5 0.000787	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	211 0.033228
S	8 0.001260	17 0.002677	41 0.006457	161 0.025354	152 0.023937	160 0.025197	45 0.007087	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	584 0.091969
SSW	2 0.000315	13 0.002047	36 0.005669	173 0.027244	197 0.031024	151 0.023780	35 0.005512	1 0.000157	0 0.000000	0 0.000000	0 0.000000	0 0.000000	608 0.095748
SW	5 0.000787	17 0.002677	60 0.009449	154 0.024252	182 0.028661	147 0.023150	29 0.004567	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	594 0.093543
WSW	6 0.000945	9 0.001417	25 0.003937	128 0.020157	181 0.028504	146 0.022992	24 0.003780	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	519 0.081732
W	5 0.000787	12 0.001890	33 0.005197	113 0.017795	122 0.019213	178 0.028031	66 0.010194	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	529 0.083307
WNN	5 0.000787	15 0.002362	55 0.010236	65 0.011496	73 0.022677	144 0.012598	80 0.000945	6 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	393 0.061890
NW	5 0.000787	11 0.001732	20 0.003150	59 0.009291	108 0.017008	116 0.018268	46 0.007244	6 0.000945	0 0.000000	0 0.000000	0 0.000000	0 0.000000	371 0.058425
NNW	5 0.000787	5 0.000787	26 0.004094	68 0.016709	141 0.022205	225 0.035433	59 0.009291	2 0.000315	0 0.000000	0 0.000000	0 0.000000	0 0.000000	531 0.083622
Total	88 0.013859	180 0.028346	482 0.075906	1487 0.234173	1712 0.269605	1831 0.288346	511 0.080472	46 0.007244	3 0.000472	0 0.000000	0 0.000000	0 0.000000	6340 0.998425

The number of calms this period = 10
 The number of valid data = 6350, total fraction = 3.77864e-01
 The number of missing data = 80

Elevation = 10 m

Pasquill stability class F

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	4 0.001988	11 0.005467	16 0.007952	39 0.019384	39 0.019384	18 0.008946	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	127 0.063121
NNE	5 0.002485	8 0.003976	15 0.007455	36 0.017893	10 0.008946	2 0.000994	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	84 0.041750
NE	4 0.001988	5 0.002485	9 0.004473	25 0.012425	18 0.008946	3 0.001491	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	64 0.031809
ENE	4 0.001988	6 0.002982	5 0.002485	18 0.008946	9 0.004473	2 0.000994	3 0.001491	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	47 0.023360
E	6 0.002982	4 0.001988	9 0.004473	28 0.013917	6 0.002982	1 0.000497	4 0.001988	5 0.002485	1 0.000497	0 0.000000	0 0.000000	0 0.000000	64 0.031809
ESE	2 0.000994	6 0.002982	4 0.001988	19 0.008946	4 0.001988	1 0.000497	6 0.002982	1 0.000497	0 0.000000	0 0.000000	0 0.000000	0 0.000000	43 0.021372
SE	4 0.001988	4 0.001988	3 0.001491	21 0.010437	6 0.002982	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	38 0.018887
SSE	4 0.001988	8 0.003976	9 0.004473	30 0.014911	9 0.004473	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	60 0.029821
S	4 0.001988	8 0.003976	23 0.011431	85 0.042247	33 0.016402	7 0.003479	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	160 0.079523
SSW	8 0.003976	8 0.003976	32 0.015905	104 0.051690	55 0.027336	8 0.003976	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	215 0.106559
SW	7 0.003479	10 0.004970	26 0.012922	107 0.053181	136 0.067594	44 0.021869	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	330 0.164016
WSW	5 0.002485	8 0.003976	23 0.011431	71 0.035288	103 0.051193	30 0.014911	0 0.000000	0 0.000000	0 0.002485	0 0.000000	0 0.000000	0 0.000000	240 0.119284
W	6 0.002982	12 0.005964	17 0.008449	54 0.026839	30 0.014911	7 0.003479	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	126 0.062624
WNW	3 0.001491	11 0.005467	19 0.009443	37 0.018390	34 0.016899	10 0.004970	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	114 0.056660
NW	5 0.002485	6 0.002982	8 0.003976	40 0.019881	28 0.013917	5 0.002485	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	92 0.045726
NNW	7 0.003479	5 0.002485	13 0.006461	44 0.021869	70 0.034791	64 0.031809	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	203 0.100895
Total	78 0.038767	120 0.059642	231 0.114811	758 0.376740	598 0.297217	202 0.100398	13 0.006461	6 0.002982	1 0.000497	0 0.000000	0 0.000000	0 0.000000	2007 0.997515

The number of calms this period = 5
The number of valid data = 2012, total fraction = 1.19726e-01
The number of missing data = 20

Elevation = 10 m

Pasquill stability class G

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	6 0.004231	4 0.062821	36 0.025388	40 0.028289	8 0.005642	2 0.001410	1 0.000705	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	87 0.068406
NNE	4 0.002821	8 0.005642	8 0.005642	14 0.009873	5 0.003526	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	39 0.027504
NE	6 0.004231	4 0.002821	9 0.006347	25 0.017630	8 0.005642	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	52 0.036671
ENE	4 0.002821	8 0.005642	14 0.009873	9 0.005347	1 0.000705	1 0.000705	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	37 0.026093
E	6 0.004231	4 0.002821	5 0.003526	9 0.006347	3 0.002116	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	27 0.019041
ESE	13 0.009168	2 0.001410	4 0.002821	9 0.006347	3 0.002116	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	31 0.021862
SE	4 0.002821	5 0.003526	2 0.001410	10 0.007052	2 0.001410	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	23 0.016220
SSE	8 0.005642	8 0.005642	8 0.005642	9 0.006347	3 0.002116	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	35 0.025388
S	4 0.002821	12 0.008463	15 0.010578	27 0.019041	5 0.003526	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	63 0.044429
SSW	5 0.003526	8 0.005642	18 0.012694	41 0.028914	13 0.009168	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	85 0.059944
SW	10 0.007052	26 0.014104	37 0.026093	73 0.051481	30 0.021157	8 0.005642	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	178 0.125529
WSW	11 0.007757	18 0.012694	26 0.018336	80 0.056417	42 0.029619	4 0.002821	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	181 0.127645
W	12 0.008463	23 0.016220	32 0.022567	53 0.037377	17 0.011989	1 0.000705	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	138 0.097320
WNW	12 0.008463	16 0.011283	24 0.016925	32 0.022567	6 0.004231	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	90 0.063470
NW	13 0.009168	16 0.011283	29 0.020451	48 0.033850	18 0.012694	2 0.001410	1 0.000705	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	127 0.089563
NNW	6 0.004231	21 0.014810	41 0.028914	74 0.052166	53 0.037377	12 0.008463	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	207 0.145980
Total	124 0.087447	177 0.124824	308 0.217207	553 0.389986	217 0.153032	30 0.021157	2 0.001410	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	1411 0.995063

The number of cols this period = 7
The number of valid data = 1418, total fraction = 8.43796e-02
The number of missing data = 20

Elevation = 10 m

All stability classes

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	17 0.001012	35 0.002083	106 0.006308	239 0.014222	226 0.013448	282 0.016781	57 0.003987	5 0.000357	1 0.000050	0 0.000000	0 0.000000	0 0.000000	979 0.058256
NNE	18 0.000952	32 0.001904	62 0.003689	183 0.010890	197 0.011723	220 0.013091	60 0.003570	1 0.000050	0 0.000000	0 0.000000	0 0.000000	0 0.000000	771 0.045879
NE	21 0.001250	22 0.001309	72 0.004284	199 0.011842	192 0.011425	194 0.011544	20 0.001190	4 0.000238	0 0.000000	0 0.000000	0 0.000000	0 0.000000	724 0.043082
ENE	16 0.000952	34 0.002023	59 0.003511	145 0.008628	148 0.008807	148 0.016483	277 0.008093	136 0.001071	18 0.000179	3 0.000000	0 0.000000	0 0.000000	836 0.049747
E	17 0.001012	26 0.001547	55 0.003273	154 0.009184	112 0.006685	151 0.008985	78 0.004641	7 0.000417	1 0.000050	0 0.000000	0 0.000000	0 0.000000	601 0.035763
ESE	23 0.001369	30 0.001785	31 0.001845	92 0.005475	77 0.004582	75 0.004463	36 0.002142	1 0.000050	0 0.000000	0 0.000000	0 0.000000	0 0.000000	365 0.021720
SE	24 0.001428	22 0.001309	52 0.003094	115 0.006843	70 0.004165	58 0.003451	19 0.001131	4 0.000238	0 0.000000	0 0.000000	0 0.000000	0 0.000000	364 0.021660
SSE	22 0.001309	34 0.002023	47 0.002797	127 0.007557	108 0.006427	66 0.003927	16 0.000952	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	420 0.024993
S	25 0.001488	42 0.002499	99 0.005891	307 0.018268	226 0.013448	206 0.012258	63 0.003749	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	968 0.057602
SSW	21 0.001250	35 0.002083	103 0.006129	374 0.022255	350 0.020827	280 0.016652	120 0.007141	7 0.000417	0 0.000000	0 0.000000	0 0.000000	0 0.000000	1290 0.076763
SW	32 0.001904	51 0.003035	145 0.008628	425 0.025290	448 0.026659	387 0.023029	166 0.009878	8 0.000476	0 0.000000	0 0.000000	0 0.000000	0 0.000000	1662 0.098899
WSW	28 0.001666	40 0.002380	92 0.005475	355 0.021125	415 0.024695	403 0.023981	135 0.008033	8 0.000476	0 0.000000	0 0.000000	0 0.000000	0 0.000000	1476 0.087831
W	30 0.001785	52 0.003094	95 0.005653	266 0.015829	256 0.015234	410 0.024398	382 0.022731	74 0.004403	2 0.000119	0 0.000000	0 0.000000	0 0.000000	1567 0.093246
WNW	23 0.001369	36 0.002142	66 0.003927	176 0.010473	187 0.011128	335 0.019935	459 0.027313	132 0.007855	10 0.000595	0 0.000000	0 0.000000	0 0.000000	1424 0.084737
NW	28 0.001666	40 0.002380	73 0.004344	196 0.011663	229 0.013627	346 0.020589	187 0.008979	138 0.008212	12 0.000714	0 0.000000	0 0.000000	0 0.000000	1549 0.092175
NNW	21 0.001250	35 0.002083	98 0.005713	242 0.014400	273 0.022196	606 0.036061	49 0.021422	2 0.0002916	0 0.000119	0 0.000000	0 0.000000	0 0.000000	1784 0.105159
Total	364 0.021660	566 0.033680	1253 0.074561	3595 0.213924	3614 0.215055	4296 0.255630	2604 0.154954	457 0.027194	31 0.001845	0 0.000000	0 0.000000	0 0.000000	16780 0.998512

