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Author(s)	SHIRASAWA, Kunio; IKEDA, Mituo; ISHIKAWA, Masao; MOCHIZUKI, Shigeto; TAKATSUKA, Tohru; AOTA, Masaaki; FUJIYOSHI, Yoshihiro
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Meteorological Observation Data Report for Saroma-ko Lagoon, Hokkaido, January 1993 - November 1995^{*,}**

Kunio SHIRASAWA, Mitsuo IKEDA, Masao ISHIKAWA, Shigeto MOCHIZUKI,
Tohru TAKATSUKA, Masaaki AOTA

(Institute of Low Temperature Science, Hokkaido University)

and Yoshihiro FUJIYOSHI

(Saroma Research Center of Aquaculture, Tokoro, Hokkaido)

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Abstract : Long-term meteorological data have been collected at a permanently installed 5-m tower at a cape of Saroma-ko Lagoon to characterize the general meteorological and climatological features at the lagoon. A number of atmospheric boundary layer variables such as air temperature, wind azimuth and speed, and solar radiation were obtained during the period from January 1993 to November 1995 to characterize the atmospheric boundary layer and sea-ice features in Saroma-ko Lagoon through the whole year.

要旨 : サロマ湖は毎年冬期間結氷する。このサロマ湖のキムアネップ岬に設置された 5m の気象塔で通年の気象観測が行なわれている。本研究では、このサロマ湖の 1993 年 1 月から 1995 年 11 月までの結氷状況及び気象観測の結果を報告する。

Key words : Meteorological parameters, Sea ice, Saroma-ko Lagoon

キーワード：気象要素，海氷，サロマ湖

* 北海道大学低温科学研究所業績 第3873号

** 北海道大学低温科学研究所 流水研究施設 研究報告 第144号

I. Introduction

Saroma-ko Lagoon located on the Okhotsk Sea coast of Hokkaido is 149.2 km² in area, 19.5 m in maximum depth and 14.5 m in mean depth (Fig. 1). The lagoon has two inlets which are connected to the Sea of Okhotsk. About 90 % of the total inflow from the sea to the lagoon passes through the first inlet opened in 1927. The remainder passes through the second inlet which was built in December, 1978. The opening of the inlets might have caused changes in the water mass and current circulation of the lagoon, and in the exchange processes of the water between sea and lagoon waters. Also, freshwater input which is mainly supplied by two major rivers causes a reduction of salinity to less than 32 ppt (parts per thousand). During winter most of the lagoon surface is covered with sea ice. The Saroma Research Center of Aquaculture in Sakaeura has been monitoring ice conditions at the lagoon for over thirty years. It was shown from year-to-year changes in the duration of complete ice coverage in the lagoon that the trend of variations appeared to have decreased for the past ten years (Shirasawa *et al.*, 1993). The Saroma Research Center has been also operating a 5-m meteorological tower at the cape of Kimuanepu in cooperation with the Sea Ice Research Laboratory of Hokkaido University to characterize the general meteorological and climatological features at the lagoon. In this report, time series of meteorological parameters during the period from January 1993 through November 1995 are shown. Time series data during the period from December 1991 through December 1992 were reported by Shirasawa *et al.* (1993).

II. Meteorological Data at Kimuanepu

A location map of the meteorological tower at Kimuanepu is shown in Fig. 1. A 5-m meteorological tower was set up at the cape of Kimuanepu in 1989 (Figs. 2 and 3). A thermometer, a pyrliometer and a wind sensor were installed at the heights of 2.9, 4.2 and 5.0 m, respectively, of the tower. Instantaneous values of those sensors were recorded at every 10 min and stored in a data acquisition system (Intelligent Data-Stocker DS-64K2 and LM-30K, Kona Sapporo Co.). The daily values of air temperature, wind speed and azimuth, and solar radiation during the period from January 1993 through November 1995 are listed in Table 1. The threshold value for the wind speed was 2 m s⁻¹. Time series of wind speed and azimuth, air temperature and solar radiation are shown in Fig. 4 at each month. Values for those graphs were obtained at a sampling interval of 10 min except for stick diagrams of wind vector on the uppermost frame in the figure, which were produced by data at a sampling interval of one hour. A time series of windrose at each month is shown in Fig. 5. The minimum air temperature

during the sampling period was recorded at -20.2 °C in January 1994, and the maximum temperature was 34.3 °C in July 1994. The maximum wind speed was at 26.2 m s⁻¹ in April 1993. It appears that stronger northwesterly winds were predominant during the winter while the winds were milder during the summer. Ice conditions such as freezing and breakup for the winters of 1992 to 1995 are shown in Table 2.

Acknowledgements

We wish to thank the Saroma Research Center of Aquaculture in Sakaeura for their kind offers to use their facilities. Funding for this work was partly obtained from the Japanese Ministry of Education, Science and Culture (Monbusho) through grants-in-aid for Scientific Research “Measurements of Energy Flux and Biological Material through/under Sea Ice Cover for Modeling of Sea-Ice Ecosystem” (No. 05680440, Principal Investigator : Kunio Shirasawa) and “An Experimental Study for Modeling of Air-Sea-Ice-Ecosystem in Seasonal Sea-Ice Evolution” (No. 07458117, Principal Investigator : Kunio Shirasawa), and from the Sasakawa Scientific Research Grant from the Japan Science Society (Principal Investigator : Tohru Takatsuka).

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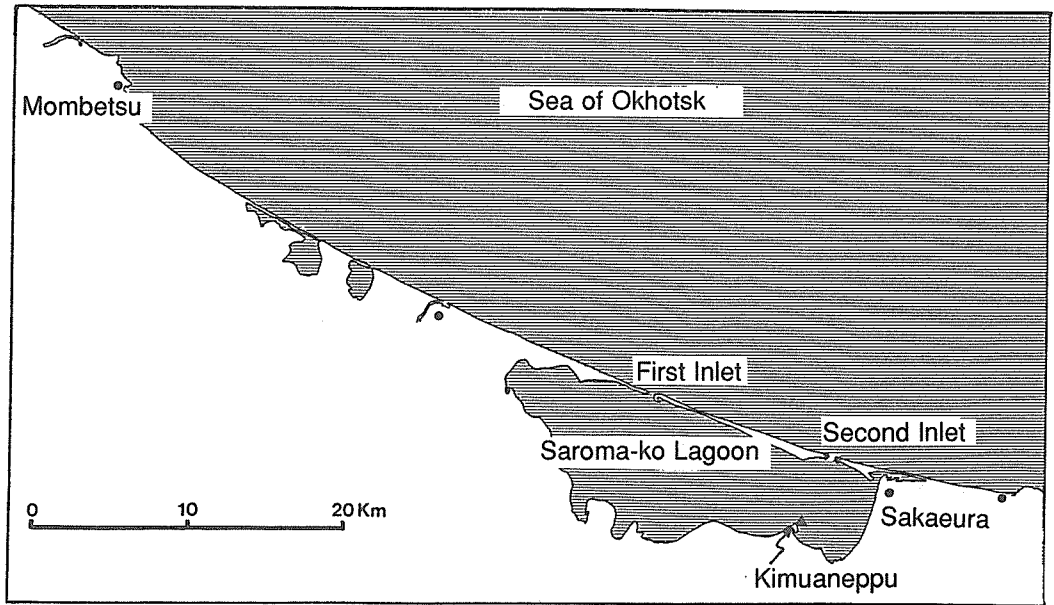


Fig. 1. A location map of Saroma-ko Lagoon.

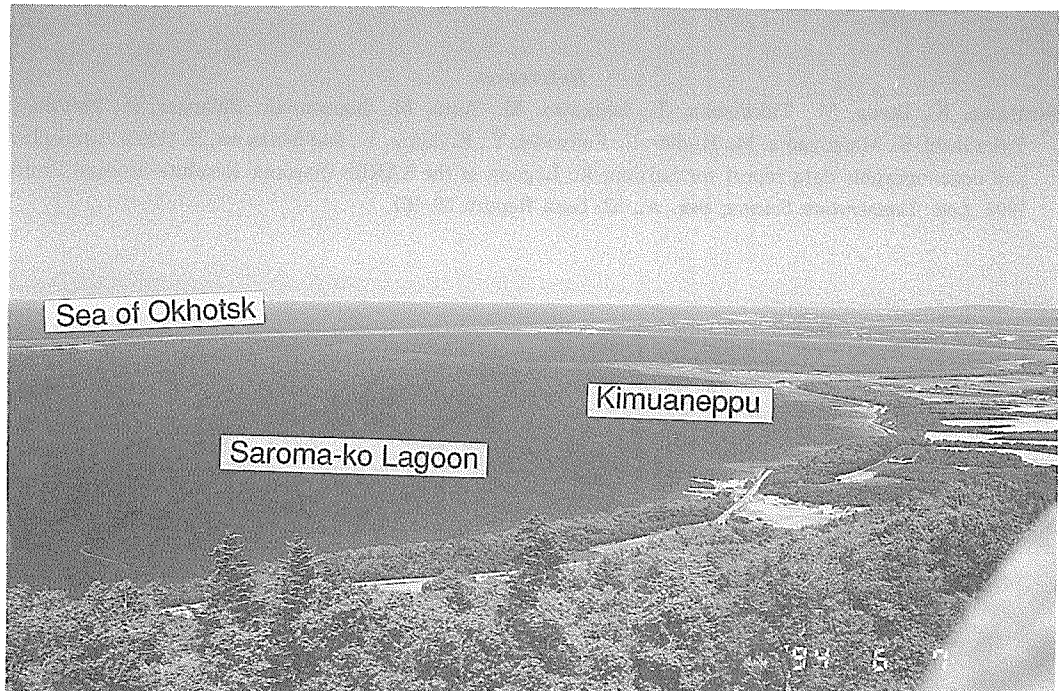


Fig. 2. The Sea of Okhotsk, Saroma-ko Lagoon and Kimuanepu.

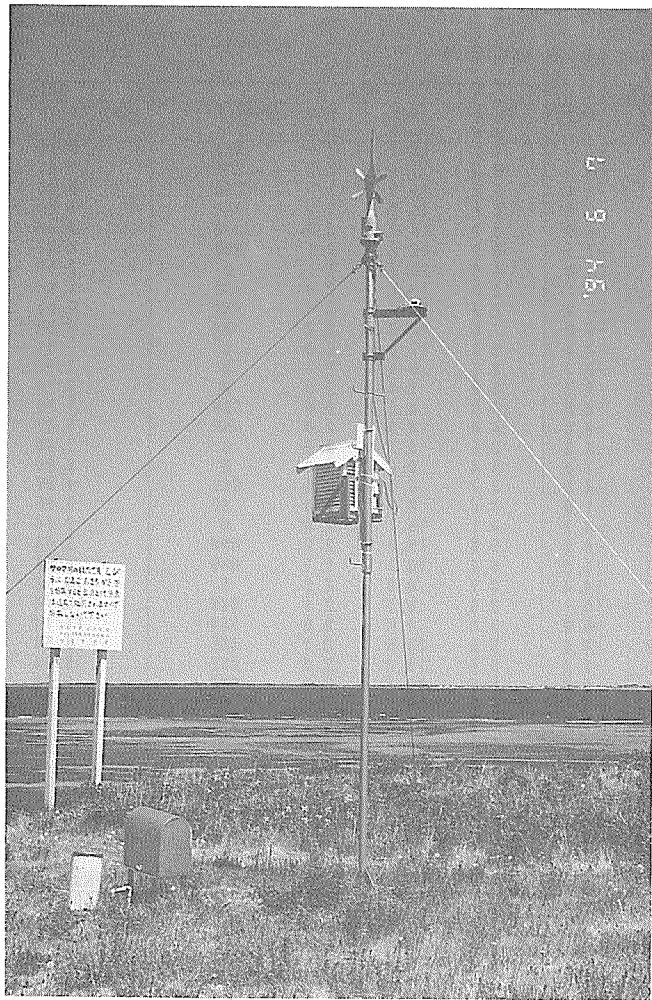


Fig. 3. A 5-m meteorological tower set up at the cape of Kimuanepu.

Table 1. Daily values of air temperature, wind speed and azimuth, and solar radiation obtained at Kimuanepu during the period between January 1993 and November 1995.

January 1993 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	-3.5	-2.3	-7.0	8.1	12.4	2.0	WNW	6.19	0.42	0.00
2	-2.3	1.7	-8.5	9.0	17.4	2.7	SSE	3.41	0.31	0.00
3	0.0	3.4	-2.4	5.2	12.8	2.0	ESE	5.96	0.41	0.00
4	-3.7	-2.2	-5.3	6.8	13.3	2.4	WNW	7.06	0.42	0.00
5	-5.7	-3.5	-6.8	8.3	15.0	2.6	WNW	4.44	0.47	0.00
6	-4.5	-1.8	-7.1	6.9	12.2	2.1	WNW	8.42	0.44	0.00
7	-1.1	4.2	-5.0	4.9	10.9	2.1	S	6.10	0.43	0.00
8	-2.9	0.6	-6.1	10.0	16.2	2.0	NNW	4.25	0.37	0.00
9	-3.8	-1.6	-5.3	7.3	14.7	2.4	WNW	7.51	0.42	0.00
10	-2.9	-0.2	-5.5	7.5	13.7	2.0	NW	3.86	0.23	0.00
11	-5.6	-3.9	-7.4	5.7	11.9	2.0	W	7.51	0.45	0.00
12	-6.0	-3.2	-9.0	3.1	5.8	2.1	S	7.83	0.46	0.00
13	-5.4	-3.5	-8.7	3.9	7.4	2.0	W	6.74	0.47	0.00
14	-5.7	-3.0	-8.8	2.8	4.8	2.0	SSW	7.90	0.53	0.00
15	-6.5	-5.1	-9.8	4.5	9.4	2.0	NNE	4.67	0.26	0.00
16	-7.4	-4.4	-9.8	2.3	3.1	2.0	S	7.45	0.45	0.00
17	-3.3	-1.2	-7.8	5.4	9.6	2.0	E	2.86	0.13	0.00
18	-1.7	0.0	-4.3	3.7	5.9	2.0	ESE	4.27	0.29	0.00
19	-0.9	1.0	-1.9	4.7	8.8	2.0	SE	4.96	0.44	0.00
20	-2.4	-0.8	-4.7	6.1	15.1	2.6	W	2.14	0.11	0.00
21	-3.1	-1.2	-5.7	10.6	16.0	2.2	NNW	3.68	0.23	0.00
22	-5.5	-3.2	-11.3	6.1	10.1	2.1	NNW	4.68	0.29	0.00
23	-9.0	-5.0	-14.4	3.2	6.8	2.0	S	10.18	0.52	0.00
24	-5.9	0.2	-10.1	3.6	6.1	2.1	SSW	10.74	0.52	0.00
25	-4.3	0.1	-8.8	3.0	4.5	2.0	SSW	11.14	0.57	0.00
26	-1.9	-0.2	-4.9	5.8	13.5	2.1	SSE	8.54	0.50	0.00
27	1.3	3.0	-1.0	5.5	13.2	2.0	SSE	6.88	0.61	0.00
28	0.9	2.4	0.0	5.7	10.7	2.0	ENE	2.28	0.13	0.00
29	0.3	1.6	-0.4	8.5	16.0	2.0	NW	2.62	0.18	0.00
30	0.9	1.9	-1.3	8.9	12.3	3.6	WNW	8.50	0.64	0.00
31	-0.6	0.3	-1.6	9.0	13.7	5.7	NW	5.86	0.43	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	4	1	1	0	2	1	0	1	3	8	2	0	1	50	28	36	138
2	0	1	2	7	13	10	24	30	28	19	7	1	0	0	0	0	142
3	0	7	7	6	10	22	9	8	6	4	3	1	1	18	10	1	113
4	0	0	0	0	0	0	0	0	14	8	19	9	23	57	12	0	142
5	0	0	0	0	0	0	0	0	26	13	0	1	17	57	27	2	143
6	0	0	0	0	0	0	0	0	10	23	9	1	15	51	35	0	144
7	0	0	0	5	2	1	8	2	51	42	11	2	0	0	0	0	124
8	34	2	0	0	0	0	0	2	0	0	1	1	6	31	21	37	135
9	0	0	0	0	0	0	0	4	37	24	2	0	12	57	2	0	138
10	12	1	0	0	0	1	1	2	13	25	6	2	0	18	33	6	120
11	15	2	0	0	1	1	5	4	4	8	3	0	26	16	8	26	119
12	0	3	1	1	0	3	2	5	24	18	3	2	2	3	7	1	75
13	3	1	0	0	0	0	0	1	9	13	16	1	38	24	8	14	128
14	0	0	11	12	8	1	0	0	8	14	5	2	9	4	0	0	74
15	34	36	23	1	0	0	0	1	3	7	5	6	9	1	0	4	130
16	0	0	2	0	1	0	0	0	7	4	5	1	0	0	0	0	20
17	0	0	0	0	48	7	1	1	0	0	0	0	0	0	0	0	57
18	0	0	0	1	28	29	9	4	0	0	0	0	0	0	0	0	71
19	0	0	0	4	7	36	55	15	2	3	0	0	0	0	0	0	122
20	0	0	1	13	14	1	0	4	5	8	3	3	17	11	0	0	80
21	32	3	0	0	0	0	0	1	3	3	0	0	6	5	1	73	127
22	37	0	0	0	0	0	0	1	2	6	3	1	7	11	10	54	132
23	0	1	0	3	8	12	13	4	32	26	25	0	0	0	0	0	124
24	0	0	0	14	4	0	1	7	6	53	19	2	0	0	0	0	106
25	0	1	0	6	4	12	5	1	10	16	4	0	0	0	0	0	59
26	0	0	0	0	0	5	20	97	21	0	0	0	0	0	0	0	143
27	0	0	0	1	4	6	17	57	39	6	1	1	0	0	0	0	132
28	1	2	1	18	2	3	0	2	1	1	0	2	10	16	8	3	70
29	0	0	0	0	0	0	0	0	26	27	2	5	2	28	48	0	138
30	0	0	0	0	0	0	0	0	0	0	0	0	25	86	28	1	140
31	0	0	0	0	0	0	0	0	0	0	0	0	0	24	84	36	144
Total	172	61	49	92	156	151	170	254	390	379	154	44	226	568	370	294	3530

February 1993 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	-1.7	-1.0	-2.8	6.1	11.0	2.8	NNE	5.17	0.33	0.00
2	-4.1	-2.6	-5.3	9.8	12.9	4.9	NNW	6.41	0.61	0.00
3	-3.3	2.6	-8.1	6.0	10.8	2.1	S	8.75	0.55	0.00
4	-4.5	-1.7	-6.1	9.0	13.3	2.1	NW	6.78	0.52	0.00
5	-3.7	0.7	-9.1	7.2	14.9	2.2	S	10.33	0.57	0.00
6	-0.9	1.8	-2.9	8.1	13.7	2.2	NNW	5.64	0.42	0.00
7	-3.8	-2.9	-4.3	7.0	11.9	2.3	NE	3.30	0.23	0.00
8	-6.6	-3.9	-9.8	10.2	14.0	2.9	NNW	8.65	0.57	0.00
9										
10										
11	-3.0	1.3	-9.4	4.7	10.6	2.0	S	12.64	0.68	0.00
12	-1.6	-0.3	-3.9	7.4	14.8	2.1	NW	7.87	0.61	0.00
13	-4.2	-2.8	-8.2	7.1	11.2	2.1	NW	9.89	0.60	0.00
14	-6.3	-3.4	-11.4	4.5	11.6	2.0	WNW	13.52	0.62	0.00
15	-4.6	-1.4	-8.2	5.5	12.2	2.0	S	10.14	0.61	0.00
16	-5.0	-4.0	-6.0	5.9	11.1	2.2	NNW	9.95	0.68	0.00
17	-6.7	-5.2	-10.5	4.0	6.4	2.0	ESE	12.22	0.65	0.00
18	-5.3	-0.3	-7.1	2.7	4.3	2.0	ESE	10.14	0.67	0.00
19	-4.4	-1.9	-6.3	3.3	6.2	2.0	ENE	11.86	0.57	0.00
20	-4.3	-0.9	-6.0	4.9	8.0	2.0	WNW	14.99	0.81	0.00
21	-5.8	-1.0	-11.9	4.0	8.9	2.0	NW	16.33	0.76	0.00
22	-5.2	-2.6	-10.1	4.6	7.2	2.0	ENE	8.54	0.40	0.00
23	-4.1	-3.2	-5.3	8.3	13.2	4.0	NNE	8.07	0.38	0.00
24	-3.5	-2.3	-5.2	10.6	14.9	6.8	NNW	6.23	0.27	0.00
25	-4.5	-3.5	-7.1	6.9	14.4	2.2	NNW	9.27	0.40	0.00
26	-4.2	0.3	-9.0	2.6	3.9	2.0	NE	13.75	0.71	0.00
27	-1.7	2.6	-8.9	5.2	10.4	2.2	S	13.48	0.67	0.00
28	-1.3	1.6	-5.5	3.5	6.5	2.0	ENE	10.79	0.51	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	22	62	8	0	0	0	0	0	0	0	0	0	0	0	27	25	144
2	37	10	0	0	0	0	0	0	0	0	0	12	13	32	40		144
3	0	0	0	0	0	0	0	1	39	29	10	23	19	15	4	1	141
4	0	0	0	0	0	0	0	0	0	1	2	3	18	40	49	22	135
5	0	0	0	0	0	0	0	4	82	41	2	0	2	8	5	0	144
6	17	0	0	0	1	0	0	1	30	5	5	1	3	10	4	65	142
7	4	28	50	37	15	2	2	0	0	0	0	0	0	0	0	5	143
8	17	15	1	0	0	0	0	0	0	0	1	3	19	11	25	52	144
9																	
10																	
11	0	0	0	0	0	6	6	12	66	24	0	0	0	0	0	0	114
12	0	0	0	0	2	3	2	4	3	0	0	0	9	42	46	7	118
13	0	0	0	0	0	0	0	1	0	2	4	5	24	35	47	18	136
14	5	2	2	0	0	0	0	1	2	3	8	4	21	31	17	11	107
15	4	0	0	0	0	0	0	2	35	19	2	1	24	23	9	9	128
16	17	3	3	0	0	0	0	0	0	0	0	1	27	20	25	43	139
17	0	0	0	2	19	34	14	2	2	3	0	0	0	0	0	0	76
18	0	1	5	14	7	16	6	1	6	0	0	0	0	0	0	0	56
19	2	12	9	14	3	6	5	1	0	0	0	0	5	2	2	0	61
20	16	9	8	2	0	0	1	0	1	0	0	1	13	20	10	16	97
21	5	0	5	12	3	2	1	3	1	11	8	3	2	2	16	11	85
22	0	0	21	49	14	9	10	1	1	2	2	2	0	0	0	0	111
23	52	64	18	1	0	0	0	0	0	0	0	0	0	0	2	7	144
24	25	0	0	0	0	0	0	0	0	0	0	0	0	1	7	111	144
25	18	0	0	0	0	0	0	0	9	13	1	0	0	2	19	61	123
26	1	3	14	0	0	2	0	2	3	2	0	0	1	1	0	0	29
27	0	0	0	0	0	4	6	4	69	17	0	0	0	0	0	0	100
28	0	0	0	25	10	5	12	2	8	18	3	2	0	0	0	0	85
Total	242	209	144	156	74	89	65	42	357	190	48	49	199	276	346	504	2990

