新庄支所における10冬期間の気象・降積雪観測資料の発刊に際して

1974年11月から1984年4月までの10冬期間の新庄支所における気象と降積雪に関する観測値を刊行するものである．使用の便利さと刷り上りの活字の大きさとを考慮したので，三部に分けて印刷することにした．すなわち，気象資料編（その1），降積雪編（その2），そして日降雪密度編（その3）である．

“十年一日の如し”とはよく言われるが，筆者が当支所へ来てから皆で協力して行ってきた観測ではあったが，この間，年末年始，日曜祭日をいとわず，一言の苦言を呈する者もなく一生懸命観測にたずさわってくれた研究員をはじめ，支援して下さった関係者の方々に厚く御礼を申し述べるものである．

特に，新気象観測露場の移転や新気象・積雪測器の導入，ならびに観測の継続については，蔭乍ら尽力のあった雪害防災研究室長（現同第1研究室長）の中村秀臣氏の労を多としたい．

昭和60年5月14日

国立防災科学技術センター 新庄支所長
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新庄支所における10冬期間の気象・降積雪観測
その1.　気象資料編

――1974年11月～1984年4月冬期――

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Ten Winter Season's Meteorological Data Observed at the Shinjo Branch of the NRCDP, Yamagata, Japan (1974/75 Winter to 1983/84 Winter)

By

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Abstract

This report contains observed results of wind direction and speed, air temperature, global solar radiation and precipitation for ten winter seasons from 1974/75 to 1983/84, which were measured at the observational yard of the Shinjo Branch, National Research Center for Disaster Prevention. These data were carefully checked and corrected through the computational analysis.

Weather observations were started in January 1971 and have been continued as one of the most important and basic sources of data for our snow studies. The Shinjo Branch, 38°47'N, 140°19'E and 127m above sea level, is located at the center of the Shinjo Basin in the northern part of Japan's main island, Honshu.

1. 緒　言

1974年11月から1984年4月までの10冬期間，山形県新庄市十日町高壇1400番地にある国立防災科学技術センター新庄支所構内において測定してきた気象要素のうち，風速，風向，気温，全天日射量および降水量の測定結果を報告する．

＊雪害防災研究室，　＊＊主任研究官，　＊＊＊新庄支所

2. 測定場所及び方法

当支所は新庄盆地のほぼ中央部の北緯38°47′，東経140°19′に位置し，標高は127mである（図1）．図2に当支所構内における気象観測露場の位置を示す．同図には，AとBの2箇所に気象観測露場がある．これは，1971年に気象観測を開始した当時Aにあった露場を，周辺の住宅が建て込んだため，1982年7月にBへ移転したことを意味する．気象観測露場の広さは，Aが10m×10m，Bが12m×20mであり，本報告の気象データは全てこれらの二つの露場で測定されたものである（写真1，2）．使用した感部の種類及び取付位置を表1に示す．この中で気温の感部だけは，積雪深の増減に伴って人力で感部を昇降できる機構となっており，地上気象観測法（気象庁，1971）に従い，感部の高さが地上あるいは雪面上約1.5mになるように調節した．これ以外の感部には昇降機構がないので，感部の地上高は一定である．ただし，風速と風向の感部については1982年7月の露場の移転の際に，地上高5.5mから10mに変更している．また，全天日射計の感部については，その側に着雪防止用のブロアーを取付けた（写真1のC）．しかし，それでも湿った降雪があったときには，着雪が見られたので，その場合には人為的に除去した．なお，表1中の（　　）内は日付を表わすものである．例えば，7／23は7月23日を意味する．

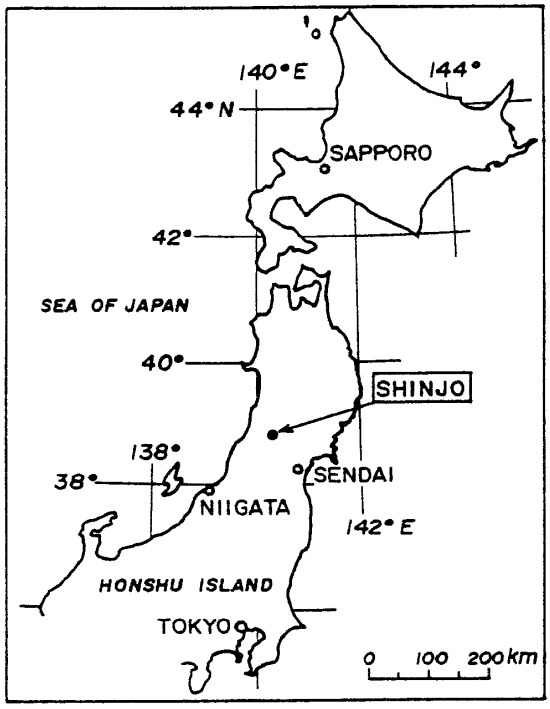

図1　新庄支所位置図

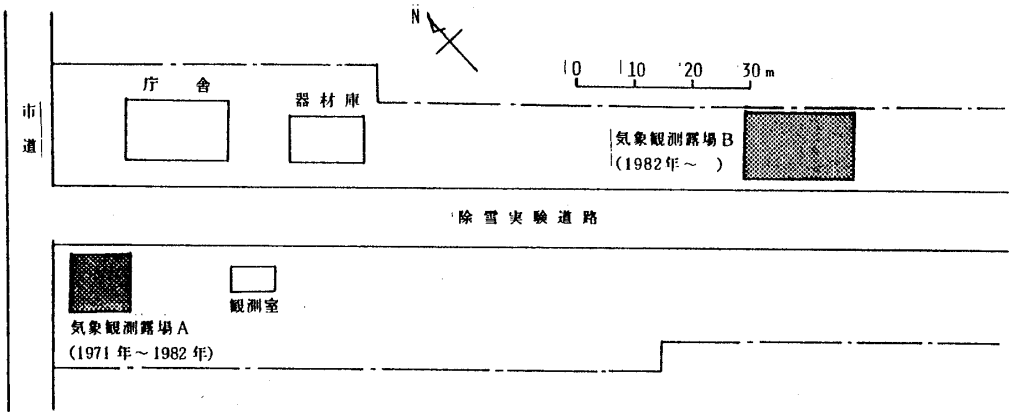

図２　気象観測露場配置図

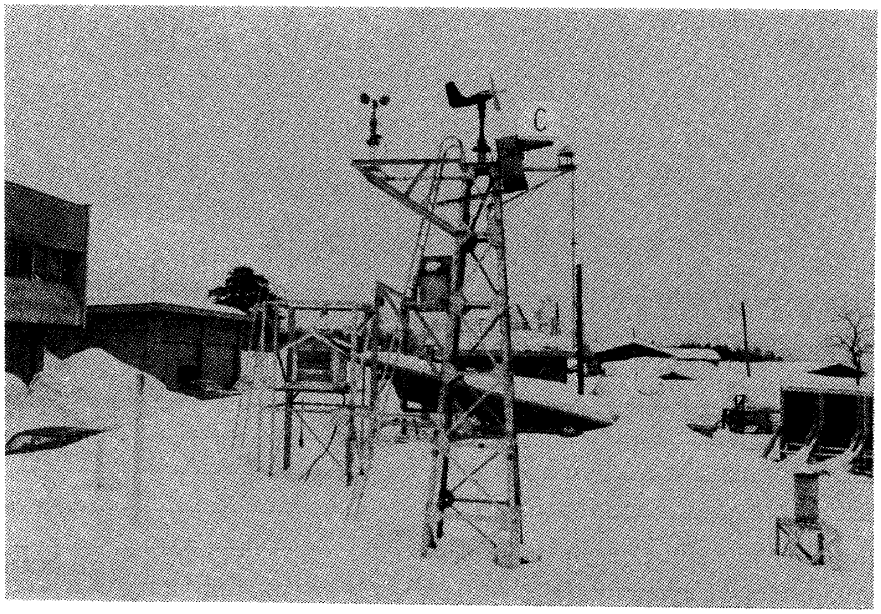

写真１　旧気象観測露場（図２中のＡ）．Ｃは全天日射計感部の着雪防止用ブロアー．

写真2　新気象観測露場（図2中のB）

表1　感部の種類及び取付位置一覧

項目他＼西暦年	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
風速	風車型風向・風速計											↓新品と交換 (7／23)		
	地上高5.5 m											(7／23) 地上高10 m		
風向	風車型風向・風速計											↓新品と交換 (7／23)		
	地上高5.5 m											(7／23) 地上高10 m		
気温	白金抵抗温度計（通風シェルター無）											(1／16) 白金抵抗温度計（通風シェルター有）		
	百葉箱内雪面上約1.5 m											(1／16) 屋外雪面上約1.5 m		
全天日射量	太陽電池式全天日射計					検定 (12／29)	積算器組込			(1／23)		熱電堆式全天日射計		
	除雪ブロアーなし地上高5.5 m					(12／29)						除雪ブロアー付地上高5.5 m		
降水量	転倒ます型雨雪量計（1パルス0.5㎜）											(12／23) いっすい式雨雪量計（1パルス0.5㎜）		
	風よけなし，地上高2.25 m											(12／23) 風よけ有 地上高2.25 m		
その他	1971年1月 総合気象盤始動			収録期間（ただし冬期のみ）							1982年1月デジタル処理装置納入		1982年7月 観測露場移転	

3. 記録及び読取り

各気象要素は，当初アナログ記録計のみに記録されていた．1982年1月にデジタル処理装置（中浅測器製，NASCON 1000）を購入してからは，従来のアナログ記録と並行してデジタルで10分毎（夏期は1時間毎）にプリンター用紙及び紙テープにも記録されるようになり，現在に至っている（図3上）．図3下は，紙テープに記録された気象データを読取り，かつ整理，解析するための装置で，これにはミニコンピュータ（三菱電機製，MELCOM 70／10）が用いられている．このため，気象データはオフラインながらも，コンピュータで読取られ，直ちにフロッピーシートに格納される．しかし，このシステムが完成する以前の気象データについては，アナログ記録のみであったので，全て記録紙から人手によって読取り，それをコンピュータのキーボードから入力し，フロッピーシートに格納した。なお，いずれの場合にもフロッピーシートには，毎正時毎の気象データを格納してある．

表2にはコンピュータに収納した気象データの期間を示した．1カ月分の気象データが10冬期にわたって整っているのは，12，1，2，3月の4カ月間であり，11月や4月はデータの日数が1カ月に満たないものや全く無いものもある．しかし，ここに掲げた期間には，それぞれの冬期における初雪の日から消雪日までの期間が完全に包含されているのである．

いったん，コンピュータに入力した気象データは，各種の統計処理を行う前に，XYプロッターによって作図され，読取りや入力の際の単純な誤りを訂正した後，再びフロッピーシートに格納された．図4.1～4.54は訂正後の入力データを図化したものである．これらの図中には毎正時の値が示されているので，毎日の気象変化の様子を知るには適している．な

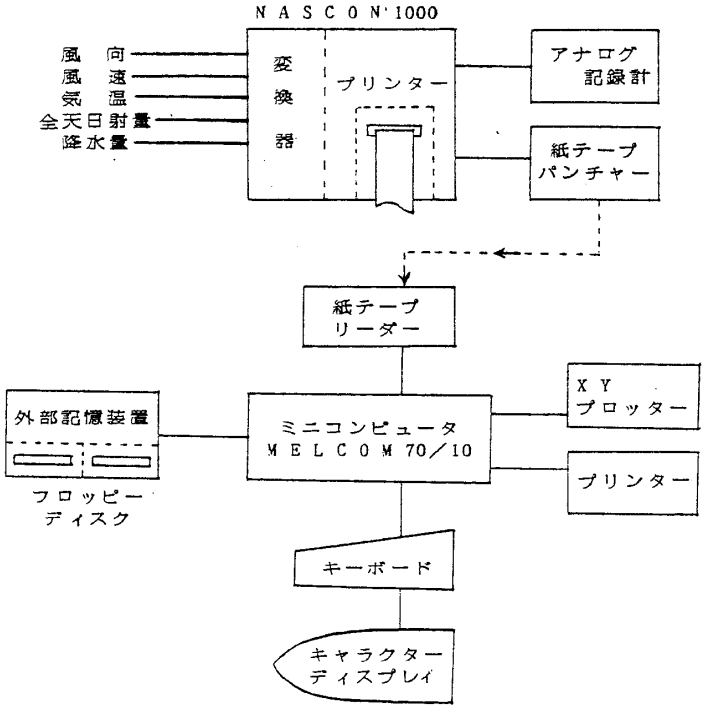

図3 気象観測装置（上）及びデータ処理装置（下）のブロックダイヤグラム

表 2　データ収納期間．それぞれの月の日付を表わす．（　）内はその月の全日数．*

No.	冬期＼月	11	12	1	2	3	4
1	1974 ～'75	1 ～30 (30)	1 ～31 (31)	1 ～31 (31)	1 ～28 (28)	1 ～31 (31)	1 ～10 (30)
2	1975 ～'76	—	1 ～31 (31)	1 ～31 (31)	1 ～29 (29)	1 ～31 (31)	1 ～ 5 (30)
3	1976 ～'77	16～30 (30)	1 ～31 (31)	1 ～31 (31)	1 ～28 (28)	1 ～31 (31)	1 ～10 (30)
4	1977 ～'78	—	1 ～31 (31)	1 ～31 (31)	1 ～28 (28)	1 ～31 (31)	1 ～10 (30)
5	1978 ～'79	—	1 ～31 (31)	1 ～31 (31)	1 ～28 (28)	1 ～31 (31)	—
6	1979 ～'80	—	1 ～31 (31)	1 ～31 (31)	1 ～29 (29)	1 ～31 (31)	1 ～ 8 (30)
7	1980 ～'81	—	1 ～31 (31)	1 ～31 (31)	1 ～28 (28)	1 ～31 (31)	1 ～12 (30)
8	1981 ～'82	6 ～30 (30)	1 ～31 (31)	1 ～31 (31)	1 ～28 (28)	1 ～31 (31)	1 ～ 5 (30)
9	1982 ～'83	1 ～30 (30)	1 ～31 (31)	1 ～31 (31)	1 ～28 (28)	1 ～31 (31)	1 ～ 5 (30)
10	1983 ～'84	1 ～30 (30)	1 ～31 (31)	1 ～31 (31)	1 ～29 (29)	1 ～31 (31)	1 ～30 (30)

（＊：例として16～30(30)は全日数30日のうち，16日から30日までの期間のデータを収納したことを表わす．）

お，風向（図中のＷＤ）の目盛が0，8，16となっているが，これは16方位の１～16と０を表わしており，０とは風速が0.2ｍ／ｓ以下の静穏のことで，風向が決定できない状態を意味するものである（気象庁，1971）．

4.　統計処理の方法

本報告における統計処理には，毎正時のデータを用いて行った日処理と，これによって得た結果の１カ月分のデータを用いて行った月処理とがある（表３参照）．また，これらの統計処理は，日界が０時と９時のそれぞれについて行った．９時の日界を設けた理由は，当支所

表 3　統計内容

項　目	日の統計	月の統計
風　　速	日平均，日最大	月平均，月最大，月最小
風　　向	日最多風向とその出現数	風向別出現数
気　　温	日平均，日最高，日最低	月平均，月最高，月最低
全天日射量	日合計	月合計，月平均，月最大，月最小
降 水 量	日合計	月合計

で行われている積雪の深さや降雪の深さ及びその密度等の測定時刻が9時となっており，これらの測定結果との対応を図ったためである．なお，日界9時の場合の日付は，当日10時から翌日9時までの24コのデータを当日の分として取扱った．

表3には，各気象要素ごとの統計内容を示してあるが，これらは次の4.1および4.2に説明する方法によって求めた．

4.1　日ごとの統計

(1)　日平均値は，毎正時のデータ24個の平均値である．

(2)　日最大値は，毎正時のデータ24個のうちの最大値である．

(3)　日最小値は，毎正時のデータ24個のうちの最小値である．

(4)　日合計値は，毎正時の積算値24個の合計値である．

(5)　日最多風向は，毎正時の風向24個のうち最も多く出現した風向である．ただし，日最多風向が複数個出現した場合は，最大3個まで採用することにした．

(6)　以上の統計については，24個のデータのうち1個でも欠測があると，それは不明とした．

(7)　1982年6月以降の日界が0時の場合については，前述のデジタル処理装置が1分ごとのデータに基づいて日処理を行うので，これらについてはそのまま採用した．

4.2　月ごとの統計

(1)　月平均，月最大，月最小及び月合計値は，上で求まった毎日の値のうち，不明な値を除いたものについての平均，最大，最小及び合計値である．なお，これらについては，用いたデータ数を明記することにした．

(2)　風向別出現数は，1カ月の全データから風向別の出現数を求めたものである．

5. 結　　果

表4.1～4.54に10冬期の風速，風向，気温，全天日射量及び降水量の統計処理の結果を示す．また，これらの表中の記号の説明を表5に示す．ここで，本表を使用する際に注意すべきことがらを，各気象要素ごとに述べておく．

風速： 1982年1月12日までは，アナログ記録を人手により読取ったが，その際の読み取り精度は0.5m／s であった．風向・風速計の感部の地上高が1982年7月の露場移転の際，5.5mから10mに変更されたので，移転後の風速値はそれ以前のものよりも大きくなっている．また，1982年6月以降の日界0時の場合については，前述した通りデジタル処理装置が1分毎に計測したデータに基づいて日処理を行うので，それによって得られた結果の精度は，1時間毎のデータに基づいて得られたものと比べて格段に高くなっているはずである．

表 4.1　新庄支所冬期気象月表

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METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

NOVEMBER 1974

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	2.3	6.0	14	(9)	4.2	6.1	0.7	X	22.0
2	2.7	6.0	14	(15)	5.7	6.9	4.2	X	2.0
3	0.3	1.5	16	(2)	5.6	13.1	0.6	X	0.0
4	0.1	1.0	14	(2)	4.8	10.5	0.1	X	2.0
5	0.6	3.5	13	(4)	3.8	11.5	-1.2	X	0.0
6	0.0	0.5	13	(1)	2.3	12.1	-2.8	X	0.0
7	0.0	0.0		(0)	3.4	13.7	-2.0	X	0.0
8	0.2	1.0	15 16	(3)	9.4	18.4	0.6	X	0.0
9	0.9	4.0	13	(5)	7.2	12.0	3.5	X	0.0
10	2.1	4.5	14	(12)	3.4	6.6	1.6	X	1.5
11	0.9	4.0	14	(5)	2.5	4.7	0.1	X	13.5
12	0.0	0.5	13 14	(1)	0.5	1.4	-0.2	X	22.5
13	1.5	5.0	14	(8)	0.1	1.6	-0.7	X	20.0
14	1.6	4.0	14	(9)	0.4	2.6	-0.9	X	2.5
15	X	X	X	(0)	0.7	3.2	-0.8	X	6.0
16	0.0	0.0		(0)	0.7	5.8	-2.5	X	0.0
17	0.0	0.0		(0)	1.4	3.3	-1.1	X	14.5
18	1.8	6.5	10 13	(4)	5.5	9.9	2.5	X	54.0
19	1.7	5.0	13	(9)	5.7	9.4	2.8	X	2.0
20	0.1	0.5	5	(2)	4.9	10.6	0.7	X	0.0
21	0.4	2.0	12	(3)	3.6	8.4	-0.6	X	16.5
22	1.9	5.5	12	(7)	3.0	5.1	1.4	X	43.5
23	0.0	0.5	13 15	(1)	4.2	6.8	-0.7	X	1.0
24	0.5	2.5	13 15 16	(2)	4.3	8.8	-0.9	X	13.0
25	0.4	2.5	14	(4)	4.7	9.7	-0.9	X	1.0
26	0.2	1.5	16	(2)	3.6	7.4	-0.3	X	2.0
27	0.7	5.0	14	(3)	2.9	9.0	-2.5	X	0.0
28	0.0	0.0		(0)	-0.4	7.5	-4.9	X	0.0
29	1.6	5.0	14	(6)	4.3	9.6	0.7	X	2.0
30	2.7	5.0	14	(16)	0.8	2.1	-1.4	X	0.5
TOTL								X	242.0
MEAN	0.9	2.9			3.4	7.9	-0.2	X	
MAX.	2.7	6.5			9.4	18.4	4.2	X	
MIN.	0.0	0.0			-0.4	1.4	-4.9	X	
DN	29	29			30	30	30	0	30

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	3.1	6.0	14	(13)	5.2	6.7	2.8	X	15.0
2	1.7	6.0	14	(10)	4.7	6.9	1.0	X	0.0
3	0.3	1.5	16	(2)	4.9	13.1	0.1	X	0.0
4	0.1	1.0	14	(2)	5.0	10.5	0.1	X	2.0
5	0.6	3.5	13	(4)	2.5	11.5	-2.8	X	0.0
6	0.0	0.5	13	(1)	2.6	12.1	-2.0	X	0.0
7	0.0	0.0		(0)	4.4	13.7	0.5	X	0.0
8	0.3	2.0	16	(4)	12.5	18.4	7.4	X	0.0
9	1.8	4.0	14	(8)	5.2	7.9	2.5	X	0.0
10	1.9	4.5	14	(10)	3.0	6.6	1.6	X	2.0
11	0.1	1.0	2 14	(2)	1.6	4.7	0.1	X	19.5
12	0.0	0.0		(0)	0.2	1.4	-0.7	X	30.5
13	2.4	5.0	14	(15)	0.2	1.6	-0.9	X	7.0
14	X	X	X	(0)	0.3	2.6	-0.8	X	7.0
15	0.2	1.0	15	(2)	0.3	3.2	-2.5	X	0.0
16	0.0	0.0		(0)	1.2	5.8	-1.5	X	0.0
17	0.0	0.5	7 15	(1)	2.7	7.0	1.4	X	39.5
18	3.0	6.5	13	(10)	6.2	9.9	4.4	X	31.0
19	0.5	3.0	13	(3)	4.5	9.4	0.7	X	0.0
20	0.1	0.5	5	(2)	4.4	10.6	-0.6	X	0.0
21	0.5	2.0	12	(3)	4.3	8.4	1.4	X	36.0
22	1.7	5.5	12	(7)	3.9	5.2	2.5	X	25.0
23	0.0	0.5	13 15	(1)	2.6	6.8	-0.9	X	0.5
24	0.6	2.5	16	(4)	6.0	8.8	3.1	X	13.5
25	0.3	2.5	14	(3)	3.0	9.7	-0.9	X	0.0
26	0.2	1.5	16	(3)	4.0	7.4	0.3	X	2.0
27	0.6	5.0	14	(3)	0.8	9.0	-4.9	X	0.0
28	0.0	0.0		(0)	1.6	7.5	-2.7	X	2.0
29	2.5	5.0	14	(11)	3.9	9.6	-1.4	X	0.0
30	3.0	5.5	14	(15)	1.7	3.2	0.5	X	0.5
TOTL								X	233.0
MEAN	0.9	2.6			3.4	8.0	0.3	X	
MAX.	3.1	6.5			12.5	18.4	7.4	X	
MIN.	0.0	0.0			0.2	1.4	-4.9	X	
DN	29	29			30	30	30	0	30

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

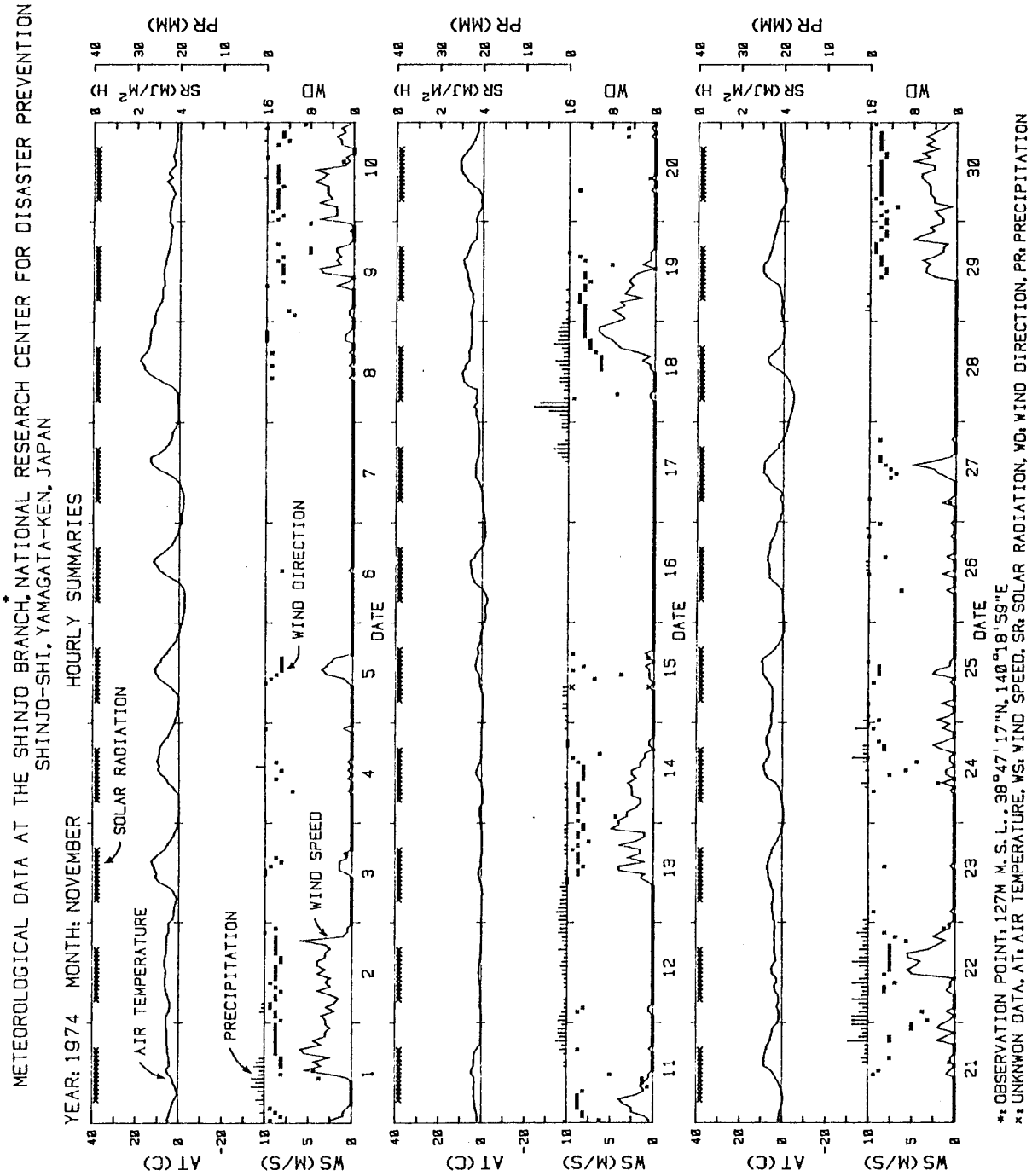

図 4.1 気象データの時間的変化

表 4.2　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

DECEMBER 1974

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.	NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	X	X	X	(0)	2.1	5.1	-2.3	X	0.0
2	X	X	X	(0)	-0.4	2.5	-3.8	X	0.0
3	0.4	2.5	14	(4)	0.5	1.9	-1.6	X	1.0
4	0.8	3.5	14	(5)	-2.7	-0.3	-6.2	X	1.5
5	0.2	2.0	8	(3)	-2.6	1.0	-6.6	X	9.0
6	0.9	4.0	13	(3)	-3.1	-1.7	-5.7	X	15.5
7	2.9	6.5	13	(9)	-1.2	0.3	-2.5	X	6.0
8	1.9	4.5	12 13	(7)	0.0	2.3	-2.2	X	0.5
9	1.1	4.0	13	(7)	1.7	4.4	-1.7	X	0.0
10	0.0	0.5	16	(1)	0.4	2.0	-2.1	X	4.0
11	0.7	2.5	14	(5)	0.9	4.5	-1.9	X	0.5
12	1.3	3.5	13 14	(6)	-0.3	1.1	-1.6	X	7.5
13	0.7	4.0	6	(5)	1.7	4.7	-0.8	X	0.5
14	3.1	6.5	12	(9)	1.1	4.3	-2.9	X	17.5
15	2.1	4.5	12	(12)	-2.7	-1.8	-3.7	X	5.0
16	1.2	3.0	14	(10)	-2.3	-1.7	-2.8	X	3.0
17	0.4	2.5	15	(5)	-1.6	1.9	-5.6	X	1.0
18	0.0	0.0		(0)	-2.5	1.2	-6.8	X	14.0
19	3.4	6.5	13	(17)	-0.4	2.5	-3.0	X	11.0
20	0.9	4.0	12	(4)	-1.9	1.3	-3.4	X	3.0
21	2.5	6.5	13	(13)	-2.0	-0.3	-2.9	X	7.5
22	1.5	4.5	14	(10)	-0.8	3.8	-6.9	X	1.0
23	0.0	0.0		(0)	-6.2	1.4	-12.0	X	0.0
24	0.2	2.0	13	(2)	-3.8	3.1	-10.7	X	18.0
25	X	X	X	(0)	-0.9	3.4	-2.9	X	22.5
26	X	X	X	(0)	-3.4	-1.9	-4.7	X	6.0
27	X	X	X	(0)	X	X	X	X	2.0
28	0.4	2.5	13 15 16	(2)	-2.0	2.3	-4.6	X	1.5
29	0.0	0.0		(0)	-6.1	0.2	-12.6	X	0.0
30	0.0	0.5	8	(1)	-3.3	-0.4	-8.0	X	0.0
31	0.7	5.0	14	(3)	-0.8	3.6	-4.5	X	2.5
TOTL								X	161.5
MEAN	1.1	3.3			-1.4	1.7	-4.6	X	
MAX.	3.4	6.5			2.1	5.1	-0.8	X	
MIN.	0.0	0.0			-6.2	-1.9	-12.6	X	
DN	26	26			30	30	30	0	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.	NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	X	X	X	(0)	-0.0	5.1	-3.8	X	0.0
2	0.0	0.0		(0)	0.9	2.5	-0.6	X	0.0
3	0.6	2.5	14 15	(6)	-0.3	1.9	-2.9	X	1.0
4	0.5	3.5	14	(3)	-4.0	-0.3	-6.6	X	1.5
5	1.1	4.0	8 13	(3)	-2.0	1.0	-5.7	X	13.0
6	0.9	5.5	14	(5)	-2.3	-0.8	-4.5	X	17.0
7	3.0	6.5	13	(9)	-0.8	1.5	-2.5	X	0.5
8	1.3	3.5	13	(8)	0.5	2.3	-2.2	X	0.5
9	0.7	4.0	13	(5)	1.3	4.4	-2.1	X	0.0
10	0.0	0.5	16	(1)	0.4	2.0	-1.9	X	4.5
11	1.3	3.0	13 14	(7)	1.3	4.5	-0.6	X	0.0
12	0.9	3.5	14	(6)	-0.4	1.0	-1.6	X	7.5
13	0.8	4.0	6	(6)	2.2	4.7	-0.3	X	13.0
14	4.2	6.5	12	(15)	-0.6	4.3	-3.7	X	6.0
15	1.5	3.0	14	(7)	-2.5	-1.7	-3.3	X	4.5
16	0.9	3.0	15	(6)	-2.2	-0.8	-2.8	X	3.5
17	0.1	1.0	15	(2)	-2.7	1.9	-6.8	X	2.5
18	1.5	6.5	13	(7)	-0.0	2.5	-2.8	X	14.0
19	2.2	6.0	13	(11)	-2.1	1.3	-3.3	X	10.5
20	1.1	3.0	13	(5)	-1.8	1.3	-3.4	X	6.5
21	2.5	6.5	13	(11)	-1.5	1.1	-2.7	X	3.0
22	0.9	4.5	14	(6)	-4.1	3.8	-12.0	X	0.0
23	0.0	0.5	13	(1)	-5.9	1.4	-10.7	X	0.0
24	0.8	3.0	13	(7)	0.1	3.4	-4.7	X	28.0
25	X	X	X	(0)	-2.8	-1.5	-4.7	X	15.0
26	3.3	5.0	13	(10)	-2.7	-0.8	-3.9	X	5.5
27	X	X	X	(0)	X	X	X	X	1.5
28	0.4	2.5	13 15	(2)	-4.4	2.3	-12.6	X	0.0
29	0.0	0.0		(0)	-4.4	0.2	-8.2	X	0.0
30	0.1	2.0	8 14	(1)	-2.3	1.2	-4.5	X	0.0
31	0.7	5.0	14	(3)	-0.1	3.6	-1.7	X	2.5
TOTL								X	161.5
MEAN	1.1	3.5			-1.5	1.8	-4.2	X	
MAX.	4.2	6.5			2.2	5.1	-0.3	X	
MIN.	0.0	0.0			-5.9	-1.7	-12.6	X	
DN	28	28			30	30	30	0	31

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

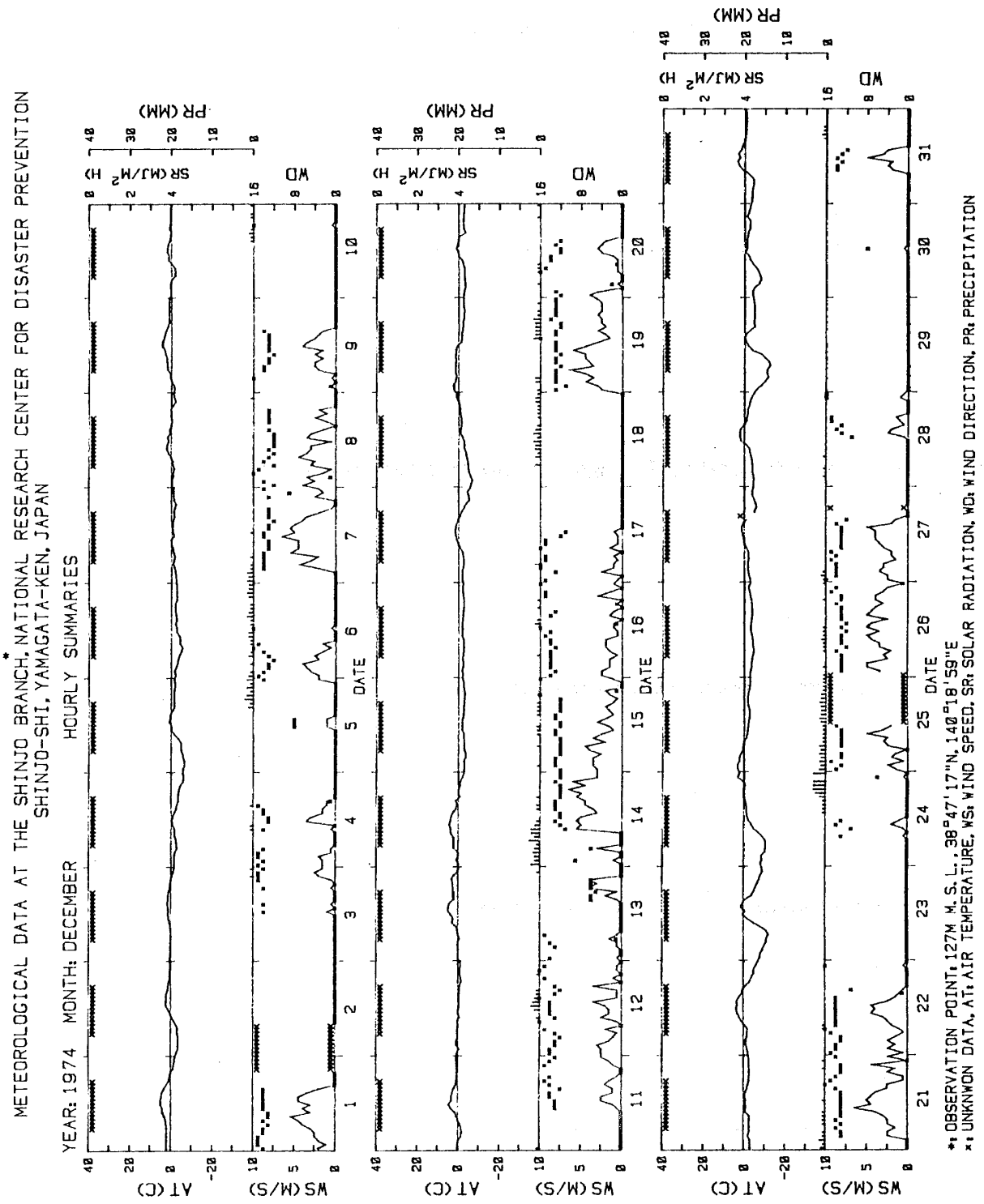

図 4.2　気象データの時間的変化

表 4.3　新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

JANUARY　1975

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.	WD(1-16) NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.7	3.0	13 14	(4)	-2.4	0.7	-10.1	X	0.0
2	0.0	0.5	9 11	(1)	-7.1	-2.4	-14.7	X	0.0
3	1.2	3.5	14	(6)	-3.7	-0.7	-7.0	X	2.0
4	0.6	3.0	13 16	(3)	-5.3	-0.6	-10.1	X	2.0
5	0.0	0.5	2	(1)	-9.2	-1.7	-14.2	X	0.0
6	0.1	1.0	9 16	(1)	-7.5	-0.4	-13.8	X	0.0
7	0.0	0.0		(0)	-4.8	2.9	-10.4	X	0.0
8	0.0	0.0		(0)	-3.2	0.1	-8.0	X	2.5
9	3.2	5.5	13	(12)	-0.6	2.5	-3.6	X	6.0
10	X	X	X	(0)	-3.8	-2.5	-4.7	X	11.5
11	2.7	6.0	13	(9)	-3.5	-2.6	-4.2	X	9.5
12	0.8	5.0	13	(4)	-3.3	-1.5	-4.0	X	25.0
13	1.3	4.5	14	(6)	-3.4	-2.5	-4.9	X	13.0
14	1.9	4.5	14	(8)	-1.5	0.0	-2.8	X	5.5
15	0.0	0.5	9 15	(1)	0.0	2.3	-1.6	X	3.5
16	0.1	1.0	13	(3)	0.3	1.6	-0.7	X	1.0
17	3.1	6.0	14	(11)	-2.4	1.6	-4.4	X	4.0
18	0.3	2.0	15	(3)	-3.4	0.0	-5.8	X	7.0
19	0.2	1.5	1 12 15	(1)	-5.2	-0.8	-9.0	X	3.5
20	0.3	2.5	13	(2)	-2.4	3.4	-9.2	X	1.5
21	0.1	0.5	10	(2)	0.1	4.3	-1.7	X	11.0
22	0.1	1.0	13	(2)	0.1	1.6	-0.7	X	12.5
23	3.4	5.0	14	(13)	0.0	1.7	-1.2	X	4.5
24	0.2	1.5	1	(2)	1.6	4.4	-1.2	X	2.0
25	1.9	5.0	13	(7)	1.1	3.6	-0.8	X	14.0
26	1.0	3.0	14	(5)	-1.3	0.5	-3.9	X	1.0
27	0.2	1.0	X	(0)	-1.8	1.5	-6.8	X	4.0
28	1.2	6.0	13	(3)	-0.9	2.2	-4.5	X	8.0
29	1.6	4.5	13 14	(5)	-5.8	-2.7	-8.8	X	1.5
30	1.8	4.0	14	(10)	-4.4	-3.5	-5.2	X	3.5
31	1.7	4.0	14	(7)	-2.9	-0.3	-4.3	X	1.0
TOTL								X	160.5
MEAN	1.0	2.9			-2.8	0.4	-5.9	X	
MAX.	3.4	6.0			1.6	4.4	-0.7	X	
MIN.	0.0	0.0			-9.2	-3.5	-14.7	X	
DN	30	30			31	31	31	0	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.	WD(1-16) NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.7	3.0	13	(4)	-6.4	0.7	-14.7	X	0.0
2	0.1	1.0	9 11	(1)	-4.3	-2.4	-6.9	X	1.5
3	1.4	3.5	14	(6)	-4.3	-0.7	-7.6	X	2.0
4	0.4	3.0	13	(2)	-7.1	-0.6	-12.5	X	0.5
5	0.0	0.5	2	(1)	-9.5	-1.7	-14.2	X	0.0
6	0.1	1.0	9 16	(1)	-5.9	-0.4	-10.4	X	0.0
7	0.0	0.0		(0)	-4.6	2.9	-8.0	X	0.0
8	0.3	3.0	13	(2)	-0.5	2.0	-3.1	X	6.5
9	4.2	5.5	13	(17)	-2.1	2.5	-4.1	X	5.0
10	X	X	X	(0)	-3.7	-2.5	-4.7	X	12.0
11	2.9	6.0	13	(9)	-3.6	-2.6	-4.2	X	12.0
12	0.0	0.0		(0)	-3.4	-1.5	-4.9	X	28.0
13	1.9	4.5	14	(10)	-2.8	-1.5	-3.6	X	6.5
14	1.4	4.5	14	(4)	-1.0	0.0	-1.6	X	6.0
15	0.1	0.5	9 13	(1)	0.3	2.3	-0.7	X	0.5
16	1.8	6.0	13	(7)	0.2	1.6	-2.6	X	3.0
17	1.4	5.0	14	(7)	-3.7	-1.8	-5.8	X	6.0
18	0.3	2.0	15	(3)	-4.7	0.0	-9.0	X	5.5
19	0.1	1.0	1 12	(1)	-4.6	-0.8	-9.2	X	2.5
20	0.3	2.5	1 13	(2)	-0.6	3.4	-3.2	X	1.5
21	0.0	0.5	10	(2)	0.5	4.3	-0.7	X	10.0
22	1.2	5.0	13 14	(5)	-0.1	1.6	-1.2	X	16.0
23	2.4	5.0	14	(10)	0.7	2.3	-1.0	X	2.5
24	0.5	5.0	12	(2)	1.3	4.4	-1.2	X	11.5
25	2.3	4.5	13	(11)	0.8	3.6	-1.4	X	2.5
26	0.3	2.0	15	(3)	-2.8	0.5	-6.8	X	1.0
27	0.2	1.0	X	(0)	-0.4	1.5	-1.9	X	8.5
28	2.1	6.0	13	(5)	-2.8	2.2	-6.4	X	4.5
29	1.5	4.0	14	(7)	-5.3	-2.7	-8.8	X	1.0
30	1.7	4.0	14	(10)	-4.2	-2.8	-5.0	X	4.0
31	0.9	3.5	13	(6)	-4.5	-0.3	-11.0	X	0.0
TOTL								X	160.5
MEAN	1.0	3.1			-2.9	0.4	-5.7	X	
MAX.	4.2	6.0			1.3	4.4	-0.7	X	
MIN.	0.0	0.0			-9.5	-2.8	-14.7	X	
DN	30	30			31	31	31	0	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

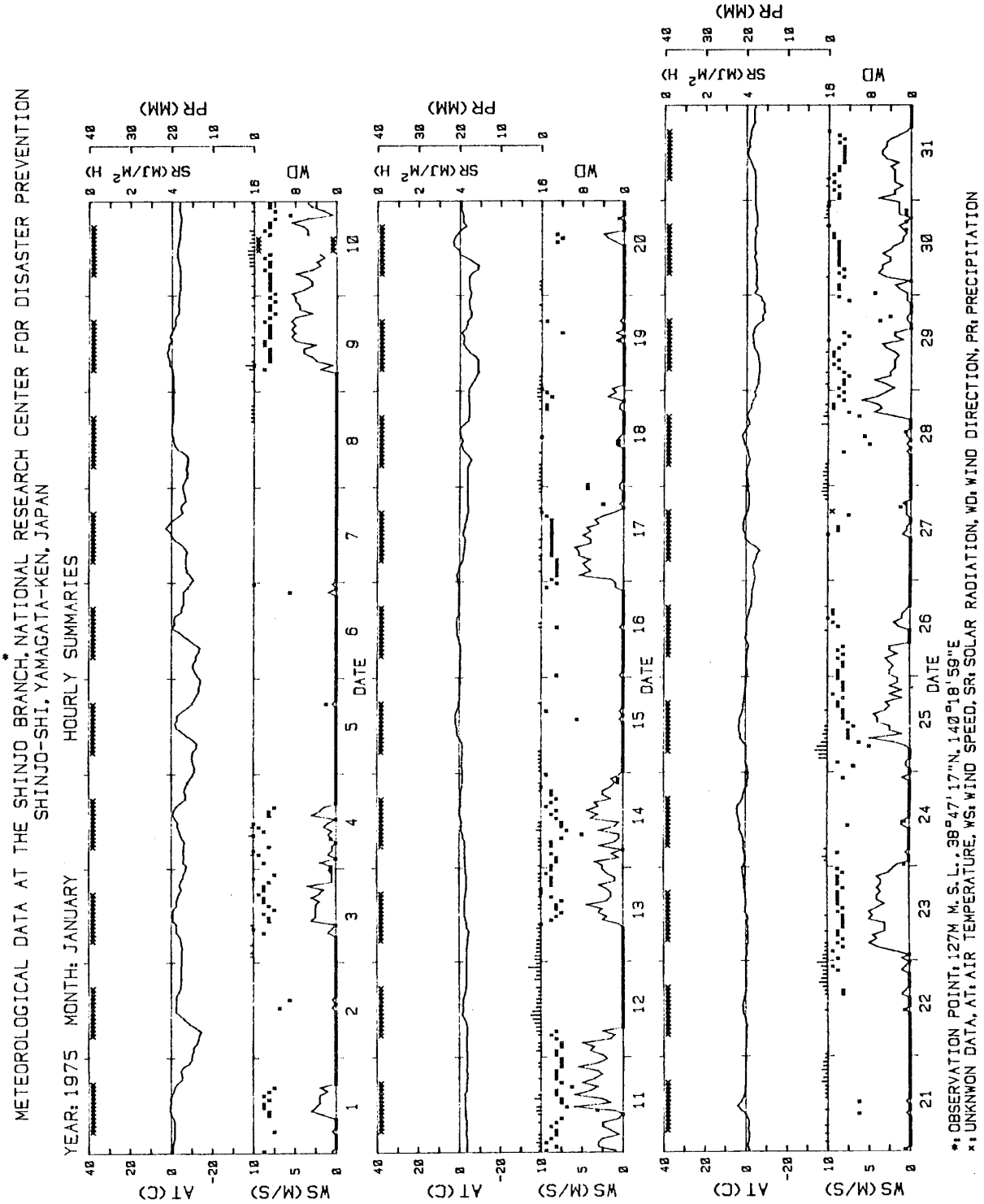

図 4.3 気象データの時間的変化

表 4.4　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH,NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI,YAMAGATA-KEN,JAPAN

(DAILY SUMMARIES)

FEBRUARY 1975

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	2.5	16	(3)	-3.9	0.3	-11.0	X	2.0
2	1.4	4.5	13	(9)	-1.2	1.6	-3.2	X	0.0
3	0.9	3.0	16	(4)	-2.3	1.6	-8.8	X	0.0
4	1.6	4.5	7	(4)	-3.3	2.2	-12.0	X	18.0
5	1.1	4.0	16	(4)	0.4	5.4	-5.5	X	5.0
6	0.7	3.5	6	(4)	-2.0	5.0	-9.1	X	0.0
7	0.6	4.0	13	(3)	0.7	2.3	-1.8	X	8.5
8	3.2	7.0	13	(14)	-3.5	-1.0	-4.7	X	5.5
9	1.7	4.0	13	(8)	-3.8	-2.1	-5.0	X	12.0
10	0.8	3.0	14	(6)	-4.1	-2.5	-4.8	X	11.0
11	1.5	5.0	13 14	(6)	-4.1	-2.1	-6.5	X	13.0
12	X	X	X	(0)	-2.3	0.9	-6.6	X	9.0
13	1.1	3.5	13	(7)	-3.7	-2.4	-5.8	X	3.5
14	0.1	0.5	4 14 16	(1)	-3.3	0.1	-7.7	X	10.5
15	1.0	4.5	14 16	(4)	-6.1	-1.1	-11.2	X	0.0
16	0.5	3.5	14	(4)	-7.2	-4.0	-14.0	X	6.0
17	0.5	3.5	11 13	(2)	-6.5	-0.9	-13.1	X	4.0
18	0.1	0.5	1	(2)	-6.1	-0.3	-11.3	X	0.5
19	0.0	0.5	14	(1)	-3.4	3.5	-9.3	X	0.0
20	0.1	1.0	1 2 3	(1)	-5.0	2.2	-10.7	X	0.0
21	0.4	2.0	15	(3)	-4.2	0.2	-10.8	X	1.5
22	0.8	2.5	15	(5)	-2.3	-0.4	-7.8	X	2.5
23	0.3	2.0	14 15 16	(2)	-2.8	3.4	-8.2	X	4.5
24	0.9	4.0	14	(4)	-1.3	1.4	-2.9	X	4.5
25	1.2	6.0	13	(4)	-0.7	3.3	-3.8	X	10.5
26	3.3	7.5	13	(7)	-1.5	1.3	-4.1	X	3.0
27	1.3	4.0	7	(7)	0.1	2.3	-2.0	X	5.0
28	2.1	4.5	13	(8)	-2.7	-0.8	-4.4	X	7.5
TOTL								X	147.5
MEAN	1.0	3.5			-3.1	0.7	-7.4	X	
MAX.	3.3	7.5			0.7	5.4	-1.8	X	
MIN.	0.0	0.5			-7.2	-4.0	-14.0	X	
DN	27	27			28	28	28	0	28

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.5	2.5	16	(4)	-1.4	0.3	-5.7	X	2.0
2	1.4	4.5	13	(9)	-1.8	1.6	-4.9	X	0.0
3	0.9	3.0	14	(5)	-4.9	1.6	-12.0	X	0.0
4	1.5	4.5	7	(4)	0.8	2.7	0.0	X	20.5
5	1.1	4.0	13 14	(3)	-2.7	5.4	-9.1	X	2.5
6	0.7	3.5	6	(4)	0.7	5.0	-2.7	X	0.5
7	1.7	5.0	13	(6)	-0.1	2.3	-3.7	X	9.0
8	3.2	7.0	13	(15)	-4.3	-2.6	-5.0	X	7.0
9	0.6	4.0	13	(4)	-3.7	-2.1	-4.6	X	16.5
10	1.5	5.0	14	(8)	-4.1	-2.5	-5.0	X	11.5
11	0.9	3.0	14	(4)	-4.0	-2.1	-6.6	X	12.0
12	X	X	X	(0)	-2.2	0.9	-5.8	X	4.0
13	0.7	3.5	13	(3)	-3.6	-2.4	-4.9	X	6.5
14	0.1	0.5	14 16	(2)	-4.4	0.1	-8.2	X	6.0
15	1.0	4.5	3 13	(3)	-7.5	-1.1	-14.0	X	0.0
16	0.5	3.5	14	(4)	-7.0	-4.0	-13.1	X	6.0
17	0.5	3.5	11 13	(2)	-6.1	-0.9	-11.3	X	4.0
18	0.1	0.5	1	(2)	-5.2	-0.3	-9.3	X	0.5
19	0.0	0.5	14	(1)	-4.3	3.5	-10.7	X	0.0
20	0.1	1.0	1 2	(1)	-4.9	2.2	-10.8	X	0.0
21	0.6	2.0	13 14	(3)	-1.6	0.2	-4.4	X	4.0
22	0.6	2.5	15	(5)	-4.3	-0.4	-8.2	X	0.0
23	0.4	3.0	14	(3)	-0.9	3.4	-2.9	X	8.5
24	0.8	4.0	12 14	(3)	-1.4	1.4	-3.0	X	0.5
25	3.0	7.5	13	(4)	-1.1	3.3	-4.1	X	12.0
26	1.6	6.0	13	(6)	-0.7	1.3	-2.0	X	3.0
27	2.2	4.5	7	(6)	-0.4	2.3	-3.7	X	5.5
28	1.1	4.0	13 14	(4)	-3.6	-0.8	-8.7	X	11.5
TOTL								X	153.5
MEAN	1.0	3.6			-3.0	0.7	-6.6	X	
MAX.	3.2	7.5			0.8	5.4	0.0	X	
MIN.	0.0	0.5			-7.5	-4.0	-14.0	X	
DN	27	27			28	28	28	0	28

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

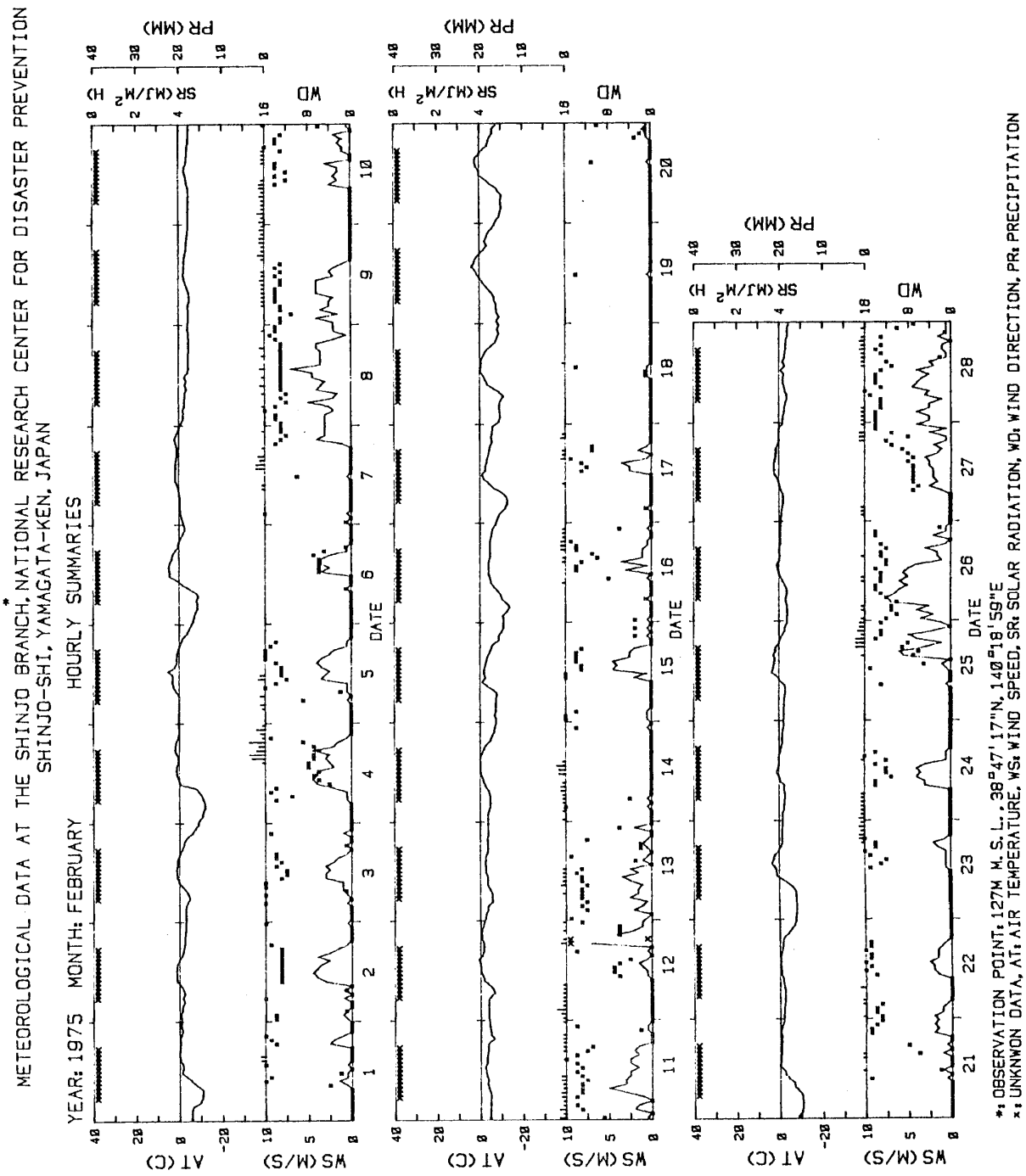

図 4.4 気象データの時間的変化

表 4.5　新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

MARCH　1975

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.0	4.5	14 15 (3)	-4.2	-1.3	-8.7	X	8.0
2	0.4	2.5	14 (3)	-3.6	-0.2	-7.3	X	5.5
3	0.4	2.0	12 13 (2)	X	X	X	X	0.5
4	1.6	4.5	13 (5)	-0.7	1.8	-3.1	X	5.0
5	1.2	4.5	5 (6)	1.1	4.6	-2.8	X	0.0
6	1.4	6.0	6 8 (4)	0.5	1.5	-0.4	X	6.0
7	2.8	6.5	14 (10)	0.5	3.0	-1.7	X	1.0
8	1.8	6.0	13 (11)	1.3	5.6	-3.8	X	0.5
9	1.4	4.0	14 (6)	2.4	9.4	-4.6	X	0.0
10	1.9	4.5	7 (8)	1.6	3.2	-1.1	X	17.0
11	2.0	5.0	13 (7)	1.8	5.1	-0.8	X	5.5
12	0.6	3.5	12 16 (3)	1.2	6.7	-1.0	X	4.0
13	0.5	2.5	1 (4)	0.1	3.7	-2.8	X	0.0
14	0.0	0.5	6 11 (1)	-0.4	5.3	-5.5	X	1.0
15	0.1	0.5	14 (2)	-0.9	7.9	-8.8	X	0.0
16	0.8	3.5	5 (4)	0.8	7.7	-7.7	X	0.0
17	0.4	2.0	12 (5)	1.4	5.3	-0.7	X	1.0
18	0.8	3.5	13 (6)	1.4	6.7	-1.8	X	0.0
19	0.2	1.0	4 6 8(1)	1.0	7.5	-2.8	X	0.0
20	3.5	7.0	X (0)	1.4	5.4	-5.7	X	10.0
21	0.5	2.0	16 (4)	3.7	5.4	2.3	X	20.5
22	1.3	2.5	12 (10)	2.8	3.9	1.6	X	53.5
23	1.0	4.0	16 (4)	3.4	6.7	1.1	X	12.0
24	1.3	4.0	11 12 14(4)	2.2	6.9	-1.8	X	2.0
25	0.9	5.5	13 (4)	-2.2	-0.4	-3.8	X	11.0
26	0.2	1.5	6 8 12(1)	-0.5	5.6	-5.3	X	0.0
27	0.2	1.0	6 (2)	-0.6	3.8	-4.4	X	15.5
28	1.1	4.0	12 13 (4)	3.2	7.3	-0.6	X	2.0
29	0.6	2.0	10 (3)	6.5	12.7	1.2	X	0.0
30	1.3	4.0	14 (8)	3.4	7.5	1.2	X	12.0
31	3.8	6.0	13 (17)	3.2	5.7	0.8	X	5.0
TOTL							X	198.5
MEAN	1.1	3.6		1.1	5.1	-2.6	X	
MAX.	3.8	7.0		6.5	12.7	2.3	X	
MIN.	0.0	0.5		-4.2	-1.3	-8.8	X	
DN	31	31		30	30	30	0	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.0	4.5	14 15 (3)	-4.4	-1.3	-7.3	X	7.0
2	0.4	2.5	14 (3)	X	X	X	X	1.0
3	0.6	2.0	12 (3)	-0.9	3.7	-3.1	X	3.5
4	1.6	4.5	13 14 (5)	-0.4	1.8	-2.8	X	1.5
5	2.0	6.0	5 (8)	1.7	4.6	-0.4	X	2.0
6	1.2	4.5	14 (6)	0.6	1.8	-0.6	X	4.5
7	2.6	6.5	13 14 (7)	0.3	3.0	-1.7	X	1.0
8	1.5	6.0	13 (8)	0.9	8.8	-4.6	X	0.0
9	1.7	4.5	14 (5)	3.2	9.4	-1.1	X	1.5
10	2.4	5.0	7 13 (5)	1.8	3.2	0.5	X	20.5
11	1.0	4.5	12 15 (3)	1.1	5.1	-1.0	X	2.0
12	0.5	3.5	12 13 (2)	0.7	6.7	-2.8	X	2.5
13	0.4	2.5	1 (4)	-0.2	3.7	-4.7	X	1.0
14	0.0	0.5	6 11 (1)	-2.0	5.3	-8.8	X	0.0
15	0.1	0.5	14 (2)	-0.3	7.9	-7.7	X	0.0
16	0.8	3.5	5 (4)	2.9	7.7	-0.3	X	0.0
17	0.4	2.0	12 (4)	0.9	5.3	-0.9	X	1.0
18	0.8	3.5	13 (6)	0.9	6.7	-2.8	X	0.0
19	0.4	4.0	X (0)	0.4	7.5	-5.7	X	0.0
20	3.4	7.0	6 (8)	3.7	5.4	2.3	X	26.5
21	0.6	2.5	16 (4)	3.8	5.4	2.8	X	14.0
22	1.7	4.0	12 (9)	2.5	3.6	1.1	X	55.0
23	0.8	3.0	14 (3)	2.9	6.7	-0.6	X	0.5
24	1.4	5.5	13 (7)	0.9	6.9	-3.1	X	4.5
25	0.3	2.0	11 (3)	-2.8	-0.4	-5.3	X	8.5
26	0.2	1.5	6 8 (1)	-0.1	5.6	-4.4	X	0.0
27	0.4	2.0	6 13 (2)	0.8	3.8	-1.1	X	17.5
28	1.0	4.0	12 (5)	4.5	7.5	1.2	X	0.0
29	0.5	2.0	10 (3)	5.6	12.7	1.2	X	4.5
30	2.7	5.0	13 14 (10)	4.0	7.5	2.4	X	8.0
31	4.0	6.0	13 (16)	2.6	5.7	0.4	X	8.5
TOTL							X	196.5
MEAN	1.2	3.7		1.2	5.4	-2.0	X	
MAX.	4.0	7.0		5.6	12.7	2.8	X	
MIN.	0.0	0.5		-4.4	-1.3	-8.8	X	
DN	31	31		30	30	30	0	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

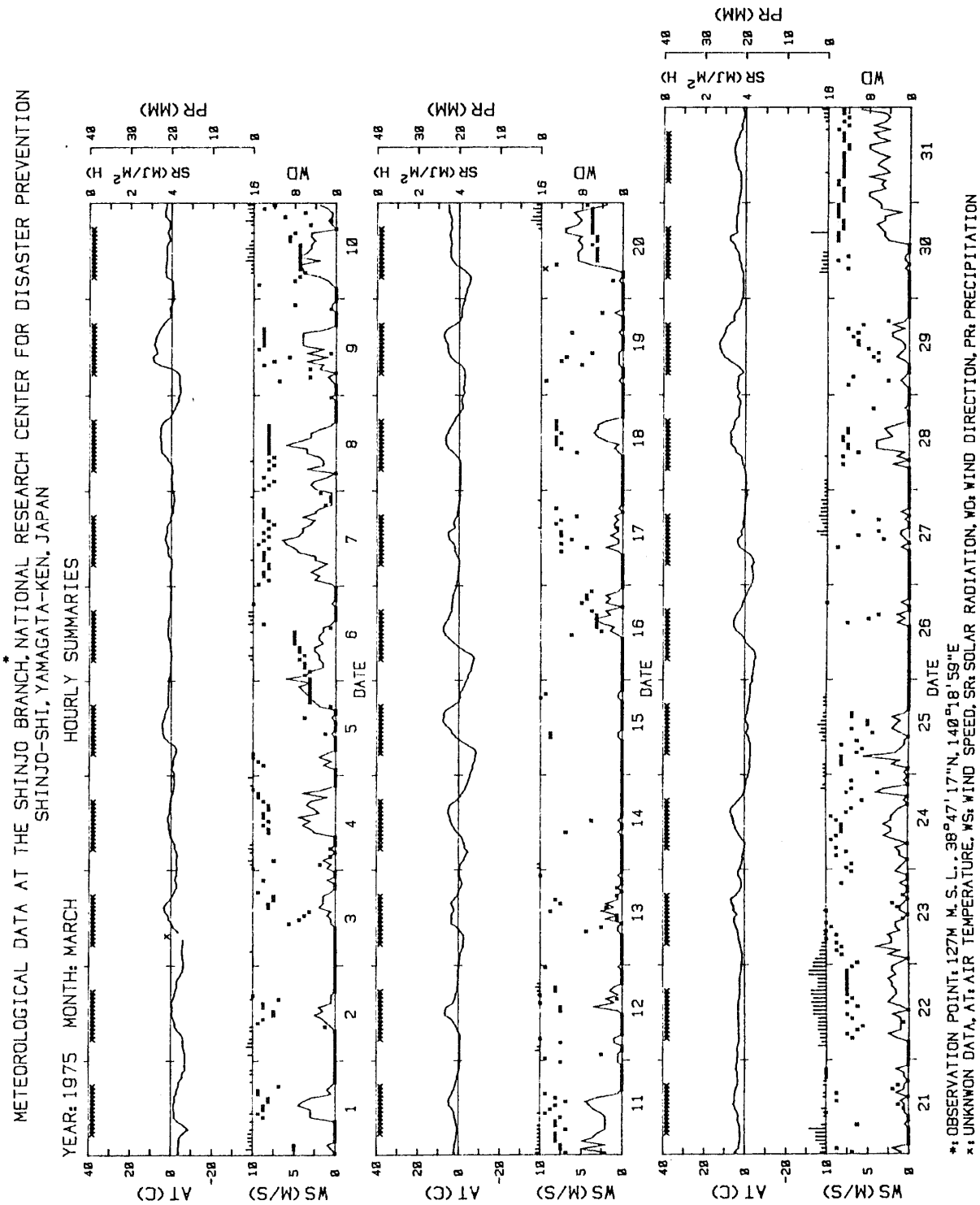

図 4.5　気象データの時間的変化

表 4.6　新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

APRIL　1975

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	2.7	5.5	13	(8)	1.7	4.4	0.4	X	12.0
2	0.4	2.5	13 15	(2)	2.7	6.3	-0.2	X	1.5
3	2.1	4.5	13	(15)	4.4	7.7	1.0	X	0.0
4	1.4	3.0	12	(5)	7.2	12.5	-0.2	X	0.0
5	0.1	1.5	10 14 15	(1)	3.3	9.8	-3.5	X	4.5
6	2.8	6.5	12	(7)	6.2	9.9	3.3	X	24.5
7	1.8	4.0	13	(8)	8.6	13.9	1.3	X	0.0
8	3.0	7.0	6	(9)	7.7	10.8	0.9	X	18.0
9	3.2	7.5	13	(13)	9.7	12.8	6.2	X	0.0
10	0.4	2.0	16	(5)	9.4	17.2	2.2	X	0.0
TOTL								X	60.5
MEAN	1.8	4.4			6.1	10.5	1.1	X	
MAX.	3.2	7.5			9.7	17.2	6.2	X	
MIN.	0.1	1.5			1.7	4.4	-3.5	X	
DN	10	10			10	10	10	0	10