The number of calms this period = 25

The number of valid data = 16805, total fraction = 1.00000e+00

The number of missing data = 739

Elevation = 30 m

Pasquill stability class A

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	0.000000	0.000000	0.000000	0.000000	0.000000	0.004082	0.032653	0.012245	0.002041	0.000000	0.000000	0.000000	0.051828
NNE	0.000000	0.000000	0.000000	0.002041	0.000000	0.010204	0.008163	0.000000	0.000000	0.000000	0.000000	0.000000	0.020408
NE	0.000000	0.000000	0.000000	0.000000	0.000000	0.002041	0.002041	0.000000	0.000000	0.000000	0.000000	0.000000	0.004082
ENE	0.000000	0.000000	0.000000	0.004082	0.000000	0.008163	0.026531	0.000000	0.000000	0.000000	0.000000	0.000000	0.038776
E	0.000000	0.000000	0.000000	0.000000	0.000000	0.014286	0.016327	0.000000	0.000000	0.000000	0.000000	0.000000	0.030612
ESE	0.000000	0.000000	0.000000	0.000000	0.002041	0.014286	0.038776	0.000000	0.000000	0.000000	0.000000	0.000000	0.055182
SE	0.000000	0.000000	0.000000	0.000000	0.004082	0.002041	0.004082	0.000000	0.000000	0.000000	0.000000	0.000000	0.010204
SSE	0.000000	0.000000	0.002041	0.000000	0.000000	0.004082	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.006122
S	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
SSW	0.000000	0.000000	0.000000	0.000000	0.000000	0.010204	0.030612	0.008163	0.000000	0.000000	0.000000	0.000000	0.048980
SW	0.000000	0.000000	0.000000	0.000000	0.002041	0.032653	0.053061	0.018367	0.000000	0.000000	0.000000	0.000000	0.106122
WSW	0.000000	0.000000	0.000000	0.000000	0.000000	0.016327	0.016327	0.002041	0.000000	0.000000	0.000000	0.000000	0.034694
W	0.000000	0.000000	0.000000	0.000000	0.002041	0.002041	0.042857	0.022449	0.000000	0.000000	0.000000	0.000000	0.069388
WNW	0.000000	0.000000	0.000000	0.000000	0.000000	0.002041	0.042857	0.028571	0.010204	0.000000	0.000000	0.000000	0.083673
NW	0.000000	0.000000	0.002041	0.002041	0.000000	0.008163	0.089796	0.030612	0.016327	0.000000	0.000000	0.000000	0.148980
NNW	0.000000	0.000000	0.000000	0.000000	0.004082	0.026531	0.177551	0.081633	0.002041	0.000000	0.000000	0.000000	0.291837
Total	0.000000	0.000000	0.004082	0.008163	0.014286	0.157143	0.581633	0.204082	0.030612	0.000000	0.000000	0.000000	1.000000

The number of calms this period = 0
 The number of valid data = 490, total fraction = 2.91580e-02
 The number of missing data = 3

Elevation = 30 m

Pasquill stability class B

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	0.000000	0.000000	0.000000	0.002037	0.000000	0.016293	0.034623	0.002037	0.000000	0.000000	0.000000	0.000000	0.054990
NNE	0.000000	0.000000	0.000000	0.002037	0.002037	0.010183	0.028513	0.000000	0.000000	0.000000	0.000000	0.000000	0.042770
NE	0.000000	0.000000	0.000000	0.000000	0.002037	0.008147	0.008147	0.000000	0.000000	0.000000	0.000000	0.000000	0.018330
ENE	0.000000	0.000000	0.000000	0.000000	0.000000	0.018330	0.024440	0.002037	0.000000	0.000000	0.000000	0.000000	0.044807
E	0.000000	0.000000	0.000000	0.008147	0.000000	0.012220	0.010183	0.000000	0.000000	0.000000	0.000000	0.000000	0.030550
ESE	0.000000	0.000000	0.000000	0.002037	0.000000	0.006110	0.018330	0.002037	0.000000	0.000000	0.000000	0.000000	0.028513
SE	0.000000	0.000000	0.000000	0.002037	0.000000	0.004073	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.006110
SSE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
S	0.000000	0.000000	0.000000	0.000000	0.000000	0.004073	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.004073
SSW	0.000000	0.000000	0.000000	0.000000	0.000000	0.010183	0.020367	0.004073	0.000000	0.000000	0.000000	0.000000	0.034623
SW	0.000000	0.000000	0.004073	0.002037	0.010183	0.036660	0.032587	0.014257	0.000000	0.000000	0.000000	0.000000	0.099796
WSW	0.000000	0.000000	0.000000	0.004073	0.002037	0.026477	0.030550	0.006110	0.000000	0.000000	0.000000	0.000000	0.069246
W	0.000000	0.000000	0.000000	0.004073	0.008147	0.008147	0.040733	0.014257	0.002037	0.000000	0.000000	0.000000	0.077393
WNW	0.000000	0.000000	0.000000	0.002037	0.006110	0.002037	0.038597	0.048880	0.016293	0.000000	0.000000	0.000000	0.114053
NW	0.000000	0.000000	0.002037	0.000000	0.008147	0.018330	0.089613	0.065173	0.022403	0.000000	0.000000	0.000000	0.205703
NNW	0.000000	0.000000	0.000000	0.004073	0.004073	0.042770	0.093656	0.022403	0.002037	0.000000	0.000000	0.000000	0.169043
Total	0.000000	0.000000	0.006110	0.032587	0.042770	0.224053	0.470468	0.101263	0.042770	0.000000	0.000000	0.000000	1.000000

The number of calms this period = 0
The number of valid data = 491, total fraction = 2.92175e-02
The number of missing data = 3

Elevation = 30 m

Pasquill stability class C

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	0.000000	0.000000	0.001399	0.000000	0.006993	0.023776	0.019580	0.000000	0.000000	0.000000	0.000000	0.000000	3.051748
NNE	0.000000	0.000000	0.000000	0.001399	0.001399	0.019580	0.012587	0.009000	0.000000	0.000000	0.000000	0.000000	0.034965
NE	0.000000	0.000000	0.001399	0.001399	0.005594	0.006993	0.002797	0.000000	0.000000	0.000000	0.000000	0.000000	0.018182
ENE	0.000000	0.001399	0.000000	0.002797	0.002797	0.015385	0.011189	0.001399	0.000000	0.000000	0.000000	0.000000	0.034965
E	0.001399	0.000000	0.000000	0.001399	0.005594	0.012587	0.006993	0.000000	0.000000	0.000000	0.000000	0.000000	0.027972
ESE	0.000000	0.000000	0.002797	0.002797	0.000000	0.005594	0.009790	0.000000	0.000000	0.000000	0.000000	0.000000	0.020974
SE	0.000000	0.000000	0.000000	0.000000	0.002797	0.004196	0.004196	0.000000	0.000000	0.000000	0.000000	0.000000	0.011189
SSE	0.000000	0.000000	0.001399	0.000000	0.000000	0.002797	0.001399	0.000000	0.000000	0.000000	0.000000	0.000000	0.005594
S	0.001399	0.000000	0.000000	0.001399	0.001399	0.004196	0.000000	0.001399	0.000000	0.000000	0.000000	0.000000	0.009790
SSW	0.000000	0.000000	0.000000	0.002797	0.001399	0.006993	0.013182	0.005594	0.000000	0.000000	0.000000	0.000000	0.034965
SW	0.000000	0.000000	0.001399	0.002797	0.006993	0.020979	0.030769	0.002797	0.000000	0.000000	0.000000	0.000000	0.065734
WSW	0.000000	0.000000	0.000000	0.000000	0.006993	0.022797	0.027972	0.030769	0.001399	0.002797	0.000000	0.000000	0.072727
W	0.000000	0.001399	0.002797	0.002797	0.004196	0.027972	0.048951	0.025371	0.008392	0.000000	0.000000	0.000000	0.125874
WNW	0.000000	0.001399	0.001399	0.002797	0.000000	0.012587	0.075524	0.041958	0.011189	0.000000	0.000000	0.000000	0.140853
NW	0.000000	0.000000	0.000000	0.000000	0.006993	0.023776	0.075524	0.058741	0.020979	0.000000	0.000000	0.000000	0.186014
NNW	0.000000	0.000000	0.001399	0.002797	0.013985	0.030769	0.079720	0.019580	0.004196	0.000000	0.000000	0.000000	0.152448
Total	2	7	10	23	45	176	306	116	34	0	0	0	715
	0.002797	0.004196	0.013986	0.032168	0.062937	0.246154	0.427972	0.162238	0.047552	0.000000	0.000000	0.000000	1.009060