March 1993 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	-2.7	-1.0	-5.8	3.5	5.7	2.1	NE	9.99	0.65	0.00
2	-3.2	-0.8	-7.3	3.1	4.4	2.0	ENE	14.82	0.74	0.00
3	-0.9	3.0	-3.4	5.7	11.8	2.0	S	12.43	0.73	0.00
4	-2.5	1.4	-8.0	4.4	8.6	2.1	W	13.50	0.82	0.00
5	-0.5	4.3	-8.0	7.8	14.5	2.1	S	11.70	0.70	0.00
6	0.8	2.2	-1.1	5.9	12.4	2.0	NW	13.26	0.75	0.00
7	-1.1	3.2	-3.6	4.4	8.6	2.0	NNE	14.41	0.98	0.00
8	-3.4	-2.5	-4.4	4.9	7.1	2.3	NNE	20.04	0.78	0.00
9	-4.0	-1.0	-8.5	3.5	5.7	2.0	WNW	20.16	0.83	0.00
10	-1.9	2.5	-7.4	3.5	6.1	2.0	SSW	19.12	0.85	0.00
11	0.0	3.7	-2.3	4.3	8.5	2.1	SSW	16.78	0.80	0.00
12	-1.0	3.0	-4.1	4.0	10.1	2.1	W	15.31	0.77	0.00
13	-3.4	2.2	-6.9	7.0	12.8	2.0	NNE	18.92	0.79	0.00
14	-4.4	-2.4	-6.4	14.3	19.3	9.7	NW	12.88	0.85	0.00
15	-3.0	-1.6	-4.5	11.4	15.5	4.9	W	18.16	0.87	0.00
16	-2.4	-0.8	-4.0	5.9	11.0	2.0	W	8.88	0.41	0.00
17	-1.4	-1.0	-3.3	10.7	14.8	2.1	N	9.21	0.42	0.00
18	-4.1	-2.5	-5.6	10.3	15.4	4.1	NNW	16.58	1.02	0.00
19	-3.8	-3.0	-6.4	7.3	14.2	2.0	NNW	19.21	0.83	0.00
20	-4.8	-1.2	-9.2	2.5	3.2	2.0	NE	22.74	0.83	0.00
21	-0.4	4.8	-7.5	4.1	7.4	2.0	S	22.32	0.99	0.00
22	2.2	5.0	0.0	4.5	8.8	2.0	S	9.90	0.57	0.00
23	3.2	6.1	-0.4	4.4	8.8	2.0	W	21.34	0.84	0.00
24	4.8	9.2	0.6	4.3	10.2	2.0	WSW	15.12	0.79	0.00
25	2.0	6.6	-2.0	6.0	13.3	2.0	NW	17.16	0.98	0.00
26	-4.2	-2.1	-6.4	4.3	7.4	2.1	N	11.38	0.67	0.00
27	-4.4	-2.3	-6.2	5.2	9.1	2.0	ENE	13.99	0.66	0.00
28	-6.9	-6.0	-8.4	4.2	7.3	2.0	ENE	23.62	0.92	0.00
29	-6.6	-4.7	-8.9	3.7	7.8	2.0	NNE	21.22	1.03	0.00
30	-0.1	4.2	-8.0	5.3	12.1	2.0	WNW	19.40	0.99	0.00
31	6.0	10.9	1.6	4.9	8.5	2.0	S	13.41	0.74	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	3	15	22	6	8	2	0	0	0	0	0	0	0	0	0	0	57
2	0	1	12	14	0	0	0	0	1	7	4	1	0	0	0	0	40
3	0	1	0	0	0	0	0	3	42	19	6	4	36	22	4	0	137
4	11	6	0	0	0	1	7	1	2	2	5	6	27	10	5	3	86
5	0	0	0	0	0	1	7	7	74	43	0	0	0	0	0	0	132
6	16	2	3	2	1	0	0	1	10	4	2	0	4	21	27	20	113
7	20	26	1	1	2	0	1	2	9	18	1	2	3	2	7	12	107
8	43	63	10	0	0	0	0	0	0	0	0	2	2	2	10	12	144
9	2	0	4	7	6	4	4	5	5	4	1	0	5	20	3	1	71
10	2	12	16	1	0	2	1	1	7	44	18	1	0	1	1	0	107
11	0	1	12	15	3	0	4	0	23	24	6	1	4	13	15	5	126
12	2	0	9	2	4	9	3	1	6	9	5	2	15	11	7	3	88
13	18	25	25	3	1	1	0	2	2	5	2	1	1	1	0	1	88
14	2	0	0	0	0	0	3	4	8	14	13	10	15	32	37	6	144
15	0	0	0	2	2	1	6	5	9	8	6	6	36	36	27	0	144
16	20	13	7	0	0	0	0	0	0	0	1	7	52	17	7	1	125
17	116	11	0	0	0	0	0	0	0	0	0	0	0	6	7	3	143
18	18	0	0	0	0	0	0	0	0	0	0	0	0	10	47	69	144
19	32	0	0	0	0	0	0	0	0	0	1	0	0	3	25	69	130
20	0	0	18	4	0	0	1	1	5	5	5	0	0	0	0	0	39
21	0	1	0	5	6	16	8	14	56	12	2	0	0	0	0	0	120
22	4	0	0	2	4	3	6	10	29	5	8	29	24	11	1	0	136
23	4	0	0	0	0	2	2	0	0	3	11	11	42	19	10	1	105
24	1	7	0	0	4	1	4	9	10	9	12	17	11	16	2	0	103
25	4	0	1	4	0	4	0	6	6	6	10	11	24	15	34	2	127
26	13	3	9	11	9	3	5	4	1	8	4	6	1	1	5	9	92
27	24	6	6	31	18	0	1	2	0	0	0	0	0	0	0	5	93
28	30	3	19	47	6	5	13	0	0	0	0	0	0	0	0	4	127
29	16	26	6	0	0	5	8	0	2	2	1	0	5	0	0	7	78
30	0	0	0	0	0	2	1	2	19	18	8	15	30	38	3	0	136
31	0	0	0	0	0	0	4	8	75	43	4	3	3	0	0	0	140
Total	401	222	180	157	74	62	89	88	401	312	136	135	340	307	284	234	3422

April 1993 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	2.4	6.1	0.6	3.2	5.8	2.0	WNW	12.25	0.69	0.00
2	4.1	8.6	0.6	3.8	8.6	2.0	SSE	8.63	0.58	0.00
3	3.5	6.0	1.1	5.5	11.6	2.0	ESE	20.27	0.84	0.00
4	2.8	7.5	0.2	5.5	13.4	2.2	S	15.16	0.88	0.00
5	-0.2	1.0	-1.0	8.6	15.0	2.0	SSE	5.88	0.68	0.00
6	-0.1	1.4	-1.4	14.8	19.2	10.2	E	16.83	0.99	0.00
7	0.8	2.2	0.0	11.7	19.6	5.2	NE	13.82	0.95	0.00
8	0.4	2.8	-0.8	4.2	8.2	2.0	NW	11.37	0.68	0.00
9	-0.5	-0.1	-1.6	7.6	9.7	5.8	NW	7.88	0.39	0.00
10	-2.0	-0.7	-5.9	6.3	10.0	2.0	NNW	16.65	0.97	0.00
11	-1.3	1.1	-5.5	4.3	10.8	2.0	SSW	24.63	0.93	0.00
12	-1.6	-0.3	-2.5	3.7	8.2	2.0	NNE	25.87	1.07	0.00
13										
14										
15	3.8	7.2	0.3	3.4	6.9	2.0	NNE	16.79	0.88	0.00
16	6.9	15.0	0.8	4.8	12.3	2.0	W	24.57	0.87	0.00
17	0.5	2.3	-0.4	4.1	6.7	2.0	E	14.20	0.87	0.00
18	1.3	7.0	-1.9	13.0	26.2	2.0	E	10.02	1.04	0.00
19	0.5	1.8	-1.8	12.6	24.4	5.6	NE	19.69	1.10	0.00
20	0.1	1.3	-1.7	8.8	13.5	2.1	NNE	18.80	0.95	0.00
21	3.1	5.9	-2.4	4.0	7.9	2.0	S	26.99	0.96	0.00
22	4.2	8.0	2.2	4.0	8.0	2.0	NE	19.62	0.91	0.00
23	2.4	3.6	1.3	4.8	11.1	2.0	NNE	6.56	0.43	0.00
24	0.5	1.9	-0.5	7.0	15.7	2.0	NE	10.33	0.65	0.00
25	-0.1	2.0	-1.1	8.4	18.2	2.1	NE	8.94	0.74	0.00
26	7.1	13.5	0.5	6.4	12.7	2.2	WSW	26.19	0.96	0.00
27	8.6	13.4	5.4	5.8	11.4	2.2	S	10.80	0.62	0.00
28	3.8	7.1	0.6	8.6	14.8	2.0	WNW	24.75	1.17	0.00
29	4.6	7.9	0.6	4.1	11.7	2.0	WNW	23.76	1.10	0.00
30	2.6	5.4	0.1	3.8	7.4	2.0	ENE	16.01	0.62	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	1	0	7	9	0	0	0	0	5	8	9	2	18	23	14	1	97
2	0	0	0	1	1	10	11	20	14	2	0	1	2	9	2	0	73
3	0	1	3	11	6	29	4	0	21	12	1	0	0	0	0	0	88
4	1	0	6	3	3	8	8	17	42	17	0	0	1	0	1	0	107
5	1	0	5	9	6	6	12	13	9	12	7	6	12	7	4	0	109
6	0	4	11	17	19	7	18	8	8	8	13	17	11	3	0	0	144
7	0	5	22	12	7	11	5	8	18	17	18	12	9	0	0	0	144
8	0	4	4	27	13	7	1	5	4	0	0	5	11	4	32	0	117
9	34	6	0	0	0	0	0	0	0	0	0	0	0	4	67	33	144
10	52	4	0	0	0	0	0	0	0	1	4	0	0	0	3	72	136
11	3	12	13	7	4	0	0	0	12	15	9	10	4	2	0	1	92
12	24	29	18	8	3	4	1	1	4	3	1	0	0	4	3	9	112
13																	
14																	
15	1	24	24	6	3	4	1	1	5	10	2	0	0	1	0	1	83
16	7	6	7	0	3	6	2	5	14	4	1	4	22	19	3	5	108
17	2	19	20	25	30	10	0	2	0	2	1	1	1	1	2	3	119
18	0	5	7	14	16	6	5	8	10	9	8	7	8	11	0	0	114
19	0	28	57	24	14	6	3	2	2	0	2	1	0	1	1	3	144
20	4	43	40	2	0	3	2	3	2	5	1	2	1	0	0	6	114
21	0	0	23	23	5	7	2	1	27	17	4	1	0	0	0	0	110
22	1	9	26	6	4	1	0	0	8	15	4	8	7	6	6	6	101
23	0	42	17	11	5	3	3	4	3	3	1	0	2	0	0	1	95
24	4	27	32	29	26	6	4	1	2	1	2	0	0	0	0	0	134
25	5	18	39	25	20	13	7	1	3	1	0	0	0	0	1	1	134
26	0	18	10	3	6	8	6	5	9	9	16	25	21	0	0	0	136
27	0	4	1	2	3	1	5	20	48	16	10	2	1	8	0	0	121
28	20	0	0	0	0	0	1	1	2	3	1	0	5	42	21	20	116
29	8	0	0	0	0	0	0	2	1	4	7	15	26	27	20	9	119
30	3	10	13	30	16	9	2	1	5	2	1	0	1	11	11	0	115
Total	171	318	405	304	213	165	103	129	270	189	134	115	164	184	191	171	3226

May 1993 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	2.5	7.8	-1.8	4.9	14.8	2.0	NE	15.73	1.00	0.00
2	3.0	6.2	-0.9	5.3	9.7	2.0	ENE	24.06	1.00	0.00
3	4.4	7.5	0.2	4.0	8.1	2.0	SSE	9.21	0.49	0.00
4	5.4	9.3	2.2	3.5	6.6	2.0	NNE	18.08	1.27	0.00
5	7.2	13.3	1.4	4.0	5.8	2.2	NE	25.76	0.96	0.00
6	7.2	10.9	5.1	3.7	5.6	2.0	NE	16.79	0.90	0.00
7	4.1	7.6	0.4	4.8	7.4	2.2	NNW	24.79	0.94	0.00
8	2.1	4.7	-0.3	4.2	8.6	2.2	ENE	23.10	0.94	0.00
9	8.9	15.3	1.4	11.1	20.5	2.0	S	21.06	0.98	0.00
10	10.1	13.6	6.7	8.7	13.9	2.0	S	10.14	0.71	0.00
11	5.7	8.4	4.2	4.4	8.9	2.0	NE	13.28	0.68	0.00
12	9.7	12.8	6.7	3.6	6.1	2.0	NE	22.51	0.93	0.00
13	11.3	14.8	8.6	5.9	13.1	2.0	W	21.81	1.06	0.00
14	8.5	11.4	4.4	5.0	10.5	2.1	WNW	23.87	1.01	0.00
15	6.2	8.0	4.1	7.1	16.7	3.6	WNW	11.81	0.65	0.00
16	7.6	12.8	2.9	5.4	12.3	2.0	W	18.51	0.78	0.00
17	8.4	12.2	1.4	4.4	7.4	2.0	ENE	24.16	0.97	0.00
18	11.2	16.9	7.4	4.3	8.0	2.0	SE	12.13	0.78	0.00
19	7.4	8.3	6.3	4.8	7.3	2.0	WNW	13.35	0.68	0.00
20	9.4	12.1	6.9	4.0	7.9	2.0	NE	19.22	1.02	0.00
21	10.4	12.6	8.6	4.3	6.2	2.0	ENE	20.58	1.12	0.00
22	14.2	20.9	9.0	7.2	19.4	2.0	SSW	25.90	0.97	0.00
23	13.2	16.3	10.8	6.2	13.3	2.0	S	7.06	0.53	0.00
24	8.5	11.7	5.3	4.8	13.8	2.1	NW	23.72	1.01	0.00
25	10.1	14.2	5.6	5.5	12.0	2.2	SSW	7.76	1.16	0.00
26	6.7	10.6	4.4					13.77	1.04	0.00
27	4.7	7.1	3.5					10.92	0.45	0.00
28	4.2	5.7	3.0					14.65	0.67	0.00
29	10.9	14.8	6.1					26.50	1.01	0.00
30	15.0	20.0	11.3					26.33	1.02	0.00
31	9.1	14.5	5.5					23.14	0.99	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0	16	28	12	17	12	2	4	0	2	2	3	2	0	0	0	100
2	0	3	25	40	9	2	4	4	11	10	0	1	0	0	0	0	109
3	0	0	0	0	5	15	15	29	21	3	1	0	0	0	0	0	89
4	3	16	4	0	0	0	3	7	14	13	2	0	0	0	0	0	62
5	0	10	33	10	2	1	0	5	16	17	1	1	2	4	1	0	103
6	0	2	23	8	0	1	0	0	0	0	0	0	1	0	0	0	35
7	8	0	12	5	5	3	8	4	4	7	10	9	7	11	13		110
8	12	9	22	37	12	4	3	0	1	1	0	0	0	5	3	9	118
9	0	0	0	0	4	8	5	2	63	40	0	0	0	0	1	0	123
10	0	0	0	0	0	0	0	0	75	51	1	1	1	3	6	1	139
11	3	7	20	5	0	0	1	0	3	1	0	0	1	17	16	9	83
12	0	2	24	15	3	0	2	4	1	3	0	3	6	2	1	0	66
13	9	0	0	0	0	0	0	0	1	2	4	21	28	12	3	19	99
14	5	1	1	4	4	6	2	3	5	5	7	12	20	27	20	10	132
15	10	4	4	8	3	6	4	3	5	4	9	18	26	28	9	3	144
16	5	13	10	12	3	0	1	2	2	1	0	7	40	12	2	3	113
17	0	0	18	26	6	18	5	5	14	6	3	0	0	0	0	0	101
18	0	1	2	2	0	9	19	15	17	13	12	5	7	5	0	0	107
19	0	0	1	3	1	2	3	7	7	7	7	7	22	25	4	1	97
20	0	0	20	14	14	9	10	5	0	0	0	0	0	3	3	0	78
21	0	0	28	32	2	0	1	1	0	0	1	0	6	6	3	0	80
22	0	0	20	7	6	6	7	5	27	36	5	0	2	1	0	0	122
23	1	0	0	0	1	7	7	22	45	21	0	3	3	7	0	0	117
24	16	6	15	6	2	2	1	0	0	1	0	1	4	10	25	22	111
25	0	0	0	0	15	23	6	6	32	39	6	0	6	2	0	0	135
26																	
27																	
28																	
29																	
30																	
31																	
Total	72	90	310	246	114	134	109	133	364	280	68	93	186	176	108	90	2573

June 1993 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	6.3	7.6	5.1					15.74	0.92	0.00
2	8.7	13.7	6.1					17.75	0.85	0.00
3										
4										
5	7.7	9.0	6.7	4.0	7.0	2.0	ENE	7.59	0.33	0.00
6	7.7	8.8	6.7	3.2	5.7	2.0	NNE	13.22	0.69	0.00
7	7.3	8.8	6.6	4.4	7.6	2.0	NE	24.74	1.03	0.00
8	9.1	11.0	6.2	3.1	5.1	2.2	NE	10.75	0.49	0.00
9	11.8	14.7	9.1	4.0	6.2	2.1	NE	12.32	1.04	0.00
10	11.2	13.2	9.3	3.0	5.1	2.0	NNE	24.38	1.09	0.00
11	9.7	11.3	8.3	3.3	5.0	2.0	NW	26.42	1.05	0.00
12	17.9	25.8	10.3	7.1	14.3	2.0	S	30.50	1.01	0.00
13	16.2	18.9	12.8	12.5	21.5	4.4	S	16.41	0.92	0.00
14	15.8	21.9	13.2	4.6	13.0	2.0	S	19.52	1.21	0.00
15	12.4	15.8	10.5	3.3	5.4	2.0	NNW	17.92	1.13	0.00
16	10.5	11.3	9.9	4.7	9.5	2.0	NW	5.07	0.22	0.00
17	9.0	10.2	8.2	7.5	11.3	2.3	NW	10.73	0.47	0.00
18	10.9	13.2	8.6	3.7	5.8	2.0	NE	25.09	0.98	0.00
19	14.1	20.4	10.0	4.9	9.4	2.0	S	28.88	1.02	0.00
20	11.9	14.1	10.4	4.8	8.7	2.1	SSE	4.72	0.29	0.00
21	10.6	12.7	8.8	3.9	6.1	2.0	WNW	14.29	0.80	0.00
22	9.0	9.8	8.6	3.3	5.3	2.0	NW	8.16	0.39	0.00
23	8.5	9.1	7.9	3.3	5.1	2.0	N	7.91	0.40	0.00
24	8.2	10.1	6.7	4.7	8.6	2.0	NNE	20.48	1.08	0.00
25	11.4	14.4	7.8	3.5	6.2	2.2	NE	25.91	1.01	0.00
26	15.6	20.1	11.2	4.2	7.3	2.0	SSW	16.41	0.93	0.00
27	10.1	12.7	8.6	4.2	7.2	2.0	ESE	4.61	0.23	0.00
28	11.6	15.3	9.4	4.9	11.6	2.1	NNW	16.95	1.23	0.00
29	10.3	13.0	8.7	5.8	12.7	2.0	NW	7.17	0.48	0.00
30	8.6	9.3	7.3	5.4	11.4	2.0	NNW	11.90	0.54	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ESE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1																	
2																	
3																	
4																	
5	0	0	37	64	19	6	0	0	0	0	0	0	0	0	0	0	126
6	9	22	13	0	1	0	2	0	0	0	1	1	8	15	3	1	76
7	0	10	37	21	2	0	2	0	0	0	0	1	1	3	0	2	79
8	2	9	31	8	0	4	8	2	0	1	0	0	1	3	10	4	83
9	0	2	29	23	5	4	3	0	0	0	0	0	0	0	1	1	68
10	13	17	3	0	0	0	0	0	0	0	0	0	0	12	12	12	69
11	3	8	18	0	0	1	3	0	0	0	0	1	5	14	25	5	83
12	0	1	2	2	2	0	1	9	51	41	3	2	1	0	4	0	119
13	0	0	0	0	0	0	0	3	86	54	1	0	0	0	0	0	144
14	0	0	0	2	0	1	1	10	30	13	1	1	10	18	23	2	112
15	5	16	18	1	0	0	0	0	0	0	0	0	2	1	13	26	82
16	6	1	2	0	0	0	0	0	0	0	0	0	0	23	62	20	114
17	0	0	0	0	0	0	0	0	0	0	0	0	0	5	83	53	141
18	3	9	36	13	2	3	0	0	0	0	1	3	4	8	2	8	84
19	0	0	0	1	0	0	1	19	27	7	3	3	4	23	19	0	107
20	1	11	3	9	2	14	6	29	20	6	0	2	7	10	1	0	121
21	17	1	0	0	0	0	0	1	3	3	5	3	9	37	28	17	124
22	29	1	0	0	1	0	0	1	0	1	0	1	1	9	58	39	141
23	65	8	1	0	0	0	0	0	0	0	2	2	5	16	40	40	139
24	12	30	28	27	10	12	5	9	0	0	0	0	0	0	0	1	134
25	0	11	18	1	1	13	3	2	16	11	2	1	0	2	3	4	88
26	12	9	8	1	1	0	1	1	12	43	6	0	1	4	1	3	103
27	10	16	17	31	6	0	0	0	0	0	0	0	0	1	13	15	109
28	7	1	5	0	0	0	0	2	2	0	9	28	7	11	31	103	
29	11	2	0	0	0	0	1	9	17	11	3	1	1	1	35	25	117
30	28	17	13	9	7	2	10	5	2	0	0	0	0	0	8	32	133
Total	233	202	319	213	59	60	47	100	266	193	25	29	84	197	437	335	2799