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.2	5.0	12	(3)	1.4	4.4	-0.2	X	8.0
2	1.0	3.0	13	(8)	3.1	6.3	1.0	X	1.5
3	2.1	4.5	13	(11)	6.1	8.3	4.1	X	0.0
4	0.8	3.0	12 14	(2)	4.1	12.5	-3.5	X	0.0
5	0.3	1.5	16	(4)	5.8	9.8	3.1	X	18.5
6	3.7	6.5	13	(11)	7.6	10.8	6.1	X	10.5
7	1.5	6.0	13	(4)	7.3	13.9	0.9	X	0.0
8	3.2	7.0	6	(7)	9.6	11.8	7.9	X	18.0
9	2.3	7.5	13	(8)	8.2	12.8	2.2	X	0.0
10	X	X	X	(0)	X	X	X	X	X
TOTL								X	56.5
MEAN	1.8	4.9			5.9	10.1	2.4	X	
MAX.	3.7	7.5			9.6	13.9	7.9	X	
MIN.	0.3	1.5			1.4	4.4	-3.5	X	
DN	9	9			9	9	9	0	9

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

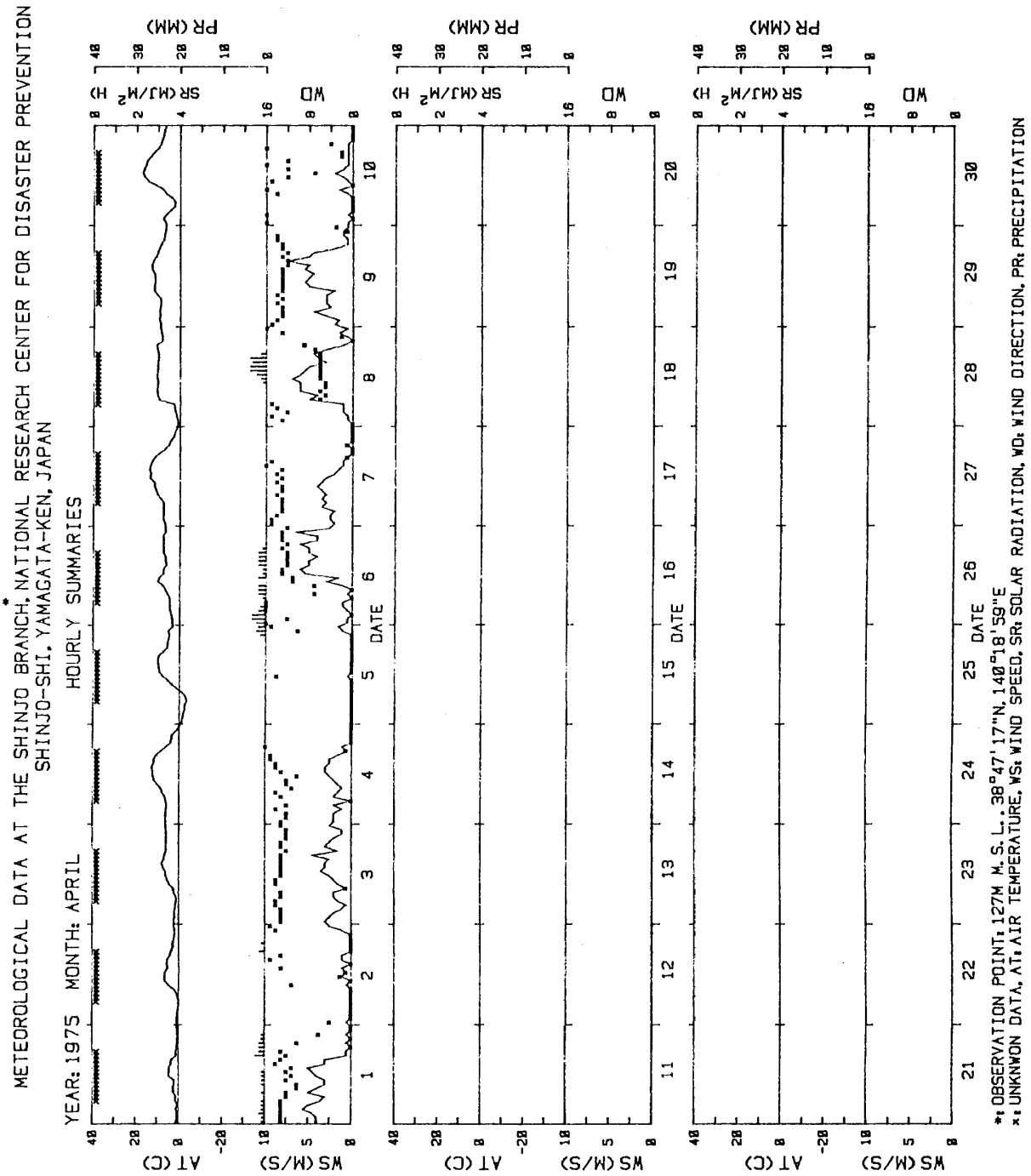

図 4.6　気象データの時間的変化

表 4.7 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

DECEMBER 1975

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.3	4.0	14	(7)	2.6	5.1	0.6	X	0.0
2	0.3	1.0	13	(2)	2.0	9.1	-2.5	X	0.0
3	X	X	X	(0)	0.1	6.6	-4.1	X	2.0
4	0.2	1.0	14	(3)	6.0	10.1	1.8	X	0.0
5	1.1	5.0	13	(6)	6.9	9.9	4.8	X	8.5
6	1.4	4.5	14 16	(5)	4.1	6.3	1.7	X	0.0
7	0.8	4.0	14	(5)	2.9	4.8	1.1	X	0.0
8	0.3	1.5	15	(4)	1.8	4.8	-0.2	X	0.0
9	1.3	3.0	16	(9)	1.2	3.6	-1.1	X	0.0
10	0.5	2.5	14	(4)	-1.2	1.6	-3.4	X	3.5
11	0.1	0.5	1	(2)	-2.6	-0.1	-6.0	X	0.0
12	0.9	3.5	13	(3)	-0.2	1.6	-2.2	X	3.5
13	0.6	3.0	13	(3)	-0.6	1.0	-2.4	X	4.0
14	0.1	0.5	2 15	(2)	0.4	3.9	-1.1	X	1.0
15	0.2	1.0	16	(2)	-1.7	-0.1	-4.3	X	0.0
16	0.5	2.0	14	(3)	-0.0	1.8	-1.3	X	14.0
17	3.6	7.0	13	(11)	X	X	X	X	X
18	0.4	3.0	12 16	(2)	0.2	3.6	-2.0	X	6.5
19	0.5	3.5	13	(5)	-0.3	3.7	-3.4	X	0.5
20	0.0	0.5	8 10	(1)	-2.0	3.6	-9.0	X	0.0
21	0.2	1.0	2 7 12	(1)	0.2	4.1	-5.2	X	9.0
22	0.2	1.5	13	(3)	1.3	2.8	0.7	X	21.5
23	0.2	1.5	13 16	(2)	0.6	1.8	-0.9	X	2.0
24	0.4	2.0	15 16	(3)	-1.0	2.6	-3.2	X	0.5
25	0.1	1.0	10 14 16	(1)	-1.0	0.8	-5.3	X	14.5
26	1.3	4.0	14	(5)	-0.9	0.0	-2.3	X	5.5
27	1.1	3.0	14	(5)	-2.7	-1.1	-7.3	X	6.0
28	1.2	3.5	14	(8)	-0.9	2.2	-7.2	X	4.0
29	0.4	2.5	13 14 15	(2)	1.1	1.9	0.5	X	2.0
30	1.6	4.0	14	(7)	0.1	1.7	-2.1	X	8.5
31	3.4	7.0	14	(12)	-0.4	2.2	-2.2	X	0.5
TOTL								X	117.5
MEAN	0.8	2.7			0.5	3.3	-2.2	X	
MAX.	3.6	7.0			6.9	10.1	4.8	X	
MIN.	0.0	0.5			-2.7	-1.1	-9.0	X	
DN	30	30			30	30	30	0	30

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.9	4.0	15	(5)	2.0	5.1	-1.2	X	0.0
2	0.3	1.0	1 2	(1)	0.8	9.1	-4.1	X	0.0
3	X	X	X	(0)	2.9	7.6	-2.1	X	2.0
4	0.1	1.0	16	(3)	6.5	10.1	4.8	X	2.5
5	1.8	5.0	13 14	(6)	6.3	9.9	1.7	X	6.0
6	0.8	4.5	1 8	(3)	3.8	6.3	2.8	X	0.0
7	0.7	4.0	16	(5)	2.2	4.8	-0.2	X	0.0
8	0.5	1.5	14	(5)	1.8	4.8	0.2	X	0.0
9	1.2	3.0	16	(9)	0.2	3.6	-2.4	X	1.0
10	0.5	2.5	1 14	(2)	-2.3	1.6	-6.0	X	2.5
11	0.0	0.5	1 14	(1)	-1.4	-0.1	-2.2	X	0.0
12	1.1	3.5	13	(4)	0.2	1.6	-1.5	X	4.0
13	0.5	3.0	2 8	(2)	-0.6	1.0	-2.4	X	4.5
14	0.1	0.5	2	(2)	-0.6	3.9	-4.3	X	0.0
15	0.3	1.0	16	(3)	-0.9	-0.1	-1.3	X	0.0
16	2.3	7.0	13	(7)	X	X	X	X	X
17	1.9	7.0	13	(5)	X	X	X	X	X
18	0.3	3.0	12	(2)	0.0	3.6	-3.1	X	3.0
19	0.5	3.5	13	(5)	-2.1	3.7	-9.0	X	0.5
20	0.0	0.5	8 10	(1)	-0.5	3.6	-5.2	X	0.0
21	0.2	1.0	12 13	(2)	1.6	4.1	-0.2	X	20.5
22	0.2	1.5	13 16	(2)	1.0	2.8	-0.7	X	10.0
23	0.2	1.5	16	(3)	-0.5	1.8	-3.2	X	2.5
24	0.4	2.0	15 16	(3)	-1.1	2.6	-5.3	X	0.5
25	0.6	3.5	14	(5)	-0.3	0.8	-1.4	X	17.0
26	1.1	4.0	13 16	(4)	-1.2	0.0	-3.1	X	4.5
27	1.0	2.5	14 15	(5)	-3.6	-1.2	-7.3	X	5.0
28	1.1	3.5	14	(7)	1.0	2.2	-1.1	X	3.0
29	1.0	4.0	15	(5)	1.1	1.9	0.1	X	2.5
30	2.2	6.0	14	(11)	-0.7	1.7	-2.2	X	8.5
31	2.1	7.0	14	(6)	-0.4	2.2	-2.2	X	0.0
TOTL								X	100.0
MEAN	0.8	3.1			0.5	3.4	-2.1	X	
MAX.	2.3	7.0			6.5	10.1	4.8	X	
MIN.	0.0	0.5			-3.6	-1.2	-9.0	X	
DN	30	30			29	29	29	0	29

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

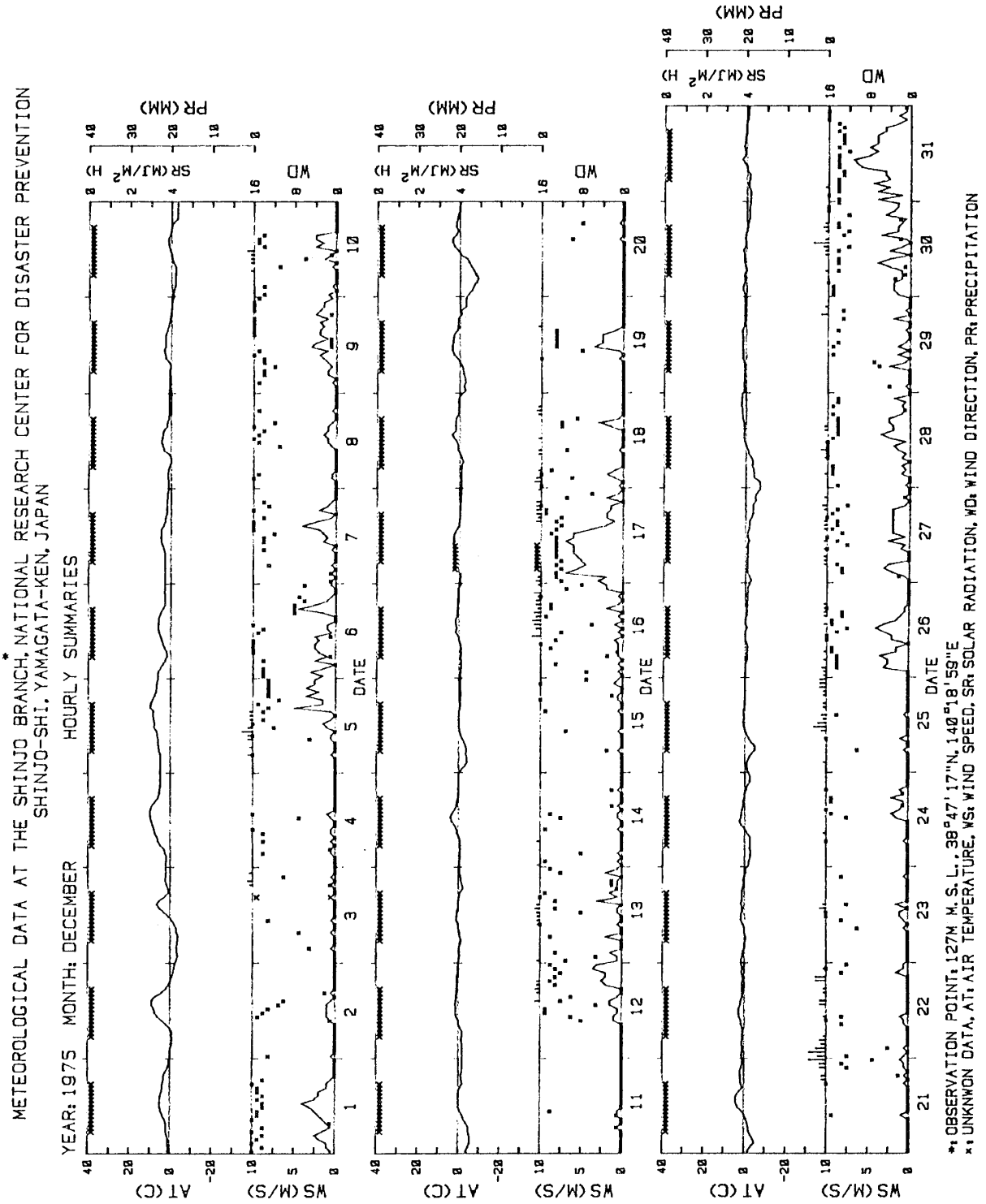

図 4.7　気象データの時間的変化

表 4.8 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

JANUARY 1976

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.3	1.0	16	(3)	2.0	7.3	-2.2	X	0.0
2	2.3	6.0	14	(11)	5.3	7.9	1.5	X	4.0
3	0.3	2.0	14	(3)	1.8	8.9	-3.3	X	0.0
4	0.0	0.5	12	(1)	0.1	2.8	-3.3	X	0.0
5	1.0	3.0	8	(4)	2.0	4.9	-0.2	X	22.5
6	2.7	7.0	12	(10)	-0.2	1.8	-3.1	X	22.5
7	2.4	6.5	13	(11)	-1.0	1.2	-3.1	X	7.0
8	0.3	1.0	12	(3)	-0.3	2.7	-4.0	X	9.0
9	1.4	4.0	13	(6)	-0.5	2.8	-3.2	X	8.5
10	0.2	1.5	1 10 12	(1)	-3.4	-0.3	-5.1	X	10.0
11	0.0	0.5	14 15	(1)	-3.8	-2.0	-7.0	X	4.5
12	1.9	4.5	13	(8)	-1.9	0.0	-5.3	X	6.5
13	0.8	3.5	1 14	(3)	1.2	4.3	-0.9	X	4.5
14	1.1	4.0	13	(4)	0.3	2.6	-2.4	X	9.0
15	2.0	4.0	13 14	(6)	-3.0	-1.2	-4.0	X	3.5
16	0.2	1.5	8	(2)	-2.5	2.0	-8.0	X	0.5
17	0.2	0.5	12	(2)	-2.3	3.1	-8.9	X	10.0
18	1.2	5.5	13 14	(6)	-2.1	0.8	-4.9	X	10.0
19	X	X	X	(0)	-4.2	-2.3	-5.9	X	18.5
20	X	X	X	(0)	-6.5	-5.9	-7.1	X	4.0
21	X	X	X	(0)	-6.4	-5.3	-7.1	X	4.0
22	X	X	X	(0)	X	X	X	X	X
23	3.1	4.5	13	(14)	-6.4	-5.1	-7.6	X	1.5
24	1.7	4.0	13	(8)	-3.7	-1.1	-7.9	X	1.0
25	0.4	3.5	13 14	(2)	-1.5	1.8	-4.1	X	20.5
26	2.1	6.0	13 14	(7)	-2.4	-1.1	-3.7	X	5.0
27	2.4	6.5	14	(10)	-1.8	0.1	-3.7	X	2.5
28	0.9	4.0	13	(5)	0.7	3.8	-2.1	X	0.0
29	0.2	1.5	12 15	(2)	-1.2	1.8	-6.1	X	6.5
30	X	X	X	(0)	-1.7	0.0	-2.4	X	3.0
31	1.1	4.0	13	(5)	-2.1	1.5	-10.8	X	6.5
TOTL								X	205.0
MEAN	1.2	3.5			-1.5	1.3	-4.5	X	
MAX.	3.1	7.0			5.3	8.9	1.5	X	
MIN.	0.0	0.5			-6.5	-5.9	-10.8	X	
DN	26	26			30	30	30	0	30

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.0	6.0	14	(4)	5.2	7.9	0.1	X	4.0
2	1.8	4.0	14	(11)	3.0	6.8	-1.3	X	0.0
3	0.0	0.5	4 15	(1)	0.5	8.9	-3.3	X	0.0
4	0.2	2.0	3 4	(1)	1.3	2.8	-0.2	X	0.0
5	1.5	4.5	12	(5)	2.2	4.9	0.6	X	33.0
6	3.6	7.0	12 13	(10)	-1.3	1.8	-3.1	X	15.5
7	0.8	6.0	13	(4)	-1.3	1.2	-4.0	X	4.0
8	0.9	4.0	12	(3)	1.2	2.8	0.0	X	16.0
9	0.8	4.0	13	(4)	-2.5	0.8	-5.1	X	2.0
10	0.2	1.5	1 10	(1)	-3.8	-0.3	-7.0	X	10.5
11	0.4	3.0	14	(2)	-3.4	-2.0	-5.3	X	7.0
12	2.1	4.5	13	(7)	-0.5	0.8	-2.1	X	3.0
13	0.2	1.5	5	(2)	1.4	4.3	-0.1	X	4.5
14	1.8	4.0	13	(5)	-1.1	2.6	-4.0	X	9.5
15	1.3	4.0	13	(5)	-2.6	-0.9	-3.9	X	3.0
16	0.2	1.5	1 3	(1)	-4.5	2.0	-8.9	X	0.0
17	0.1	0.5	12	(2)	0.5	3.1	-3.2	X	16.0
18	1.2	5.5	13 14	(6)	-3.6	-0.2	-4.9	X	14.0
19	X	X	X	(0)	-5.0	-2.3	-7.1	X	11.0
20	X	X	X	(0)	-6.6	-5.9	-7.1	X	4.0
21	3.1	7.0	13	(12)	-6.2	-5.3	-8.5	X	1.5
22	X	X	X	(0)	X	X	X	X	X
23	2.3	4.0	13	(11)	-6.6	-4.6	-7.9	X	1.0
24	1.4	3.5	13	(6)	-2.5	-1.1	-4.1	X	1.0
25	1.9	6.0	13	(7)	-1.3	1.8	-3.7	X	21.5
26	0.8	2.5	14	(7)	-2.5	-1.1	-3.7	X	5.5
27	2.7	6.5	14	(10)	-0.8	0.7	-2.3	X	1.0
28	0.4	2.5	13 14	(2)	-0.8	3.8	-6.1	X	0.0
29	X	X	X	(0)	0.1	1.8	-2.4	X	9.0
30	3.1	6.0	13	(13)	-1.8	-0.7	-2.4	X	1.5
31	0.3	2.0	14	(2)	-6.2	1.5	-13.4	X	5.5
TOTL								X	204.5
MEAN	1.3	3.9			-1.7	1.2	-4.1	X	
MAX.	3.6	7.0			5.2	8.9	0.6	X	
MIN.	0.0	0.5			-6.6	-5.9	-13.4	X	
DN	27	27			30	30	30	0	30

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

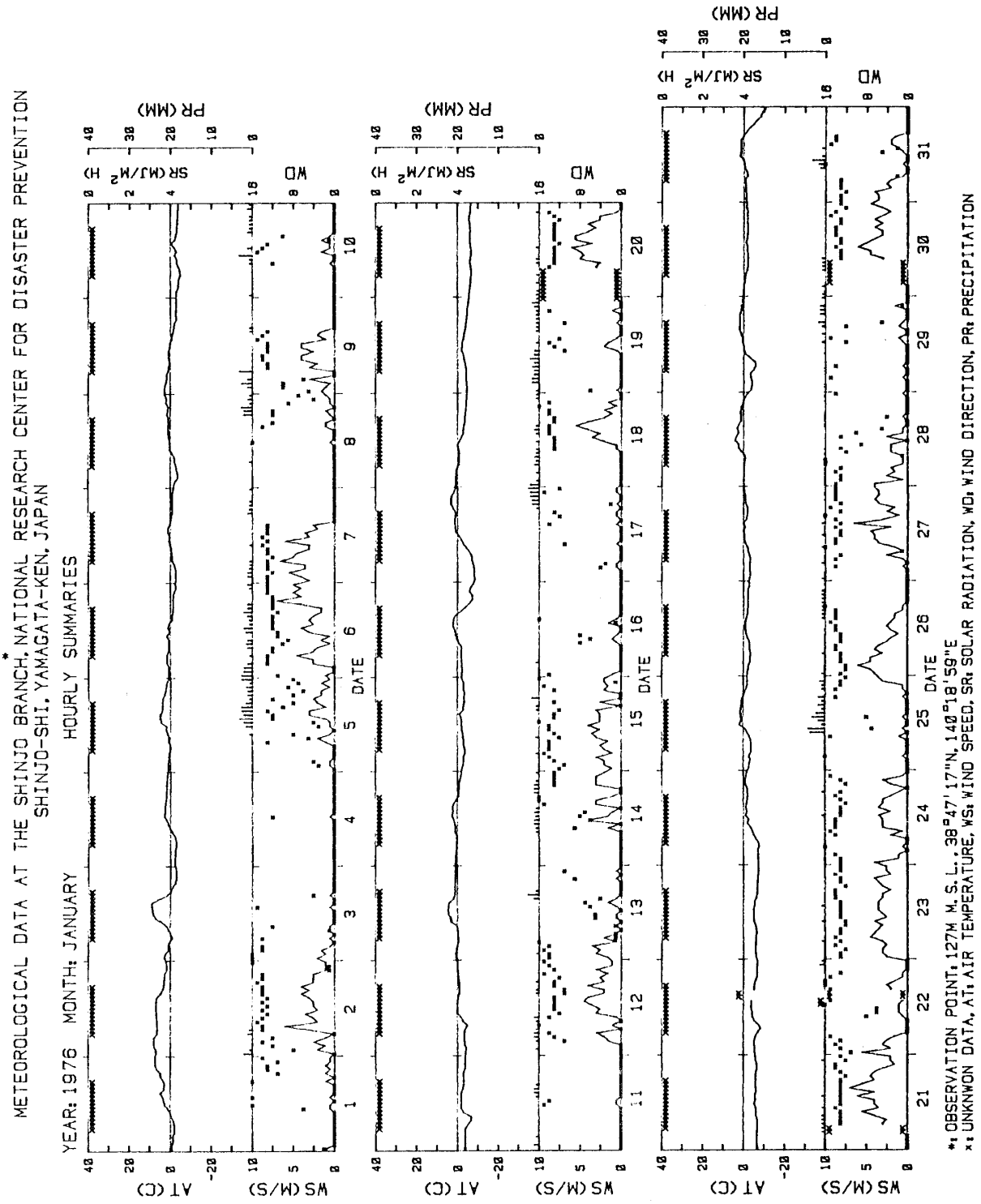

図 4.8　気象データの時間的変化

表 4.9　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

FEBRUARY 1976

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.0	0.5	2	(1)	-6.2	2.7	-13.4	X	0.0
2	0.8	4.0	6 16	(3)	-2.1	2.8	-9.4	X	7.0
3	1.0	2.0	13	(9)	-0.1	1.9	-2.5	X	9.5
4	1.1	3.5	14	(6)	-1.9	2.1	-8.4	X	0.5
5	0.0	0.5	1 14	(1)	-4.9	-0.8	-11.3	X	5.5
6	0.8	4.0	11 13	(3)	-0.9	2.8	-2.9	X	11.5
7	1.6	6.0	15	(5)	-1.8	0.0	-4.6	X	8.5
8	0.0	0.5	1 16	(1)	-2.2	1.5	-6.2	X	1.0
9	0.9	3.5	14	(6)	-1.3	0.3	-3.0	X	4.5
10	0.1	1.0	12	(3)	-1.4	0.4	-7.1	X	13.0
11	3.1	5.5	14	(12)	-3.2	0.5	-6.3	X	5.5
12	1.3	3.5	15	(5)	-4.8	-1.9	-9.3	X	3.5
13	0.0	0.5	14	(1)	-7.0	-0.2	-13.1	X	0.0
14	0.1	1.0	2 3	4(1)	-5.6	2.4	-16.9	X	0.0
15	0.0	0.0		(0)	1.4	2.8	0.0	X	12.5
16	0.1	1.0	13	(2)	1.4	2.9	0.5	X	16.0
17	0.3	2.0	15	(2)	2.2	7.1	-3.1	X	3.5
18	0.0	0.5	1 16	(1)	0.7	2.9	-4.0	X	15.5
19	1.5	5.0	13	(7)	1.9	4.9	-0.7	X	2.0
20	2.2	5.0	13	(11)	-2.2	0.3	-7.6	X	0.0
21	0.1	0.5	1	(2)	-4.9	2.7	-11.6	X	0.0
22	0.4	2.5	6	(3)	-0.1	5.6	-6.0	X	1.0
23	1.7	4.0	13	(9)	2.9	6.6	0.8	X	2.0
24	4.2	7.0	13	(15)	0.4	1.8	-0.6	X	1.5
25	2.1	4.5	13	(8)	1.1	4.6	-1.8	X	0.0
26	0.2	1.5	1 2	(2)	0.7	5.7	-3.4	X	1.5
27	X	X	X	(0)	X	X	X	X	0.0
28	0.1	0.5	1 13 15	(1)	-0.1	3.4	-4.4	X	6.5
29	0.1	1.0	16	(2)	2.7	4.7	0.7	X	25.5
TOTL								X	157.5
MEAN	0.9	2.5			-1.3	2.5	-5.6	X	
MAX.	4.2	7.0			2.9	7.1	0.8	X	
MIN.	0.0	0.0			-7.0	-1.9	-16.9	X	
DN	28	28			28	28	28	0	29

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.1	1.0	2 7	(1)	-4.7	2.7	-9.4	X	0.0
2	1.2	4.0	13	(7)	1.4	2.8	-3.9	X	7.0
3	0.9	2.0	14	(7)	-1.7	1.0	-3.7	X	10.0
4	0.8	3.5	13	(3)	-4.4	2.1	-11.3	X	0.0
5	0.0	0.5	1 14	(1)	-1.8	-0.1	-5.4	X	5.5
6	1.4	6.0	13	(5)	-1.1	2.8	-3.3	X	18.0
7	1.0	3.0	14 15	(3)	-2.8	-0.2	-6.2	X	2.0
8	0.2	2.0	13	(2)	-1.2	1.5	-3.0	X	5.0
9	0.8	3.5	14	(5)	-1.6	0.3	-7.1	X	2.0
10	1.1	5.0	12	(6)	-0.8	0.5	-2.4	X	14.5
11	2.7	5.5	14	(12)	-5.0	-1.1	-7.9	X	3.0
12	0.6	3.0	15	(3)	-5.8	-1.9	-11.0	X	3.0
13	0.0	0.5	14	(1)	-9.3	-0.2	-16.9	X	0.0
14	0.1	1.0	2 3	(1)	0.2	2.4	-5.8	X	4.0
15	0.0	0.0		(0)	1.7	2.8	1.1	X	13.5
16	0.1	1.0	13	(2)	1.1	2.9	0.4	X	14.5
17	0.3	2.0	15 16	(2)	1.0	7.1	-4.0	X	0.0
18	0.5	3.0	13	(3)	2.5	3.1	1.6	X	15.5
19	2.4	5.0	13	(11)	0.1	4.9	-3.0	X	2.0
20	1.0	3.5	13	(5)	-5.3	0.3	-11.6	X	0.0
21	0.1	0.5	1	(2)	-2.8	2.7	-6.0	X	0.0
22	0.4	2.5	6	(3)	2.5	5.6	-0.9	X	1.5
23	3.0	6.0	13	(17)	2.4	6.6	-0.1	X	3.0
24	3.9	7.0	13	(13)	0.3	1.8	-0.6	X	0.0
25	1.2	4.5	14	(6)	0.3	4.6	-3.4	X	1.0
26	0.2	1.5	2	(2)	1.1	5.7	-2.1	X	0.5
27	X	X	X	(0)	X	X	X	X	0.0
28	0.1	0.5	1 13	(1)	2.4	4.1	0.3	X	12.5
29	0.1	1.0	16	(2)	1.9	4.7	-0.3	X	19.5
TOTL								X	157.5
MEAN	0.9	2.8			-1.0	2.5	-4.5	X	
MAX.	3.9	7.0			2.5	7.1	1.6	X	
MIN.	0.0	0.0			-9.3	-1.9	-16.9	X	
DN	28	28			28	28	28	0	29

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

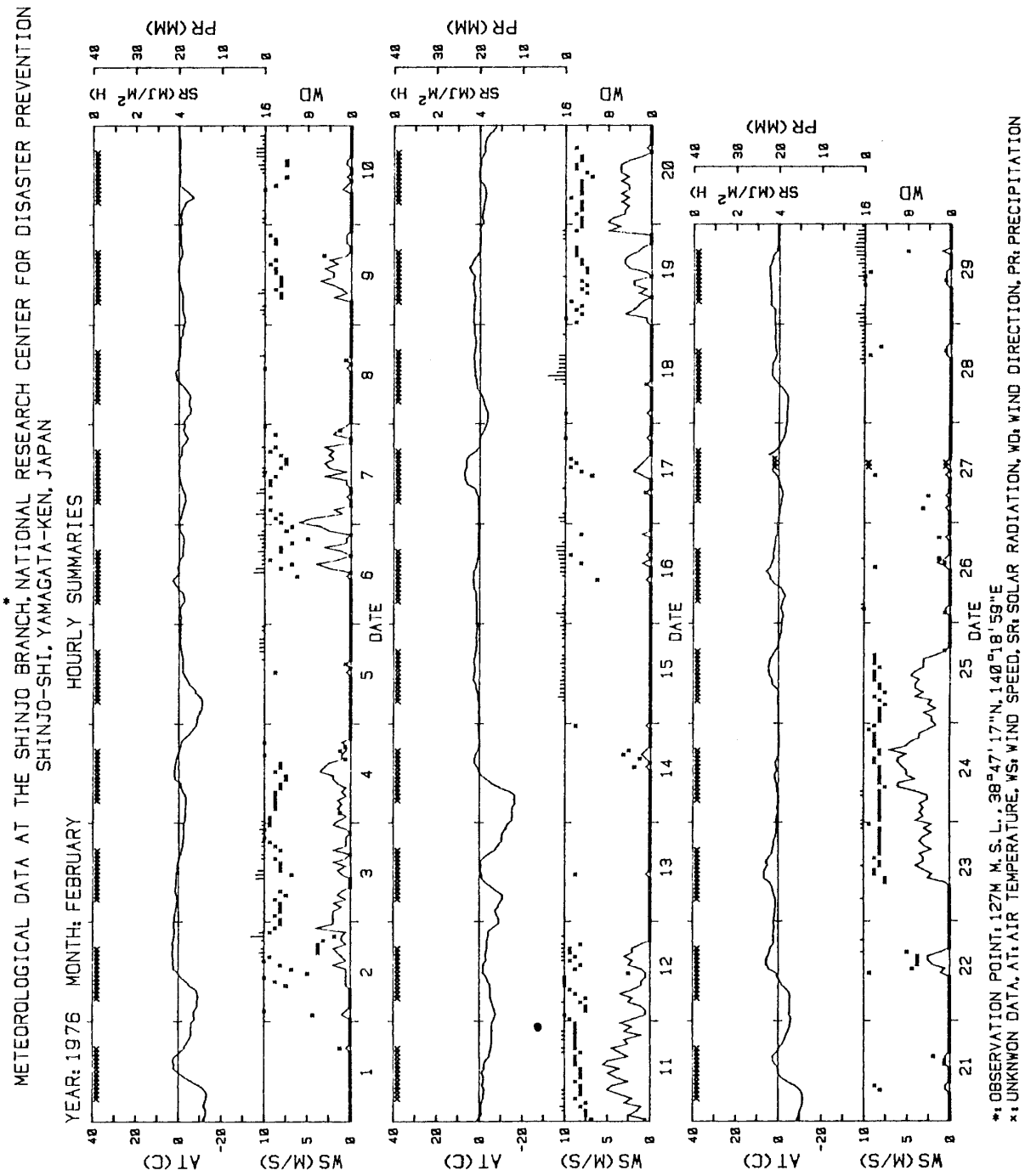

図 4.9　気象データの時間的変化

表 4.10 新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

MARCH 1976

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.7	3.0	12	(4)	1.2	4.8	-0.8	X	1.0
2	0.5	2.5	14 15	(3)	-0.3	3.1	-4.9	X	0.5
3	0.7	3.5	14	(3)	-0.4	3.0	-3.4	X	1.0
4	1.8	4.0	14	(7)	0.7	4.1	-3.5	X	0.5
5	0.0	0.5	1 2	(1)	0.0	7.2	-8.3	X	0.5
6	0.6	3.5	14	(5)	2.2	8.7	-3.3	X	1.0
7	0.6	2.5	12	(4)	2.8	11.9	-6.0	X	0.5
8	0.1	0.5	2 4 6	(1)	3.8	9.9	-2.5	X	0.0
9	0.5	2.5	4 14	(2)	2.2	11.7	-3.9	X	0.0
10	1.4	4.5	5	(8)	1.6	5.6	-3.2	X	0.0
11	0.1	0.5	1	(3)	4.5	10.1	1.2	X	0.0
12	0.8	4.0	14	(4)	3.7	8.6	0.7	X	2.0
13	2.7	5.0	14	(18)	2.6	5.0	0.4	X	0.0
14	0.2	1.0	2 10	(2)	1.8	6.7	-3.9	X	0.0
15	1.2	5.5	13	(6)	1.7	8.8	-4.9	X	2.5
16	1.6	4.0	14	(9)	1.6	6.0	-2.5	X	0.0
17	0.7	5.0	6 14	(3)	0.9	3.9	-3.3	X	0.0
18	0.6	2.5	13	(3)	3.5	6.4	1.9	X	11.0
19	3.2	7.0	14	(14)	-0.2	1.9	-3.9	X	3.0
20	3.7	7.0	13	(15)	-2.1	-0.2	-4.3	X	2.5
21	2.3	6.0	13	(8)	-1.0	2.1	-3.0	X	4.0
22	1.6	5.0	13	(5)	0.2	4.0	-2.3	X	3.5
23	0.5	3.0	7	(3)	0.4	3.8	-1.2	X	4.5
24	1.2	4.0	14	(6)	0.8	3.9	-2.9	X	1.5
25	1.3	4.5	14	(7)	0.6	3.8	-3.9	X	1.0
26	0.9	3.0	6	(5)	0.8	6.7	-6.0	X	1.5
27	1.4	5.5	13 14	(5)	3.3	5.1	0.9	X	3.5
28	2.2	5.5	14	(11)	3.8	6.9	-0.3	X	0.0
29	0.6	4.0	6	(4)	1.9	5.9	-2.5	X	1.5
30	0.3	2.0	16	(4)	4.1	6.7	1.9	X	17.5
31	0.9	3.5	13 14	(4)	4.1	7.7	0.5	X	1.5
TOTL								X	66.0
MEAN	1.1	3.7			1.6	5.9	-2.5	X	
MAX.	3.7	7.0			4.5	11.9	1.9	X	
MIN.	0.0	0.5			-2.1	-0.2	-8.3	X	
DN	31	31			31	31	31	0	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.6	3.0	12	(4)	0.1	4.8	-4.9	X	1.5
2	0.6	2.5	14 15	(3)	0.0	3.1	-1.9	X	0.5
3	1.4	3.5	14 15	(5)	-0.0	3.0	-3.4	X	1.0
4	1.1	4.0	14	(5)	-1.4	4.1	-8.3	X	0.0
5	0.1	0.5	1 2	(1)	1.9	7.2	-2.1	X	1.0
6	0.6	3.5	14	(5)	0.9	8.7	-6.0	X	0.5
7	0.6	2.5	12	(4)	5.2	11.9	-0.1	X	0.5
8	0.1	1.0	4	(2)	1.9	9.9	-3.9	X	0.0
9	0.4	2.5	14	(2)	2.4	11.7	-3.2	X	0.0
10	1.4	4.5	5	(8)	3.2	5.6	1.2	X	0.0
11	0.1	0.5	15	(2)	4.2	10.1	0.7	X	0.0
12	2.0	5.0	14	(13)	4.0	8.6	0.9	X	2.0
13	1.5	4.5	14	(9)	1.5	5.0	-3.9	X	0.0
14	0.2	1.0	2 10	(2)	0.8	6.7	-4.9	X	0.0
15	1.6	5.5	14	(8)	3.2	8.8	-1.5	X	2.5
16	1.3	4.0	13 14	(4)	0.8	6.0	-3.3	X	0.0
17	0.8	5.0	14	(3)	2.5	3.9	0.7	X	3.5
18	1.6	4.0	13	(7)	3.0	6.4	-0.1	X	8.0
19	3.3	7.0	14	(13)	-1.8	1.9	-4.3	X	4.5
20	3.1	7.0	13	(13)	-1.6	-0.2	-3.0	X	2.5
21	2.2	6.0	13	(7)	-0.8	2.1	-2.3	X	2.5
22	1.2	5.0	13	(4)	0.6	4.0	-1.0	X	7.5
23	0.6	3.0	7 9	(2)	0.2	3.8	-2.9	X	1.5
24	1.3	4.0	14	(6)	1.0	3.9	-2.1	X	1.0
25	1.1	4.5	14	(6)	-0.9	3.8	-6.0	X	0.0
26	0.9	3.0	6	(5)	3.1	6.7	0.9	X	4.5
27	2.2	5.5	13	(8)	3.9	5.6	2.6	X	0.5
28	1.4	5.5	14	(9)	2.1	6.9	-2.5	X	0.0
29	0.6	4.0	6	(4)	3.2	5.9	1.9	X	13.5
30	0.3	2.0	16	(4)	4.6	6.7	2.7	X	7.0
31	0.9	3.5	13 14	(4)	X	X	X	X	0.0
TOTL								X	66.0
MEAN	1.1	3.8			1.6	5.9	-2.0	X	
MAX.	3.3	7.0			5.2	11.9	2.7	X	
MIN.	0.1	0.5			-1.8	-0.2	-8.3	X	
DN	31	31			30	30	30	0	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

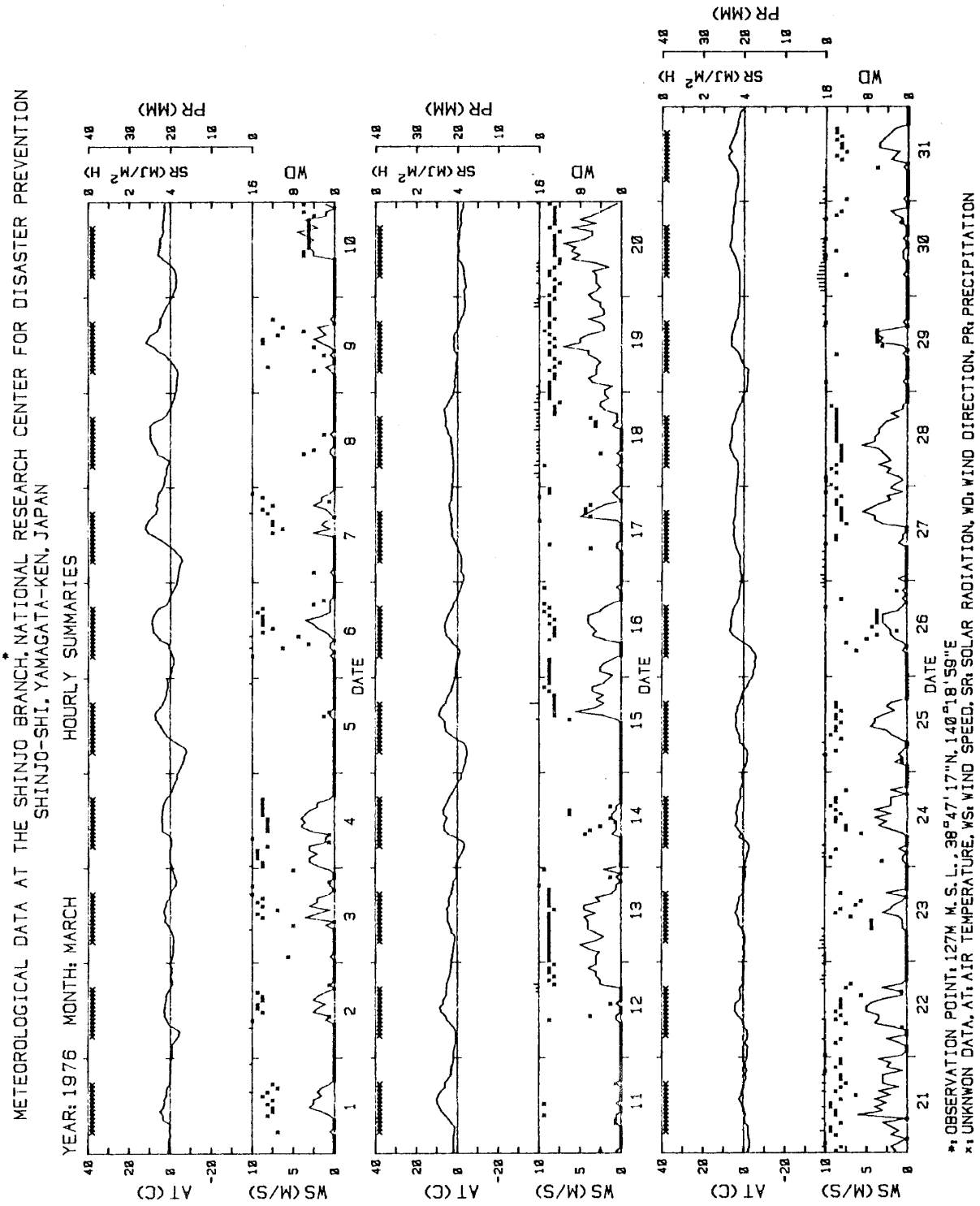

図 4.10　気象データの時間的変化

表 4.11 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH,NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI,YAMAGATA-KEN,JAPAN

(DAILY SUMMARIES)

APRIL 1976

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.8	2.5	X	(0)	X	X	X	X	0.0
2	1.0	4.0	13	(4)	2.7	12.3	-1.2	X	4.5
3	2.0	4.0	13	(13)	3.4	7.1	-0.4	X	0.0
4	1.1	4.0	13	(5)	2.7	8.1	-2.0	X	0.0
5	0.4	2.5	12	(3)	0.9	6.7	-3.9	X	1.0
TOTL								X	5.5
MEAN	1.1	3.4			2.4	8.5	-1.9	X	
MAX.	2.0	4.0			3.4	12.3	-0.4	X	
MIN.	0.4	2.5			0.9	6.7	-3.9	X	
DN	5	5			4	4	4	0	5

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.8	2.5	X	(0)	X	X	X	X	0.0
2	1.8	4.0	13	(9)	3.6	12.3	0.7	X	4.5
3	1.1	4.0	13	(7)	2.4	7.1	-1.2	X	0.0
4	1.2	4.0	13 14	(5)	1.7	8.1	-3.9	X	0.0
5	X	X	X	(0)	X	X	X	X	X
TOTL								X	4.5
MEAN	1.2	3.6			2.5	9.2	-1.5	X	
MAX.	1.8	4.0			3.6	12.3	0.7	X	
MIN.	0.8	2.5			1.7	7.1	-3.9	X	
DN	4	4			3	3	3	0	4

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

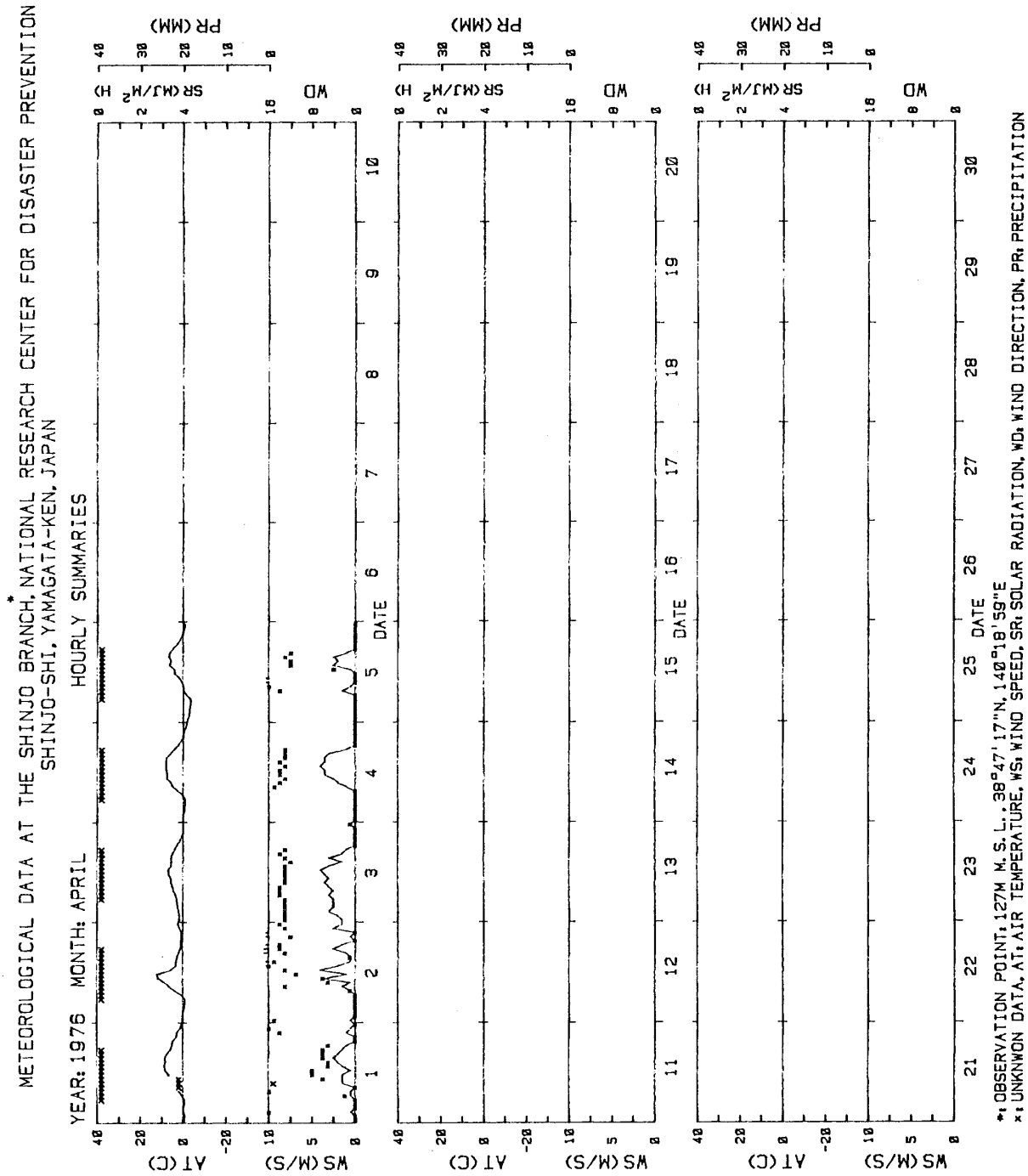

図 4.11 気象データの時間的変化

表 4.12　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

NOVEMBER 1976

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
16	0.8	3.0	15	(4)	3.4	8.4	0.5	X	0.5
17	0.4	3.0	8 14	(2)	4.9	9.6	0.6	X	0.0
18	1.5	5.0	14	(4)	9.1	12.4	5.7	X	10.0
19	1.6	4.5	14	(11)	5.1	8.7	0.2	X	0.0
20	0.2	2.0	2 10 13	(1)	2.0	4.7	-2.7	X	0.5
21	1.3	4.0	14	(8)	2.9	5.5	0.6	X	2.0
22	0.1	1.5	8 10	(1)	3.2	9.6	-1.4	X	0.0
23	0.3	2.0	10 15	(2)	2.8	5.8	1.4	X	18.5
24	0.5	2.5	1 14	(3)	1.4	5.4	-1.8	X	0.5
25	0.2	1.0	12	(3)	0.3	1.8	-1.8	X	6.0
26	0.0	0.5	5 12	(1)	1.3	4.7	-0.6	X	13.0
27	1.2	4.0	13	(9)	3.0	5.6	0.5	X	8.5
28	0.6	4.0	6 7	(3)	0.7	3.2	-0.6	X	9.0
29	0.8	4.0	13	(4)	-0.6	0.4	-1.2	X	17.0
30	2.0	4.0	13	(8)	0.1	1.5	-1.4	X	4.0
TOTL								X	89.5
MEAN	0.8	3.0			2.6	5.8	-0.1	X	
MAX.	2.0	5.0			9.1	12.4	5.7	X	
MIN.	0.0	0.5			-0.6	0.4	-2.7	X	
DN	15	15			15	15	15	0	15

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
16	0.3	2.5	12	(3)	2.8	8.4	0.5	X	0.0
17	0.8	3.5	8 10	(3)	7.6	9.7	3.7	X	5.0
18	2.1	5.0	14	(11)	8.0	12.4	5.1	X	5.0
19	0.7	3.0	14	(4)	2.5	8.7	-2.7	X	0.0
20	0.6	3.0	14	(6)	3.3	4.7	0.6	X	2.5
21	0.8	4.0	13	(5)	2.1	5.5	-1.4	X	0.0
22	0.3	2.0	10 15	(2)	3.9	9.6	1.3	X	0.0
23	0.1	1.0	6 10	(1)	2.3	5.8	-0.4	X	19.0
24	0.6	2.5	14	(4)	0.8	5.4	-1.8	X	4.5
25	0.1	1.0	12 13	(1)	0.5	1.8	-0.6	X	1.5
26	0.5	2.5	13	(4)	2.7	4.7	0.3	X	21.0
27	0.8	4.0	13	(5)	1.7	5.6	-0.6	X	0.5
28	0.6	4.0	6	(3)	0.5	3.2	-1.2	X	17.5
29	1.4	4.0	13	(7)	-0.7	0.4	-1.4	X	12.5
30	2.2	4.0	14	(11)	1.1	2.6	-0.6	X	1.0
TOTL								X	90.0
MEAN	0.8	3.1			2.6	5.9	0.1	X	
MAX.	2.2	5.0			8.0	12.4	5.1	X	
MIN.	0.1	1.0			-0.7	0.4	-2.7	X	
DN	15	15			15	15	15	0	15

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

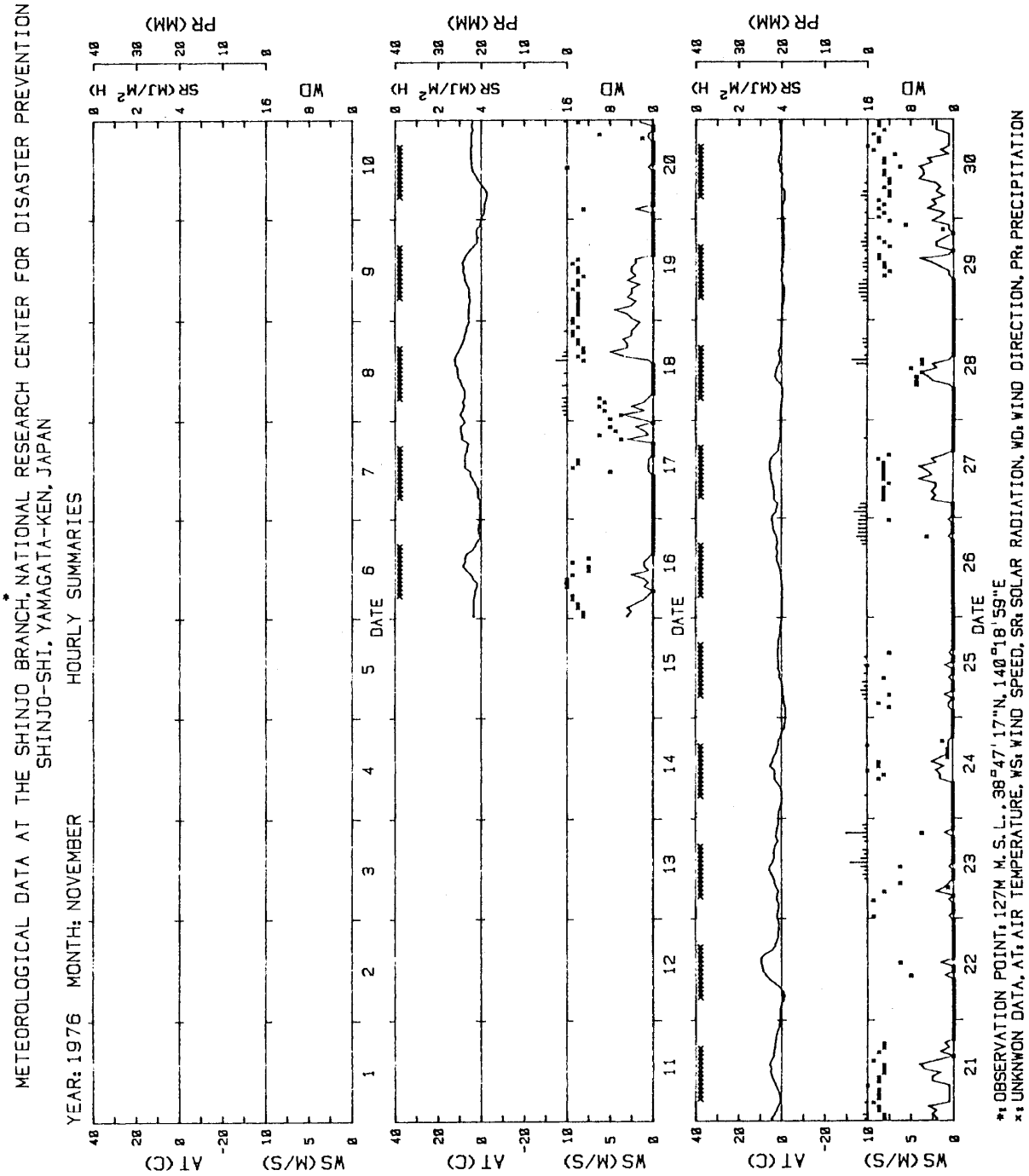

図 4. 12　気象データの時間的変化

表 4.13　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

DECEMBER 1976

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.3	4.0	X	(0)	2.7	4.6	1.3	X	1.5
2	0.0	0.5	14	(1)	2.3	8.9	-1.5	X	0.0
3	0.0	0.0		(0)	1.3	6.7	-1.6	X	0.0
4	0.0	0.0		(0)	0.4	2.2	-1.3	X	3.0
5	0.4	2.0	14	(5)	1.9	4.5	0.4	X	0.5
6	0.4	2.5	12	(5)	1.3	3.7	-0.5	X	0.5
7	0.4	2.5	6	(2)	1.8	5.5	-1.2	X	0.0
8	0.1	0.5	8	9 16(1)	1.8	3.6	0.6	X	1.5
9	0.5	3.5	13	(3)	0.1	2.6	-0.6	X	9.0
10	0.4	3.0	13	(3)	0.5	3.0	-0.4	X	20.5
11	2.2	4.0	14	(17)	1.1	2.4	-0.6	X	0.5
12	1.4	4.0	14	(10)	0.5	4.3	-5.9	X	0.0
13	0.0	0.0		(0)	-1.6	1.5	-6.1	X	5.0
14	0.3	2.0	14	(4)	0.9	4.7	-1.6	X	1.0
15	1.0	4.5	14	(7)	1.9	3.6	-0.7	X	15.0
16	0.2	2.0	12 15	(2)	0.7	4.2	-2.7	X	4.0
17	2.3	6.0	13	(12)	3.2	6.4	-1.0	X	6.0
18	1.1	4.5	6 7	(3)	1.2	6.7	-4.5	X	14.5
19	3.8	6.5	13	(12)	0.4	1.6	-0.7	X	6.0
20	0.9	2.5	14	(11)	-0.0	1.8	-1.5	X	13.5
21	0.7	4.0	14	(8)	-0.4	0.9	-2.9	X	3.5
22	0.1	2.5	6	(2)	-1.7	1.1	-5.2	X	1.0
23	1.5	4.0	14	(9)	-0.7	1.8	-3.9	X	4.0
24	0.1	1.0	5 12 13	(1)	-3.5	2.5	-10.4	X	0.0
25	0.0	0.0		(0)	-4.2	-0.7	-10.6	X	19.5
26	X	X	X	(0)	-0.2	3.0	-3.9	X	27.5
27	X	X	X	(0)	-4.2	-2.7	-5.0	X	15.0
28	0.5	4.5	12	(3)	-2.7	-1.3	-5.1	X	13.0
29	0.5	3.5	12	(2)	-5.2	-0.6	-10.8	5.52	2.0
30	X	X	X	(0)	-7.0	-1.7	-13.7	3.92	12.5
31	X	X	X	(0)	-4.5	-2.7	-5.8	5.77	9.0
TOTL								15.21	209.0
MEAN	0.8	2.7			-0.4	2.6	-3.5	5.07	
MAX.	3.8	6.5			3.2	8.9	1.3	5.77	
MIN.	0.0	0.0			-7.0	-2.7	-13.7	3.92	
DN	27	27			31	31	31	3	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	2.0	X	(0)	2.3	4.6	0.4	X	0.5
2	0.0	0.5	14	(1)	1.7	8.9	-1.6	X	0.0
3	0.0	0.0		(0)	1.2	6.7	-1.3	X	0.0
4	0.0	0.0		(0)	0.9	2.2	-0.1	X	3.0
5	0.5	2.0	14	(5)	1.8	4.5	-0.5	X	1.0
6	0.4	2.5	12	(5)	1.0	3.7	-1.2	X	0.0
7	0.4	2.5	6	(2)	2.3	5.5	0.6	X	0.0
8	0.3	3.5	13	(2)	1.8	3.6	-0.6	X	3.5
9	0.3	2.5	14	(2)	-0.3	0.4	-0.6	X	19.0
10	1.1	3.5	14	(10)	0.6	3.0	-0.6	X	9.0
11	2.1	4.0	14	(15)	1.7	2.5	0.6	X	0.0
12	0.8	4.0	14	(4)	-1.7	4.3	-6.1	X	0.0
13	0.0	0.5	13	(1)	-0.1	1.5	-1.6	X	5.5
14	0.5	2.0	14	(5)	1.7	4.7	-1.5	X	7.0
15	0.9	4.5	14	(6)	0.6	3.6	-2.7	X	8.5
16	1.7	6.0	13	(6)	3.4	6.4	0.5	X	8.5
17	0.8	3.5	13	(6)	0.0	3.7	-4.5	X	1.5
18	2.9	6.5	13	(8)	2.6	6.7	-0.6	X	19.5
19	2.0	6.0	14	(7)	0.0	0.7	-0.7	X	14.0
20	1.5	4.0	14	(17)	-0.3	1.8	-2.9	X	0.5
21	0.1	2.0	14	(2)	-1.2	0.9	-5.2	X	4.0
22	0.2	2.5	6	(3)	-0.5	1.1	-2.5	X	4.0
23	1.4	4.0	14	(8)	-2.0	1.8	-4.5	X	0.5
24	0.1	0.5	5 12	(1)	-5.0	2.5	-10.6	X	4.0
25	0.0	0.0		(0)	-1.6	0.7	-4.4	X	23.0
26	X	X	X	(0)	-1.6	3.0	-5.0	X	29.0
27	2.7	6.5	12	(13)	-3.6	-1.6	-4.6	X	13.0
28	0.0	0.0		(0)	-3.8	-1.3	-6.8	X	7.5
29	0.5	3.5	12	(2)	-7.3	-0.6	-13.7	5.48	0.5
30	X	X	X	(0)	-4.3	-1.7	-9.8	3.78	16.0
31	2.6	5.5	13	(10)	-5.0	-2.7	-6.6	5.71	10.0
TOTL								14.97	212.5
MEAN	0.8	2.9			-0.5	2.6	-3.2	4.99	
MAX.	2.9	6.5			3.4	8.9	0.6	5.71	
MIN.	0.0	0.0			-7.3	-2.7	-13.7	3.78	
DN	29	29			31	31	31	3	31

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

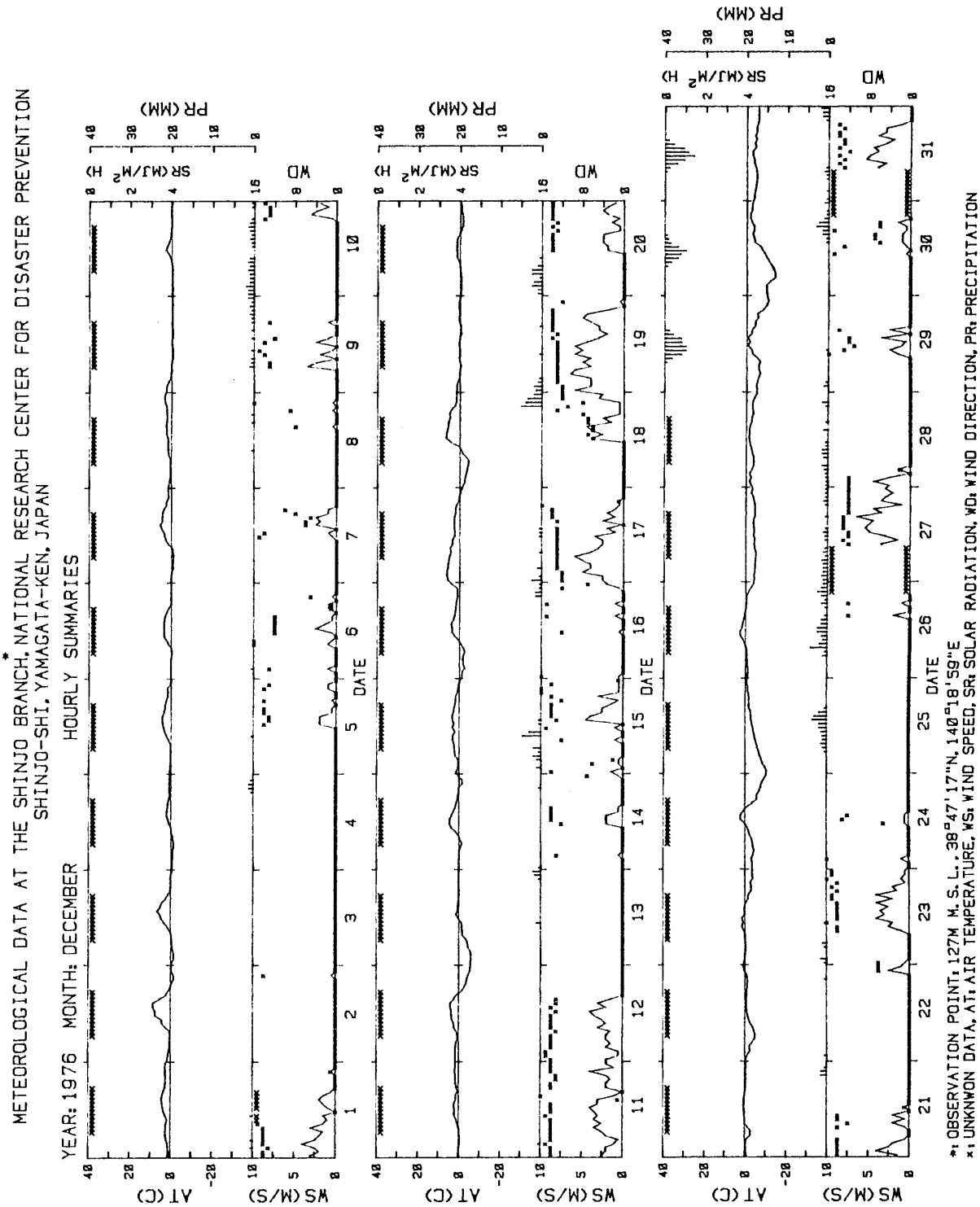

図 4.13　気象データの時間的変化

表 4.14　新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

JANUARY　1977

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	3.7	6.0	13	(14)	-6.3	-5.0	-7.5	3.18	6.5
2	0.8	3.5	6 11	(3)	-6.7	-2.5	-13.6	4.78	4.5
3	0.6	2.5	13	(4)	-3.1	-0.6	-4.9	5.72	9.0
4	2.1	6.0	13 14	(8)	-5.3	-4.1	-6.5	4.34	5.5
5	0.2	4.0	14	(1)	-4.3	-0.7	-7.7	6.40	9.0
6	X	X	X	(0)	-4.7	-2.6	-6.0	5.86	X
7	0.0	0.5	14 16	(1)	X	X	X	2.17	26.0
8	1.7	4.5	14	(7)	-2.0	-0.7	-2.9	4.49	4.5
9	0.1	0.5	9	(2)	-2.1	1.5	-4.6	6.64	0.0
10	1.2	4.0	14	(9)	-1.7	0.9	-4.6	3.14	9.0
11	1.9	4.5	13	(8)	-2.9	1.4	-7.8	7.02	0.0
12	1.0	5.0	13	(5)	-4.1	-0.3	-9.6	6.10	5.5
13	1.2	3.0	12 13	(5)	-4.7	-2.2	-6.9	5.50	3.0
14	1.8	4.0	14	(10)	-5.5	-3.7	-7.5	5.08	2.0
15	0.1	1.0	10 12 13	(1)	-7.3	-2.6	-14.0	7.51	0.0
16	0.1	0.5	9 10 14	(1)	-4.0	1.1	-6.8	8.13	1.0
17	0.4	2.0	14	(3)	-2.5	0.3	-4.7	6.78	3.5
18	2.2	5.5	14	(12)	-4.5	-3.4	-5.6	6.43	4.5
19	0.1	0.5	14	(2)	-7.6	-4.7	-14.2	5.44	4.0
20	1.5	3.0	14	(10)	-4.8	-3.0	-8.8	6.02	2.0
21	0.3	2.5	11 13	(2)	-6.9	-1.9	-13.0	6.97	1.0
22	0.7	3.5	13 16	(4)	-5.3	-2.6	-9.9	7.30	1.5
23	0.3	2.0	15 16	(2)	-4.8	-1.7	-9.9	7.54	2.5
24	2.2	4.5	13	(10)	-4.6	-2.7	-6.4	6.86	1.5
25	1.2	3.5	6	(4)	-1.1	2.2	-4.4	6.39	3.5
26	0.6	2.0	14	(5)	-0.8	2.4	-3.0	6.57	10.5
27	0.5	2.0	12 14 15	(2)	-1.7	2.6	-3.9	9.69	0.0
28	1.4	5.0	12	(8)	-3.1	0.0	-4.4	9.20	18.0
29	0.4	1.5	8	(4)	-4.2	-1.7	-6.5	7.45	12.5
30	1.4	5.0	14	(6)	-5.4	-2.7	-7.1	7.07	13.0
31	1.3	5.0	13	(5)	-6.8	-4.7	-8.1	7.38	3.0
TOTL								193.15	166.5
MEAN	1.0	3.2			-4.3	-1.4	-7.4	6.23	
MAX.	3.7	6.0			-0.8	2.6	-2.9	9.69	
MIN.	0.0	0.5			-7.6	-5.0	-14.2	2.17	
DN	30	30			30	30	30	31	30