The number of calms this period = 0
The number of valid data = 715, total fraction = 4.25460e-02
The number of missing data = 8

Elevation = 30 m

Pasquill stability class D

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	1 0.000188	1 0.000188	9 0.001689	20 0.003753	40 0.007506	95 0.017827	82 0.015388	4 0.000751	0 0.000000	0 0.000000	0 0.000000	0 0.000000	252 0.047288
NNE	0 0.000000	1 0.000188	6 0.001126	22 0.004128	26 0.004879	117 0.021955	62 0.011634	9 0.001689	0 0.000000	0 0.000000	0 0.000000	0 0.000000	243 0.045500
NE	0 0.000000	6 0.001126	2 0.000375	24 0.004504	46 0.008632	100 0.018765	47 0.008820	0 0.000000	1 0.000188	0 0.000000	0 0.000000	0 0.000000	226 0.042409
ENE	2 0.000375	2 0.000375	7 0.001314	12 0.002252	35 0.006568	101 0.018953	142 0.026647	16 0.003002	0 0.000000	0 0.000300	0 0.000000	0 0.000000	317 0.059486
E	3 0.000563	0 0.000000	9 0.001689	17 0.003190	37 0.006943	81 0.015200	85 0.015950	14 0.002627	0 0.000000	0 0.000000	0 0.000000	0 0.000000	246 0.046163
ESE	2 0.000375	3 0.000563	6 0.001126	17 0.003190	22 0.004128	45 0.008444	20 0.003753	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	115 0.021580
SE	4 0.000751	4 0.000751	6 0.001126	20 0.003753	27 0.005067	44 0.008257	8 0.001501	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	113 0.021205
SSE	0 0.000000	1 0.000188	8 0.001501	13 0.002439	23 0.004316	38 0.007131	18 0.003378	5 0.000938	0 0.000000	0 0.000000	0 0.000000	0 0.000000	106 0.019891
S	4 0.000751	5 0.000938	6 0.001126	23 0.004316	27 0.005067	53 0.009945	29 0.005442	5 0.000938	0 0.000000	0 0.000000	0 0.000000	0 0.000000	152 0.028523
SSW	3 0.000563	3 0.000563	8 0.001501	25 0.004691	44 0.008257	124 0.023269	95 0.017827	13 0.002439	1 0.000188	0 0.000000	0 0.000000	0 0.000000	316 0.059298
SW	4 0.000751	8 0.001501	3 0.000563	33 0.006193	68 0.012760	130 0.024395	147 0.027585	18 0.003378	1 0.000188	0 0.000000	0 0.000000	0 0.000000	412 0.077313
WSW	3 0.000563	3 0.000563	6 0.001126	33 0.006193	50 0.009383	146 0.027397	163 0.030587	25 0.004691	4 0.000751	0 0.000000	0 0.000000	0 0.000000	433 0.081254
W	5 0.001126	1 0.000188	3 0.000563	21 0.003941	29 0.005442	29 0.023269	273 0.051229	116 0.021768	39 0.007318	0 0.000000	0 0.000000	0 0.000000	612 0.114843
WNW	0 0.000000	2 0.000375	4 0.000751	13 0.002439	31 0.005817	108 0.020266	253 0.047476	165 0.030963	48 0.009007	1 0.000188	0 0.000000	0 0.000000	625 0.117283
NW	4 0.000751	2 0.000375	7 0.001314	17 0.003190	38 0.007131	105 0.019704	255 0.047851	173 0.032464	50 0.003383	1 0.000188	0 0.000000	0 0.000000	652 0.122349
NNW	2 0.000375	1 0.000188	4 0.000751	21 0.003941	40 0.007506	159 0.029837	219 0.041096	53 0.009946	8 0.001501	1 0.000188	0 0.000000	0 0.000000	508 0.095327
Total	38 0.007111	43 0.008069	94 0.017639	331 0.062113	583 0.109401	1570 0.294614	1898 0.356164	616 0.115594	152 0.028523	3 0.000563	0 0.000000	0 0.000000	5328 0.999812

The number of calms this period = 1
The number of valid data = 5329, total fraction = 3.17108e-01
The number of missing data = 83

Elevation = 30 m

Pasquill stability class E

From 84/ 1 to 85/12

Wind Direction	Wind Speed (m/s)												Total
	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	
N	2 0.000315	6 0.000945	13 0.002047	48 0.007559	75 0.011811	168 0.026457	94 0.014803	6 0.000945	3 0.000472	0 0.000000	0 0.000000	0 0.000000	415 0.065354
NNE	4 0.000630	5 0.000787	9 0.001417	33 0.005197	70 0.011024	141 0.022205	75 0.011811	11 0.001732	1 0.000157	0 0.000000	0 0.000000	0 0.000000	349 0.054961
NE	5 0.000787	2 0.000315	8 0.001260	51 0.008031	68 0.010709	131 0.020630	88 0.013858	2 0.000315	3 0.000472	0 0.000000	0 0.000000	0 0.000000	358 0.056378
ENE	4 0.000630	1 0.000157	13 0.002047	37 0.005827	54 0.008504	106 0.016693	109 0.017165	25 0.003937	18 0.002835	3 0.000472	0 0.000000	0 0.000000	370 0.058268
E	0 0.000000	2 0.000315	10 0.001575	37 0.005827	43 0.006772	68 0.010709	40 0.006299	12 0.001890	2 0.000315	0 0.000000	0 0.000000	0 0.000000	214 0.033701
ESE	2 0.000315	4 0.000630	12 0.001890	18 0.002835	22 0.003465	45 0.007087	16 0.002520	2 0.000315	0 0.000000	0 0.000000	0 0.000000	0 0.000000	121 0.019055
SE	1 0.000157	9 0.001417	8 0.001260	35 0.005512	38 0.005984	47 0.007402	24 0.003780	9 0.001417	4 0.000630	0 0.000000	0 0.000000	0 0.000000	175 0.027559
SSE	4 0.000630	9 0.001417	8 0.001260	29 0.004567	42 0.006614	85 0.013386	35 0.005512	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	212 0.033386
S	3 0.000472	7 0.001102	16 0.002520	53 0.008346	128 0.020157	219 0.034488	148 0.023307	11 0.001732	0 0.000000	0 0.000000	0 0.000000	0 0.000000	585 0.092126
SSW	3 0.000472	1 0.000157	13 0.002047	51 0.008031	124 0.019528	271 0.042677	131 0.020630	16 0.002520	0 0.000000	0 0.000000	0 0.000000	0 0.000000	610 0.096063
SW	3 0.000472	6 0.000945	15 0.002362	71 0.011181	115 0.018110	262 0.041260	115 0.018110	9 0.001417	0 0.000000	0 0.000000	0 0.000000	0 0.000000	596 0.093858
WSW	0 0.000000	8 0.001260	7 0.001102	35 0.005512	86 0.013543	263 0.041417	111 0.017480	9 0.001417	0 0.000000	0 0.000000	0 0.000000	0 0.000000	519 0.081732
W	2 0.000315	4 0.000630	11 0.001732	40 0.006299	86 0.013543	185 0.029134	174 0.027402	27 0.004252	0 0.000000	0 0.000000	0 0.000000	0 0.000000	529 0.083307
WNN	5 0.000787	3 0.000472	4 0.000630	21 0.003307	38 0.006142	130 0.020472	146 0.022992	42 0.005614	5 0.000787	0 0.000000	0 0.000000	0 0.000000	395 0.062205
NW	2 0.000315	5 0.000787	9 0.001417	25 0.003937	43 0.006772	156 0.024567	99 0.015591	26 0.004094	6 0.000945	0 0.000000	0 0.000000	0 0.000000	371 0.058425
NNW	1 0.000157	4 0.000630	5 0.000787	33 0.005197	51 0.008031	204 0.032126	202 0.031811	38 0.004724	1 0.000157	0 0.000000	0 0.000000	0 0.000000	531 0.083622
Total	41 0.006457	76 0.011969	161 0.025354	617 0.097165	1084 0.170709	2481 0.390709	1607 0.253071	237 0.037323	43 0.006772	3 0.000472	0 0.000000	0 0.000000	6350 1.000000