July 1993 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	11.7	16.3	6.0	4.1	6.6	2.0	ENE	29.92	1.24	0.00
2	16.8	20.6	11.3	4.3	6.9	2.0	SSW	30.56	0.98	0.00
3	20.1	28.0	14.1	4.9	8.9	2.1	S	29.56	0.97	0.00
4	16.4	18.6	13.0	3.3	6.2	2.0	SSW	27.11	1.08	0.00
5	18.2	23.3	13.6	4.3	8.3	2.0	ENE	30.19	0.96	0.00
6	18.3	23.4	13.6	3.1	4.6	2.0	NE	30.09	1.01	0.00
7	17.6	19.4	14.1	3.1	4.5	2.0	NW	22.62	0.88	0.00
8	18.9	21.7	15.8	3.4	6.1	2.0	NE	29.77	0.98	0.00
9	18.4	21.8	15.1	3.2	6.2	2.0	NE	27.11	0.94	0.00
10	18.9	22.5	14.9	3.5	8.5	2.0	SSW	28.12	0.95	0.00
11	18.0	19.5	15.6	3.6	5.8	2.1	NNW	29.09	0.95	0.00
12	15.3	16.7	14.4	4.2	6.0	2.0	NNW	12.80	0.77	0.00
13	15.6	17.1	14.3	3.4	6.2	2.0	ENE	8.84	0.50	0.00
14	18.4	21.3	15.6	4.9	11.3	2.0	SE	17.33	0.97	0.00
15	15.1	16.8	12.8	3.7	7.4	2.0	ESE	5.88	0.31	0.00
16	13.2	14.2	12.5	3.7	6.9	2.0	NNW	13.74	1.12	0.00
17	13.3	14.2	12.0	5.7	11.5	2.7	NNW	9.48	0.50	0.00
18	11.8	12.7	11.1	6.6	9.4	4.7	N	10.17	0.55	0.00
19	11.9	12.7	11.1	5.1	8.0	3.1	NE	5.52	0.23	0.00
20	12.1	13.3	11.3	3.4	5.1	2.0	NNE	11.46	1.00	0.00
21	13.2	14.5	11.9	3.5	5.7	2.0	NE	17.04	1.01	0.00
22	16.6	20.2	13.5	4.1	8.0	2.0	S	19.10	1.14	0.00
23	16.1	17.9	14.8	3.1	5.1	2.0	SSW	8.16	0.56	0.00
24	15.8	17.8	14.1	3.2	5.4	2.0	NE	23.82	0.95	0.00
25	17.8	22.9	14.5	5.0	12.5	2.0	SSW	18.63	1.18	0.00
26	19.8	23.6	17.5	6.5	13.7	2.1	SSE	15.04	1.16	0.00
27	18.3	24.9	15.5	4.1	8.1	2.0	SSE	26.73	1.03	0.00
28										
29										
30	16.3	20.2	12.5	5.7	9.4	2.4	S	21.49	0.80	0.00
31	15.0	16.5	13.5	5.0	10.4	2.0	SSE	5.67	0.27	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0	3	21	27	16	12	10	2	7	4	4	0	1	3	0	0	110
2	1	1	24	21	7	5	6	0	8	29	6	0	0	0	0	4	112
3	0	1	13	5	6	3	6	3	42	19	1	2	0	0	0	0	101
4	2	5	1	0	0	0	0	0	6	19	7	0	0	10	16	7	73
5	1	6	7	26	6	11	2	1	11	16	7	3	1	11	4	1	114
6	0	0	30	11	2	0	0	0	4	1	1	1	0	1	4	6	61
7	8	3	0	0	0	0	0	5	1	3	2	1	2	6	18	17	66
8	6	3	30	2	0	0	1	1	3	9	16	5	0	0	2	3	81
9	0	3	28	10	0	0	5	2	0	14	15	1	0	0	0	0	78
10	10	29	5	0	0	0	0	1	5	39	15	6	0	0	1	0	111
11	9	14	4	0	0	0	0	0	2	20	11	1	0	7	25	28	121
12	38	6	0	1	2	0	0	0	0	0	0	0	1	2	13	44	107
13	0	9	24	49	14	5	0	1	0	0	0	0	0	0	0	0	102
14	0	0	0	0	7	35	44	35	16	2	0	0	0	0	0	0	139
15	1	6	17	30	32	37	4	0	0	0	0	0	0	0	0	0	127
16	33	30	26	2	0	0	0	0	0	0	0	0	0	0	7	36	134
17	16	0	0	0	0	0	0	0	0	0	0	1	14	16	36	61	144
18	72	29	0	0	0	0	0	0	0	0	0	0	0	0	5	38	144
19	12	46	72	13	1	0	0	0	0	0	0	0	0	0	0	0	144
20	31	60	30	5	0	1	1	0	0	0	0	0	0	0	0	1	129
21	0	2	32	29	22	15	1	0	0	0	0	0	0	0	0	0	101
22	0	6	12	10	1	0	3	12	15	6	1	1	0	2	4	1	74
23	0	2	14	12	2	1	6	5	5	36	15	0	0	0	0	0	98
24	0	16	21	4	6	2	0	0	1	2	0	0	0	1	0	0	53
25	1	0	0	1	8	5	1	1	31	42	0	1	3	9	9	2	114
26	0	0	0	0	0	0	12	70	51	11	0	0	0	0	0	0	144
27	4	3	22	14	2	8	5	32	13	0	0	0	0	11	17	10	141
28																	
29																	
30	0	0	0	0	0	0	0	22	87	32	3	0	0	0	0	0	144
31	0	0	0	0	9	22	30	44	31	3	0	0	0	0	0	0	139
Total	245	283	433	272	143	162	137	237	339	307	104	23	22	79	161	259	3206

August 1993 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	13.8	15.3	12.7	3.8	6.5	2.0	NE	11.48	0.90	0.00
2	12.4	13.6	11.6	3.3	6.2	2.0	NE	11.86	0.77	0.00
3	12.4	14.4	10.8	3.9	6.1	2.1	NE	20.92	0.97	0.00
4	12.4	13.4	11.2	3.0	5.1	2.0	N	10.40	0.51	0.00
5	13.1	14.3	10.9	3.3	5.8	2.0	N	7.97	0.50	0.00
6	17.3	24.9	10.2	5.7	13.2	2.0	S	27.71	0.93	0.00
7	17.4	24.3	11.7	5.3	9.7	2.0	S	27.51	0.97	0.00
8	16.9	23.0	11.3	6.7	12.4	2.6	SSE	28.33	0.97	0.00
9	16.7	21.7	13.1	7.3	12.0	3.5	S	27.64	0.97	0.00
10	17.4	23.4	13.1	6.8	12.2	2.2	S	27.40	0.96	0.00
11	17.5	19.6	14.7	6.4	12.1	2.2	SSE	5.99	0.34	0.00
12	19.1	21.4	17.7	4.3	8.5	2.0	SE	5.58	0.30	0.00
13	17.4	18.8	16.6	3.2	4.4	2.0	NE	7.96	0.44	0.00
14	16.9	18.3	15.9	3.4	7.2	2.0	WNW	7.04	0.56	0.00
15	18.8	25.1	16.7	4.7	10.7	2.1	SSE	13.65	1.15	0.00
16	18.5	20.8	15.8	3.9	5.7	2.1	NE	23.94	0.97	0.00
17	19.8	27.0	15.5	4.0	7.9	2.0	S	20.98	0.91	0.00
18	18.8	20.5	17.2	3.6	6.0	2.0	ENE	11.17	0.83	0.00
19	19.4	21.9	17.6	3.8	5.8	2.1	ENE	21.79	0.97	0.00
20	18.6	20.3	16.9	3.1	6.2	2.0	NW	14.72	0.79	0.00
21	19.2	23.1	15.5	4.2	7.8	2.0	ENE	23.17	0.91	0.00
22	19.6	23.5	17.2	4.7	9.8	2.0	S	10.42	0.51	0.00
23	19.7	23.0	17.9	3.3	6.3	2.1	SSW	16.46	1.04	0.00
24	21.5	25.5	18.6	3.5	5.6	2.0	SSW	13.18	0.76	0.00
25	22.3	31.0	16.9	3.1	5.4	2.0	S	19.43	1.18	0.00
26	25.3	33.3	21.6	4.5	9.7	2.0	SSW	21.34	0.86	0.00
27	23.4	27.3	21.2	5.5	14.1	2.1	S	10.47	0.85	0.00
28	19.9	21.2	19.0	4.9	10.3	2.1	ESE	6.61	0.86	0.00
29	21.6	25.9	18.3	3.4	8.4	2.0	S	23.47	1.01	0.00
30	21.0	26.8	17.6	4.0	10.4	2.1	S	19.40	0.93	0.00
31	18.2	20.3	17.1	4.3	11.0	2.0	NE	18.65	1.03	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0	6	50	7	16	3	8	10	4	0	0	0	2	0	1	1	108
2	13	20	37	20	6	0	0	2	0	1	1	0	2	0	1	1	104
3	0	3	29	17	16	4	1	3	2	3	0	0	0	0	0	0	78
4	19	12	8	0	0	0	0	0	1	0	0	0	0	2	8	16	66
5	19	15	13	9	6	4	6	4	4	1	0	0	3	10	14	16	124
6	0	1	5	5	2	19	19	21	45	15	0	0	0	0	0	0	132
7	0	0	0	0	0	0	2	16	59	41	8	2	1	0	0	0	129
8	0	0	0	0	0	0	6	75	54	7	0	0	0	0	0	0	142
9	0	0	0	0	0	0	5	59	77	3	0	0	0	0	0	0	144
10	0	0	0	0	0	0	6	30	76	29	2	0	0	0	0	0	143
11	0	0	0	0	0	4	24	75	32	6	0	0	0	0	0	0	141
12	0	0	0	0	2	20	35	26	18	1	1	0	0	0	0	0	103
13	4	9	35	5	0	0	0	1	0	0	0	0	0	3	8	4	69
14	4	5	3	3	5	7	6	3	7	3	0	0	2	10	7	5	70
15	0	0	0	1	1	9	8	24	22	2	0	1	0	0	7	4	79
16	0	0	32	23	6	5	2	1	1	1	1	1	1	1	0	0	75
17	2	1	11	11	1	0	1	8	12	12	1	1	1	1	0	0	63
18	1	6	6	22	6	1	1	1	7	2	0	0	1	0	1	0	55
19	1	4	23	25	11	10	1	0	3	2	0	0	0	0	0	5	85
20	3	13	5	0	0	1	2	3	2	1	2	0	0	12	19	11	74
21	0	0	15	31	10	5	4	2	12	18	1	0	0	0	0	0	98
22	1	1	0	0	0	2	10	23	52	34	0	0	0	0	0	1	124
23	9	7	5	1	1	6	7	8	14	17	4	1	0	0	2	7	89
24	4	1	3	5	4	15	22	5	17	29	3	0	0	0	0	0	108
25	0	6	10	0	0	1	4	11	19	19	14	1	0	0	0	3	88
26	2	3	2	5	0	0	0	6	18	30	7	1	2	30	6	2	114
27	0	0	0	0	4	27	21	16	38	35	0	0	0	0	0	0	141
28	1	6	11	9	18	19	13	3	0	0	0	0	2	8	19	3	112
29	2	6	5	10	4	5	5	6	22	17	6	4	5	4	0	0	101
30	3	5	3	1	3	2	2	9	35	17	7	3	11	6	1	6	114
31	7	9	18	7	5	13	2	7	9	11	2	4	2	4	15	17	132
Total	95	139	329	217	127	182	223	458	662	357	60	19	35	91	109	102	3205

September 1993 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	17.7	19.5	15.1	4.5	13.7	2.0	WNW	5.13	0.42	0.00
2	18.3	21.0	13.9	4.2	6.5	2.0	WNW	23.34	0.86	0.00
3	17.8	21.8	12.9	3.5	6.1	2.0	ENE	22.92	0.83	0.00
4	19.0	24.5	14.1	3.8	10.2	2.0	SSW	15.69	0.74	0.00
5	16.2	18.1	13.9	3.8	6.2	2.1	ESE	3.41	0.16	0.00
6	16.7	19.7	14.3	3.5	6.4	2.1	SE	11.67	1.04	0.00
7	16.0	18.0	13.1	4.2	7.7	2.0	ENE	13.67	1.00	0.00
8	15.1	16.7	13.2	4.5	7.5	2.0	SSE	8.28	0.39	0.00
9	15.0	18.1	12.6	6.1	11.6	2.0	S	9.82	0.67	0.00
10	16.6	18.0	14.9	3.6	5.6	2.0	NNW	8.24	0.44	0.00
11	15.6	17.2	12.2	5.1	8.3	2.0	N	8.88	0.91	0.00
12	15.6	18.4	11.9	4.6	8.8	2.0	ENE	19.77	0.94	0.00
13	17.9	22.2	15.1	6.5	11.5	2.0	SSW	15.70	0.76	0.00
14	17.4	21.4	13.9	5.4	10.7	2.0	SSW	7.44	0.43	0.00
15	18.3	21.2	13.2	4.4	9.6	2.0	WNW	15.41	0.80	0.00
16	19.5	25.3	14.5	5.4	9.5	2.1	S	13.57	0.87	0.00
17	18.3	21.5	15.1	3.2	5.4	2.0	ENE	20.37	0.89	0.00
18	17.4	20.4	14.4	4.8	12.8	2.0	S	4.59	0.28	0.00
19	18.2	22.5	12.9	7.0	15.6	2.0	WSW	20.05	0.81	0.00
20	16.3	22.0	11.1	5.6	12.6	2.1	WSW	12.55	0.90	0.00
21	15.0	19.3	10.9	5.1	11.6	2.0	W	17.78	0.86	0.00
22	14.0	15.7	10.6	5.5	8.9	2.0	W	18.85	0.75	0.00
23	14.6	19.5	9.9	5.3	10.9	2.0	S	17.06	0.80	0.00
24	15.9	19.9	12.6	5.0	10.0	2.2	SSE	13.00	0.82	0.00
25	16.6	20.8	13.6	3.8	7.7	2.1	SSE	12.06	0.98	0.00
26	14.8	16.6	13.0	4.2	9.5	2.0	WNW	11.15	0.75	0.00
27	13.0	14.4	11.9	9.7	18.1	3.3	NNW	8.04	0.57	0.00
28	12.2	12.8	10.5	10.7	16.9	2.1	NNW	4.53	0.43	0.00
29	13.0	17.0	8.4	7.3	12.7	2.0	S	16.76	0.88	0.00
30	16.4	18.9	14.3	6.3	14.6	2.1	S	3.77	0.25	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	2	0	0	0	0	3	7	4	15	17	6	4	12	33	5	9	117
2	0	0	6	19	6	1	0	1	2	3	0	1	8	34	3	2	86
3	0	6	17	18	9	0	0	1	9	10	0	0	2	0	0	72	
4	0	0	0	0	1	14	11	23	37	40	10	0	0	0	0	136	
5	0	0	0	6	27	30	7	4	15	2	0	0	0	0	0	91	
6	0	0	4	5	4	4	13	11	12	10	1	0	0	0	0	64	
7	23	12	18	24	0	0	0	0	1	17	1	0	0	8	10	7	121
8	0	0	1	25	29	16	4	30	21	0	0	0	0	0	0	126	
9	0	0	0	0	0	1	2	34	63	36	3	0	0	0	0	139	
10	22	10	2	0	0	0	0	1	3	5	1	1	0	7	18	26	96
11	38	33	24	8	7	7	0	3	0	0	0	0	0	0	0	0	120
12	0	0	10	22	20	16	11	2	12	16	2	2	0	0	0	0	113
13	0	0	0	0	0	0	0	3	50	88	3	0	0	0	0	0	144
14	0	0	0	0	0	0	0	13	40	51	12	0	1	0	0	0	117
15	0	0	6	7	2	9	5	2	7	7	2	0	2	27	15	3	94
16	0	0	0	0	0	0	1	2	23	20	9	23	22	14	3	0	117
17	0	5	9	15	7	6	10	11	7	4	11	8	6	3	5	1	108
18	0	0	0	1	8	25	14	17	29	12	3	5	7	3	1	0	125
19	0	0	0	0	0	0	0	0	3	11	33	67	26	1	0	0	141
20	0	0	0	0	0	0	0	2	16	18	16	25	21	14	12	3	127
21	0	0	0	1	0	0	0	4	9	13	22	7	32	32	2	0	122
22	15	10	2	0	0	1	0	1	3	4	4	5	30	14	3	13	105
23	0	0	0	0	0	2	9	51	55	8	2	0	0	0	0	0	127
24	0	0	0	0	2	9	13	71	38	4	0	0	0	0	0	0	137
25	1	0	1	2	4	10	25	35	26	0	1	0	1	0	3	2	111
26	4	16	9	0	1	0	1	1	6	4	3	3	8	21	13	9	99
27	29	2	0	0	0	0	0	0	0	0	0	0	2	17	26	68	144
28	18	4	0	0	0	0	0	0	2	2	0	0	0	12	101	139	
29	0	0	0	0	0	1	1	9	60	47	2	0	0	0	0	0	120
30	0	0	3	2	3	9	3	11	45	40	5	0	0	0	0	1	122
Total	152	98	112	155	130	164	137	346	599	488	164	151	178	230	131	245	3480