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	2.7	6.0	13	(10)	-8.3	-5.5	-13.6	3.38	3.0
2	0.9	3.5	11	(5)	-3.8	-2.2	-8.7	4.87	6.0
3	1.6	6.0	13	(9)	-4.1	-0.6	-6.5	5.54	8.5
4	0.8	3.5	14	(5)	-5.5	-4.1	-7.7	4.66	7.5
5	1.1	4.0	13	(7)	-4.0	-0.7	-6.0	6.15	5.0
6	X	X	X	(0)	X	X	X	5.66	X
7	0.5	4.5	13	(3)	-1.9	-0.4	-4.5	2.45	20.5
8	1.3	4.0	14	(7)	-2.6	-0.7	-4.6	4.60	0.0
9	0.1	0.5	8 9	(1)	-2.0	1.5	-4.6	6.27	3.0
10	2.2	4.5	14	(14)	-1.2	0.9	-3.6	3.43	6.0
11	1.0	3.5	13	(6)	-4.3	1.4	-9.6	6.88	5.0
12	0.9	5.0	13	(5)	-3.7	-0.3	-6.2	6.42	1.0
13	1.6	3.0	14	(8)	-4.8	-2.2	-6.9	5.19	4.0
14	1.5	4.0	16	(6)	-7.3	-3.7	-14.0	5.48	0.5
15	0.0	1.0	12	(1)	-5.8	-2.6	-7.9	7.28	1.0
16	0.1	0.5	9 10	(1)	-2.7	1.1	-4.7	8.21	1.0
17	1.0	3.0	14	(6)	-3.3	0.3	-5.6	6.57	7.0
18	1.6	5.5	14	(10)	-6.9	-3.4	-14.2	6.87	0.0
19	0.8	3.0	14	(4)	-5.2	-4.1	-8.4	5.00	5.5
20	0.8	3.0	14	(7)	-7.2	-3.0	-13.0	6.11	0.5
21	0.4	2.5	11 13	(2)	-5.5	-1.9	-9.9	7.07	2.0
22	0.6	3.5	13 14	(3)	-5.1	-2.6	-9.9	7.30	1.0
23	0.9	4.5	14	(5)	-4.3	-1.7	-6.4	7.46	3.0
24	2.1	4.5	13	(9)	-3.7	-2.5	-5.4	6.92	0.5
25	1.0	3.5	14	(4)	0.2	2.4	-1.8	6.24	13.5
26	0.4	2.0	12 13	(3)	-2.1	0.7	-3.9	6.78	0.5
27	0.6	2.0	15	(4)	-2.0	2.6	-4.4	9.50	8.5
28	1.5	5.0	12	(7)	-3.2	0.0	-5.4	9.20	18.0
29	0.5	2.5	10	(3)	-4.6	-1.7	-6.5	7.49	14.0
30	1.2	5.0	14	(5)	-5.9	-2.7	-7.7	7.24	4.5
31	1.3	5.0	13	(5)	-7.1	-4.7	-8.1	7.28	5.0
TOTL								193.50	155.5
MEAN	1.0	3.6			-4.3	-1.3	-7.3	6.24	
MAX.	2.7	6.0			0.2	2.6	-1.8	9.50	
MIN.	0.0	0.5			-8.3	-5.5	-14.2	2.45	
DN	30	30			30	30	30	31	30

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

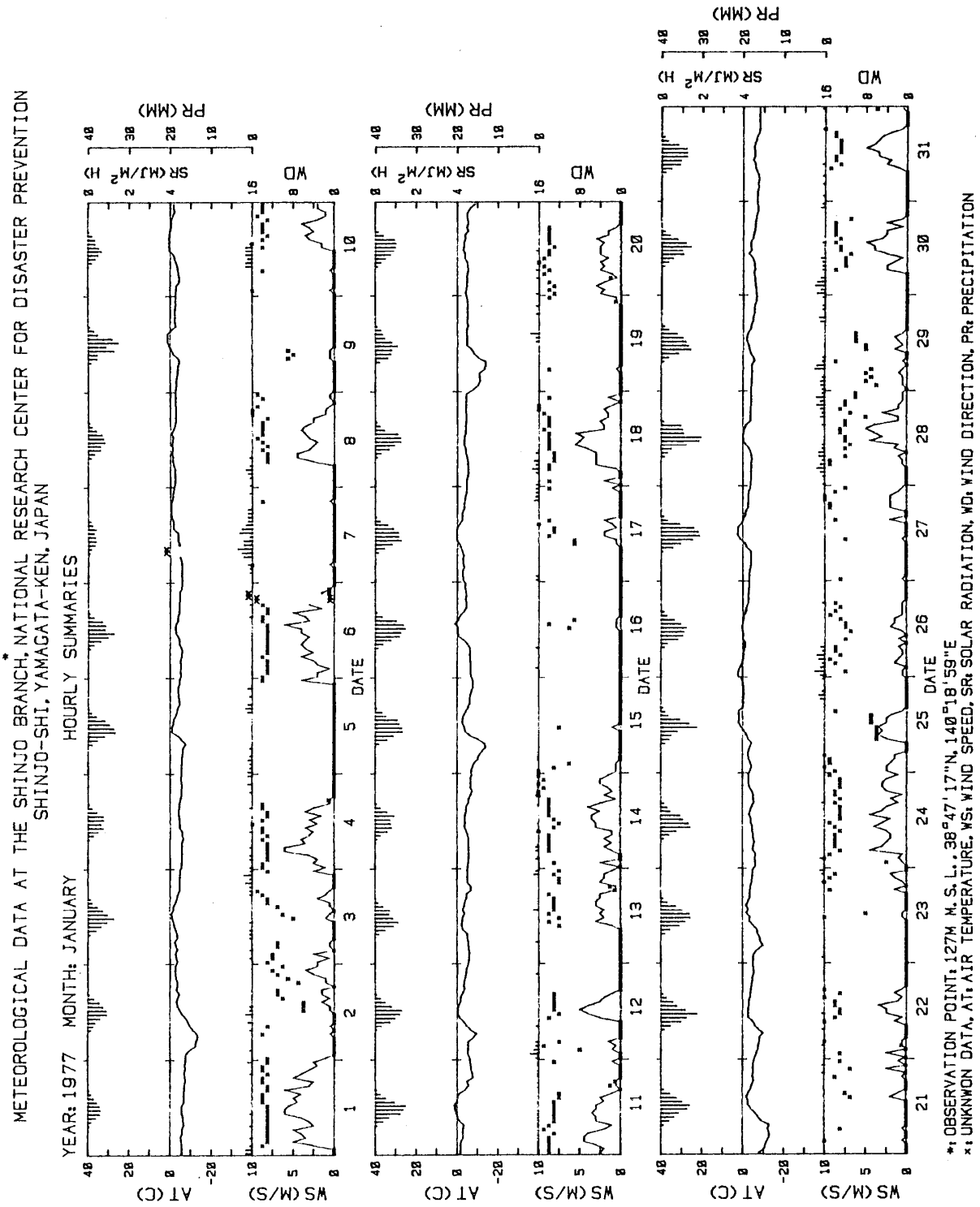

図 4.14　気象データの時間的変化

表 4.15　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

FEBRUARY 1977

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	X	X	X	(0)	-6.4	-4.6	-8.1	4.50	15.0
2	X	X	X	(0)	-5.1	-3.1	-8.6	7.49	3.5
3	0.6	3.0	14 15	(3)	-5.7	-1.3	-12.9	9.22	0.5
4	0.3	2.0	12 16	(2)	-3.0	1.8	-7.7	9.00	4.0
5	0.5	3.0	14 16	(3)	-4.6	0.7	-9.1	8.53	2.0
6	1.5	4.5	13	(5)	-2.9	-0.7	-5.3	8.22	7.0
7	3.2	6.0	13	(12)	-5.5	-4.3	-7.1	8.22	3.5
8	0.5	2.0	13 14	(3)	-4.3	-0.9	-7.6	8.37	1.5
9	0.3	2.0	6 8	(3)	-3.3	0.6	-6.3	11.41	1.0
10	1.0	5.0	13	(7)	-2.0	1.1	-4.8	7.59	6.0
11	4.2	6.0	13	(11)	-5.1	-3.9	-6.0	7.30	4.0
12	1.3	5.0	14	(8)	-2.4	1.5	-5.3	8.99	0.0
13	0.1	1.0	1 5	7(1)	-1.6	1.8	-6.6	4.92	12.5
14	0.2	1.0	14	(4)	-0.6	3.5	-3.8	8.62	1.5
15	0.9	4.0	16	(7)	-2.9	0.8	-6.1	11.51	0.0
16	1.8	6.5	6	(5)	-5.0	-1.7	-8.8	5.65	3.0
17	2.7	6.0	13	(7)	-3.7	-1.2	-5.9	5.27	10.5
18	1.2	4.5	14	(6)	-3.0	0.1	-6.5	10.98	6.5
19	1.2	3.5	16	(4)	0.1	3.8	-2.6	8.64	2.5
20	1.1	3.0	6	(6)	2.3	5.8	-0.3	6.29	5.5
21	1.5	6.0	13	(5)	-0.4	3.5	-4.5	6.06	11.0
22	3.1	7.5	13	(9)	-5.9	-4.0	-7.8	7.89	7.5
23	1.7	6.5	13	(5)	-3.7	-1.3	-8.7	5.96	11.5
24	1.0	3.5	12 16	(3)	-0.2	7.8	-10.7	12.73	0.0
25	0.5	2.0	13	(3)	7.1	12.8	2.5	11.71	1.0
26	1.0	3.0	12	(4)	3.8	6.9	0.4	2.45	6.0
27	0.6	2.0	16	(4)	3.5	7.6	0.3	8.87	0.0
28	0.1	0.5	2 10 12	(1)	1.6	8.4	-3.0	12.13	0.0
TOTL								228.52	127.0
MEAN	1.2	3.8			-2.1	1.5	-5.7	8.16	
MAX.	4.2	7.5			7.1	12.8	2.5	12.73	
MIN.	0.1	0.5			-6.4	-4.6	-12.9	2.45	
DN	26	26			28	28	28	28	28

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	X	X	X	(0)	-5.4	-4.4	-6.8	4.58	12.5
2	1.2	3.5	14	(8)	-6.8	-3.1	-12.9	7.43	2.5
3	0.6	3.0	14	(3)	-3.7	-1.3	-5.9	9.19	3.5
4	0.3	2.0	8 12	(1)	-4.3	1.8	-9.1	9.15	2.0
5	0.9	4.5	14	(4)	-2.8	0.7	-4.8	8.64	1.5
6	2.2	4.5	13	(8)	-4.1	-0.7	-7.1	8.19	9.5
7	2.1	6.0	13	(7)	-5.3	-3.8	-7.6	8.29	1.5
8	0.5	2.0	13 14	(3)	-3.9	-0.9	-6.3	8.63	1.5
9	0.3	2.0	6 8	(3)	-3.1	0.6	-6.1	10.83	2.0
10	2.7	6.0	13	(11)	-2.3	1.1	-5.9	7.82	6.0
11	3.3	5.5	14	(13)	-4.7	-2.4	-6.0	7.12	2.0
12	0.6	2.0	14	(2)	-2.7	1.5	-6.6	8.94	2.5
13	0.1	0.5	14	(2)	-0.3	1.8	-1.5	5.03	10.5
14	0.3	1.0	15	(4)	-1.8	3.5	-5.5	9.32	1.0
15	0.8	4.0	16	(7)	-4.0	0.8	-8.8	11.00	0.0
16	3.0	6.5	6	(10)	-4.0	-1.7	-5.9	5.27	9.0
17	1.7	6.0	13	(6)	-4.0	-1.2	-6.5	6.13	10.0
18	1.6	4.5	14	(7)	-1.8	0.1	-3.2	10.35	2.0
19	1.2	3.5	6	(9)	1.3	4.8	-0.5	8.94	1.5
20	0.5	2.5	1 12	(2)	1.9	5.8	0.0	5.86	12.5
21	3.5	7.5	13	(11)	-3.1	3.5	-7.8	6.08	5.0
22	1.3	6.0	13	(4)	-5.2	-4.0	-6.5	7.87	12.5
23	1.6	6.5	13	(4)	-5.3	-1.3	-10.7	6.45	5.5
24	1.0	3.5	12	(4)	5.6	7.8	-2.9	12.46	0.0
25	0.8	3.0	10 12	(3)	6.6	12.8	2.3	11.71	7.0
26	0.6	2.5	14	(4)	2.3	5.8	0.3	2.58	0.0
27	0.5	2.0	16	(3)	2.8	7.6	-3.0	9.41	0.0
28	0.5	3.0	16	(3)	2.9	9.7	-3.5	11.59	0.0
TOTL								228.86	123.5
MEAN	1.3	3.8			-2.0	1.6	-5.3	8.17	
MAX.	3.5	7.5			6.6	12.8	2.3	12.46	
MIN.	0.1	0.5			-6.8	-4.4	-12.9	2.58	
DN	27	27			28	28	28	28	28

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

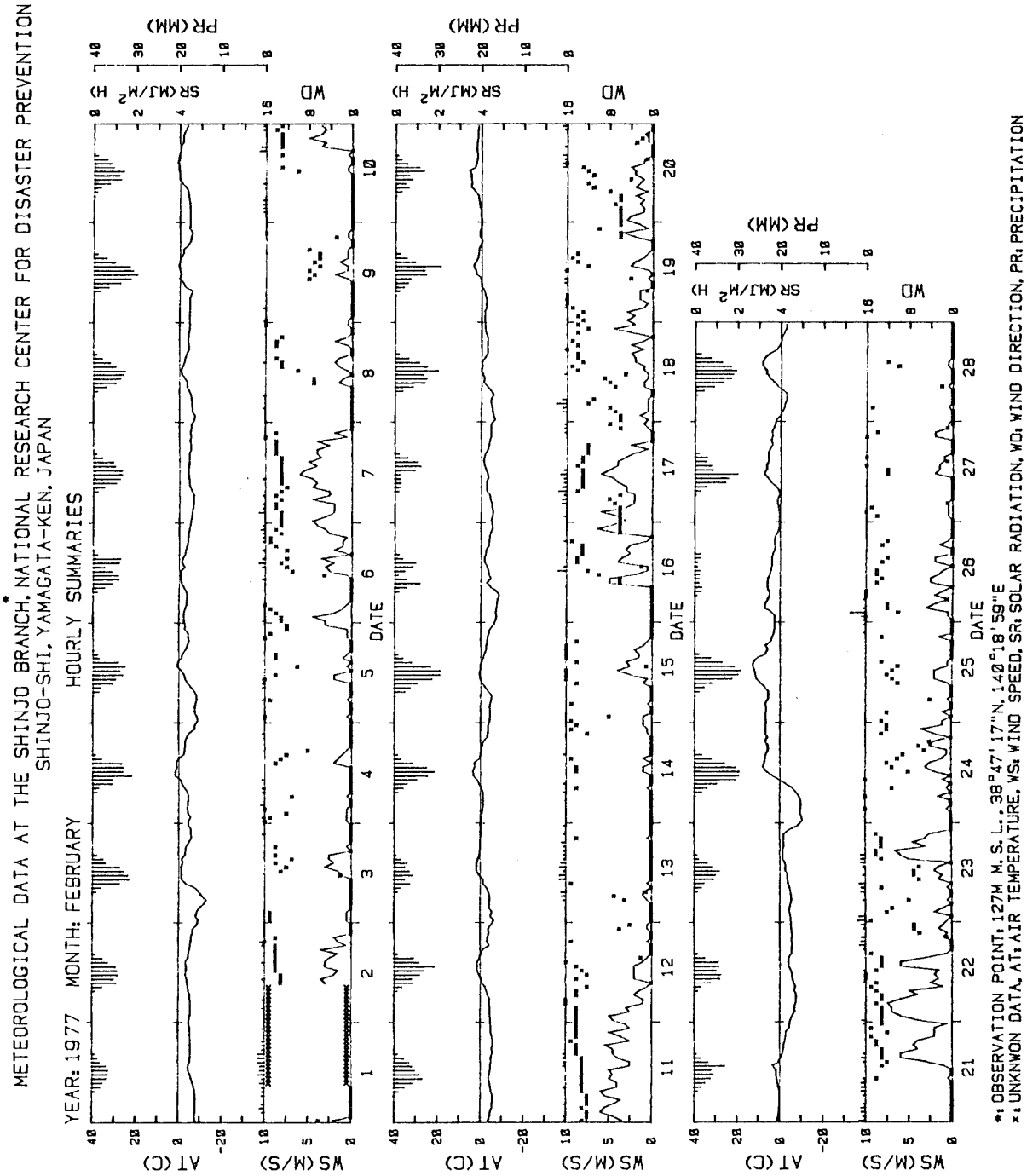

図 4.15　気象データの時間的変化

表 4.16 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

MARCH 1977

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.1	3.0	16	(5)	4.3	10.1	-3.5	3.47	0.0
2	0.1	1.0	13 14 16	(1)	1.0	2.2	0.4	2.50	3.0
3	2.5	5.5	14	(12)	-0.6	2.5	-4.6	8.73	3.5
4	1.0	3.0	13	(5)	-3.0	1.3	-6.5	12.36	1.0
5	0.9	4.0	11	(5)	-5.6	-3.2	-6.7	7.37	14.0
6	0.8	3.0	10	(3)	-5.0	-0.9	-9.6	8.99	7.5
7	0.0	0.0		(0)	-2.6	2.3	-7.5	9.08	0.0
8	0.0	0.0		(0)	0.1	7.9	-6.9	15.13	0.0
9	1.3	4.0	14	(6)	2.4	9.3	0.1	3.69	4.5
10	4.1	6.0	13	(16)	0.1	3.0	-1.4	10.68	1.0
11	2.3	5.0	14	(13)	1.4	4.5	-2.1	12.04	2.5
12	1.8	4.0	14	(10)	1.6	4.6	-3.0	15.49	0.0
13	0.1	1.0	2 6 8	(1)	0.7	8.5	-8.1	15.10	0.0
14	0.2	1.0	14	(3)	4.7	10.9	-0.6	14.90	0.0
15	1.9	5.5	13	(7)	4.0	7.5	0.6	11.82	1.0
16	0.6	2.0	14	(5)	3.9	7.9	-0.6	9.30	0.0
17	0.0	0.5	6	(1)	2.3	9.1	-1.5	13.36	0.0
18	1.3	4.5	6	(5)	3.4	10.7	-2.9	15.59	2.0
19	0.1	1.0	15 16	(1)	2.5	4.6	0.6	5.18	7.0
20	1.6	4.0	14	(7)	3.4	6.6	0.4	13.88	2.0
21	1.2	4.0	13	(5)	1.3	6.3	-4.5	19.11	0.0
22	0.1	0.5	2 7 14	(1)	0.7	7.6	-6.8	16.07	0.0
23	2.4	6.5	6	(12)	4.8	10.4	-1.6	15.74	0.0
24	2.0	5.5	6 12 13	(4)	5.3	9.5	0.2	3.21	12.0
25	2.0	5.5	12	(8)	0.5	1.6	-1.8	7.07	14.5
26	1.5	4.5	6 13	(4)	4.4	9.0	0.1	15.29	0.5
27	0.5	3.0	8	(3)	1.2	3.3	0.2	3.57	0.5
28	0.6	3.0	14	(6)	1.7	4.7	-1.0	11.89	0.0
29	0.1	0.5	5 6 12	(1)	1.2	7.4	-4.9	19.69	0.0
30	1.0	3.5	8 9 14	(3)	0.7	3.6	-2.9	5.79	10.5
31	0.3	1.5	1 16	(3)	4.5	7.8	1.0	5.97	4.5
TOTL								332.06	91.5
MEAN	1.1	3.1			1.5	5.8	-2.8	10.71	
MAX.	4.1	6.5			5.3	10.9	1.0	19.69	
MIN.	0.0	0.0			-5.6	-3.2	-9.6	2.50	
DN	31	31			31	31	31	31	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.6	2.5	14	(3)	3.6	10.1	0.4	2.89	0.0
2	0.4	2.5	14	(4)	0.9	2.2	0.3	3.18	4.0
3	2.7	5.5	14	(10)	-2.7	2.5	-6.5	9.32	3.5
4	0.8	2.0	14	(5)	-3.2	1.3	-6.6	12.12	6.0
5	1.0	4.0	11	(4)	-5.7	-3.2	-6.8	7.48	11.5
6	0.4	2.5	10	(3)	-5.2	-0.9	-9.6	8.64	4.0
7	0.0	0.0		(0)	-2.0	2.3	-6.9	9.45	0.0
8	0.2	1.5	14	(2)	2.3	7.9	-0.7	14.01	1.0
9	2.5	5.5	13	(11)	2.1	9.3	-1.4	4.98	3.5
10	3.5	6.0	13 14	(10)	-0.2	3.0	-2.1	10.70	3.5
11	2.0	5.0	14	(11)	2.2	4.5	0.4	12.19	0.0
12	1.3	4.0	14	(6)	-0.9	4.6	-8.1	15.74	0.0
13	0.2	1.0	14	(3)	4.0	8.5	1.8	14.15	0.0
14	0.4	5.5	14	(2)	4.1	10.9	-0.6	15.36	1.0
15	2.1	5.0	14	(8)	4.7	7.5	3.3	10.91	0.0
16	0.1	1.5	13	(2)	2.3	7.9	-1.4	10.23	0.0
17	0.0	0.5	6 8	(1)	1.9	9.1	-2.9	13.58	0.0
18	1.3	4.5	6	(5)	4.8	10.7	1.6	14.30	7.5
19	0.3	2.0	14	(3)	3.0	5.9	0.6	6.64	3.5
20	1.4	4.0	13	(5)	1.9	6.6	-4.5	14.35	0.0
21	1.1	4.0	13	(5)	-0.1	6.3	-6.8	19.00	0.0
22	0.1	0.5	2 7	(1)	2.3	7.6	-1.6	15.53	0.0
23	3.3	6.5	6	(16)	8.1	10.4	4.3	14.31	4.5
24	1.4	4.5	13	(4)	2.1	7.2	-1.8	3.94	12.0
25	2.1	5.5	12	(8)	1.1	4.4	0.1	7.90	10.5
26	1.1	4.5	13	(4)	4.5	9.0	0.4	14.16	0.0
27	0.4	3.0	8	(3)	0.7	2.7	0.0	4.51	0.5
28	0.6	3.0	14	(6)	0.6	4.7	-4.9	12.81	0.0
29	0.1	0.5	5 6	(1)	1.4	7.4	-2.9	18.58	0.0
30	1.0	3.5	14	(4)	2.0	4.9	1.0	5.77	15.0
31	0.5	2.0	15	(4)	5.3	7.8	3.6	5.17	2.5
TOTL								331.90	94.0
MEAN	1.1	3.3			1.5	5.9	-1.9	10.71	
MAX.	3.5	6.5			8.1	10.9	4.3	19.00	
MIN.	0.0	0.0			-5.7	-3.2	-9.6	2.89	
DN	31	31			31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

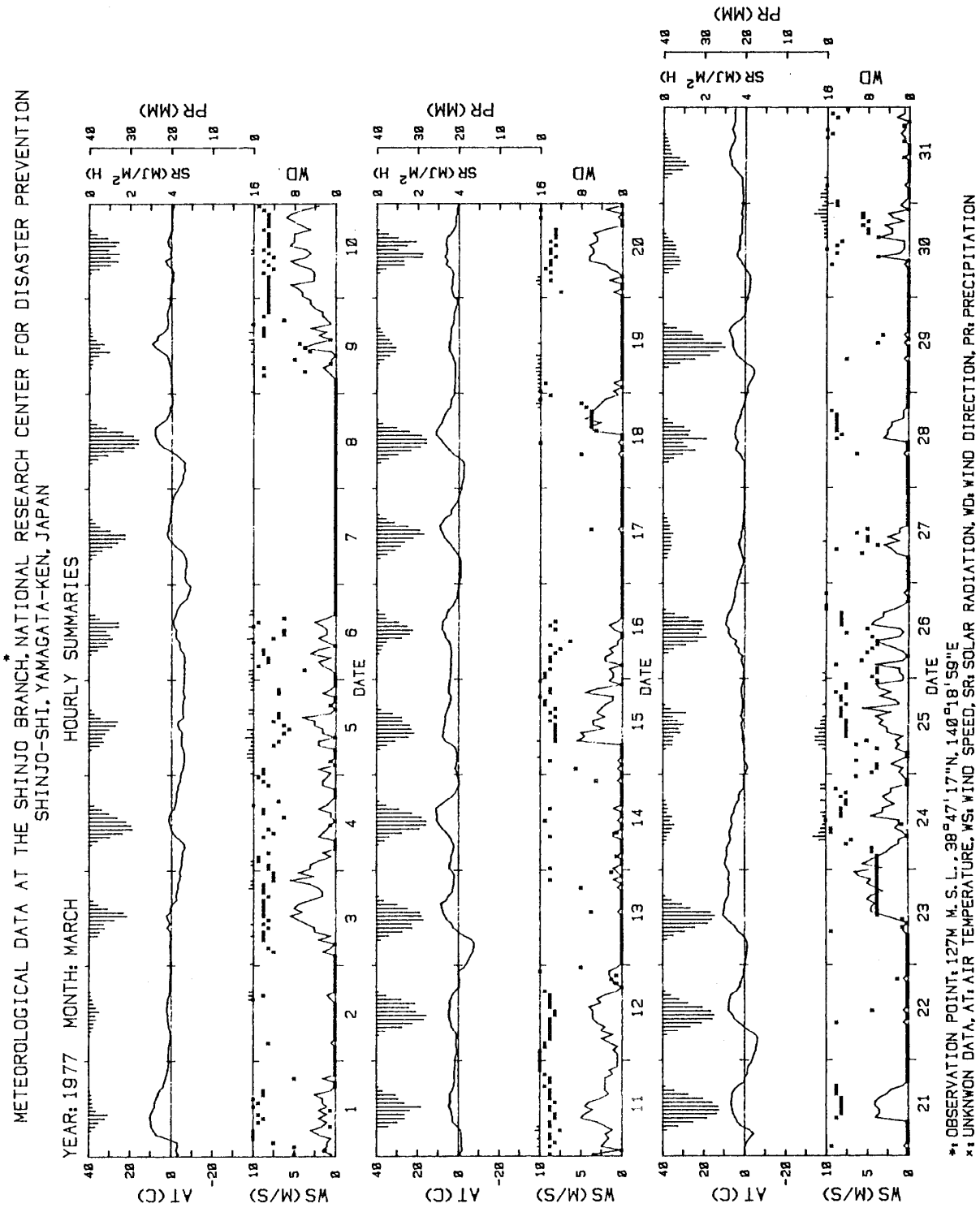

図 4.16　気象データの時間的変化

表 4.17 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

APRIL 1977

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.8	2.5	13	(5)	4.2	6.5	0.4	7.98	3.0
2	1.4	5.0	13	(7)	1.8	6.9	-2.2	11.83	0.0
3	1.4	4.0	14	(4)	1.3	8.2	-3.7	8.04	6.5
4	2.3	5.0	13	(13)	3.5	6.1	1.8	8.23	0.5
5	1.0	3.5	13	(7)	5.0	9.4	1.6	14.49	0.5
6	0.3	1.0	12 16	(3)	X	X	X	9.94	0.0
7	2.4	6.0	7	(6)	3.7	5.8	0.7	7.05	2.5
8	0.4	1.5	15 16	(4)	5.3	8.9	2.6	8.78	0.0
9	0.2	1.5	16	(3)	3.9	6.6	2.0	5.13	4.5
10	0.7	3.0	13	(5)	7.1	12.8	3.4	13.31	1.0
TOTL								94.78	18.5
MEAN	1.1	3.3			4.0	7.9	0.7	9.48	
MAX.	2.4	6.0			7.1	12.8	3.4	14.49	
MIN.	0.2	1.0			1.3	5.8	-3.7	5.13	
DN	10	10			9	9	9	10	10

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.7	2.5	13 14	(4)	2.6	6.5	-2.2	8.38	0.5
2	1.4	5.0	13	(6)	1.2	6.9	-3.7	13.13	0.0
3	2.2	5.0	13	(7)	2.8	8.2	-0.1	6.74	6.5
4	1.8	4.0	13	(14)	3.8	6.1	1.6	9.04	1.0
5	1.0	3.5	14	(4)	4.8	9.4	1.7	14.66	0.0
6	1.2	4.5	5 16	(3)	X	X	X	8.18	2.5
7	1.3	6.0	7	(4)	3.7	5.8	2.5	7.56	0.0
8	0.5	1.5	15 16	(4)	5.1	8.9	2.0	8.85	0.0
9	0.1	0.5	16	(3)	4.5	6.6	3.3	5.75	4.5
10	X	X	X	(0)	X	X	X	X	X
TOTL								82.29	15.0
MEAN	1.1	3.6			3.6	7.3	0.6	9.14	
MAX.	2.2	6.0			5.1	9.4	3.3	14.66	
MIN.	0.1	0.5			1.2	5.8	-3.7	5.75	
DN	9	9			8	8	8	9	9

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

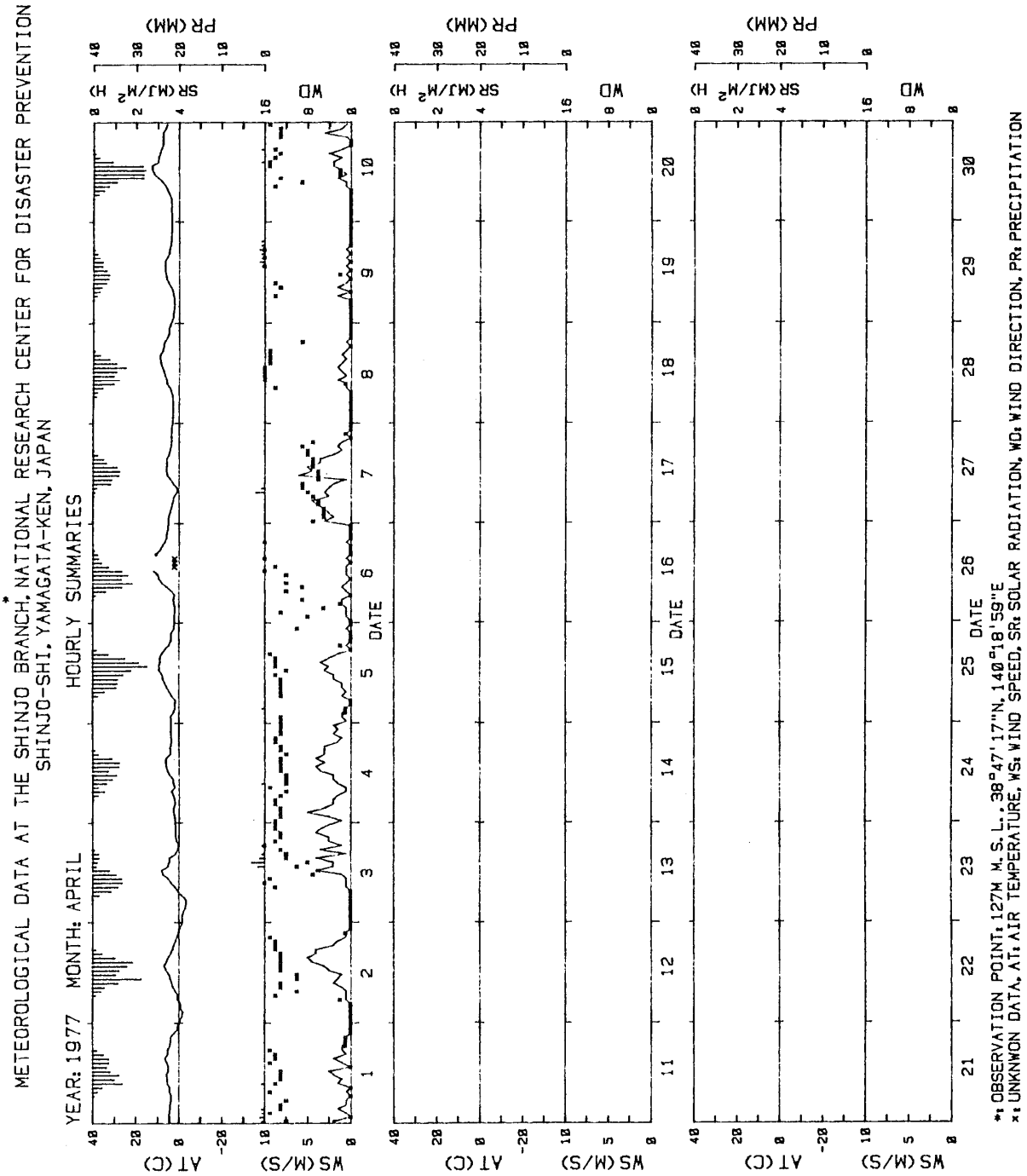

図 4. 17　気象データの時間的変化

表 4.18 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

DECEMBER 1977

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.0	0.5	13	(1)	2.9	6.8	-0.8	4.46	0.0
2	0.9	4.5	14	(5)	1.4	4.5	-0.7	2.65	8.0
3	0.6	3.5	16	(4)	2.4	5.4	-0.3	1.92	4.5
4	0.1	0.5	12	(2)	7.3	11.3	4.3	3.16	21.5
5	0.4	2.5	14	(5)	7.4	10.4	3.6	3.91	9.0
6	X	X	X	(0)	X	X	X	X	0.0
7	1.1	3.0	14	(12)	4.6	7.0	1.4	3.04	0.0
8	0.0	0.5	14	(1)	3.0	6.6	-0.5	3.92	0.5
9	0.2	1.5	13	(2)	3.9	4.8	2.8	1.61	7.5
10	0.0	1.0	13	(1)	3.1	6.1	-0.3	4.62	9.0
11	0.9	3.5	15	(4)	3.8	7.6	1.5	6.45	2.5
12	0.0	0.0		(0)	2.2	8.7	-1.3	6.64	0.0
13	0.0	1.0	4	(1)	1.0	6.4	-3.2	4.35	3.0
14	0.3	2.0	12 13 14	(2)	4.1	10.7	-1.6	6.23	0.0
15	0.0	0.5	1	(1)	-0.4	2.4	-2.7	3.51	0.0
16	0.0	0.5	1 6	(1)	1.7	3.5	-0.5	1.55	15.5
17	0.6	2.5	15	(7)	6.1	9.5	3.4	1.03	7.5
18	0.1	0.5	5 8 15	(1)	3.4	5.7	0.3	2.05	16.5
19	0.6	3.0	14	(7)	-0.2	0.6	-1.6	2.67	4.5
20	0.4	2.5	14	(3)	-0.1	2.0	-1.8	3.71	5.5
21	2.3	5.0	14	(10)	-2.6	-0.6	-4.3	5.19	3.0
22	1.9	4.5	14	(10)	-2.5	-0.8	-4.2	4.92	1.5
23	0.2	1.0	12	(3)	-3.1	3.5	-7.2	5.99	0.0
24	0.4	2.0	14	(3)	-1.2	3.2	-5.3	3.83	5.0
25	1.1	3.0	14	(7)	1.3	3.7	-0.8	0.81	27.5
26	3.6	6.0	14	(13)	-1.6	0.6	-3.1	4.77	7.5
27	3.7	6.0	13	(15)	-0.4	1.6	-4.9	3.89	7.5
28	2.9	5.0	14	(11)	-1.7	3.6	-5.7	6.19	2.5
29	0.8	3.0	7	(5)	2.5	8.4	-0.5	6.67	1.0
30	0.9	4.5	13 16	(4)	2.3	8.0	-4.4	7.59	10.0
31	0.4	2.0	14	(3)	0.1	1.4	-3.7	1.39	18.5
TOTL								118.72	199.0
MEAN	0.8	2.5			1.7	5.1	-1.4	3.96	
MAX.	3.7	6.0			7.4	11.3	4.3	7.59	
MIN.	0.0	0.0			-3.1	-0.8	-7.2	0.81	
DN	30	30			30	30	30	30	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.0	0.5	13 14	(1)	1.9	6.8	-0.8	4.50	1.0
2	1.0	4.5	14	(5)	1.4	4.5	-0.3	2.61	7.0
3	0.5	3.5	12 13	(2)	4.0	5.5	1.6	1.90	10.0
4	0.1	0.5	12	(2)	8.3	11.3	5.7	3.03	25.0
5	0.4	2.5	14	(5)	6.1	10.4	3.2	4.13	0.0
6	X	X	X	(0)	X	X	X	X	0.0
7	0.5	3.0	14	(7)	3.1	7.0	-0.5	3.22	0.0
8	0.0	0.5	14	(1)	4.2	6.6	2.8	3.55	3.5
9	0.2	1.5	13	(2)	3.1	4.8	-0.3	2.13	5.5
10	0.1	1.0	13 15	(1)	3.3	6.1	1.5	4.43	10.5
11	0.8	3.5	13 14	(3)	2.9	7.6	-1.3	6.70	0.0
12	0.0	0.0		(0)	1.5	8.7	-3.2	6.37	0.0
13	0.0	1.0	4	(1)	2.9	6.4	-1.2	4.31	3.0
14	0.3	2.0	12 13	(2)	2.2	10.7	-2.7	6.15	0.0
15	0.0	0.5	1	(1)	0.4	2.4	-1.4	3.49	0.0
16	0.1	0.5	1 6	(1)	3.2	3.8	1.1	1.38	15.5
17	0.6	2.5	15	(8)	6.5	9.5	3.6	1.35	7.5
18	0.3	3.0	13	(3)	1.7	4.6	-0.2	1.84	20.5
19	0.4	3.0	14	(7)	-0.8	0.6	-1.8	3.00	3.0
20	1.3	3.5	14	(8)	-0.3	2.0	-3.3	3.63	3.5
21	2.5	5.0	14	(13)	-3.2	-1.2	-4.3	5.26	3.5
22	0.9	3.0	16	(8)	-3.0	-0.8	-7.2	4.90	0.5
23	0.2	1.0	12	(3)	-3.1	3.5	-6.5	5.71	0.0
24	0.6	2.5	6	(6)	1.8	3.7	-1.6	3.70	21.5
25	2.2	6.0	14	(14)	-0.8	1.8	-3.1	1.20	15.5
26	3.6	6.0	13	(11)	-0.3	1.6	-2.4	4.77	6.0
27	3.1	6.0	13	(9)	-2.9	1.6	-5.7	3.94	6.5
28	2.5	5.0	14	(9)	1.0	3.7	-2.6	6.21	0.5
29	0.7	3.0	1 7	(4)	2.5	8.4	-0.5	6.68	11.0
30	1.0	4.5	14	(6)	1.0	8.0	-4.4	7.12	2.0
31	0.1	1.0	1 2	(1)	1.1	1.4	0.8	1.48	17.5
TOTL								118.69	200.0
MEAN	0.8	2.7			1.7	5.0	-1.2	3.96	
MAX.	3.6	6.0			8.3	11.3	5.7	7.12	
MIN.	0.0	0.0			-3.2	-1.2	-7.2	1.20	
DN	30	30			30	30	30	30	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

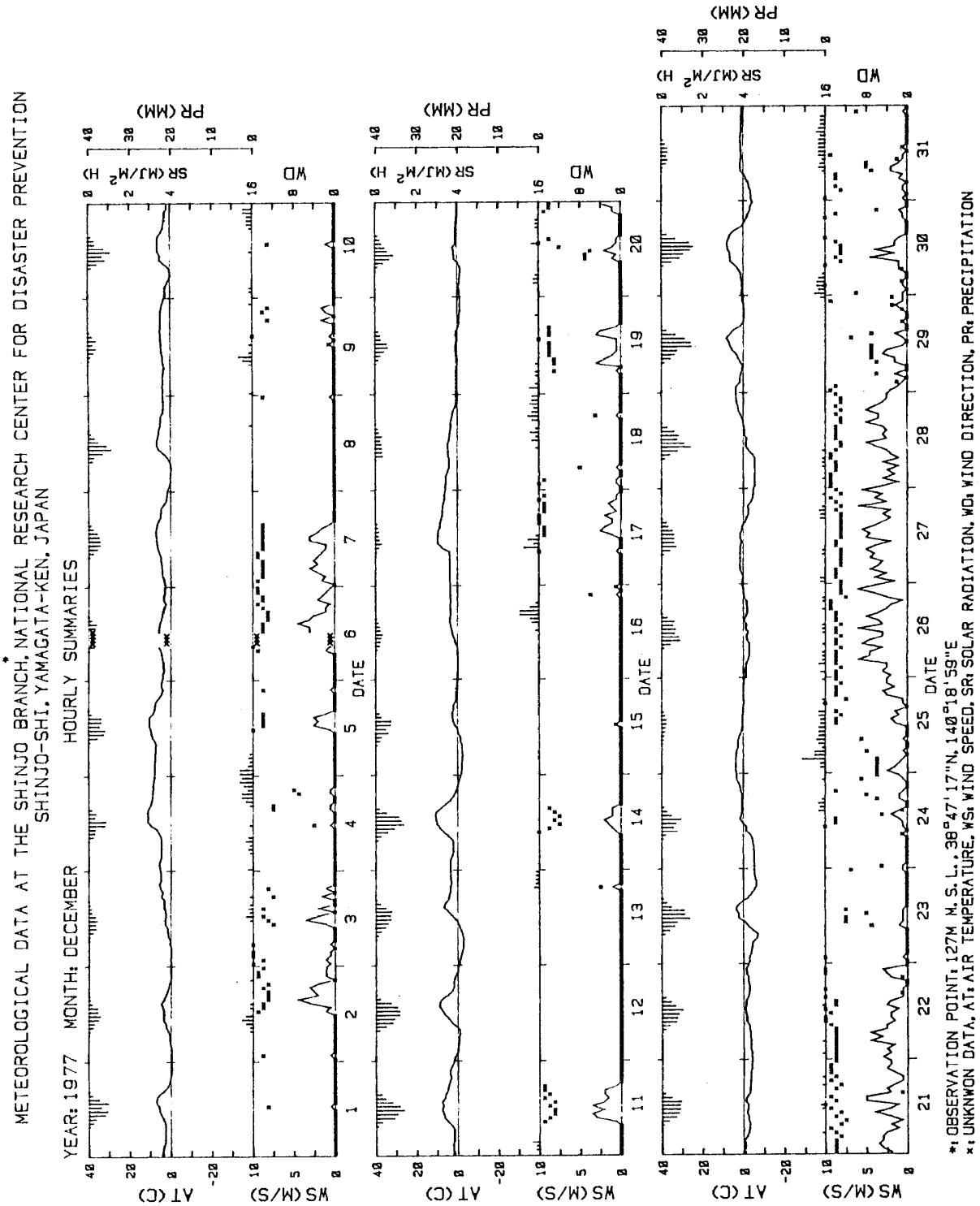

図 4.18　気象データの時間的変化

表 4.19 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

JANUARY 1978

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.0	5.5	14 (6)	2.0	5.4	-0.6	3.33	2.5
2	1.3	3.5	14 (12)	-3.0	-0.9	-5.0	3.79	0.0
3	0.3	2.5	13 16 (2)	-2.5	2.5	-5.8	6.03	1.0
4	0.6	4.0	14 (5)	-1.8	-0.2	-2.9	4.28	4.5
5	X	X	X (0)	-1.8	-0.4	-2.7	4.97	14.5
6	1.7	6.0	14 (5)	-0.6	0.7	-1.8	2.63	7.5
7	0.3	2.0	16 (3)	0.3	1.6	-1.1	3.64	16.5
8	0.2	2.0	1 (3)	-0.5	1.6	-4.8	4.40	3.0
9	0.9	3.0	6 9 (4)	0.6	2.4	-0.7	2.76	25.0
10	1.9	4.0	14 15 (6)	-1.7	-0.3	-2.8	3.31	13.5
11	1.4	3.5	14 (5)	1.2	3.7	-2.4	3.32	10.0
12	2.2	4.5	14 (10)	1.4	3.9	-0.8	3.85	4.5
13	0.3	1.0	1 (5)	0.5	5.2	-4.9	6.14	0.0
14	0.1	0.5	14 (2)	-0.2	5.5	-4.8	6.64	3.0
15	0.9	5.0	13 (4)	2.6	6.7	-2.5	3.54	11.5
16	3.4	5.0	14 (12)	-3.4	-1.8	-4.5	6.05	2.0
17	1.1	3.5	14 (8)	-2.8	1.3	-7.0	5.96	2.5
18	0.0	0.5	1 2 (1)	-3.9	-1.3	-9.0	4.84	0.0
19	1.8	5.0	13 (7)	0.4	2.7	-1.7	5.51	12.5
20	1.3	4.5	14 (6)	-0.8	2.6	-5.9	7.72	2.5
21	0.4	1.5	12 13 14(2)	-0.7	4.9	-6.5	6.80	2.5
22	5.3	9.5	13 (18)	-0.6	1.0	-2.5	3.87	11.5
23	2.1	5.0	14 (12)	-1.3	0.6	-2.9	5.32	1.0
24	X	X	X (0)	-1.0	1.6	-3.7	6.40	3.0
25	3.2	5.5	14 (16)	-4.2	-3.3	-5.6	5.72	4.5
26	0.8	2.5	15 (5)	-1.5	2.4	-7.6	7.47	0.0
27	0.2	1.0	14 (3)	-0.1	5.3	-3.4	5.66	0.5
28	1.5	3.5	15 (6)	-2.5	-0.1	-6.1	5.53	4.5
29	0.7	2.5	16 (4)	-5.2	-0.8	-8.5	7.35	0.5
30	0.0	0.0	(0)	-5.2	-2.3	-9.0	6.08	2.5
31	1.3	4.5	14 (9)	-4.9	-1.8	-6.8	4.28	12.0
TOTL							157.19	179.0
MEAN	1.2	3.5		-1.3	1.6	-4.3	5.07	
MAX.	5.3	9.5		2.6	6.7	-0.6	7.72	
MIN.	0.0	0.0		-5.2	-3.3	-9.0	2.63	
DN	29	29		31	31	31	31	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.8	5.5	14 (12)	0.4	5.4	-4.4	3.43	1.5
2	0.5	2.5	14 (6)	-3.8	-0.9	-5.8	3.94	0.0
3	0.9	4.0	14 (5)	-1.2	2.5	-3.5	6.12	1.5
4	X	X	X (0)	-2.1	-0.3	-2.7	4.22	10.5
5	1.0	6.0	8 14 (3)	-1.3	-0.3	-2.2	4.99	14.0
6	0.8	4.5	15 (3)	-0.3	0.7	-1.7	2.48	15.5
7	0.5	2.0	1 16 (3)	-0.2	1.6	-4.8	3.84	2.5
8	0.3	2.5	6 (3)	0.3	1.6	-1.1	4.03	10.0
9	1.1	3.5	7 15 (3)	0.1	2.4	-2.3	2.74	20.5
10	2.2	4.0	14 (8)	-1.4	1.6	-2.8	3.37	11.5
11	1.4	4.0	14 (9)	2.3	3.9	0.7	3.26	13.0
12	1.5	4.5	16 (5)	0.7	3.5	-0.8	4.10	1.0
13	0.1	1.0	1 (2)	-1.3	5.2	-4.9	6.45	0.0
14	0.3	1.5	6 14 (2)	2.3	5.5	0.4	6.22	5.5
15	2.2	5.0	14 (9)	0.3	6.7	-4.3	3.71	10.0
16	2.7	4.0	14 (11)	-3.6	-1.8	-4.5	6.19	3.5
17	0.3	1.5	14 (3)	-3.6	1.3	-9.0	5.72	0.0
18	0.1	0.5	1 2 (1)	-2.0	0.3	-4.4	4.91	7.5
19	2.4	5.0	13 (9)	0.4	2.7	-1.2	5.55	6.5
20	0.8	4.5	14 16 (4)	-2.3	2.6	-6.5	8.13	1.0
21	1.6	5.0	13 (9)	1.0	4.9	-0.8	6.19	7.5
22	5.2	9.5	13 (12)	-1.2	1.0	-2.9	4.09	6.5
23	0.9	4.5	14 (6)	-1.3	0.6	-2.2	5.49	3.0
24	X	X	X (0)	-2.2	1.6	-5.6	6.23	4.0
25	2.4	5.0	14 (11)	-3.9	-2.3	-7.6	5.85	1.5
26	0.6	2.5	6 (4)	-0.9	2.4	-3.4	7.10	0.0
27	0.1	1.0	14 (3)	0.4	5.3	-2.2	6.14	4.0
28	1.8	3.5	15 (9)	-4.8	-0.1	-8.5	5.32	1.5
29	0.4	2.5	12 13 (3)	-5.3	-0.8	-9.0	7.43	1.5
30	0.5	3.0	14 (4)	-3.8	-1.8	-5.4	5.75	8.5
31	0.8	4.5	14 (5)	-6.5	-4.8	-7.6	4.50	7.5
TOTL							157.49	181.0
MEAN	1.2	3.7		-1.4	1.6	-3.9	5.08	
MAX.	5.2	9.5		2.3	6.7	0.7	8.13	
MIN.	0.1	0.5		-6.5	-4.8	-9.0	2.48	
DN	29	29		31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

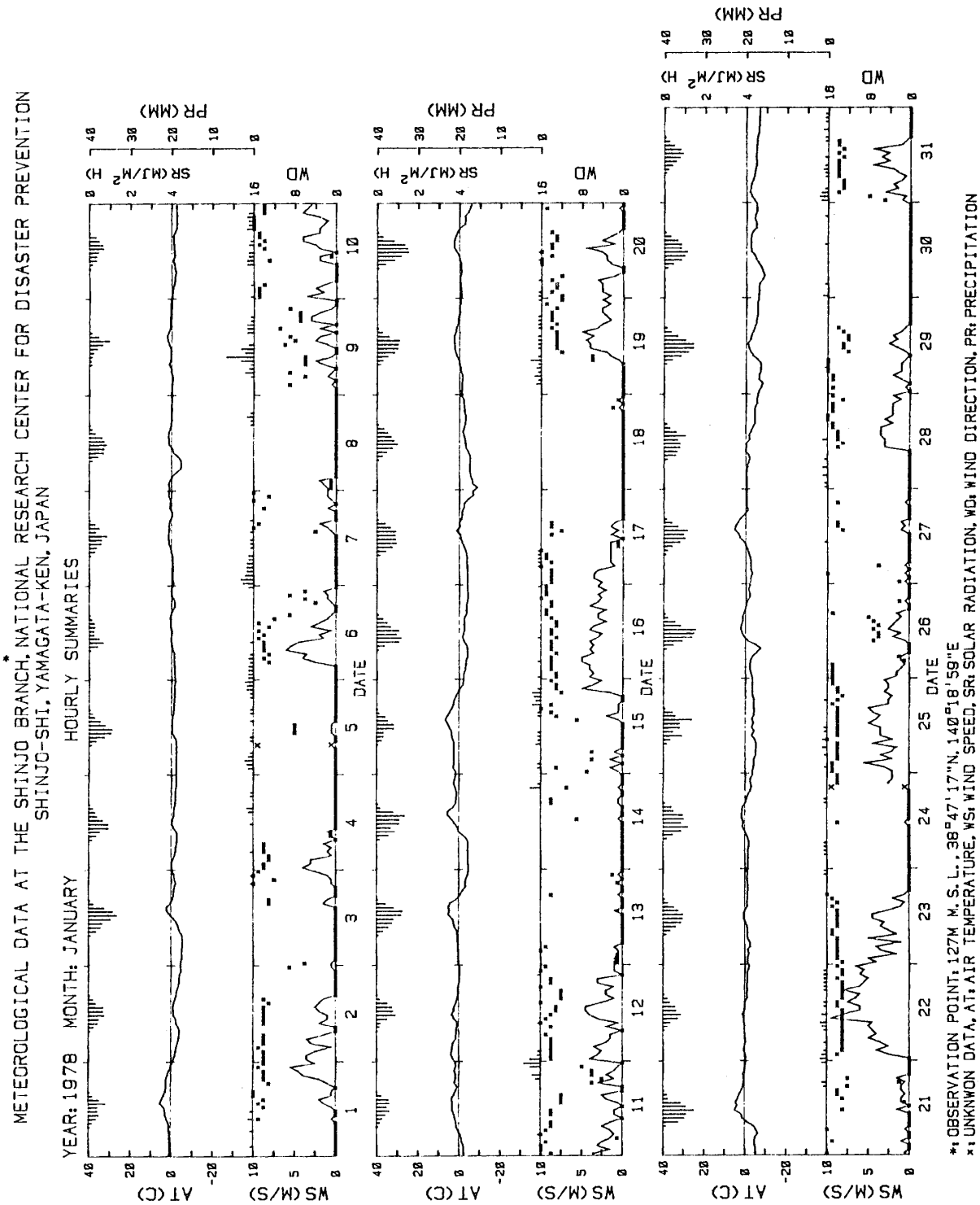

図 4.19 気象データの時間的変化

表 4.20 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

FEBRUARY 1978

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.3	2.0	X	(0)	-6.3	-4.5	-7.6	6.61	10.0
2	2.6	6.5	X	(0)	-5.4	-3.4	-6.3	7.16	7.5
3	X	X	X	(0)	-5.7	-4.6	-7.2	4.63	7.0
4	1.8	4.0	13	(7)	-4.4	-3.3	-5.3	4.48	7.5
5	3.2	7.0	14	(9)	-4.4	-3.7	-5.2	5.84	5.0
6	2.1	3.5	14	(11)	-1.2	1.0	-3.4	7.99	6.0
7	0.6	4.0	1 7 14	(2)	-0.9	0.4	-2.2	5.11	12.5
8	2.7	5.0	13	(15)	-0.9	0.7	-2.5	7.63	2.5
9	0.1	2.0	16	(2)	-0.8	3.3	-5.5	8.39	0.0
10	0.1	1.0	14	(2)	-0.3	0.8	-1.6	2.80	14.5
11	0.6	3.0	13 14	(3)	0.0	3.5	-2.3	8.21	1.0
12	0.1	1.5	16	(2)	-1.2	2.8	-6.5	8.90	0.0
13	1.7	5.5	13	(6)	-3.4	2.5	-8.6	10.06	9.0
14	2.4	5.5	13	(13)	-6.0	-4.4	-7.9	6.95	2.0
15	0.4	2.0	13 14	(4)	-5.6	-3.1	-6.7	7.29	10.5
16	0.7	5.0	14	(4)	-6.2	-4.0	-7.7	10.56	5.0
17	0.1	1.0	8 14	(1)	-6.2	0.6	-13.1	13.21	2.0
18	0.5	3.5	12	(3)	-5.9	1.4	-12.6	9.99	1.5
19	1.5	5.0	6 7	(6)	-2.8	-0.4	-5.9	9.38	2.5
20	0.8	3.0	14	(4)	-1.6	0.9	-3.6	7.14	8.0
21	0.1	1.5	1	(1)	-3.1	-0.4	-5.3	7.85	6.0
22	X	X	X	(0)	-3.3	-1.7	-4.5	4.33	16.0
23	1.2	3.0	15	(7)	-4.2	-2.1	-6.6	6.32	5.0
24	0.9	2.5	16	(6)	-3.7	-0.5	-6.3	11.08	1.0
25	0.4	3.0	9 12	(2)	-3.0	1.0	-5.1	11.90	6.5
26	0.3	2.0	14	(4)	-2.2	0.1	-5.4	9.97	2.0
27	1.6	4.5	14	(6)	1.1	5.1	-3.6	12.17	1.5
28	0.9	5.0	7	(4)	-0.8	4.6	-9.5	9.75	0.5
TOTL								225.70	152.5
MEAN	1.1	3.5			-3.2	-0.3	-6.0	8.06	
MAX.	3.2	7.0			1.1	5.1	-1.6	13.21	
MIN.	0.1	1.0			-6.3	-4.6	-13.1	2.80	
DN	26	26			28	28	28	28	28

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.0	3.0	X	(0)	-5.8	-4.5	-6.5	6.48	11.5
2	X	X	X	(0)	-5.4	-3.4	-6.2	7.25	6.0
3	1.2	5.0	12 13	(4)	-5.4	-4.4	-7.2	4.54	8.0
4	3.2	7.0	13	(12)	-4.2	-3.3	-4.7	4.63	4.5
5	2.4	7.0	14	(9)	-3.9	-2.2	-5.2	5.97	9.0
6	1.8	4.0	14	(8)	-0.6	1.0	-2.2	7.80	5.0
7	1.2	3.5	13	(6)	-1.2	0.4	-2.5	5.34	10.5
8	1.8	5.0	13	(9)	-1.2	0.7	-5.5	7.78	0.5
9	0.1	2.0	16	(2)	-0.3	3.3	-1.8	7.82	6.5
10	0.1	1.0	14	(2)	-0.4	0.8	-2.3	3.06	8.5
11	0.8	3.0	14	(4)	-0.1	3.5	-2.7	8.41	0.5
12	0.1	1.5	1 6	(1)	-2.6	2.8	-8.6	9.01	5.0
13	3.3	5.5	13	(12)	-3.9	2.5	-7.9	9.82	4.0
14	0.8	4.0	13	(6)	-5.9	-4.4	-6.6	7.10	6.0
15	0.5	2.0	14	(6)	-6.0	-3.1	-7.7	7.88	9.0
16	0.6	5.0	15	(3)	-6.2	-4.0	-8.2	10.55	4.5
17	0.1	1.0	8 14	(1)	-7.7	0.6	-13.1	12.95	0.0
18	0.6	3.5	12 14	(3)	-3.7	1.4	-5.9	10.12	3.0
19	1.6	5.0	7	(7)	-1.4	-0.4	-3.3	9.00	8.0
20	0.5	3.0	14	(3)	-2.6	0.9	-5.3	7.73	2.0
21	0.2	2.0	1 4	(1)	-3.1	-0.4	-4.5	7.04	12.0
22	X	X	X	(0)	-3.6	-1.7	-6.6	4.68	9.5
23	1.6	3.0	15	(8)	-4.3	-2.1	-6.3	6.89	4.5
24	0.4	2.5	7 13	(2)	-3.4	-0.5	-5.1	10.74	3.0
25	0.5	3.0	9 12	(2)	-3.0	1.0	-5.4	12.23	5.0
26	0.8	4.5	14	(7)	-0.4	3.2	-1.5	9.92	3.0
27	0.9	4.0	13	(4)	-1.6	5.1	-9.5	12.26	0.0
28	2.4	6.5	7	(4)	2.1	4.6	-2.0	8.82	2.5
TOTL								225.82	151.5
MEAN	1.1	3.7			-3.1	-0.1	-5.5	8.06	
MAX.	3.3	7.0			2.1	5.1	-1.5	12.95	
MIN.	0.1	1.0			-7.7	-4.5	-13.1	3.06	
DN	26	26			28	28	28	28	28

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

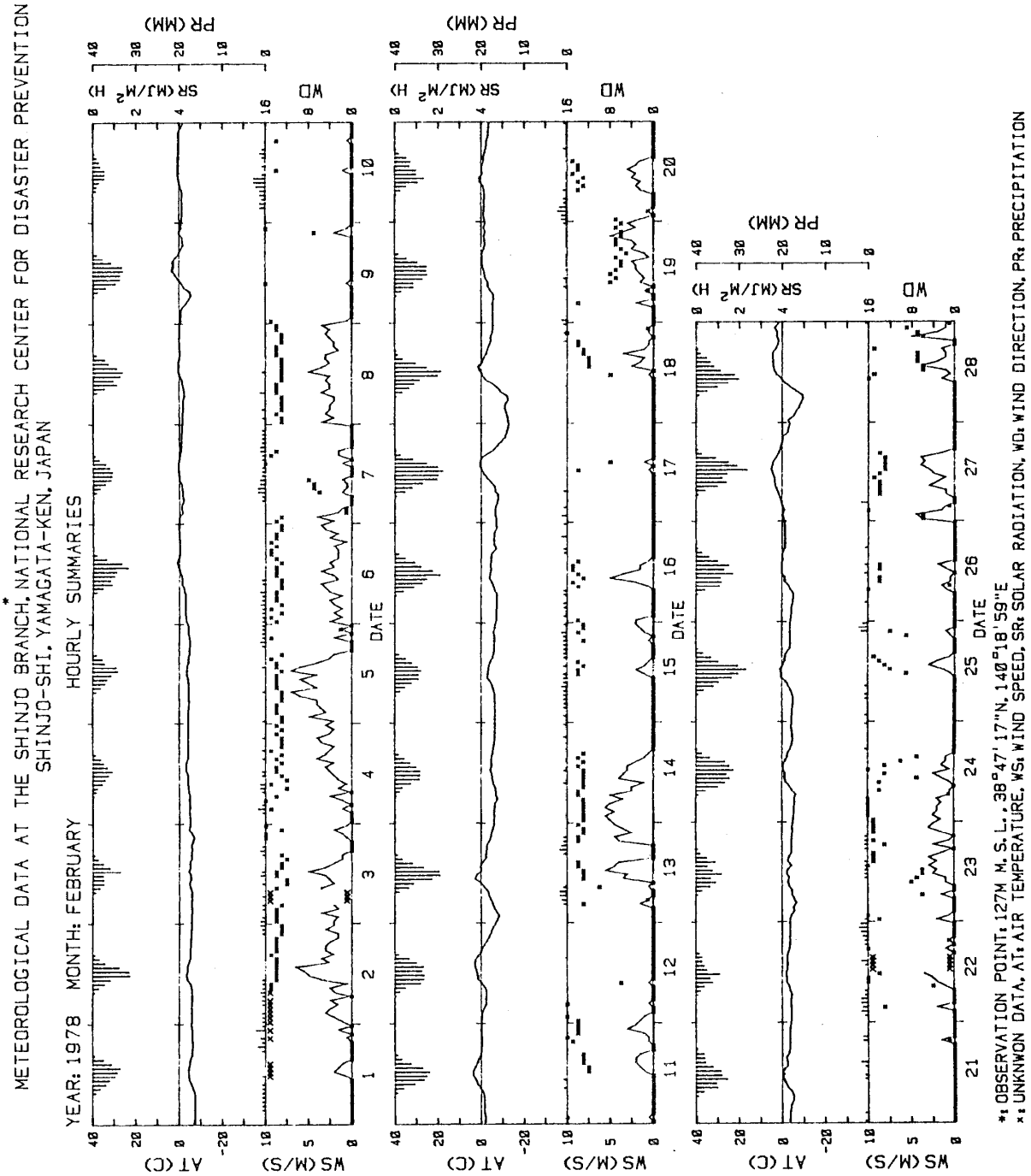

図 4.20　気象データの時間的変化

表 4.21　新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

MARCH　1978

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	4.9	8.0	13	(15)	-2.1	3.7	-5.1	5.45	4.0
2	3.2	5.0	13 14	(9)	-0.4	1.9	-4.0	12.06	0.5
3	0.2	1.0	5 6 7	(1)	1.4	5.3	-1.2	8.25	2.5
4	1.2	3.5	13	(7)	2.4	6.5	0.4	5.04	16.5
5	1.6	3.5	13	(8)	1.5	4.5	-0.3	10.01	0.5
6	1.0	3.0	14	(6)	0.7	3.6	-4.4	11.74	0.0
7	0.1	1.0	12 16	(1)	0.1	6.8	-7.7	15.78	0.5
8	0.3	2.0	13	(4)	2.9	8.0	-0.7	14.10	0.0
9	2.7	7.5	6	(11)	1.8	5.7	-2.7	16.78	0.0
10	3.8	6.5	6	(17)	1.7	4.0	-0.5	5.90	24.5
11	3.8	6.5	12	(12)	0.6	2.7	-1.4	5.74	5.0
12	1.1	3.0	12	(7)	-1.1	1.7	-3.0	13.56	4.0
13	1.1	3.5	12	(8)	-1.6	1.5	-3.2	11.08	4.0
14	1.7	4.5	14	(11)	-1.5	0.4	-2.7	7.94	10.0
15	1.1	3.0	14	(6)	-0.3	1.3	-2.0	8.96	5.0
16	0.6	2.5	14	(5)	0.5	3.7	-3.4	12.71	3.5
17	0.8	3.5	13	(4)	1.3	5.2	-1.6	12.94	0.5
18	0.1	1.5	1 16	(1)	1.7	7.5	-3.4	17.01	2.5
19	0.1	0.5	5	(2)	1.1	3.1	-1.5	6.29	7.0
20	1.9	5.0	14	(11)	3.2	7.4	-1.8	16.64	0.0
21	0.4	3.5	7	(2)	2.3	8.1	-4.9	13.84	0.0
22	0.3	2.0	8	(3)	1.7	3.5	0.4	8.13	5.0
23	1.0	4.5	14	(4)	1.2	4.6	-1.1	14.09	8.0
24	1.1	5.0	13	(3)	2.5	6.6	-1.2	12.49	4.0
25	0.5	2.0	12	(3)	6.2	11.5	0.2	15.70	3.5
26	0.5	2.5	1	(5)	5.2	11.3	-0.8	15.64	0.0
27	0.1	0.5	1 12 16	(1)	6.5	13.9	-0.5	19.22	0.0
28	0.5	3.0	14	(3)	1.6	4.6	-2.7	4.57	15.0
29	2.1	5.0	14	(9)	3.9	6.0	1.1	15.31	0.0
30	1.2	4.0	15	(7)	0.5	3.6	-1.6	11.32	1.0
31	1.9	4.5	13	(7)	-0.2	4.4	-3.7	15.80	1.0
TOTL								364.09	128.0
MEAN	1.3	3.6			1.5	5.2	-2.1	11.74	
MAX.	4.9	8.0			6.5	13.9	1.1	19.22	
MIN.	0.1	0.5			-2.1	0.4	-7.7	4.57	
DN	31	31			31	31	31	31	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	4.8	8.0	13	(18)	-3.6	-1.5	-5.1	5.69	2.5
2	1.9	5.0	14	(5)	0.6	1.9	-1.2	12.40	0.0
3	0.1	1.0	4 5	(1)	1.8	5.3	0.3	7.25	10.0
4	1.9	3.5	13	(11)	2.5	6.5	0.2	5.75	9.5
5	1.2	3.5	13 14	(4)	1.2	4.5	-0.5	10.32	0.0
6	0.7	3.0	14	(6)	-1.6	3.6	-7.7	12.43	0.0
7	0.1	1.0	12 16	(1)	2.5	6.8	-0.7	15.26	0.5
8	0.3	2.0	13	(4)	2.3	8.0	-2.7	14.58	0.0
9	4.7	7.5	6	(20)	2.2	5.7	-0.5	15.72	0.5
10	3.0	6.5	6	(8)	2.3	4.0	0.4	5.57	25.5
11	2.7	6.5	12	(14)	-0.6	1.9	-1.6	7.00	6.0
12	1.2	3.0	12	(8)	-1.6	1.7	-3.2	13.02	3.0
13	1.4	4.5	12	(7)	-1.4	1.5	-2.7	10.62	4.5
14	1.6	3.5	14	(11)	-1.3	0.4	-2.4	8.01	12.5
15	0.6	3.0	14 15	(3)	-0.4	1.3	-3.4	9.78	0.5
16	0.6	2.5	14	(5)	1.0	3.7	-1.6	13.40	3.5
17	0.8	3.5	13	(4)	1.1	5.2	-3.4	12.14	2.5
18	0.1	1.5	1 16	(1)	1.9	7.5	-2.1	16.16	2.0
19	0.4	2.5	14	(4)	1.9	5.4	0.7	7.96	5.5
20	1.5	5.0	14	(7)	1.5	7.4	-4.9	16.62	0.0
21	0.5	3.5	7	(3)	3.7	8.1	0.5	12.73	2.0
22	0.2	2.0	8	(2)	1.2	3.5	-1.1	8.53	9.0
23	1.0	4.5	14	(4)	1.1	4.6	-1.2	14.24	4.0
24	1.2	5.0	12 13	(3)	4.3	8.8	2.5	12.56	5.5
25	0.4	2.0	11 12	(2)	4.7	11.5	-0.8	15.46	0.0
26	0.5	2.5	1	(5)	6.7	11.3	2.3	16.67	0.0
27	0.0	0.5	12	(1)	4.3	13.9	-2.7	18.06	0.0
28	1.4	4.0	14	(7)	3.3	4.6	2.3	5.23	15.0
29	1.3	5.0	14	(5)	2.7	6.0	-1.6	15.20	0.0
30	1.4	4.0	15	(7)	-0.3	3.6	-3.7	11.75	1.0
31	1.8	4.5	13	(7)	-0.5	4.4	-5.4	15.51	2.0
TOTL								365.62	127.0
MEAN	1.3	3.7			1.4	5.2	-1.6	11.79	
MAX.	4.8	8.0			6.7	13.9	2.5	18.06	
MIN.	0.0	0.5			-3.6	-1.5	-7.7	5.23	
DN	31	31			31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