The number of calms this period = 0
 The number of valid data = 6350, total fraction = 3.77864e-01
 The number of missing data = 80

Elevation = 30 m

Pasquill stability class F

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	0	5	10	18	32	56	6	0	0	0	0	0	127
NNE	0.000000	0.002485	0.004970	0.008946	0.015905	0.027633	0.002982	0.000000	0.000000	0.000000	0.000000	0.000000	0.063121
NE	0.001988	0.000497	0.003976	0.010437	0.012425	0.012425	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.041750
E	0.001988	0.000000	0.002485	0.005964	0.009443	0.010934	0.000994	0.000000	0.000000	0.000000	0.000000	0.000000	0.031809
ESE	0.000994	0.000994	0.002982	0.002485	0.007455	0.006461	0.000994	0.000994	0.000000	0.000000	0.000000	0.000000	0.023360
SE	0.000994	0.001988	0.001988	0.005467	0.010437	0.005467	0.000497	0.001988	0.002982	0.000000	0.000000	0.000000	0.031809
SSE	0.000497	0.000994	0.002485	0.002982	0.007952	0.002485	0.002485	0.000994	0.000497	0.000000	0.000000	0.000000	0.021372
S	0.001491	0.000497	0.001988	0.004473	0.007455	0.002582	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.018887
SSW	0.001491	0.001491	0.002982	0.005958	0.009940	0.006958	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.029821
SW	0.001491	0.001491	0.003479	0.015408	0.033300	0.023360	0.001491	0.000000	0.000000	0.000000	0.000000	0.000000	0.080020
WSW	0.001491	0.002485	0.003976	0.018887	0.042247	0.035282	0.001491	0.000000	0.000000	0.000000	0.000000	0.000000	0.106859
W	0.001491	0.002485	0.004970	0.017893	0.038270	0.087972	0.011431	0.000000	0.000000	0.000000	0.000000	0.000000	0.164513
WNW	0.000994	0.001491	0.003976	0.013917	0.024354	0.069085	0.005467	0.000000	0.000000	0.000000	0.000000	0.000000	0.119284
NW	0.000000	0.003479	0.005467	0.011431	0.021869	0.018390	0.001988	0.000000	0.000000	0.000000	0.000000	0.000000	0.062624
NNW	0.000000	0.001491	0.003976	0.012922	0.010934	0.022366	0.003479	0.000000	0.000000	0.000000	0.000000	0.000000	0.057157
Total	37	53	111	306	565	821	102	8	7	0	0	0	2010
	0.018390	0.026342	0.055169	0.152087	0.280815	0.408052	0.050695	0.003976	0.003479	0.000000	0.000000	0.000000	0.999006

The number of cols this period = 2
The number of valid data = 2012, total fraction = 1.19726e-01
The number of missing data = 20

Elevation = 30 m

Pasquill stability class G

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	3 0.002116	4 0.002821	4 0.002821	44 0.031030	28 0.019746	12 0.008463	3 0.002116	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	98 0.069111
NNE	3 0.002116	3 0.002116	7 0.004937	12 0.008463	8 0.005642	7 0.004937	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	48 0.028209
NE	4 0.002821	3 0.002116	3 0.002116	11 0.007757	21 0.014810	10 0.007052	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	52 0.036671
ENE	4 0.002821	2 0.001410	6 0.004231	19 0.013399	2 0.001410	4 0.002821	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	37 0.026093
E	3 0.002116	4 0.002821	3 0.002116	6 0.004231	6 0.004231	5 0.003526	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	27 0.019041
ESE	11 0.007757	2 0.001410	2 0.001410	4 0.002821	8 0.005642	4 0.002821	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	31 0.021862
SE	2 0.001410	4 0.002821	3 0.002116	5 0.003526	7 0.004937	2 0.001410	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	23 0.016220
SSE	5 0.003526	6 0.004231	6 0.004231	10 0.007052	7 0.004937	3 0.002116	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	37 0.026093
S	1 0.000705	4 0.002821	11 0.007757	17 0.011989	23 0.016220	7 0.004937	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	63 0.044429
SSW	4 0.002821	3 0.002116	8 0.005642	24 0.016925	31 0.021862	17 0.011989	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	87 0.061354
SW	5 0.003526	6 0.004231	20 0.014104	47 0.033145	56 0.039492	44 0.031030	1 0.000705	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	179 0.126234
WSW	4 0.002821	9 0.006347	16 0.011283	32 0.022567	65 0.045839	53 0.037377	2 0.001410	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	181 0.127645
W	4 0.002821	12 0.008463	19 0.013399	45 0.031735	33 0.023272	25 0.017630	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	138 0.097320
WNW	5 0.003526	10 0.007052	13 0.009168	31 0.021862	21 0.014810	10 0.007052	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	90 0.063470
NW	6 0.004231	12 0.008463	11 0.007757	37 0.026093	37 0.026093	22 0.015515	1 0.000705	1 0.000705	0 0.000000	0 0.000000	0 0.000000	0 0.000000	127 0.089563
NNW	2 0.001410	7 0.004937	19 0.013399	58 0.035261	57 0.040197	68 0.047955	5 0.003526	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	208 0.146685
Total	66 0.046544	91 0.064175	151 0.106488	394 0.277856	410 0.289140	293 0.206629	12 0.008463	1 0.000705	0 0.000000	0 0.000000	0 0.000000	0 0.000000	1418 1.000000

The number of calms this period = 0
The number of valid data = 1418, total fraction = 0.43796e-02
The number of missing data = 20

Elevation = 30 m

All stability classes

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	6 0.000357	16 0.000952	37 0.002202	131 0.007795	180 0.010711	358 0.021303	232 0.013805	17 0.001012	4 0.000238	0 0.000000	0 0.000000	0 0.000000	981 0.058375
NNE	11 0.000655	18 0.000595	30 0.001785	91 0.005415	131 0.007795	314 0.018685	164 0.009759	20 0.001190	1 0.000060	0 0.000000	0 0.000000	0 0.000000	772 0.045939
NE	13 0.000774	11 0.000655	19 0.001131	99 0.005891	159 0.009461	273 0.015245	144 0.008569	2 0.000119	4 0.000238	0 0.000000	0 0.000000	0 0.000000	724 0.043082
ENE	12 0.000714	8 0.000476	32 0.001904	77 0.004582	108 0.006427	248 0.014758	286 0.017019	45 0.002678	18 0.001071	3 0.000179	0 0.000000	0 0.000000	837 0.049807
E	9 0.000536	10 0.000595	26 0.001547	76 0.004522	111 0.006605	187 0.011128	144 0.008569	30 0.001785	8 0.000476	0 0.000000	0 0.000000	0 0.000000	601 0.035763
ESE	16 0.000952	11 0.000655	27 0.001607	48 0.002856	69 0.004106	113 0.006724	76 0.004522	5 0.000298	1 0.000060	0 0.000000	0 0.000000	0 0.000000	366 0.021779
SE	10 0.000595	18 0.001071	21 0.001250	70 0.004165	91 0.005415	105 0.006248	37 0.002202	9 0.000536	4 0.000238	0 0.000000	0 0.000000	0 0.000000	365 0.021720
SSE	12 0.000714	19 0.001131	30 0.001785	66 0.003927	92 0.005475	144 0.008569	54 0.003213	5 0.000298	0 0.000000	0 0.000000	0 0.000000	0 0.000000	422 0.025112
S	12 0.000714	19 0.001131	40 0.002303	125 0.007438	246 0.014639	331 0.019697	180 0.010711	17 0.001012	0 0.000000	0 0.000000	0 0.000000	0 0.000000	970 0.057721
SSW	13 0.000774	12 0.000714	37 0.002202	140 0.008331	285 0.016959	500 0.029753	267 0.015888	39 0.002321	1 0.000060	0 0.000000	0 0.000000	0 0.000000	1294 0.077001
SW	15 0.000893	25 0.001488	51 0.003035	190 0.011306	327 0.019458	562 0.039393	350 0.020827	45 0.002678	1 0.000060	0 0.000000	0 0.000000	0 0.000000	1666 0.099137
WSW	9 0.000536	23 0.001369	37 0.002202	135 0.008033	253 0.015055	642 0.038203	332 0.019756	39 0.002321	6 0.000357	0 0.000000	0 0.000000	0 0.000000	1476 0.087831
W	12 0.000714	25 0.001488	46 0.002737	133 0.007914	200 0.011901	396 0.023564	527 0.031360	182 0.010830	46 0.002737	0 0.000000	0 0.000000	0 0.000000	1567 0.093246
WNW	14 0.000833	19 0.001131	30 0.001785	94 0.005594	116 0.006903	304 0.018090	500 0.029753	275 0.016364	74 0.004403	1 0.000060	0 0.000000	0 0.000000	1427 0.084915
NW	12 0.000714	24 0.001428	35 0.002083	92 0.005475	156 0.009283	350 0.020827	500 0.029753	289 0.017197	90 0.005356	1 0.000060	0 0.000000	0 0.000000	1549 0.092175
NNW	8 0.000476	16 0.000952	34 0.002023	124 0.007379	109 0.011366	601 0.035763	648 0.038560	148 0.008807	14 0.000833	1 0.000260	0 0.000000	0 0.000000	1785 0.106218
Total	184 0.010949	266 0.015829	532 0.031657	1691 0.100625	2715 0.161559	5528 0.328950	4441 0.264267	1167 0.069444	272 0.016186	6 0.000357	0 0.000000	0 0.000000	16802 0.999821