October 1993 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	15.3	18.8	10.5	4.6	10.9	2.0	SSW	9.66	0.78	0.00
2	11.4	14.1	7.1	7.3	14.2	2.0	NNW	9.52	0.94	0.00
3	12.4	16.0	8.2	4.3	8.6	2.0	S	15.99	0.74	0.00
4										
5										
6	9.4	12.5	4.2	7.4	18.2	2.1	NNW	8.24	0.80	0.00
7	13.2	19.3	6.6	5.2	11.4	2.1	SSW	16.14	0.70	0.00
8	13.3	17.9	9.5	4.0	9.4	2.0	SSW	8.01	0.77	0.00
9	13.8	17.4	9.4	2.9	8.4	2.0	SSW	15.17	0.64	0.00
10	14.4	17.8	9.7	7.3	14.0	2.1	S	5.11	0.65	0.00
11	9.0	11.4	5.6	6.7	13.7	2.0	WNW	10.17	0.78	0.00
12	9.6	15.6	4.9	5.1	9.1	2.0	SSW	5.23	0.50	0.00
13	8.3	11.7	4.9	8.2	17.2	2.1	W	7.26	0.66	0.00
14	7.2	10.3	2.7	5.5	11.5	2.3	WSW	12.95	0.82	0.00
15	8.8	13.7	4.4	3.7	7.4	2.0	SSW	14.46	0.73	0.00
16	10.9	17.4	5.1	5.0	9.9	2.2	SSW	14.91	0.70	0.00
17	12.4	16.0	8.3	6.2	11.4	2.3	S	5.97	0.33	0.00
18	10.3	12.3	7.6	6.5	14.8	2.1	W	13.47	0.75	0.00
19	10.1	13.5	6.2	4.1	8.6	2.1	SSW	12.83	0.62	0.00
20	9.5	13.6	5.8	2.9	4.5	2.1	S	10.81	0.75	0.00
21	11.0	17.1	5.8	3.9	7.0	2.0	SSW	13.92	0.60	0.00
22	11.6	15.3	8.4	5.5	13.8	2.2	SSE	8.87	0.67	0.00
23	10.9	12.1	9.7	7.0	15.9	2.0	WNW	2.25	0.38	0.00
24	10.6	13.2	7.8	9.7	19.1	2.1	WNW	4.14	0.31	0.00
25	8.9	10.0	7.5	9.1	13.8	3.5	W	8.14	0.65	0.00
26	7.3	8.5	4.9	6.4	10.7	2.0	W	6.87	0.77	0.00
27	6.6	10.6	2.0	4.8	10.3	2.1	SW	13.94	0.67	0.00
28	9.8	15.4	2.3	4.9	12.7	2.0	SSW	13.04	0.57	0.00
29	8.5	13.3	4.8	4.9	12.9	2.1	SE	2.86	0.18	0.00
30	9.6	12.5	7.1	5.0	12.6	2.1	S	2.42	0.22	0.00
31	10.8	14.0	6.0	5.7	13.5	2.1	E	9.90	0.62	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0	0	0	0	0	0	0	6	24	28	13	19	14	7	2	0	113
2	4	0	0	0	0	0	0	0	5	4	14	6	12	16	11	57	129
3	0	1	10	10	7	7	5	6	31	16	2	0	4	15	4	0	118
4																	
5																	
6	9	0	0	0	0	0	0	2	6	22	5	0	23	20	5	43	135
7	0	0	0	0	0	0	0	6	45	65	15	7	0	0	0	0	138
8	0	0	0	0	0	1	9	6	35	47	15	7	2	0	0	0	122
9	0	5	3	3	7	3	1	9	17	22	4	0	0	1	0	0	75
10	7	2	0	0	0	0	0	0	32	20	1	3	14	11	23	22	135
11	13	5	0	0	0	0	0	1	8	17	8	2	18	31	13	22	138
12	0	0	0	0	0	0	0	4	24	76	22	8	2	0	0	0	136
13	0	0	0	0	0	0	0	0	6	11	13	46	34	30	4	4	144
14	0	0	0	0	0	0	0	0	2	36	43	37	24	1	0	0	143
15	4	2	7	2	3	1	2	3	14	30	9	5	4	11	3	0	100
16	0	0	0	0	0	2	2	9	54	59	8	2	0	0	0	0	136
17	0	0	0	0	0	0	0	0	64	45	17	1	3	1	3	1	135
18	2	2	1	0	0	0	0	1	3	8	8	34	50	17	6	0	132
19	0	0	0	0	0	0	0	3	13	27	17	8	22	25	8	7	130
20	3	7	16	5	2	1	1	2	32	15	0	0	0	0	0	0	84
21	0	0	0	0	0	1	16	12	39	60	7	0	0	0	0	0	135
22	0	0	0	0	0	0	25	68	24	13	3	1	1	0	0	0	135
23	0	3	20	20	1	6	9	3	3	1	1	0	3	24	3	0	97
24	0	0	3	10	3	0	1	0	0	0	6	13	39	53	13	0	141
25	0	0	0	0	0	0	0	0	0	0	0	11	90	42	1	0	144
26	13	0	0	0	0	0	0	0	0	0	3	11	46	24	12	33	142
27	1	0	0	0	0	0	0	0	7	14	41	9	12	15	23	20	142
28	0	0	0	0	0	0	1	0	20	48	34	20	15	2	0	0	140
29	5	6	7	9	5	9	23	5	7	3	5	14	5	5	3	21	132
30	0	0	0	1	14	23	25	21	28	8	1	0	0	0	0	0	121
31	4	4	2	6	13	8	3	4	8	13	4	11	6	5	9	7	107
Total	65	37	69	66	55	62	123	171	543	669	310	248	468	383	173	237	3679

November 1993 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	6.2	8.1	3.4	6.6	13.0	2.1	WSW	10.25	0.63	0.00
2	8.4	11.8	2.5	5.3	10.4	2.0	W	12.68	0.61	0.00
3	10.6	13.9	4.1	7.9	16.4	2.0	WNW	12.17	0.56	0.00
4	9.6	13.7	3.9	6.6	12.3	2.1	S	11.49	0.52	0.00
5	7.5	14.1	3.5	11.2	21.2	2.7	WNW	10.13	0.63	0.00
6	4.4	7.4	1.8	6.9	13.2	2.0	WNW	5.97	0.56	0.00
7	1.0	3.8	-0.6	9.8	14.2	5.4	NNW	4.43	0.42	0.00
8	0.7	3.3	-3.4	3.9	12.1	2.0	S	8.21	0.52	0.00
9	1.6	2.9	-0.4	8.2	14.0	2.0	NNW	4.89	0.66	0.00
10	2.5	5.6	-0.2	4.3	9.0	2.0	SSW	9.11	0.56	0.00
11	4.1	8.9	0.6	3.4	6.9	2.0	SSW	11.07	0.52	0.00
12	4.8	8.6	1.9	4.0	6.4	2.0	SSW	10.38	0.58	0.00
13	6.1	9.7	1.5	6.1	11.9	2.0	SSE	5.73	0.66	0.00
14	11.1	12.7	8.8	9.4	17.0	2.1	SSE	1.36	0.12	0.00
15	8.2	9.6	5.1	9.6	16.1	-2.1	NNW	2.71	0.20	0.00
16	4.2	5.3	3.0	5.6	10.6	2.0	NNW	3.89	0.32	0.00
17	4.5	7.9	2.2	4.7	9.6	2.0	S	6.76	0.41	0.00
18	6.0	11.1	1.7	6.6	13.3	2.0	SSW	4.47	0.27	0.00
19	0.7	2.5	-1.3	10.6	15.9	4.0	N	4.24	0.37	0.00
20	-0.5	2.0	-5.2	4.8	12.2	2.0	S	8.49	0.48	0.00
21	5.3	8.2	2.2	4.2	11.3	2.0	SE	4.02	0.29	0.00
22	2.4	7.9	-1.8	8.1	15.1	2.0	W	10.48	0.51	0.00
23	1.1	4.3	-1.6	3.8	7.8	2.0	S	9.51	0.48	0.00
24	-0.4	2.2	-3.3	8.9	16.1	2.0	WNW	8.18	0.60	0.00
25	0.3	4.3	-3.7	4.7	9.1	2.0	SSW	7.51	0.56	0.00
26	3.1	6.1	-0.6	5.4	11.3	2.0	S	7.74	0.45	0.00
27	2.5	3.9	0.9	3.8	6.1	2.1	NNW	4.40	0.58	0.00
28	1.5	5.4	-1.6	8.6	16.7	2.1	WNW	6.54	0.55	0.00
29	-1.4	-0.1	-2.5	9.0	16.0	2.1	WNW	5.83	0.68	0.00
30										

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0	0	0	0	0	0	0	0	6	14	24	37	33	19	2	0	135
2	0	0	0	0	0	1	9	3	6	13	18	23	38	16	8	0	135
3	7	0	0	0	0	1	3	2	4	4	4	27	18	41	13	8	132
4	25	2	0	0	0	0	3	11	57	26	3	0	0	0	0	2	129
5	3	0	0	0	0	0	0	0	6	2	3	9	7	44	26	42	142
6	13	1	0	0	0	0	0	2	14	18	0	0	0	39	26	12	125
7	13	0	0	0	0	0	0	0	0	0	0	0	6	36	34	55	144
8	0	0	0	0	0	4	9	4	29	27	2	0	6	11	3	3	98
9	0	0	0	0	0	0	0	0	0	0	3	1	11	45	36	47	143
10	1	0	0	0	0	0	0	1	11	24	8	8	19	10	13	8	103
11	0	0	4	8	1	3	10	2	16	55	10	1	0	0	0	0	110
12	0	0	2	13	2	1	0	0	10	36	12	0	0	0	0	0	76
13	0	0	0	0	0	10	19	48	17	0	0	0	0	0	0	0	94
14	0	0	0	0	0	7	13	80	29	0	0	0	1	0	1	0	131
15	0	0	0	0	1	0	0	0	0	0	0	1	4	35	51	5	92
16	40	10	0	1	0	0	0	0	3	1	0	0	0	0	6	49	110
17	0	0	0	0	0	1	2	9	41	40	14	1	0	0	0	0	108
18	35	0	0	0	0	0	0	0	26	38	2	5	0	1	9	21	137
19	57	0	0	0	0	0	0	0	0	0	1	12	19	29	26	26	144
20	0	0	0	0	0	1	8	28	41	27	4	3	7	14	1	0	134
21	0	0	2	10	5	7	13	10	10	2	0	1	6	9	2	3	80
22	0	0	0	0	0	0	0	0	0	4	17	34	64	21	0	0	140
23	0	1	0	0	2	9	16	22	31	9	5	0	5	9	5	1	115
24	0	0	0	0	0	1	0	4	3	6	3	12	24	73	8	0	134
25	0	0	0	0	0	0	3	2	21	26	15	10	18	12	12	8	127
26	0	0	0	0	0	0	2	11	59	28	4	0	1	6	9	5	125
27	5	8	2	0	5	8	4	7	11	2	0	0	0	6	11	19	88
28	0	0	0	0	0	1	2	7	20	4	4	17	39	40	3	0	137
29	0	0	0	0	0	0	0	0	0	0	1	26	70	38	9	9	144
30																	
Total	199	22	10	32	16	55	116	253	471	406	155	191	342	545	330	369	3512

December 1993 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1										
2	2.4	4.9	0.2	6.7	13.3	2.2	S	7.29	0.55	0.00
3	1.6	6.6	-1.0	7.5	14.3	2.0	WNW	5.55	0.59	0.00
4	-0.9	1.4	-3.0	5.5	11.1	2.0	W	7.59	0.60	0.00
5	-2.8	-1.0	-3.8	6.4	17.1	2.0	WNW	3.76	0.39	0.00
6	-2.7	1.5	-7.2	3.4	9.6	2.0	SSW	8.87	0.47	0.00
7	-1.2	1.0	-3.9	4.5	7.9	2.1	W	6.09	0.46	0.00
8	-0.1	3.6	-3.4	4.8	8.3	2.0	S	8.73	0.50	0.00
9	0.2	2.2	-2.0	4.8	10.5	2.0	NW	6.12	0.49	0.00
10	-1.1	0.6	-3.1	4.9	8.3	2.0	N	5.17	0.52	0.00
11	-0.1	1.7	-2.7	5.8	11.8	2.0	ENE	4.45	0.29	0.00
12	0.2	1.3	-0.9	6.0	12.8	2.0	NNE	4.98	0.43	0.00
13	1.3	6.2	-0.9	8.0	16.3	2.1	S	5.88	0.43	0.00
14	-2.9	-0.2	-5.9	6.6	13.8	2.0	W	5.72	0.59	0.00
15	-5.2	-3.9	-7.0	10.5	17.3	2.1	W	8.48	0.47	0.00
16	-3.4	-1.3	-4.9	8.3	15.6	2.0	WNW	9.33	0.63	0.00
17	-2.4	1.2	-5.1	7.0	15.0	2.1	WSW	2.42	0.29	0.00
18	-3.5	-1.6	-6.4	13.9	21.6	7.4	WNW	5.97	0.45	0.00
19	-5.7	-4.1	-7.5	12.8	19.7	5.4	NW	7.41	0.45	0.00
20	-4.0	-0.5	-9.2	6.4	22.6	2.0	S	9.34	0.61	0.00
21	3.6	7.6	-1.2	10.0	21.1	2.2	S	5.14	0.41	0.00
22	-3.0	2.0	-7.5	8.0	16.3	2.6	W	7.23	0.46	0.00
23	-5.1	-2.4	-8.2	6.3	14.7	2.1	SSW	4.13	0.31	0.00
24	-1.7	0.6	-4.2	6.9	13.9	2.0	WNW	7.85	0.52	0.00
25	-1.0	3.4	-4.9	3.6	7.3	2.0	SSW	8.21	0.42	0.00
26	1.1	5.8	-2.0	4.4	8.6	2.0	SSW	7.35	0.51	0.00
27	1.0	2.1	0.0	3.8	8.6	2.0	WNW	2.98	0.28	0.00
28	-0.1	0.2	-0.4	4.1	7.2	2.0	NNE	1.75	0.17	0.00
29	-1.0	-0.4	-2.1	3.7	10.5	2.0	NNW	2.68	0.25	0.00
30	-1.9	-0.8	-4.7	5.3	12.3	2.0	S	3.58	0.37	0.00
31	-0.4	2.7	-3.3	9.3	15.1	2.0	NNW	5.64	0.50	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1																	
2	12	15	2	1	1	0	1	12	75	17	1	0	0	0	0	0	137
3	0	0	0	0	0	0	0	0	2	12	12	18	26	53	12	0	135
4	2	0	0	0	0	0	2	0	1	11	9	13	27	16	27	12	120
5	0	1	0	0	0	0	0	1	2	8	7	16	29	42	16	1	123
6	0	0	0	1	5	2	1	2	33	39	9	4	0	7	0	0	103
7	0	0	0	0	0	0	0	1	17	24	7	14	28	17	8	2	118
8	0	0	0	0	0	0	0	1	68	56	2	3	0	0	0	0	130
9	2	2	0	0	0	2	0	1	14	8	1	3	16	25	27	15	116
10	32	1	0	0	3	29	26	6	1	0	0	2	1	2	0	16	119
11	0	0	15	33	13	14	26	28	11	0	0	0	0	0	0	0	140
12	4	50	26	2	0	1	6	24	18	0	0	0	0	0	0	0	131
13	0	0	0	0	0	0	3	4	43	25	3	9	12	16	6	0	121
14	0	0	0	0	0	0	0	1	3	6	15	31	39	35	8	0	138
15	0	0	0	0	0	0	0	0	3	2	10	4	89	34	0	0	142
16	1	1	0	0	0	0	5	2	22	8	0	0	32	42	3	3	119
17	0	0	0	0	1	3	10	19	19	6	13	24	19	12	2	0	128
18	0	0	0	0	0	0	0	0	0	0	0	2	25	74	43	0	144
19	0	0	0	0	0	0	0	0	0	0	0	2	61	81	0	0	144
20	0	0	0	0	0	0	13	16	47	40	0	0	2	20	2	0	140
21	0	0	0	0	0	0	0	32	79	14	1	2	1	3	3	0	135
22	0	0	0	0	0	0	0	0	17	27	7	30	33	15	15	0	144
23	0	0	0	0	0	0	0	0	37	40	3	10	21	26	3	0	140
24	0	0	0	0	0	0	1	8	3	2	4	0	28	54	21	0	121
25	0	0	0	0	0	0	0	8	34	54	14	4	0	0	0	0	114
26	0	0	0	0	0	1	8	0	30	54	24	3	0	1	2	0	123
27	0	0	1	9	10	6	4	5	12	8	0	0	4	33	3	0	95
28	16	24	18	9	4	0	0	0	0	0	0	0	0	0	1	3	75
29	7	14	9	1	0	0	0	0	0	1	0	2	9	14	38	0	95
30	0	1	0	0	0	2	5	15	52	14	2	2	16	9	11	1	130
31	16	2	0	0	0	0	0	1	22	20	2	4	13	15	2	43	140
Total	92	111	71	56	37	60	111	187	665	495	147	198	465	621	310	134	3760

January 1994 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	-5.2	-3.0	-9.4	7.6	12.7	2.1	NNW	5.16	0.54	0.00
2	-4.2	-0.7	-6.6	3.6	6.1	2.0	SSW	7.08	0.41	0.00
3	-1.3	0.9	-4.1	3.7	7.7	2.0	W	5.56	0.49	0.00
4	-4.4	-1.1	-8.5	6.8	15.5	2.0	WNW	5.89	0.48	0.00
5	-9.4	-6.9	-11.4	10.4	17.6	2.2	W	9.07	0.49	0.00
6	-9.7	-5.0	-13.4	3.9	6.9	2.0	S	8.42	0.48	0.00
7	-7.1	-3.4	-11.1	6.2	20.4	2.1	W	4.07	0.32	0.00
8	-7.0	-4.0	-11.3	5.4	13.0	2.0	S	8.58	0.46	0.00
9	-4.1	-2.2	-8.7	3.2	10.0	2.0	ESE	7.61	0.55	0.00
10	-3.0	-0.6	-6.6	4.5	12.0	2.0	S	7.38	0.60	0.00
11	-3.9	-2.0	-6.1	5.6	10.6	2.1	NNW	7.34	0.51	0.00
12	-6.8	-5.1	-9.9	3.7	7.6	2.0	WNW	9.35	0.59	0.00
13	-8.0	-4.3	-11.4	3.1	5.7	2.0	SSW	9.05	0.72	0.00
14	-6.4	-1.9	-11.9	3.3	6.0	2.1	S	10.56	0.70	0.00
15	-3.4	-2.1	-4.7	6.0	12.3	2.1	WNW	9.79	0.73	0.00
16	-2.5	-0.3	-4.0	6.0	13.2	2.0	WNW	6.98	0.56	0.00
17	-3.1	-1.2	-6.6	4.4	8.6	2.0	NNW	4.26	0.38	0.00
18	-6.5	-3.6	-12.6	5.2	11.5	2.0	WNW	7.02	0.58	0.00
19	-9.1	-5.8	-12.6	5.5	13.9	2.0	SSW	8.40	0.50	0.00
20	-8.1	-5.2	-10.9	5.9	9.6	2.0	W	10.04	0.52	0.00
21	-6.9	-1.4	-10.3	3.9	6.5	2.0	SSW	11.06	0.70	0.00
22	-7.3	-2.7	-11.0	2.8	4.0	2.1	ENE	10.55	0.52	0.00
23	-5.7	-3.7	-8.9	3.9	7.1	2.1	S	5.14	0.53	0.00
24	-7.3	-4.3	-14.2	5.1	11.8	2.1	W	10.35	0.74	0.00
25	-6.9	-2.8	-9.6	2.9	4.6	2.0	WSW	9.49	0.55	0.00
26	-7.7	-4.7	-11.3	3.1	5.2	2.0	ESE	9.02	0.56	0.00
27	-7.6	-6.0	-11.4	3.9	6.2	2.1	NNW	8.44	0.59	0.00
28	-11.2	-7.2	-17.4	5.4	11.6	2.1	NW	11.11	0.64	0.00
29	-12.0	-7.0	-20.2	4.0	8.6	2.1	S	12.50	0.61	0.00
30	-9.0	-4.8	-12.6	9.8	17.8	2.1	W	6.05	0.39	0.00
31										

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	12	0	0	0	0	0	0	0	0	7	12	4	5	16	14	68	138
2	0	0	0	0	1	2	1	6	30	47	4	1	1	2	0	0	95
3	0	4	2	5	8	2	0	1	4	6	2	4	20	18	5	1	82
4	0	0	0	0	0	0	0	3	8	12	6	15	13	40	28	10	135
5	0	0	0	0	0	0	0	0	0	4	4	11	73	44	6	0	142
6	0	0	1	0	3	2	3	4	32	15	9	1	6	4	2	0	82
7	0	0	0	0	2	13	8	5	14	5	2	6	19	6	4	13	97
8	0	0	0	0	1	0	1	1	75	39	7	3	3	3	1	3	137
9	0	0	0	0	18	25	12	6	22	16	10	2	0	0	0	0	111
10	0	0	0	0	1	2	8	5	26	24	11	4	1	5	16	21	124
11	0	0	0	0	0	1	0	2	17	8	0	0	23	32	17	36	136
12	0	0	0	0	0	0	0	2	5	9	17	4	14	40	21	5	117
13	0	0	0	0	0	0	0	0	14	34	11	0	1	1	15	13	89
14	0	0	2	7	6	13	18	7	37	11	5	1	0	1	0	0	108
15	0	0	0	0	0	1	5	0	0	0	0	5	29	66	13	12	131
16	1	0	0	0	0	0	0	11	28	15	1	0	11	45	9	2	123
17	25	0	0	0	0	0	0	0	5	2	1	0	0	6	22	52	113
18	0	0	0	0	0	0	1	2	19	11	15	22	17	36	6	0	129
19	0	0	0	0	0	0	0	1	11	32	15	13	30	28	8	0	138
20	0	0	0	0	0	0	0	2	8	12	4	5	39	22	23	5	120
21	0	0	0	0	1	8	9	8	42	48	7	0	0	0	0	0	123
22	0	0	6	10	3	1	3	5	3	3	1	0	0	0	0	0	35
23	2	2	2	3	7	2	3	9	32	9	2	3	6	10	2	3	95
24	0	0	0	1	0	0	3	5	9	17	4	11	54	20	9	0	133
25	0	0	0	0	0	1	2	2	10	10	2	12	9	2	3	0	53
26	0	0	0	0	16	26	1	4	7	8	6	1	2	0	0	0	71
27	22	2	3	0	0	0	0	0	1	2	2	1	13	21	7	30	104
28	1	0	0	0	0	2	4	1	5	11	7	16	13	5	23	8	96
29	6	0	0	1	0	0	1	3	19	13	6	16	3	9	14	18	109
30	0	0	0	0	0	0	0	0	0	2	2	9	49	28	44	9	143
31																	
Total	69	6	16	27	67	101	83	95	483	432	175	170	454	510	312	309	3309