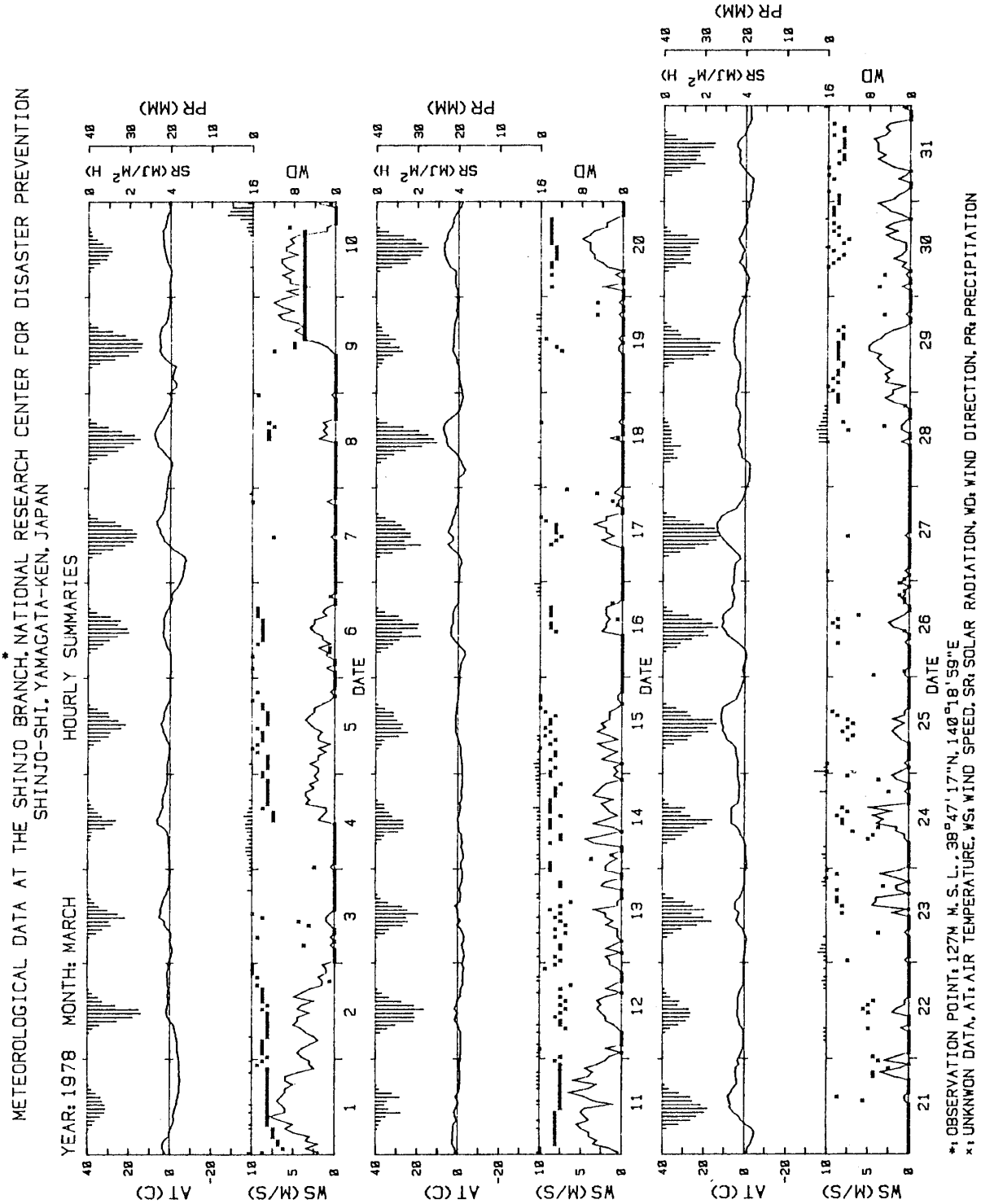

図 4.21　気象データの時間的変化

表 4.22 新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

APRIL 1978

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.7	5.0	15	(7)	-0.3	4.0	-5.4	16.17	1.0
2	0.4	1.5	6	(5)	2.1	6.8	-2.5	18.05	0.0
3	0.5	2.5	9	(6)	1.2	2.9	0.3	4.29	22.5
4	0.7	4.0	14	(3)	2.4	6.4	-1.0	11.71	10.5
5	0.0	0.5	9	(1)	2.5	12.2	-3.5	20.41	0.0
6	0.1	1.0	14	(2)	2.0	6.4	-3.7	6.45	4.5
7	4.1	8.0	13	(17)	4.9	6.6	3.2	11.03	3.5
8	3.6	7.0	13	(13)	9.1	11.6	5.7	21.90	2.5
9	1.5	3.0	13	(6)	8.3	12.6	4.1	8.49	5.0
10	3.2	6.0	14	(11)	5.6	8.7	0.5	22.32	0.0
TOTL								140.82	49.5
MEAN	1.6	3.8			3.8	7.8	-0.2	14.08	
MAX.	4.1	8.0			9.1	12.6	5.7	22.32	
MIN.	0.0	0.5			-0.3	2.9	-5.4	4.29	
DN	10	10			10	10	10	10	10

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.6	5.0	13	(5)	0.3	4.0	-2.5	16.78	0.0
2	0.4	1.5	6	(3)	2.9	6.8	0.6	16.06	3.0
3	0.5	2.5	9	(6)	1.1	2.9	-0.2	4.79	30.0
4	0.7	4.0	14	(3)	1.4	6.4	-3.5	13.29	0.0
5	0.0	0.5	9	(1)	2.5	12.2	-3.7	19.49	0.0
6	1.0	4.5	12 13	(3)	4.4	6.4	3.2	5.45	8.0
7	4.8	8.0	13	(22)	6.1	9.7	4.5	13.06	2.5
8	2.5	7.0	13	(7)	10.4	12.6	6.6	21.56	0.0
9	1.9	5.5	13	(8)	6.2	12.6	3.3	9.46	5.0
10	X	X	X	(0)	X	X	X	X	X
TOTL								119.94	48.5
MEAN	1.5	4.3			3.9	8.2	0.9	13.33	
MAX.	4.8	8.0			10.4	12.6	6.6	21.56	
MIN.	0.0	0.5			0.3	2.9	-3.7	4.79	
DN	9	9			9	9	9	9	9

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

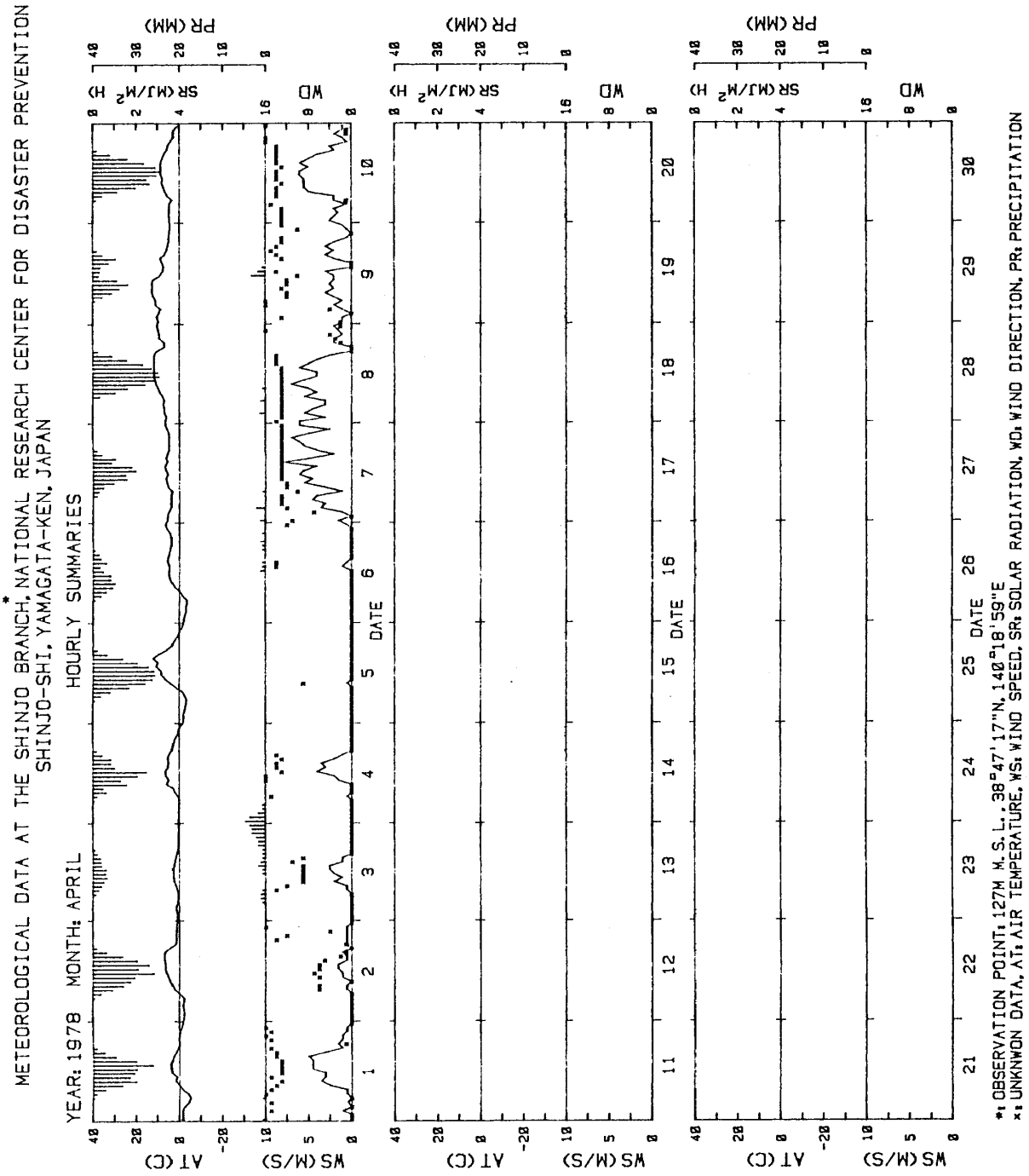

図 4.22　気象データの時間的変化

表 4.23　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

DECEMBER 1978

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.3	1.0	16	(3)	4.8	10.4	0.6	5.00	3.5
2	1.9	5.5	12	(6)	5.8	8.1	0.2	2.51	15.5
3	3.6	7.0	13	(12)	4.7	5.9	2.6	3.56	10.5
4	0.6	3.5	15	(3)	4.8	8.8	-0.3	4.88	7.0
5	4.1	7.0	13 14	(10)	0.7	4.7	-1.8	3.21	X
6	1.7	5.0	13	(10)	0.4	2.7	-1.5	6.46	X
7	0.1	0.5	16	(2)	3.3	7.4	-1.0	5.44	1.0
8	0.7	2.0	6 14	(3)	6.2	11.0	1.6	2.34	17.0
9	0.0	0.5	9	(1)	5.1	11.5	-0.1	4.85	0.0
10	0.5	2.5	14	(5)	7.6	11.4	3.8	1.48	15.5
11	1.9	3.5	16	(11)	2.2	4.3	1.0	3.57	0.0
12	0.3	2.5	6	(3)	3.8	9.7	-0.4	5.50	0.0
13	X	X	X	(0)	X	X	X	X	0.0
14	0.0	0.0		(0)	3.0	8.8	-0.5	4.11	0.0
15	0.6	3.0	1 16	(4)	4.5	8.5	0.9	2.25	5.0
16	0.0	0.0		(0)	2.7	9.4	-1.9	5.96	0.0
17	0.7	3.5	13	(9)	4.0	7.3	0.5	1.22	2.0
18	0.6	2.5	13	(8)	-0.3	0.6	-1.2	3.10	0.5
19	0.3	2.5	12	(4)	-0.9	1.3	-2.0	4.21	1.0
20	0.5	2.0	14	(4)	-1.7	1.3	-3.6	5.19	1.5
21	0.0	1.0	1	(1)	X	X	X	3.83	7.5
22	0.0	0.5	11	(1)	1.1	5.9	-0.7	3.90	1.0
23	0.0	0.0		(0)	-0.9	0.5	-2.1	2.82	0.0
24	0.9	4.5	13 14	(3)	1.7	5.4	-1.2	2.57	4.5
25	0.3	2.5	16	(5)	2.4	5.4	-0.6	3.38	0.0
26	0.0	0.5	11 14	(1)	2.3	7.4	-2.3	4.03	0.0
27	0.2	1.5	2 10 12	(1)	3.1	11.6	-0.3	4.83	0.0
28	1.7	5.0	13	(9)	3.2	6.6	0.3	4.06	6.5
29	0.5	2.0	12 14	(4)	-0.7	1.4	-2.7	3.19	1.5
30	1.8	5.5	13	(9)	-3.5	-2.2	-4.7	3.94	4.0
31	1.1	6.5	13	(4)	-0.7	2.0	-3.4	4.98	3.0
TOTL								116.37	108.0
MEAN	0.8	2.8			2.4	6.1	-0.7	3.88	
MAX.	4.1	7.0			7.6	11.6	3.8	6.46	
MIN.	0.0	0.0			-3.5	-2.2	-4.7	1.22	
DN	30	30			29	29	29	30	29

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.8	5.5	14	(3)	5.4	10.4	0.2	5.16	0.5
2	3.1	7.0	12 13	(8)	5.9	7.3	4.0	2.44	26.0
3	1.9	6.0	13	(6)	3.2	5.9	-0.3	3.79	0.0
4	2.4	7.0	13	(5)	5.4	8.8	0.6	4.64	12.0
5	3.1	6.0	13	(14)	-0.7	2.5	-1.8	3.78	X
6	0.8	5.0	13 14	(3)	0.9	2.7	-1.0	6.11	X
7	0.4	2.0	4 6	(2)	5.0	7.4	2.7	4.98	11.0
8	0.4	2.0	14	(3)	4.8	11.0	-0.1	2.65	7.0
9	0.2	2.5	2 9	(1)	7.2	11.5	5.0	4.59	4.0
10	1.1	3.0	16	(7)	5.9	11.4	1.0	1.58	11.5
11	1.4	3.5	14	(5)	2.3	4.3	1.4	3.56	0.0
12	0.0	0.5	6 13	(1)	3.5	9.7	-0.4	5.74	0.0
13	X	X	X	(0)	X	X	X	X	0.0
14	0.0	0.5	1	(1)	4.4	8.8	1.3	3.88	4.0
15	0.6	3.0	16	(4)	2.9	8.5	-1.9	2.66	1.0
16	0.0	1.0	15	(1)	4.2	9.4	1.5	5.56	1.0
17	1.1	3.5	13	(13)	2.5	7.3	-0.7	1.22	1.0
18	0.3	2.0	13	(4)	-0.7	0.6	-2.0	3.39	0.5
19	0.6	2.5	12	(5)	-1.0	1.3	-2.5	4.44	1.5
20	0.2	1.0	10 14	(2)	-2.4	1.3	-4.4	5.09	5.5
21	0.1	1.0	1 11	(1)	X	X	X	3.56	4.0
22	0.0	0.0		(0)	0.4	5.9	-2.1	3.85	0.0
23	0.0	0.5	1	(1)	-0.6	0.5	-1.3	2.74	1.0
24	1.0	4.5	13 14	(3)	2.5	5.4	1.3	2.58	3.5
25	0.2	2.5	16	(3)	1.5	5.4	-2.3	3.50	0.0
26	0.0	0.5	11 14	(1)	3.0	7.4	-0.3	4.07	0.0
27	0.4	3.0	13	(3)	3.8	11.6	0.3	4.69	6.0
28	1.7	5.0	13	(9)	2.2	6.6	-0.6	4.14	1.0
29	1.1	5.5	13	(7)	-2.2	0.7	-4.6	3.20	2.0
30	1.2	4.0	14	(7)	-2.9	-1.0	-4.7	4.10	3.5
31	1.1	6.5	13 16	(4)	0.3	2.0	-1.4	5.09	2.5
TOTL								116.78	110.0
MEAN	0.8	3.2			2.3	6.0	-0.5	3.89	
MAX.	3.1	7.0			7.2	11.6	5.0	6.11	
MIN.	0.0	0.0			-2.9	-1.0	-4.7	1.22	
DN	30	30			29	29	29	30	29

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

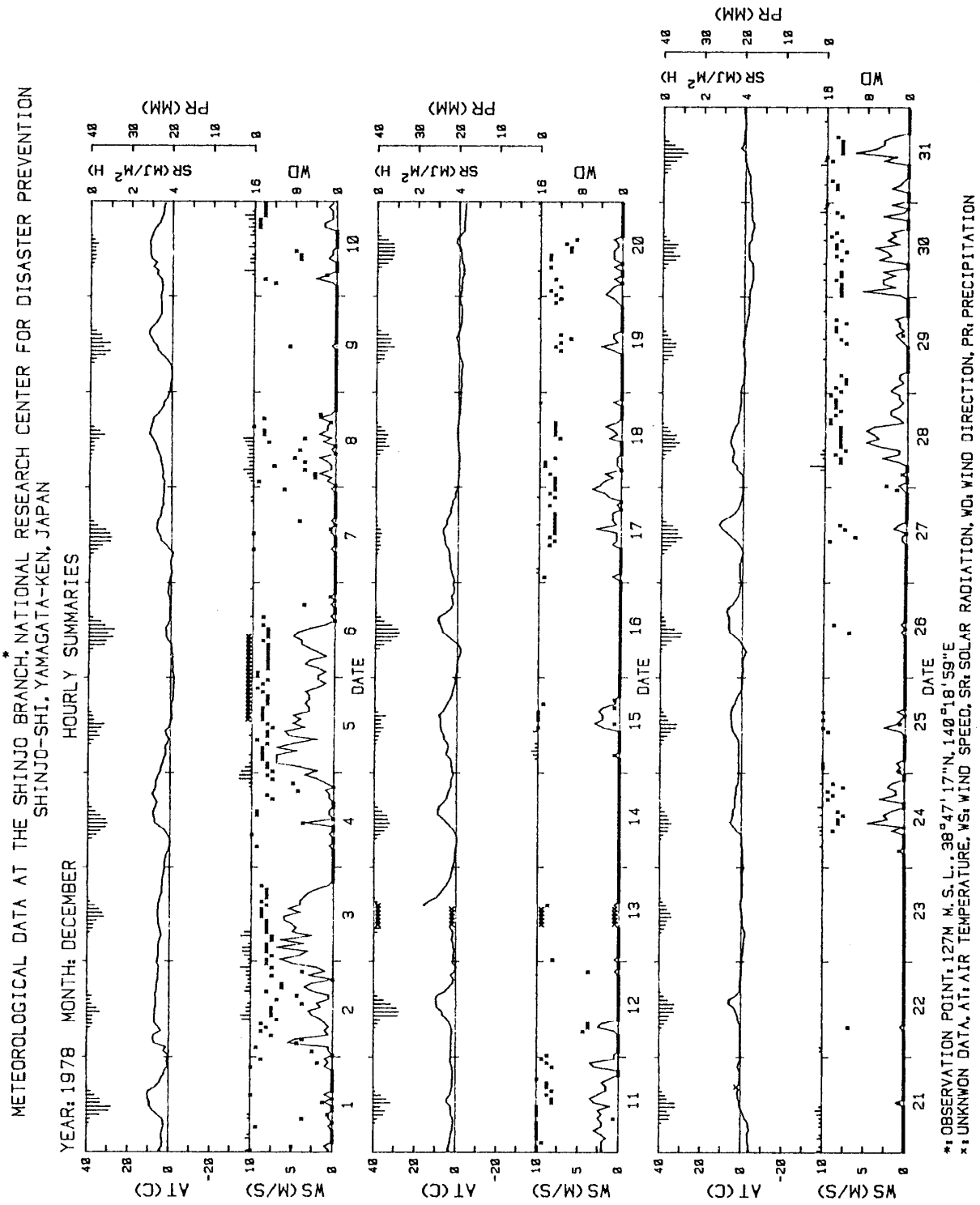

図 4.23 気象データの時間的変化

表 4.24　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

JANUARY　1979

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.6	3.0	16	(3)	0.8	3.6	-1.6	4.30	0.0
2	1.4	4.0	13	(7)	1.1	4.2	-4.4	4.50	0.0
3	0.2	2.0	14	(2)	2.3	5.6	-1.2	3.84	0.0
4	0.0	0.0		(0)	1.6	4.3	-0.3	3.40	1.5
5	0.4	2.0	14	(5)	2.2	4.5	0.7	1.91	7.0
6	0.5	3.0	13	(3)	0.8	3.9	-3.2	3.90	0.0
7	0.3	2.0	13	(3)	0.4	6.2	-4.1	4.51	4.0
8	0.3	2.0	12	(2)	8.1	13.1	4.0	6.81	2.0
9	1.1	5.0	14	(5)	5.9	9.6	-0.6	2.09	0.5
10	1.3	5.0	14	(4)	3.7	10.2	-1.3	4.30	3.5
11	3.4	6.0	13	(15)	-2.5	0.6	-4.3	4.02	2.5
12	1.2	3.0	14	(8)	-2.7	-1.5	-3.5	4.42	2.5
13	1.5	4.0	13	(6)	-2.7	-0.4	-5.1	5.06	4.0
14	1.9	5.0	13	(7)	-3.8	-1.5	-5.8	4.82	6.0
15	0.0	0.0		(0)	-2.6	-0.6	-3.6	4.80	8.5
16	1.0	5.0	13 14	(3)	-1.9	0.1	-3.0	5.42	5.0
17	0.1	1.5	1 5	6(1)	0.3	3.6	-2.3	4.37	15.0
18	1.2	7.0	13	(5)	0.7	2.2	-2.6	2.24	19.0
19	3.4	7.5	13	(13)	-5.2	-3.8	-6.3	5.86	10.5
20	0.3	2.5	15	(3)	-2.3	0.2	-5.1	6.10	6.5
21	2.0	7.5	12	(6)	-1.7	1.3	-4.0	2.18	14.5
22	1.3	5.0	14 16	(4)	-3.2	-0.2	-5.1	5.99	9.0
23	0.0	0.0		(0)	-0.1	1.5	-2.9	3.45	24.0
24	1.0	3.5	14	(5)	0.4	2.6	-1.7	5.40	4.0
25	0.0	0.5	1 13	(1)	-1.5	2.6	-6.3	3.57	0.5
26	0.2	1.0	15	(4)	2.1	5.8	-0.9	5.14	1.5
27	1.9	5.5	14	(11)	-1.2	2.8	-6.4	3.62	3.5
28	2.1	4.0	14	(12)	-5.1	-2.4	-6.8	8.79	2.5
29	0.9	4.0	5	(5)	-2.8	1.0	-7.2	9.43	0.0
30	1.5	5.0	6	(6)	0.9	4.3	-1.2	1.91	11.5
31	1.6	5.0	6	(7)	3.5	5.2	1.6	5.05	2.0
TOTL								141.20	171.0
MEAN	1.0	3.6			-0.1	2.9	-3.0	4.55	
MAX.	3.4	7.5			8.1	13.1	4.0	9.43	
MIN.	0.0	0.0			-5.2	-3.8	-7.2	1.91	
DN	31	31			31	31	31	31	31

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.5	3.0	12 13	(2)	-0.3	3.6	-4.4	4.18	0.0
2	1.5	4.0	13	(8)	2.9	4.2	-0.3	4.40	0.0
3	0.0	0.5	10	(1)	1.5	5.6	-1.2	3.75	1.0
4	0.0	0.5	1 14	(1)	2.0	4.3	0.7	3.26	3.0
5	0.8	3.0	14	(5)	2.2	4.5	0.4	2.19	4.5
6	0.1	1.0	11 13	(1)	-0.8	3.9	-4.1	3.96	0.0
7	0.3	2.0	4 13	(2)	3.4	6.3	-1.0	4.43	4.0
8	0.9	5.0	13 14	(4)	9.5	13.1	7.3	6.77	2.5
9	0.4	3.0	15	(3)	2.5	8.7	-1.3	2.26	0.0
10	3.0	6.0	14	(9)	2.8	10.2	-4.3	4.07	3.5
11	2.2	4.0	13	(14)	-2.6	-1.5	-3.6	4.13	3.5
12	0.9	3.0	14	(5)	-2.6	-1.5	-3.3	4.39	1.5
13	2.6	5.0	13	(12)	-3.6	-0.4	-5.8	5.01	6.5
14	0.6	5.0	14	(4)	-3.0	-1.5	-4.0	4.90	5.5
15	0.0	0.0		(0)	-2.3	-0.6	-3.2	4.60	9.5
16	1.0	5.0	14	(4)	-1.7	0.1	-2.7	5.65	3.5
17	0.2	1.5	5	(3)	1.3	3.6	-1.2	4.17	16.0
18	3.1	7.5	13	(13)	-1.6	2.2	-6.2	2.38	19.5
19	1.7	5.5	13	(5)	-4.6	-2.3	-6.3	6.17	10.5
20	0.0	1.0	8	(1)	-1.7	0.2	-3.3	5.81	5.0
21	2.8	7.5	12	(7)	-2.4	1.3	-5.1	2.24	13.5
22	0.5	3.0	1 6	(1)	-2.1	-0.2	-4.0	5.91	25.5
23	0.0	0.0		(0)	0.2	1.5	-0.5	3.40	10.5
24	1.0	3.5	14	(5)	-1.2	2.6	-6.3	5.62	0.5
25	0.0	0.5	13	(1)	0.1	2.6	-2.0	3.39	0.5
26	0.5	2.0	14	(6)	2.9	5.8	0.7	5.27	1.5
27	2.6	5.5	14	(14)	-4.3	-0.4	-6.8	3.89	5.5
28	1.1	3.5	13 14	(5)	-4.9	-2.4	-7.2	8.73	0.5
29	2.0	5.0	5	(6)	-0.8	1.0	-2.8	8.90	1.5
30	0.4	2.5	6 9	(2)	1.9	4.3	0.5	2.29	11.0
31	1.7	5.0	6	(7)	3.6	5.2	1.7	4.69	9.0
TOTL								140.81	179.0
MEAN	1.0	3.3			-0.1	2.7	-2.6	4.54	
MAX.	3.1	7.5			9.5	13.1	7.3	8.90	
MIN.	0.0	0.0			-4.9	-2.4	-7.2	2.19	
DN	31	31			31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

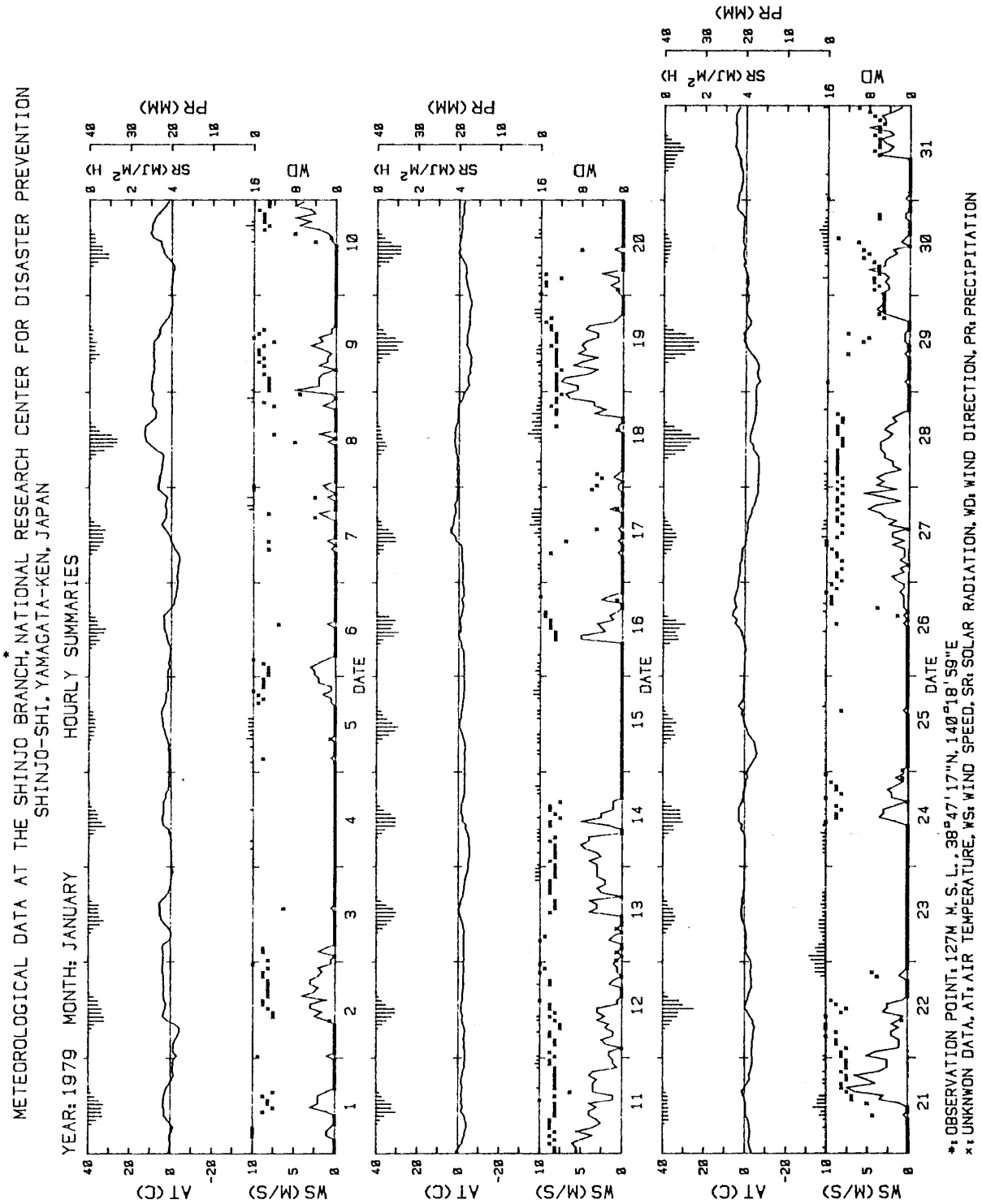

図 4.24 気象データの時間的変化

表 4.25 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

FEBRUARY 1979

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.5	2.0	X	(0)	3.8	7.1	1.6	2.87	9.0
2	1.9	5.5	12 13	(5)	0.5	1.5	-0.7	5.28	5.0
3	0.3	2.5	1 6 7	(1)	1.6	4.0	0.1	6.09	0.5
4	0.8	3.0	14	(5)	-0.3	2.7	-2.6	3.37	10.5
5	1.0	4.0	5	(5)	-0.7	2.3	-3.3	9.83	0.0
6	2.0	5.5	13	(7)	1.2	3.7	-1.7	3.58	25.5
7	2.4	6.0	13	(11)	1.5	3.3	-0.4	6.73	4.5
8	0.6	3.0	14	(4)	-0.4	1.1	-1.5	6.88	6.0
9	0.1	1.0	14	(2)	-1.2	4.2	-7.0	9.46	0.0
10	0.0	0.0		(0)	-2.8	2.3	-8.8	6.96	0.0
11	1.3	5.5	15	(5)	1.9	4.8	-0.1	5.41	1.5
12	1.7	4.0	14	(7)	1.0	2.4	0.1	2.15	3.0
13	0.7	2.5	14	(6)	1.6	6.4	-4.6	10.20	0.0
14	0.6	3.0	14	(6)	-0.3	6.1	-7.4	7.97	5.0
15	1.4	5.0	13	(8)	0.2	3.6	-3.9	9.80	5.0
16	1.8	4.0	13	(10)	-2.7	-0.6	-4.6	7.50	4.0
17	0.3	3.0	6	(2)	-0.2	4.3	-4.8	10.73	6.0
18	2.4	6.0	13	(11)	1.0	4.5	-1.0	6.51	5.0
19	1.5	4.0	13	(8)	-0.9	0.5	-2.6	4.18	22.5
20	0.5	3.5	16	(3)	1.5	8.5	-4.2	12.27	0.0
21	0.5	3.0	12 13	(2)	1.8	8.2	-6.8	12.21	3.0
22	0.6	2.5	15	(7)	2.1	5.6	-2.4	13.50	0.0
23	0.7	3.5	7	(4)	1.1	4.1	-2.1	4.40	2.5
24	1.0	3.0	7	(6)	2.6	4.6	0.3	3.67	18.5
25	0.0	0.0		(0)	1.7	3.8	-0.3	7.98	2.5
26	0.0	0.0		(0)	2.0	4.5	0.6	5.11	2.0
27	0.1	0.5	14	(2)	2.0	4.4	0.6	5.88	2.5
28	0.6	3.0	1 6 7	(2)	1.8	5.5	0.3	10.72	6.0
TOTL								201.24	150.0
MEAN	0.9	3.2			0.8	4.0	-2.4	7.19	
MAX.	2.4	6.0			3.8	8.5	1.6	13.50	
MIN.	0.0	0.0			-2.8	-0.6	-8.8	2.15	
DN	28	28			28	28	28	28	28

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.6	2.0	X	(0)	3.2	7.1	0.5	3.23	3.5
2	1.8	5.5	13 14	(5)	0.4	1.5	-0.7	5.21	3.0
3	0.1	1.0	1 6	(1)	1.6	4.0	0.1	5.95	1.0
4	0.9	3.0	14	(6)	-1.5	2.7	-3.3	3.86	9.5
5	1.0	4.0	5	(5)	-0.1	2.3	-1.7	9.20	16.0
6	2.8	5.5	13	(10)	2.0	3.7	0.4	3.80	12.5
7	1.6	6.0	13	(8)	1.0	3.3	-0.6	7.23	6.0
8	0.6	3.0	14	(5)	-1.0	1.1	-3.0	6.60	1.5
9	0.1	1.0	10 12	(1)	-3.5	4.2	-8.8	9.67	0.0
10	0.2	1.5	13 14	(1)	1.1	4.8	-3.3	6.36	0.5
11	1.8	5.5	14	(9)	1.5	4.3	-0.1	5.54	1.0
12	1.5	4.0	13	(8)	1.1	2.5	0.4	2.44	3.0
13	0.3	2.5	14	(4)	-1.1	6.4	-7.4	10.49	0.0
14	1.1	4.0	14	(8)	1.9	6.1	-0.7	7.51	5.0
15	2.0	5.0	13	(13)	-1.4	3.6	-4.6	10.01	8.0
16	0.7	3.5	14	(4)	-2.6	-0.6	-4.8	7.93	1.0
17	1.4	6.0	13	(7)	2.0	4.5	-1.3	9.96	9.5
18	1.5	5.5	13 14	(6)	0.2	1.4	-1.0	6.46	18.5
19	1.7	4.0	13	(8)	-0.9	2.2	-2.6	4.69	5.5
20	0.0	0.5	6	(1)	-0.5	8.5	-6.8	12.58	0.0
21	0.8	3.0	15	(5)	4.5	8.2	0.6	12.16	3.0
22	0.4	2.5	13 14	(2)	1.0	5.6	-2.4	12.78	1.0
23	1.5	3.5	7	(9)	2.7	4.6	0.3	4.51	5.0
24	0.2	2.0	5 6	(1)	1.5	4.5	-0.3	4.12	17.5
25	0.0	0.0		(0)	2.1	3.8	0.8	7.92	0.0
26	0.0	0.5	15	(1)	1.8	4.5	0.6	4.94	2.0
27	0.1	0.5	14	(2)	2.0	4.4	0.3	6.22	3.0
28	0.6	3.0	1 6	(2)	1.5	5.5	-0.2	10.71	6.0
TOTL								202.08	142.5
MEAN	0.9	3.1			0.7	4.1	-1.8	7.22	
MAX.	2.8	6.0			4.5	8.5	0.8	12.78	
MIN.	0.0	0.0			-3.5	-0.6	-8.8	2.44	
DN	28	28			28	28	28	28	28

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

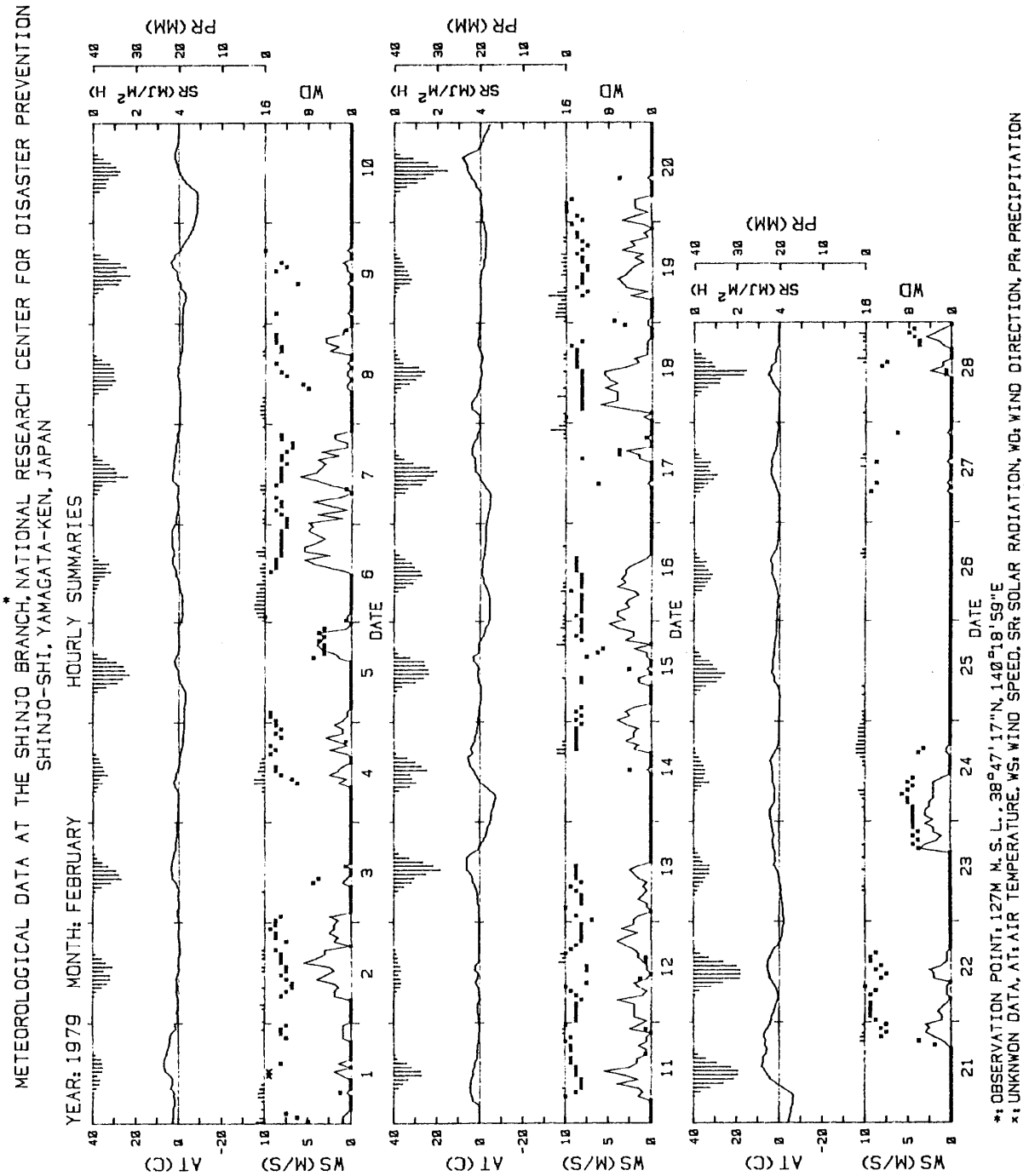

図 4.25　気象データの時間的変化

表 4.26 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

MARCH 1979

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.6	4.0	14	(4)	0.2	2.2	-1.5	7.19	6.0
2	1.6	4.5	13 14	(8)	-0.9	1.2	-2.2	8.19	12.5
3	0.4	3.5	13	(3)	-0.3	2.7	-2.2	11.03	11.0
4	0.2	1.5	16	(2)	-1.0	3.3	-4.8	11.76	0.0
5	0.1	1.0	1	(3)	-0.3	5.0	-4.9	12.35	0.0
6	0.0	0.5	1 16	(1)	-1.3	2.6	-6.1	6.95	2.0
7	0.7	3.0	13	(4)	1.0	6.0	-4.0	16.78	0.5
8	0.3	2.5	15	(2)	0.1	7.5	-7.0	12.37	2.5
9	0.9	3.0	14 15	(3)	4.0	8.0	-1.0	12.88	1.0
10	0.2	3.5	14	(2)	1.2	4.2	-2.7	6.32	4.5
11	4.7	7.5	13	(18)	-0.5	3.7	-3.0	10.35	2.5
12	0.8	3.5	13	(6)	-0.3	2.7	-3.5	11.00	0.0
13	0.8	4.0	13	(4)	-0.5	6.0	-7.1	15.16	0.0
14	0.5	2.5	14	(3)	1.7	6.4	-3.0	15.70	1.0
15	0.1	0.5	1 14 15	(1)	0.3	3.3	-1.0	7.47	1.5
16	1.5	6.5	13	(5)	1.1	5.2	-3.1	13.40	0.5
17	0.5	3.5	1 9 10	(2)	1.1	10.5	-4.3	9.09	8.0
18	2.2	6.5	14	(10)	0.6	3.4	-1.3	11.75	2.5
19	0.3	1.5	6 8	(2)	3.1	10.0	-2.1	16.55	0.0
20	0.8	4.0	13	(5)	3.4	12.5	-3.4	13.41	0.0
21	0.9	3.0	16	(6)	1.4	6.5	-2.7	14.32	0.0
22	0.3	2.0	13 14 15	(2)	-1.7	0.2	-4.8	4.64	4.0
23	1.5	5.0	13	(8)	0.1	3.9	-3.4	16.83	0.5
24	0.2	1.0	2 7 12	(1)	-0.5	2.5	-5.0	4.17	14.5
25	2.3	5.5	12	(7)	2.8	5.5	1.0	5.08	12.0
26	0.5	3.5	13	(3)	4.5	9.5	0.5	10.02	8.0
27	1.5	5.0	14	(9)	4.5	9.2	-1.4	17.23	2.0
28	1.0	4.5	14	(5)	4.8	12.5	-3.8	14.65	0.0
29	0.5	1.5	1	(5)	8.1	15.5	1.9	11.20	0.0
30	0.4	2.5	14 16	(2)	6.4	10.0	2.5	3.88	17.5
31	6.5	11.0	13	(16)	4.2	12.0	2.0	2.55	33.5
TOTL								334.27	148.0
MEAN	1.1	3.6			1.5	6.2	-2.6	10.78	
MAX.	6.5	11.0			8.1	15.5	2.5	17.23	
MIN.	0.0	0.5			-1.7	0.2	-7.1	2.55	
DN	31	31			31	31	31	31	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.5	4.0	14	(9)	-0.3	2.2	-1.7	7.34	10.0
2	0.7	4.5	13	(5)	-0.9	1.2	-2.2	8.28	18.0
3	0.4	3.5	13	(3)	-0.6	2.7	-3.5	11.12	1.0
4	0.2	1.5	16	(2)	-1.5	3.3	-4.9	12.06	0.0
5	0.1	1.0	1	(3)	-0.6	5.0	-6.1	11.87	0.0
6	0.0	0.5	1 16	(1)	0.2	2.6	-2.0	7.53	2.5
7	0.7	3.0	13	(4)	-1.0	6.0	-7.0	16.21	0.0
8	0.7	2.5	15	(4)	4.0	7.5	-1.0	13.07	3.5
9	0.5	3.0	14	(3)	1.7	8.0	-2.7	12.35	0.0
10	1.9	7.5	13	(7)	2.6	4.2	-0.8	6.37	5.0
11	3.3	7.5	13	(15)	-1.9	-0.4	-3.0	10.06	2.0
12	0.4	2.5	12	(3)	-1.6	2.7	-7.1	11.75	0.0
13	0.8	4.0	13	(4)	1.1	6.0	-3.0	15.35	1.0
14	0.5	2.5	14	(3)	1.8	6.4	-1.0	14.72	0.5
15	0.2	1.5	1	(2)	0.5	3.3	-1.2	8.05	1.5
16	1.4	6.5	13	(5)	-0.0	5.2	-4.3	13.40	0.0
17	0.9	4.0	13 14	(4)	2.2	10.5	-1.0	8.80	10.5
18	1.8	6.5	14	(7)	0.4	3.7	-2.1	11.94	0.0
19	0.3	1.5	6 8	(2)	2.8	10.0	-3.4	17.17	0.0
20	1.0	4.0	16	(7)	4.0	12.5	-1.3	13.25	0.0
21	0.6	3.0	13	(4)	0.1	6.5	-4.8	13.19	0.0
22	0.7	2.0	14	(6)	-1.0	1.0	-3.0	6.03	4.5
23	1.2	5.0	13	(8)	-0.7	3.9	-5.0	16.35	0.0
24	0.8	4.0	12	(7)	2.4	5.5	0.0	2.92	20.0
25	1.7	5.5	14	(5)	1.8	3.7	0.5	5.45	12.5
26	0.6	3.5	13 14	(3)	5.3	9.5	2.3	11.20	4.0
27	1.3	5.0	14	(8)	2.5	9.2	-3.8	17.63	0.0
28	1.1	4.5	1 14	(4)	7.1	12.5	1.9	14.08	0.0
29	0.4	1.0	1	(3)	7.8	15.5	2.5	10.28	0.0
30	2.9	11.0	12	(5)	7.3	12.0	2.5	3.04	34.0
31	X	X	X	(0)	X	X	X	X	X
TOTL								330.86	130.5
MEAN	1.0	3.9			1.5	6.1	-2.2	11.03	
MAX.	3.3	11.0			7.8	15.5	2.5	17.63	
MIN.	0.0	0.5			-1.9	-0.4	-7.1	2.92	
DN	30	30			30	30	30	30	30

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

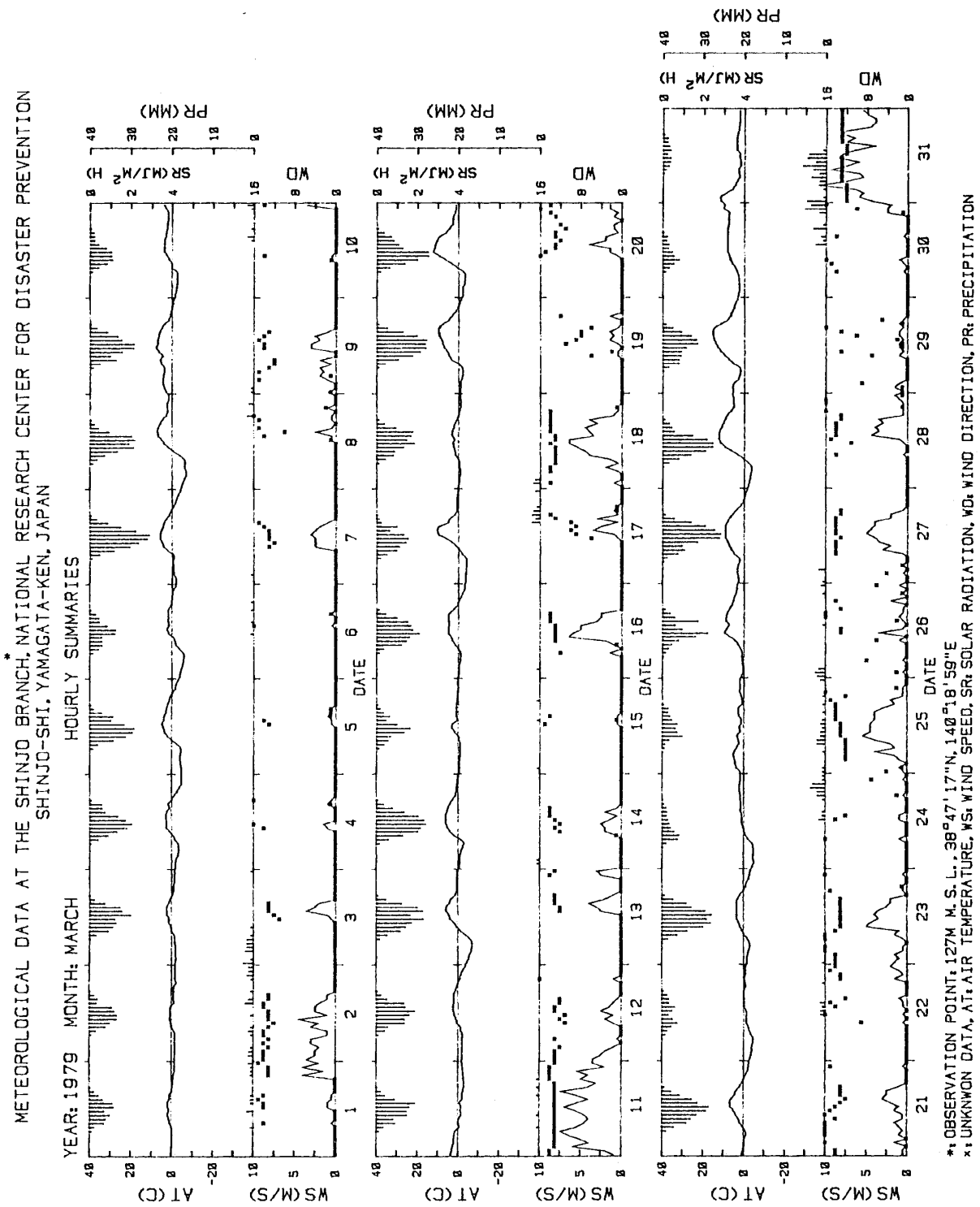

図 4.26 気象データの時間的変化

表 4.27 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

DECEMBER 1979

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.1	0.5	15	(2)	5.2	7.2	4.0	3.87	2.5
2	1.2	3.0	14	(10)	3.5	5.2	1.4	2.61	5.0
3	1.0	2.5	14	(5)	4.9	10.0	-1.1	7.41	2.0
4	0.0	0.5	2 8	(1)	1.1	6.3	-2.4	4.40	0.0
5	0.1	1.0	6	(2)	6.3	12.1	2.4	2.89	3.5
6	0.3	1.5	13	(3)	8.5	10.8	6.2	2.90	5.0
7	0.4	2.0	16	(3)	7.5	11.0	5.3	3.96	5.0
8	0.5	3.0	13	(5)	6.0	9.0	4.6	4.47	12.0
9	0.7	2.0	14	(7)	5.2	8.8	0.4	3.73	1.0
10	0.9	4.0	14	(8)	1.2	5.2	-1.0	3.27	20.0
11	0.1	0.5	10 15	(2)	0.4	2.9	-2.7	4.64	6.5
12	0.1	0.5	2 9 11	(1)	1.5	5.0	-0.4	5.51	2.0
13	0.6	3.0	15 16	(3)	1.0	2.9	0.4	2.83	12.5
14	0.4	2.0	16	(5)	1.8	6.4	-1.6	6.37	0.0
15	0.8	4.0	13	(5)	0.9	3.2	-1.2	1.71	20.5
16	1.8	5.0	15	(6)	1.1	2.1	0.1	2.40	11.0
17	0.6	2.0	14 16	(3)	2.9	7.0	0.6	7.29	0.0
18	0.0	0.5	12	(1)	1.7	9.1	-2.2	6.57	0.0
19	0.0	0.5	14	(2)	-0.9	1.6	-3.2	4.92	0.0
20	1.6	4.0	13	(5)	8.9	12.6	2.0	2.10	9.5
21	0.1	1.0	1 2 11	(1)	9.0	12.0	6.6	5.02	3.5
22	0.4	3.5	13	(4)	5.9	7.6	4.2	3.07	5.0
23	0.9	4.5	13	(6)	2.5	5.9	-1.0	1.44	8.0
24	0.3	1.5	11 12	(2)	-0.4	2.0	-2.6	5.36	0.5
25	0.5	2.0	16	(3)	0.1	3.5	-3.9	5.61	3.5
26	0.3	2.0	1	(3)	1.1	2.6	-0.5	3.77	1.0
27	1.2	4.0	13	(4)	1.7	4.7	-1.8	1.00	13.0
28	0.3	1.5	1	(3)	1.4	3.8	0.2	3.48	3.0
29	0.0	0.5	16	(1)	1.9	4.1	0.5	3.17	1.0
30	0.1	1.5	8 10 13	(1)	2.8	4.7	0.9	2.44	3.0
31	1.4	4.0	14	(9)	2.3	6.8	-0.8	1.51	13.5
TOTL								119.72	173.0
MEAN	0.5	2.2			3.1	6.3	0.4	3.86	
MAX.	1.8	5.0			9.0	12.6	6.6	7.41	
MIN.	0.0	0.5			-0.9	1.6	-3.9	1.00	
DN	31	31			31	31	31	31	31

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.3	2.0	15	(4)	4.8	7.2	2.8	4.10	0.5
2	1.5	3.0	14	(10)	4.0	7.1	1.4	2.71	6.5
3	0.6	2.5	13 14	(3)	2.4	10.0	-2.4	7.19	0.0
4	0.0	0.5	2	(1)	2.9	6.3	-0.8	4.31	0.0
5	0.2	1.0	6 8	(2)	8.1	12.1	4.3	2.93	8.5
6	0.3	1.5	13 14	(2)	7.7	10.8	5.3	2.80	1.0
7	0.4	2.0	16	(3)	7.6	11.0	4.7	4.21	10.5
8	0.7	3.0	13	(4)	5.7	9.0	4.1	4.34	6.5
9	0.8	4.0	14	(7)	4.0	8.8	0.4	3.77	5.5
10	0.6	4.0	14	(5)	-0.0	5.2	-2.7	3.23	19.5
11	0.1	0.5	10	(2)	0.9	2.9	-0.4	5.03	1.5
12	0.1	0.5	2 6	(1)	1.7	5.0	0.4	5.15	8.0
13	0.9	3.0	16	(6)	0.7	2.9	-1.6	3.01	6.5
14	0.2	1.5	16	(3)	1.7	6.4	-1.2	5.98	2.0
15	1.7	5.0	13	(8)	1.3	3.2	0.1	1.83	26.0
16	0.9	3.0	15	(6)	1.5	2.1	0.9	2.56	3.5
17	0.4	2.0	14	(3)	2.1	7.0	-1.4	7.29	0.0
18	0.0	0.5	12	(1)	0.9	9.1	-3.2	6.46	0.0
19	0.5	2.5	14	(3)	2.3	8.6	-2.1	4.70	9.5
20	1.1	4.0	13	(5)	9.7	12.6	6.6	2.57	0.0
21	0.1	1.0	1 2	(1)	8.7	12.0	5.8	4.52	4.0
22	1.1	4.5	13	(8)	5.1	7.2	3.9	3.09	9.5
23	0.2	1.5	16	(4)	0.3	3.9	-1.3	1.76	3.5
24	0.3	1.5	11 12	(2)	-1.2	2.0	-3.9	5.30	0.0
25	0.5	2.0	1 16	(4)	1.4	3.5	-1.3	5.57	4.5
26	0.3	2.0	16	(2)	1.0	2.8	-1.8	3.59	2.5
27	1.3	4.0	13	(5)	2.0	4.7	0.2	1.09	13.0
28	0.1	1.5	1 13	(1)	1.5	3.8	0.5	3.53	1.5
29	0.1	1.5	8 10	(1)	2.2	4.1	0.9	3.15	2.5
30	0.1	2.5	6 14	(1)	2.9	4.8	0.8	2.71	0.5
31	2.0	4.0	14	(15)	1.1	6.8	-1.9	1.39	13.5
TOTL								119.87	170.5
MEAN	0.6	2.3			3.1	6.5	0.6	3.87	
MAX.	2.0	5.0			9.7	12.6	6.6	7.29	
MIN.	0.0	0.5			-1.2	2.0	-3.9	1.09	
DN	31	31			31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

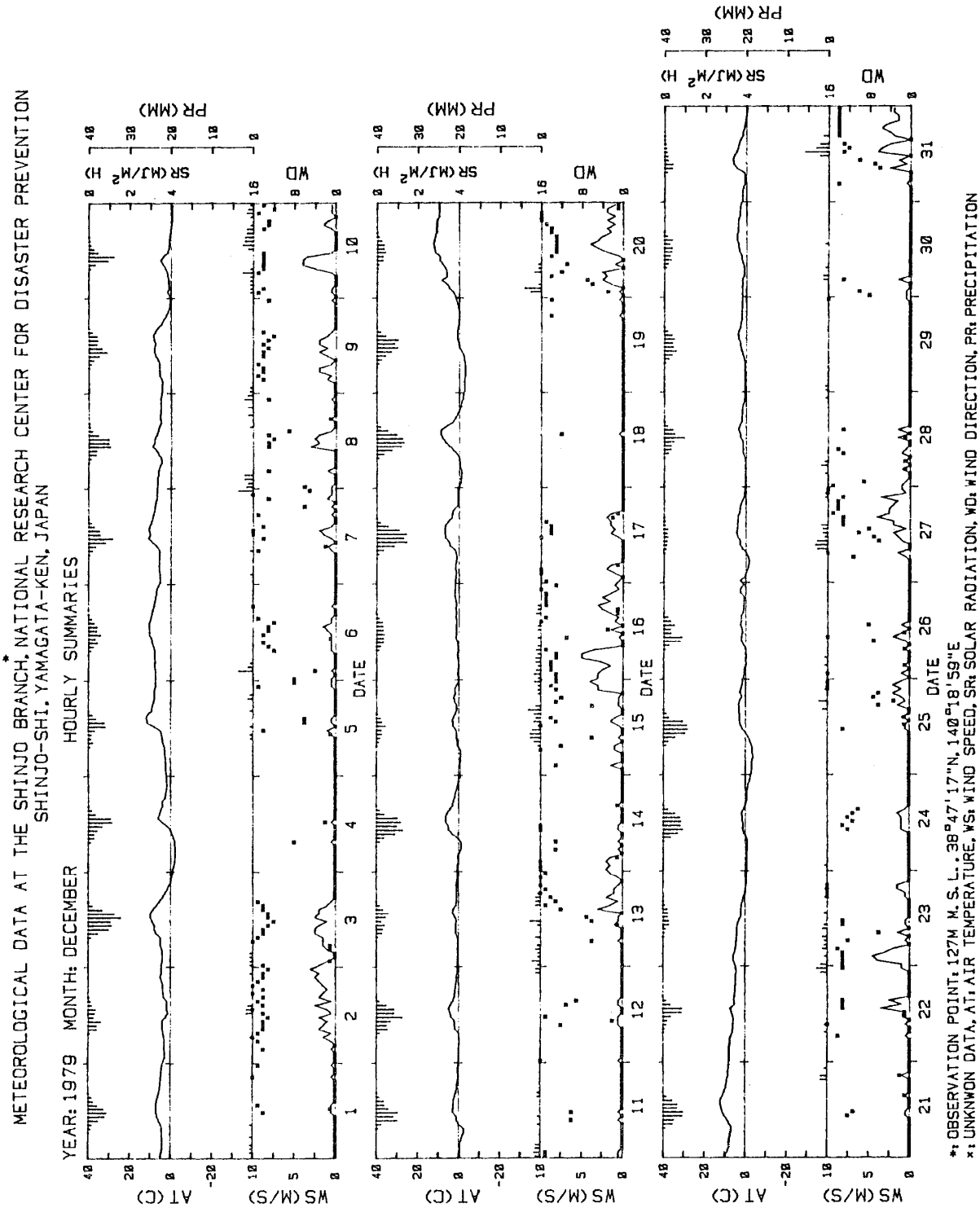

図 4.27　気象データの時間的変化

表 4.28 新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

JANUARY 1980

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.8	3.5	14 (11)	-0.3	1.6	-1.9	5.30	0.0
2	1.3	3.5	5 6 (5)	2.1	6.1	-2.8	7.24	0.0
3	0.7	3.0	6 7 (3)	5.1	10.1	2.7	4.55	0.0
4	0.9	3.0	13 14 (6)	3.5	6.3	1.1	1.19	9.5
5	1.9	3.5	14 (8)	-1.6	0.9	-3.4	4.51	6.0
6	0.7	2.0	6 16 (4)	-1.1	1.7	-6.2	3.17	23.0
7	2.6	6.0	13 14 (6)	-1.9	1.7	-6.4	1.24	25.0
8	0.3	3.0	14 (3)	-5.2	-3.4	-7.7	3.43	8.0
9	0.1	1.0	7 (3)	-2.7	1.1	-5.3	7.75	1.5
10	0.3	2.0	13 14 15(2)	-2.6	-0.4	-7.2	3.93	2.0
11	1.5	4.0	13 (8)	-2.9	-1.7	-4.2	3.57	7.5
12	0.4	1.5	16 (4)	-4.1	0.9	-11.1	7.50	0.0
13	0.1	1.0	7 15 (1)	-1.4	1.8	-5.2	4.42	0.5
14	0.2	1.5	15 16 (2)	-5.5	-1.4	-10.9	3.91	0.0
15	0.4	2.5	14 (5)	-3.1	-1.4	-3.9	3.68	4.0
16	1.7	4.5	13 (11)	-3.0	-1.5	-3.9	2.12	5.0
17	0.8	3.0	13 (5)	-3.5	-1.1	-7.5	3.19	8.5
18	0.5	3.5	16 (3)	-2.7	1.8	-8.2	3.60	11.0
19	0.1	1.0	5 6 8(1)	-0.1	2.8	-3.2	5.87	5.0
20	0.4	2.0	13 (3)	-0.1	1.9	-2.5	3.64	12.0
21	0.1	2.0	13 (2)	-2.8	-1.5	-4.0	2.72	6.0
22	0.1	1.0	9 (2)	-2.3	2.3	-4.7	X	6.5
23	1.0	5.0	14 (4)	-0.7	2.1	-3.2	X	8.5
24	1.6	5.0	14 (9)	-2.2	0.3	-3.9	5.94	5.5
25	1.6	3.5	14 (8)	-2.4	-1.3	-3.9	5.34	3.0
26	2.0	6.0	13 (9)	-0.3	3.1	-5.4	9.75	0.0
27	0.0	0.5	10 (1)	-2.6	3.8	-10.5	10.65	0.0
28	0.1	1.5	9 12 16(1)	0.8	2.1	-1.2	2.16	1.0
29	0.1	1.0	6 (3)	1.9	3.5	0.7	3.28	4.0
30	1.2	4.0	6 (4)	2.9	4.5	1.0	2.81	6.5
31	1.6	4.0	12 (9)	-0.1	3.1	-2.2	6.07	13.5
TOTL							132.53	183.0
MEAN	0.8	2.9		-1.3	1.6	-4.4	4.57	
MAX.	2.6	6.0		5.1	10.1	2.7	10.65	
MIN.	0.0	0.5		-5.5	-3.4	-11.1	1.19	
DN	31	31		31	31	31	29	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.1	3.5	13 14 (4)	-0.3	1.6	-2.8	5.43	0.0
2	1.9	3.5	6 (8)	4.0	6.1	2.5	6.81	0.0
3	0.2	2.0	5 7 (1)	5.0	10.1	2.7	4.57	6.5
4	1.8	3.5	14 (10)	2.2	6.3	-1.2	1.61	3.0
5	1.2	3.0	14 16 (4)	-3.1	-0.4	-6.2	4.41	7.0
6	1.0	5.0	6 (5)	0.8	1.7	-1.2	2.85	39.5
7	2.2	6.0	14 (7)	-4.8	0.9	-7.7	1.29	9.0
8	0.1	1.5	14 (2)	-4.3	-3.4	-5.3	3.67	8.0
9	0.1	1.0	7 (3)	-2.9	1.1	-7.2	7.82	0.0
10	0.6	3.5	13 (4)	-1.7	-0.4	-3.1	3.67	5.0
11	1.2	4.0	13 14 (6)	-5.2	-1.7	-11.1	3.83	4.5
12	0.4	1.5	8 16 (3)	-2.0	0.9	-5.1	7.35	0.5
13	0.0	0.0	(0)	-3.8	1.8	-10.9	4.44	0.0
14	0.2	1.5	15 16 (2)	-3.4	-1.4	-5.4	3.82	2.0
15	0.5	2.5	14 (7)	-2.8	-1.4	-3.6	3.65	2.5
16	1.9	4.5	13 (15)	-3.0	-1.5	-3.9	2.11	8.5
17	0.5	3.0	15 (4)	-4.9	-1.1	-8.2	3.46	5.0
18	0.5	3.5	16 (3)	-0.7	1.8	-3.2	3.38	13.5
19	0.2	1.0	14 (2)	-0.2	2.8	-2.5	5.87	2.0
20	0.4	2.0	13 (3)	-0.6	1.9	-3.2	3.51	16.0
21	0.1	2.0	13 (2)	-3.2	-1.5	-4.7	2.87	4.5
22	0.4	2.0	9 12 (2)	-1.9	2.3	-3.2	X	6.5
23	1.2	5.0	14 (5)	-0.0	2.1	-2.2	8.61	8.0
24	1.7	5.0	14 (12)	-3.1	-1.3	-3.9	6.05	5.5
25	1.7	3.5	13 14 (6)	-1.6	-0.2	-2.2	5.59	1.0
26	1.4	6.0	13 (7)	-2.6	3.1	-10.5	9.95	0.0
27	0.0	0.5	10 (1)	0.1	3.8	-4.1	9.86	0.0
28	0.1	1.5	9 12 (1)	1.2	2.1	0.7	2.16	5.0
29	1.1	4.0	6 (7)	2.8	4.5	1.6	3.36	0.0
30	1.1	4.0	8 12 (3)	1.8	4.3	-1.0	3.12	7.5
31	0.8	4.0	12 (6)	-1.3	1.8	-3.2	5.83	36.5
TOTL							140.95	207.0
MEAN	0.8	3.0		-1.3	1.5	-3.8	4.70	
MAX.	2.2	6.0		5.0	10.1	2.7	9.95	
MIN.	0.0	0.0		-5.2	-3.4	-11.1	1.29	
DN	31	31		31	31	31	30	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