The number of calms this period = 3
The number of valid data = 16805, total fraction = 1.00000e+00
The number of missing data = 739

Elevation = 60 m

Pusquill stability class A

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	0	0	0	0	0	0	10	9	2	0	0	0	21
	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.02053	0.01848	0.004107	0.00000	0.00000	0.00000	0.043121
NNE	0	0	0	0	1	1	5	2	0	0	0	0	9
	0.00000	0.00000	0.00000	0.00000	0.002053	0.002053	0.010267	0.004107	0.00000	0.00000	0.00000	0.00000	0.018489
NE	0	0	0	0	0	1	5	1	0	0	0	0	7
	0.00000	0.00000	0.00000	0.00000	0.00000	0.002053	0.010267	0.002053	0.00000	0.00000	0.00000	0.00000	0.014374
ENE	0	0	0	0	0	2	9	8	0	0	0	0	19
	0.00000	0.00000	0.00000	0.00000	0.00000	0.004107	0.01848	0.016427	0.00000	0.00000	0.00000	0.00000	0.039314
E	0	0	0	0	0	1	11	5	0	0	0	0	17
	0.00000	0.00000	0.00000	0.00000	0.00000	0.002053	0.022587	0.010267	0.00000	0.00000	0.00000	0.00000	0.034908
ESE	0	0	0	0	0	1	11	13	1	0	0	0	26
	0.00000	0.00000	0.00000	0.00000	0.00000	0.002053	0.022587	0.026694	0.002053	0.00000	0.00000	0.00000	0.053388
SE	0	0	0	1	0	2	1	0	0	0	0	0	4
	0.00000	0.00000	0.00000	0.002053	0.00000	0.004107	0.002053	0.00000	0.00000	0.00000	0.00000	0.00000	0.008214
SSE	0	0	0	0	0	1	1	0	0	0	0	0	2
	0.00000	0.00000	0.00000	0.00000	0.00000	0.002053	0.002053	0.00000	0.00000	0.00000	0.00000	0.00000	0.004107
S	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
SSW	0	0	0	0	0	0	12	10	5	0	0	0	27
	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.024641	0.020534	0.010267	0.00000	0.00000	0.00000	0.055441
SW	0	0	0	0	1	2	20	18	11	0	0	0	52
	0.00000	0.00000	0.00000	0.00000	0.002053	0.004107	0.041068	0.036961	0.022587	0.00000	0.00000	0.00000	0.106776
WSW	0	0	0	0	0	7	4	7	0	0	0	0	18
	0.00000	0.00000	0.00000	0.00000	0.00000	0.014374	0.008214	0.014374	0.00000	0.00000	0.00000	0.00000	0.036961
W	0	0	0	0	0	2	9	27	9	0	0	0	42
	0.00000	0.00000	0.00000	0.00000	0.00000	0.004107	0.01848	0.045175	0.01848	0.00000	0.00000	0.00000	0.086242
WNW	0	0	0	1	0	1	14	13	14	2	0	0	45
	0.00000	0.00000	0.00000	0.002053	0.00000	0.002053	0.028747	0.026694	0.028747	0.004107	0.00000	0.00000	0.092402
NW	0	0	0	0	1	3	30	29	14	0	0	0	77
	0.00000	0.00000	0.00000	0.00000	0.002053	0.006160	0.061602	0.059548	0.028747	0.00000	0.00000	0.00000	0.158111
NNW	0	0	0	1	0	5	46	52	16	1	0	0	121
	0.00000	0.00000	0.00000	0.002053	0.00000	0.010267	0.094456	0.106776	0.032854	0.002053	0.00000	0.00000	0.248460
Total	0	0	0	3	3	29	188	189	72	3	0	0	487
	0.00000	0.00000	0.00000	0.006160	0.006160	0.059548	0.38607	0.388090	0.147844	0.006160	0.00000	0.00000	1.000000

The number of calms this period = 0
 The number of valid data = 487, total fraction = 2.89536e-02
 The number of missing data = 6

Elevation = 60 m

Pasquill stability class B

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	0	0	0	0	1	4	20	6	0	0	0	0	31
NNE	0.000000	0.000000	0.000000	0.000000	0.002037	0.008147	0.040733	0.012220	0.000000	0.000000	0.000000	0.000000	0.063136
NE	0	0	0	0	1	3	11	4	0	0	0	0	19
ENE	0.000000	0.000000	0.000000	0.000000	0.002037	0.005110	0.022403	0.008147	0.000000	0.000000	0.000000	0.000000	0.038597
E	0	0	0	0	0	2	9	1	0	0	0	0	12
ESE	0.000000	0.000000	0.000000	0.000000	0.004073	0.018330	0.002037	0.000000	0.000000	0.000000	0.000000	0.000000	0.024440
SE	0	0	0	0	1	0	14	10	1	0	0	0	26
SSE	0.000000	0.000000	0.000000	0.000000	0.002037	0.000000	0.028513	0.020367	0.002037	0.000000	0.000000	0.000000	0.052953
S	0	0	0	0	3	1	6	2	0	0	0	0	12
SSW	0.000000	0.000000	0.000000	0.000000	0.005110	0.002037	0.012220	0.004073	0.000000	0.000000	0.000000	0.000000	0.024440
SW	0	0	0	1	0	2	6	4	1	0	0	0	14
WSW	0.000000	0.000000	0.000000	0.002037	0.000000	0.004073	0.012220	0.008147	0.002037	0.000000	0.000000	0.000000	0.028513
W	0	0	0	0	1	0	1	0	0	0	0	0	2
WNW	0.000000	0.000000	0.000000	0.000000	0.002037	0.000000	0.002037	0.000000	0.000000	0.000000	0.000000	0.000000	0.004073
NW	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total	0	0	0	7	17	56	211	126	64	10	0	0	491

The number of calms this period = 0
 The number of valid data = 491, total fraction = 2.91914e-02
 The number of missing data = 3

Elevation = 60 m

Pasquill stability class C

From 84/ 1 to 85/12

Wind Direction	Wind Speed (m/s)												Total
	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 16.0	>16.0	
N	0	0	0	1	2	11	16	5	0	0	0	0	35
NNE	0.000000	0.000000	0.000000	0.001399	0.002797	0.015385	0.022378	0.006993	0.000000	0.000000	0.000000	0.000000	0.048951
NE	0	0	0	0	0	7	14	4	0	0	0	0	25
ENE	0.000000	0.000000	0.000000	0.000000	0.000000	0.009790	0.019580	0.005594	0.000000	0.000000	0.000000	0.000000	0.034965
E	0	0	0	2	0	5	6	3	0	0	0	0	16
ESE	0.000000	0.000000	0.000000	0.002797	0.000000	0.006993	0.008392	0.004196	0.000000	0.000000	0.000000	0.000000	0.022378
SE	1	0	1	0	2	4	15	6	1	0	0	0	30
SSE	0.001399	0.000000	0.001399	0.000000	0.002797	0.005594	0.020979	0.008392	0.001399	0.000000	0.000000	0.000000	0.041958
S	0	0	0	0	4	3	6	4	0	0	0	0	17
SSW	0.000000	0.000000	0.000000	0.000000	0.005594	0.004196	0.008392	0.005594	0.000000	0.000000	0.000000	0.000000	0.023776
SW	0	0	0	1	0	0	0	2	0	0	0	0	13
WSW	0.000000	0.000000	0.000000	0.001399	0.000000	0.002797	0.011189	0.002797	0.000000	0.000000	0.000000	0.000000	0.018182
W	0	0	1	0	1	2	4	2	0	0	0	0	10
WNW	0.000000	0.000000	0.001399	0.001399	0.000000	0.002797	0.005594	0.002797	0.000000	0.000000	0.000000	0.000000	0.013986
NW	1	0	0	1	0	1	1	0	0	0	0	0	4
NNW	0.001399	0.000000	0.000000	0.001399	0.000000	0.001399	0.001399	0.000000	0.000000	0.000000	0.000000	0.000000	0.005594
Total	0	0	0	0	0	1	3	0	2	0	0	0	6
	0.000000	0.000000	0.000000	0.000000	0.000000	0.001399	0.004196	0.000000	0.002797	0.000000	0.000000	0.000000	0.008392
	0	0	0	0	2	3	11	7	3	0	0	0	26
	0.000000	0.000000	0.000000	0.000000	0.002797	0.004196	0.015385	0.009790	0.004196	0.000000	0.000000	0.000000	0.036364
	0	0	0	1	4	10	23	18	4	0	0	0	60
	0.000000	0.000000	0.000000	0.001399	0.005594	0.013986	0.032168	0.025175	0.005594	0.000000	0.000000	0.000000	0.083916
	0	0	0	3	2	9	32	13	1	0	0	0	61
	0.000000	0.000000	0.000000	0.004196	0.002797	0.012587	0.044755	0.018182	0.001399	0.001399	0.000000	0.000000	0.085315
	0	0	2	1	2	9	21	33	16	2	0	0	86
	0.000000	0.000000	0.002797	0.001399	0.002797	0.012587	0.029371	0.046154	0.022378	0.002797	0.000000	0.000000	0.120280
	0	1	0	0	3	5	35	31	26	1	0	0	103
	0.000000	0.001399	0.000000	0.001399	0.004196	0.006993	0.048951	0.043357	0.036364	0.001399	0.000000	0.000000	0.144056
	0	0	0	1	1	18	38	46	26	5	0	0	135
	0.000000	0.000000	0.000000	0.001399	0.001399	0.025175	0.053147	0.064336	0.036364	0.006993	0.000000	0.000000	0.188811
	0	0	0	1	2	13	48	18	6	0	0	0	86
	0.000000	0.000000	0.000000	0.001399	0.002797	0.018182	0.067133	0.025175	0.008392	0.000000	0.000000	0.000000	0.123077
	2	1	4	14	24	103	281	192	85	9	0	0	715
Total	0.002797	0.001399	0.005594	0.019580	0.033566	0.144056	0.393007	0.268531	0.118881	0.012587	0.000000	0.000000	1.000000