April 1994 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	3.9	12.4	-4.9					23.77	0.87	0.00
2	7.0	12.6	0.7					13.15	0.67	0.00
3	0.9	6.8	-1.3					3.60	0.20	0.00
4	-0.3	3.7	-2.0					21.88	0.92	0.00
5	3.9	8.9	0.0					21.81	0.91	0.00
6	1.7	4.6	-0.4					25.44	0.93	0.00
7										
8										
9										
10										
11										
12										
13										
14										
15	6.3	9.8	2.3	6.3	15.0	2.1	SW	16.16	1.07	0.00
16	10.6	15.1	4.6	4.5	11.0	2.0	S	25.40	0.90	0.00
17	6.9	11.7	0.3	9.2	17.9	2.1	S	13.15	1.02	0.00
18	2.5	5.1	-0.3	8.3	16.9	2.0	NNW	16.30	0.94	0.00
19	2.4	7.9	-1.5	5.2	8.9	2.0	S	13.29	0.68	0.00
20	2.4	5.8	-1.7	4.5	11.0	2.0	NE	22.41	0.94	0.00
21	4.2	6.4	2.0	6.8	12.3	2.2	NE	26.29	0.96	0.00
22	1.4	3.1	-0.7	3.7	6.2	2.0	N	26.54	0.99	0.00
23	6.7	15.6	-0.8	6.6	22.6	2.0	SSW	23.37	0.89	0.00
24	8.5	14.4	3.2	8.3	19.0	2.0	SSW	19.66	1.06	0.00
25	7.4	16.2	3.4	4.7	10.0	2.0	S	23.81	0.91	0.00
26	6.1	9.5	1.9	9.7	18.1	2.0	NW	15.27	1.02	0.00
27	5.1	7.1	0.9	7.7	15.1	2.1	NW	19.10	1.22	0.00
28	2.3	5.6	-0.2	5.2	10.3	2.0	ENE	13.17	0.68	0.00
29	2.6	4.8	0.7	4.6	9.4	2.0	NE	9.56	0.93	0.00
30	0.8	2.2	0.2	5.4	7.1	2.8	N	6.13	0.24	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15	2	0	0	0	0	0	0	0	8	32	42	8	13	30	4	1	140
16	3	4	8	11	7	6	1	0	20	13	9	18	5	2	3	3	113
17	1	1	6	6	5	3	3	10	23	13	7	21	17	9	5	2	132
18	17	0	0	0	2	2	1	7	9	11	10	8	13	8	5	35	128
19	12	5	2	1	0	0	2	5	20	15	2	3	1	4	19	9	100
20	12	17	34	3	2	0	1	3	7	7	9	7	3	5	3	8	121
21	2	3	28	27	5	7	7	3	6	2	2	2	9	9	18	14	144
22	20	13	16	10	9	3	3	1	4	10	1	1	2	13	13	9	128
23	0	0	11	15	2	4	15	19	33	34	2	0	0	0	0	0	135
24	2	3	1	2	9	2	9	23	27	39	2	0	0	0	0	0	119
25	1	3	8	23	1	1	1	16	24	9	0	0	10	20	9	5	131
26	0	0	1	2	1	4	6	11	11	13	11	10	6	14	25	2	117
27	7	1	1	2	3	6	4	3	2	1	7	4	6	9	48	37	141
28	1	1	15	43	17	3	3	8	13	8	5	1	1	0	0	0	119
29	3	5	29	29	8	1	1	0	0	0	3	0	1	17	6	3	106
30	63	32	6	0	0	0	0	0	0	0	0	0	2	24	6	11	144
Total	146	88	166	174	71	42	57	109	207	207	112	83	89	164	164	139	2018

May 1994 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	1.4	2.0	0.7	5.4	7.2	3.6	NNW	7.38	0.46	0.00
2	2.2	4.9	0.5	4.0	7.2	2.0	N	16.45	1.03	0.00
3	4.8	7.7	0.8	5.6	10.7	2.1	ENE	24.02	0.94	0.00
4	6.1	7.3	4.8	8.2	16.0	3.0	SSE	5.26	0.26	0.00
5	6.8	14.4	4.3	4.3	8.2	2.0	S	7.03	0.92	0.00
6	10.9	15.4	6.7	5.5	11.5	2.1	WSW	22.11	1.23	0.00
7	13.6	22.4	9.7	8.3	18.1	2.1	S	22.22	1.02	0.00
8	10.9	18.3	7.2	6.1	12.5	2.1	SSW	19.99	1.16	0.00
9	10.7	15.0	4.4	4.7	11.7	2.0	WSW	16.91	1.15	0.00
10	11.9	16.0	8.8	4.8	11.1	2.0	S	5.30	0.37	0.00
11	13.9	22.1	9.2	6.8	14.7	2.1	S	12.76	0.96	0.00
12	10.7	19.5	3.9	4.7	13.2	2.0	S	22.71	1.03	0.00
13	8.3	14.9	1.7	6.7	21.4	2.0	NE	27.50	1.00	0.00
14	4.8	8.7	1.8	7.3	16.6	2.1	ENE	17.78	1.00	0.00
15	10.1	14.1	5.4	12.7	20.7	4.1	SSW	24.67	1.00	0.00
16	13.2	20.0	10.0	6.0	12.5	2.2	SSE	10.78	0.96	0.00
17	12.8	14.8	10.5	10.3	21.8	2.0	SW	28.51	1.11	0.00
18	12.7	16.7	8.1	7.5	13.8	2.2	SSW	24.98	1.10	0.00
19	7.6	12.2	5.9	6.2	11.0	2.3	SSW	14.16	1.24	0.00
20	8.7	11.8	6.3	4.1	6.9	2.0	ENE	26.36	1.03	0.00
21	15.3	22.5	6.3	7.5	15.2	2.1	S	23.73	0.98	0.00
22	16.0	21.9	11.8	8.9	16.2	2.2	S	17.66	1.01	0.00
23	14.1	18.0	11.3	3.7	8.8	2.0	NE	29.44	1.01	0.00
24	16.6	24.4	11.0	2.6	4.2	2.0	NNE	30.29	0.99	0.00
25	14.6	18.4	12.2	5.4	10.8	2.0	ENE	29.11	0.98	0.00
26	22.4	30.2	11.8	8.4	13.6	2.5	NNE	22.97	0.98	0.00
27	17.8	19.0	15.2	10.1	15.0	5.0	S	5.14	0.27	0.00
28	17.1	22.9	13.5	4.9	10.2	2.0	S	25.51	1.06	0.00
29	20.1	26.5	13.4	8.7	14.5	2.0	S	30.85	1.00	0.00
30	16.3	20.9	12.2	7.8	14.3	2.0	SSW	12.06	0.50	0.00
31	15.2	21.0	10.5	3.8	8.4	2.0	ENE	29.71	1.02	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	30	2	0	0	0	0	0	0	0	0	0	0	0	0	16	96	144
2	22	14	9	16	2	0	0	0	0	0	0	0	0	0	0	9	72
3	0	1	17	35	16	3	0	0	6	8	0	0	0	0	0	0	86
4	0	0	0	0	0	0	18	53	38	35	0	0	0	0	0	0	144
5	1	1	1	2	0	0	12	27	49	10	2	2	2	5	5	3	122
6	2	1	0	0	0	2	2	6	23	24	16	32	18	1	2	0	129
7	0	0	0	0	0	1	0	3	41	39	22	20	12	1	2	1	142
8	9	3	6	17	7	0	2	4	25	29	7	4	5	3	2	2	125
9	1	1	1	2	3	5	6	3	9	12	13	39	8	7	9	3	122
10	0	1	6	2	6	8	11	18	41	12	0	0	0	0	0	0	105
11	7	3	1	1	2	1	2	4	22	20	11	5	8	1	14	11	113
12	9	14	8	2	1	3	3	7	25	7	5	5	1	3	16	10	119
13	6	7	27	25	3	1	2	0	1	0	8	0	1	3	20	14	118
14	16	10	6	29	18	15	1	1	12	6	0	0	0	0	1	26	141
15	0	0	0	0	0	0	2	11	63	67	1	0	0	0	0	0	144
16	1	3	3	0	2	10	23	34	13	4	4	2	1	3	0	0	103
17	0	0	2	4	5	8	10	11	16	19	38	26	1	0	1	0	141
18	0	6	16	9	8	4	7	11	23	28	24	4	1	0	0	0	141
19	24	5	3	1	1	0	1	4	8	31	2	6	6	12	29	10	143
20	0	12	31	34	3	5	2	6	4	4	6	0	0	0	0	0	107
21	0	0	0	1	0	0	1	9	91	37	4	0	0	0	0	0	143
22	0	22	9	5	6	5	16	25	35	6	15	0	0	0	0	0	144
23	0	27	34	21	0	2	5	2	5	1	2	0	0	0	0	0	99
24	2	16	11	8	1	3	9	5	0	1	3	1	0	0	1	0	61
25	5	8	8	32	0	0	0	0	3	1	5	3	3	3	2	1	74
26	0	55	14	9	9	9	8	6	15	5	7	1	3	0	0	0	141
27	0	2	1	0	4	6	6	20	88	15	2	0	0	0	0	0	144
28	1	1	2	1	5	4	3	9	40	40	7	4	6	8	3	0	134
29	0	0	0	0	0	0	0	4	82	53	2	1	0	0	0	0	142
30	0	0	0	0	0	0	1	2	41	49	9	4	1	17	4	0	128
31	4	1	18	21	9	3	0	2	15	20	5	3	3	6	2	3	115
Total	140	216	234	277	111	98	153	287	834	583	220	162	80	73	129	189	3786

June 1994 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	13.6	21.0	10.9	5.1	9.4	2.0	WNW	20.90	1.14	0.00
2	9.8	13.5	8.1	3.7	6.6	2.0	NW	9.97	0.49	0.00
3	8.6	9.6	7.5	3.2	4.9	2.0	N	11.70	0.71	0.00
4	10.5	12.9	8.3	2.8	4.5	2.0	N	18.54	1.22	0.00
5	10.2	12.5	8.2	3.3	5.5	2.0	N	14.79	0.89	0.00
6										
7										
8	17.3	20.5	11.7	4.3	6.3	2.1	ENE	29.22	0.99	0.00
9	17.2	22.1	13.7	6.8	14.0	2.0	S	17.77	1.26	0.00
10	12.5	14.1	11.6	3.2	4.9	2.0	NNW	15.36	0.92	0.00
11	16.9	21.9	12.5	5.2	9.6	2.0	SSW	30.06	0.99	0.00
12	20.6	25.9	16.5	6.7	13.4	2.5	SSW	29.83	0.94	0.00
13	19.6	25.1	13.7	5.8	12.3	2.0	S	23.16	1.00	0.00
14	17.3	20.3	13.1	4.5	9.1	2.1	S	8.55	0.37	0.00
15	11.4	12.9	10.4	8.5	13.5	2.7	NNW	12.09	0.84	0.00
16	11.6	14.0	9.3	4.3	7.8	2.0	NNW	26.40	1.03	0.00
17	8.7	9.6	7.7	4.8	7.2	2.3	N	12.48	1.10	0.00
18	8.0	8.6	7.2	6.8	9.1	4.4	N	7.18	0.66	0.00
19	7.8	9.5	6.7	4.5	7.2	2.0	N	13.14	0.67	0.00
20	11.9	16.7	7.4	5.4	11.6	2.0	ENE	22.91	1.06	0.00
21	13.4	15.2	11.3	4.4	8.2	2.0	ENE	18.98	0.94	0.00
22	11.8	14.0	7.2	3.3	5.5	2.0	NW	26.41	1.05	0.00
23	14.7	20.7	6.9	4.2	6.7	2.1	NE	32.26	1.02	0.00
24	16.5	19.7	12.5	4.4	8.1	2.0	NE	29.41	1.03	0.00
25	13.1	14.6	11.4	3.1	5.5	2.0	N	18.43	0.99	0.00
26	12.8	14.8	11.4	4.2	8.3	2.0	NW	15.60	0.92	0.00
27	9.8	11.4	9.2	5.6	7.8	2.1	NNE	5.74	0.28	0.00
28	10.9	13.1	9.3	4.5	6.8	2.1	ENE	29.71	1.15	0.00
29	13.4	16.7	7.5	5.2	11.8	2.0	NE	31.49	1.01	0.00
30	16.9	22.3	12.7	7.1	12.4	2.3	SSW	18.31	1.10	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	7	3	1	0	0	0	2	0	7	5	0	0	8	45	30	3	111
2	21	6	2	0	0	0	0	1	8	5	1	1	1	4	33	22	105
3	43	9	0	0	0	0	0	0	0	1	0	0	1	1	17	41	113
4	23	13	13	11	7	4	0	0	0	2	0	0	0	0	0	4	77
5	41	17	5	0	0	0	0	0	0	0	0	0	0	0	5	19	87
6																	
7																	
8	0	4	17	19	15	5	9	1	0	3	2	2	0	0	0	0	77
9	2	1	0	0	0	0	0	3	50	45	7	1	0	0	20	10	139
10	11	0	0	0	0	0	6	0	0	0	0	0	0	4	29	47	97
11	0	5	19	23	6	2	1	1	12	26	3	2	0	3	2	0	105
12	3	0	2	0	0	0	0	4	55	61	7	1	2	1	1	1	138
13	0	6	8	4	0	0	0	4	51	37	9	2	5	1	1	2	130
14	3	1	6	1	3	17	27	29	37	6	0	0	0	0	0	0	130
15	12	6	17	2	0	0	0	0	0	0	0	0	0	2	34	70	143
16	18	13	17	3	0	0	0	0	0	0	0	0	0	13	16	27	107
17	86	14	1	0	0	0	0	0	0	0	0	0	0	0	3	31	135
18	79	38	0	0	0	0	0	0	0	0	0	0	0	0	2	25	144
19	52	11	5	0	0	4	1	0	2	0	0	0	0	0	6	36	117
20	0	1	10	43	6	11	5	16	21	2	1	0	0	0	0	0	116
21	3	5	24	32	6	3	4	10	11	5	0	0	3	3	0	0	109
22	8	20	9	0	0	0	0	0	1	7	10	0	1	7	32	22	117
23	0	0	30	27	6	6	0	1	5	4	0	0	2	3	0	0	84
24	2	11	33	20	1	0	0	0	6	10	5	0	1	6	1	1	97
25	36	23	2	0	0	0	0	0	0	1	0	0	0	7	12	28	109
26	6	17	11	0	0	0	0	0	0	0	0	0	0	4	69	27	134
27	29	65	2	0	0	0	0	0	0	0	0	0	0	0	10	37	143
28	22	10	21	23	2	14	4	4	1	0	2	0	1	2	5	11	122
29	0	0	37	24	1	0	0	4	15	26	4	0	0	3	5	0	119
30	0	0	0	0	0	0	0	0	52	69	9	2	2	4	1	0	139
Total	507	299	292	232	53	66	59	78	334	315	60	11	27	113	334	464	3244

July 1994 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	20.7	26.2	16.7	5.8	14.7	2.1	S	25.12	1.10	0.00
2	20.1	23.9	17.8	4.6	9.6	2.0	SSE	6.24	0.61	0.00
3	22.8	27.7	18.0	5.9	13.0	2.1	W	23.88	1.14	0.00
4	19.7	23.6	15.0	3.5	6.7	2.0	NE	28.01	1.02	0.00
5	12.3	16.1	10.3	5.1	8.0	2.0	N	10.72	0.64	0.00
6	10.6	11.9	9.7	5.0	8.0	2.0	NNW	15.62	0.70	0.00
7	12.8	15.8	9.7	4.2	9.3	2.0	NE	19.77	1.23	0.00
8	16.7	21.7	13.6	4.8	9.9	2.0	S	18.55	1.09	0.00
9	18.5	24.2	16.3	6.7	11.4	2.6	S	18.79	1.15	0.00
10	18.8	24.5	15.2	6.1	10.3	2.5	S	22.58	0.98	0.00
11	15.9	19.5	12.8	6.4	12.0	2.1	NW	8.83	0.80	0.00
12	14.4	17.9	12.1	4.7	8.3	2.0	NW	17.94	1.03	0.00
13	18.5	21.9	13.7	4.7	10.1	2.2	ENE	22.62	1.13	0.00
14	26.3	34.3	20.4	6.6	11.4	2.8	S	21.07	1.05	0.00
15	19.7	26.9	14.8	3.9	7.2	2.0	E	3.42	0.18	0.00
16	15.8	17.4	14.1	4.3	7.5	2.0	NE	20.69	1.15	0.00
17	17.9	20.5	16.6	4.5	6.9	2.0	NE	21.45	1.04	0.00
18	19.2	22.8	16.0	3.8	7.2	2.0	NE	25.49	0.97	0.00
19	22.2	24.7	19.8	3.5	5.7	2.0	ENE	24.64	0.96	0.00
20	22.4	24.7	20.2	2.8	4.6	2.0	NNE	27.57	0.92	0.00
21	24.2	30.5	20.7	4.1	11.1	2.0	NE	25.10	0.99	0.00
22	23.6	26.7	21.8	4.5	7.8	2.0	SSW	18.86	0.94	0.00
23	22.5	24.6	19.8	3.9	8.3	2.0	ENE	20.33	0.91	0.00
24	18.4	20.4	16.1	3.5	5.7	2.0	NE	7.18	0.44	0.00
25	17.1	18.7	15.7	3.6	5.9	2.1	NE	4.40	0.27	0.00
26	20.2	24.7	16.7	4.0	7.7	2.1	SSW	22.18	0.90	0.00
27	19.3	21.3	17.6	4.4	9.0	2.0	ENE	12.21	0.94	0.00
28	16.1	17.6	15.2	3.6	5.0	2.1	N	10.22	0.49	0.00
29	18.8	21.5	16.4	4.5	8.9	2.0	ENE	25.27	0.92	0.00
30	21.0	25.0	17.7	4.0	7.8	2.0	SSW	26.79	0.89	0.00
31	21.1	23.6	19.4	3.3	6.0	2.0	NE	23.34	1.01	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0	0	0	0	0	0	0	6	34	33	13	5	4	15	5	1	116
2	0	0	4	0	5	12	15	33	28	4	1	0	0	0	0	0	102
3	3	1	0	1	0	0	0	1	10	19	8	20	37	19	10	5	134
4	2	10	17	7	2	2	1	0	0	3	2	12	5	2	1	0	66
5	38	37	13	9	3	1	0	0	0	0	2	0	1	1	0	20	125
6	33	32	10	2	0	0	1	2	3	2	0	0	0	0	6	37	128
7	2	5	27	20	7	4	12	17	10	6	0	0	0	0	0	1	111
8	4	15	3	0	0	0	2	15	47	27	7	1	0	0	0	0	121
9	0	0	0	0	0	0	2	48	65	27	1	0	0	0	0	0	143
10	0	0	0	0	0	2	3	20	66	47	3	0	0	0	0	0	141
11	0	0	0	0	0	1	4	7	34	27	10	1	2	9	43	0	138
12	2	4	0	0	0	0	0	0	4	7	2	0	4	6	43	36	108
13	0	0	17	33	11	5	3	3	12	12	2	1	0	0	0	0	99
14	0	0	0	0	0	0	0	2	73	53	3	8	4	0	0	0	143
15	0	11	10	7	27	9	1	3	3	13	3	0	0	0	0	0	87
16	7	7	33	28	0	0	0	0	0	0	0	0	3	11	9	1	99
17	7	4	28	19	0	0	0	0	0	0	0	0	0	0	3	3	64
18	3	1	42	9	0	3	0	0	0	0	0	0	2	2	5	3	70
19	0	7	25	26	14	2	3	1	0	0	0	1	1	2	2	1	85
20	11	12	10	0	2	0	2	2	0	0	0	0	2	3	10	4	58
21	0	0	28	10	3	1	4	0	10	28	7	2	0	1	8	6	108
22	1	1	27	11	2	0	0	0	6	37	17	1	0	2	8	1	114
23	6	14	9	31	2	1	1	0	0	19	13	0	0	0	2	5	103
24	11	26	36	20	13	2	0	0	0	0	0	0	0	0	0	0	108
25	4	5	16	6	3	6	2	3	6	11	5	5	6	2	5	11	96
26	9	5	33	10	6	3	0	0	6	39	6	0	0	0	2	6	125
27	0	0	35	57	27	4	0	0	0	0	0	0	0	1	2	1	127
28	36	11	25	16	24	6	2	0	0	0	0	0	0	0	1	14	135
29	3	12	18	21	4	4	10	3	6	15	4	0	0	6	0	5	111
30	0	22	4	1	2	7	2	1	8	33	9	0	2	7	0	0	98
31	5	15	23	11	2	0	1	1	4	4	2	1	4	13	16	6	108
Total	187	257	493	355	159	75	71	168	435	466	120	58	77	102	181	167	3371