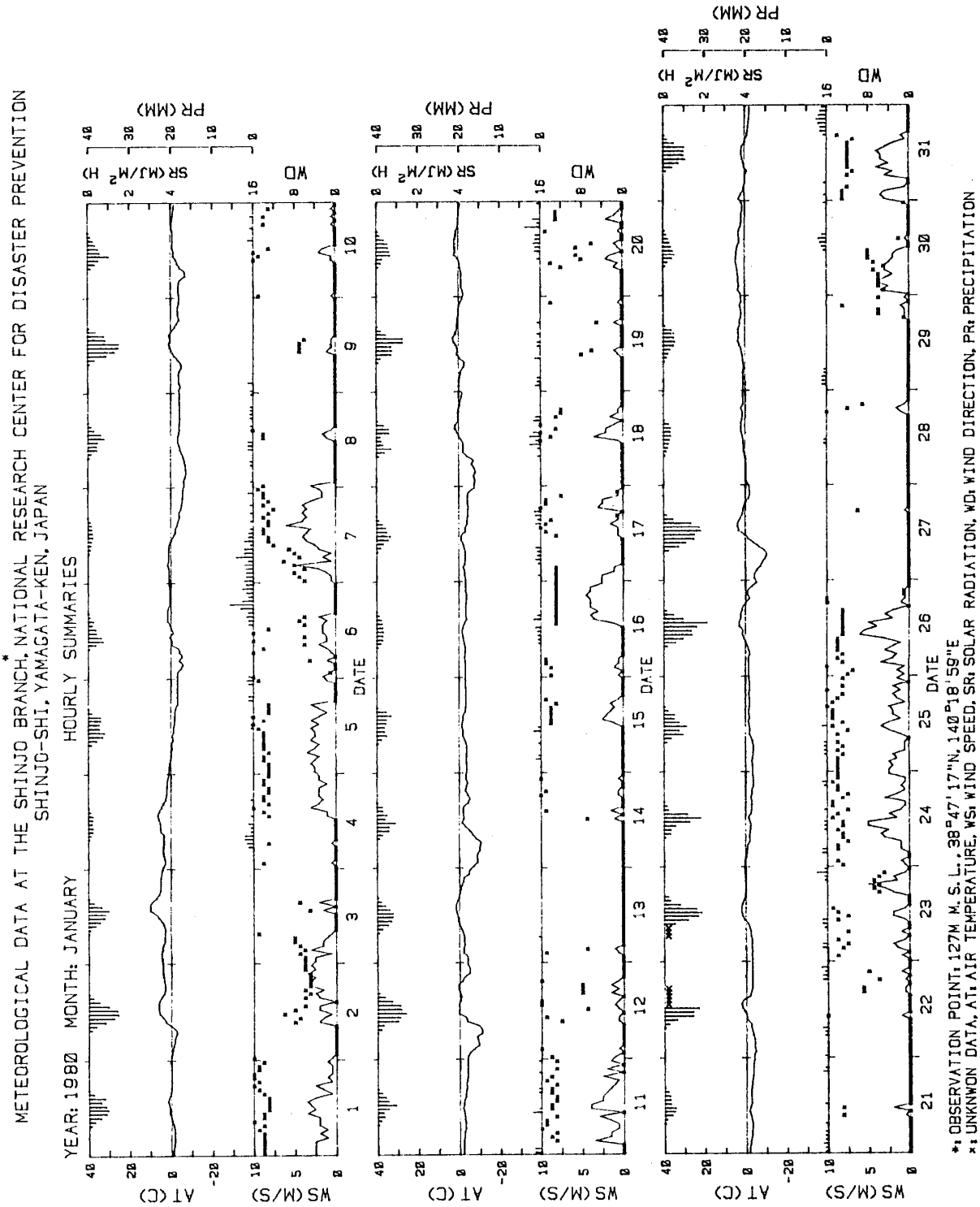

図 4.28　気象データの時間的変化

表 4.29 新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

FEBRUARY 1980

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.7	3.5	13	(5)	-2.6	-1.9	-3.2	3.16	35.5
2	2.0	5.0	12	(9)	-1.5	-0.4	-3.4	3.29	20.5
3	0.4	4.0	11 12 13	(1)	-1.9	-0.6	-3.0	3.49	42.5
4	0.1	1.0	14	(2)	-2.7	-1.2	-4.0	7.39	5.5
5	0.4	2.5	8 9 10	(1)	-1.8	2.0	-6.8	10.96	4.0
6	2.0	5.0	13	(9)	-3.9	-2.4	-4.6	6.03	2.0
7	1.1	3.5	13 14	(5)	-4.2	-2.4	-5.6	5.62	8.0
8	0.0	0.5	1 3	(1)	-4.2	-0.2	-7.5	8.87	2.0
9	0.2	1.5	12	(2)	-2.7	1.0	-5.2	8.17	4.5
10	0.8	5.0	12	(3)	-1.9	0.1	-4.0	6.27	5.0
11	0.4	2.0	13 16	(2)	-1.0	1.3	-2.2	7.18	2.0
12	1.5	4.5	14	(10)	-1.7	0.5	-3.4	8.59	2.0
13	1.0	3.5	13	(9)	-4.0	-2.4	-5.5	5.90	4.5
14	0.5	2.0	13	(3)	-3.7	-1.0	-6.2	7.94	9.0
15	0.4	4.5	14	(3)	-4.2	-1.1	-8.2	10.15	6.0
16	2.1	3.5	13 14	(9)	-5.4	-3.1	-7.2	7.71	1.5
17	1.0	2.5	13 14	(4)	-4.7	-0.1	-10.4	11.31	4.5
18	1.3	3.0	14	(5)	-2.7	0.7	-4.9	13.28	1.0
19	0.0	0.5	16	(1)	-2.9	0.6	-6.3	8.82	0.5
20	0.7	4.0	14	(4)	-0.9	1.8	-3.2	7.33	6.5
21	1.2	4.0	14	(7)	-3.2	-1.0	-5.5	10.70	6.0
22	1.1	3.0	14	(9)	-3.3	-0.4	-5.4	11.52	2.5
23	0.2	2.0	8 14	(3)	-0.6	3.7	-4.1	11.93	7.5
24	1.4	3.5	14	(10)	0.6	3.0	-1.2	12.72	1.0
25	1.3	3.5	14	(6)	-1.4	1.9	-4.7	13.56	0.0
26	0.1	1.0	2 10 12	(1)	-1.4	3.8	-8.4	11.86	4.0
27	1.2	4.0	13	(9)	1.0	2.4	-0.5	10.84	2.0
28	0.7	3.0	13	(5)	0.7	3.6	-2.0	11.25	2.0
29	0.1	1.0	4 15	(1)	1.5	7.7	-5.0	15.67	0.0
TOTL								261.51	192.0
MEAN	0.8	3.0			-2.2	0.5	-4.9	9.02	
MAX.	2.1	5.0			1.5	7.7	-0.5	15.67	
MIN.	0.0	0.5			-5.4	-3.1	-10.4	3.16	
DN	29	29			29	29	29	29	29

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.2	3.5	13	(6)	-2.5	-0.6	-3.4	3.19	17.5
2	2.0	5.0	12	(8)	-1.5	-0.4	-2.3	3.22	28.0
3	0.0	0.0		(0)	-2.2	-0.6	-3.2	3.84	34.5
4	0.1	1.0	14	(2)	-3.4	-1.2	-6.8	7.69	0.0
5	0.9	5.0	16	(6)	-1.5	2.0	-4.4	10.41	4.0
6	1.7	4.5	13	(9)	-4.3	-3.1	-5.6	6.28	7.0
7	0.8	3.5	13	(4)	-4.5	-2.4	-6.3	5.89	3.5
8	0.0	0.5	3	(1)	-3.8	-0.2	-7.5	8.77	1.5
9	0.2	1.5	12	(2)	-2.2	1.0	-4.0	7.73	6.5
10	0.8	5.0	12	(3)	-1.3	0.1	-2.2	6.73	3.5
11	0.9	2.5	14	(7)	-1.0	1.3	-2.4	6.90	1.5
12	1.1	4.5	13	(9)	-2.3	0.5	-4.3	8.72	4.5
13	1.2	3.5	13	(9)	-4.7	-2.5	-6.2	6.10	3.0
14	0.6	4.5	14	(3)	-3.9	-1.0	-8.2	8.34	9.5
15	0.9	3.5	13	(4)	-4.1	-1.1	-6.4	9.49	4.5
16	1.2	3.5	14	(6)	-6.3	-3.1	-10.4	8.10	3.0
17	1.7	2.5	14	(7)	-3.1	-0.1	-4.4	11.16	4.0
18	0.6	3.0	12	(3)	-3.3	0.7	-6.3	13.21	0.0
19	0.0	0.5	16	(1)	-1.6	0.6	-3.0	8.71	4.5
20	0.9	4.0	14 15	(5)	-1.3	1.8	-3.9	7.57	7.0
21	1.3	4.0	14	(8)	-3.7	-1.0	-5.5	10.71	3.0
22	0.8	3.0	14	(7)	-2.9	-0.4	-4.1	11.84	3.0
23	0.4	2.0	14 16	(4)	0.9	3.7	-0.2	11.80	5.5
24	1.6	3.5	14	(9)	-0.6	3.0	-4.0	13.38	1.0
25	0.9	3.5	14	(6)	-2.9	1.9	-8.4	13.40	0.0
26	0.6	3.0	13	(5)	1.6	3.8	-1.5	11.31	6.0
27	0.8	4.0	13 15	(4)	0.2	2.4	-2.0	11.13	0.0
28	0.6	3.0	13	(5)	0.3	3.6	-5.0	12.02	2.0
29	0.1	1.0	4 12	(1)	1.3	7.7	-3.9	14.43	0.0
TOTL								262.07	168.0
MEAN	0.8	3.1			-2.2	0.6	-4.7	9.04	
MAX.	2.0	5.0			1.6	7.7	-0.2	14.43	
MIN.	0.0	0.0			-6.3	-3.1	-10.4	3.19	
DN	29	29			29	29	29	29	29

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

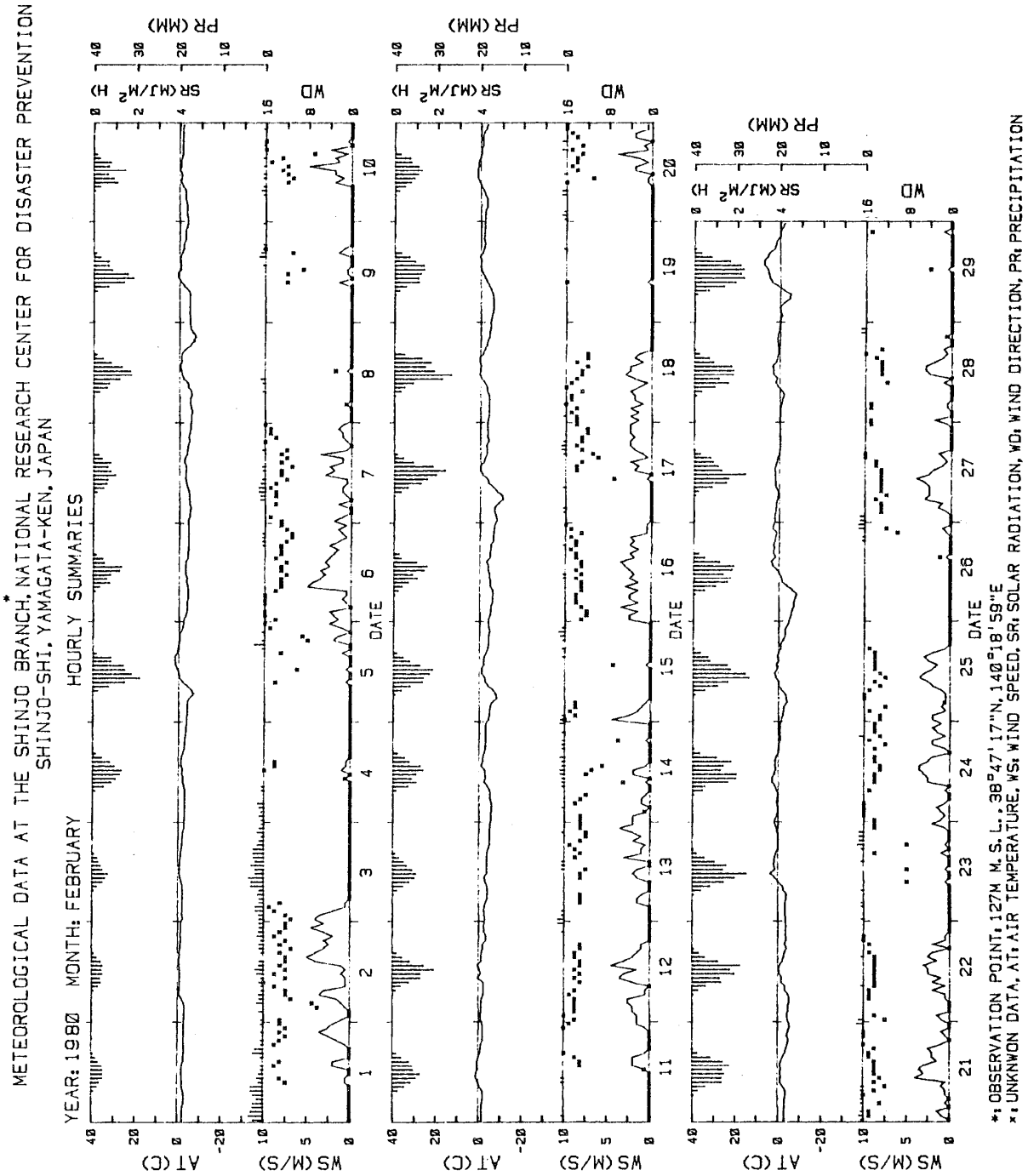

図 4.29 気象データの時間的変化

表 4.30 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

MARCH 1980

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.5	6.0	13	(7)	-0.0	5.8	-3.9	5.89	2.5
2	3.3	5.5	13	(19)	0.2	1.7	-2.7	7.81	0.5
3	0.4	2.5	6 14	(2)	0.6	6.5	-4.4	16.07	0.0
4	1.3	4.0	14	(9)	0.5	3.8	-4.3	13.49	7.5
5	1.0	3.0	14	(8)	-0.2	3.0	-6.1	14.13	0.0
6	0.0	1.0	5	(1)	-2.5	6.8	-9.7	18.73	0.0
7	0.1	0.5	3 4 11	(1)	-1.1	4.0	-8.2	10.00	11.0
8	0.7	3.0	13	(4)	3.3	9.1	-1.3	15.22	2.5
9	0.6	2.5	6	(4)	1.9	6.0	-3.0	7.97	7.0
10	3.8	6.5	13	(17)	1.5	4.7	-1.7	5.89	10.5
11	4.2	6.0	13	(21)	-2.6	-0.9	-4.4	13.10	2.5
12	3.9	7.0	13	(16)	-2.2	-1.1	-3.7	9.95	2.5
13	2.5	6.0	13	(10)	0.2	4.0	-2.4	11.00	0.5
14	0.1	1.0	14	(2)	-0.5	2.1	-3.7	8.32	4.0
15	1.0	4.5	14	(9)	-0.1	3.1	-1.3	9.67	5.0
16	0.3	2.0	6 13	(3)	-0.8	4.1	-5.3	9.84	4.0
17	0.4	2.0	11 13	(2)	-0.2	3.6	-4.2	10.77	2.5
18	2.1	4.0	14	(14)	-2.3	0.0	-4.5	12.30	0.5
19	0.3	2.0	14	(5)	-1.1	3.6	-5.2	18.53	0.0
20	0.5	2.5	16	(3)	0.7	4.8	-2.2	7.95	9.5
21	1.6	4.0	14	(16)	2.5	4.5	0.8	14.15	0.0
22	0.4	4.0	6 7 15	(2)	0.1	2.8	-2.0	7.56	7.0
23	0.3	2.0	14	(2)	-0.6	3.7	-3.3	12.60	3.5
24	1.2	4.0	14	(7)	0.8	4.0	-2.2	15.24	2.0
25	0.4	1.5	6	(3)	3.0	7.2	-1.0	16.61	0.0
26	1.2	3.5	14	(5)	2.8	8.9	-1.2	12.76	2.5
27	2.5	5.0	13	(10)	1.9	5.6	-4.2	14.88	0.5
28	0.0	0.0		(0)	0.5	9.2	-7.5	22.06	0.0
29	0.4	2.5	6 14	(2)	4.2	13.1	-5.4	19.59	2.0
30	0.9	3.5	12 13	(3)	6.3	11.6	2.7	12.04	13.5
31	0.7	4.0	6 13	(2)	5.9	10.0	1.1	14.07	7.0
TOTL								388.19	110.5
MEAN	1.2	3.4			0.7	5.0	-3.4	12.52	
MAX.	4.2	7.0			6.3	13.1	2.7	22.06	
MIN.	0.0	0.0			-2.6	-1.1	-9.7	5.89	
DN	31	31			31	31	31	31	31

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	3.0	6.0	13	(13)	0.3	5.8	-2.7	5.98	3.0
2	2.0	4.0	13	(12)	0.4	1.7	-2.2	8.46	0.0
3	0.2	1.0	6	(2)	0.1	6.5	-4.4	15.81	7.5
4	1.5	4.0	14	(12)	1.0	3.8	-1.2	14.16	0.0
5	0.8	3.0	14	(5)	-3.0	3.0	-9.7	14.62	0.0
6	0.0	0.0		(0)	-2.0	6.8	-8.2	17.85	0.0
7	0.1	1.0	3 4	(1)	1.6	4.0	-1.0	10.00	13.5
8	0.7	3.0	13	(5)	2.2	9.1	-3.0	14.58	0.0
9	1.2	5.5	6 13	(4)	3.7	6.0	0.7	7.79	16.0
10	4.9	6.5	13	(23)	-0.8	3.8	-4.4	6.95	2.0
11	4.1	6.0	13	(21)	-2.6	-0.9	-3.7	12.32	3.5
12	3.5	7.0	13	(11)	-1.1	1.2	-2.4	9.92	1.0
13	1.3	6.0	13	(6)	-0.5	4.0	-3.7	11.47	0.5
14	0.2	2.0	14	(3)	0.3	2.1	-1.3	8.41	4.5
15	1.0	4.5	14	(8)	-0.6	3.1	-5.1	10.00	4.5
16	0.1	1.5	13	(3)	-1.1	4.1	-5.3	9.73	4.0
17	1.1	3.5	14	(6)	0.1	3.6	-3.1	10.85	3.0
18	1.4	4.0	14	(9)	-3.1	0.0	-5.2	13.15	0.0
19	0.3	2.0	14	(5)	-0.3	3.6	-2.6	16.61	5.0
20	0.8	3.0	16	(5)	2.1	4.8	0.8	8.25	4.5
21	1.4	4.0	14	(14)	1.8	4.5	-1.4	14.47	0.0
22	0.3	4.0	6 7	(2)	-0.5	2.8	-2.3	7.97	9.0
23	0.3	2.0	14	(2)	-0.6	3.7	-3.3	12.85	2.5
24	1.4	4.0	14	(8)	1.6	4.0	-1.0	16.05	1.0
25	0.4	2.5	6	(4)	2.7	7.2	-1.2	15.07	0.0
26	2.2	3.5	13	(8)	3.5	8.9	1.4	12.92	2.5
27	1.3	5.0	14	(5)	-0.8	5.6	-7.5	16.71	0.5
28	0.0	0.0		(0)	1.3	9.2	-5.4	22.07	0.0
29	0.4	2.5	6 14	(2)	6.5	13.1	2.7	17.47	15.0
30	0.9	3.5	12 13	(3)	6.4	11.6	1.1	13.79	0.5
31	0.7	4.0	6 13	(2)	5.5	10.0	2.0	11.71	15.0
TOTL								387.99	118.5
MEAN	1.2	3.5			0.8	5.1	-2.7	12.52	
MAX.	4.9	7.0			6.5	13.1	2.7	22.07	
MIN.	0.0	0.0			-3.1	-0.9	-9.7	5.98	
DN	31	31			31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

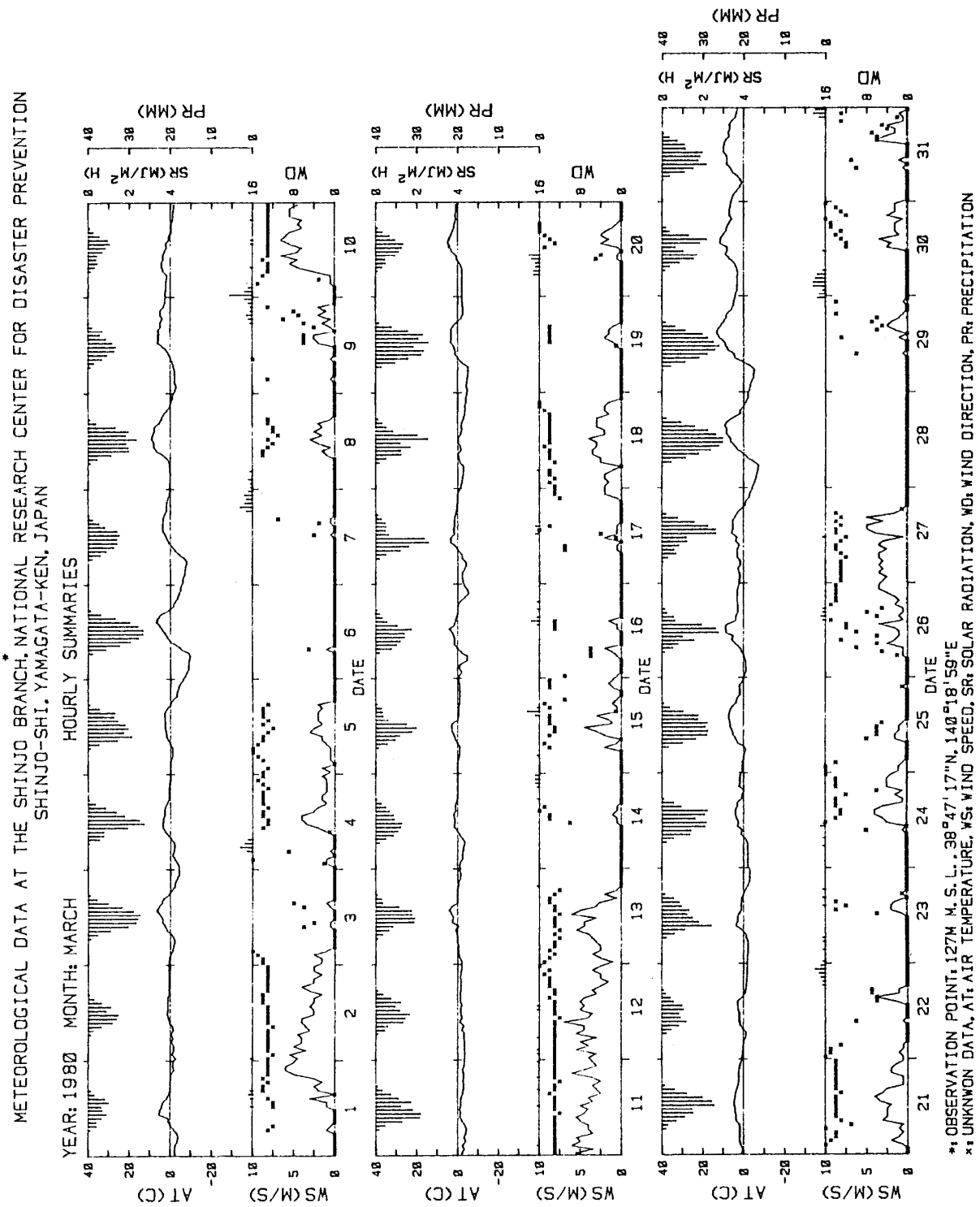

図 4.30　気象データの時間的変化

表 4.31 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

APRIL 1980

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.5	3.0	14	(6)	3.6	5.9	2.0	7.00	10.0
2	0.9	3.0	13	(5)	2.7	5.1	0.7	9.25	5.5
3	0.2	1.0	1	(3)	3.3	8.8	-2.4	23.04	0.0
4	0.0	0.5	13	(1)	3.1	10.9	-3.8	19.27	0.0
5	0.0	0.5	10 14	(1)	5.8	14.7	-1.2	20.29	0.0
6	0.6	2.0	14	(5)	5.3	10.8	2.7	2.00	47.5
7	2.1	4.5	13	(14)	4.4	8.7	-1.4	19.70	1.0
8	0.1	1.5	1	(2)	3.5	9.9	-2.8	13.52	0.0
TOTL								114.07	64.0
MEAN	0.6	2.0			4.0	9.3	-0.8	14.26	
MAX.	2.1	4.5			5.8	14.7	2.7	23.04	
MIN.	0.0	0.5			2.7	5.1	-3.8	2.00	
DN	8	8			8	8	8	8	8

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.0	3.0	14	(8)	3.9	5.9	1.6	8.86	2.5
2	0.4	2.5	13	(3)	1.8	5.1	-2.4	10.48	5.0
3	0.1	1.0	1	(3)	2.2	8.8	-3.8	21.78	0.0
4	0.0	0.5	10 13	(1)	4.2	10.9	-1.2	20.04	0.0
5	0.1	1.5	14	(2)	6.7	14.7	2.7	17.49	16.0
6	1.5	3.5	13	(8)	5.6	10.8	3.4	2.90	32.5
7	1.2	4.5	13	(8)	2.5	8.7	-2.8	20.77	0.0
8	X	X	X	(0)	X	X	X	X	X
TOTL								102.32	56.0
MEAN	0.6	2.4			3.8	9.3	-0.4	14.62	
MAX.	1.5	4.5			6.7	14.7	3.4	21.78	
MIN.	0.0	0.5			1.8	5.1	-3.8	2.90	
DN	7	7			7	7	7	7	7

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

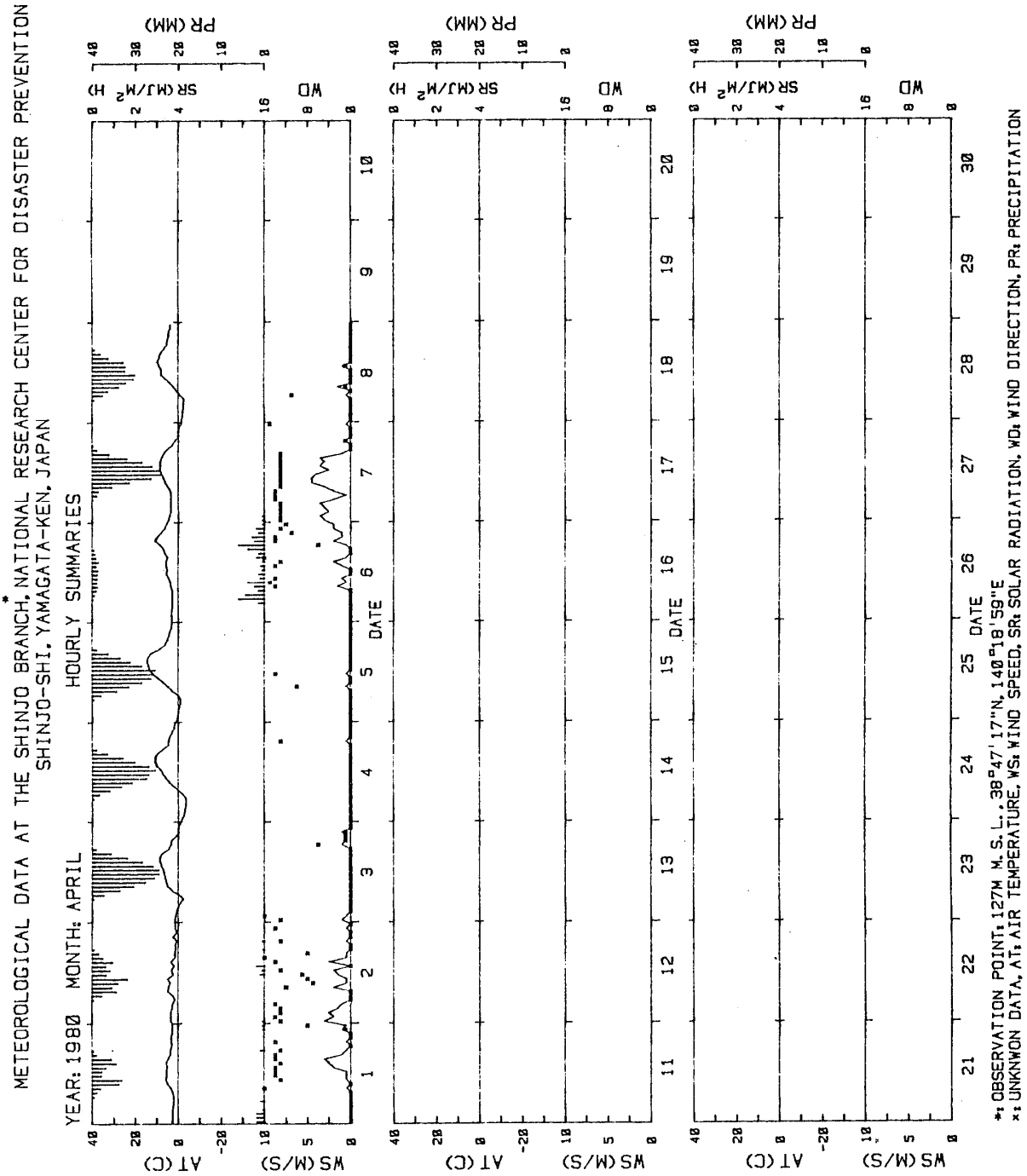

図 4.31　気象データの時間的変化

表 4.32 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

DECEMBER 1980

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.8	5.5	13	(7)	7.6	10.1	1.6	4.15	3.0
2	1.7	4.5	6	(8)	5.9	11.9	-2.1	9.32	0.0
3	0.4	2.0	13	(4)	9.0	11.0	6.5	2.75	2.5
4	1.3	3.5	12	(5)	3.8	9.7	0.3	2.48	36.5
5	0.0	0.0		(0)	0.8	1.7	0.2	2.88	21.0
6	X	X	X	(0)	0.9	2.4	-0.1	2.89	4.5
7	0.1	1.0		(0)	1.6	3.7	0.4	3.76	5.0
8	0.8	3.5	16	(7)	0.5	2.4	-3.3	5.12	3.0
9	0.1	1.0	12 13 16	(1)	-0.8	1.8	-5.1	4.29	0.5
10	0.1	1.0	10 13	(1)	2.0	5.2	0.4	6.08	12.0
11	0.0	0.5	14	(2)	1.0	7.5	-2.1	6.83	0.0
12	0.1	0.5	13	(2)	2.6	6.4	-2.6	5.74	4.5
13	1.5	5.0	12	(9)	-0.3	1.4	-1.3	3.08	37.5
14	1.6	4.0	13	(8)	-0.3	0.7	-1.4	3.05	19.0
15	2.4	5.0	13	(12)	0.5	1.7	-0.9	4.20	8.0
16	0.7	2.5	14	(5)	1.7	4.1	-2.8	2.90	1.0
17	0.5	2.5	13	(4)	0.1	2.9	-4.2	3.81	1.5
18	0.0	0.5	15	(1)	1.0	2.3	0.3	3.49	6.5
19	1.0	4.0	13	(5)	-1.4	0.8	-5.0	5.87	2.0
20	0.1	0.5	13 14 15	(1)	-3.0	-0.2	-7.5	6.48	3.0
21	0.3	1.0	13	(4)	-1.9	1.5	-6.3	5.68	5.0
22	0.7	2.5	14	(6)	0.1	2.4	-1.9	4.33	0.5
23	1.3	5.0	6	(7)	0.9	3.6	-2.0	7.82	1.0
24	1.6	6.5	14	(9)	1.1	3.6	0.3	1.59	23.0
25	0.7	2.5	13	(4)	2.7	7.8	-0.8	9.48	1.0
26	0.4	3.0	7	(3)	0.9	2.4	-0.6	3.78	9.5
27	0.7	2.0	6	(7)	-0.0	2.0	-1.6	6.06	7.0
28	2.3	5.0	7	(12)	-0.8	0.3	-1.9	2.20	22.5
29	0.4	2.5	6	(3)	X	X	X	X	X
30	0.2	1.0	6	(3)	1.0	2.4	0.0	4.62	12.0
31	0.1	1.0	11 13 14	(1)	0.3	3.3	-2.0	4.64	8.5
TOTL								139.37	261.0
MEAN	0.8	2.6			1.3	3.9	-1.5	4.65	
MAX.	2.4	6.5			9.0	11.9	6.5	9.48	
MIN.	0.0	0.0			-3.0	-0.2	-7.5	1.59	
DN	30	30			30	30	30	30	30

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.1	5.5	14	(5)	4.1	10.1	-2.1	4.82	0.0
2	1.7	4.5	6	(8)	9.6	11.9	4.9	8.30	0.0
3	1.0	3.5	13	(5)	8.2	11.0	4.0	2.77	9.0
4	0.6	3.5	10 12	(2)	1.3	3.8	0.2	2.35	42.0
5	X	X	X	(0)	0.7	1.7	-0.1	2.85	9.5
6	X	X	X	(0)	1.1	2.4	0.4	3.21	9.0
7	0.2	2.0	16	(2)	1.7	3.7	0.5	3.74	3.0
8	0.6	3.5	16	(5)	-1.3	2.4	-5.1	5.23	0.0
9	0.1	1.0	12 13	(1)	0.9	1.8	-0.9	4.35	12.0
10	0.1	1.0	10 13	(1)	1.4	5.2	-1.7	6.62	0.5
11	0.0	0.5	14 16	(1)	0.9	7.5	-2.6	6.63	0.0
12	0.4	2.5	12	(4)	3.2	6.4	0.1	5.10	22.5
13	1.5	5.0	12	(7)	-0.9	0.1	-1.4	3.17	32.0
14	2.1	4.5	13	(14)	-0.1	0.7	-0.9	3.03	12.0
15	2.1	5.0	14	(10)	1.6	3.3	0.3	4.16	3.5
16	0.2	1.5	2 14	(2)	-0.4	4.1	-4.2	3.01	0.0
17	0.5	2.5	13	(4)	1.5	2.9	0.4	3.74	5.5
18	0.2	4.0	13 15	(1)	0.5	2.3	-1.6	3.63	4.0
19	0.8	3.0	14	(5)	-3.2	0.8	-7.5	6.33	0.5
20	0.0	0.5	1 13	(1)	-2.4	-0.2	-6.3	6.47	3.5
21	0.8	2.5	15	(6)	-0.7	1.5	-1.9	5.24	5.0
22	0.2	1.5	14	(5)	-0.0	2.4	-2.0	4.54	0.5
23	1.4	5.0	6	(7)	1.6	3.6	0.3	7.31	8.0
24	1.7	6.5	14	(8)	1.2	3.6	-0.8	2.38	15.5
25	0.8	3.0	13	(4)	2.5	7.8	-0.6	8.83	2.0
26	0.2	1.5	7	(2)	0.7	2.4	-1.1	3.88	13.0
27	1.9	5.0	6	(12)	-0.5	2.0	-1.9	5.88	8.0
28	1.3	3.5	7	(10)	X	X	X	X	X
29	0.1	2.0	6	(2)	X	X	X	X	X
30	0.2	1.0	6	(3)	0.9	2.4	0.0	4.78	2.5
31	0.1	1.0	11 13	(1)	-0.2	3.3	-2.9	4.50	9.5
TOTL								136.85	232.5
MEAN	0.8	3.0			1.2	3.8	-1.2	4.72	
MAX.	2.1	6.5			9.6	11.9	4.9	8.83	
MIN.	0.0	0.5			-3.2	-0.2	-7.5	2.35	
DN	29	29			29	29	29	29	29

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

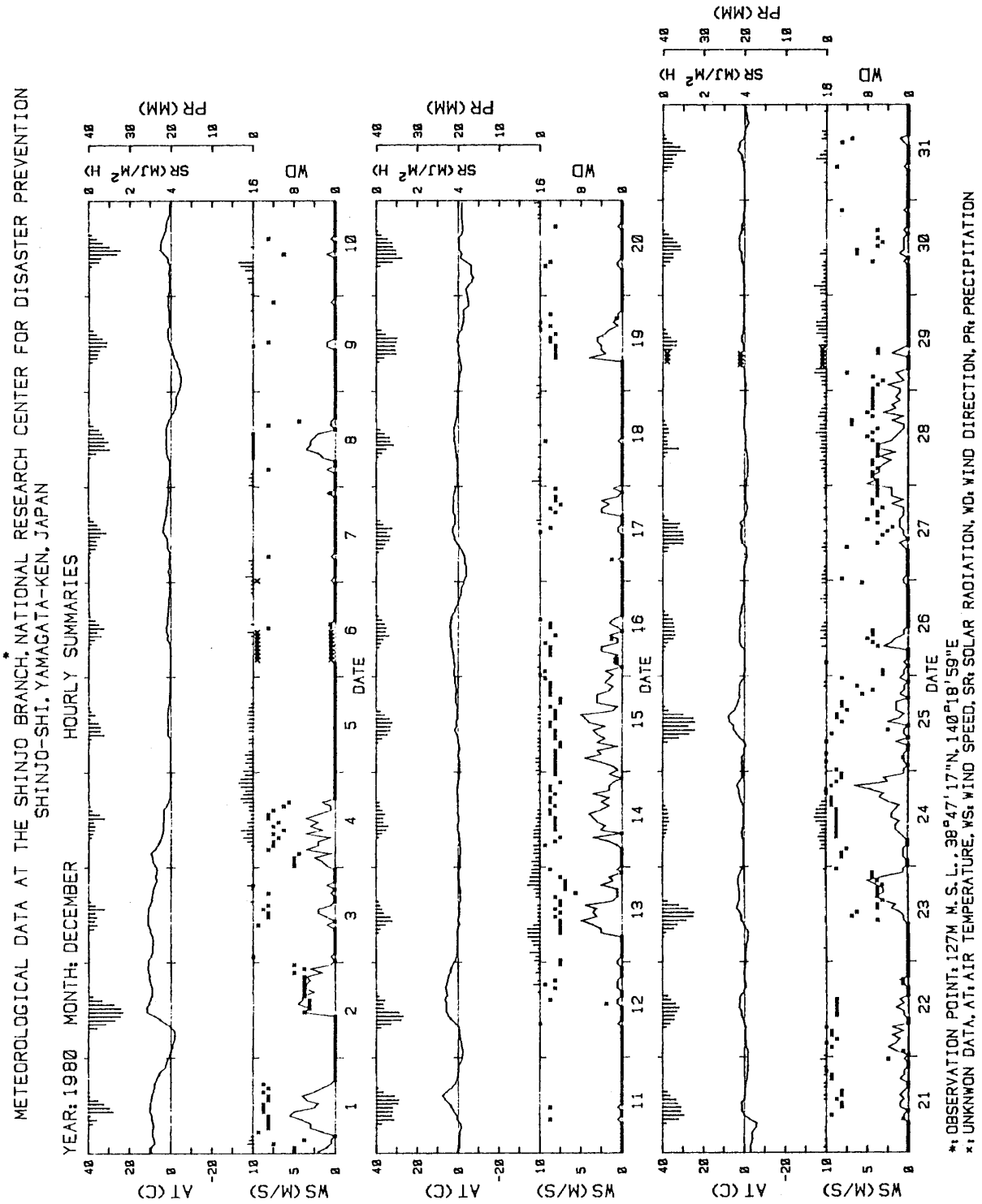

図 4.32　気象データの時間的変化

表 4.33 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

JANUARY 1981

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.2	1.0	6	(4)	-1.3	2.2	-6.1	6.11	1.5
2	0.9	2.5	8 9	(3)	0.6	2.6	-5.3	3.04	8.5
3	2.2	5.5	12	(9)	1.2	2.4	-0.2	4.16	23.5
4	0.3	3.0	13 14	(2)	0.3	3.2	-1.7	5.99	10.5
5	0.8	4.0	12	(3)	-1.2	0.7	-2.6	3.52	15.5
6	0.4	2.0	13 14	(3)	-3.2	-1.9	-4.4	3.98	19.0
7	2.0	5.0	13 14	(9)	-4.7	-3.6	-5.8	4.22	8.0
8	2.5	4.5	14	(16)	-2.5	-0.9	-4.2	9.12	3.5
9	X	X	X	(0)	-0.1	2.3	-1.9	4.74	8.0
10	0.1	1.0	1	(2)	-0.6	0.6	-2.2	5.01	14.0
11	1.1	3.0	12 13	(6)	-3.2	-1.0	-4.3	5.08	9.5
12	0.1	1.0	16	(2)	-4.2	-2.8	-5.6	4.01	11.0
13	0.1	1.0	11 16	(2)	-5.3	-2.0	-7.2	5.71	14.0
14	0.1	0.5	2 7 10	(1)	-8.4	-0.8	-14.3	11.71	4.0
15	0.0	0.5	5	(1)	-5.9	-2.9	-9.9	5.59	14.0
16	0.1	1.0	6	(2)	-4.6	-0.4	-9.7	9.61	2.5
17	0.1	1.0	11	(2)	-3.4	0.8	-8.5	8.47	5.0
18	0.5	4.0	6	(3)	-0.8	2.0	-3.3	7.84	3.5
19	1.1	2.5	13	(5)	-1.9	-0.5	-4.2	4.67	9.5
20	0.9	3.0	13	(7)	-3.5	-0.4	-5.6	6.34	10.0
21	1.9	4.0	14	(9)	-5.6	-4.5	-8.5	5.60	6.0
22	1.1	2.5	14	(11)	-4.9	-2.6	-8.0	7.04	10.5
23	1.2	3.0	15	(9)	-2.1	-0.5	-4.2	6.40	2.0
24	0.3	3.0	7	(3)	0.1	3.0	-2.0	5.57	7.5
25	2.1	5.5	13	(8)	-3.0	-0.5	-6.4	8.67	3.5
26	0.6	2.5	15 16	(4)	X	X	X	X	7.0
27	X	X	X	(0)	-5.2	-3.2	-6.5	7.36	6.0
28	1.8	4.0	13	(10)	-4.1	-2.0	-5.9	8.42	2.0
29	0.2	1.0	16	(4)	-2.6	-0.6	-4.4	7.22	4.5
30	1.8	4.0	14	(10)	-2.7	-0.4	-5.2	7.08	2.5
31	0.9	2.5	14	(5)	-0.2	2.7	-4.1	12.28	0.0
TOTL.								194.56	246.5
MEAN	0.9	2.7			-2.8	-0.3	-5.4	6.49	
MAX.	2.5	5.5			1.2	3.2	-0.2	12.28	
MIN.	0.0	0.5			-8.4	-4.5	-14.3	3.04	
DN	29	29			30	30	30	30	31

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.7	2.5	6 14	(4)	-1.2	2.5	-6.1	5.95	0.0
2	1.0	4.5	11 12	(4)	1.1	2.6	-0.2	3.22	17.0
3	1.7	5.5	12	(6)	1.1	2.4	-0.5	4.11	21.5
4	0.2	3.0	13	(2)	-0.4	3.2	-2.1	5.85	11.0
5	0.9	4.0	12	(4)	-1.9	0.7	-4.4	3.54	16.0
6	1.3	5.0	13	(8)	-3.8	-1.9	-5.8	4.07	15.5
7	1.8	4.0	14	(17)	-4.3	-3.1	-5.2	4.54	6.5
8	X	X	X	(0)	-1.5	0.2	-2.9	8.70	1.0
9	0.1	2.0	2 13	(1)	0.2	2.3	-0.8	4.87	16.5
10	0.1	1.0	1	(2)	-1.7	0.6	-4.2	5.24	7.5
11	1.2	3.0	12 13	(6)	-3.6	-1.0	-4.9	4.79	10.5
12	0.0	0.5	13	(1)	-5.0	-2.8	-6.8	4.20	12.5
13	0.1	1.0	11 16	(2)	-6.6	-2.0	-14.3	6.58	11.5
14	0.1	0.5	2 7	(1)	-7.9	-0.8	-14.1	10.84	10.5
15	0.0	0.5	5	(1)	-5.4	-2.9	-9.7	5.69	6.0
16	0.1	1.0	6	(2)	-4.5	-0.4	-8.5	9.68	3.0
17	0.3	2.5	11	(2)	-1.9	0.8	-3.3	8.50	5.5
18	0.6	4.0	6	(5)	-0.3	2.0	-1.9	7.56	5.0
19	0.8	2.5	13 15	(4)	-3.1	-0.5	-5.6	4.75	11.5
20	1.4	3.5	13	(9)	-3.9	-0.4	-5.7	6.27	7.5
21	1.5	4.0	14	(7)	-6.2	-4.5	-8.5	5.80	10.0
22	1.6	3.0	14	(13)	-3.7	-2.6	-4.7	7.00	4.5
23	0.5	2.0	15	(6)	-1.4	-0.5	-2.0	6.38	3.5
24	0.6	4.0	14	(5)	0.1	3.0	-2.0	5.62	8.0
25	1.9	5.5	13	(8)	-4.7	-1.0	-6.6	8.49	6.0
26	X	X	X	(0)	X	X	X	X	4.0
27	1.9	4.5	14	(13)	-5.2	-3.2	-6.5	7.42	4.0
28	1.1	4.0	16	(7)	-3.4	-2.0	-4.2	8.63	3.0
29	0.2	3.0	13	(2)	-2.9	-0.6	-5.2	7.21	5.0
30	2.1	4.0	14	(12)	-1.9	-0.4	-4.1	7.35	1.0
31	0.5	2.0	13	(3)	-1.2	2.7	-7.4	11.83	0.0
TOTL								194.68	245.0
MEAN	0.8	3.0			-2.8	-0.3	-5.3	6.49	
MAX.	2.1	5.5			1.1	3.2	-0.2	11.83	
MIN.	0.0	0.5			-7.9	-4.5	-14.3	3.22	
DN	29	29			30	30	30	30	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

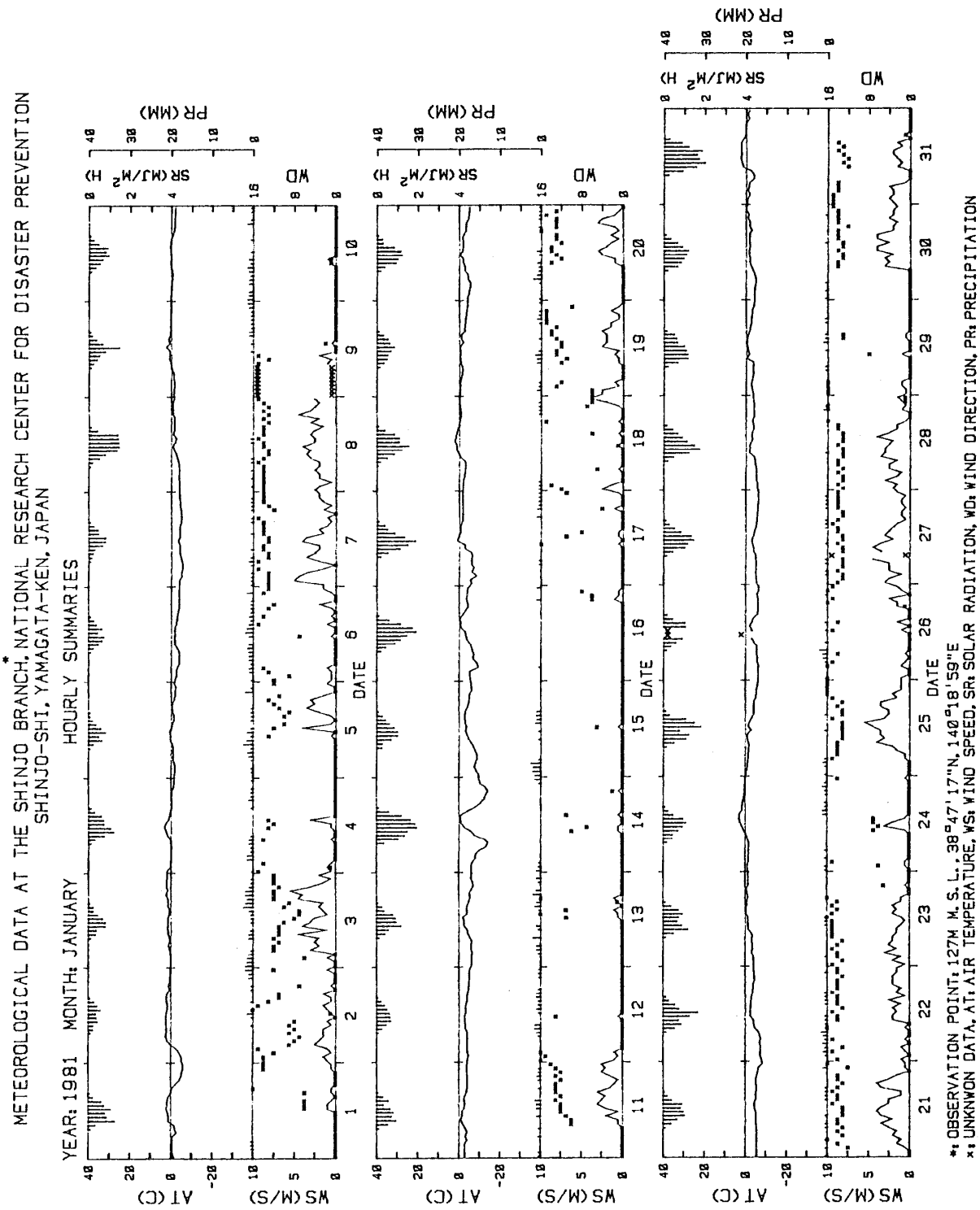

図 4.33　気象データの時間的変化

表 4.34 新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

FEBRUARY 1981

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.0	0.5	15 16	(1)	-2.4	-0.1	-7.4	4.94	3.5
2	1.2	3.5	12	(7)	-0.3	1.1	-1.4	5.02	23.5
3	0.6	2.5	6	(3)	-1.8	2.7	-8.2	10.39	2.5
4	X	X	X	(0)	X	X	X	X	X
5	X	X	X	(0)	-2.0	1.6	-6.8	7.02	3.0
6	0.4	2.5	12 13	(3)	0.2	3.2	-1.8	7.86	3.5
7	0.1	1.0	13	(3)	-0.9	2.4	-4.5	7.82	2.0
8	1.6	4.5	13	(7)	-1.5	0.7	-2.8	5.93	8.0
9	0.5	3.0	14	(3)	-1.9	-0.5	-3.1	5.65	3.5
10	1.3	4.0	13	(4)	-0.1	2.4	-1.6	7.74	5.0
11	1.6	6.0	13	(8)	-3.4	-2.0	-4.4	5.27	6.5
12	X	X	X	(0)	0.6	2.7	-3.1	5.78	10.5
13	0.0	0.5	11 13	(1)	2.1	6.1	0.1	9.60	2.5
14	0.2	1.5	1 5 11	(1)	2.3	7.6	0.1	8.21	0.0
15	0.1	0.5	1 3 4	(1)	0.8	5.1	-3.2	10.67	0.0
16	1.1	4.0	14	(9)	3.4	6.6	-1.0	6.30	0.0
17	1.4	3.0	13	(10)	-0.6	0.6	-1.8	8.56	0.5
18	0.5	3.5	1 5 6	(2)	1.3	6.7	-4.2	14.31	0.0
19	1.6	5.0	13	(11)	-0.7	2.2	-4.1	6.71	21.5
20	0.6	2.5	13 15 16	(3)	-2.1	0.2	-4.3	9.14	4.0
21	1.2	3.0	14	(8)	-3.2	0.2	-5.3	13.32	3.5
22	0.5	2.5	13	(4)	-3.4	1.4	-7.5	12.04	6.0
23	0.0	0.5	14	(1)	-5.5	-2.0	-10.8	5.21	2.5
24	1.3	6.0	6	(6)	-0.7	2.5	-3.1	7.34	1.5
25	3.6	5.5	12	(15)	-2.0	0.7	-4.1	9.00	2.0
26	1.1	4.0	13	(4)	-4.7	-1.2	-9.8	7.92	1.5
27	0.2	2.0	12	(2)	-5.3	0.5	-12.3	16.19	16.5
28	0.6	3.0	13	(5)	-4.9	-2.9	-6.7	10.27	6.0
TOTL								228.21	139.5
MEAN	0.9	3.0			-1.4	1.8	-4.6	8.45	
MAX.	3.6	6.0			3.4	7.6	0.1	16.19	
MIN.	0.0	0.5			-5.5	-2.9	-12.3	4.94	
DN	25	25			27	27	27	27	27

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	3.0	12 13	(2)	-0.8	1.1	-3.1	4.64	14.5
2	0.9	3.5	11 12	(5)	-2.2	0.8	-8.2	5.47	12.5
3	1.0	4.0	6	(6)	-0.2	2.7	-3.3	10.05	9.0
4	X	X	X	(0)	X	X	X	X	X
5	0.1	0.5	2 5	(1)	-0.3	1.6	-1.8	6.83	2.5
6	0.4	2.5	12 13	(3)	-0.5	3.2	-4.5	8.32	2.5
7	0.4	3.0	13	(5)	-0.6	2.4	-2.8	7.17	7.5
8	1.8	4.5	13	(7)	-1.7	0.7	-3.1	5.94	2.5
9	0.3	2.0	14 16	(2)	-1.3	0.5	-2.1	5.99	3.5
10	1.5	4.0	13	(7)	-1.1	2.4	-4.4	7.42	7.5
11	X	X	X	(0)	-2.4	0.8	-4.0	5.42	9.5
12	0.4	2.0	11	(2)	1.2	2.7	0.1	5.65	7.5
13	0.0	0.0		(0)	2.3	6.1	0.4	9.43	0.0
14	0.2	1.5	1 5	(1)	1.5	7.6	-3.2	9.36	0.0
15	0.3	2.0	3 16	(2)	2.6	6.6	-1.0	9.92	0.0
16	1.4	4.0	14	(14)	2.0	6.6	-1.3	6.09	0.0
17	1.0	3.0	13	(7)	-0.8	0.6	-4.2	9.89	0.5
18	0.5	3.5	5 6	(2)	1.8	6.7	-0.6	12.86	16.5
19	2.1	5.0	13	(11)	-2.1	2.2	-4.3	8.09	6.0
20	0.1	1.0	13	(2)	-2.2	0.2	-4.7	8.13	4.5
21	1.2	3.0	14	(9)	-3.6	0.2	-5.3	13.87	8.0
22	0.5	2.5	13	(4)	-5.2	1.4	-10.8	11.46	0.0
23	0.0	0.5	14	(1)	-2.8	-1.7	-5.5	5.25	2.5
24	2.8	6.0	6	(6)	-0.2	2.5	-3.2	7.69	3.5
25	3.1	5.0	12	(12)	-3.1	-0.9	-4.2	9.58	0.0
26	0.1	2.0	7	(2)	-6.5	-1.2	-12.3	8.37	12.5
27	0.6	3.0	12 13	(3)	-4.3	0.5	-6.7	15.43	10.5
28	0.2	2.0	13	(2)	-5.0	-2.9	-6.8	10.11	4.0
TOTL								228.43	147.5
MEAN	0.8	2.8			-1.3	2.0	-4.1	8.46	
MAX.	3.1	6.0			2.6	7.6	0.4	15.43	
MIN.	0.0	0.0			-6.5	-2.9	-12.3	4.64	
DN	26	26			27	27	27	27	27

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

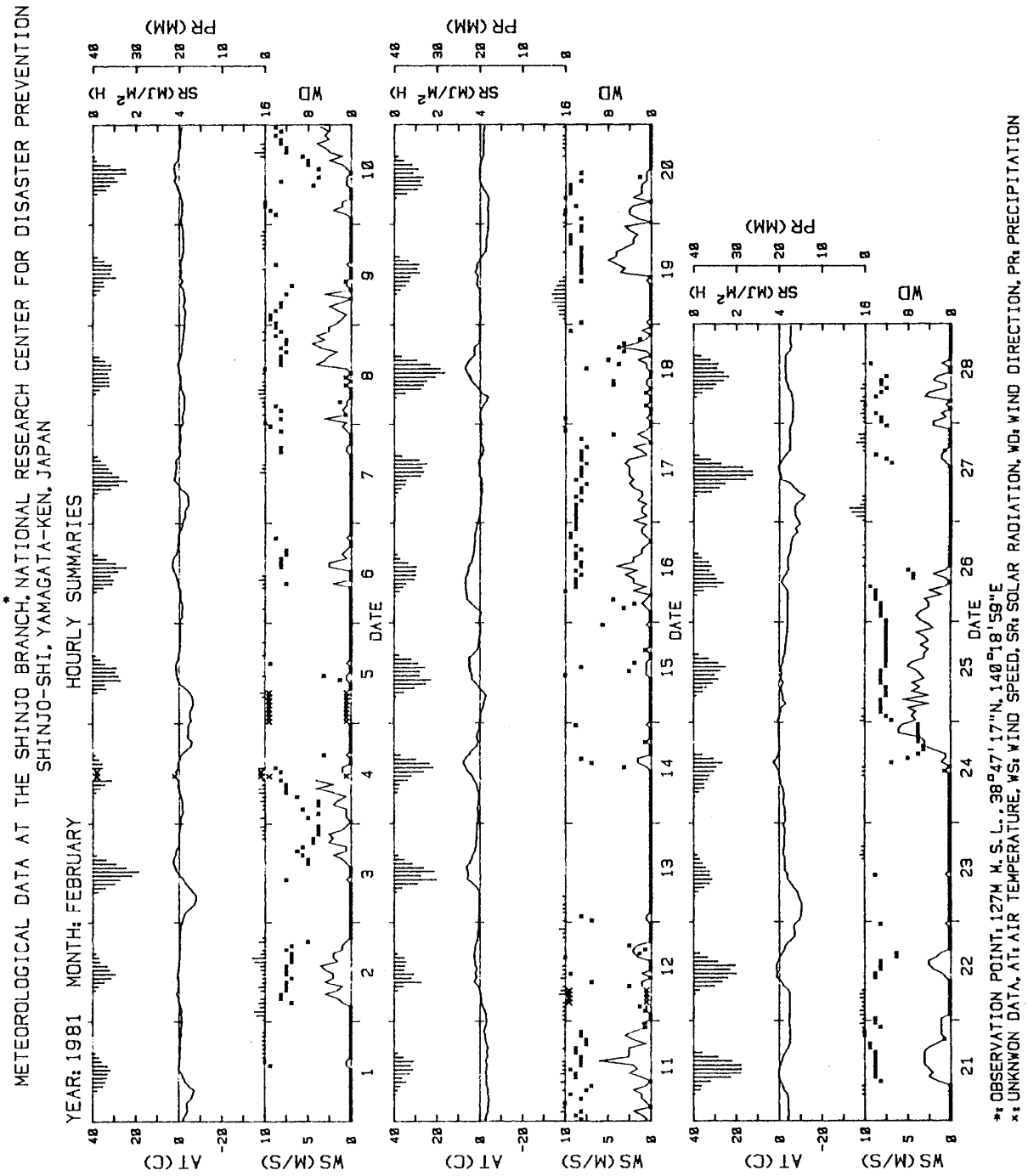

図 4.34　気象データの時間的変化

表 4.35　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

MARCH　1981

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	2.5	13	(3)	-3.7	1.3	-6.8	13.16	5.0
2	0.1	1.0	14	(3)	-2.0	4.4	-9.9	18.07	0.0
3	0.1	0.5	16	(2)	0.3	6.4	-5.1	13.96	0.0
4	0.3	1.5	13	(3)	0.8	6.4	-6.5	12.06	0.5
5	1.3	4.0	13	(5)	-0.0	2.7	-4.2	17.98	3.0
6	0.9	2.5	13	(9)	-3.0	0.0	-6.3	9.91	7.0
7	2.1	5.0	7	(5)	-0.4	3.7	-6.5	14.55	5.5
8	1.7	4.5	14	(5)	-1.1	0.3	-3.2	9.99	1.5
9	0.1	0.5	3	(2)	-1.8	1.3	-5.7	8.42	0.0
10	1.4	5.0	13	(8)	-0.8	4.0	-4.4	15.63	5.5
11	0.9	3.0	14	(7)	-3.0	1.3	-8.8	16.54	4.5
12	0.0	0.5	1	(1)	-2.6	5.7	-13.1	19.36	0.0
13	0.2	2.0	4 16	(2)	2.3	10.0	-5.7	18.62	0.0
14	1.6	4.5	6	(6)	3.8	6.1	1.6	8.43	4.5
15	1.7	6.5	12	(8)	2.1	6.1	-0.5	5.89	29.5
16	3.2	5.5	12	(9)	-0.8	0.0	-1.7	8.93	7.5
17	1.9	4.5	14	(10)	0.0	1.9	-2.8	11.95	1.0
18	0.9	2.0	X	(0)	2.5	7.7	-3.4	18.50	0.0
19	0.0	0.5	1	(1)	1.1	11.2	-7.7	20.31	0.0
20	0.1	0.5	16	(2)	4.1	12.2	-1.7	17.42	0.0
21	0.1	1.5	16	(2)	4.1	10.0	0.1	15.30	0.0
22	0.3	1.5	16	(3)	5.1	10.9	1.0	16.27	0.0
23	1.6	4.0	13	(8)	3.2	6.5	0.3	16.03	2.0
24	1.1	3.5	6 13	(3)	3.0	8.5	-4.2	20.71	0.0
25	3.0	6.5	6	(9)	1.5	3.3	0.5	4.34	21.0
26	1.1	3.5	12 13	(4)	4.8	9.8	0.3	13.02	9.0
27	3.1	6.0	14	(10)	1.2	2.4	-0.2	10.82	7.5
28	0.6	2.0	14	(8)	1.9	5.7	-3.9	15.01	0.5
29	0.5	2.0	13	(3)	-0.2	3.6	-7.1	10.54	2.0
30	1.3	4.0	13	(11)	1.1	6.4	-5.2	23.32	0.0
31	0.1	0.5	7 9 16	(1)	-0.5	7.0	-8.4	20.18	0.0
TOTL								445.22	117.0
MEAN	1.0	3.0			0.7	5.4	-4.2	14.36	
MAX.	3.2	6.5			5.1	12.2	1.6	23.32	
MIN.	0.0	0.5			-3.7	0.0	-13.1	4.34	
DN	31	31			31	31	31	31	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	2.5	13	(3)	-3.9	1.3	-9.9	14.26	2.0
2	0.2	1.0	14	(3)	0.2	4.4	-2.1	18.07	0.0
3	0.1	0.5	4 9	(1)	-0.7	6.4	-6.5	13.77	0.0
4	0.6	2.5	13	(4)	2.3	6.4	-0.4	11.84	3.0
5	1.5	4.0	13	(9)	-0.8	2.7	-4.2	17.17	3.5
6	0.5	2.5	13	(4)	-4.1	-1.7	-6.5	10.74	4.5
7	3.0	5.0	12	(7)	1.0	3.7	-2.0	13.46	5.5
8	0.8	3.0	15	(4)	-2.4	0.2	-5.7	10.67	1.0
9	0.1	0.5	3 9	(1)	-0.5	1.3	-1.7	8.40	4.0
10	1.6	5.0	13	(8)	-1.8	4.0	-4.9	16.97	6.0
11	0.7	3.0	14	(4)	-5.3	1.3	-13.1	16.57	0.0
12	0.1	1.0	1 16	(1)	0.2	5.7	-5.7	19.04	0.0
13	1.3	4.5	5 6	(4)	4.7	10.0	0.5	17.08	1.0
14	0.8	3.5	1 6	(2)	3.1	6.1	1.4	7.90	13.0
15	2.6	6.5	12	(13)	1.1	6.1	-1.0	5.90	26.0
16	2.7	5.5	14	(9)	-1.0	0.0	-2.8	10.33	1.5
17	1.7	4.5	X	(0)	0.6	4.3	-1.3	12.58	1.0
18	0.5	2.0	14 15	(3)	0.3	7.7	-7.7	18.65	0.0
19	0.0	0.5	1 13	(1)	3.0	11.2	-1.7	18.82	0.0
20	0.1	1.5	16	(2)	4.9	12.2	0.1	18.23	0.0
21	0.1	0.5	16	(2)	4.1	10.0	1.0	15.03	0.0
22	0.4	1.5	16	(4)	5.3	10.9	1.3	15.93	2.0
23	1.7	4.0	13	(9)	2.2	6.5	-4.2	18.00	0.0
24	2.8	6.5	5 6	(7)	3.4	8.5	0.5	18.05	0.0
25	1.3	6.0	6	(5)	2.6	7.8	1.3	4.87	23.0
26	2.2	6.0	12	(7)	3.5	9.8	-0.2	12.83	12.0
27	2.0	5.0	14	(11)	1.5	3.7	0.2	11.88	3.0
28	0.5	2.0	14	(5)	-0.4	5.7	-7.1	15.33	0.0
29	0.7	2.0	13	(6)	1.4	4.3	-4.8	11.97	2.0
30	1.2	4.0	13	(8)	-0.8	6.4	-8.4	22.39	0.0
31	0.0	0.5	9	(1)	-0.1	7.0	-7.1	20.68	0.0 *
TOTL								447.41	114.0
MEAN	1.0	3.1			0.8	5.6	-3.3	14.43	
MAX.	3.0	6.5			5.3	12.2	1.4	22.39	
MIN.	0.0	0.5			-5.3	-1.7	-13.1	4.87	
DN	31	31			31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