The number of calms this period = 0
The number of valid data = 715, total fraction = 4.25089e-02
The number of missing data = 8

Elevation = 50 m

Pasquill stability class D

From 84/ 1 to 85/12

Wind Direction	Wind Speed (m/s)												Total
	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	
N	1 0.000187	0 0.000000	5 0.000934	15 0.002802	17 0.003175	58 0.010833	133 0.024841	23 0.004296	4 0.000747	0 0.000000	0 0.000000	0 0.000000	256 0.047815
NNE	1 0.000187	1 0.000187	6 0.001121	5 0.000934	18 0.003362	44 0.008218	141 0.026335	32 0.005977	6 0.001121	0 0.000000	0 0.000000	0 0.000000	254 0.047441
NE	0 0.000000	2 0.000374	1 0.000187	9 0.001581	22 0.004109	58 0.010833	138 0.025775	39 0.007284	4 0.000747	1 0.000187	0 0.000000	0 0.000000	274 0.051177
ENE	1 0.000187	1 0.000187	1 0.000187	10 0.001868	17 0.003175	41 0.007658	129 0.024094	102 0.019051	43 0.008031	0 0.000000	0 0.000000	0 0.000000	345 0.064438
E	1 0.000187	2 0.000374	2 0.000374	15 0.002802	16 0.002988	37 0.006911	88 0.016436	40 0.007471	23 0.004296	2 0.000374	0 0.000000	0 0.000000	226 0.042211
ESE	3 0.000560	1 0.000187	6 0.001121	6 0.001121	15 0.002802	29 0.005417	53 0.009899	5 0.000934	1 0.000187	0 0.000000	0 0.000000	0 0.000000	119 0.022226
SE	1 0.000187	3 0.000560	3 0.000560	9 0.001681	11 0.002055	34 0.006350	35 0.006537	3 0.000560	0 0.000000	0 0.000000	0 0.000000	0 0.000000	99 0.018491
SSE	0 0.000000	0 0.000000	2 0.000374	11 0.002055	10 0.001868	33 0.006164	28 0.005230	9 0.001681	6 0.001121	0 0.000000	0 0.000000	0 0.000000	99 0.018491
S	1 0.000187	3 0.000560	4 0.000747	13 0.002428	22 0.004109	37 0.008911	54 0.010086	18 0.003362	4 0.000747	0 0.000000	0 0.000000	0 0.000000	156 0.029137
SSW	1 0.000187	5 0.000934	4 0.000747	16 0.002988	23 0.004296	65 0.012140	139 0.025962	48 0.008965	23 0.004296	1 0.000187	0 0.000000	0 0.000000	325 0.060702
SW	1 0.000187	2 0.000374	10 0.001868	17 0.003175	36 0.006724	108 0.020172	146 0.027269	109 0.020359	29 0.005417	1 0.000187	0 0.000000	0 0.000000	459 0.085730
WSW	4 0.000747	2 0.000374	3 0.000560	15 0.002802	32 0.005977	89 0.016823	200 0.037355	112 0.020919	24 0.004483	4 0.000747	0 0.000000	0 0.000000	485 0.090586
W	1 0.000187	1 0.000187	1 0.000187	12 0.002241	16 0.002988	70 0.013074	178 0.033246	194 0.036235	139 0.025962	23 0.004296	0 0.000000	0 0.000000	635 0.118693
WNW	1 0.000187	1 0.000187	2 0.000374	11 0.002055	20 0.003736	66 0.012327	179 0.033433	155 0.028950	134 0.025028	11 0.002055	1 0.000187	0 0.000000	581 0.108517
NW	6 0.001121	1 0.000187	3 0.000560	14 0.002615	23 0.004296	75 0.014008	196 0.036608	175 0.032686	108 0.020172	21 0.003922	1 0.000187	0 0.000000	623 0.116362
NNW	1 0.000187	0 0.000000	3 0.000560	15 0.002802	20 0.003736	70 0.013074	184 0.034367	94 0.017557	29 0.005417	1 0.000187	0 0.000000	0 0.000000	417 0.077886
Total	24 0.004483	25 0.004669	56 0.010459	193 0.036948	318 0.059395	914 0.170713	2021 0.377475	1158 0.216287	577 0.107770	65 0.012140	2 0.000374	0 0.000000	5353 0.999813

The number of calms this period = 1
 The number of valid data = 5354, total fraction = 3.18312e-01
 The number of missing data = 58

Elevation = 60 m

Pasquill stability class E

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	4 0.000631	1 0.000158	3 0.000473	13 0.002051	12 0.001894	56 0.008837	194 0.030814	63 0.009942	5 0.000789	2 0.000316	0 0.000000	0 0.000000	353 0.055705
NNE	0 0.000000	4 0.000631	1 0.000158	10 0.001578	19 0.002998	81 0.012782	190 0.029983	51 0.008048	11 0.001736	1 0.000158	0 0.000000	0 0.000000	368 0.058072
NE	1 0.000158	1 0.000158	4 0.000631	11 0.001736	19 0.002998	86 0.013571	200 0.031561	87 0.013729	7 0.001105	2 0.000316	3 0.000473	0 0.000000	421 0.066435
ENE	2 0.000316	2 0.000316	2 0.000316	10 0.001578	16 0.002525	78 0.012309	130 0.020514	91 0.014360	34 0.005365	14 0.002269	10 0.001578	0 0.000000	389 0.061386
E	1 0.000158	3 0.000473	7 0.001105	7 0.001105	12 0.001894	44 0.006943	89 0.014045	23 0.003629	9 0.001420	4 0.000631	0 0.000000	0 0.000000	199 0.031403
ESE	2 0.000316	0 0.000000	2 0.000316	10 0.001578	11 0.001736	30 0.004734	54 0.008521	8 0.001262	5 0.000789	0 0.000000	0 0.000000	0 0.000000	122 0.019252
SE	3 0.000473	0 0.000000	3 0.000473	8 0.001262	20 0.003156	35 0.005523	58 0.009153	8 0.001262	13 0.002051	3 0.000473	0 0.000000	0 0.000000	151 0.023828
SSE	1 0.000158	2 0.000316	4 0.000631	18 0.002840	20 0.003156	51 0.008048	92 0.014518	19 0.002998	1 0.000158	0 0.000000	0 0.000000	0 0.000000	208 0.032823
S	2 0.000316	1 0.000158	2 0.000316	13 0.002051	18 0.002840	91 0.014360	249 0.039293	102 0.016096	24 0.003787	0 0.000000	0 0.000000	0 0.000000	502 0.079217
SSW	2 0.000316	3 0.000473	2 0.000316	11 0.001736	20 0.003156	103 0.016254	421 0.066435	133 0.020988	22 0.003472	1 0.000158	0 0.000000	0 0.000000	718 0.113303
SW	2 0.000316	1 0.000158	4 0.000631	14 0.002209	27 0.004261	56 0.015149	338 0.053338	119 0.018779	27 0.004261	0 0.000000	0 0.000000	0 0.000000	628 0.099101
WSW	1 0.000158	3 0.000473	2 0.000316	12 0.001894	19 0.002998	79 0.012466	279 0.044027	106 0.016727	6 0.000947	0 0.000000	0 0.000000	0 0.000000	507 0.083006
W	2 0.000316	2 0.000316	5 0.000789	13 0.002051	23 0.003629	87 0.013729	263 0.041502	141 0.022250	32 0.005850	1 0.000158	0 0.000000	0 0.000000	569 0.089790
WNW	1 0.000158	1 0.000158	2 0.000316	6 0.000947	14 0.002209	54 0.008521	163 0.025722	90 0.014202	34 0.005365	1 0.000158	0 0.000000	0 0.000000	366 0.057756
NW	4 0.000631	4 0.000631	1 0.000158	9 0.001420	13 0.002051	61 0.009626	185 0.029194	57 0.008995	18 0.002840	0 0.000000	0 0.000000	0 0.000000	352 0.055547
NNW	3 0.000473	0 0.000000	4 0.000631	6 0.000947	18 0.002840	62 0.009784	129 0.036295	20 0.020357	31 0.004892	1 0.000158	0 0.000000	0 0.000000	484 0.076377
Total	31 0.004892	28 0.004418	48 0.007575	171 0.026984	281 0.044343	1094 0.172637	3135 0.494714	1227 0.193625	279 0.044027	30 0.004734	13 0.002051	0 0.000000	6337 1.000000