August 1994 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	22.8	25.6	19.6	4.7	8.2	2.1	NE	17.71	1.16	0.00
2	25.1	29.2	22.1	3.9	6.4	2.1	ENE	25.91	0.89	0.00
3	23.7	29.7	21.5	3.4	6.4	2.0	NW	15.65	0.90	0.00
4	24.3	27.3	21.5	4.1	8.4	2.0	SSW	16.99	1.00	0.00
5	21.5	23.5	19.6	4.2	6.7	2.0	ENE	27.44	0.94	0.00
6	26.3	33.1	21.3	5.6	10.2	2.1	S	22.59	0.97	0.00
7	28.4	36.0	23.4	5.7	13.7	2.0	WSW	24.69	0.93	0.00
8										
9										
10	23.9	26.0	21.0	4.5	10.5	2.0	ENE	19.21	1.03	0.00
11	25.9	30.0	23.1	8.4	17.2	2.1	S	14.80	0.77	0.00
12	23.5	28.1	21.6	5.0	12.2	2.0	S	3.96	0.39	0.00
13	20.8	22.1	19.8	4.2	7.0	2.0	ENE	8.13	0.65	0.00
14	21.9	24.1	20.3	4.6	9.0	2.0	ENE	9.12	0.80	0.00
15	20.2	22.3	19.1	5.9	13.6	2.2	NNW	15.19	0.99	0.00
16	18.0	19.1	16.7	5.7	10.4	2.1	ENE	20.06	0.99	0.00
17	20.5	25.4	16.4	10.4	14.6	5.9	S	23.81	0.97	0.00
18	22.1	28.9	20.1	4.1	9.9	2.0	NE	21.30	0.97	0.00
19	19.8	21.2	17.6	3.6	5.9	2.0	NE	8.68	0.52	0.00
20	16.7	17.5	15.8	4.2	6.1	2.0	NE	9.19	0.56	0.00
21	17.0	18.1	15.7	4.0	6.7	2.0	ENE	6.47	0.51	0.00
22	18.8	20.8	15.4	3.2	4.7	2.0	NNE	24.77	0.88	0.00
23	19.4	22.0	16.2	3.6	6.2	2.0	ENE	23.91	0.93	0.00
24	18.9	21.5	14.2	5.4	9.0	2.1	ENE	23.69	0.86	0.00
25	22.1	26.6	18.5	7.0	12.7	2.4	S	23.18	0.90	0.00
26	22.5	25.8	20.0	9.4	14.9	2.9	SSW	20.45	0.95	0.00
27	23.0	26.6	21.2	6.9	14.7	2.2	SSW	6.70	1.07	0.00
28	23.5	27.6	20.4	3.5	7.7	2.0	WSW	22.17	0.87	0.00
29	23.6	27.6	19.9	3.4	5.7	2.0	S	14.15	0.84	0.00
30	22.5	26.2	18.1	3.6	4.9	2.0	NE	21.54	0.87	0.00
31	21.1	22.8	19.0	4.1	6.2	2.0	ESE	5.46	0.51	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0	1	19	4	0	0	0	0	1	1	0	0	0	1	2	1	30
2	0	2	24	35	12	8	1	1	0	0	0	0	0	0	2	1	86
3	10	3	16	10	1	2	4	4	9	3	1	1	0	13	19	2	98
4	9	16	10	1	1	5	7	1	10	18	3	1	8	8	8	9	115
5	5	6	22	24	7	1	0	2	1	1	3	4	1	0	16	12	105
6	2	1	0	0	0	0	0	8	53	43	1	2	0	0	0	0	110
7	3	7	2	2	4	12	3	9	20	10	8	28	11	4	0	1	124
8																	
9																	
10	0	13	10	14	13	8	8	5	8	7	1	0	0	0	0	1	88
11	1	0	0	0	0	0	0	7	64	53	1	1	1	2	1	4	135
12	4	0	0	0	1	7	8	14	24	19	2	2	6	4	0	1	92
13	3	9	13	46	12	3	2	2	2	1	0	0	0	0	0	0	93
14	1	1	7	18	8	12	8	8	8	4	0	2	1	1	3	1	83
15	6	9	6	3	0	0	0	0	0	0	0	0	3	27	32	42	128
16	0	0	7	39	19	14	16	9	11	1	0	0	0	0	0	0	116
17	0	0	0	0	0	0	0	1	85	58	0	0	0	0	0	0	144
18	0	10	21	13	3	3	4	10	20	17	5	3	0	0	2	0	111
19	2	26	39	16	2	0	0	1	1	0	0	0	0	3	5	3	98
20	0	14	76	33	4	4	4	0	1	0	0	0	0	0	0	0	136
21	0	0	19	28	11	15	7	13	3	0	0	0	0	0	0	0	96
22	5	28	11	1	2	9	7	1	4	1	2	0	0	0	0	0	71
23	2	3	21	24	2	6	3	0	4	17	3	0	1	0	1	4	91
24	0	0	15	42	3	0	1	1	1	11	4	0	0	0	0	0	78
25	0	0	0	0	0	0	0	5	76	51	7	1	0	0	0	0	140
26	0	0	1	0	0	0	1	3	58	77	2	0	1	0	0	0	143
27	0	0	0	0	0	0	1	1	22	54	10	1	3	4	1	0	97
28	3	0	3	2	0	1	1	3	9	6	8	13	5	9	11	5	79
29	0	3	0	0	0	0	0	0	37	32	7	0	0	0	0	1	80
30	0	3	23	15	4	1	1	1	0	0	1	2	5	3	5	1	65
31	0	0	0	3	16	42	7	5	4	5	0	0	1	1	1	0	85
Total	56	155	365	373	125	153	94	115	536	490	69	61	47	80	109	89	2917

September 1994 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	19.2	20.5	16.5	5.2	9.4	2.0	N	11.00	0.87	0.00
2	21.9	25.3	16.1	3.9	12.5	2.0	S	22.08	0.88	0.00
3	18.8	21.5	15.1	6.1	9.2	2.1	NNW	21.32	0.86	0.00
4	19.4	22.7	14.0	3.4	6.4	2.0	SSW	16.93	0.97	0.00
5	22.5	26.1	19.3	3.3	5.8	2.0	SSW	17.92	0.81	0.00
6	24.6	28.3	20.6	9.4	19.5	2.1	S	22.77	0.85	0.00
7	21.5	24.7	18.3	5.1	11.4	2.0	SSW	17.06	0.91	0.00
8	21.6	26.1	17.8	6.2	11.6	2.0	S	17.87	0.88	0.00
9	20.7	25.1	17.7	5.8	11.5	2.0	W	16.11	1.01	0.00
10	20.4	25.0	16.1	4.5	8.2	2.1	S	15.69	0.89	0.00
11	19.3	21.0	17.7	4.8	9.2	2.0	S	2.25	0.14	0.00
12	19.2	22.1	16.5	3.3	6.7	2.0	NNE	13.02	0.89	0.00
13	18.2	20.5	15.4	3.4	5.3	2.1	NE	11.99	0.68	0.00
14	17.9	18.6	16.9	4.8	7.6	2.0	NE	2.60	0.16	0.00
15	17.3	17.7	17.0	4.2	6.9	2.0	NNE	4.48	0.34	0.00
16	18.5	19.8	17.0	2.9	4.2	2.0	E	4.03	0.23	0.00
17	21.8	28.9	19.1	5.1	10.8	2.1	NW	15.33	0.90	0.00
18	19.5	21.4	17.5	6.2	11.0	2.0	ENE	12.12	1.02	0.00
19	15.7	18.1	13.4	9.6	13.2	7.2	NNE	3.49	0.22	0.00
20	12.4	13.8	11.2	9.8	14.5	5.5	NNE	2.36	0.14	0.00
21	12.7	13.1	12.1	7.7	10.6	2.6	NE	3.50	0.17	0.00
22	12.9	15.9	10.9	5.4	9.2	2.0	S	10.74	1.02	0.00
23	13.1	15.2	8.3	6.3	9.6	2.3	SE	5.76	0.42	0.00
24	16.2	18.5	13.9	4.6	11.1	2.0	ESE	10.37	0.79	0.00
25	14.9	16.5	13.9	3.7	6.6	2.1	WNW	2.65	0.24	0.00
26	15.6	18.3	13.6	4.5	11.4	2.0	NNW	18.40	0.89	0.00
27	16.8	20.6	13.8	5.4	10.5	2.0	S	12.03	0.88	0.00
28	15.8	18.3	11.9	3.7	5.9	2.0	SSW	17.23	0.77	0.00
29	15.0	17.2	13.7	3.6	5.8	2.1	NW	13.37	1.07	0.00
30	13.7	15.2	12.7	5.6	10.2	2.2	ESE	2.04	0.14	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	24	17	7	12	18	4	0	0	1	1	1	0	0	0	11	15	111
2	0	9	14	2	0	0	1	4	19	7	0	0	1	11	10	11	89
3	10	1	2	1	6	2	0	0	1	10	0	0	0	2	12	58	105
4	0	9	10	10	9	11	6	1	16	27	5	0	0	1	0	0	105
5	0	7	16	16	2	2	7	5	24	26	4	1	0	0	0	0	110
6	0	0	1	0	0	1	0	0	66	63	7	1	0	0	0	0	139
7	14	6	4	3	6	2	3	2	10	26	8	3	5	5	6	25	128
8	0	0	0	1	0	3	9	25	67	16	1	0	0	0	0	0	122
9	0	1	3	0	1	2	1	3	12	22	7	21	41	9	1	0	124
10	0	1	5	8	4	5	3	5	37	22	2	15	7	1	0	0	115
11	0	0	0	0	1	3	3	20	26	14	6	3	13	16	10	1	116
12	13	16	2	2	2	0	2	2	8	13	5	1	4	7	6	3	86
13	0	3	15	12	14	7	1	0	4	5	0	0	0	0	0	0	61
14	5	18	36	16	0	0	1	0	0	1	1	0	6	7	1	5	97
15	42	68	13	0	0	0	0	0	0	0	0	0	0	0	0	3	126
16	4	6	11	17	23	8	2	2	2	0	0	0	0	0	0	0	75
17	2	0	0	0	0	4	2	6	25	15	1	0	1	0	34	4	94
18	0	0	13	58	25	20	14	5	0	0	0	0	0	0	0	0	135
19	13	92	36	3	0	0	0	0	0	0	0	0	0	0	0	0	144
20	32	96	16	0	0	0	0	0	0	0	0	0	0	0	0	0	144
21	2	37	57	34	8	0	0	3	0	0	0	0	0	0	0	0	141
22	0	0	0	0	0	3	38	39	40	4	0	0	0	0	0	0	124
23	0	0	0	0	0	53	62	8	0	4	1	0	0	0	0	0	128
24	1	2	13	15	19	22	3	3	1	2	1	0	0	8	7	1	98
25	8	2	12	3	0	0	1	0	0	0	0	0	3	43	28	10	110
26	10	1	8	11	7	5	3	0	2	1	0	0	4	15	19	22	108
27	0	0	0	0	1	5	12	11	61	38	4	2	0	0	0	0	134
28	0	3	16	13	3	0	0	1	2	37	10	0	0	8	3	0	96
29	0	2	17	17	11	18	10	0	0	0	0	0	1	21	24	5	126
30	0	0	0	1	4	49	40	32	5	0	0	0	0	0	0	0	131
Total	180	397	327	255	164	229	224	177	429	354	64	47	86	154	172	163	3422

October 1994 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	17.2	20.1	13.3	3.8	8.7	2.1	ENE	16.55	0.87	0.00
2	15.1	17.6	11.8	3.4	7.4	2.0	NE	14.80	0.86	0.00
3										
4										
5	15.2	18.0	11.1	5.3	14.1	2.1	SSE	3.64	0.23	0.00
6	14.7	18.9	9.9	5.2	10.9	2.0	S	13.29	0.78	0.00
7	15.3	19.3	10.7	4.8	9.6	2.0	W	17.21	0.88	0.00
8	14.6	18.5	10.8	4.3	10.6	2.2	W	13.41	0.78	0.00
9	13.9	18.0	10.1	5.8	12.2	2.2	SSW	7.92	0.87	0.00
10	11.5	16.9	6.7	3.0	6.7	2.1	SSW	17.00	0.71	0.00
11	11.8	17.7	6.7	3.5	6.8	2.1	SSW	17.16	0.71	0.00
12	13.1	17.8	7.6	4.0	7.2	2.0	S	14.00	0.73	0.00
13	18.4	24.1	12.9	9.2	15.0	2.5	W	15.19	0.67	0.00
14	12.5	15.2	9.6	11.1	15.6	5.1	NW	6.29	0.58	0.00
15	10.6	13.1	9.2	5.8	11.5	2.2	WNW	9.09	0.70	0.00
16	11.9	16.0	9.2	8.2	22.1	2.6	SSW	4.30	0.45	0.00
17	7.1	9.6	4.5	10.7	15.5	3.2	WNW	4.49	0.34	0.00
18	9.2	13.7	5.7	4.8	10.6	2.0	W	14.09	0.72	0.00
19	9.4	12.9	5.1	5.4	8.9	2.2	S	4.17	0.22	0.00
20	8.9	12.1	4.4	8.0	15.9	2.1	WNW	6.97	0.72	0.00
21	6.9	11.7	2.1	4.4	11.8	2.0	SW	14.92	0.65	0.00
22	8.0	12.2	3.8	4.6	12.7	2.0	SSW	13.99	0.64	0.00
23	5.8	8.2	3.7	7.7	13.4	2.7	NNW	4.85	0.66	0.00
24	6.1	9.6	2.0	4.4	7.6	2.0	WSW	7.30	0.65	0.00
25	5.9	11.2	1.7	3.8	6.2	2.0	SSW	14.39	0.63	0.00
26	8.1	13.1	3.5	4.5	9.4	2.0	SSW	14.06	0.62	0.00
27	11.0	16.9	5.7	7.5	15.0	2.0	SSW	10.86	0.68	0.00
28	11.2	18.0	5.3	4.8	11.4	2.1	S	13.21	0.59	0.00
29	11.2	12.3	9.7	5.5	9.6	2.0	NW	2.23	0.29	0.00
30	9.5	10.9	8.7	4.4	9.1	2.0	ENE	4.19	0.59	0.00
31	8.1	9.7	4.5	5.2	11.3	2.1	W	9.28	0.63	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	2	8	15	23	8	4	3	3	7	0	1	2	2	1	5	5	89
2	0	2	19	19	3	3	0	2	1	2	9	2	4	16	6	1	89
3																	
4																	
5	0	0	0	1	3	3	6	47	31	12	8	1	3	2	3	1	121
6	0	0	3	12	8	7	2	1	42	37	5	1	0	0	0	0	118
7	0	0	0	0	0	0	3	2	8	10	23	8	32	20	15	5	126
8	0	0	0	0	0	0	2	6	6	11	15	17	30	27	8	0	122
9	21	3	0	0	0	0	0	1	18	35	6	11	17	13	8	9	142
10	6	0	0	0	0	2	3	3	21	39	4	8	5	5	6	3	105
11	0	0	4	17	8	6	3	10	19	38	6	0	0	0	0	0	111
12	0	0	0	6	13	12	17	25	42	11	0	0	0	0	0	0	126
13	0	0	0	0	1	1	6	11	25	15	3	30	47	3	2	0	144
14	1	0	0	0	0	0	0	0	0	0	0	2	5	44	67	25	144
15	2	0	1	4	6	9	1	0	10	21	2	1	20	41	6	3	127
16	0	0	0	0	0	2	0	1	32	52	3	3	13	9	9	20	144
17	2	0	0	0	0	0	0	0	0	0	1	1	23	59	24	33	143
18	8	0	0	0	0	2	8	1	13	14	11	12	22	19	1	2	113
19	0	0	0	0	0	0	2	8	67	56	7	1	1	2	0	0	144
20	1	0	0	0	1	0	0	3	10	8	1	6	39	41	17	0	127
21	0	0	0	0	0	0	0	2	18	22	33	12	20	11	1	2	121
22	8	4	17	5	2	1	0	2	21	37	8	3	5	1	1	8	123
23	35	1	0	0	0	0	0	0	0	2	0	2	6	38	17	42	143
24	0	0	0	0	0	0	0	0	3	15	13	28	28	25	20	1	133
25	1	6	9	11	5	4	3	1	23	48	5	0	0	0	0	0	116
26	0	0	14	9	6	7	4	1	19	46	14	0	0	0	0	0	120
27	1	1	3	5	1	3	3	2	35	50	7	1	1	0	0	0	113
28	0	0	7	7	3	0	0	5	46	36	6	0	0	0	0	0	110
29	0	0	0	0	0	0	1	1	9	3	0	0	1	6	57	10	88
30	11	3	6	22	10	10	0	0	0	0	0	1	9	14	15	15	101
31	3	0	0	0	0	0	0	0	0	1	6	12	44	31	26	15	138
Total	102	28	98	141	78	76	67	138	526	621	197	164	369	423	313	200	3541

November 1994 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	6.7	8.5	3.8	5.2	10.5	2.0	WNW	12.90	0.71	0.00
2	8.0	11.6	2.6	4.5	9.3	2.2	SSW	12.51	0.57	0.00
3	11.9	17.5	7.9	8.2	12.9	2.5	S	10.00	0.58	0.00
4	3.5	7.4	0.0	9.6	17.3	2.4	WNW	4.89	0.44	0.00
5	7.4	15.5	0.5	5.5	8.6	2.0	SSW	11.09	0.56	0.00
6	14.0	18.8	8.1	7.9	14.1	2.1	S	8.80	0.66	0.00
7	8.6	16.7	-0.1	9.7	17.9	3.1	W	11.97	0.55	0.00
8	3.8	8.0	-1.6	5.5	15.1	2.1	W	11.01	0.59	0.00
9	11.4	16.9	6.1	5.3	11.2	2.3	S	10.34	0.50	0.00
10	7.5	14.8	-0.7	9.3	19.2	2.1	NNW	5.78	0.72	0.00
11	4.3	9.4	-1.4	5.2	15.8	2.0	S	9.65	0.58	0.00
12	8.7	13.0	4.4	7.2	15.1	2.1	NW	10.59	0.62	0.00
13	1.4	4.4	-1.4	8.6	15.0	3.8	WNW	8.69	0.63	0.00
14	-2.3	-0.4	-5.0	6.6	13.9	2.0	W	11.00	0.67	0.00
15	-1.8	-0.1	-5.1	8.0	12.3	2.4	W	10.61	0.60	0.00
16	0.5	6.5	-5.2	4.2	7.2	2.0	S	10.86	0.52	0.00
17	4.0	11.0	-0.4	4.3	8.2	2.2	S	9.57	0.63	0.00
18	6.7	9.4	2.7	4.8	7.4	2.1	S	2.93	0.19	0.00
19	5.9	7.0	4.3	6.1	11.4	2.0	NNE	1.39	0.09	0.00
20	4.7	6.7	2.7	4.5	9.8	2.0	SSW	2.38	0.19	0.00
21	2.3	4.1	-0.1	5.9	11.4	2.0	NNW	5.17	0.60	0.00
22	0.7	2.4	-0.4	5.1	10.8	2.1	WNW	7.07	0.53	0.00
23	-1.4	-0.1	-3.5	8.8	13.6	3.4	WNW	4.91	0.65	0.00
24	-0.9	2.7	-5.4	5.5	9.9	2.4	S	9.99	0.49	0.00
25	4.7	7.9	0.6	6.5	13.9	2.1	SSE	6.63	0.57	0.00
26	3.8	6.5	0.7	3.4	6.8	2.0	S	8.50	0.51	0.00
27	2.1	3.6	-1.1	5.5	10.8	2.1	WNW	2.85	0.29	0.00
28	3.1	4.9	1.1	8.1	14.7	2.0	NW	6.48	0.53	0.00
29	2.0	3.8	-0.4	3.7	6.2	2.0	NNW	6.43	0.44	0.00
30	2.5	4.8	-0.5	4.0	6.5	2.0	WNW	8.40	0.45	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	7	5	5	0	7	5	2	5	4	3	1	0	10	34	16	6	110
2	2	4	4	13	6	2	9	4	35	41	5	1	0	0	0	0	126
3	0	0	0	0	0	0	0	0	59	26	8	26	23	2	0	0	144
4	0	0	0	0	0	0	0	1	7	13	13	6	12	46	36	9	143
5	0	0	0	0	0	0	7	4	47	54	7	3	0	0	0	0	122
6	0	1	2	5	5	5	5	10	74	27	5	2	0	0	0	0	141
7	0	0	0	2	1	1	5	3	6	3	2	21	61	29	9	0	143
8	0	1	0	2	1	4	7	16	10	8	11	15	24	19	3	2	123
9	0	1	3	8	1	7	8	25	52	24	6	0	0	0	0	0	135
10	24	2	0	0	0	0	0	3	21	18	4	2	4	6	24	33	141
11	1	2	6	2	3	1	4	8	38	35	5	2	0	0	5	8	120
12	0	0	0	0	0	1	1	1	13	12	3	22	10	15	41	15	134
13	0	0	0	0	0	0	0	0	0	0	3	14	28	73	23	3	144
14	0	0	0	0	0	0	0	0	1	0	21	26	44	31	21	0	144
15	0	0	0	0	0	0	0	0	0	0	1	19	55	50	19	0	144
16	0	2	1	0	1	2	7	6	58	53	8	0	2	3	0	0	143
17	2	4	2	2	7	2	4	19	42	11	8	2	0	0	3	1	109
18	0	1	1	0	1	2	5	7	66	50	8	1	0	0	0	0	142
19	22	54	9	2	0	0	0	0	1	3	1	0	0	1	2	3	98
20	0	0	0	0	0	0	2	4	26	31	7	1	1	4	4	10	90
21	2	0	0	0	0	0	0	0	1	7	1	3	10	20	24	44	112
22	1	3	10	6	2	2	0	0	0	7	7	1	1	19	17	19	95
23	22	2	0	0	0	0	0	0	0	0	0	0	11	58	35	15	143
24	0	0	0	0	0	0	0	5	81	53	0	0	1	3	0	0	143
25	0	0	0	0	0	4	39	57	24	12	1	0	1	1	0	0	139
26	0	4	5	16	1	3	5	5	23	22	11	3	1	2	2	0	103
27	0	0	0	0	0	5	7	5	5	6	6	3	1	34	34	20	126
28	0	0	0	0	0	0	0	0	1	4	0	0	0	30	65	30	130
29	9	0	0	0	0	0	0	0	5	19	4	0	4	16	8	31	96
30	6	0	0	0	0	0	0	2	7	6	2	3	15	49	8	16	114
Total	98	86	48	58	36	46	117	190	707	548	159	176	319	545	399	265	3797