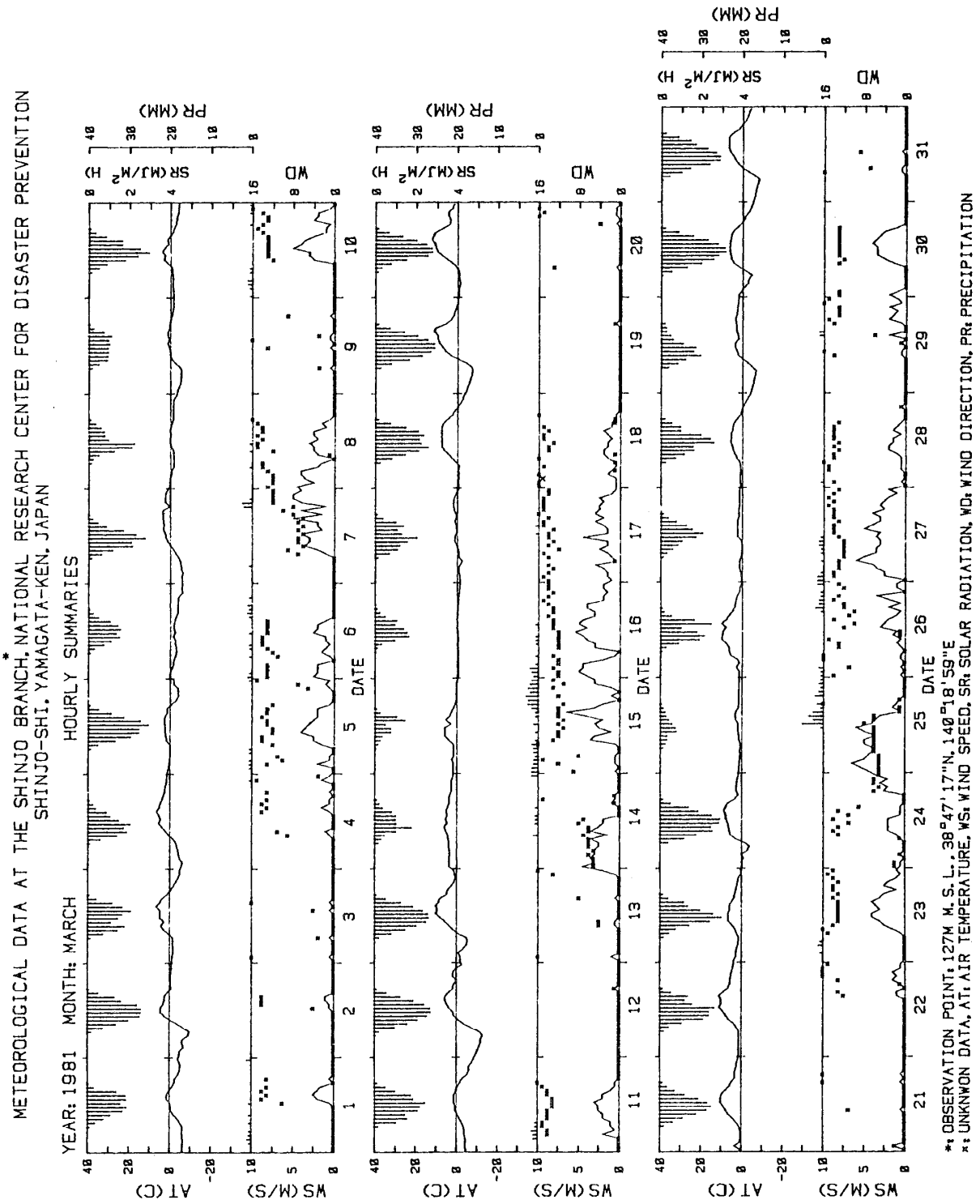

図 4.35　気象データの時間的変化

表 4.36 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

APRIL 1981

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	4.0	6	(2)	0.9	7.4	-7.1	16.38	5.5
2	1.3	6.0	13	(7)	2.6	5.1	1.1	4.82	14.5
3	2.9	5.0	13	(16)	5.9	9.1	2.7	13.17	0.0
4	0.1	0.5	1	9 16(1)	4.9	10.7	-2.2	19.91	0.0
5	1.2	3.5	5	7 (4)	5.9	11.4	-1.1	17.21	0.0
6	1.4	4.0	6	(4)	5.9	7.4	3.8	6.67	9.0
7	2.4	4.0	13	(11)	6.1	9.7	2.8	22.12	0.0
8	0.4	2.0	13	(3)	4.6	12.4	-1.9	23.00	0.0
9	0.0	0.5	2	4 (1)	3.9	12.6	-3.4	19.38	0.0
10	0.3	2.0	1	6 7(1)	5.8	12.0	2.1	11.08	5.0
11	1.6	2.5	14	(8)	7.5	8.7	5.5	1.75	4.5
12	0.8	2.5	16	(5)	8.0	13.2	4.0	18.46	0.0
TOTL								173.95	38.5
MEAN	1.1	3.0			5.2	10.0	0.5	14.50	
MAX.	2.9	6.0			8.0	13.2	5.5	23.00	
MIN.	0.0	0.5			0.9	5.1	-7.1	1.75	
DN	12	12			12	12	12	12	12

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	4.0	6	(2)	3.2	7.4	1.1	13.82	10.5
2	2.8	6.0	13	(12)	3.9	5.8	2.2	4.63	9.5
3	1.5	4.0	13	(10)	4.4	9.1	-2.2	16.43	0.0
4	0.0	0.5	1	(2)	5.2	10.7	-1.1	19.89	0.0
5	1.9	4.0	6	(7)	7.4	11.4	3.8	14.17	7.0
6	1.3	4.0	13	(7)	6.0	7.6	4.5	8.28	2.0
7	1.9	4.0	13	(7)	4.5	9.7	-1.9	23.69	0.0
8	0.3	2.0	13	(3)	3.3	12.4	-3.4	21.82	0.0
9	0.1	1.0	1 2	(1)	5.8	12.6	2.1	17.97	0.5
10	0.8	2.5	13 14	(3)	7.3	12.0	3.7	9.92	9.0
11	1.2	2.5	14	(6)	7.3	8.7	5.5	2.50	0.0
12	X	X	X	(0)	X	X	X	X	X
TOTL								153.12	38.5
MEAN	1.1	3.1			5.3	9.8	1.3	13.92	
MAX.	2.8	6.0			7.4	12.6	5.5	23.69	
MIN.	0.0	0.5			3.2	5.8	-3.4	2.50	
DN	11	11			11	11	11	11	11

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

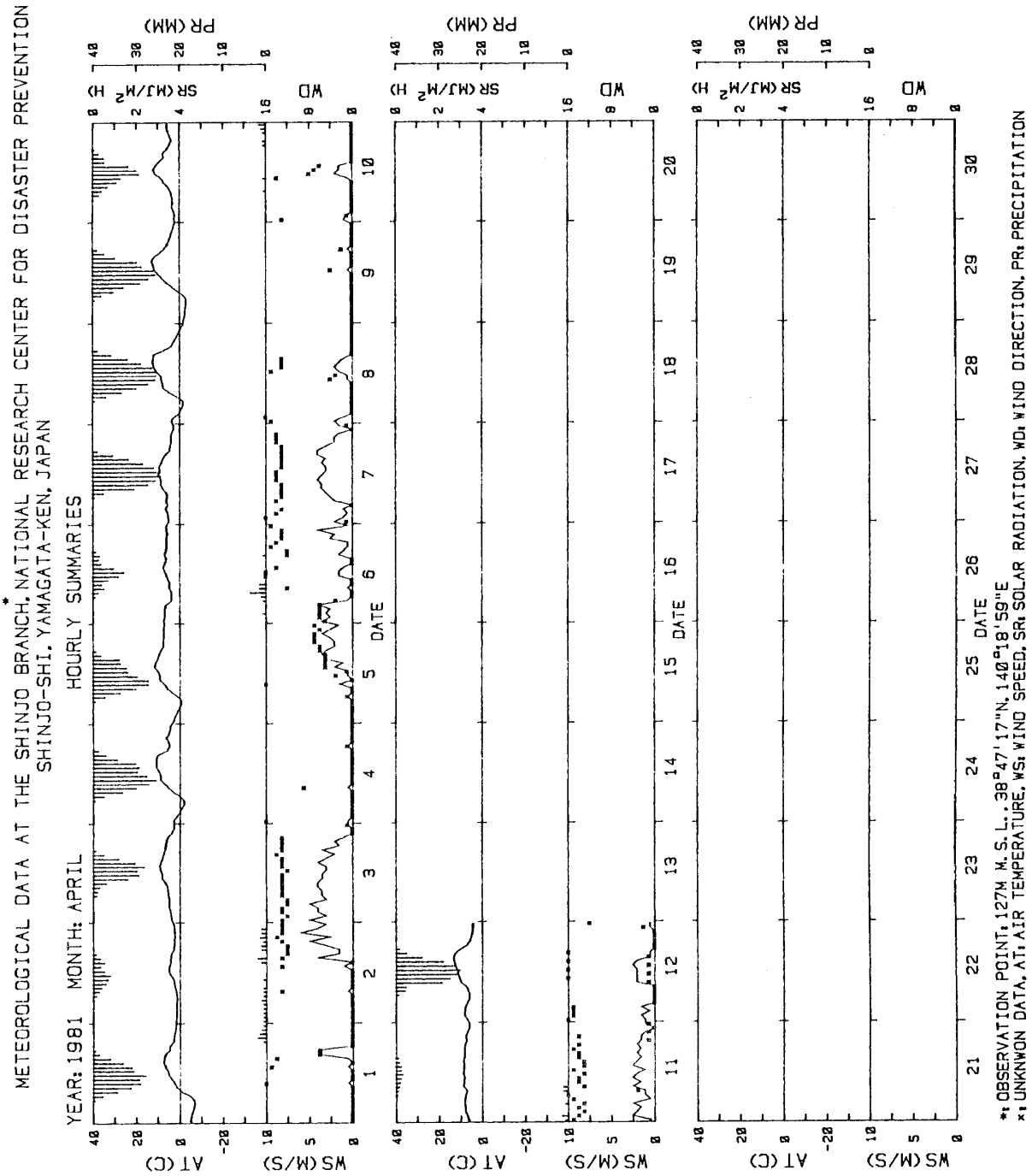

図 4.36　気象データの時間的変化

表 4.37　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

NOVEMBER 1981

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
6	0.6	2.0	16	(5)	5.8	9.1	3.5	8.77	0.0
7	0.4	3.0	15	(2)	4.1	7.0	0.3	4.20	3.5
8	1.2	3.0	14	(11)	-0.3	0.7	-1.8	2.41	9.0
9	0.1	0.5	10	(2)	0.1	4.1	-4.2	9.97	3.0
10	0.4	1.5	16	(3)	2.3	6.6	-0.1	6.92	11.0
11	0.7	3.0	14	(3)	2.7	4.3	1.1	2.45	14.0
12	0.1	1.0	5 11 12	(1)	3.9	7.7	0.5	5.45	0.0
13	0.4	2.0	6 15	(3)	4.2	7.9	0.0	2.89	17.0
14	0.8	2.5	14	(4)	5.1	9.7	1.8	8.98	0.5
15	0.3	1.0	16	(3)	4.2	8.7	0.0	1.63	7.5
16	1.2	3.0	13	(7)	6.4	8.9	2.3	4.69	18.0
17	0.9	3.5	14	(4)	2.1	6.6	0.2	9.40	0.5
18	0.3	1.5	1	(4)	2.4	5.1	0.2	4.34	2.5
19	0.3	1.0	11	(3)	5.5	10.7	1.4	7.63	1.5
20	0.4	2.5	16	(4)	8.5	11.2	5.8	1.01	18.5
21	0.6	3.0	13	(5)	4.6	6.6	2.3	4.23	1.5
22	1.3	3.0	14	(7)	3.0	5.6	1.2	8.03	1.5
23	0.5	3.0	8	(4)	4.4	6.6	1.8	3.67	14.5
24	2.6	5.0	13	(12)	3.7	7.4	1.1	3.41	9.0
25	1.1	5.0	14	(10)	2.3	5.2	-0.1	7.52	0.5
26	0.0	0.5	15 16	(1)	1.5	3.5	-0.8	3.21	0.0
27	0.2	1.0	13 16	(2)	2.8	5.1	-0.8	1.66	0.5
28	1.5	2.5	13	(13)	-1.1	0.4	-2.9	4.19	5.5
29	1.0	3.5	15	(6)	-1.4	-0.2	-2.7	7.70	4.0
30	0.3	1.5	13	(4)	-0.3	1.7	-3.4	4.26	1.5
TOTL								128.62	145.0
MEAN	0.7	2.4			3.1	6.0	0.3	5.14	
MAX.	2.6	5.0			8.5	11.2	5.8	9.97	
MIN.	0.0	0.5			-1.4	-0.2	-4.2	1.01	
DN	25	25			25	25	25	25	25

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
6	0.5	2.0	1 16	(4)	5.2	9.1	3.1	8.16	0.0
7	0.7	3.0	15	(5)	2.6	7.0	-1.0	3.72	8.5
8	0.9	3.0	14	(10)	-1.1	0.7	-4.2	3.06	6.5
9	0.1	0.5	10	(2)	1.2	4.1	-0.1	10.20	0.5
10	0.4	1.5	16	(3)	2.7	6.6	1.1	6.09	15.5
11	0.7	3.0	14	(4)	3.1	4.3	2.1	2.88	9.5
12	0.3	2.0	5	(3)	3.4	7.7	0.0	5.05	9.0
13	0.3	1.5	15	(5)	5.2	7.9	2.6	3.52	8.0
14	0.6	2.5	13 14	(3)	3.9	9.7	0.0	8.34	0.5
15	0.4	1.0	16	(3)	6.8	8.7	3.0	1.74	24.0
16	1.3	3.0	13	(7)	3.9	8.9	0.4	5.28	1.5
17	0.8	3.5	14	(4)	2.1	6.6	0.2	8.92	1.5
18	0.3	1.5	12	(3)	2.6	5.1	1.4	4.36	2.5
19	0.3	1.0	1 9	(2)	7.2	10.7	4.6	7.43	3.0
20	0.4	2.5	16	(3)	7.9	11.2	3.7	1.71	17.0
21	0.9	3.0	13	(7)	3.6	6.6	1.2	3.67	1.5
22	1.0	3.0	14	(6)	3.1	5.6	1.8	8.04	0.5
23	1.7	5.0	13	(7)	5.7	7.4	4.1	3.76	18.5
24	2.1	5.0	14	(15)	2.2	4.4	1.0	3.79	5.5
25	0.4	2.0	14	(4)	1.3	5.2	-0.8	6.89	0.0
26	0.0	0.5	16	(1)	2.5	3.5	1.1	3.20	0.5
27	0.6	2.5	13	(7)	2.0	5.1	-0.9	1.64	1.5
28	1.6	3.5	13	(11)	-2.0	-0.4	-2.9	4.62	6.0
29	0.5	2.0	16	(4)	-0.6	1.0	-1.3	7.40	2.0
30	0.2	1.5	13	(3)	-1.0	1.7	-3.4	4.09	3.5
TOTL								127.56	147.0
MEAN	0.7	2.4			2.9	5.9	0.7	5.10	
MAX.	2.1	5.0			7.9	11.2	4.6	10.20	
MIN.	0.0	0.5			-2.0	-0.4	-4.2	1.64	
DN	25	25			25	25	25	25	25

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

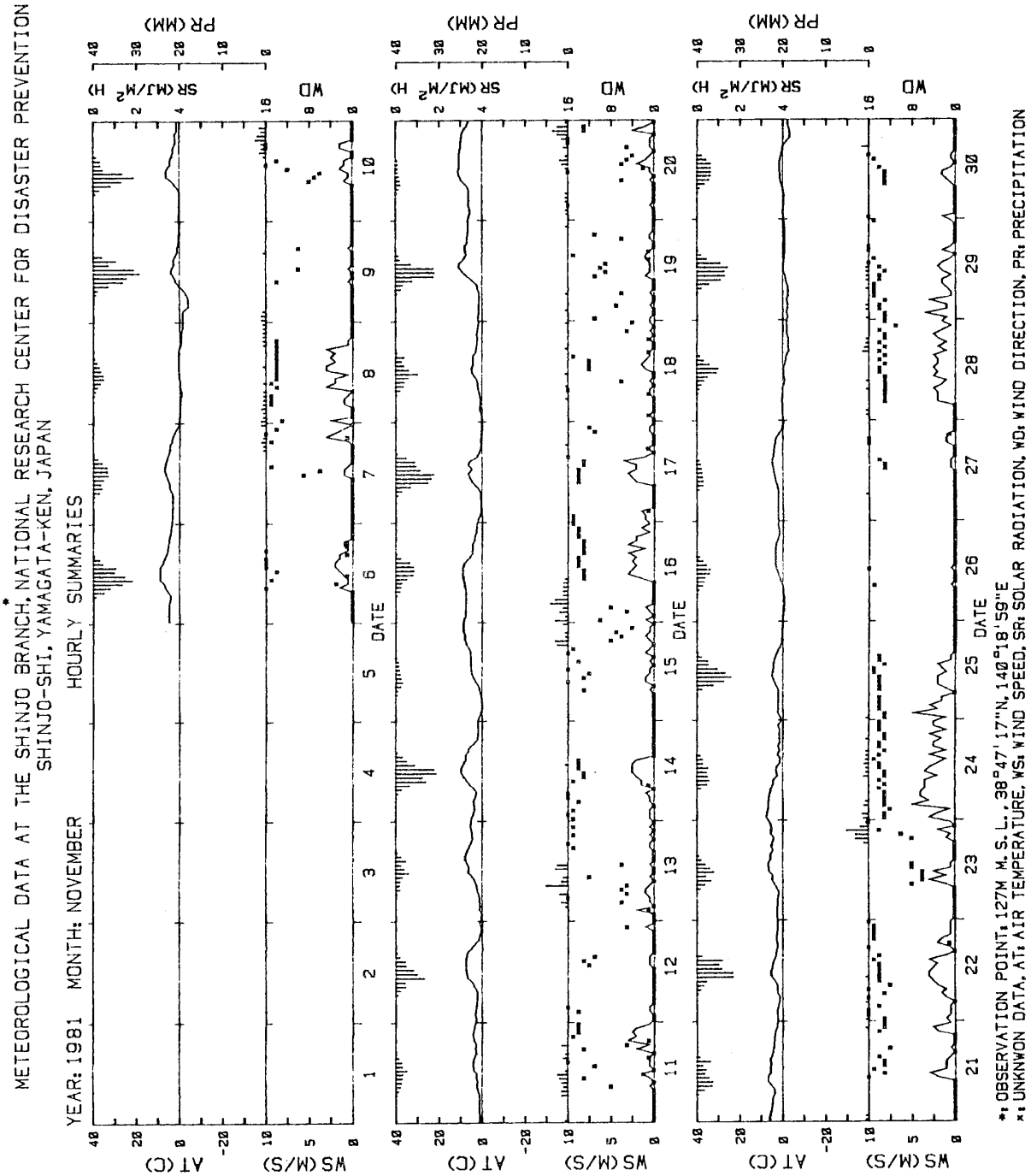

図 4.37　気象データの時間的変化

表 4.38　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

DECEMBER 1981

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	2.0	9	(4)	-1.2	1.1	-2.6	1.28	13.0
2	0.6	2.5	14	(6)	-0.6	1.2	-2.4	1.53	12.5
3	0.9	3.0	13 14	(4)	-0.7	1.5	-2.7	X	1.5
4	0.2	1.5	13 14	(2)	0.5	2.9	-2.7	3.46	8.5
5	0.5	3.0	15 16	(4)	1.7	5.4	0.3	2.95	5.0
6	0.1	1.0	16	(2)	0.5	4.1	-2.7	4.38	2.0
7	0.2	1.5	15	(2)	X	X	X	X	3.5
8	0.4	1.5	1	(6)	0.9	1.8	0.3	3.45	7.0
9	0.4	3.0	13	(4)	0.7	2.3	-0.1	2.34	16.5
10	1.0	3.0	14	(8)	X	X	X	X	X
11	0.1	0.5	1	(2)	-0.2	5.7	-3.6	9.00	X
12	0.4	2.5	4 16	(2)	0.6	3.5	-2.7	2.87	X
13	3.5	5.0	13	(18)	-1.0	1.4	-3.6	3.84	X
14	2.1	4.5	13	(10)	X	X	X	X	X
15	0.8	3.5	13 14 15	(4)	-1.2	1.6	-3.5	6.99	19.0
16	0.0	0.5	12	(1)	X	X	X	6.57	15.0
17	X	X	X	(0)	X	X	X	X	X
18	1.9	3.5	14	(11)	3.8	4.8	2.9	2.43	0.0
19	0.1	1.0	12 14	(2)	1.3	3.7	-1.9	5.15	1.0
20	2.0	7.5	13 14	(5)	1.6	3.3	0.2	3.04	18.5
21	1.2	3.0	13	(8)	3.8	5.5	1.2	3.72	0.0
22	0.1	0.5	14	(2)	1.9	5.5	-0.6	4.53	0.5
23	0.9	3.5	4 6 7	(2)	4.5	7.3	2.1	3.07	6.0
24	2.5	5.0	14	(14)	-1.6	2.1	-3.1	3.98	6.5
25	0.4	2.5	14	(4)	-0.2	3.7	-4.0	8.29	0.0
26	0.4	2.0	13	(4)	1.1	3.5	-3.1	3.32	12.5
27	0.4	2.0	14	(3)	2.4	4.5	1.0	3.33	10.5
28	0.1	0.5	16	(2)	3.5	9.9	0.4	7.73	0.0
29	0.4	2.5	12 13	(2)	2.8	6.5	-1.6	5.72	10.5
30	1.1	3.0	14	(8)	1.9	3.3	-2.0	3.15	0.5
31	0.0	1.0	16	(1)	-1.9	-0.3	-4.0	2.28	4.5
TOTL								108.40	174.5
MEAN	0.8	2.5			0.9	3.7	-1.5	4.17	
MAX.	3.5	7.5			4.5	9.9	2.9	9.00	
MIN.	0.0	0.5			-1.9	-0.3	-4.0	1.28	
DN	30	30			26	26	26	26	25

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	2.0	9	(4)	-0.4	1.1	-1.6	1.25	14.5
2	1.1	3.0	13 14	(7)	-1.5	1.2	-2.7	1.50	9.5
3	0.4	3.0	14	(5)	-0.4	1.5	-2.7	X	1.0
4	0.2	1.5	13	(2)	1.2	2.9	0.3	3.24	8.5
5	0.6	3.0	16	(5)	1.0	5.4	-2.7	3.02	5.0
6	0.1	1.0	1 12	(1)	X	X	X	X	2.0
7	0.3	1.5	13 15	(2)	0.5	1.4	-0.4	3.38	9.5
8	0.3	1.5	1	(6)	0.8	1.8	0.1	3.43	5.5
9	0.8	3.0	14	(7)	X	X	X	X	X
10	0.6	3.0	14	(5)	0.1	3.5	-3.6	6.46	X
11	0.1	1.0	1	(2)	-0.1	5.7	-3.2	8.67	X
12	1.6	5.0	13	(7)	1.1	3.5	-1.4	2.78	X
13	3.2	5.0	13	(19)	-2.5	1.1	-4.4	3.91	X
14	1.4	3.5	12	(5)	X	X	X	X	X
15	0.5	3.5	13	(3)	-0.1	1.6	-0.9	6.98	25.5
16	0.0	0.5	12	(1)	X	X	X	X	8.0
17	X	X	X	(0)	X	X	X	X	X
18	1.2	3.5	14	(8)	2.6	4.8	-1.9	2.93	0.0
19	0.4	3.5	12	(3)	1.6	3.7	0.2	4.71	14.0
20	2.5	7.5	13	(9)	2.5	3.7	1.0	2.95	5.5
21	0.5	2.5	13 14	(3)	2.8	5.5	-0.6	4.12	0.0
22	0.3	1.5	4	(3)	2.8	5.5	0.8	4.33	1.0
23	1.4	3.5	14	(7)	3.2	7.3	-1.9	3.08	10.0
24	2.2	5.0	14	(11)	-1.8	0.1	-3.1	4.11	2.0
25	0.4	2.0	13	(4)	-0.0	3.7	-4.0	7.94	11.0
26	0.3	2.0	5 14	(2)	1.8	3.5	1.0	3.33	8.0
27	0.2	1.0	2 3	(1)	2.4	4.5	0.7	3.55	4.0
28	0.1	0.5	16	(2)	2.9	9.9	-1.6	7.74	0.0
29	1.2	3.0	13 14	(4)	3.7	6.5	1.6	5.64	11.0
30	0.3	2.0	14	(4)	-0.4	2.9	-4.0	3.04	0.0
31	0.0	1.0	16	(1)	-0.9	-0.1	-2.1	2.39	6.5
TOTL								104.48	162.0
MEAN	0.8	2.6			0.9	3.5	-1.4	4.18	
MAX.	3.2	7.5			3.7	9.9	1.6	8.67	
MIN.	0.0	0.5			-2.5	-0.1	-4.4	1.25	
DN	30	30			26	26	26	25	24

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

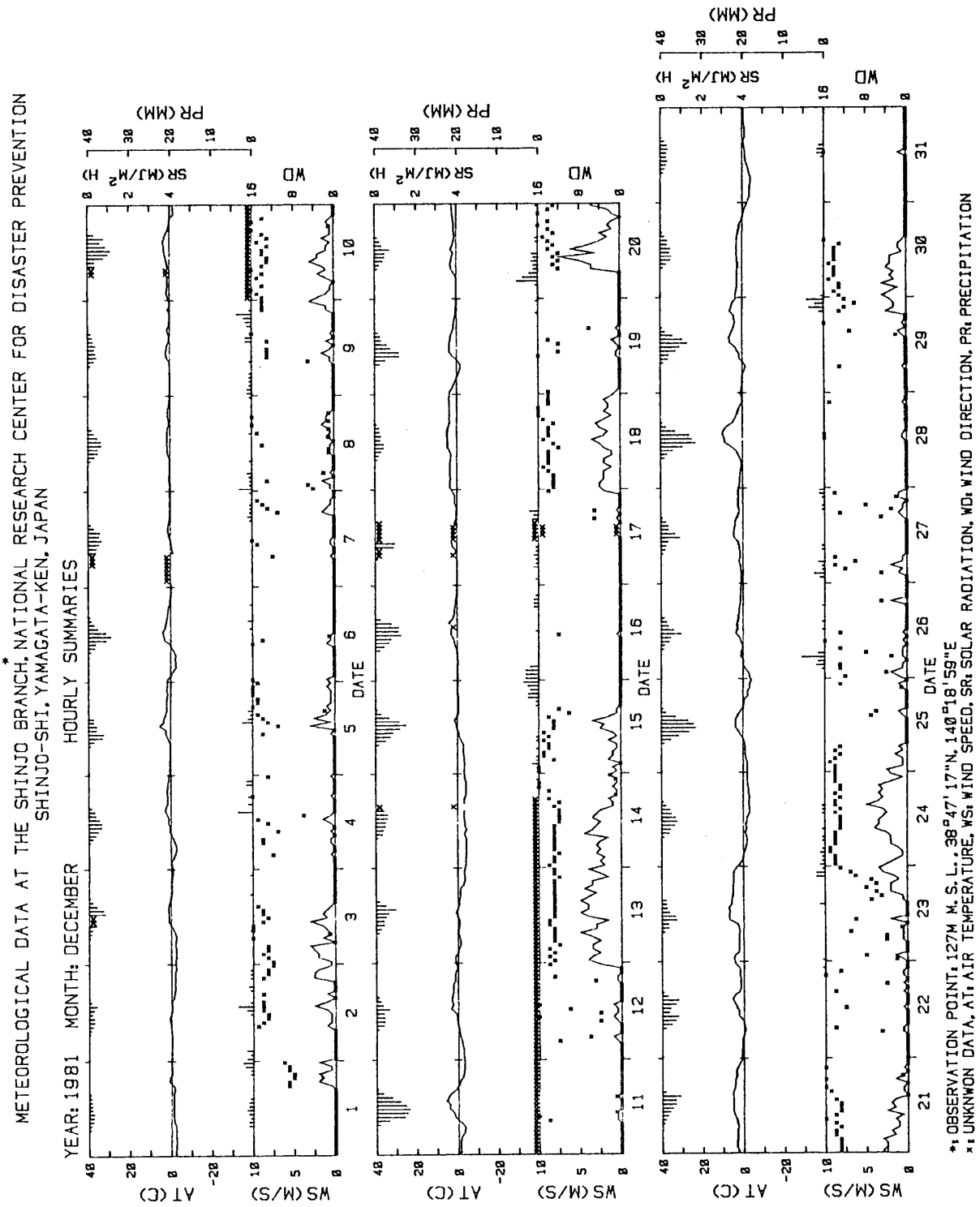

図 4.38　気象データの時間的変化

表 4.39 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

JANUARY 1982

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	2.0	13 14	(3)	0.6	3.1	-1.3	4.15	7.0
2	0.4	3.0	13	(4)	-1.7	1.1	-3.4	5.16	1.0
3	0.1	0.5	6	(2)	-3.3	3.5	-8.1	8.63	0.0
4	0.1	1.5	1 5	(1)	-2.9	2.6	-10.0	8.34	0.0
5	0.6	2.5	14	(6)	1.8	4.6	-0.4	2.34	12.5
6	0.5	2.5	16	(5)	0.4	2.5	-2.2	5.83	0.0
7	1.2	4.0	13	(9)	-3.6	-0.1	-9.9	4.08	9.5
8	0.1	1.0	8 10 16	(1)	-5.0	-0.6	-10.1	6.61	0.0
9	0.0	0.5	11	(1)	-3.9	-0.3	-11.3	3.18	15.0
10	0.7	2.0	13 14	(6)	-0.7	1.0	-3.1	4.51	1.0
11	0.1	0.5	1 16	(2)	-4.9	1.2	-12.3	9.50	0.0
12	0.2	1.0	1	(2)	-2.0	0.6	-8.5	2.75	4.0
13	X	X	X	(0)	X	X	X	X	X
14	X	X	X	(0)	-4.0	-2.2	-5.5	4.60	31.0
15	0.0	0.1		(0)	-3.7	-1.9	-5.5	3.80	23.0
16	0.1	1.0	11	(2)	-6.5	-4.1	-10.4	6.95	0.0
17	0.2	1.4	16	(3)	-6.6	-2.7	-13.8	4.70	7.5
18	0.4	1.4	1 13	(3)	-2.4	1.1	-6.4	9.15	2.5
19	2.1	5.8	13	(6)	-2.4	0.1	-5.4	3.55	3.5
20	2.9	5.0	13	(13)	-2.8	0.3	-5.5	3.95	7.5
21	1.9	4.0	13	(9)	2.5	4.2	0.0	3.30	14.0
22	1.0	3.4	15	(4)	1.5	3.7	-0.4	8.80	0.0
23	1.6	4.4	15	(5)	-0.8	1.4	-2.9	5.30	10.5
24	1.6	4.0	13	(7)	0.2	2.9	-3.7	5.50	1.0
25	0.9	2.7	16	(7)	-0.8	1.9	-3.1	6.15	1.0
26	0.4	1.9	1	(3)	-0.3	1.8	-1.7	9.20	0.0
27	0.4	2.0	1 9	(2)	-0.4	2.7	-5.8	8.00	1.0
28	0.9	2.7	13	(4)	-1.6	0.1	-3.4	7.45	5.5
29	3.0	6.0	11 12	(6)	-2.3	-1.0	-3.6	4.85	11.5
30	1.5	4.1	16	(5)	-4.0	-2.5	-5.3	9.40	8.0
31	0.4	2.0	6	(4)	-1.9	-0.3	-4.1	6.90	19.5
TOTL								176.63	197.0
MEAN	0.8	2.5			-2.0	0.8	-5.6	5.89	
MAX.	3.0	6.0			2.5	4.6	0.0	9.50	
MIN.	0.0	0.1			-6.6	-4.1	-13.8	2.34	
DN	29	29			30	30	30	30	30

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	2.0	14	(4)	-0.3	3.1	-3.4	4.12	5.0
2	0.3	3.0	13	(5)	-2.4	1.1	-7.4	5.55	1.0
3	0.0	0.5	6	(2)	-4.6	3.5	-10.0	8.58	0.0
4	0.1	1.5	1 5	(1)	0.2	2.6	-3.1	7.85	12.5
5	1.0	2.5	14	(7)	1.9	4.6	0.0	3.28	0.0
6	0.4	4.0	3 10	(2)	-0.3	2.5	-2.4	5.25	5.5
7	0.9	4.0	13	(8)	-5.0	-0.1	-9.9	4.10	4.0
8	0.1	1.0	8 10	(1)	-5.7	-0.6	-11.3	6.21	1.5
9	0.3	2.0	13	(5)	-1.2	0.4	-4.2	3.34	14.5
10	0.4	2.0	14 16	(4)	-3.8	1.0	-12.3	4.74	0.0
11	0.2	1.0	1	(3)	-3.8	1.2	-8.5	9.35	0.0
12	0.1	1.0	1 3	(1)	-0.2	0.6	-2.1	2.80	8.0
13	X	X	X	(0)	X	X	X	X	X
14	0.1	1.2	13	(2)	-3.5	-2.2	-4.4	4.35	42.5
15	0.0	0.1		(0)	-5.1	-1.9	-9.7	4.15	11.5
16	0.1	1.0	11	(2)	-7.8	-4.1	-13.8	6.75	1.0
17	0.2	1.4	16	(3)	-4.2	-2.7	-6.4	5.30	8.0
18	0.4	1.4	1	(4)	-1.2	1.1	-4.0	8.50	2.5
19	3.2	5.8	13	(12)	-3.8	0.1	-5.5	3.45	5.0
20	2.2	5.0	13	(11)	-0.5	2.3	-3.6	4.20	11.0
21	2.0	4.0	15	(7)	2.5	4.2	-0.3	3.40	7.5
22	0.5	3.3	12	(3)	0.9	3.7	-0.8	8.50	5.0
23	2.4	4.4	15	(10)	-1.0	1.4	-2.9	5.50	6.0
24	1.0	4.0	13	(5)	-0.4	2.9	-3.7	5.55	1.0
25	0.9	2.7	16	(8)	-0.2	1.9	-1.7	6.30	0.5
26	0.3	1.9	1	(3)	-0.9	1.8	-5.8	9.30	0.0
27	0.4	2.0	9	(2)	0.1	2.7	-2.8	7.85	1.5
28	1.6	4.0	13	(6)	-2.0	0.1	-3.6	7.25	11.5
29	2.8	6.0	12	(6)	-3.1	-1.0	-5.3	4.90	8.5
30	1.0	3.0	16	(4)	-3.6	-2.5	-5.0	9.45	13.0
31	0.3	1.1	6	(4)	-0.9	-0.3	-1.7	6.90	17.0
TOTL								176.77	205.0
MEAN	0.8	2.6			-2.0	0.9	-5.2	5.89	
MAX.	3.2	6.0			2.5	4.6	0.0	9.45	
MIN.	0.0	0.1			-7.8	-4.1	-13.8	2.80	
DN	30	30			30	30	30	30	30

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

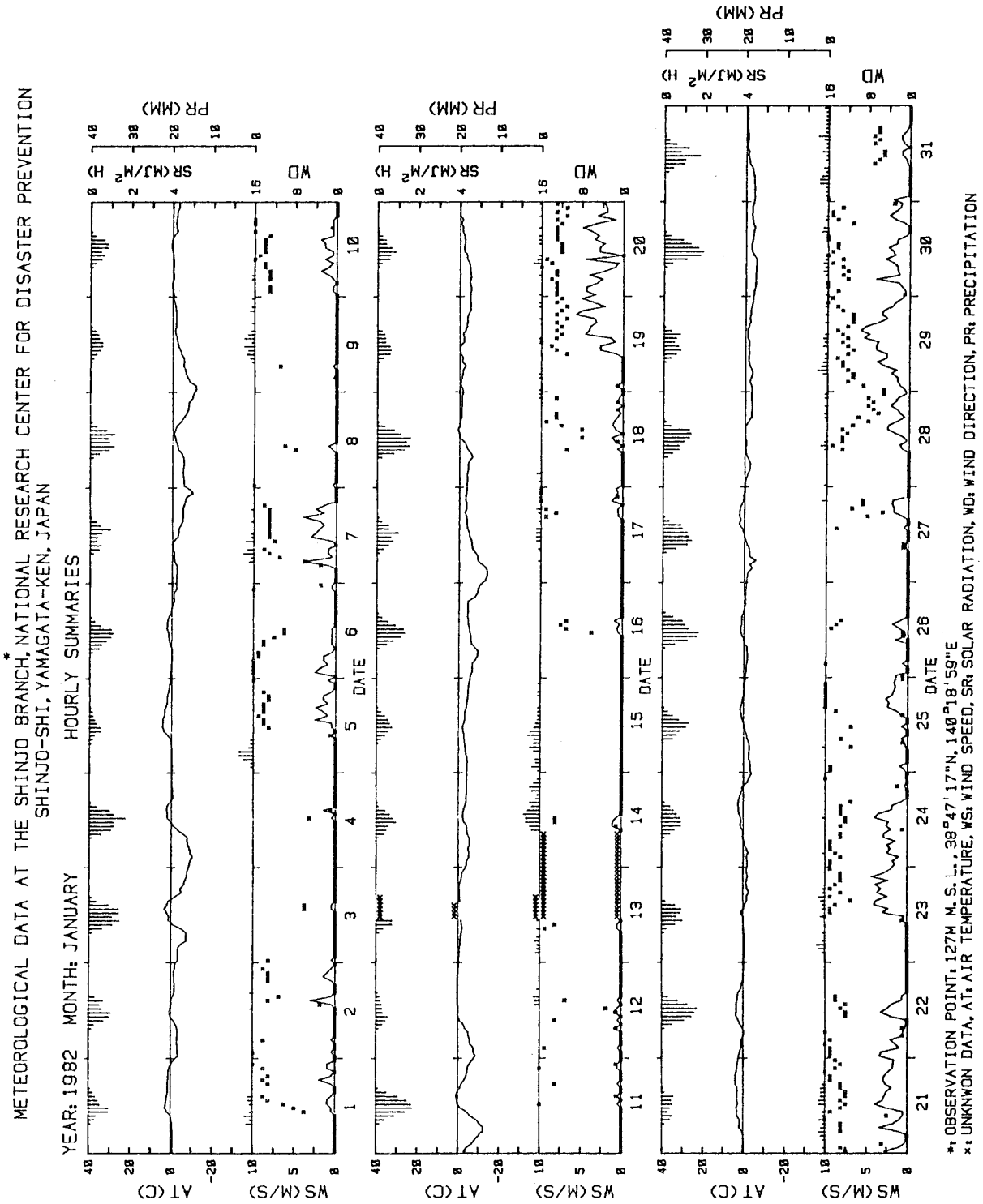

図 4.39　気象データの時間的変化

表 4.40　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

FEBRUARY 1982

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.2	3.0	14 15	(4)	-2.3	-0.5	-5.1	6.90	8.5
2	1.3	3.7	15	(5)	-3.7	-1.0	-5.4	9.35	4.5
3	0.8	3.4	5	(4)	0.1	1.9	-2.5	6.45	9.5
4	2.0	3.4	14	(9)	-1.7	0.5	-4.9	10.00	0.0
5	1.0	2.6	13	(7)	-4.7	-2.4	-6.5	8.10	0.5
6	0.2	4.2	13	(2)	-4.4	-1.9	-6.6	8.75	7.0
7	1.9	4.7	15	(10)	-5.3	-3.9	-6.6	6.60	5.0
8	1.5	3.6	14 15	(6)	-5.5	-4.6	-6.3	X	13.0
9	1.3	3.5	12 15	(4)	-4.3	-2.7	-6.0	8.45	7.0
10	1.0	2.6	13	(7)	-3.9	-2.8	-5.7	5.35	13.5
11	1.1	3.3	13	(5)	-1.2	0.9	-3.1	9.35	8.0
12	0.1	1.3	1 11	(2)	-2.1	2.0	-8.5	9.65	1.0
13	0.1	0.6	8 10 12	(1)	-5.9	0.0	-12.7	11.30	1.0
14	1.1	2.7	13	(4)	-1.2	1.0	-3.0	8.75	8.0
15	1.1	3.7	5	(5)	-2.3	-1.2	-3.9	5.75	11.5
16	0.2	1.1	1	(4)	-1.3	1.1	-4.8	7.05	8.0
17	0.1	0.8	16	(2)	-5.6	0.3	-12.0	9.95	0.0
18	0.6	2.8	14	(3)	-0.9	2.6	-6.4	8.50	1.0
19	0.2	1.2	6 13	(2)	-0.2	3.9	-5.3	11.05	0.0
20	0.2	1.4	16	(3)	1.9	4.1	0.5	5.20	6.0
21	0.4	1.2	13	(5)	3.2	5.6	-0.1	11.05	0.0
22	1.5	3.6	13	(7)	0.8	3.2	-1.6	9.55	0.0
23	1.2	3.6	13	(5)	-0.5	1.8	-2.8	11.75	0.5
24	0.6	2.9	12	(3)	-1.1	2.0	-3.0	12.05	1.0
25	1.9	4.4	13	(6)	-2.8	-0.2	-4.8	10.75	3.5
26	2.0	4.3	13	(8)	-3.7	-2.4	-6.1	6.55	9.5
27	1.4	3.0	13	(4)	0.7	4.0	-2.6	10.10	0.5
28	0.7	3.2	1 8 12	(2)	1.9	8.0	-2.1	13.55	7.0
TOTL								241.85	135.0
MEAN	1.0	2.8			-2.0	0.7	-4.9	8.96	
MAX.	2.0	4.7			3.2	8.0	0.5	13.55	
MIN.	0.1	0.6			-5.9	-4.6	-12.7	5.20	
DN	28	28			28	28	28	27	28

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.7	3.0	14 15	(7)	-3.7	-1.1	-5.4	6.90	4.0
2	0.9	3.7	1 4	(2)	-2.4	0.2	-4.4	9.40	7.0
3	1.4	3.4	14	(5)	0.6	1.9	-1.1	7.15	5.5
4	1.6	3.4	1	(5)	-3.5	0.0	-5.4	9.40	0.0
5	0.6	2.6	13	(6)	-5.2	-2.4	-6.6	8.25	1.0
6	1.0	4.7	15	(5)	-3.8	-1.9	-5.6	8.55	8.0
7	1.6	4.5	15	(7)	-5.7	-4.6	-6.6	6.50	9.5
8	1.3	3.1	15	(7)	-5.3	-4.5	-6.0	X	9.5
9	1.0	3.5	1 12	(3)	-4.2	-2.7	-5.7	8.20	9.0
10	1.4	2.6	13	(11)	-3.0	-1.9	-3.7	5.20	16.5
11	0.7	3.3	16	(3)	-1.1	0.9	-2.6	9.65	1.5
12	0.2	1.3	1 11	(2)	-5.3	2.0	-12.7	9.75	0.0
13	0.4	1.9	8	(3)	-2.6	0.0	-6.2	10.90	6.5
14	1.3	3.7	13	(7)	-1.6	1.0	-3.9	9.10	7.0
15	0.5	2.5	5	(4)	-1.8	-1.2	-2.5	5.70	14.5
16	0.2	1.1	1	(4)	-4.2	1.1	-12.0	7.05	0.5
17	0.2	0.8	16	(2)	-3.6	0.3	-8.3	10.35	0.0
18	0.6	2.8	12 13	(2)	-0.7	2.6	-5.3	8.20	1.0
19	0.2	1.2	6 13	(2)	1.5	3.9	-1.2	10.55	3.0
20	0.4	1.4	13	(4)	2.9	4.1	1.5	5.65	3.0
21	0.3	1.6	13 15	(2)	1.9	5.6	-1.6	10.85	0.0
22	1.8	3.6	13	(7)	0.3	3.2	-2.8	10.45	0.5
23	0.9	3.6	13	(4)	-0.9	1.8	-3.0	11.20	0.5
24	1.0	2.9	16	(4)	-1.3	2.0	-3.5	12.45	1.0
25	2.2	4.4	13	(11)	-3.3	-0.2	-6.1	10.05	7.0
26	2.1	4.1	14 16	(6)	-2.2	1.7	-4.2	6.80	5.5
27	0.7	2.5	13	(3)	0.5	4.0	-2.6	11.00	5.5
28	0.5	3.2	13	(2)	2.1	8.0	-0.6	12.30	2.0
TOTL								241.55	129.0
MEAN	1.0	2.9			-2.0	0.9	-4.6	8.95	
MAX.	2.2	4.7			2.9	8.0	1.5	12.45	
MIN.	0.2	0.8			-5.7	-4.6	-12.7	5.20	
DN	28	28			28	28	28	27	28

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

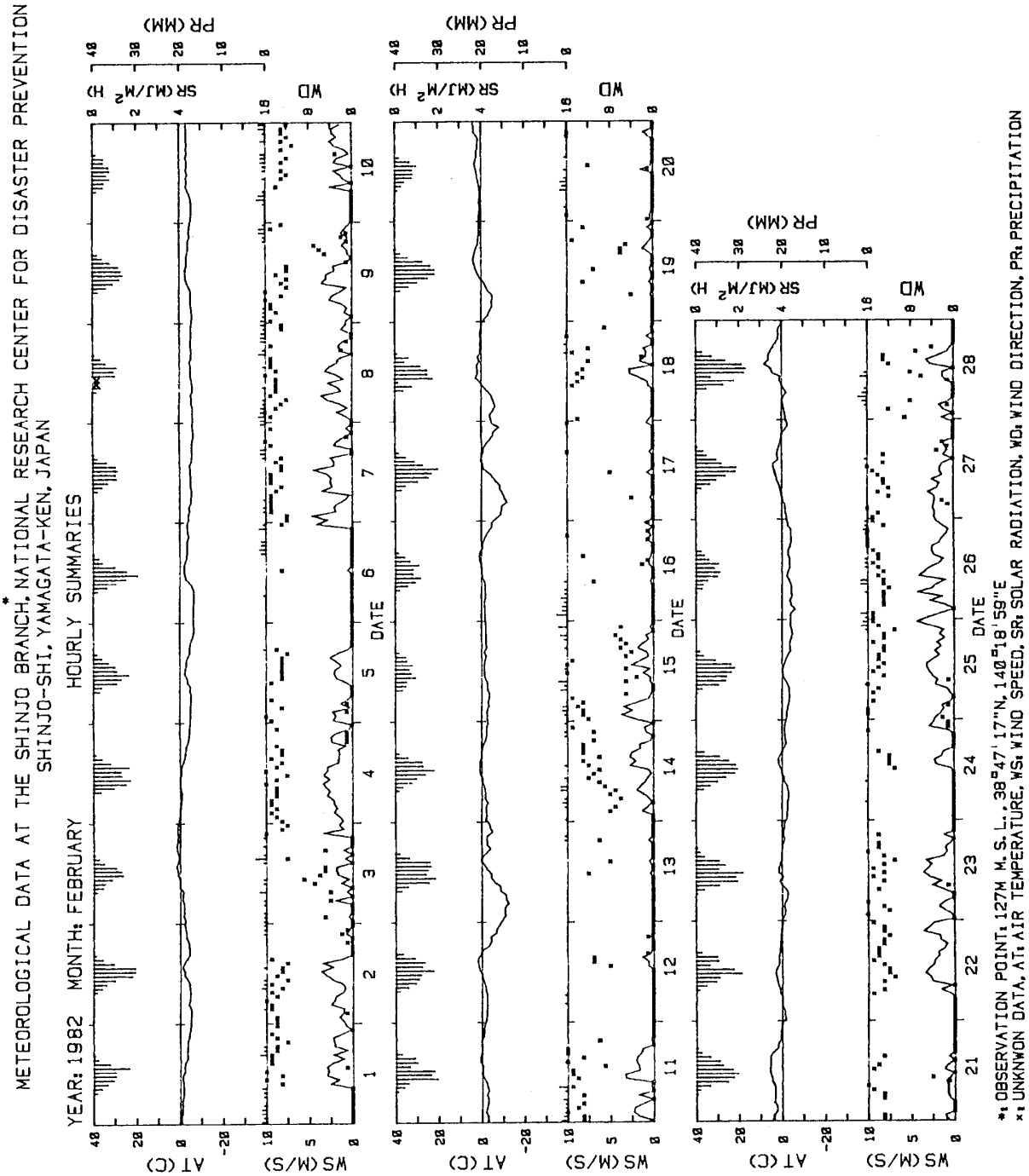

図 4.40　気象データの時間的変化

表 4.41 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

MARCH 1982

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.0	0.0		(0)	0.2	0.8	-0.6	3.70	6.5
2	0.7	3.4	14	(4)	-0.8	1.9	-4.8	9.60	2.0
3	0.8	3.3	13 15	(3)	0.2	2.6	-1.3	12.65	4.5
4	0.4	1.9	1 2	6(1)	2.5	5.4	-2.7	9.40	0.0
5	0.8	4.3	1 2	11(2)	2.9	6.7	1.0	2.90	18.5
6	2.1	4.1	14	(8)	1.0	3.8	-2.3	11.50	0.5
7	1.5	5.3	13	(7)	-2.4	-0.5	-3.4	13.50	9.0
8	0.4	1.7	8	(3)	-1.0	2.1	-3.4	15.05	2.5
9	0.4	1.9	16	(3)	-0.4	2.3	-4.1	9.60	14.0
10	0.4	2.2	8 9	(2)	0.3	7.9	-8.7	18.70	2.5
11	0.5	2.6	13	(6)	4.4	8.4	-0.3	16.35	0.0
12	0.1	0.6	1 5	6(1)	2.1	7.9	-2.8	15.75	0.0
13	0.5	2.3	12 13	(2)	2.2	8.4	-3.1	12.35	0.0
14	0.2	1.3	15	(3)	0.2	7.3	-6.3	19.45	0.0
15	0.4	2.0	15	(3)	1.7	8.5	-3.4	7.95	2.5
16	1.2	3.7	13	(5)	6.0	9.3	0.4	5.20	12.5
17	0.9	2.6	15	(5)	2.3	4.5	0.1	13.45	0.0
18	1.1	4.8	1 15	(4)	1.1	4.2	-0.7	12.70	4.0
19	1.2	3.1	13	(6)	1.9	6.1	-2.8	19.00	1.5
20	1.0	3.4	6 7	(3)	0.4	4.4	-5.0	5.70	4.5
21	0.8	3.8	13	(6)	3.1	4.4	1.6	3.40	17.0
22	0.9	1.8	1	(7)	4.0	7.6	0.4	11.75	2.5
23	0.4	1.9	16	(4)	3.0	7.3	-2.2	13.80	1.5
24	2.8	4.7	13	(8)	2.4	6.8	-2.1	4.75	0.5
25	2.5	5.0	13	(8)	0.8	5.1	-1.9	16.50	8.0
26	X	X	X	(0)	X	X	X	X	9.0
27	0.7	3.0	13	(3)	-0.7	2.2	-3.3	14.45	2.0
28	0.9	3.8	13	(4)	0.6	5.5	-4.0	18.10	0.0
29	0.6	3.0	4	(3)	2.0	8.1	-4.2	20.50	0.0
30	0.1	0.9	5	(2)	2.7	12.3	-4.6	19.10	0.0
31	0.5	3.2	7 12	13(2)	2.9	5.1	0.3	3.80	5.5
TOTL								360.65	131.0
MEAN	0.8	2.9			1.5	5.5	-2.5	12.02	
MAX.	2.8	5.3			6.0	12.3	1.6	20.50	
MIN.	0.0	0.0			-2.4	-0.5	-8.7	2.90	
DN	30	30			30	30	30	30	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.0	0.0		(0)	-0.8	0.8	-4.8	4.95	6.5
2	0.7	3.4	14	(4)	-0.1	1.9	-1.8	8.80	6.0
3	0.9	3.3	15	(4)	0.4	2.9	-2.7	13.70	0.5
4	0.3	1.9	1 11	(2)	3.1	5.4	1.0	7.85	1.5
5	1.5	4.3	14	(6)	3.2	6.7	1.1	3.35	17.5
6	1.7	4.1	13	(7)	-1.0	2.0	-3.4	11.85	4.5
7	1.2	5.3	13	(4)	-2.4	-0.5	-3.4	13.85	6.0
8	0.4	1.7	6 8	(3)	-0.1	2.1	-2.6	15.20	7.0
9	0.3	1.9	16	(3)	-2.8	2.3	-8.7	10.25	8.0
10	0.5	2.2	16	(3)	4.0	7.9	-0.8	18.60	2.5
11	0.4	2.6	13	(5)	2.7	8.4	-2.8	16.25	0.0
12	0.1	0.6	5 6	(1)	2.7	7.9	-0.9	14.70	0.0
13	0.5	2.3	12 13	(2)	0.5	8.4	-6.3	13.85	0.0
14	0.2	1.3	15	(3)	0.9	7.3	-3.4	18.25	0.0
15	1.0	3.7	13	(3)	5.3	9.3	2.0	6.80	3.0
16	1.2	2.6	14	(5)	3.9	8.1	0.4	6.35	12.0
17	0.5	2.2	12 13	(2)	1.6	4.5	-0.5	13.50	4.0
18	1.5	4.8	13 15	(5)	1.3	4.2	-0.7	14.10	1.5
19	0.8	2.8	13	(4)	0.3	6.1	-5.0	17.20	0.0
20	1.0	3.4	6 7	(3)	2.5	4.4	0.3	5.10	6.5
21	1.1	3.8	13	(6)	3.2	4.9	1.0	5.10	15.0
22	0.7	1.8	1	(8)	3.0	7.6	-2.2	12.35	2.5
23	0.9	3.5	15 16	(4)	4.9	7.3	2.6	11.75	1.5
24	3.3	4.7	13	(11)	0.5	3.3	-2.1	5.10	3.0
25	1.6	5.0	12	(5)	0.3	5.1	-2.4	18.75	10.0
26	X	X	X	(0)	X	X	X	X	6.0
27	0.8	3.0	13	(3)	-1.2	2.2	-4.0	14.65	0.5
28	0.9	3.8	1 13	(4)	1.4	5.5	-4.2	19.05	0.0
29	0.6	3.0	4 14	(2)	1.1	8.1	-4.6	19.95	0.0
30	0.2	1.1	5	(2)	4.5	12.3	0.3	16.95	0.0
31	1.2	3.3	13	(10)	4.1	6.0	3.0	5.25	5.5
TOTL								363.40	131.0
MEAN	0.9	2.9			1.6	5.4	-1.9	12.11	
MAX.	3.3	5.3			5.3	12.3	3.0	19.95	
MIN.	0.0	0.0			-2.8	-0.5	-8.7	3.35	
DN	30	30			30	30	30	30	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

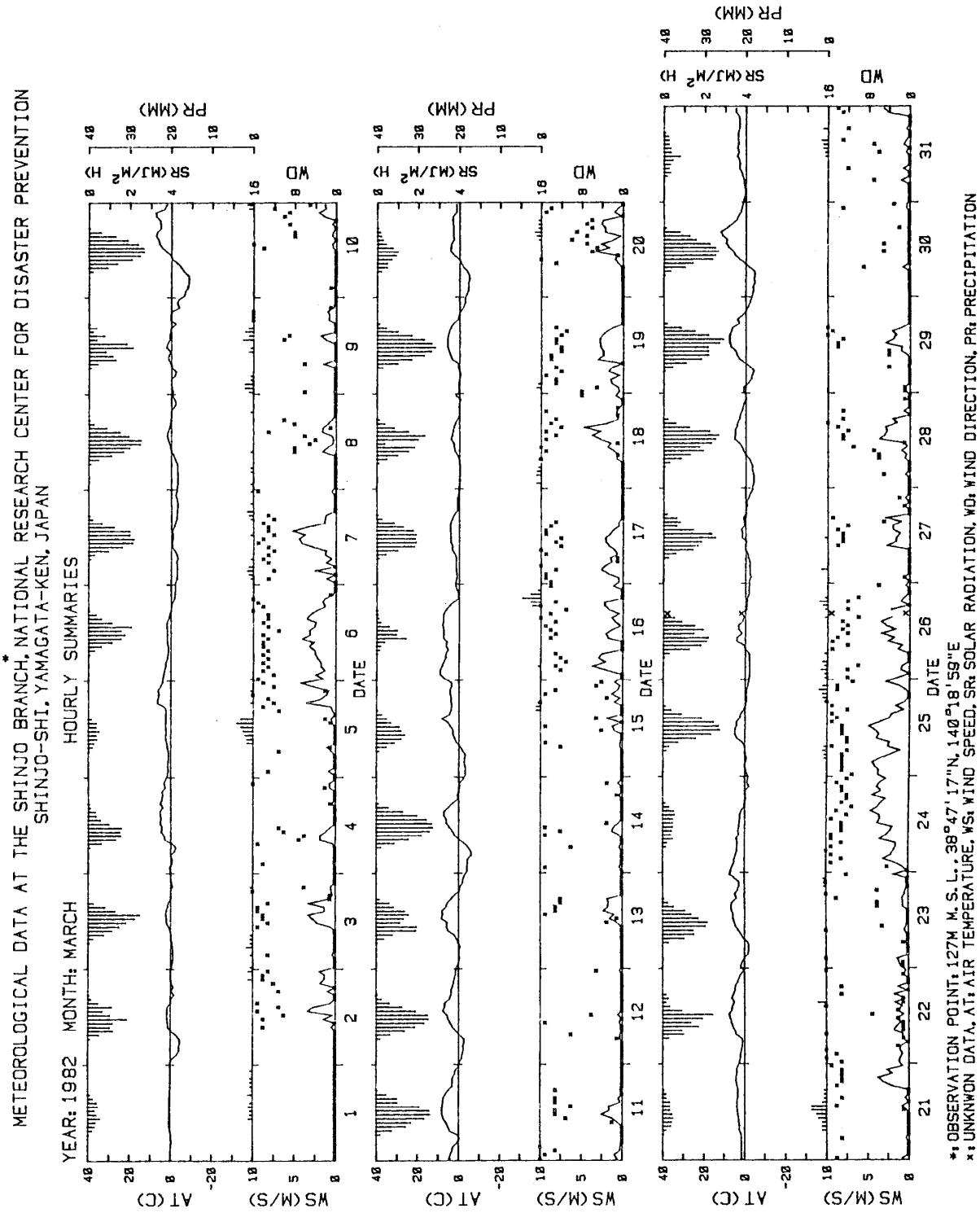

図 4.41 気象データの時間的変化

表 4.42 新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

APRIL 1982

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	2.0	4.3	13	(10)	4.8	8.4	-1.3	19.35	0.0
2	0.2	1.0	1 3 4	(1)	3.2	9.2	-3.1	18.95	0.0
3	1.6	4.2	13	(7)	3.5	6.7	2.1	4.50	8.5
4	1.6	5.2	13	(9)	3.1	5.7	0.8	11.50	0.0
5	1.5	3.9	13	(7)	5.3	9.9	0.0	22.45	0.0
TOTL								76.75	8.5
MEAN	1.4	3.7			4.0	8.0	-0.3	15.35	
MAX.	2.0	5.2			5.3	9.9	2.1	22.45	
MIN.	0.2	1.0			3.1	5.7	-3.1	4.50	
DN	5	5			5	5	5	5	5

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.1	4.3	12	(5)	2.6	8.4	-3.1	20.55	0.0
2	0.3	1.0	16	(3)	4.7	9.2	2.1	16.10	6.5
3	1.7	4.2	13	(9)	3.3	6.7	0.8	6.15	2.0
4	1.8	5.2	13	(8)	3.7	8.0	0.5	13.00	0.0
5	X	X	X	(0)	X	X	X	X	X
TOTL								55.80	8.5
MEAN	1.2	3.7			3.6	8.1	0.1	13.95	
MAX.	1.8	5.2			4.7	9.2	2.1	20.55	
MIN.	0.3	1.0			2.6	6.7	-3.1	6.15	
DN	4	4			4	4	4	4	4

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

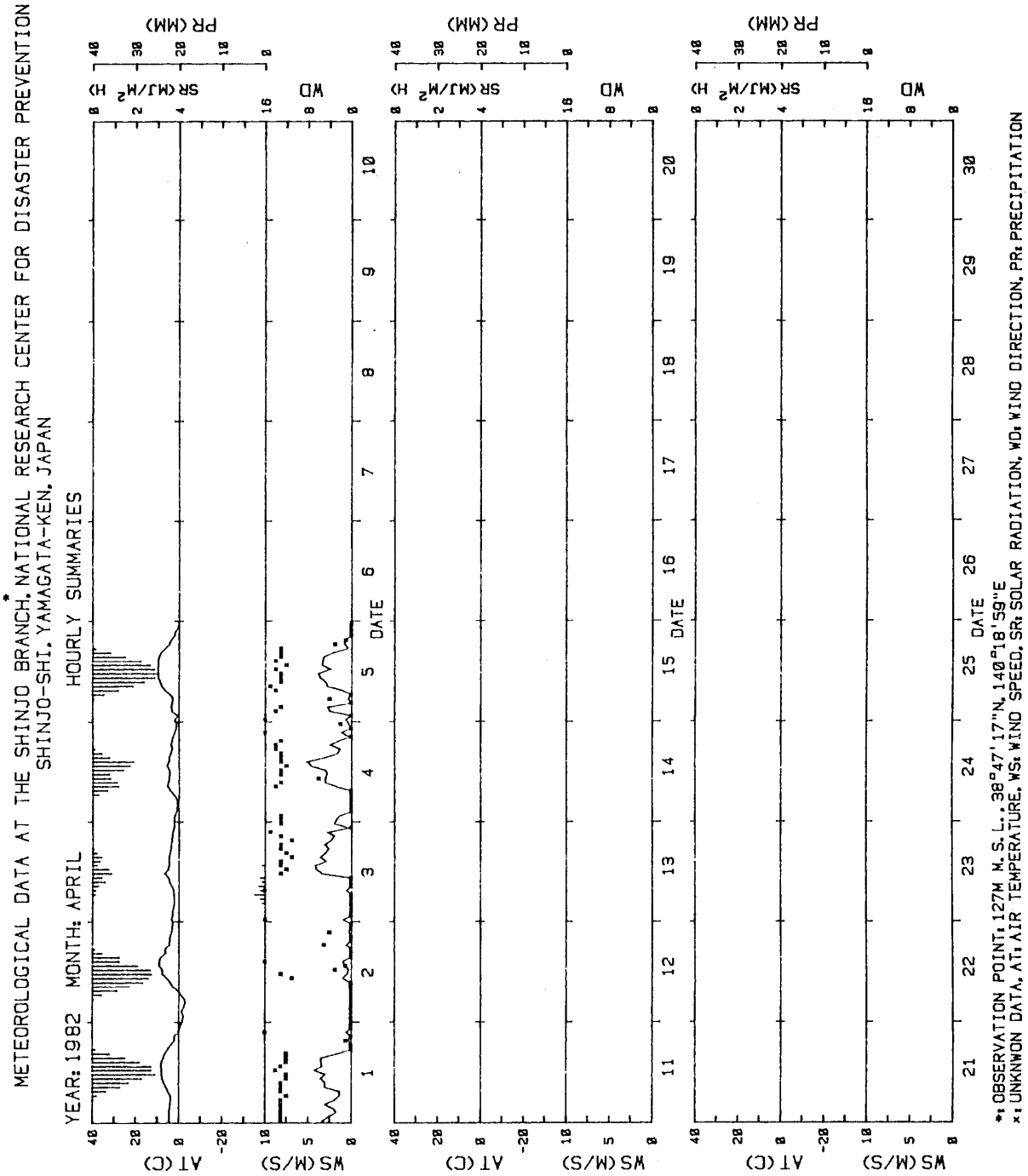

図 4.42　気象データの時間的変化

表 4.43 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

NOVEMBER 1982

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.0	3.8	13	(7)	11.1	15.1	8.8	3.45	5.0
2	2.2	7.1	14	(7)	8.2	11.1	5.7	7.05	0.5
3	0.8	4.2	14	(3)	6.7	13.4	0.1	11.95	0.5
4	0.3	2.3	7	(2)	5.3	15.8	-0.9	9.45	0.0
5	0.8	3.0	15	(4)	7.7	12.7	3.6	3.00	2.0
6	1.0	4.8	5	(4)	5.9	14.6	-1.7	12.40	0.5
7	0.3	2.3	2	(3)	7.9	14.0	3.9	6.05	0.0
8	0.7	2.8	15	(3)	7.2	13.7	1.8	5.25	0.5
9	0.4	1.9	2 16	(2)	5.7	13.3	0.2	8.55	0.0
10	2.1	8.6	6	(5)	8.3	10.9	5.3	1.35	8.5
11	2.5	6.9	8	(5)	11.0	13.7	9.2	1.70	22.0
12	1.2	3.8	6	(4)	9.0	11.1	7.9	2.10	37.5
13	1.5	5.2	16	(6)	10.0	14.0	6.9	6.00	1.0
14	0.7	3.9	13	(3)	8.1	15.8	2.9	9.10	0.0
15	0.1	1.4	5 11 13	(1)	5.7	10.1	1.8	4.50	0.0
16	1.6	5.3	14	(6)	8.5	11.8	4.0	2.05	3.0
17	0.6	3.1	13 16	(3)	5.2	9.0	2.6	2.55	2.0
18	0.8	4.4	15	(4)	7.6	12.3	3.4	1.35	0.5
19	0.5	2.8	4	(4)	7.8	10.7	5.9	1.70	15.5
20	1.7	5.2	13 14	(4)	7.9	11.4	3.7	6.20	4.5
21	0.5	2.9	11	(4)	6.4	12.2	2.6	6.60	0.0
22	1.7	6.2	6	(4)	8.5	14.0	2.9	6.65	3.5
23	2.2	6.8	12	(5)	7.3	10.6	1.4	5.50	6.0
24	3.3	9.3	13	(7)	2.5	7.2	-1.3	1.10	29.5
25	6.3	12.6	13	(11)	0.8	3.1	-2.0	4.85	X
26	3.5	6.7	13	(9)	2.1	3.9	0.7	5.90	X
27	2.0	6.9	15	(5)	1.2	4.3	-0.7	5.05	3.0
28	1.4	4.6	16	(7)	2.0	6.3	-3.2	6.55	0.0
29	0.8	2.9	13	(4)	0.6	4.4	-5.4	7.35	0.0
30	2.8	9.1	13	(7)	9.4	13.9	3.7	2.65	7.0
TOTL								157.95	152.5
MEAN	1.5	5.0			6.5	11.1	2.5	5.26	
MAX.	6.3	12.6			11.1	15.8	9.2	12.40	
MIN.	0.1	1.4			0.6	3.1	-5.4	1.10	
DN	30	30			30	30	30	30	28