The number of calms this period = 0
 The number of valid data = 6337, total fraction = 3.76754e-01
 The number of missing data = 93

Elevation = 60 m

Pasquill stability class F

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 16.0	>16.0	Total
N	2 0.000990	2 0.000990	2 0.000990	1 0.000495	10 0.004950	12 0.005941	85 0.042079	25 0.012376	0 0.000000	0 0.000000	0 0.000000	0 0.000000	139 0.068812
NNE	0 0.000000	0 0.000000	0 0.000000	6 0.002970	6 0.002970	19 0.009406	45 0.022277	6 0.002970	0 0.000000	0 0.000000	0 0.000000	0 0.000000	82 0.040594
NE	2 0.000990	1 0.000495	0 0.000000	7 0.003465	3 0.001485	15 0.007426	48 0.023762	8 0.003960	0 0.000000	0 0.000000	0 0.000000	0 0.000000	84 0.041584
ENE	0 0.000000	0 0.000000	0 0.000000	3 0.001485	6 0.002970	7 0.003465	26 0.012871	2 0.000990	4 0.001980	0 0.000000	0 0.000000	0 0.000000	48 0.023762
E	0 0.000000	0 0.000000	5 0.002475	3 0.001485	5 0.002475	14 0.006931	20 0.009901	3 0.001485	2 0.000990	6 0.002970	3 0.001485	0 0.000000	61 0.030198
ESE	1 0.000495	1 0.000495	1 0.000495	1 0.000495	8 0.003960	15 0.007426	14 0.006931	0 0.000000	6 0.002970	0 0.000000	0 0.000000	0 0.000000	47 0.023267
SE	1 0.000495	1 0.000495	3 0.001485	5 0.002475	3 0.001485	13 0.005436	14 0.006931	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	40 0.019802
SSE	1 0.000495	0 0.000000	2 0.000990	4 0.001980	13 0.006436	26 0.012871	23 0.011386	0 0.000000	0 0.000000	0 0.000000	0 0.000000	0 0.000000	69 0.034158
S	1 0.000495	1 0.000495	1 0.000495	7 0.003465	15 0.007426	28 0.013861	76 0.037624	7 0.003465	0 0.000000	0 0.000000	0 0.000000	0 0.000000	136 0.067327
SSW	0 0.000000	0 0.000000	2 0.000990	5 0.002475	12 0.005941	57 0.028218	145 0.071782	12 0.005941	0 0.000000	0 0.000000	0 0.000000	0 0.000000	233 0.115347
SW	2 0.000990	0 0.000000	0 0.000000	3 0.001485	12 0.005941	40 0.019802	205 0.011485	54 0.026733	2 0.000990	0 0.000000	0 0.000000	0 0.000000	318 0.157426
WSW	1 0.000495	1 0.000495	0 0.000000	9 0.004455	9 0.004455	47 0.023267	139 0.068812	45 0.022772	0 0.000000	0 0.000000	0 0.000000	0 0.000000	252 0.124752
W	1 0.000495	0 0.000000	2 0.000990	9 0.004455	15 0.007426	48 0.023762	78 0.038614	11 0.005446	0 0.000000	0 0.000000	0 0.000000	0 0.000000	164 0.081188
WNW	0 0.000000	1 0.000495	1 0.000495	7 0.003465	10 0.004950	43 0.021287	54 0.026733	6 0.002970	0 0.000000	0 0.000000	0 0.000000	0 0.000000	122 0.060396
NW	0 0.000000	1 0.000495	1 0.000495	6 0.002970	2 0.000990	28 0.013861	51 0.025248	3 0.001485	0 0.000000	0 0.000000	0 0.000000	0 0.000000	92 0.045545
NNW	1 0.000495	0 0.000000	0 0.000000	2 0.000990	1 0.000495	6 0.002970	16 0.007921	40 0.033168	0 0.019802	0 0.000000	0 0.000000	0 0.000000	133 0.065842
Total	13 0.066433	9 0.004455	22 0.010891	77 0.035119	135 0.066832	428 0.211881	1090 0.539604	223 0.110396	14 0.006931	6 0.002970	3 0.001485	0 0.000000	2020 1.000000

The number of calms this period = 0
The number of valid data = 2020, total fraction = 1.000000
The number of missing data = 12

Elevation = 60 m

Pasquill stability class G

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
	2	3	0	5	9	27	41	13	0	0	0	0	198
N	0.001412	0.002119	0.000000	0.003531	0.006356	0.019068	0.028955	0.009181	0.000000	0.000000	0.000000	0.000000	0.070621
	0	0	5	4	8	33	25	1	0	0	0	0	76
NNE	0.000000	0.000000	0.003531	0.002825	0.005650	0.023305	0.017655	0.00706	0.000000	0.000000	0.000000	0.000000	0.053672
	0	2	1	2	5	10	21	3	0	0	0	0	44
NE	0.000000	0.001412	0.000706	0.001412	0.003531	0.007062	0.014831	0.002119	0.000000	0.000000	0.000000	0.000000	0.031073
	1	0	1	3	3	9	11	2	0	0	0	0	38
ENE	0.000706	0.000000	0.000706	0.002119	0.002119	0.006356	0.007768	0.001412	0.000000	0.000000	0.000000	0.000000	0.021186
	1	1	1	2	4	8	7	0	0	0	0	0	24
E	0.000706	0.000706	0.000706	0.001412	0.002825	0.005650	0.004944	0.000000	0.000000	0.000000	0.000000	0.000000	0.016949
	0	0	2	4	2	8	6	0	0	0	0	0	22
ESE	0.000000	0.000000	0.001412	0.002825	0.001412	0.005650	0.004237	0.000000	0.000000	0.000000	0.000000	0.000000	0.015537
	2	1	1	7	1	10	5	0	0	0	0	0	27
SE	0.001412	0.000706	0.000706	0.004944	0.000706	0.007062	0.003531	0.000000	0.000000	0.000000	0.000000	0.000000	0.019068
	1	2	1	5	6	16	10	1	0	0	0	0	42
SSE	0.000706	0.001412	0.000706	0.003531	0.004237	0.011299	0.007062	0.000706	0.000000	0.000000	0.000000	0.000000	0.029661
	1	0	4	5	6	17	27	0	0	0	0	0	69
S	0.000706	0.000000	0.002825	0.003531	0.004237	0.012006	0.019068	0.000000	0.000000	0.000000	0.000000	0.000000	0.042373
	2	2	0	4	12	37	50	0	0	0	0	0	107
SSW	0.001412	0.001412	0.000000	0.002825	0.004475	0.026130	0.035311	0.000000	0.000000	0.000000	0.000000	0.000000	0.075565
	2	0	6	8	21	58	98	11	2	0	0	0	206
SW	0.001412	0.000000	0.004237	0.005650	0.014831	0.040960	0.069209	0.007768	0.001412	0.000000	0.000000	0.000000	0.145480
	1	4	2	4	18	37	88	6	0	0	0	0	160
WSW	0.000706	0.002825	0.001412	0.002825	0.012712	0.026130	0.062147	0.004237	0.000000	0.000000	0.000000	0.000000	0.112994
	2	2	3	9	24	48	61	3	0	0	0	0	144
W	0.001412	0.001412	0.002119	0.006356	0.016949	0.028249	0.043079	0.002119	0.000000	0.000000	0.000000	0.000000	0.101695
	1	1	1	13	18	41	40	2	0	0	0	0	117
WNW	0.000706	0.000706	0.000706	0.009181	0.012712	0.028955	0.028249	0.001412	0.000000	0.000000	0.000000	0.000000	0.082627
	4	1	1	10	13	39	54	1	1	0	0	0	124
NW	0.002825	0.000706	0.000706	0.007062	0.009181	0.027542	0.038136	0.00706	0.000706	0.000000	0.000000	0.000000	0.087571
	1	2	5	6	10	35	65	9	0	0	0	0	133
NNW	0.000706	0.001412	0.003531	0.004237	0.007062	0.024718	0.045904	0.006356	0.000000	0.000000	0.000000	0.000000	0.093927
	21	21	34	91	160	425	609	52	3	0	0	0	1416
Total	0.014831	0.014831	0.024011	0.064266	0.112994	0.300141	0.430085	0.036723	0.002119	0.000000	0.000000	0.000000	1.000000

The number of calms this period = 0
 The number of valid data = 1416, total fraction = 8.41855e-02
 The number of missing data = 22

Elevation = 60 m

All stability classes

From 84/ 1 to 85/12

Wind Speed (m/s)