December 1994 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	1.8	3.7	-0.6	4.5	9.9	2.1	S	7.63	0.47	0.00
2	6.7	10.1	2.2	7.7	15.3	2.1	S	5.70	0.43	0.00
3	3.3	7.2	0.4	7.4	20.1	2.0	WSW	8.69	0.46	0.00
4	0.7	2.3	-1.1	5.0	10.3	2.2	SW	6.76	0.51	0.00
5										
6										
7										
8	1.4	4.2	-1.4	5.2	10.6	2.0	WNW	7.82	0.44	0.00
9	1.4	5.7	-0.9	9.4	18.3	2.9	SSW	2.99	0.26	0.00
10	-2.9	-0.8	-5.3	11.3	17.4	2.8	WNW	5.15	0.51	0.00
11	-2.3	0.0	-6.4	5.4	9.2	2.0	NW	4.98	0.40	0.00
12	-3.1	-0.7	-6.3	3.8	8.4	2.0	NNW	4.57	0.37	0.00
13	-2.9	-1.0	-7.4	5.5	10.7	2.0	NW	6.55	0.44	0.00
14	-4.3	-0.2	-9.2	3.0	6.8	2.0	SW	8.11	0.45	0.00
15	-5.8	-3.3	-9.2	5.7	11.6	2.0	WNW	6.52	0.44	0.00
16	-6.9	-4.5	-9.2	11.2	21.3	2.1	WNW	3.10	0.30	0.00
17	-6.0	-2.9	-9.4	5.3	10.3	2.0	WNW	5.68	0.49	0.00
18	-6.7	-5.4	-8.3	6.1	12.0	2.3	W	6.11	0.48	0.00
19	-6.2	-4.3	-7.7	11.0	17.5	4.9	W	3.74	0.24	0.00
20	-5.4	-2.8	-11.2	5.5	8.8	2.1	S	6.44	0.44	0.00
21	-3.9	-1.8	-5.7	8.1	14.2	2.1	NW	4.97	0.37	0.00
22	-3.7	-1.9	-6.0	3.8	8.7	2.1	NNW	2.76	0.19	0.00
23	-5.0	-3.7	-7.6	4.4	8.6	2.0	NE	4.92	0.38	0.00
24	-1.6	2.1	-6.6	4.0	7.6	2.0	SSW	5.49	0.45	0.00
25	-2.6	-0.1	-4.7	12.2	17.8	2.1	NW	2.29	0.21	0.00
26	-4.1	-2.8	-6.1	7.0	12.1	2.0	WNW	5.06	0.45	0.00
27	-5.3	-4.0	-7.1	3.0	6.1	2.0	ESE	2.83	0.18	0.00
28	-4.0	-2.2	-6.5	3.5	6.7	2.0	WNW	6.90	0.42	0.00
29	-5.7	-3.0	-9.7	5.8	9.9	2.0	N	3.31	0.29	0.00
30	-6.8	-4.1	-9.6	3.1	5.5	2.0	SSW	5.64	0.50	0.00
31	-6.5	-2.8	-10.3	3.5	6.8	2.0	S	5.05	0.47	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	4	0	3	3	2	7	3	10	19	10	4	3	0	4	1		73
2	0	0	0	4	3	3	9	15	65	18	11	9	5	2	0	0	144
3	0	0	0	0	0	0	0	0	0	7	31	62	18	9	0	0	127
4	0	0	0	0	0	0	0	0	5	12	54	50	17	1	0	0	139
5																	
6																	
7																	
8	0	0	0	2	1	1	1	1	13	12	4	2	9	45	29	6	126
9	9	0	0	0	0	0	0	0	26	40	0	0	1	19	16	33	144
10	0	0	0	0	0	0	0	0	0	1	2	10	47	62	19	3	144
11	0	0	0	0	0	0	0	2	8	12	6	3	29	16	43	7	126
12	1	1	3	3	2	8	3	4	7	9	11	0	4	3	8	16	83
13	0	0	0	0	0	2	2	2	5	7	19	8	8	32	34	16	135
14	0	6	4	2	4	3	3	9	16	8	18	2	3	6	2	2	88
15	2	2	1	2	2	1	1	8	8	16	11	0	25	31	15	0	125
16	5	0	0	0	0	0	0	0	3	7	20	19	12	39	16	20	141
17	2	1	1	1	0	1	4	7	10	12	18	10	18	22	20	10	137
18	9	0	0	0	0	0	0	0	0	0	15	12	51	34	15	8	144
19	0	0	0	0	0	0	0	0	0	0	5	60	51	28	0	0	144
20	0	0	0	1	0	6	3	13	63	20	11	0	4	15	5	0	141
21	0	0	0	1	0	0	1	0	6	3	2	24	38	59	3	0	137
22	7	4	18	0	0	0	3	9	16	5	1	0	3	3	13	32	114
23	0	9	33	7	22	14	3	1	1	1	1	0	0	0	0	0	92
24	0	0	0	0	0	0	0	8	35	37	10	4	0	0	0	0	94
25	2	1	0	0	0	0	0	0	0	5	2	0	3	28	65	22	128
26	18	9	10	3	0	0	0	0	2	0	0	1	11	38	31	17	140
27	0	0	2	2	4	27	25	6	12	7	7	1	0	0	0	0	93
28	0	3	4	6	1	6	3	1	2	1	5	1	7	33	5	0	78
29	55	7	1	0	1	0	0	3	1	15	5	0	0	1	4	43	136
30	1	2	1	1	1	1	1	6	16	33	17	6	8	3	4	3	104
31	14	8	1	1	0	6	3	9	24	15	21	0	0	2	6	5	115
Total	129	53	82	39	43	86	68	114	357	316	307	210	367	533	441	247	3392

January 1995 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	-8.5	-6.1	-10.5	10.7	17.5	2.1	NNW	3.23	0.41	0.00
2	-7.5	-3.6	-11.7	5.8	13.3	2.0	W	8.30	0.46	0.00
3	-2.0	2.4	-6.5	5.0	12.6	2.1	S	6.54	0.47	0.00
4	-1.0	1.2	-2.2	3.1	4.3	2.0	ENE	2.86	0.18	0.00
5	-2.0	-1.1	-5.0	2.8	4.7	2.0	NNE	4.62	0.36	0.00
6	-3.4	-0.6	-6.7	4.6	8.3	2.1	WNW	7.82	0.58	0.00
7	-3.6	0.8	-7.0	7.6	15.7	2.0	S	6.77	0.45	0.00
8	-3.9	-1.0	-6.8	7.4	15.0	2.1	NW	8.40	0.46	0.00
9	1.0	8.1	-4.5	8.9	19.0	2.1	S	6.39	0.42	0.00
10	-0.3	5.3	-5.7	7.2	13.8	2.4	WSW	8.84	0.54	0.00
11	-5.8	-2.4	-9.6	5.1	11.4	2.0	W	9.40	0.49	0.00
12	-7.1	-2.4	-10.4	4.1	8.9	2.0	S	8.53	0.49	0.00
13	-8.2	-4.5	-10.5	5.0	9.3	2.2	NW	7.31	0.49	0.00
14	-11.3	-8.0	-16.3	5.3	9.1	2.0	W	7.94	0.62	0.00
15	-9.5	-7.5	-11.3	10.5	19.0	2.9	WNW	7.27	0.68	0.00
16	-6.6	-5.5	-7.8	12.2	18.4	7.2	WNW	4.11	0.23	0.00
17	-7.8	-2.2	-14.6	3.9	9.2	2.0	N	10.04	0.51	0.00
18	-6.9	-2.2	-16.1	6.3	10.9	2.1	S	9.08	0.53	0.00
19	-6.0	-3.5	-12.3	6.1	9.8	2.0	N	4.84	0.43	0.00
20	-8.6	-6.6	-11.0	5.7	13.2	2.1	WNW	6.48	0.74	0.00
21	-8.0	-3.8	-14.3	4.0	6.8	2.0	W	10.38	0.53	0.00
22	-2.5	1.7	-7.4	4.7	10.8	2.4	S	10.10	0.51	0.00
23	0.5	2.2	-0.9	6.9	14.0	2.2	SSE	3.67	0.19	0.00
24	-1.9	-0.5	-3.0	9.0	14.0	2.1	NW	3.96	0.22	0.00
25	-2.5	-1.4	-3.3	7.5	12.7	3.3	WNW	4.85	0.25	0.00
26	-3.0	-2.2	-7.0	4.3	7.5	2.1	WNW	5.36	0.28	0.00
27	-5.8	-1.4	-11.4	2.9	6.2	2.0	S	10.53	0.53	0.00
28	-7.8	-3.1	-12.1	3.0	5.3	2.0	ENE	11.11	0.55	0.00
29	-5.7	-0.6	-14.7	4.1	8.0	2.0	ESE	6.76	0.63	0.00
30	-2.8	-1.6	-4.4	7.2	13.4	2.1	NNW	5.63	0.27	0.00
31										

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	32	5	0	0	1	0	0	7	9	4	1	0	1	6	1	55	122
2	1	1	0	1	5	4	1	10	15	6	6	10	33	15	10	7	125
3	0	0	2	7	9	18	22	28	34	14	4	0	0	0	0	0	138
4	0	4	6	18	4	0	1	0	2	8	0	0	9	18	5	1	76
5	5	31	17	6	1	1	0	0	0	4	0	1	7	3	3	3	79
6	0	0	0	0	0	0	2	3	3	2	4	0	2	28	14	7	65
7	1	0	0	0	0	0	0	4	50	17	3	3	0	17	20	22	137
8	0	0	0	0	0	0	0	3	20	20	0	0	0	14	55	20	132
9	0	1	0	0	2	4	10	7	76	31	2	3	0	0	0	0	136
10	0	0	1	4	3	2	1	1	3	5	29	60	32	3	0	0	144
11	0	2	1	4	2	3	3	2	12	15	31	23	37	3	3	0	141
12	0	2	1	3	3	3	6	9	21	12	15	8	14	6	12	0	115
13	0	0	0	1	2	2	4	7	13	6	11	3	21	28	30	5	133
14	0	0	0	0	0	0	1	0	1	7	8	12	34	26	5	3	97
15	0	0	0	0	0	0	0	0	0	0	3	10	32	91	7	1	144
16	13	0	0	0	0	0	0	0	0	0	0	0	0	62	46	23	144
17	36	3	1	0	0	0	4	5	5	13	0	0	0	0	0	7	74
18	0	0	0	0	0	0	1	7	55	45	9	0	1	1	0	0	119
19	64	11	2	1	0	3	2	1	5	6	1	0	5	4	3	17	125
20	36	2	3	4	2	2	1	3	3	3	1	1	20	37	6	12	136
21	0	1	2	6	5	11	13	9	5	2	3	0	22	17	1	2	99
22	0	3	1	3	7	17	16	21	57	12	4	0	0	0	0	0	141
23	0	2	0	0	2	0	8	67	52	3	0	0	0	0	0	0	134
24	0	0	0	0	0	1	5	3	2	0	0	0	0	28	49	13	101
25	0	0	0	0	0	0	0	0	0	0	0	0	2	109	33	0	144
26	8	0	0	0	0	0	0	0	0	0	1	1	13	58	26	26	133
27	1	5	3	2	2	0	0	12	20	2	1	14	4	4	7	0	77
28	0	1	2	11	9	2	5	9	11	8	5	1	0	0	0	0	64
29	0	0	15	15	12	22	22	3	9	7	0	1	0	0	0	0	106
30	12	12	11	15	2	0	1	2	7	0	5	6	10	11	21	22	137
31																	
Total	209	86	68	101	73	95	129	223	490	248	151	156	293	593	357	246	3518

February 1995 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1										
2										
3										
4	1.2	4.2	-1.4	3.6	6.3	2.0	SSW	11.10	0.58	0.00
5	1.7	5.7	-0.9	4.3	8.8	2.0	NW	8.65	0.60	0.00
6	-2.5	0.2	-4.0	4.9	8.3	2.0	WNW	10.40	0.63	0.00
7	-2.5	0.0	-6.4	4.1	10.1	2.2	S	12.83	0.62	0.00
8	-2.7	-0.7	-6.3	4.6	9.9	2.0	S	7.93	0.76	0.00
9	-2.6	-1.0	-5.2	3.5	8.1	2.0	WNW	11.42	0.69	0.00
10	-4.7	-0.2	-9.2	3.8	6.3	2.0	WNW	14.64	0.65	0.00
11	-5.2	-1.6	-9.2	3.1	5.2	2.0	E	12.96	0.63	0.00
12	-7.3	-5.5	-9.2	6.2	16.5	2.2	S	9.08	0.60	0.00
13	-6.0	-2.9	-9.4	5.6	15.1	2.0	N	8.03	0.49	0.00
14	-6.4	-4.9	-8.3	2.8	3.8	2.0	WNW	13.08	0.65	0.00
15	-6.3	-4.3	-7.7	2.9	4.8	2.0	WNW	13.24	0.77	0.00
16	-5.9	-3.0	-11.2	3.7	5.5	2.0	ESE	12.58	0.63	0.00
17	-3.6	-1.8	-4.7	13.2	25.7	3.4	NW	5.21	0.25	0.00
18	-4.0	-1.9	-6.0	14.0	23.6	9.4	NW	5.83	0.34	0.00
19	-4.5	-1.9	-5.7	9.5	13.0	6.6	NW	9.39	0.48	0.00
20	-2.7	2.1	-7.6	9.0	12.5	6.1	NW	7.37	0.40	0.00
21	-1.8	1.2	-4.7	10.1	14.0	6.9	NW	8.72	0.43	0.00
22	-3.9	-2.8	-5.2	10.0	16.1	4.8	NW	9.25	0.47	0.00
23	-5.4	-4.0	-7.0	3.7	5.6	2.0	WNW	12.56	0.73	0.00
24	-4.3	-2.2	-7.1	2.6	4.2	2.0	W	10.32	0.74	0.00
25	-4.9	-3.0	-8.0	3.6	6.6	2.0	W	16.82	0.82	0.00
26	-7.0	-4.1	-9.7	2.4	2.8	2.0	SSW	16.48	0.73	0.00
27	-6.3	-2.8	-8.8	3.4	5.2	2.0	WNW	10.02	0.51	0.00
28	-8.4	-4.9	-10.5	3.6	5.2	2.1	WNW	17.13	0.74	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1																	
2																	
3																	
4	0	6	10	7	8	7	4	4	16	28	6	0	0	0	0	0	96
5	1	0	0	0	0	0	0	0	6	4	1	2	3	23	27	18	85
6	0	0	0	0	0	0	1	2	6	1	0	0	23	43	11	25	112
7	0	3	0	0	5	15	9	14	25	4	1	0	0	0	0	0	76
8	14	2	0	0	0	1	6	10	19	6	8	9	15	8	3	13	114
9	0	0	0	0	0	0	0	0	0	0	0	0	42	64	8	22	136
10	0	4	0	0	0	0	0	1	0	2	6	3	14	55	19	6	110
11	0	0	0	2	11	10	8	8	6	1	3	0	0	0	0	0	49
12	0	0	1	2	6	5	6	21	27	15	18	4	9	8	11	2	135
13	41	1	0	0	0	0	0	0	0	0	0	0	3	4	29	29	107
14	0	4	5	10	3	5	8	3	1	1	0	0	13	15	0	0	68
15	1	0	4	0	0	1	3	2	0	0	0	3	4	15	5	0	38
16	0	0	1	26	12	7	5	2	1	0	0	1	2	2	0	0	59
17	15	0	0	0	0	0	0	0	0	0	0	0	0	19	85	22	141
18	0	0	0	0	0	0	0	0	0	0	0	0	0	52	78	14	144
19	0	0	0	0	0	0	0	0	0	0	0	0	0	29	115	0	144
20	1	0	0	0	0	0	0	0	0	0	0	0	0	5	79	59	144
21	0	0	0	0	0	0	0	0	0	0	0	0	0	2	128	14	144
22	0	0	0	0	0	0	0	0	0	0	0	0	0	39	105	0	144
23	0	3	5	0	0	0	0	0	0	0	0	1	43	0	0	0	52
24	0	5	7	1	0	0	0	0	0	0	0	3	8	5	3	1	33
25	0	3	0	0	0	0	0	3	4	1	10	2	33	23	20	15	114
26	0	0	0	0	2	0	0	0	4	6	1	0	0	0	0	0	13
27	2	3	13	4	0	0	0	0	0	0	0	0	0	55	10	0	87
28	0	1	15	14	4	1	3	2	0	0	0	5	22	5	0	0	72
Total	75	35	61	66	51	52	53	72	115	69	54	27	175	531	741	240	2417

March 1995 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	-7.8	-3.6	-11.7	3.2	4.7	2.0	WNW	9.58	0.44	0.00
2	-3.4	2.1	-7.9	5.3	8.3	2.3	NE	11.37	0.58	0.00
3	-0.5	2.4	-2.2	3.0	5.0	2.2	WNW	19.41	0.81	0.00
4	-1.8	-1.1	-3.0	3.2	4.5	2.1	WNW	18.86	0.80	0.00
5	-3.3	-0.6	-6.0	4.2	6.5	2.0	WNW	19.08	1.15	0.00
6	-3.6	0.8	-7.0	2.9	4.1	2.1	NW	17.55	0.83	0.00
7	-3.8	-1.0	-6.2	4.3	6.2	2.0	WNW	19.28	0.94	0.00
8	-0.7	4.5	-6.8	8.1	17.3	2.1	NNW	14.35	0.78	0.00
9	1.3	8.1	-3.9	9.5	14.1	5.2	NW	13.58	0.81	0.00
10	-5.1	-2.4	-9.0	2.9	6.1	2.0	WNW	14.78	0.75	0.00
11	-7.0	-2.4	-10.1	3.7	6.1	2.0	WNW	10.76	0.47	0.00
12	-8.2	-4.5	-10.5	3.5	5.9	2.0	NW	10.43	0.48	0.00
13	-10.9	-8.0	-16.3	3.6	5.5	2.1	NW	11.13	0.51	0.00
14	-10.2	-7.8	-13.7	3.2	5.1	2.0	WNW	22.18	0.87	0.00
15	-6.9	-5.6	-7.9	3.5	5.3	2.0	SSW	20.50	0.90	0.00
16	-6.7	-2.2	-13.6	6.1	14.6	2.1	SE	20.16	0.81	0.00
17	-8.3	-2.2	-16.1	9.8	22.8	3.1	W	12.91	0.85	0.00
18	-5.0	-3.1	-7.6	6.5	14.9	2.0	WNW	20.02	0.89	0.00
19	-8.7	-6.6	-12.3	5.8	12.7	2.0	NE	17.89	0.97	0.00
20	-8.4	-3.8	-14.3	5.0	12.1	2.0	S	17.32	0.90	0.00
21	-3.3	1.7	-7.4	7.8	14.3	2.2	S	9.56	0.67	0.00
22	0.5	2.2	-1.0	3.3	6.2	2.0	WNW	14.37	0.94	0.00
23	-1.5	-0.1	-2.7	4.3	12.0	2.1	ENE	20.73	1.11	0.00
24	-2.6	-1.4	-3.3	3.3	6.7	2.0	NNE	22.36	0.89	0.00
25	-2.7	-2.0	-3.6	4.0	9.1	2.0	N	20.62	0.92	0.00
26	-5.7	-1.4	-11.4	5.0	10.7	2.0	ESE	24.41	0.91	0.00
27	-7.0	-3.1	-12.1	9.8	16.9	3.9	SSW	22.67	0.90	0.00
28	-6.9	-0.6	-14.7	3.5	8.3	2.1	SSW	15.16	0.91	0.00
29	-2.8	-1.6	-3.6	4.3	12.4	2.0	ENE	21.56	0.89	0.00
30				11.0	16.2	6.1	NE	21.60	0.93	0.00
31				5.5	14.5	2.0	SSE	8.62	0.63	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0	0	0	0	0	0	0	0	0	0	0	0	14	28	1	0	43
2	6	12	30	13	2	0	0	0	0	0	0	0	9	22	18	28	140
3	0	1	0	0	0	0	0	0	0	6	2	0	1	7	1	1	19
4	1	0	7	2	0	0	0	0	0	0	0	0	8	13	2	0	33
5	0	0	0	0	0	0	0	0	0	0	0	1	9	33	20	2	65
6	0	1	1	0	0	1	0	5	2	5	1	0	0	7	12	1	36
7	0	2	4	1	0	0	0	2	0	0	0	0	11	25	1	1	47
8	0	0	0	0	0	0	0	0	0	0	0	0	0	33	52	58	143
9	0	0	0	0	0	0	0	0	0	0	0	0	0	6	132	6	144
10	2	4	13	7	1	0	1	1	0	0	0	0	1	34	9	5	78
11	0	0	0	0	3	3	1	8	2	1	0	0	0	42	32	0	92
12	25	17	0	0	0	0	0	0	0	0	0	0	0	2	39	8	91
13	14	1	1	1	0	0	0	0	0	0	0	0	0	41	66	7	131
14	0	0	2	0	0	0	0	3	0	0	0	0	9	47	15	0	76
15	2	2	11	4	2	3	5	0	5	18	3	0	1	2	0	1	59
16	1	6	13	5	8	13	15	12	12	4	3	3	2	4	2	1	104
17	1	4	7	10	13	9	7	9	13	5	16	5	22	17	3	1	142
18	0	6	4	11	2	2	3	0	0	0	2	6	12	47	14	1	110
19	3	14	19	17	6	4	9	14	7	1	5	2	0	1	1	2	105
20	0	15	9	8	3	1	6	16	53	16	10	0	0	0	0	1	138
21	2	0	0	0	0	0	0	0	34	34	0	3	2	20	7	4	106
22	2	20	12	12	8	1	1	0	0	0	1	4	1	23	17	6	108
23	13	9	18	39	12	5	13	6	0	2	3	3	3	3	1	5	135
24	4	23	15	10	7	0	2	11	4	4	7	1	3	0	1	3	95
25	20	10	4	2	0	0	0	0	0	5	3	2	7	6	3	9	71
26	1	0	0	3	28	31	8	0	9	12	0	0	3	12	5	0	112
27	0	0	0	0	0	0	0	2	60	82	0	0	0	0	0	0	144
28	2	3	7	0	0	0	2	4	11	22	6	0	0	6	4	4	71
29	0	3	15	25	25	4	0	9	10	4	1	1	1	0	0	0	98
30	0	12	39	26	22	14	7	11	10	2	1	0	0	0	0	0	144
31	9	2	1	0	2	10	24	33	11	0	0	0	5	8	23	1	129
Total	108	167	232	196	144	101	104	143	246	223	64	31	124	489	481	156	3009