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.8	5.4	13 15	(7)	10.6	14.7	6.6	4.90	1.5
2	1.5	5.1	14	(4)	7.0	10.6	2.7	7.10	1.0
3	0.7	3.3	14	(3)	4.6	13.0	-0.9	11.00	0.0
4	0.4	1.9	16	(3)	7.4	15.8	2.4	9.10	0.0
5	0.8	2.6	15	(4)	6.1	12.4	-1.3	4.60	2.5
6	0.9	3.4	1 5	(4)	8.1	14.5	4.3	11.20	0.0
7	0.3	1.8	2	(3)	7.7	14.0	3.7	5.65	0.5
8	0.8	2.7	8 12	(2)	5.6	13.6	0.4	5.75	0.0
9	0.3	1.3	2 9	(2)	7.7	13.2	5.1	7.80	0.0
10	3.7	8.1	6	(5)	9.7	10.6	8.1	1.35	15.0
11	1.4	3.6	11	(4)	10.5	13.1	8.2	1.65	35.0
12	1.1	2.2	14 15	(4)	9.0	10.6	7.8	2.55	19.0
13	1.0	3.9	13	(4)	8.6	13.9	3.5	6.45	0.0
14	0.8	2.9	13	(3)	7.0	15.0	1.8	8.75	0.0
15	0.4	2.8	1 3	(1)	8.0	11.6	4.4	3.90	3.0
16	1.5	3.4	14	(6)	6.8	11.4	4.0	2.10	0.0
17	0.5	2.1	16	(3)	5.3	8.9	2.7	2.60	2.5
18	0.8	3.7	15	(3)	8.2	11.7	6.0	1.30	0.5
19	1.1	3.6	4 13	(3)	8.6	10.5	7.0	2.15	19.5
20	1.1	4.5	11 12	(3)	6.1	10.9	2.9	6.05	0.0
21	0.7	2.6	12 15	(3)	6.6	12.0	3.1	6.85	0.0
22	2.4	5.2	6	(4)	10.6	13.6	8.5	6.10	9.0
23	2.1	6.3	12 13	(4)	5.1	9.5	1.2	5.65	13.0
24	6.1	9.6	13	(9)	0.9	5.8	-1.3	1.40	X
25	4.5	8.6	13	(11)	1.7	3.0	0.8	4.70	X
26	3.0	6.0	13	(8)	1.8	3.4	0.2	6.10	X
27	1.9	5.2	15 16	(5)	1.4	3.3	-0.4	5.20	1.0
28	1.0	4.2	13	(5)	0.1	6.1	-4.6	7.00	0.0
29	1.1	3.0	16	(4)	4.7	12.8	0.0	6.20	3.5
30	2.7	6.1	13	(6)	9.5	13.9	5.4	3.10	3.5
TOTL								158.25	130.0
MEAN	1.5	4.2			6.5	11.1	3.1	5.27	
MAX.	6.1	9.6			10.6	15.8	8.5	11.20	
MIN.	0.3	1.3			0.1	3.0	-4.6	1.30	
DN	30	30			30	30	30	30	27

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

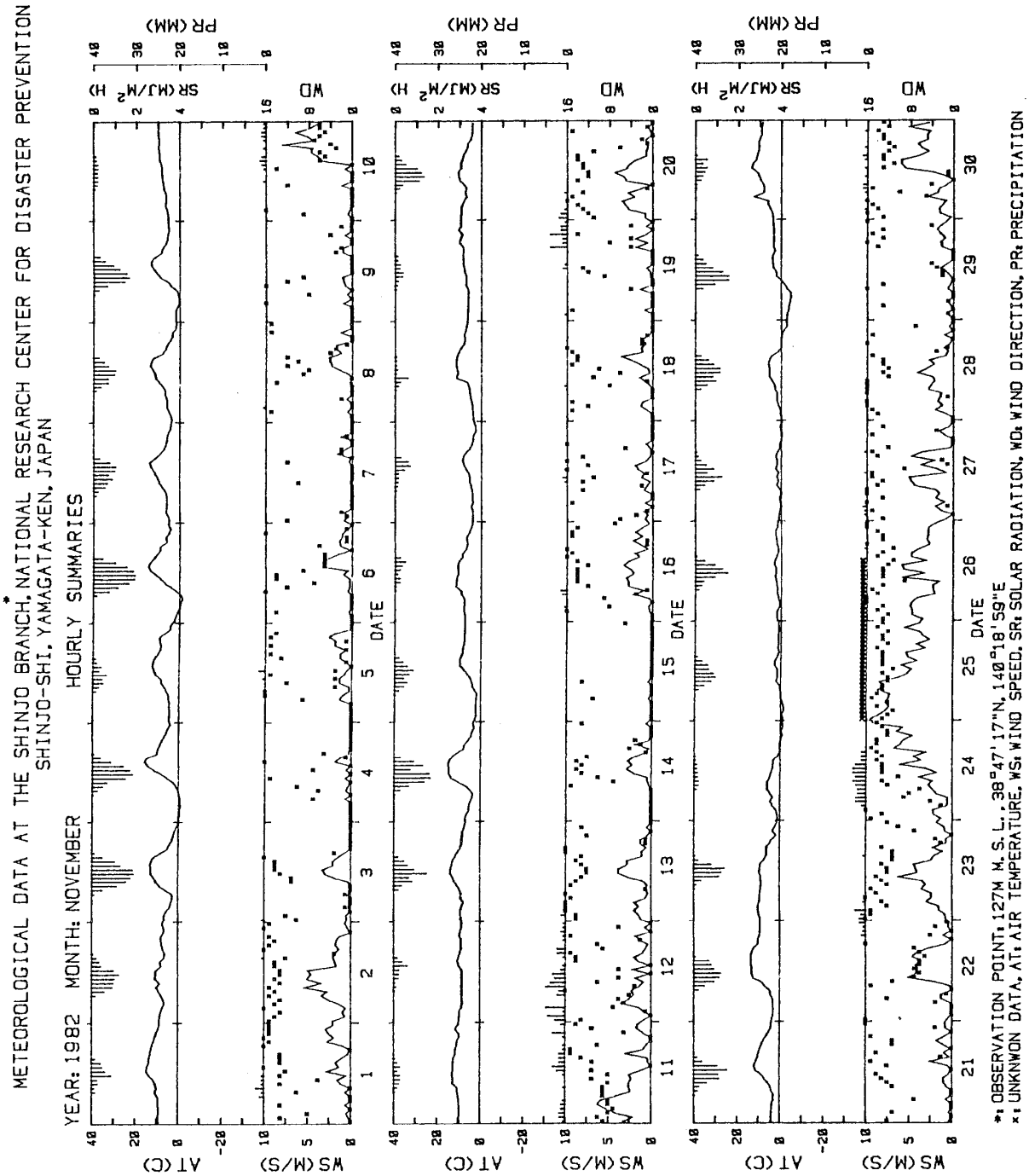

図 4.43　気象データの時間的変化

表 4.44 新庄支所冬期気象月表

METEOROLOGICAL DATA AT THE SHINJO BRANCH*, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

DECEMBER 1982

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.	NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.1	4.9	12 15	(3)	7.3	9.2	5.0	2.35	9.0
2	1.3	4.9	14 15	(4)	4.6	6.8	1.8	3.50	2.5
3	1.5	4.9	6 16	(4)	4.9	8.7	1.9	5.05	7.5
4	0.8	3.1	14	(4)	5.6	12.3	0.6	6.10	0.5
5	1.3	6.0	13	(4)	4.5	12.5	-0.1	4.10	0.5
6	2.9	8.2	13	(7)	-1.0	2.0	-4.2	5.10	5.5
7	1.5	5.0	2	(4)	0.6	4.9	-2.4	6.40	9.5
8	2.4	5.8	14	(7)	1.0	3.1	-2.5	4.15	0.0
9	0.8	2.9	1	(5)	2.6	6.5	-1.8	7.75	5.0
10	1.3	4.1	16	(4)	4.8	8.8	1.6	3.65	0.5
11	0.9	4.9	12 14	(4)	4.5	10.4	0.3	1.85	21.0
12	1.1	5.0	5 10	(4)	4.9	6.9	1.8	2.25	27.0
13	1.7	5.5	13 14	(4)	0.9	3.3	-1.4	3.65	6.0
14	0.1	1.6	16	(3)	0.6	5.6	-3.5	8.20	0.0
15	0.3	2.3	10	(3)	0.9	4.1	-0.7	3.60	0.0
16	0.7	2.7	15	(4)	1.8	4.4	0.2	2.80	5.5
17	0.5	2.8	1 16	(3)	2.9	5.1	0.8	2.30	16.5
18	1.4	5.5	14 15	(4)	0.3	2.3	-1.3	1.90	13.0
19	0.8	4.3	16	(3)	0.2	3.0	-2.9	3.90	0.0
20	0.7	2.8	1	(3)	2.0	3.6	0.1	0.95	12.5
21	0.3	2.1	13	(2)	2.5	9.2	-1.1	7.10	0.0
22	0.2	1.9	14	(2)	1.0	4.6	-1.6	2.80	0.0
23	2.0	6.5	11	(6)	3.7	6.9	0.2	2.20	43.0
24	3.7	8.6	13	(11)	3.7	6.2	2.0	2.75	26.5
25	2.3	6.2	15	(4)	1.1	3.3	0.0	3.80	3.5
26	0.9	3.2	14	(4)	0.1	3.3	-1.2	1.40	6.5
27	1.4	5.3	15	(6)	3.2	5.1	0.1	2.50	11.0
28	0.7	3.8	14	(5)	0.7	3.2	-2.9	5.15	2.0
29	0.7	3.3	16	(3)	0.1	3.4	-3.1	2.30	8.0
30	1.1	4.9	13	(4)	1.4	3.0	-1.0	2.55	7.5
31	2.7	6.9	14	(7)	-1.5	0.0	-3.3	5.35	3.0
TOTL								117.45	253.0
MEAN	1.3	4.5			2.3	5.5	-0.6	3.79	
MAX.	3.7	8.6			7.3	12.5	5.0	8.20	
MIN.	0.1	1.6			-1.5	0.0	-4.2	0.95	
DN	31	31			31	31	31	31	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.	NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.1	3.0	14	(5)	6.4	9.1	3.5	2.15	10.0
2	1.1	3.5	13	(4)	3.8	5.4	2.1	3.45	9.0
3	1.3	4.0	16	(4)	4.9	8.5	2.2	5.55	0.5
4	0.7	2.0	14	(3)	4.5	12.1	0.3	5.95	0.0
5	2.2	5.1	13	(5)	4.2	12.0	-1.3	3.75	2.5
6	2.4	6.6	13	(5)	-1.6	0.3	-3.8	5.40	5.0
7	2.3	3.9	14	(7)	1.8	4.3	0.2	6.35	8.0
8	1.3	5.5	1 2	(3)	0.5	2.9	-2.0	4.40	0.0
9	0.9	2.0	2 16	(4)	3.7	6.4	1.8	7.20	5.5
10	1.0	3.5	1 12	(3)	4.1	8.7	0.8	3.80	0.0
11	1.0	2.9	5	(5)	6.1	10.1	2.9	1.55	29.5
12	1.9	3.6	14	(6)	3.5	6.5	0.2	2.50	18.5
13	0.7	3.4	12 13	(2)	-0.3	3.0	-3.2	3.95	6.0
14	0.3	1.5	16	(3)	1.4	5.4	-0.7	8.00	0.0
15	0.5	1.9	10	(3)	1.2	3.7	-0.1	3.35	2.5
16	0.6	2.0	15	(4)	2.3	4.3	1.4	2.80	4.0
17	1.2	4.6	14 15	(3)	2.5	4.8	0.4	2.50	26.5
18	0.7	2.3	15	(3)	-0.7	1.1	-2.8	1.85	2.0
19	1.1	3.7	15	(3)	1.3	2.9	0.1	3.65	5.0
20	0.4	1.2	10 13	(2)	2.0	3.3	-0.4	1.45	7.5
21	0.2	1.2	1 2	(1)	1.8	8.8	-1.3	6.80	0.0
22	0.6	2.0	14	(4)	2.4	6.2	0.8	2.60	7.0
23	2.6	4.9	12	(8)	4.0	6.1	1.5	2.30	52.5
24	3.5	5.9	13	(12)	2.7	4.9	0.1	2.75	12.0
25	1.5	3.4	15	(5)	0.4	1.6	-1.0	3.90	1.5
26	1.7	3.7	15	(7)	1.7	4.5	-0.2	1.40	6.5
27	0.5	2.1	6	(2)	1.9	5.0	0.0	2.50	13.0
28	0.8	3.5	14	(6)	-0.1	2.8	-2.7	5.20	0.0
29	0.6	2.4	1 5	(2)	1.3	2.8	0.0	2.20	11.5
30	2.3	5.3	13	(6)	0.2	2.9	-2.8	2.75	6.0
31	2.4	4.9	14	(7)	-1.3	-0.3	-2.4	5.25	2.0
TOTL								117.25	254.0
MEAN	1.3	3.4			2.2	5.2	-0.2	3.78	
MAX.	3.5	6.6			6.4	12.1	3.5	8.00	
MIN.	0.2	1.2			-1.6	-0.3	-3.8	1.40	
DN	31	31			31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

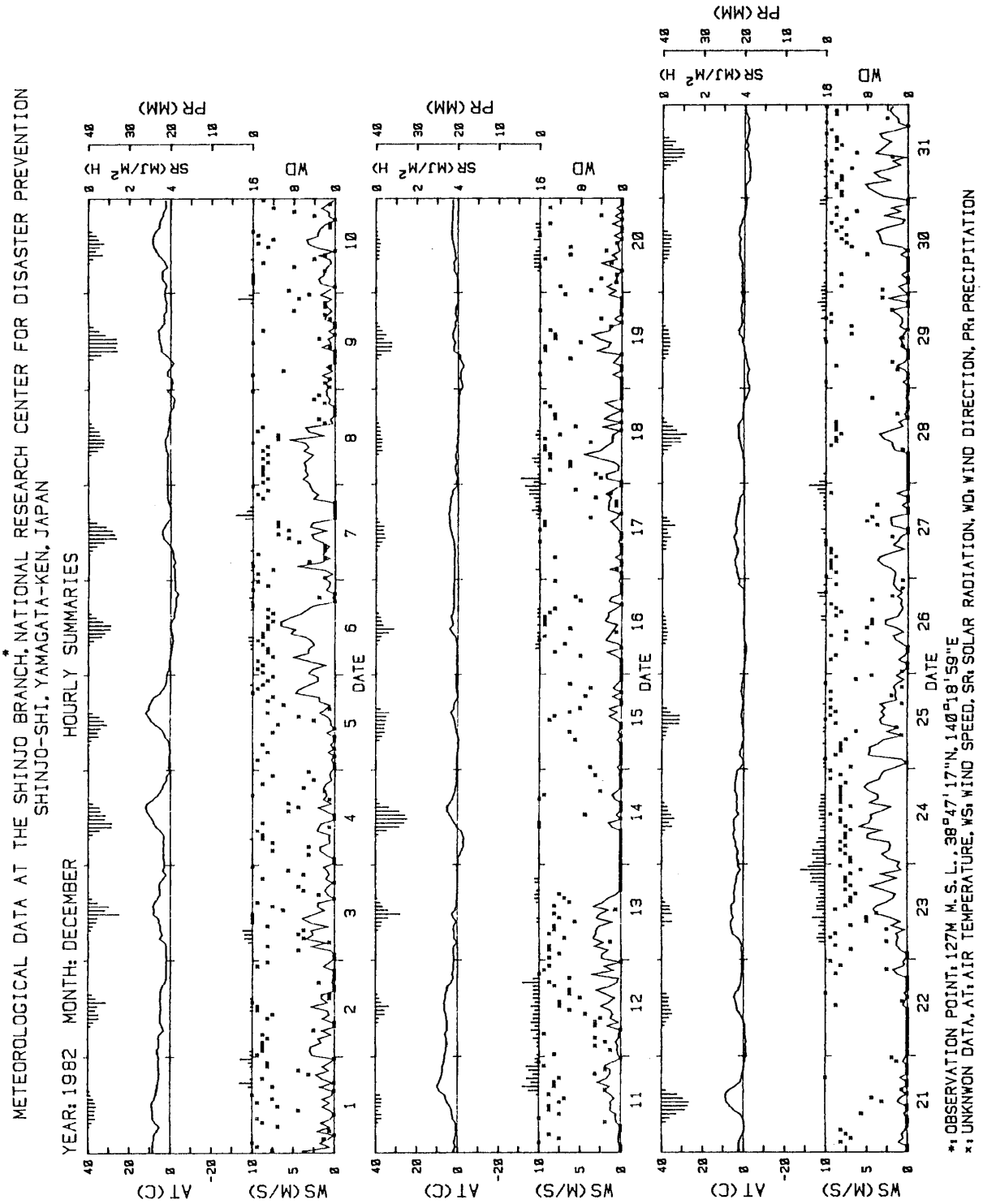

図 4.44 気象データの時間的変化

表 4.45 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

JANUARY 1983

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	2.9	5.9	14 15 (7)	-1.4	0.8	-2.7	4.65	2.0
2	0.8	2.3	1 16 (4)	-2.1	0.9	-8.6	5.55	0.5
3	1.5	4.4	13 14 15(3)	-1.4	2.1	-8.3	6.30	2.0
4	1.4	3.7	13 (4)	1.1	3.8	-0.7	5.75	0.0
5	0.2	2.0	3 11 13(1)	-0.3	1.8	-3.9	4.35	4.5
6	0.5	2.5	2 16 (3)	0.6	4.7	-4.3	6.85	0.0
7	1.4	7.1	2 6 15(2)	-0.7	5.1	-5.0	7.85	0.0
8	2.0	5.3	15 (5)	2.1	8.1	-2.9	0.50	8.5
9	4.2	7.5	13 (11)	-2.9	-2.0	-3.6	4.45	3.0
10	4.0	7.1	13 (12)	-3.9	-2.7	-4.9	3.40	5.0
11	4.1	7.5	13 (9)	-2.2	0.8	-4.7	4.60	5.5
12	1.3	5.2	15 (5)	-0.3	1.3	-1.9	3.20	12.0
13	0.8	4.4	14 (4)	-0.8	0.9	-3.0	4.55	4.0
14	2.6	7.2	12 13 (6)	-0.9	1.8	-3.4	6.35	1.5
15	2.2	6.9	13 15 (8)	-0.7	1.1	-2.3	6.30	3.0
16	1.7	5.7	14 (6)	-0.3	3.1	-5.8	7.85	0.0
17	0.9	5.4	13 14 (3)	-0.6	2.9	-4.1	6.60	3.5
18	0.3	2.5	12 (2)	-2.2	-0.5	-6.1	2.95	5.0
19	1.2	4.0	2 (3)	-2.2	1.3	-8.6	8.15	0.0
20	1.5	6.2	13 (4)	-3.6	-0.7	-7.8	4.25	4.5
21	1.4	5.7	7 13 (3)	-4.4	-2.1	-10.2	6.50	2.5
22	1.2	5.8	12 13 (3)	-4.9	-2.1	-8.8	5.85	20.5
23	1.6	5.1	16 (8)	-3.0	-0.2	-9.4	6.20	5.0
24	2.7	5.5	6 14 (5)	0.1	2.0	-1.3	5.35	12.5
25	1.0	4.0	2 (4)	2.0	5.0	-0.2	7.00	12.0
26	4.5	7.7	14 (11)	2.3	4.4	1.3	8.75	0.5
27	3.0	6.2	12 (10)	3.1	4.9	1.1	6.90	0.0
28	1.5	4.3	15 (4)	3.8	5.9	2.1	4.95	2.5
29	2.9	7.4	11 (10)	6.8	9.8	3.1	8.85	6.0
30	2.2	4.9	13 14 (8)	1.2	4.7	-2.7	5.30	2.0
31	4.0	8.0	14 (8)	-1.3	1.1	-3.9	7.95	1.0
TOTL							178.05	129.0
MEAN	2.0	5.4		-0.5	2.2	-3.9	5.74	
MAX.	4.5	8.0		6.8	9.8	3.1	8.85	
MIN.	0.2	2.0		-4.9	-2.7	-10.2	0.50	
DN	31	31		31	31	31	31	31

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.7	5.1	14 15 (5)	-1.8	-0.2	-3.1	4.75	1.5
2	0.6	1.7	1 (3)	-2.9	0.7	-7.3	5.70	1.0
3	1.9	3.6	14 15 (5)	0.4	1.9	-0.9	6.00	1.0
4	0.8	2.2	13 (3)	0.4	3.6	-3.3	6.05	0.0
5	0.2	1.8	15 16 (2)	0.6	1.5	-1.0	4.15	4.5
6	0.3	2.3	2 (3)	-1.5	4.7	-5.8	7.05	0.0
7	1.9	5.7	2 4 (3)	2.0	6.1	-3.9	7.30	1.0
8	3.3	5.0	14 (7)	0.1	7.2	-3.3	0.85	8.5
9	3.9	5.1	13 (11)	-3.3	-2.4	-4.8	4.35	5.5
10	4.2	5.9	13 (13)	-3.9	-3.4	-4.7	3.40	3.0
11	2.6	6.6	14 (6)	-1.2	0.5	-3.5	4.60	14.0
12	1.8	3.8	15 (7)	-0.0	1.2	-1.3	3.25	2.0
13	1.3	6.3	14 (4)	-1.6	0.0	-3.2	4.75	4.5
14	2.3	6.2	13 (9)	-0.5	1.1	-2.2	6.35	3.0
15	2.4	5.4	13 15 (7)	-0.5	1.1	-3.8	6.30	1.0
16	1.0	4.5	14 (3)	-0.8	3.0	-3.5	7.75	3.5
17	1.0	5.4	13 14 (3)	-1.4	2.5	-4.5	6.40	0.0
18	0.5	2.5	12 14 (3)	-1.2	-0.2	-2.7	3.70	5.0
19	0.8	2.8	2 (3)	-3.6	1.0	-7.7	7.80	1.0
20	2.3	4.6	13 (6)	-3.0	-0.9	-4.3	4.05	5.0
21	0.8	3.0	12 (2)	-5.4	-2.3	-8.9	6.75	5.5
22	1.4	3.5	1 13 (3)	-4.6	-2.2	-8.4	5.65	17.5
23	2.5	4.8	6 16 (6)	-1.0	0.2	-2.5	5.95	10.0
24	1.6	4.6	14 (5)	0.4	1.6	-0.3	5.60	6.0
25	2.3	5.3	14 (6)	2.9	4.3	1.3	7.50	12.5
26	4.1	6.1	13 14 (10)	1.9	2.9	1.3	8.40	0.0
27	2.5	5.0	12 (13)	3.8	4.7	2.7	6.55	1.5
28	1.1	2.9	1 2 (3)	4.6	8.0	3.0	5.40	1.0
29	3.2	5.5	11 (11)	5.7	9.6	1.3	8.55	6.0
30	2.9	4.8	14 (9)	-1.3	2.7	-3.9	5.60	2.0
31	2.7	7.3	13 (7)	-0.0	1.3	-2.7	7.75	1.0
TOTL							178.25	128.0
MEAN	1.9	4.5		-0.5	1.9	-3.0	5.75	
MAX.	4.2	7.3		5.7	9.6	3.0	8.55	
MIN.	0.2	1.7		-5.4	-3.4	-8.9	0.85	
DN	31	31		31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

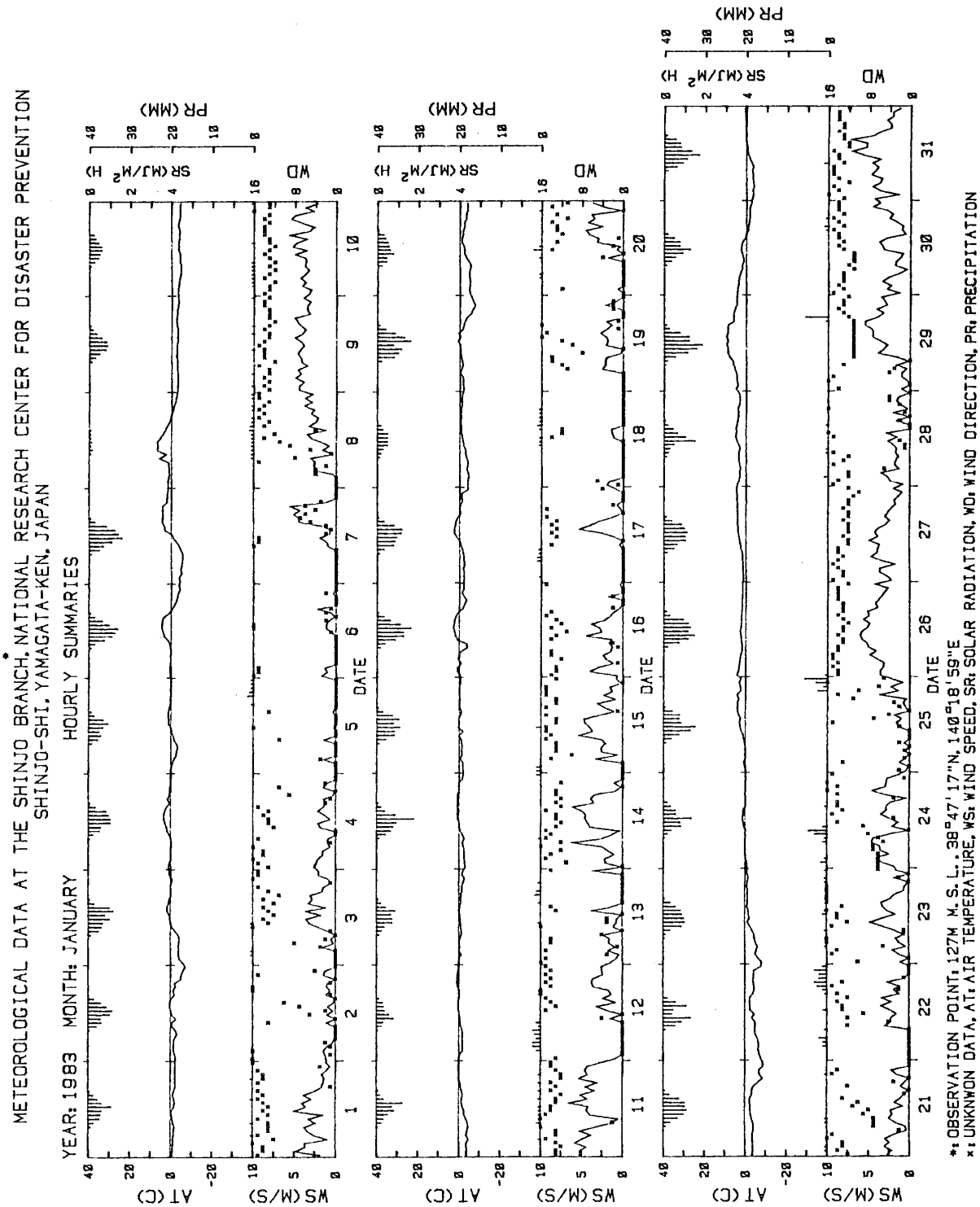

図 4.45 気象データの時間的変化

表 4.46　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

FEBRUARY 1983

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.5	2.8	13	(2)	1.1	6.1	-2.2	10.30	0.0
2	0.3	2.0	16	(3)	-1.0	0.3	-4.3	2.80	8.5
3	1.2	5.5	12 13 15	(3)	-0.3	1.5	-2.9	6.50	4.0
4	1.9	5.1	12 14 15	(4)	-1.3	1.5	-3.4	9.35	1.0
5	0.5	2.5	15 16	(2)	-0.3	2.9	-3.4	8.30	4.5
6	0.7	3.4	6 7	(4)	0.4	1.5	-0.6	4.60	9.5
7	0.8	4.3	1 11 12	(2)	-1.7	0.6	-7.8	5.10	7.0
8	0.6	3.6	2	(3)	-3.4	0.4	-9.0	11.25	1.5
9	2.5	7.7	6	(6)	-1.5	0.0	-3.8	3.30	19.5
10	1.4	5.8	13	(3)	-3.3	-2.0	-5.1	6.10	10.0
11	0.7	4.4	15	(4)	-4.7	-2.1	-8.1	9.15	5.0
12	1.8	5.4	14	(6)	-5.6	-3.2	-7.6	11.70	1.5
13	2.7	7.8	14	(7)	-6.7	-5.7	-8.1	5.95	8.0
14	1.8	6.5	14 15	(4)	-5.6	-2.4	-11.8	9.25	X
15	2.1	9.9	13 15	(4)	-4.6	4.3	-12.7	7.00	2.0
16	1.9	5.7	15	(6)	-2.0	1.1	-8.5	9.25	0.0
17	2.2	8.2	7	(5)	-2.6	2.6	-10.9	5.20	0.0
18	1.8	7.3	8 9	(4)	1.3	4.4	0.0	9.05	10.0
19	0.8	4.9	13	(4)	-0.1	1.6	-0.8	7.90	17.5
20	2.2	7.5	7	(7)	-0.7	0.7	-2.1	8.55	22.0
21	1.5	5.2	14	(6)	-2.8	-1.2	-4.6	6.30	14.0
22	2.1	6.4	13	(7)	-2.9	-0.5	-6.4	10.50	2.0
23	1.1	4.1	3	(4)	-2.6	0.9	-7.4	9.30	4.5
24	0.3	2.2	1 2 4	(1)	-4.0	1.5	-10.9	12.60	0.0
25	2.4	7.8	14	(6)	-3.8	1.3	-10.5	9.05	2.5
26	3.7	8.8	13 14	(8)	-3.8	0.1	-5.3	9.30	10.0
27	3.8	6.9	14	(12)	-2.4	0.1	-5.5	11.20	2.5
28	2.8	7.9	13	(8)	1.1	4.6	-3.8	10.75	6.5
TOTL								229.60	173.5
MEAN	1.6	5.7			-2.3	0.7	-6.0	8.20	
MAX.	3.8	9.9			1.3	6.1	0.0	12.60	
MIN.	0.3	2.0			-6.7	-5.7	-12.7	2.80	
DN	28	28			28	28	28	28	27

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.5	1.8	1 16	(2)	0.1	5.7	-3.5	10.05	0.0
2	0.3	1.7	14 16	(2)	-0.1	0.3	-1.2	3.15	11.5
3	2.2	4.7	15	(6)	-1.2	1.1	-3.1	6.70	1.5
4	1.0	4.6	12	(5)	-1.4	1.1	-2.9	9.10	1.5
5	0.5	1.7	16	(3)	0.7	2.4	-0.8	8.10	8.5
6	0.6	2.9	6 7	(4)	-0.4	1.4	-3.1	4.75	9.5
7	1.1	3.2	2	(4)	-3.5	0.3	-8.0	5.80	2.0
8	1.5	5.8	6	(5)	-1.5	0.4	-4.1	10.30	10.0
9	2.1	4.7	7	(5)	-2.1	0.0	-3.4	3.75	15.0
10	0.9	3.6	12	(2)	-4.1	-2.1	-5.9	6.10	11.0
11	1.4	4.3	14	(6)	-5.2	-2.3	-7.5	9.50	0.0
12	1.3	4.1	12 14	(3)	-5.9	-3.2	-7.6	11.20	6.5
13	3.0	5.7	14	(7)	-6.5	-4.7	-7.0	6.00	X
14	1.1	4.7	13	(4)	-7.3	-3.1	-12.1	10.10	X
15	2.7	7.8	15	(9)	-1.1	3.6	-7.5	6.45	2.0
16	1.5	4.8	14	(7)	-4.7	0.9	-10.4	8.90	0.0
17	2.2	6.3	7	(6)	0.8	2.3	-0.4	5.40	3.5
18	1.5	4.9	9	(4)	1.0	3.9	-0.7	9.05	13.5
19	2.0	5.4	6 13	(4)	-0.1	1.1	-0.7	7.90	15.0
20	1.8	6.2	7 10	(4)	-1.5	0.7	-3.2	8.85	21.5
21	2.2	5.1	14	(8)	-3.0	-1.4	-4.3	6.25	11.5
22	1.1	2.9	15	(4)	-3.6	-0.7	-6.1	10.20	2.5
23	0.9	3.2	2 3	(3)	-3.4	0.7	-7.6	9.75	2.5
24	0.4	2.0	15	(2)	-4.2	1.4	-9.2	12.15	2.0
25	4.0	7.8	14	(10)	-2.8	0.2	-5.3	9.10	1.5
26	3.7	6.4	14	(9)	-3.8	-0.1	-5.4	9.75	10.5
27	2.9	5.8	14	(8)	-1.2	0.5	-2.9	10.85	1.0
28	2.9	6.7	12 13	(6)	2.8	4.4	0.3	10.65	6.5
TOTL								229.85	170.5
MEAN	1.7	4.6			-2.3	0.5	-4.8	8.21	
MAX.	4.0	7.8			2.8	5.7	0.3	12.15	
MIN.	0.3	1.7			-7.3	-4.7	-12.1	3.15	
DN	28	28			28	28	28	28	26

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

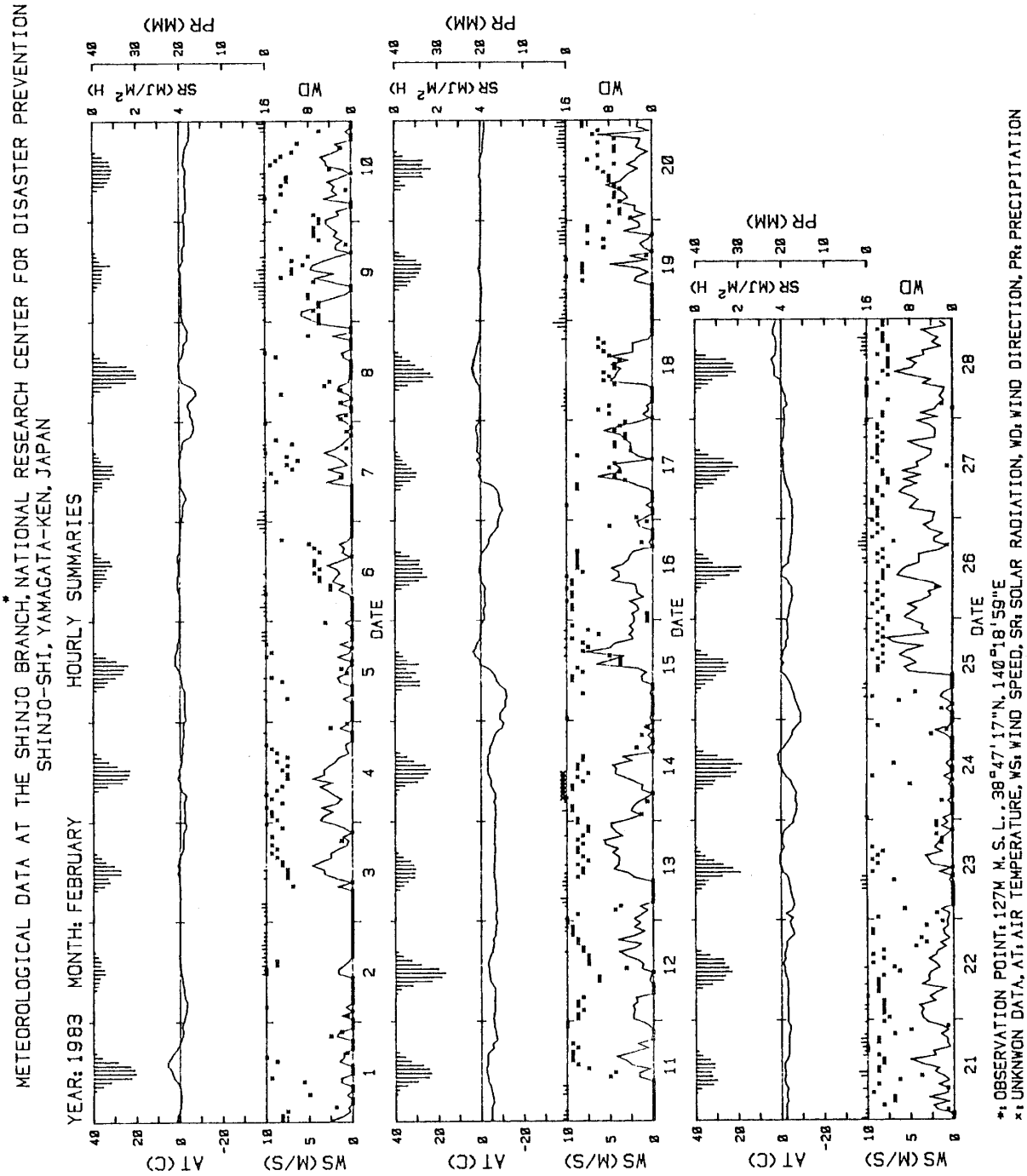

図 4.46 気象データの時間的変化

表 4.47　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

MARCH　1983

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	2.2	5.4	1	(5)	3.0	6.1	-1.7	13.20	0.0
2	3.8	12.3	6	(9)	1.2	4.4	-1.7	3.30	17.5
3	2.2	6.0	13	(9)	2.4	5.3	0.5	8.45	9.5
4	1.5	6.1	13	(6)	0.3	3.2	-1.6	8.85	2.0
5	1.6	5.4	15	(6)	-1.5	1.5	-6.3	12.85	0.0
6	1.3	4.4	7	(3)	-0.7	1.4	-3.7	8.20	11.5
7	1.3	3.8	5 6	(4)	-1.8	1.3	-7.3	12.35	2.5
8	1.5	5.0	13 14	(4)	-1.5	2.0	-3.9	14.50	1.0
9	1.4	4.1	1	(3)	-1.1	3.2	-7.4	13.40	0.0
10	0.4	2.1	15	(4)	-2.2	3.0	-9.1	10.60	1.0
11	1.1	5.3	16	(4)	2.1	7.7	-4.9	13.50	0.5
12	0.5	2.3	1	(3)	-0.9	7.2	-7.6	14.70	0.0
13	0.1	2.0	1 2	3(1)	0.4	1.6	-0.8	3.05	28.5
14	2.5	8.0	15	(6)	-1.1	1.2	-3.5	13.00	5.0
15	1.6	6.1	2	(4)	-0.9	2.7	-4.8	9.00	10.5
16	0.9	5.9	1	(4)	0.1	4.8	-4.6	18.10	0.0
17	1.6	5.2	13	(4)	2.3	4.8	0.5	5.75	9.5
18	5.0	9.2	13	(11)	0.3	3.6	-2.3	8.65	15.5
19	2.9	5.9	14	(9)	1.0	3.3	-1.5	11.55	2.0
20	0.3	2.3	1 2	(3)	0.3	6.1	-6.3	18.25	0.0
21	0.3	2.8	2	(4)	0.0	6.8	-5.8	7.30	0.5
22	1.5	5.2	13	(4)	4.3	7.6	-0.1	14.15	0.0
23	0.4	2.6	1 2	(2)	2.4	7.6	-2.7	13.30	2.5
24	0.5	3.0	2	(3)	3.1	7.4	-1.2	8.80	5.5
25	1.6	4.8	13	(7)	1.9	6.6	-2.3	13.75	0.0
26	1.3	4.8	14	(4)	1.6	6.1	-4.1	13.65	0.5
27	0.4	2.6	2	(3)	1.0	8.3	-4.4	18.65	0.0
28	0.8	4.3	11	(3)	1.7	9.3	-4.9	21.25	0.0
29	1.0	4.8	6 12	14(2)	2.6	9.8	-5.4	20.20	0.0
30	0.9	4.8	3	(3)	3.5	10.9	-2.5	20.35	0.0
31	3.0	7.6	6	(7)	3.4	9.7	-5.0	20.75	0.0
TOTL								393.40	125.5
MEAN	1.5	5.0			0.9	5.3	-3.8	12.69	
MAX.	5.0	12.3			4.3	10.9	0.5	21.25	
MIN.	0.1	2.0			-2.2	1.2	-9.1	3.05	
DN	31	31			31	31	31	31	31

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	2.1	7.2	1	(5)	1.9	5.9	-1.2	12.90	0.0
2	3.9	11.7	6	(7)	2.2	4.8	1.0	3.55	25.0
3	1.9	4.6	13	(7)	1.4	4.6	-0.5	8.80	2.0
4	1.6	4.2	13 15	(4)	-1.1	2.4	-5.3	9.80	2.0
5	1.5	5.4	13	(3)	-0.8	1.0	-3.1	11.95	7.5
6	1.7	3.3	13	(3)	-1.2	1.2	-4.4	8.45	6.5
7	0.7	2.4	5 6	(3)	-1.6	0.9	-3.4	13.25	0.5
8	2.0	4.4	1 13	(4)	-1.7	1.3	-6.7	13.60	0.5
9	1.2	3.9	2	(3)	-2.7	3.1	-8.2	13.55	0.0
10	0.5	2.1	15	(4)	1.1	3.0	-2.0	10.10	1.5
11	1.0	4.3	1 12	(2)	-0.4	7.1	-6.9	14.20	0.0
12	0.5	1.7	1 2	(3)	1.6	6.9	-0.5	13.30	4.5
13	0.4	5.1	15	(2)	-0.3	1.4	-2.0	3.90	25.5
14	2.9	6.9	14 15	(5)	-0.9	1.0	-2.8	12.80	3.5
15	0.8	4.0	2	(4)	-2.0	2.1	-4.6	10.00	9.5
16	1.2	3.8	1	(4)	2.0	4.1	-1.4	16.55	0.5
17	2.7	7.4	12 13	(5)	2.6	4.3	0.3	6.05	17.5
18	4.5	8.5	13	(8)	-0.4	1.5	-1.9	9.05	8.5
19	1.8	3.6	14	(5)	0.1	3.1	-4.7	13.25	0.5
20	0.3	1.6	2	(5)	0.1	5.7	-5.3	16.45	0.0
21	1.1	4.1	13	(5)	2.9	6.8	-0.1	7.65	0.5
22	0.6	2.2	2 11	(2)	2.4	7.3	-1.9	15.55	0.0
23	0.2	2.2	1	(2)	3.5	7.2	1.4	10.95	7.5
24	0.7	1.7	2 13	(3)	2.1	7.4	-1.8	10.75	0.5
25	1.5	3.9	13	(5)	2.5	6.1	-1.4	13.25	0.5
26	1.1	4.4	13 14	(3)	0.3	5.9	-4.1	14.15	0.0
27	0.4	1.8	2 3	(2)	1.3	7.7	-4.3	19.25	0.0
28	0.9	3.9	11	(3)	1.6	8.6	-3.8	21.45	0.0
29	1.0	3.9	6 12	(2)	3.7	9.1	-1.3	20.25	0.0
30	0.9	4.0	2 3	(3)	2.6	10.8	-4.2	20.25	0.0
31	5.0	8.4	6	(12)	6.6	9.6	4.0	20.80	0.0
TOTL								395.80	124.5
MEAN	1.5	4.4			0.9	4.9	-2.6	12.77	
MAX.	5.0	11.7			6.6	10.8	4.0	21.45	
MIN.	0.2	1.6			-2.7	0.9	-8.2	3.55	
DN	31	31			31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

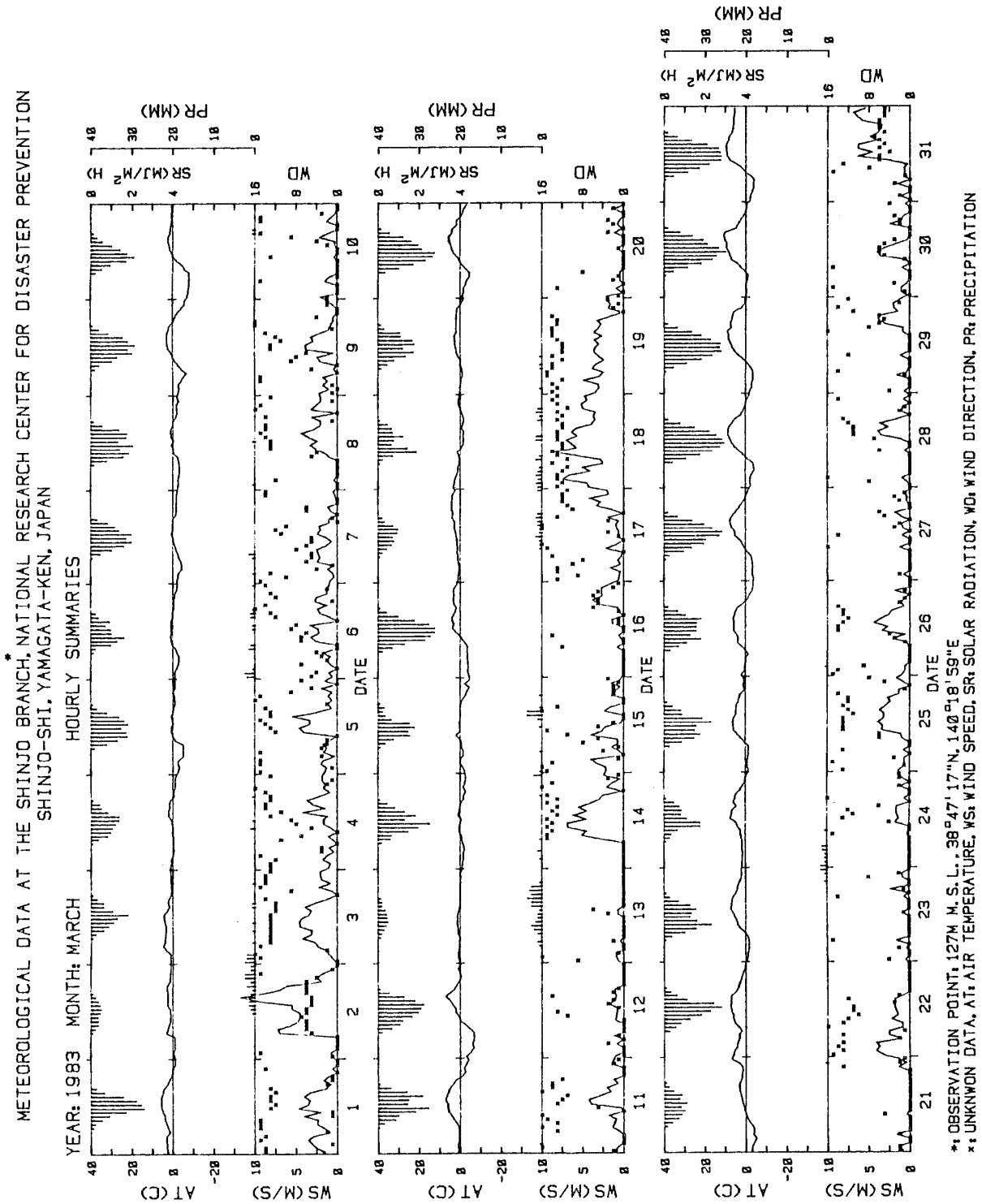

図 4.47 気象データの時間的変化

表 4.48 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

APRIL 1983

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	7.5	16.0	6	(12)	8.0	10.6	4.0	12.85	1.5
2	2.5	10.6	12	(6)	7.4	11.6	2.9	8.75	5.0
3	1.5	4.7	12	(4)	5.5	10.0	1.7	11.65	1.0
4	2.3	7.3	6	(6)	6.3	8.9	1.7	3.85	4.5
5	1.0	4.2	13 14	(4)	6.8	13.6	1.0	20.65	0.0
6	0.4	2.5	1 2	12(2)	6.9	18.0	-0.5	19.25	0.0
7	0.9	3.9	14	(3)	8.7	18.8	0.3	15.10	0.0
8	1.0	4.5	15	(3)	9.0	17.2	2.6	17.45	0.0
9	1.1	5.4	7	(3)	7.6	16.0	-0.6	21.25	0.0
10	1.2	5.3	5 15	(4)	8.6	13.8	2.6	11.20	0.0
11	0.7	3.2	13	(7)	11.8	17.5	6.7	11.45	0.0
12	1.0	3.9	1 2	7(2)	9.6	13.2	4.5	6.00	0.0
13	0.9	3.7	16	(4)	8.6	18.1	0.5	22.30	0.0
14	4.3	12.7	5	(8)	11.2	20.2	0.7	19.15	0.0
15	3.2	8.5	6	(7)	12.9	15.0	11.3	4.60	15.0
16	2.3	6.3	13 14	(5)	9.1	12.7	6.3	11.00	6.5
17	1.6	6.5	5	(5)	7.7	10.0	5.2	4.90	8.0
18	1.0	4.2	8	(5)	12.4	21.7	6.9	23.55	0.0
19	0.6	2.9	15	(6)	9.9	14.1	4.5	9.20	17.0
20	2.2	7.5	12	(8)	10.1	12.9	4.7	11.00	4.5
21	2.6	8.0	14	(6)	10.7	16.8	3.2	23.85	0.0
22	4.1	8.6	6	(8)	12.1	14.8	7.5	4.75	15.0
23	3.8	8.9	12 14	(5)	12.1	15.3	8.2	23.25	0.0
24	1.7	6.0	13	(4)	12.7	22.3	2.5	22.50	0.0
25	1.4	5.1	13 16	(3)	14.2	26.0	5.3	22.90	0.0
26	0.9	5.0	4	(3)	16.4	29.4	4.7	23.30	0.0
27	3.2	12.9	13	(5)	17.4	25.3	10.0	13.60	0.0
28	1.6	5.2	8	(6)	16.7	22.4	9.4	10.45	4.5
29	2.0	6.3	15	(4)	13.9	18.3	8.9	8.50	22.0
30	2.5	7.0	13	(7)	9.6	12.9	4.1	12.40	0.5
TOTL								430.65	105.0
MEAN	2.0	6.6			10.5	16.6	4.4	14.35	
MAX.	7.5	16.0			17.4	29.4	11.3	23.85	
MIN.	0.4	2.5			5.5	8.9	-0.6	3.85	
DN	30	30			30	30	30	30	30

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	6.7	13.4	5	(10)	8.8	11.1	5.1	10.90	6.0
2	1.8	3.8	12	(5)	6.0	10.1	2.3	9.70	1.0
3	2.4	6.4	6	(6)	6.4	9.9	1.8	10.20	0.5
4	1.2	3.7	1 13	(4)	5.3	8.2	1.2	6.35	4.5
5	0.6	3.8	13 14	(3)	5.7	13.3	-0.5	19.45	0.0
6	0.5	2.2	2	(3)	7.4	17.5	0.3	19.40	0.0
7	0.8	3.1	1 14	(3)	10.0	18.4	4.6	15.05	0.0
8	1.0	3.8	15	(3)	7.5	16.7	-0.1	18.75	0.0
9	1.3	5.0	7	(3)	8.6	15.5	3.0	19.80	0.0
10	1.2	3.7	5	(4)	10.0	13.5	6.8	10.95	0.0
11	0.9	2.2	13	(5)	12.2	17.3	8.4	10.10	0.0
12	0.8	3.0	1 12	(2)	7.1	13.1	0.8	8.90	0.0
13	0.9	3.3	12 16	(4)	8.8	17.7	1.0	22.60	0.0
14	6.1	9.0	6	(11)	14.6	19.7	11.6	16.40	1.0
15	2.3	5.5	7 14	(4)	11.9	14.8	7.6	4.80	20.5
16	1.9	5.5	13	(4)	7.6	10.8	5.2	10.45	7.0
17	1.5	5.3	5	(4)	8.5	11.2	6.9	8.30	1.0
18	0.9	3.4	8	(5)	11.9	21.5	4.7	22.10	0.0
19	0.6	2.5	15	(5)	11.7	13.7	10.4	7.40	21.5
20	2.6	6.4	14	(9)	8.4	12.5	4.2	14.70	0.0
21	3.8	7.0	5 6	(6)	12.3	16.6	8.5	21.00	0.0
22	4.1	7.6	6 12	(4)	12.5	14.7	10.0	6.35	15.0
23	1.9	5.2	1 11	(3)	9.8	15.1	2.7	24.10	0.0
24	1.6	5.2	13	(4)	13.6	22.1	5.6	22.60	0.0
25	1.3	4.8	13	(4)	14.1	25.6	5.3	23.00	0.0
26	1.0	4.2	4	(5)	18.5	29.1	10.7	20.85	0.0
27	3.5	12.4	12 13	(4)	17.6	24.6	10.0	14.75	0.0
28	1.7	4.0	8	(4)	16.4	22.1	12.2	8.40	19.5
29	2.5	6.2	15	(5)	12.5	17.8	8.7	8.55	7.5
30	1.7	5.4	13	(6)	7.3	12.6	2.0	13.95	0.0
TOTL								429.85	105.0
MEAN	2.0	5.2			10.4	16.2	5.4	14.33	
MAX.	6.7	13.4			18.5	29.1	12.2	24.10	
MIN.	0.5	2.2			5.3	8.2	-0.5	4.80	
DN	30	30			30	30	30	30	30

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

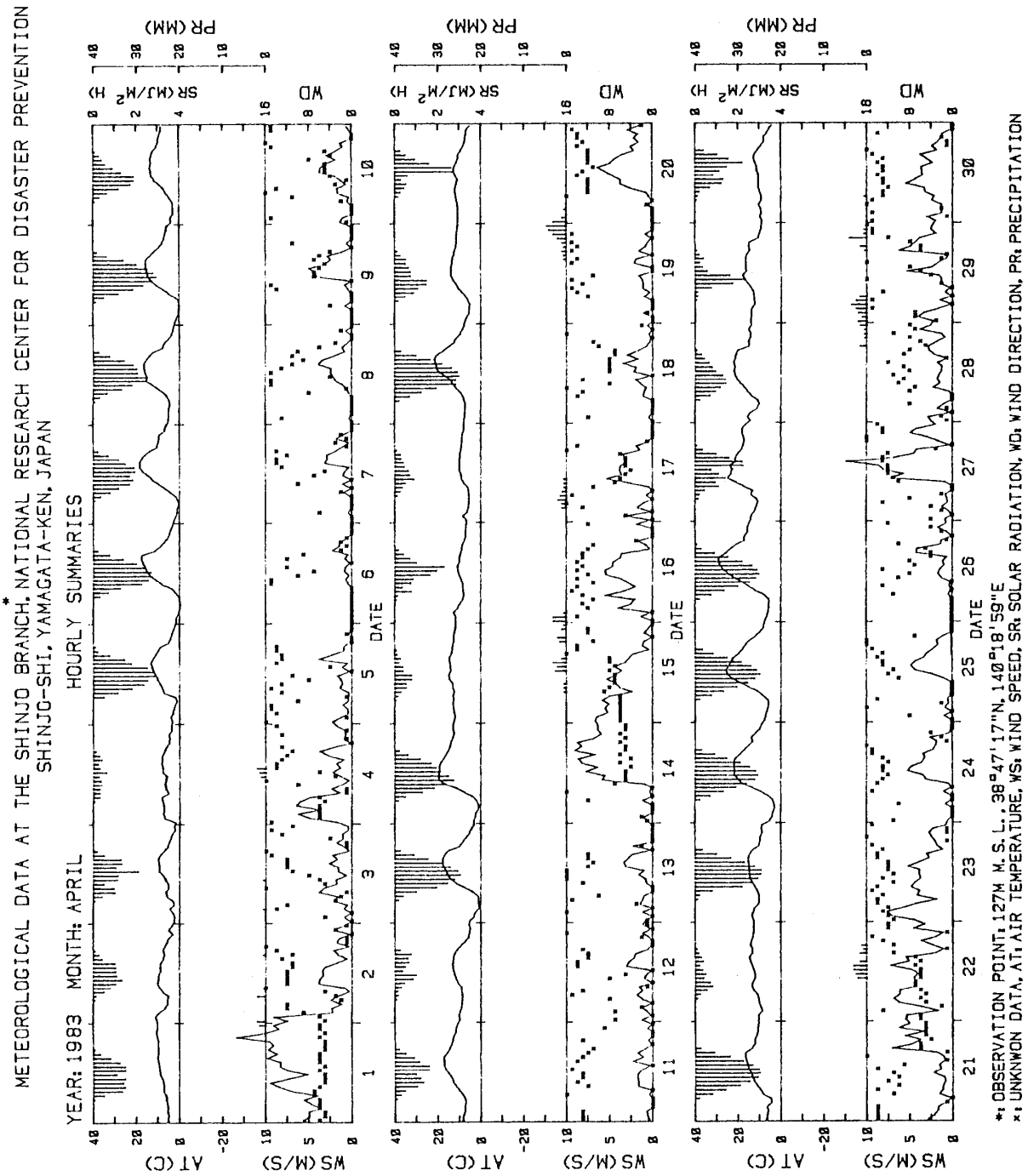

図 4.48　気象データの時間的変化

表 4.49　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

NOVEMBER 1983

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.3	1.7	4	5 11(1)	7.7	12.1	4.1	8.30	0.0
2	0.3	2.1	15	(3)	7.7	13.0	4.4	6.80	0.0
3	0.7	3.7	10 12	(3)	8.7	13.2	5.1	6.45	7.5
4	0.9	3.9	1 12 13	(2)	7.3	12.7	2.1	10.50	0.0
5	0.3	2.5	13	(3)	4.6	14.1	0.0	10.15	0.0
6	0.2	2.0	15	(3)	5.3	8.5	0.7	2.35	5.0
7	0.3	3.2	1 5 13	(2)	8.3	13.2	2.9	5.50	0.5
8	0.4	3.1	1 10	(2)	7.0	14.9	2.5	9.95	0.0
9	1.0	5.1	14	(3)	7.1	13.9	3.2	6.60	0.0
10	0.7	3.4	14	(3)	7.9	13.0	1.9	3.00	3.0
11	0.9	4.1	14	(4)	11.6	15.7	9.2	6.30	2.5
12	0.9	4.2	5 6 8	(2)	8.6	11.1	5.7	1.90	13.0
13	1.9	6.0	6	(5)	4.2	7.8	0.2	3.60	23.0
14	0.8	3.0	13	(3)	3.6	8.2	-0.1	5.60	3.0
15	0.3	2.6	1	(2)	5.5	11.4	1.4	7.80	0.0
16	1.0	4.9	5	(3)	6.6	14.9	0.4	10.35	0.0
17	1.2	5.8	14	(5)	5.0	8.7	0.9	3.25	7.5
18	3.2	10.2	6 13	(5)	1.4	3.9	0.1	1.00	41.5
19	3.6	9.1	15 16	(5)	6.3	8.8	3.2	2.60	6.5
20	0.8	3.8	11	(3)	5.2	9.0	0.7	4.80	0.0
21	1.4	4.5	14	(5)	5.2	8.7	1.9	2.65	8.0
22	3.0	8.9	13	(8)	3.2	5.6	-0.4	7.50	0.5
23	0.3	2.2	1 13	(2)	0.4	7.8	-3.0	7.75	0.0
24	0.8	4.6	1 13 15	(2)	3.1	7.7	-0.8	2.55	10.5
25	X	X	X	(0)	X	X	X	X	X
26	X	X	X	(0)	X	X	X	X	X
27	3.9	8.2	14	(8)	-1.0	1.1	-3.9	4.50	5.5
28	2.1	6.5	13	(5)	0.8	2.7	-2.4	6.30	3.0
29	0.2	2.4	1 2 13	(1)	-2.1	3.3	-5.7	9.25	0.0
30	0.7	6.3	13	(4)	-1.4	4.7	-4.9	3.40	10.5
TOTL								160.70	151.0
MEAN	1.1	4.6			4.9	9.6	1.0	5.74	
MAX.	3.9	10.2			11.6	15.7	9.2	10.50	
MIN.	0.2	1.7			-2.1	1.1	-5.7	1.00	
DN	28	28			28	28	28	28	28

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.2	1.1	3 5	(1)	7.9	11.7	5.6	8.05	0.0
2	0.5	1.3	15	(3)	7.6	12.7	4.8	6.65	1.0
3	0.6	3.1	12	(3)	8.6	13.0	3.1	7.40	6.5
4	1.0	3.6	1 12	(2)	5.5	12.4	0.2	9.70	0.0
5	0.5	2.2	13	(4)	5.0	13.9	0.9	9.70	0.0
6	0.3	1.4	1 15	(2)	7.6	9.2	5.6	2.70	5.5
7	0.3	1.7	5 13	(2)	6.7	13.1	2.7	5.95	0.0
8	0.6	2.5	1 2	(2)	7.4	14.6	3.5	9.45	0.0
9	0.9	4.4	16	(3)	6.8	13.2	2.0	6.60	0.0
10	0.7	2.3	14	(3)	10.5	12.9	7.8	3.10	3.0
11	1.0	3.0	14	(4)	11.3	15.6	9.3	5.95	7.0
12	1.0	3.3	8	(3)	7.0	10.8	4.9	1.85	17.0
13	1.7	4.6	6	(4)	2.2	7.2	0.0	3.80	15.0
14	0.4	1.4	9 15	(2)	5.1	7.5	2.6	5.70	2.5
15	0.3	1.4	1	(2)	4.5	11.2	0.7	8.55	0.0
16	1.3	4.1	5 14	(3)	7.2	14.6	2.1	9.90	0.0
17	1.2	3.5	14	(4)	4.0	8.6	0.2	2.45	27.0
18	4.6	8.6	13	(6)	3.1	5.9	0.7	1.25	28.0
19	1.9	4.6	16	(4)	5.6	8.7	1.1	3.15	0.5
20	0.9	2.5	12 16	(3)	5.2	8.9	2.3	4.10	2.0
21	2.9	7.1	14	(6)	5.3	8.4	0.6	2.95	6.5
22	1.1	4.0	13	(6)	1.1	5.3	-3.0	7.45	0.0
23	0.3	1.5	15	(3)	1.3	7.4	-1.0	7.35	8.5
24	1.6	4.9	14	(6)	5.1	7.5	1.5	2.75	4.0
25	X	X	X	(0)	X	X	X	X	X
26	X	X	X	(0)	X	X	X	X	X
27	3.7	6.1	14	(8)	0.0	0.9	-0.9	4.80	7.0
28	1.0	2.4	1	(5)	-0.4	2.6	-5.0	6.50	0.0
29	0.2	2.3	13	(2)	-2.2	3.3	-4.5	8.90	0.0
30	2.8	8.1	13	(5)	1.2	4.4	-1.9	3.45	13.5
TOTL								160.15	154.5
MEAN	1.2	3.5			5.0	9.5	1.6	5.72	
MAX.	4.6	8.6			11.3	15.6	9.3	9.90	
MIN.	0.2	1.1			-2.2	0.9	-5.0	1.25	
DN	28	28			28	28	28	28	28