Wind Direction	.22 to .50	.51 to .75	.76 to 1.0	1.1 to 1.5	1.6 to 2.0	2.1 to 3.0	3.1 to 5.0	5.1 to 7.0	7.1 to 10.0	10.1 to 13.0	13.1 to 18.0	>18.0	Total
N	9 0.000535	6 0.000357	10 0.000595	35 0.002081	51 0.003032	168 0.009988	499 0.029667	144 0.008561	11 0.000654	2 0.000119	0 0.000000	0 0.000000	935 0.055589
NNE	1 0.000059	5 0.000297	12 0.000713	25 0.001486	53 0.003151	188 0.011177	431 0.025524	180 0.005945	17 0.001011	1 0.000050	0 0.000000	0 0.000000	833 0.049524
NE	3 0.000178	6 0.000357	6 0.000357	31 0.001843	49 0.002913	177 0.010523	427 0.025386	142 0.008442	11 0.000654	3 0.000178	3 0.000178	0 0.000000	858 0.051011
ENE	5 0.000297	3 0.000178	5 0.000297	26 0.001546	45 0.002675	141 0.008383	334 0.019857	221 0.013139	83 0.004935	14 0.000832	10 0.000595	0 0.000000	887 0.052735
E	3 0.000178	6 0.000357	15 0.000892	27 0.001605	44 0.002616	108 0.006421	227 0.013436	77 0.004578	34 0.002021	12 0.000713	3 0.000178	0 0.000000	556 0.033056
ESE	6 0.000357	2 0.000119	11 0.000654	23 0.001367	36 0.002140	87 0.005172	152 0.009037	32 0.001902	14 0.000832	0 0.000000	0 0.000000	0 0.000000	363 0.021581
SE	7 0.000416	5 0.000297	11 0.000654	31 0.001843	36 0.002140	95 0.005707	118 0.007015	13 0.000773	13 0.000773	3 0.000178	0 0.000000	0 0.000000	333 0.019798
SSE	4 0.000238	4 0.000238	9 0.000535	39 0.002319	49 0.002913	128 0.007610	155 0.009215	29 0.001724	7 0.000416	0 0.000000	0 0.000000	0 0.000000	424 0.025208
S	5 0.000297	5 0.000297	11 0.000654	38 0.002259	61 0.003627	175 0.010404	410 0.024376	127 0.007551	30 0.001784	0 0.000000	0 0.000000	0 0.000000	862 0.051249
SSW	5 0.000297	10 0.000595	8 0.000476	37 0.002200	70 0.004162	270 0.016052	789 0.046908	215 0.012782	54 0.003210	2 0.000119	0 0.000000	0 0.000000	1460 0.086801
SW	7 0.000416	3 0.000178	20 0.001189	45 0.002675	103 0.006124	320 0.019025	847 0.050357	85 0.020273	1 0.000059	0 0.000000	0 0.000000	0 0.000000	1772 0.105351
WSW	7 0.000416	10 0.000595	7 0.000416	43 0.002556	80 0.004756	271 0.016112	765 0.045482	299 0.017776	33 0.001962	5 0.000297	0 0.000000	0 0.000000	1520 0.090369
W	6 0.000357	5 0.000297	13 0.000773	45 0.002675	83 0.004935	258 0.015339	626 0.037218	416 0.024732	207 0.012307	26 0.001546	0 0.000000	0 0.000000	1685 0.102178
WNW	3 0.000178	5 0.000297	6 0.000357	40 0.002378	67 0.003983	213 0.012663	495 0.029429	311 0.018490	224 0.013317	21 0.001249	1 0.000059	0 0.000000	1386 0.082402
NW	14 0.000832	7 0.000416	6 0.000357	40 0.002378	54 0.003210	233 0.013853	591 0.035137	341 0.020273	183 0.010800	30 0.001784	1 0.000059	0 0.000000	1500 0.089180
NNW	6 0.000357	2 0.000119	14 0.000832	31 0.001843	57 0.003389	216 0.012842	669 0.039774	359 0.021344	88 0.005232	3 0.000178	0 0.000000	0 0.000000	1445 0.085910
Total	91 0.005410	84 0.004994	164 0.009750	556 0.033056	938 0.055767	3049 0.0181272	7535 0.447979	3167 0.188288	1094 0.065042	123 0.007313	18 0.001070	0 0.000000	16819 0.999941

The number of calms this period = 1
The number of valid data = 16820, total fraction = 1.00000e+00
The number of missing data = 724

Fig. 1 Location of Meteorological Station.
The tower is shown at location D91
on the map.

TFTR Scatter Diagram for Jan 1984 to Dec 1984
Temperature at 10 m

Fig. 2

TFTR Scatter Diagram for Jan 1984 to Dec 1984
Dew Point at 10 m

Fig. 3

TFTR Scatter Diagram for Jan 1984 to Dec 1984
10 to 60 m Temperature Difference

Fig. 4

TFTR Scatter Diagram for Jan 1984 to Dec 1984
10 to 60 m Temperature Difference

Fig. 5

TFTR Scatter Diagram for Jan 1984 to Dec 1984
10 to 60 m Temperature Difference

Fig. 6

TFTR Scatter Diagram for Jan 1984 to Dec 1984
10 to 60 m Temperature Difference

Fig. 7

TFTR Scatter Diagram for Jan 1984 to Dec 1984
10 to 60 m Temperature Difference

Fig. 8

TFTR Scatter Diagram for Jan 1984 to Dec 1984
10 to 60 m Temperature Difference

Fig. 9

TFTR Scatter Diagram for Jan 1984 to Dec 1984
10 to 60 m Temperature Difference

Fig. 10

TFTR Scatter Diagram for Jan 1984 to Dec 1984
10 to 60 m Temperature Difference

Fig. 11

TFTR Scatter Diagram for Jan 1984 to Dec 1984
10 to 60 m Temperature Difference

Fig. 12

TFTR Scatter Diagram for Jan 1984 to Dec 1984
Sigma Theta at 30 m

Fig. 13

TFTR Scatter Diagram for Jan 1984 to Dec 1984
Sigma Theta at 60 m

Fig. 14

TFTR Scatter Diagram for Jan 1984 to Dec 1984
Wind Speed at 10 m

Fig. 15

TFTR Scatter Diagram for Jan 1984 to Dec 1984
Wind Speed at 30 m

Fig. 16

TFTR Scatter Diagram for Jan 1984 to Dec 1984
Wind Speed at 60 m

Fig. 17

TFTR Scatter Diagram for Jan 1984 to Dec 1984 Instrument Failure

Fig. 18

TFTR Scatter Diagram for Jan 1985 to Dec 1985
Temperature at 10 m

Fig. 19

TFTR Scatter Diagram for Jan 1985 to Dec 1985
Dew Point at 10 m

Fig. 20

TFTR Scatter Diagram for Jan 1985 to Dec 1985
10 to 60 m Temperature Difference

Fig. 21

TFTR Scatter Diagram for Jan 1985 to Dec 1985
10 to 60 m Temperature Difference

Fig. 22

TFTR Scatter Diagram for Jan 1985 to Dec 1985
10 to 60 m Temperature Difference

Fig. 23

TFTR Scatter Diagram for Jan 1985 to Dec 1985
10 to 60 m Temperature Difference

Fig. 24

TFTR Scatter Diagram for Jan 1985 to Dec 1985
10 to 60 m Temperature Difference

Fig. 25

TFTR Scatter Diagram for Jan 1985 to Dec 1985
10 to 60 m Temperature Difference

Vertical Lapse Rate (C/100m) from 12 to 15h

Fig. 26

TFTR Scatter Diagram for Jan 1985 to Dec 1985
10 to 60 m Temperature Difference

Fig. 27

TFTR Scatter Diagram for Jan 1985 to Dec 1985
10 to 60 m Temperature Difference

Fig. 28

TFTR Scatter Diagram for Jan 1985 to Dec 1985
10 to 60 m Temperature Difference

Fig. 29

TFTR Scatter Diagram for Jan 1985 to Dec 1985
Sigma Theta at 30 m

Fig. 30

TFTR Scatter Diagram for Jan 1985 to Dec 1985
Sigma Theta at 60 m

Fig. 31

TFTR Scatter Diagram for Jan 1985 to Dec 1985
Wind Speed at 10 m

Fig. 32

TFTR Scatter Diagram for Jan 1985 to Dec 1985
Wind Speed at 30 m

Fig. 33

TFTR Scatter Diagram for Jan 1985 to Dec 1985
Wind Speed at 60 m

Fig. 34

TFTR Scatter Diagram for Jan 1985 to Dec 1985
Instrument Failure

Fig. 35

Wind Rose
 Joint Frequency Data for TFTR
 84/1 to 85/12
 Elevation 10 m, Extrapolated
 For All Stability Classes (100.0%)

Fig. 36

Wind Rose
 Joint Frequency Data for TFTR
 84/ 1 to 85/12
 Elevation 30 m
 For All Stability Classes (100.0%)

Wind Speed (m/s)

10.0	and above
7.0	to 10.0
5.0	to 7.0
3.0	to 5.0
2.0	to 3.0
1.5	to 2.0
1.0	to 1.5
0.75	to 1.0
0.22	to 0.75

Center = Calm

Fig. 37

Wind Rose
 Joint Frequency Data for TFTR
 84/ 1 to 85/12
 Elevation 60 m
 For All Stability Classes (100.0%)

Fig. 38

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