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

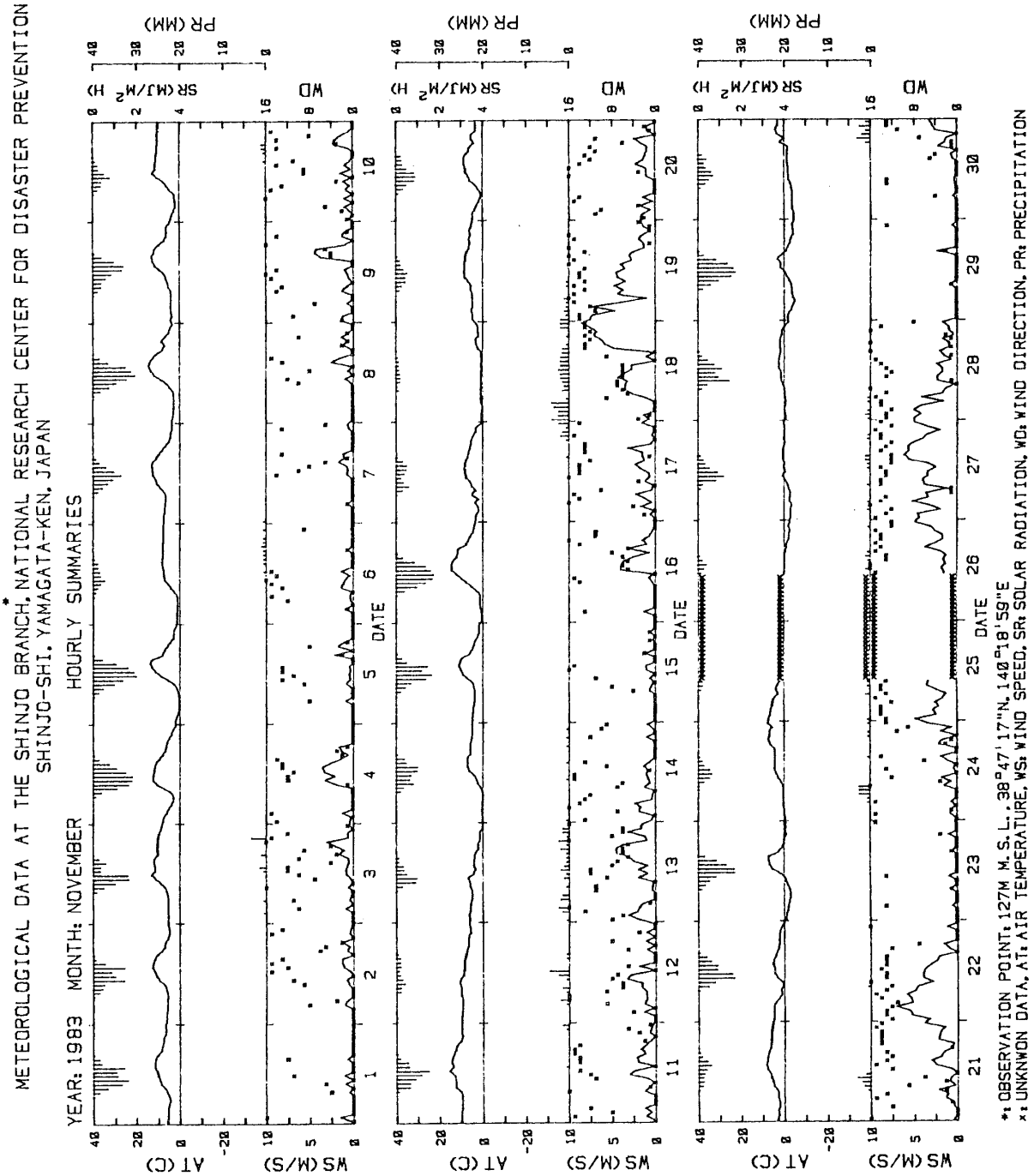

図 4.49 気象データの時間的変化

表 4.50 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

DECEMBER 1983

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	5.7	10.2	12	(10)	2.1	4.4	-0.2	2.70	8.5
2	3.1	7.5	13	(7)	6.6	10.1	4.0	4.35	22.0
3	4.3	9.7	13	(10)	2.6	7.1	-1.2	2.95	3.0
4	3.1	7.4	14	(8)	0.0	1.8	-1.4	3.35	2.5
5	1.5	5.1	7	(4)	1.2	3.4	-0.6	5.90	3.5
6	1.2	4.1	15	(7)	0.4	2.1	-0.6	5.25	9.0
7	0.4	2.2	1	(5)	1.4	3.4	-0.3	3.50	2.5
8	1.4	4.5	1	(5)	3.0	5.5	0.2	2.90	0.5
9	1.5	4.7	1	2 12(3)	3.8	7.2	1.4	6.45	1.0
10	0.8	5.6	7	(4)	3.4	8.3	0.6	4.95	3.5
11	1.6	6.5	13	(5)	3.2	6.8	0.3	2.35	13.5
12	4.2	8.1	13	(9)	1.3	4.1	-0.4	3.55	5.5
13	1.6	6.0	5 13	(4)	2.3	5.5	-0.4	3.45	39.5
14	3.0	6.8	13	(5)	1.4	5.1	-3.3	1.95	16.0
15	1.2	4.1	14 15	(4)	-1.6	-0.3	-4.3	4.60	3.0
16	2.0	5.9	13	(8)	-3.1	-1.9	-4.4	2.55	10.0
17	0.7	2.9	14 15	(5)	-4.1	-2.2	-8.3	7.85	3.0
18	0.7	3.5	1	(3)	-3.6	-1.5	-7.9	4.70	11.5
19	1.1	5.3	13 15	(4)	-1.0	0.2	-2.0	4.65	18.0
20	1.6	5.1	16	(6)	-2.6	-0.6	-6.8	5.60	8.5
21	1.0	3.2	1	(6)	0.3	4.0	-3.2	7.15	0.5
22	0.3	2.4	3 11 13	(2)	-2.1	0.0	-4.6	5.55	0.0
23	2.7	8.4	13	(8)	0.5	4.8	-1.9	3.50	X
24	1.2	4.8	16	(4)	-3.8	-1.3	-10.1	6.05	2.0
25	2.5	5.7	13	(5)	-2.2	1.5	-8.2	4.70	8.0
26	1.4	4.6	12	(4)	-1.6	1.0	-3.9	5.35	13.0
27	0.5	2.3	1 2	8(2)	-4.2	-1.0	-8.7	7.40	2.0
28	0.3	1.9	5	(2)	-5.7	-1.1	-10.4	7.65	0.0
29	0.2	1.8	2 11	(2)	-5.8	-2.1	-11.9	5.70	2.5
30	0.2	2.4	1	(3)	-3.6	-0.8	-9.1	7.05	1.0
31	0.4	2.1	3	(5)	-5.6	-4.5	-7.1	4.65	0.5
TOTL								148.30	214.0
MEAN	1.7	5.0			-0.6	2.2	-3.7	4.78	
MAX.	5.7	10.2			6.6	10.1	4.0	7.85	
MIN.	0.2	1.8			-5.8	-4.5	-11.9	1.95	
DN	31	31			31	31	31	31	30

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	4.8	9.7	13	(9)	3.0	6.3	-0.0	2.50	7.5
2	2.9	6.7	14	(6)	6.7	10.1	2.1	4.25	21.5
3	4.6	7.0	13	(11)	0.3	2.4	-1.1	3.25	3.0
4	2.0	4.6	13 14	(4)	0.5	1.8	-0.4	3.95	1.5
5	1.9	4.0	4 7	(3)	1.0	3.4	-0.4	5.35	7.0
6	0.7	2.4	15	(4)	0.6	2.1	-0.2	5.05	7.5
7	0.8	2.8	1	(6)	1.8	3.1	0.4	3.65	0.5
8	2.0	4.1	1 14	(5)	3.9	5.4	2.0	2.95	0.0
9	0.8	3.5	8 11	(2)	3.0	7.2	0.8	6.20	4.5
10	1.0	5.4	7 15	(4)	3.6	8.1	0.6	4.80	0.0
11	3.0	7.7	13	(10)	3.3	6.7	0.4	2.50	17.5
12	2.7	6.3	13	(6)	1.0	2.0	-0.2	3.70	1.5
13	1.7	4.3	7 13	(4)	3.6	5.1	0.5	3.10	52.5
14	2.7	6.8	16	(4)	-1.0	2.4	-3.6	2.50	2.5
15	1.4	3.9	13	(7)	-1.6	-0.4	-3.3	4.10	6.5
16	1.6	4.1	15	(5)	-3.7	-2.3	-4.3	2.95	8.5
17	0.6	2.2	15	(4)	-4.7	-2.2	-7.9	7.85	4.5
18	1.2	4.2	1	(4)	-1.9	-0.6	-3.3	4.55	13.5
19	1.4	4.1	13	(5)	-1.9	0.1	-6.3	4.80	14.0
20	1.5	4.1	1	(6)	-1.6	0.2	-3.7	5.40	6.0
21	0.6	2.1	1	(4)	-0.7	3.6	-4.3	7.20	0.5
22	0.6	2.9	3	(3)	-0.7	1.6	-3.2	5.45	3.5
23	3.1	5.8	13	(9)	-0.4	4.5	-2.9	3.60	X
24	1.5	3.9	16	(3)	-4.1	-1.1	-9.0	6.25	2.0
25	2.4	5.0	13	(7)	-1.5	0.7	-2.9	4.35	16.5
26	0.8	2.9	15	(4)	-2.7	0.0	-6.8	5.80	5.5
27	0.4	1.9	1	(3)	-4.9	-1.4	-8.0	7.30	1.0
28	0.3	1.8	2 5	(2)	-6.9	-1.1	-11.4	7.45	0.5
29	0.1	1.0	1 3	(1)	-3.4	-2.6	-5.4	5.75	2.5
30	0.4	2.1	1	(4)	-4.6	-1.2	-6.8	7.00	0.5
31	0.6	1.8	4	(3)	-4.8	-1.4	-6.5	4.60	3.5
TOTL								148.15	216.0
MEAN	1.6	4.2			-0.6	2.0	-3.1	4.78	
MAX.	4.8	9.7			6.7	10.1	2.1	7.85	
MIN.	0.1	1.0			-6.9	-2.6	-11.4	2.50	
DN	31	31			31	31	31	31	30

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

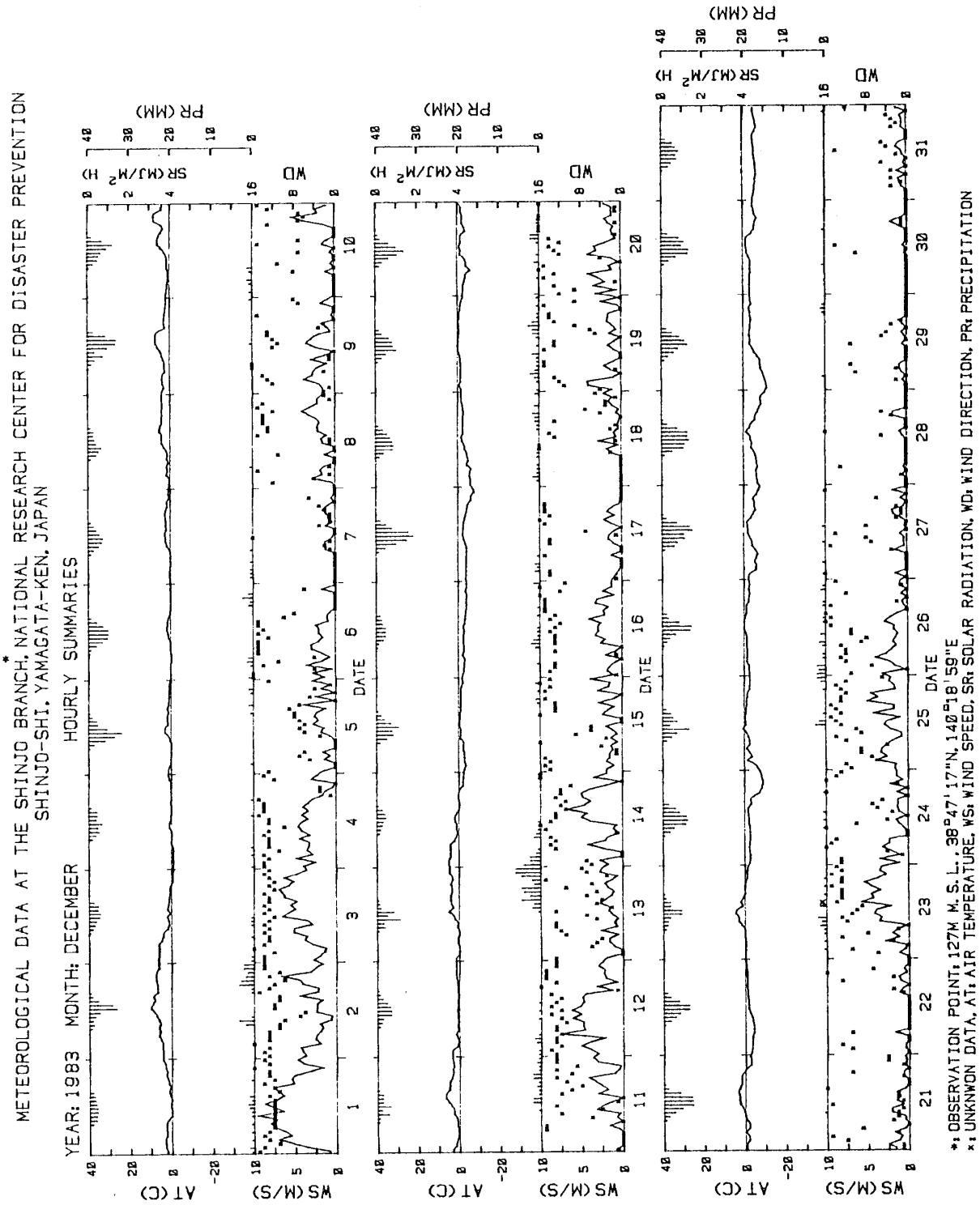

図 4.50　気象データの時間的変化

表 4.51　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

JANUARY　1984

---------- BOUNDARY OF DATE : 00H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.5	5.3	1	(5)	-2.1	0.5	-5.6	4.05	9.0
2	1.2	3.8	13	(4)	-1.9	0.4	-7.5	4.10	0.5
3	0.3	3.4	3 11 14	(1)	-4.3	-1.1	-10.2	4.75	2.5
4	0.6	4.6	6 7 8	(2)	-0.4	1.0	-1.7	3.55	17.0
5	0.7	3.2	12	(5)	-1.8	0.0	-6.9	4.45	2.5
6	2.6	7.1	13	(6)	-2.2	-0.4	-6.7	4.65	4.0
7	1.2	4.4	3 16	(4)	-3.8	-2.2	-7.3	6.00	2.5
8	0.4	2.2	12 16	(2)	-4.9	-2.3	-8.3	5.35	8.5
9	0.2	2.8	14	(3)	-3.1	-0.5	-7.6	5.65	7.0
10	1.6	7.1	7	(3)	-0.6	1.4	-4.1	7.00	11.5
11	3.6	7.9	13	(7)	-3.0	-1.1	-4.3	4.70	7.0
12	2.1	5.5	12 14	(5)	-3.4	-1.1	-5.7	5.95	10.0
13	1.0	4.0	15	(4)	-3.3	0.1	-7.4	7.10	7.5
14	0.7	5.6	3	(3)	-3.7	2.6	-9.1	5.70	0.0
15	2.3	7.4	14 15	(4)	-1.4	2.3	-6.1	1.45	36.0
16	4.9	9.3	13	(15)	-6.0	-4.8	-6.8	3.70	7.5
17	5.1	9.1	12 13	(8)	-6.4	-5.5	-7.2	5.20	5.5
18	3.3	6.6	13	(10)	-4.9	-3.5	-6.3	X	3.0
19	0.4	3.9	15	(3)	-4.9	-2.8	-7.0	X	2.5
20	1.8	4.9	1 13 14	(4)	-4.2	-2.0	-6.7	X	3.0
21	0.6	3.2	6	(3)	-5.1	-1.7	-9.4	X	2.0
22	0.4	2.6	15	(5)	-2.3	-0.3	-9.2	X	7.5
23	1.5	6.0	12	(4)	-1.0	2.9	-3.5	X	1.0
24	2.5	5.4	14	(6)	-2.3	-1.2	-3.6	X	1.5
25	0.1	2.0	3	(3)	-3.9	-2.7	-7.8	X	9.5
26	1.2	5.5	7	(4)	-4.9	-2.2	-11.5	X	11.0
27	0.6	2.9	1	(3)	-4.5	-0.9	-12.3	X	9.5
28	0.6	3.1	1 6	(3)	-3.9	-0.5	-8.4	X	7.0
29	1.3	5.1	7	(5)	-3.0	0.4	-7.4	X	6.5
30	0.5	2.6	15	(3)	-3.2	-1.6	-5.8	X	8.5
31	0.0	1.2	2	(2)	-3.6	-2.3	-6.2	X	9.5
TOTL								83.35	220.5
MEAN	1.4	4.8			-3.4	-0.9	-7.0	4.90	
MAX.	5.1	9.3			-0.4	2.9	-1.7	7.10	
MIN.	0.0	1.2			-6.4	-5.5	-12.3	1.45	
DN	31	31			31	31	31	17	31

---------- BOUNDARY OF DATE : 09H O'CLOCK ----------

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.6	3.1	1 14	(5)	-0.9	0.1	-2.0	4.00	6.0
2	0.9	2.5	13	(3)	-4.5	0.3	-10.2	4.30	0.5
3	0.2	1.8	11 14	(1)	-1.8	-0.8	-5.0	4.55	8.0
4	0.6	2.7	6 7	(2)	-0.4	0.6	-1.9	3.55	12.5
5	1.8	3.9	12	(7)	-2.7	-0.9	-6.4	4.75	3.5
6	2.5	4.4	16	(6)	-2.3	-1.0	-4.0	4.50	2.5
7	0.4	1.4	3	(4)	-4.7	-2.9	-6.6	6.05	5.0
8	0.4	2.6	12	(3)	-4.8	-2.8	-8.1	5.55	8.5
9	0.1	1.0	4 7	(1)	-2.1	-0.8	-3.8	5.75	7.5
10	3.0	7.0	7	(4)	-0.7	1.0	-3.3	6.60	11.0
11	2.9	6.2	13	(8)	-3.7	-1.7	-5.1	4.65	7.0
12	1.3	3.8	12 14	(4)	-3.5	-1.4	-5.0	6.10	13.5
13	1.0	3.4	15	(4)	-4.0	-0.2	-7.2	7.15	1.0
14	1.8	6.9	6	(5)	-1.8	1.5	-5.2	5.30	7.0
15	2.6	5.1	13	(8)	-3.2	1.2	-6.2	1.60	32.5
16	5.5	7.0	13	(12)	-6.5	-5.5	-7.1	3.75	7.5
17	4.6	8.1	12 13	(8)	-5.9	-5.0	-6.6	X	4.5
18	2.1	5.6	13	(7)	-4.9	-3.7	-6.7	X	2.5
19	1.0	3.1	15	(6)	-4.7	-3.1	-5.7	X	1.5
20	1.5	3.5	1	(4)	-4.1	-2.5	-5.6	X	4.0
21	0.5	1.5	15	(6)	-5.1	-2.1	-8.9	X	0.0
22	0.2	1.2	1	(2)	-1.1	-0.4	-3.1	X	7.5
23	2.4	5.0	12 14	(5)	-1.1	2.4	-2.6	X	1.5
24	1.6	4.6	12	(4)	-2.9	-1.2	-4.3	X	6.5
25	0.7	5.2	3 6	(3)	-4.6	-2.8	-9.1	X	9.0
26	0.8	3.2	1	(6)	-5.3	-2.5	-10.5	X	12.0
27	0.3	1.7	1 3	(2)	-4.2	-1.3	-7.8	X	5.5
28	1.4	4.2	6 7	(5)	-3.0	-1.0	-4.0	X	6.0
29	0.3	1.4	15	(2)	-3.1	0.2	-6.1	X	12.0
30	0.5	1.9	15	(4)	-3.7	-1.8	-5.8	X	3.0
31	0.0	0.7	6	(1)	-3.8	-2.3	-8.2	X	9.5
TOTL								78.15	218.5
MEAN	1.4	3.7			-3.4	-1.3	-5.9	4.88	
MAX.	5.5	8.1			-0.4	2.4	-1.9	7.15	
MIN.	0.0	0.7			-6.5	-5.5	-10.5	1.60	
DN	31	31			31	31	31	16	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

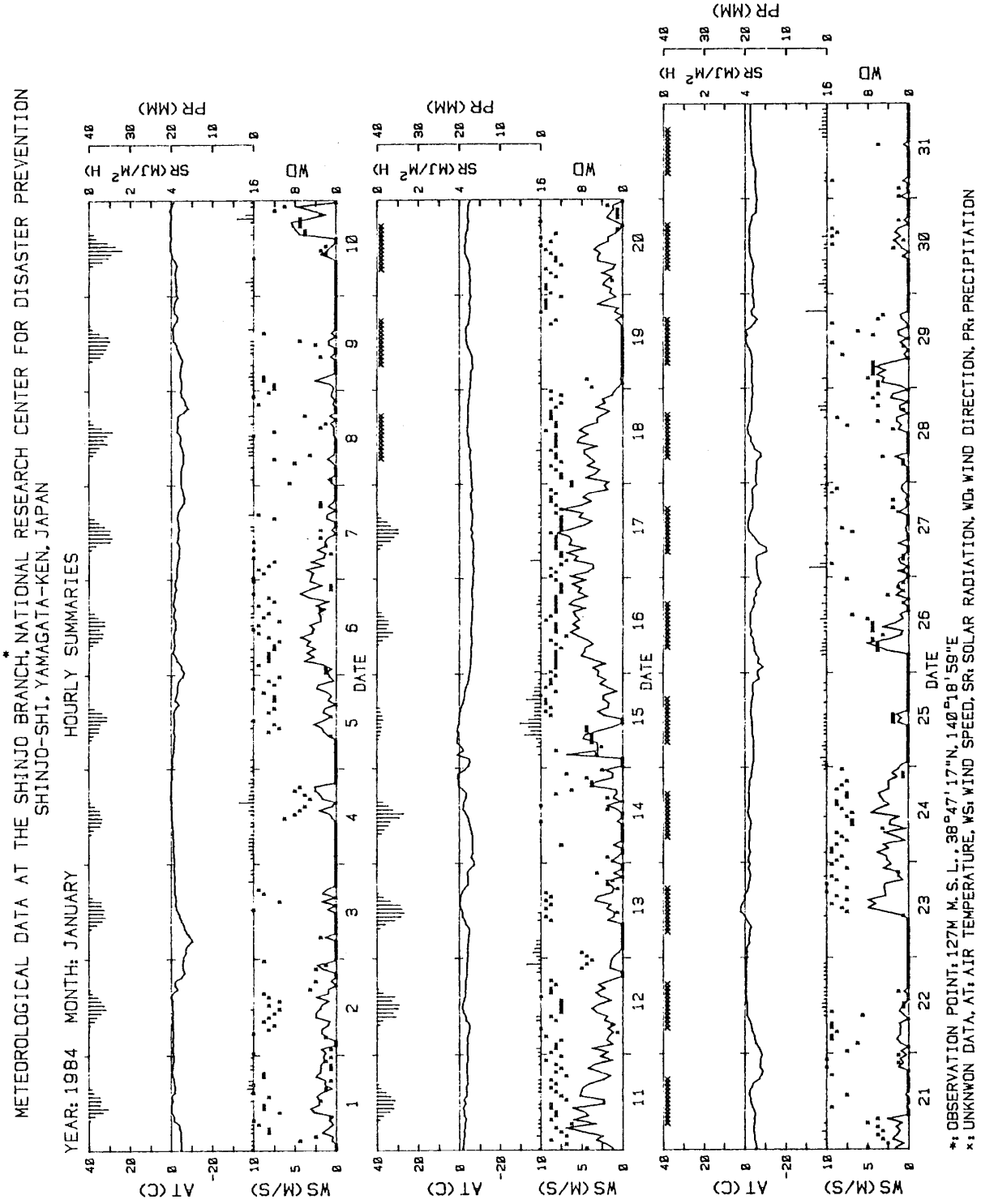

図 4.51 気象データの時間的変化

表 4.52　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

FEBRUARY 1984

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.2	2.8	8	(2)	-2.7	1.2	-9.4	X	5.5
2	2.4	8.9	6 7	(6)	-0.8	2.2	-3.8	X	7.0
3	2.0	6.2	13	(7)	-4.5	-2.7	-6.8	X	4.5
4	3.7	8.3	13	(8)	-6.4	-5.1	-7.4	X	6.5
5	1.9	5.5	15	(5)	-5.3	-3.1	-6.9	X	0.0
6	3.5	7.7	13	(12)	-7.4	-6.2	-9.1	X	9.5
7	3.5	7.1	13	(13)	-7.2	-5.4	-8.0	X	4.0
8	2.5	5.9	13	(7)	-5.8	-4.2	-7.9	X	8.5
9	3.8	8.4	13	(10)	-4.6	-2.1	-6.7	X	5.0
10	2.4	6.4	14	(5)	-3.7	-0.8	-8.5	X	3.0
11	2.2	5.4	14	(7)	-2.2	0.2	-7.1	X	1.0
12	0.4	2.3	1 2	(3)	-5.9	-0.3	-12.4	X	0.0
13	1.4	5.3	14 16	(4)	-2.6	1.8	-5.7	X	0.5
14	0.9	4.3	13	(3)	-2.8	0.2	-4.8	X	5.5
15	1.5	5.6	14 15	(4)	-5.8	-3.0	-15.7	10.98	12.5
16	2.7	6.3	14	(6)	-6.4	-3.6	-13.4	10.53	6.0
17	1.0	4.8	15	(3)	-4.7	-3.1	-6.6	7.69	1.0
18	2.1	5.5	13 15	(5)	-6.1	-1.7	-13.6	12.99	2.0
19	3.4	7.1	13 14	(8)	-3.3	-1.7	-6.0	11.76	3.0
20	1.6	5.1	14	(5)	-1.1	1.6	-3.0	10.78	3.0
21	1.9	5.1	11 12	(4)	-1.1	1.6	-4.8	9.90	0.0
22	2.6	6.0	12 13	(6)	-1.7	0.4	-7.6	13.08	1.0
23	4.4	9.6	6	(8)	-1.3	0.5	-7.4	3.92	3.5
24	3.1	6.2	14	(9)	0.0	1.8	-1.9	10.49	0.5
25	2.0	5.1	1	(5)	-1.3	1.2	-5.2	9.95	0.5
26	4.3	11.0	5	(6)	0.0	1.2	-3.4	5.34	6.5
27	X	X	X	(0)	X	X	-2.1	X	X
28	3.1	6.3	13	(7)	-2.9	-1.2	-4.5	7.30	7.0
29	3.9	8.2	12	(9)	-3.7	-1.8	-5.3	12.30	1.0
TOTL								137.01	108.0
MEAN	2.4	6.3			-3.6	-1.1	-7.1	9.79	
MAX.	4.4	11.0			0.0	2.2	-1.9	13.08	
MIN.	0.2	2.3			-7.4	-6.2	-15.7	3.92	
DN	28	28			28	28	29	14	28

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.2	4.4	7	(5)	-1.1	1.0	-5.4	X	7.5
2	2.1	8.1	14	(4)	-1.9	1.7	-4.9	X	4.0
3	2.8	5.2	13	(7)	-5.7	-3.5	-7.3	X	8.5
4	3.2	5.5	13 15	(9)	-6.0	-5.2	-7.1	X	2.5
5	1.8	5.3	13	(5)	-5.8	-3.4	-7.5	X	6.0
6	3.7	6.1	13	(13)	-7.9	-6.3	-8.8	X	4.5
7	2.7	4.5	13	(9)	-6.7	-5.5	-7.6	X	6.5
8	3.2	6.3	13	(9)	-5.4	-4.2	-6.3	X	8.0
9	3.4	6.0	13	(7)	-4.2	-2.1	-7.2	X	2.5
10	1.8	4.9	14	(5)	-3.0	-1.1	-4.8	X	3.5
11	2.0	4.2	14	(5)	-4.7	0.1	-11.6	X	0.0
12	0.4	1.5	1	(3)	-4.0	-0.9	-6.9	X	0.0
13	1.5	3.8	16	(5)	-2.2	1.8	-4.6	X	3.5
14	1.1	4.0	13	(5)	-2.8	0.2	-4.5	X	12.0
15	1.5	4.4	14	(5)	-7.6	-3.1	-13.6	10.79	5.5
16	2.7	6.1	14	(5)	-4.9	-3.8	-5.8	10.78	3.5
17	0.9	2.4	15	(4)	-6.5	-3.1	-13.2	8.39	1.0
18	2.6	4.1	13 14	(6)	-4.1	-2.2	-5.6	11.86	5.0
19	3.3	6.2	14	(8)	-2.3	-1.7	-3.2	12.16	0.0
20	1.8	3.7	15	(4)	-1.3	1.3	-4.3	10.67	3.0
21	2.2	4.6	13	(5)	-0.5	1.6	-2.6	10.39	1.0
22	3.5	8.5	12	(6)	-2.2	0.3	-6.7	12.41	0.0
23	3.1	8.4	6	(7)	-0.3	0.8	-1.2	4.17	3.5
24	3.3	5.9	14	(9)	-0.7	1.6	-2.7	10.39	1.0
25	3.2	8.5	1 4	(4)	-0.7	1.2	-4.9	9.85	0.0
26	2.4	7.2	7	(4)	0.1	1.2	-1.3	5.49	7.0
27	X	X	X	(0)	X	X	X	X	X
28	3.8	6.0	12	(9)	-3.5	-1.6	-4.7	7.64	6.0
29	4.0	7.5	12 13	(7)	-4.0	-2.5	-5.2	12.05	1.5
TOTL								137.04	107.0
MEAN	2.5	5.5			-3.6	-1.3	-6.1	9.79	
MAX.	4.0	8.5			0.1	1.8	-1.2	12.41	
MIN.	0.4	1.5			-7.9	-6.3	-13.6	4.17	
DN	28	28			28	28	28	14	28

X - UNKNOWN DATA
* - OBSERVATION POINT:127M M.S.L.,38.79 DEG.N,140.32 DEG.E

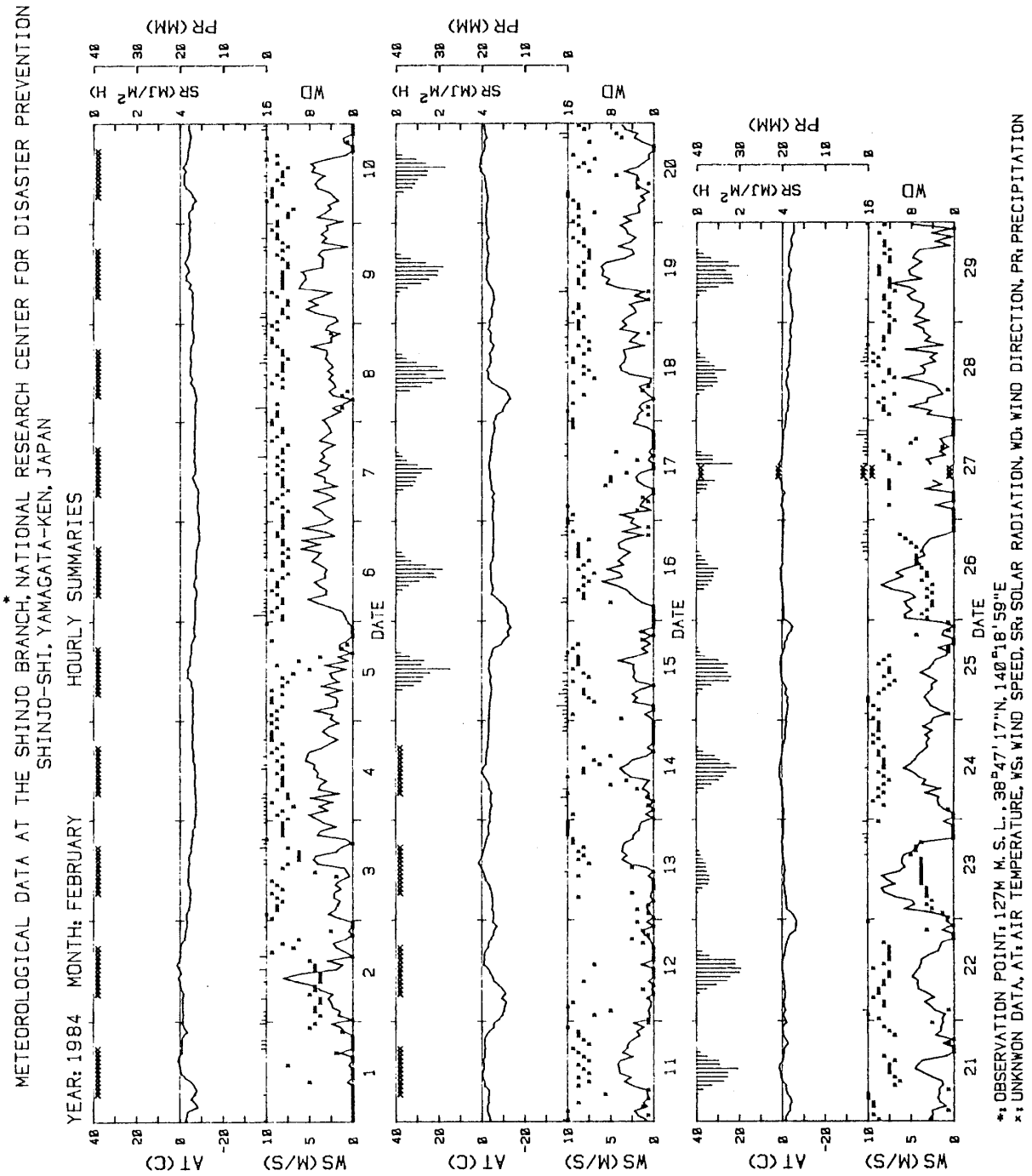

図 4.52　気象データの時間的変化

表 4.53　新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

MARCH　1984

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	3.0	7.5	13	(7)	-3.9	-1.3	-10.6	11.12	3.0
2	0.8	7.3	6 13 14	(2)	-3.4	1.9	-13.3	14.94	2.0
3	2.2	7.5	7	(4)	-1.9	0.9	-11.1	9.65	8.0
4	0.7	4.9	1 9 13	(2)	-6.5	0.9	-14.5	17.98	0.0
5	1.3	5.0	1	(4)	-4.2	-0.9	-10.9	12.69	12.5
6	1.2	5.2	15	(5)	-3.9	0.8	-9.1	11.47	7.5
7	2.6	7.0	13	(7)	-1.4	1.0	-4.5	11.17	1.0
8	2.0	6.1	1 13 15	(4)	-1.5	1.8	-5.8	14.01	1.0
9	1.5	7.1	2	(5)	-2.9	2.1	-7.6	13.82	1.5
10	1.8	6.7	14 16	(3)	-3.0	1.6	-9.3	5.49	2.5
11	5.8	10.1	13	(13)	-1.1	0.4	-3.1	12.40	3.0
12	1.4	4.7	15	(5)	-3.1	-1.7	-6.3	6.71	9.5
13	2.0	6.6	16	(6)	-3.4	0.2	-7.4	14.99	3.0
14	0.5	3.1	3	(3)	-2.6	1.6	-9.9	16.61	6.0
15	0.6	3.5	1 13	(3)	-4.8	3.0	-13.7	18.86	0.0
16	3.3	7.8	6	(5)	-1.0	2.6	-7.1	12.59	2.0
17	2.5	7.7	12	(6)	1.5	3.9	0.2	11.07	6.0
18	4.5	8.6	13	(13)	0.8	2.7	-0.4	10.19	7.5
19	2.2	8.0	5 6	(3)	1.1	3.9	-1.1	16.61	0.0
20	0.8	5.3	13	(3)	0.1	2.4	-1.5	10.98	4.5
21	2.9	7.9	12 13	(5)	-0.4	2.0	-2.9	13.48	4.0
22	2.4	6.9	14 15 16	(5)	-2.3	0.7	-5.8	15.09	5.0
23	1.4	6.2	5 12	(3)	-3.0	0.6	-8.1	18.28	0.5
24	0.7	3.1	16	(6)	-3.2	0.9	-9.8	12.15	2.5
25	2.5	8.0	12	(5)	1.9	5.6	-4.2	21.36	3.5
26	4.5	9.2	13	(9)	0.0	1.8	-3.9	22.15	0.5
27	0.6	3.2	6	(2)	-1.2	2.9	-4.4	16.22	11.0
28	1.0	4.9	12	(3)	-1.6	3.1	-7.3	20.97	1.5
29	0.7	3.8	16	(5)	-1.0	4.1	-6.0	10.19	7.0
30	0.4	2.6	1 16	(2)	1.8	5.2	0.0	14.70	4.0
31	1.8	5.0	12	(6)	2.3	4.9	-2.0	19.65	3.5
TOTL								437.59	123.5
MEAN	1.9	6.1			-1.7	1.9	-6.5	14.12	
MAX.	5.8	10.1			2.3	5.6	0.2	22.15	
MIN.	0.4	2.6			-6.5	-1.7	-14.5	5.49	
DN	31	31			31	31	31	31	31

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	1.2	7.1	13	(5)	-5.4	-1.3	-11.1	11.08	4.0
2	1.8	5.8	7	(5)	-0.3	1.4	-4.0	14.98	5.0
3	1.0	5.1	1	(3)	-6.7	0.3	-13.5	10.35	3.0
4	1.0	3.3	9	(3)	-3.6	0.6	-7.6	16.80	10.5
5	1.2	4.3	1	(4)	-5.0	-1.1	-8.2	12.99	6.0
6	1.4	3.0	13	(5)	-2.2	0.7	-5.4	11.67	4.0
7	2.5	6.1	13	(4)	-1.6	0.9	-4.8	11.66	0.5
8	1.9	5.2	2 13	(4)	-1.9	1.3	-5.0	13.76	1.0
9	1.5	5.6	14	(5)	-4.2	1.8	-8.6	13.42	1.5
10	4.2	7.8	13	(5)	-0.6	1.6	-4.0	5.59	5.0
11	4.0	8.6	13	(9)	-2.1	0.0	-5.3	12.45	1.5
12	1.6	4.2	16	(6)	-3.6	-1.8	-6.9	7.41	11.0
13	1.6	4.7	14	(4)	-2.8	0.0	-4.1	15.25	6.5
14	0.5	2.4	3	(3)	-5.4	1.2	-12.5	17.58	0.0
15	1.0	3.2	15	(3)	-2.4	2.9	-6.3	18.42	0.0
16	3.5	7.8	6	(5)	1.1	2.4	0.2	11.56	4.0
17	4.0	6.3	12	(9)	1.6	3.5	-0.3	11.07	10.0
18	2.8	5.3	13	(12)	0.4	2.0	-0.7	10.24	1.5
19	2.1	6.6	6	(4)	1.0	3.7	-1.0	16.56	2.0
20	1.2	4.0	12	(4)	-0.0	1.9	-2.1	12.45	2.5
21	2.6	6.0	15 16	(5)	-1.1	1.6	-3.8	12.37	6.5
22	1.9	5.6	14	(4)	-3.2	0.0	-7.4	15.40	2.5
23	1.5	4.8	14 16	(4)	-4.2	0.3	-9.2	18.33	0.5
24	0.9	4.7	16	(4)	-0.2	2.1	-4.6	13.42	4.5
25	4.2	6.9	12	(8)	2.0	4.7	-0.1	21.02	2.0
26	2.7	7.6	13 14	(5)	-1.6	1.7	-4.3	21.23	5.5
27	0.5	2.0	1 2	(1)	-1.1	2.2	-5.3	16.67	7.0
28	1.2	4.6	12	(4)	-2.0	2.9	-7.0	18.98	2.0
29	0.4	2.3	16	(3)	0.7	3.7	-2.5	11.41	9.0
30	0.9	4.5	1	(4)	2.6	4.8	0.9	14.90	3.5
31	1.2	4.0	12	(5)	0.5	4.6	-4.1	21.41	0.0
TOTL								440.43	122.5
MEAN	1.9	5.1			-1.7	1.6	-5.1	14.21	
MAX.	4.2	8.6			2.6	4.8	0.9	21.41	
MIN.	0.4	2.0			-6.7	-1.8	-13.5	5.59	
DN	31	31			31	31	31	31	31

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

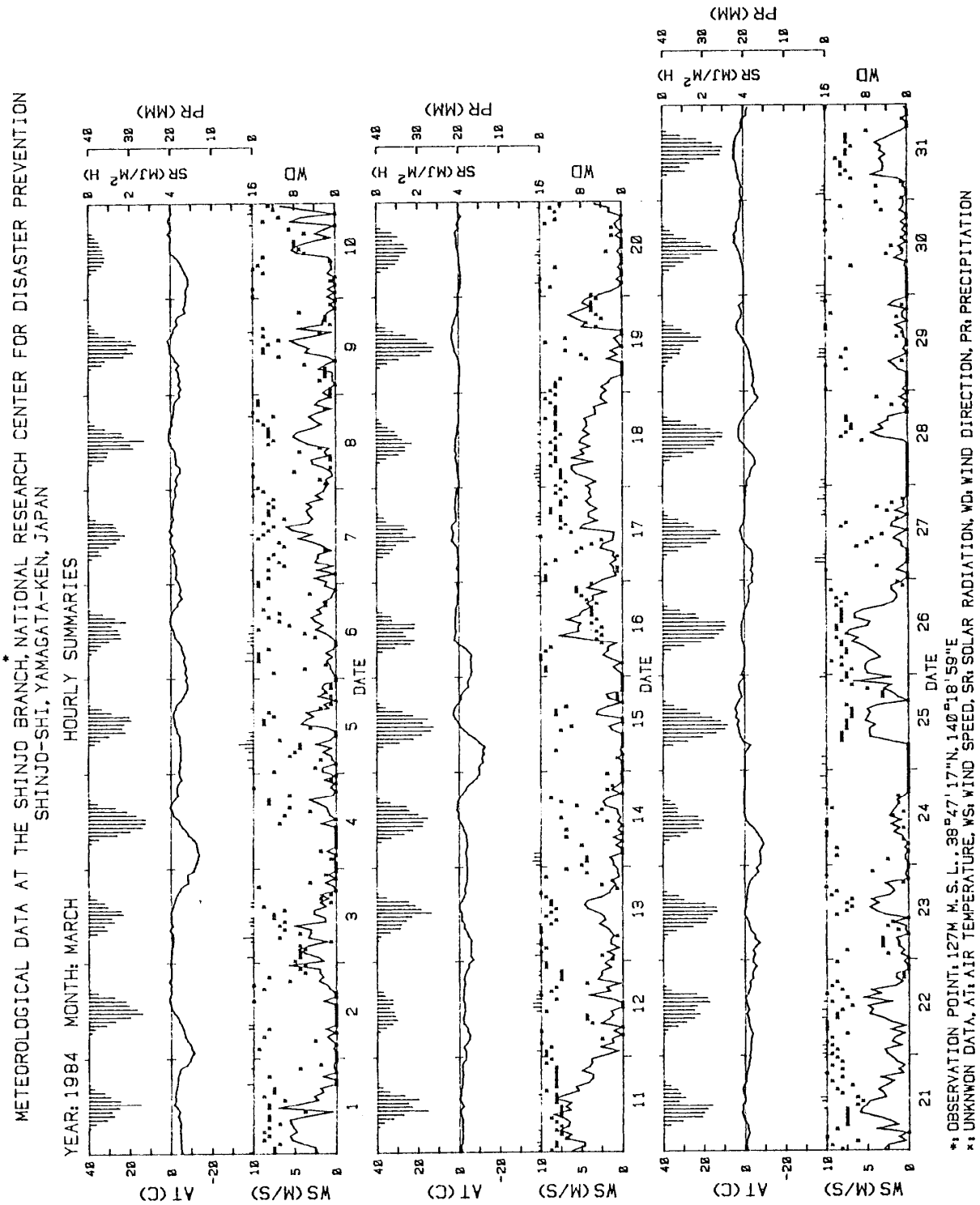

図 4.53　気象データの時間的変化

表 4.54 新庄支所冬期気象月表

*
METEOROLOGICAL DATA AT THE SHINJO BRANCH, NATIONAL RESEARCH CENTER FOR DISASTER PREVENTION
SHINJO-SHI, YAMAGATA-KEN, JAPAN

(DAILY SUMMARIES)

APRIL 1984

BOUNDARY OF DATE : 00H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.5	2.2	1	(4)	-0.2	5.4	-5.6	24.55	0.0
2	0.7	3.1	2 11	(3)	-1.5	5.7	-9.5	25.09	0.0
3	0.7	2.7	14	(5)	0.2	5.8	-5.4	16.76	0.0
4	0.3	2.9	1	(3)	3.5	11.9	-1.9	23.27	0.0
5	1.9	6.7	7 8	(4)	3.5	6.9	0.7	4.16	25.5
6	5.3	9.4	12	(9)	3.2	6.9	0.2	12.74	11.5
7	3.3	7.7	13	(9)	1.0	4.0	-4.4	23.08	0.5
8	0.9	3.9	12 13	(4)	0.1	4.9	-4.4	16.07	0.0
9	1.3	4.2	1 5	6(4)	1.1	6.8	-5.8	22.44	0.0
10	0.2	1.8	15	(3)	2.5	5.0	0.5	9.21	0.0
11	0.5	2.4	2 5	8(2)	4.2	11.2	0.5	18.33	0.0
12	1.4	3.5	13	(7)	3.3	5.6	0.4	6.47	0.0
13	1.6	3.8	1 15	(5)	3.8	7.6	-1.5	20.78	0.0
14	1.0	4.1	2	(4)	2.5	9.3	-3.0	25.63	0.0
15	0.3	3.1	1 3	6(1)	2.5	8.7	-4.6	18.95	0.0
16	0.3	2.6	1	(3)	4.5	9.0	0.8	14.95	0.0
17	0.6	2.4	1 15	(3)	4.7	10.1	1.5	15.65	3.0
18	0.8	2.7	13	(5)	4.0	6.6	2.1	3.15	19.0
19	2.3	7.1	7	(5)	2.0	3.6	0.3	3.55	38.0
20	1.0	4.0	1	(5)	2.5	4.1	0.8	8.70	15.0
21	3.3	8.4	7	(8)	4.8	8.7	1.6	13.70	1.0
22	1.7	6.6	6 7	(3)	5.3	9.2	2.3	11.65	0.0
23	1.2	5.6	13	(4)	5.7	10.4	0.9	21.40	0.0
24	0.6	3.6	15	(3)	5.0	13.6	-0.6	22.00	0.0
25	0.6	3.0	1 3	15(3)	7.3	16.7	-0.8	21.95	0.0
26	0.7	4.9	1 4	5(1)	10.3	21.1	1.0	24.10	0.0
27	0.4	2.9	2 9	(3)	11.0	21.3	1.9	23.95	0.0
28	2.1	7.0	4 5	7(3)	11.3	21.7	2.3	23.50	0.0
29	6.3	10.7	5	(11)	7.5	11.5	3.5	24.55	0.0
30	6.2	10.4	5	(13)	9.7	13.9	6.2	24.05	0.5
TOTL								524.38	114.0
MEAN	1.6	4.8			4.2	9.6	-0.7	17.48	
MAX.	6.3	10.7			11.3	21.7	6.2	25.63	
MIN.	0.2	1.8			-1.5	3.6	-9.5	3.15	
DN	30	30			30	30	30	30	30

BOUNDARY OF DATE : 09H O'CLOCK

DATE	WS(M/S) MEAN	WS(M/S) MAX.	WD(1-16) MOST	WD(1-16) FREQ.NO.	AT(C) MEAN	AT(C) MAX.	AT(C) MIN.	SR(MJ/M2) TOTL	PR(MM) TOTL
1	0.4	1.7	11	(3)	-1.7	5.1	-9.1	24.94	0.0
2	0.9	2.4	16	(4)	-0.3	5.4	-4.9	24.15	0.0
3	0.4	1.9	14	(3)	1.6	5.6	-1.5	17.06	0.0
4	0.4	2.2	1	(4)	3.9	10.7	1.0	20.38	1.0
5	3.5	6.9	7 8	(4)	4.9	6.3	3.0	5.88	32.0
6	5.7	8.0	12	(10)	1.6	4.2	-1.2	14.30	4.5
7	1.7	5.2	13	(6)	-0.3	3.8	-3.8	21.07	0.0
8	1.0	2.8	12 13	(4)	0.3	4.7	-5.1	18.51	0.0
9	1.2	3.7	5 6	(4)	2.8	6.1	0.9	19.99	0.0
10	0.3	1.3	2 4	(2)	2.6	4.7	0.7	9.16	0.0
11	0.6	2.0	1	(3)	4.5	10.8	0.7	18.23	0.0
12	1.7	3.0	13	(7)	3.5	5.6	1.9	7.54	0.0
13	1.1	2.8	13 16	(3)	2.6	7.5	-2.0	22.51	0.0
14	0.9	3.5	2	(4)	2.0	9.0	-4.0	24.45	0.0
15	0.2	1.7	3 6	(1)	4.3	8.5	1.3	19.55	0.0
16	0.4	2.4	1	(3)	4.7	8.6	1.9	13.35	0.0
17	0.6	1.7	1	(4)	4.7	9.5	2.3	13.25	10.5
18	0.8	2.2	15	(5)	3.5	6.2	0.4	3.55	33.5
19	2.4	5.9	7	(5)	1.9	3.4	0.9	3.85	24.0
20	0.7	2.9	15	(3)	2.9	3.8	1.9	9.40	8.0
21	4.0	7.6	7	(9)	5.5	8.6	2.8	14.85	0.0
22	0.8	4.9	1	(3)	5.2	8.4	2.9	10.70	0.0
23	1.3	4.6	13	(4)	4.3	9.8	-0.5	22.15	0.0
24	0.6	3.0	15	(4)	5.5	13.4	-0.7	24.20	0.0
25	0.6	2.2	1	(4)	8.2	16.3	1.3	21.20	0.0
26	0.5	3.7	9 12	(2)	10.9	20.7	2.3	24.80	0.0
27	0.5	1.5	2 11	(3)	11.2	21.2	2.4	23.75	0.0
28	3.9	7.4	5	(6)	11.5	21.2	3.5	23.15	0.0
29	7.1	9.5	5	(15)	8.2	11.4	6.2	25.80	0.0
30	X	X	X	(0)	X	X	X	X	X
TOTL								501.72	113.5
MEAN	1.5	3.7			4.2	9.0	0.2	17.30	
MAX.	7.1	9.5			11.5	21.2	6.2	25.80	
MIN.	0.2	1.3			-1.7	3.4	-9.1	3.55	
DN	29	29			29	29	29	29	29

X - UNKNOWN DATA
* - OBSERVATION POINT: 127M M.S.L., 38.79 DEG.N, 140.32 DEG.E

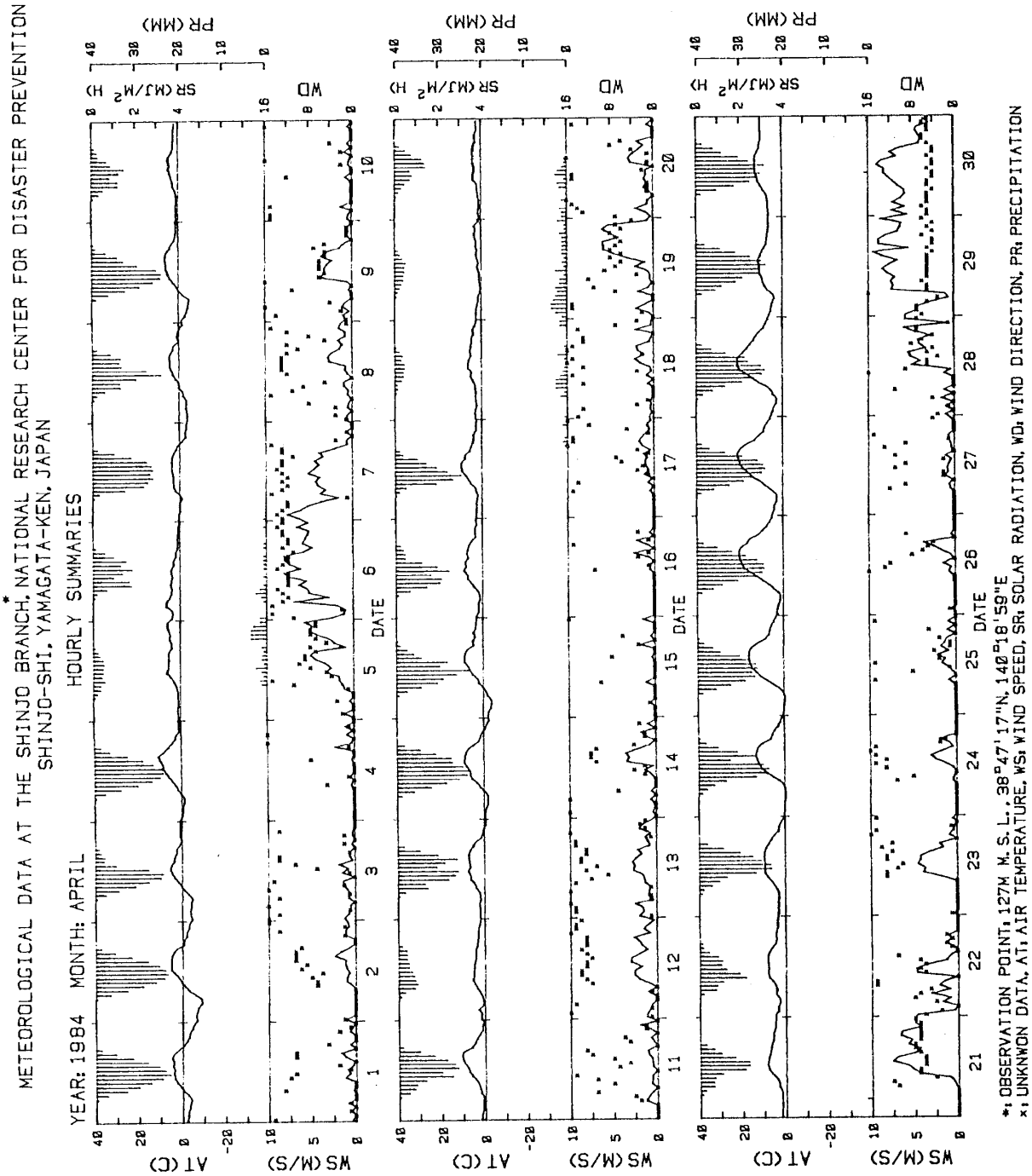

図 4.54 気象データの時間的変化

記　　号	内　　容
WS	風速（単位：m／sec）
WD	風向*，16方位，16が真北
AT	気温（単位：℃）
SR	全天日射量（単位：MJ／㎡）
PR	降水量（単位：㎜）
DATE	日付
MEAN	平均値
MAX.	最大値
MIN.	最小値
MOST FREQ. NO.	最多風向とその出現数
TOTL	合計値
DN	データ数

（＊：風速が0.2 m／s 以上のときの風向）

表5　表4中の記号の説明

特に日最大風速の場合，風速の時間的変化が激しいので，1時間毎のデータのうちの最大値が，その日における日最大値にいつもなるとは考えにくい．したがって，そのようにして求めた日最大風速は，真の値よりも小さめに表われるはずである．このことは，気温の場合の最高及び最低気温についても言える．

風向：16方位で表示してあり，東回りで1が北北東，16が北である．また，風速が0.2 m／s以下の場合は静穏とみなしており，毎正時の風向が全て静穏となった場合の最多風向の欄は空白とした．

気温：1982年1月16日以降，それまで百葉箱内にあった感部を通風シェルター付のものと交換したので，気温変化に対する応答が速くなっているはずである．

全天日射量：アナログ記録計による瞬時値は，気象観測開始時からあったが，それでは1時間ごとの積算値を読取ることは困難であった．それで，積算器（英弘精器製，MP－20）を組込み，しかも感部に着雪防止用のブロアーを取付けた状態で記録を開始した1976年12月29日以降の測定値を採用した．なお，1981年にWMOによる日射のスケールの改正が行われたので，本報告でもこれに準拠し，全て新スケールで表示してある．

降水量：1983年12月23日15時から感部を降雪に対する捕捉率がよいといわれているいっ水式のものに変更した．

共通：不明なデータは×印で表示した．

表6.1，6.2は風向について1カ月の全データを用いて風向別出現数を求めた結果である．出現数が最も多いのは北西及び西北西であることが分かる．

表7～11は，上記の表4及び表6の月ごとの統計処理結果のうち，新庄支所における気象をよく表わすと思われるものを各気象要素ごとにまとめたものである．なお，これらの表中

表 6.1　風向別出現数（その１）

年	月	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N	CALM	合 計
1974	11	7	4	1	0	3	3	4	7	3	7	8	20	69	102	26	25	430	719(720)*
'74	12	10	1	0	0	1	7	0	4	2	0	6	48	127	92	37	23	360	718(744)
1975	1	19	2	0	2	1	1	3	3	5	5	5	36	106	97	31	22	401	743(744)
'75	2	13	9	5	4	2	18	16	8	5	6	13	26	84	74	24	29	335	671(672)
'75	3	20	7	5	6	23	26	20	15	10	15	24	54	80	58	21	20	339	743(744)
'75	4	6	4	1	2	3	10	4	0	1	5	6	28	57	22	12	13	66	240(720)
1975	12	24	10	3	2	4	6	7	9	1	8	9	28	55	83	48	68	378	743(744)
1976	1	12	4	3	7	7	9	5	10	6	6	15	49	139	93	26	26	309	726(744)
'76	2	13	7	3	3	4	6	2	4	0	2	8	26	93	72	29	21	401	694(696)
'76	3	16	10	0	9	13	22	8	3	4	9	6	27	85	127	28	24	353	744(744)
'76	4	3	1	0	1	4	5	0	2	0	0	1	5	23	13	3	5	53	119(720)
1976	11	4	3	0	0	1	6	4	5	3	8	1	16	38	43	17	9	202	360(720)
'76	12	7	2	0	0	3	12	7	4	1	1	2	39	59	101	17	12	440	707(744)
1977	1	7	3	0	1	0	9	6	9	6	10	13	32	110	122	28	30	356	742(744)
'77	2	10	5	2	5	4	31	13	12	2	10	11	41	84	81	28	39	270	648(672)
'77	3	17	4	0	0	4	38	9	17	7	13	7	29	73	100	29	32	365	744(744)
'77	4	8	6	0	0	4	6	7	5	7	5	0	13	42	27	15	12	83	240(720)
1977	12	13	2	2	2	3	11	10	7	2	2	2	13	61	117	45	32	417	741(744)
1978	1	17	6	0	3	1	18	7	7	9	1	2	19	67	142	55	37	351	742(744)
'78	2	12	1	0	1	1	16	17	6	3	2	0	12	86	100	33	26	335	651(672)
'78	3	16	5	0	3	8	35	7	6	3	4	11	51	98	92	33	30	342	744(744)
'78	4	6	4	1	3	1	5	2	0	7	3	2	10	49	28	10	12	97	240(720)
1978	12	15	3	2	4	0	12	8	4	2	7	5	30	93	66	29	30	429	739(744)
1979	1	13	1	0	4	10	17	10	7	3	4	4	24	101	94	23	28	401	744(744)
'79	2	12	2	1	2	7	13	15	7	3	6	6	27	92	70	26	13	367	669(672)
'79	3	27	7	0	2	1	5	2	3	5	5	6	35	113	81	18	29	405	744(744)

＊：これは１カ月の全データ数720 個（１日24 個のデータの30日分）のうち，不明なものや収納しなかったものを除いたデータ数が719 個あったことを表わす（以下同様）．

表 6.2　風向別出現数（その2）

年	月	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N	CALM	合 計
1979	12	27	5	3	1	1	14	6	6	3	6	7	17	58	66	34	43	447	744(744)
1980	1	7	1	0	0	11	28	17	16	6	3	3	25	84	82	36	34	391	744(744)
'80	2	6	1	1	1	1	2	4	4	3	3	11	45	89	95	40	39	351	696(696)
'80	3	7	3	2	6	7	23	5	5	1	7	8	26	137	112	21	22	352	744(744)
'80	4	9	3	0	0	0	2	1	3	1	1	2	2	26	19	3	4	116	192(720)
1980	12	10	2	2	3	11	38	25	11	4	7	9	28	71	56	20	25	413	735(744)
1981	1	10	2	0	1	3	14	10	7	6	8	16	36	91	107	47	28	349	735(744)
'81	2	15	6	2	3	8	16	9	9	5	4	14	47	85	52	22	17	339	653(672)
'81	3	21	3	4	5	12	23	9	6	6	5	12	43	91	77	36	30	360	743(744)
'81	4	17	10	13	7	5	12	5	2	1	0	1	14	51	27	16	17	90	288(720)
1981	11	19	2	1	3	8	14	3	8	3	5	7	11	64	77	37	41	297	600(720)
'81	12	16	6	2	7	10	6	3	6	4	7	6	26	97	96	28	42	378	740(744)
1982	1	26	1	5	1	7	10	5	8	3	5	25	30	90	41	36	41	388	722(744)
'82	2	32	8	3	7	11	9	6	7	5	5	12	37	90	56	64	40	280	672(672)
'82	3	36	9	5	7	12	16	8	7	5	12	14	42	85	48	46	33	358	743(744)
'82	4	3	1	2	2	3	1	0	0	0	0	3	10	35	9	4	7	40	120(720)
1982	11	37	18	19	14	13	20	14	12	15	14	25	49	82	61	57	56	214	720(720)
'82	12	34	23	18	16	17	13	19	14	13	22	29	45	70	78	63	53	217	744(744)
1983	1	31	30	12	14	8	9	8	5	5	7	26	57	118	113	77	41	183	744(744)
'83	2	22	17	8	9	9	25	29	20	10	15	15	40	77	85	50	37	204	672(672)
'83	3	50	47	25	14	30	34	8	12	9	5	20	40	78	55	45	23	249	744(744)
'83	4	44	25	11	18	43	51	27	27	9	15	34	57	61	52	44	34	168	720(720)
1983	11	39	16	14	10	16	19	10	15	15	9	20	40	66	56	43	36	271	695(720)
'83	12	51	23	23	19	16	17	21	11	12	12	31	51	104	67	54	37	195	744(744)
1984	1	36	23	23	8	11	25	24	9	2	8	20	59	79	65	48	34	270	744(744)
'84	2	37	14	10	12	13	21	19	14	3	9	21	77	131	102	67	30	113	693(696)
'84	3	43	25	18	17	19	25	22	13	12	14	37	71	95	58	49	48	178	744(744)
'84	4	80	41	52	49	51	44	43	33	16	16	41	50	55	32	57	49	11	720(720)

単位：m／s

表 7　月平均風速

冬＼月	11	12	1	2	3	4
1974／75	0.9	1.1	1.0	1.0	1.1	
1975／76		0.8	1.2	0.9	1.1	
1976／77		0.8	1.0	1.2	1.1	
1977／78		0.8	1.2	1.1	1.3	
1978／79		0.8	1.0	0.9	1.1	
1979／80		0.5	0.8	0.8	1.2	
1980／81		0.8	0.9	0.9	1.0	
1981／82		0.8	0.8	1.0	0.8	
1982／83*	1.5	1.3	2.0	1.6	1.5	2.0
1983／84*	1.1	1.7	1.4	2.4	1.9	1.6

＊ 1982年7月　風速計の地上高が5.5mから10mに変わった．

16方位

表 8　月最多風向

冬＼月	11	12	1	2	3	4
1974／75	14	13	13	13	13	
1975／76		14	13	13	14	
1976／77		14	14	13	14	
1977／78		14	14	14	13	
1978／79		13	13	13	13	
1979／80		14	13	14	13	
1980／81		13	14	13	13	
1981／82		13	13	13	13	
1982／83	13	14	13	14	13	13
1983／84	13	13	13	13	13	1

単位：℃

表 9　月平均気温

冬＼月	11	12	1	2	3	4
1974／75	3.4	−1.4	−2.8	−3.1	1.1	
1975／76		0.5	−1.5	−1.3	1.6	
1976／77		−0.4	−4.3	−2.1	1.5	
1977／78		1.7	−1.3	−3.2	1.5	
1978／79		2.4	−0.1	0.8	1.5	
1979／80		3.1	−1.3	−2.2	0.7	
1980／81		1.3	−2.8	−1.4	0.7	
1981／82	3.1	0.9	−2.0	−2.0	1.5	
1982／83	6.5	2.3	−0.5	−2.3	0.9	10.5
1983／84	4.9	−0.6	−3.4	−3.6	−1.7	4.2

単位：MJ／㎡

表10　月平均全天日射量

冬＼月	11	12	1	2	3	4
1974／75						
1975／76						
1976／77			6.23	8.16	10.71	
1977／78		3.96	5.07	8.06	11.74	
1978／79		3.88	4.55	7.19	10.78	
1979／80		3.86	4.57	9.02	12.52	
1980／81		4.65	6.49	8.45	14.36	
1981／82		4.17	5.89	8.96	12.02	
1982／83	5.26	3.79	5.74	8.20	12.69	14.35
1988／84	5.74	4.78	－	－	14.12	17.48

単位：㎜

表11　月降水量

冬＼月	11	12	1	2	3	4
1974／75	242.0	161.5	160.5	147.5	198.5	
1975／76		117.5	205.0	157.5	66.0	
1976／77		209.0	166.5	127.0	91.5	
1977／78		199.0	179.0	152.5	128.0	
1978／79		108.0	171.0	150.0	148.0	
1979／80		173.0	183.0	192.0	110.5	
1980／81		261.0	246.5	139.5	117.0	
1981／82	145.0	174.5	197.0	135.0	131.0	
1982／83	152.5	253.0	129.0	173.5	125.5	105.0
1983／84	151.0	214.0	220.5	108.0	123.5	114.0

でデータの日数が１カ月分に満たないものは空白としてある．

新庄支所は新庄盆地の中央部に位置するため，風は割合弱く（表７参照），その主風向は北西（14）及び西北西（13）である（表８参照）．月平均気温は，冬期によってかなり変動しており，１月で比較すると－0.1℃から－4.3℃の範囲である（表９参照）．月平均全天日射量は，12月から1，2，3月へと急激に増加し，２月は12月の約２倍である．また，冬期による変動幅が割合少ないことや，56豪雪（1980／81年冬）時の12月及び１月の値が他の冬のものに比べてむしろ大きくなっていることが注目される（表10参照）．月降水量は12月と１月が冬期によって違いはあるもののほぼ同程度であり，２月，３月の順に少なくなっている．また，56豪雪時の12月と１月の月降水量は10冬期中それぞれ最大となった．

6. あとがき

1974年11月から本格的に開始された気象•降積雪観測は1984年４月現在で10冬期となった．この間，冬期には各研究会分担者が休日も交替で記録計等の点検を行い，データの欠損を防止してきた．本資料は風速，風向，気温，全天日射量および降水量の５要素の１時間毎のデータを基に作成されたものである．これらのうち全天日射量については，現在最大積雪深が１ｍを超える多雪地においての測定例がほとんどないので，貴重な資料となっている．なお，新庄での平均最大積雪深は1.46ｍである（中村他，1983）．

これら一連の測定は，国立防災科学技術センターの経常研究「東北地方の積雪性状に関する研究」（研究代表者：中村勉）において，積雪の変態過程を明らかにするため，並びに当支所における他の研究テーマの基礎資料とするために行われたものである．今後，本資料を基にして種々の解析が行われる予定である．

最後に，本資料の作成に協力していただいた野秋千恵子嬢，渡部千和嬢，押切豊美夫人および片桐隆子（旧姓佐藤）夫人に感謝するものである．また，研究分担者全員が出張などの理由で記録計の点検ができなくなった場合に，替りに点検していただいた当支所管理係の結城広行技官にも併せて感謝するものである．

参　考　文　献

1)　気象庁（1971）：地上気象観測法．日本気象協会，東京，p．49 参照．

2)　気象庁（1971）：同上，p．81参照．

3)　中村勉・中村秀臣・東浦将夫・沼野夏生・阿部修（1983）：都市雪害推定に関する研究．昭和56年の豪雪に関する特別研究報告書，科学技術庁研究調整局，p．56 参照．

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