April 1995 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1				6.0	13.3	2.0	NW	12.74	0.81	0.00
2				5.3	12.1	2.1	NNW	15.02	0.94	0.00
3				3.3	7.2	2.0	NNE	21.11	1.15	0.00
4				4.0	9.8	2.0	WSW	11.56	0.93	0.00
5				5.0	12.6	2.0	S	24.36	0.91	0.00
6				7.1	13.0	2.0	S	19.83	0.87	0.00
7				6.4	12.6	2.1	S	10.51	0.86	0.00
8				5.9	13.2	2.1	WSW	19.67	0.93	0.00
9				5.8	15.9	2.2	ESE	12.32	0.94	0.00
10				8.0	17.5	2.0	WNW	14.12	0.93	0.00
11										
12										
13	-0.6	1.0	-2.7	7.6	14.6	2.0	NNW	13.98	0.71	0.00
14	1.1	3.7	-3.4	4.4	7.5	2.1	ENE	25.97	0.94	0.00
15	2.2	4.6	-0.4	4.2	11.8	2.0	NE	23.50	0.91	0.00
16	1.9	4.8	-0.5	6.3	13.3	2.0	E	19.28	0.89	0.00
17	1.5	3.0	0.6	5.6	10.1	2.2	ESE	7.97	0.64	0.00
18	4.4	9.3	0.5	9.9	20.8	2.2	SSE	19.53	0.92	0.00
19	4.4	7.6	0.8	10.3	17.8	2.2	NW	3.02	0.12	0.00
20	2.5	4.4	0.2	14.8	21.4	5.8	NW	8.49	0.58	0.00
21	7.6	15.3	-0.6	4.4	10.6	2.0	S	17.83	0.94	0.00
22	10.9	17.6	4.5	5.1	10.3	2.0	ESE	13.32	0.85	0.00
23	6.7	13.8	1.9	3.7	9.8	2.0	NNE	6.63	0.49	0.00
24	4.1	7.3	0.8	4.8	8.4	2.1	NW	14.85	1.05	0.00
25	10.0	18.0	6.3	4.4	7.8	2.0	ENE	19.05	1.04	0.00
26	8.5	14.5	4.4	4.1	8.6	2.0	NW	10.40	0.51	0.00
27	3.1	6.6	1.6	6.9	13.5	2.0	NW	13.36	0.90	0.00
28	9.0	13.1	4.0	4.5	8.2	2.1	ENE	26.06	0.96	0.00
29	14.3	23.4	8.1	5.4	11.8	2.1	S	24.68	0.93	0.00
30	13.3	16.0	11.1	11.0	16.9	2.6	S	12.71	0.74	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	5	5	15	17	12	4	0	0	0	0	0	1	2	4	34	24	123
2	14	5	3	0	0	0	0	1	1	0	0	0	0	2	16	65	107
3	1	13	13	8	8	2	2	2	8	0	8	9	1	0	0	1	76
4	2	12	5	3	1	0	2	1	5	2	8	15	8	9	6	6	85
5	0	0	4	6	10	7	13	18	58	18	0	0	0	0	0	0	134
6	0	0	0	0	1	1	2	10	71	43	8	2	0	0	0	0	138
7	2	1	0	2	2	2	4	20	56	10	5	4	3	1	2	3	117
8	3	13	10	10	11	16	5	2	9	7	4	19	16	9	6	0	140
9	4	3	9	7	10	23	11	1	3	0	10	9	1	7	5	6	109
10	0	0	0	1	0	0	0	3	1	2	5	4	23	61	20	6	126
11																	
12																	
13	42	15	4	0	0	0	0	0	0	0	2	3	2	6	9	55	138
14	0	7	14	21	9	12	3	1	1	1	0	0	10	14	5	3	101
15	5	6	19	18	0	0	2	1	2	1	4	2	1	0	6	5	72
16	17	3	15	21	23	12	4	4	2	0	2	1	0	0	15	21	140
17	6	10	15	11	10	56	11	1	0	0	0	0	0	0	9	6	135
18	0	1	5	6	16	22	18	25	17	2	1	0	0	0	0	0	113
19	0	0	11	7	10	15	6	7	10	4	0	0	1	29	32	2	134
20	0	0	0	0	0	0	0	0	0	0	0	0	10	39	91	4	144
21	3	4	4	6	3	3	1	6	21	2	20	16	6	11	7	2	115
22	0	6	13	14	9	29	22	14	9	6	4	0	0	0	0	1	127
23	7	14	14	10	4	5	4	2	0	1	0	1	3	3	5	7	80
24	3	1	16	13	9	8	5	4	2	1	0	1	1	14	31	17	126
25	0	1	10	16	8	9	8	12	13	3	3	7	4	11	4	0	109
26	1	0	5	1	2	6	15	8	14	9	9	1	1	8	22	1	103
27	3	5	11	6	0	0	2	1	0	0	0	0	0	24	56	5	113
28	0	7	19	23	3	4	1	1	5	2	0	2	6	2	4	1	80
29	0	1	19	2	6	4	4	14	32	16	6	3	1	13	3	2	126
30	0	0	0	0	0	0	0	1	84	55	2	0	1	0	0	0	143
Total	118	133	253	229	167	240	145	160	424	185	101	100	101	267	388	243	3254

May 1995 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	14.0	22.3	9.0	7.9	16.9	2.2	S	26.31	0.91	0.00
2	11.2	13.5	8.7	6.3	14.3	2.0	SSE	6.68	0.23	0.00
3	9.8	13.3	7.7	3.3	7.7	2.0	NNE	17.27	0.77	0.00
4	12.5	17.0	8.1	9.4	19.5	2.0	WSW	29.18	0.99	0.00
5	10.2	15.0	7.4	5.4	12.1	2.2	S	12.46	0.90	0.00
6	9.8	15.2	6.9	4.9	11.3	2.0	S	19.89	1.03	0.00
7	7.0	9.1	4.8	5.5	11.4	2.0	NNW	24.22	0.98	0.00
8	10.8	15.4	4.0	4.2	8.5	2.0	ENE	29.77	0.98	0.00
9	11.5	15.6	6.7	6.1	11.3	2.0	ENE	27.50	1.02	0.00
10	16.2	21.7	10.4	9.3	15.8	2.2	SSE	28.53	0.98	0.00
11	16.0	22.1	12.3	12.0	19.0	4.0	NNE	29.20	0.97	0.00
12	13.8	20.7	9.4	7.9	19.9	2.1	NNE	21.04	1.07	0.00
13	14.7	18.9	9.7	8.0	14.8	2.1	NNE	19.30	1.02	0.00
14	14.7	18.7	12.4	4.8	9.4	2.1	SSE	12.58	0.86	0.00
15	11.5	12.5	10.3	2.8	4.2	2.0	NNE	13.19	0.74	0.00
16	8.0	10.6	5.6	4.8	7.6	2.1	ENE	6.86	0.36	0.00
17	6.0	8.6	4.9	9.0	12.7	5.3	NNW	4.34	0.29	0.00
18	10.6	15.1	8.0	5.9	13.3	2.1	NNW	26.90	0.96	0.00
19	15.6	21.6	9.1	4.3	12.7	2.0	WNW	16.54	0.98	0.00
20	18.3	20.6	13.7	4.8	11.2	2.0	NNE	7.14	0.24	0.00
21	14.2	20.5	10.7	4.9	11.3	2.0	NNE	2.46	0.13	0.00
22	8.0	10.9	4.7	3.8	6.0	2.0	N	6.07	0.46	0.00
23	6.1	7.8	4.8	4.4	7.2	2.3	N	12.13	0.57	0.00
24	10.6	15.0	6.8	4.2	7.7	2.0	SSW	14.99	1.23	0.00
25	12.5	17.7	8.1	6.5	13.3	2.1	S	9.51	0.79	0.00
26	11.7	13.5	10.7	3.3	6.6	2.0	NNE	8.71	0.65	0.00
27	9.2	11.6	6.8	4.5	8.9	2.0	NNW	15.75	1.09	0.00
28	14.7	20.2	8.4	4.4	7.8	2.0	WNW	26.84	1.08	0.00
29	15.2	19.9	8.4	6.3	13.3	2.0	ENE	24.43	1.06	0.00
30	12.2	15.0	9.8	5.7	10.3	2.1	SSE	5.50	0.45	0.00
31	11.5	16.8	9.5	5.0	10.8	2.0	ENE	27.14	1.02	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	1	7	17	11	8	4	6	12	37	19	5	0	0	0	0	0	127
2	0	0	5	5	5	4	19	55	48	0	0	0	0	0	0	0	141
3	8	23	13	7	2	4	1	8	9	3	2	1	0	10	7	3	101
4	0	0	0	0	0	2	2	1	4	4	32	64	19	2	2	2	134
5	5	3	1	0	0	0	2	8	52	34	17	6	0	2	0	1	131
6	4	13	9	5	4	2	4	9	36	17	3	2	1	0	1	3	113
7	14	1	1	1	2	0	1	0	8	6	1	2	1	7	21	36	102
8	0	0	17	32	0	13	2	9	26	14	6	0	1	0	1	1	122
9	0	1	14	27	1	24	6	4	9	2	2	0	5	2	1	0	98
10	0	4	13	17	15	12	17	30	21	6	3	1	1	0	0	0	140
11	0	35	16	14	15	20	8	21	10	4	1	0	0	0	0	0	144
12	0	33	16	11	8	5	9	9	11	1	6	1	9	12	0	0	131
13	0	69	23	15	7	4	9	8	2	2	3	1	0	0	0	0	143
14	0	19	7	2	4	12	26	51	8	2	2	0	0	0	0	0	133
15	5	20	20	13	4	0	0	0	0	0	0	0	0	0	13	6	81
16	11	23	28	58	13	0	0	0	0	0	0	0	0	0	0	1	134
17	14	2	0	0	0	0	0	0	0	0	0	0	0	6	53	69	144
18	1	1	22	9	2	0	0	0	0	0	0	0	1	7	20	26	89
19	3	6	6	5	5	11	8	7	9	0	4	9	8	12	1	0	94
20	0	31	6	2	2	0	6	2	24	30	9	1	1	2	1	1	118
21	0	41	3	1	3	7	7	7	18	11	2	0	5	5	2	2	114
22	37	32	1	0	0	1	0	0	1	0	1	0	0	2	11	18	104
23	36	24	9	10	15	19	8	7	3	0	0	0	0	0	0	9	140
24	0	1	8	0	3	17	1	6	25	26	1	2	2	4	1	0	97
25	0	0	1	2	4	0	1	3	66	43	7	3	2	1	0	0	133
26	0	18	16	4	4	7	8	7	1	3	4	4	9	2	4	2	93
27	19	9	14	8	2	0	2	1	0	3	4	1	1	3	15	32	114
28	5	2	17	7	6	2	2	5	5	10	8	6	11	21	20	6	133
29	0	11	18	31	8	15	19	4	0	2	2	0	1	0	1	0	112
30	0	0	2	0	0	29	30	73	9	0	0	0	0	0	0	0	143
31	0	10	19	27	1	1	10	22	7	0	2	0	1	19	12	6	137
Total	163	439	342	324	143	215	214	369	449	242	127	104	79	119	187	224	3740

June 1995 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	8.9	9.9	8.4	6.2	9.1	3.4	NW	8.22	0.84	0.00
2	8.6	9.6	7.9	5.2	8.1	2.1	NNW	15.31	1.13	0.00
3	12.7	20.7	7.4	6.0	12.9	2.0	SSW	31.37	1.15	0.00
4	13.2	16.2	10.6	5.9	10.0	2.3	SSE	9.38	0.64	0.00
5	10.1	12.2	8.3	5.0	8.3	2.0	NE	10.89	0.73	0.00
6	8.2	9.3	6.8	3.9	6.6	2.0	NNW	14.17	0.51	0.00
7	10.4	12.9	7.7	4.6	8.7	2.0	ENE	28.21	1.10	0.00
8	13.4	16.1	9.2	3.8	5.9	2.0	NE	28.24	0.95	0.00
9	16.6	20.5	13.6	4.5	7.3	2.0	ENE	29.68	0.97	0.00
10	9.8	14.9	7.9	5.9	9.7	3.2	NNE	5.13	0.36	0.00
11	8.0	9.6	6.8	5.1	8.2	2.0	NNE	23.06	1.25	0.00
12										
13										
14	17.0	25.7	8.7	6.1	11.2	2.0	S	30.78	0.97	0.00
15	15.9	22.4	10.5	6.5	13.8	2.2	S	26.24	0.97	0.00
16	15.0	19.4	12.6	4.0	8.3	2.0	NE	26.27	1.06	0.00
17	12.3	13.1	11.2	4.0	7.3	2.0	NW	14.87	0.91	0.00
18	12.1	14.8	10.5	4.2	6.8	2.0	NW	22.18	1.02	0.00
19	11.3	14.1	10.3	4.9	8.5	2.1	ENE	14.65	0.83	0.00
20	10.7	11.8	9.8	3.3	5.6	2.0	NNE	6.36	0.27	0.00
21	10.1	11.1	9.2	3.6	6.0	2.1	NNE	12.42	0.89	0.00
22	10.7	12.6	9.0	4.3	7.7	2.0	NE	21.30	1.09	0.00
23	12.8	15.5	9.6	3.3	5.6	2.0	NE	17.14	1.17	0.00
24	12.0	12.6	11.6	3.7	6.8	2.0	ENE	12.57	1.04	0.00
25	13.3	14.4	11.6	2.8	4.3	2.0	NNE	14.37	1.03	0.00
26	14.4	17.7	13.0	4.0	6.6	2.0	NW	12.41	0.65	0.00
27	12.6	13.1	11.9	4.5	6.5	2.7	NW	7.91	0.44	0.00
28	12.3	14.4	11.1	3.3	5.9	2.0	NE	17.41	1.02	0.00
29	13.9	15.6	11.8	4.4	8.0	2.0	NE	21.12	1.06	0.00
30	17.4	20.1	13.2	6.2	13.6	2.0	S	11.88	0.64	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	3	0	0	0	0	0	0	0	0	0	0	0	0	6	110	25	144
2	6	6	3	0	0	4	1	0	0	0	0	0	0	4	37	41	102
3	7	6	18	17	0	1	9	0	17	29	6	0	0	0	0	0	110
4	0	0	0	0	4	23	25	35	30	17	2	0	0	0	0	0	136
5	3	4	24	22	20	7	7	0	0	0	0	0	0	3	19	24	133
6	22	21	9	3	8	4	2	4	3	1	0	0	0	0	5	41	123
7	1	1	15	46	25	16	5	1	2	0	0	0	0	0	0	0	112
8	1	10	24	0	1	5	1	0	0	0	0	0	2	20	19	8	91
9	1	15	18	24	10	3	2	0	0	0	0	0	2	9	3	0	87
10	27	45	11	0	0	0	0	0	0	0	0	0	0	8	13	34	138
11	20	32	29	22	6	3	2	8	3	5	0	0	0	0	0	4	134
12																	
13																	
14	0	0	0	0	3	0	3	23	48	46	5	2	0	0	0	0	130
15	1	0	0	3	1	2	7	16	80	29	1	0	0	0	0	0	140
16	6	3	29	9	8	10	9	7	4	1	0	0	2	17	18	5	128
17	21	8	2	0	0	0	0	0	0	0	0	0	0	11	60	31	133
18	3	13	19	5	2	1	1	0	0	0	0	0	0	3	35	25	107
19	8	1	13	44	14	12	5	2	3	0	0	0	0	0	1	3	106
20	13	38	24	13	0	0	0	0	0	0	0	0	0	2	6	12	108
21	36	74	16	0	0	0	0	0	0	0	0	0	0	0	0	8	134
22	1	26	37	30	13	9	8	1	1	1	0	0	0	0	0	0	127
23	10	12	29	5	0	0	0	2	11	16	3	0	0	0	3	16	107
24	5	6	29	30	2	1	1	0	0	0	0	0	0	0	0	4	78
25	3	18	12	5	3	2	5	1	4	5	0	0	0	0	0	1	59
26	3	3	18	4	0	0	3	9	22	7	2	1	0	21	34	2	129
27	0	0	0	0	0	0	0	0	0	0	0	0	0	5	93	46	144
28	12	16	35	16	8	0	2	0	0	0	0	0	0	0	4	12	105
29	0	9	23	20	1	3	4	1	2	1	0	0	0	0	0	0	64
30	0	0	0	0	0	0	3	9	56	49	4	1	2	4	0	0	128
Total	213	367	437	318	129	106	105	119	286	207	23	4	8	113	460	342	3237

July 1995 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	18.1	22.4	15.0	4.9	13.3	2.0	S	15.76	0.69	0.00
2	13.3	15.8	12.1	3.6	7.7	2.0	NNW	9.48	0.57	0.00
3	12.4	12.8	11.2	4.4	6.4	2.1	E	4.55	0.23	0.00
4	12.1	12.9	11.0	3.5	6.4	2.0	ENE	8.24	1.27	0.00
5	13.8	15.3	12.5	2.5	4.0	2.0	NE	15.64	1.05	0.00
6	15.3	17.6	13.7	4.5	7.6	2.0	NE	22.15	1.04	0.00
7	17.3	18.9	15.9	2.9	6.4	2.0	NE	13.09	0.94	0.00
8	18.9	22.4	15.4	4.7	9.0	2.0	NE	26.32	1.22	0.00
9	21.3	29.3	17.7	5.0	9.7	2.1	S	27.09	0.95	0.00
10	21.6	26.3	17.4	9.2	16.7	2.5	SSW	26.70	0.97	0.00
11	21.2	25.3	17.6	3.3	8.1	2.0	SSE	21.44	1.00	0.00
12	20.5	22.5	18.7	2.4	4.2	2.0	S	13.19	1.21	0.00
13	23.4	29.8	20.5	5.4	11.8	2.0	S	26.12	0.94	0.00
14	20.2	23.2	15.8	7.9	14.8	2.1	S	3.83	0.22	0.00
15	14.4	15.8	13.3	7.4	10.3	4.7	NNW	7.11	0.37	0.00
16	13.3	13.8	12.9	5.3	7.8	3.0	NNW	10.31	0.57	0.00
17	13.0	13.6	12.2	4.8	7.8	2.6	NNW	7.73	0.35	0.00
18	17.0	22.4	12.5	3.8	7.2	2.0	ENE	26.37	1.03	0.00
19	19.5	24.6	15.0	3.9	7.1	2.0	S	25.25	1.09	0.00
20	19.2	21.7	16.2	3.2	5.0	2.0	ENE	21.55	1.00	0.00
21	18.6	20.9	17.0	3.9	6.7	2.1	ENE	24.08	1.07	0.00
22	19.2	22.4	17.1	4.0	7.6	2.0	ENE	13.74	1.03	0.00
23	18.0	20.3	16.7	3.9	8.4	2.0	NW	16.72	1.04	0.00
24										
25										
26	24.2	31.1	18.1	3.9	9.3	2.0	S	28.95	0.96	0.00
27	24.9	32.2	21.5	4.4	7.8	2.0	SSW	24.90	0.94	0.00
28	19.4	21.5	17.8	3.4	5.8	2.1	ENE	6.75	0.81	0.00
29	23.7	27.4	20.3	4.7	10.2	2.2	S	11.87	0.93	0.00
30	22.8	27.8	20.1	3.2	6.2	2.0	E	16.84	1.11	0.00
31	17.4	20.2	16.3	4.9	7.6	2.2	E	3.69	0.21	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	3	10	7	0	0	0	0	0	24	20	4	2	1	16	18	16	121
2	18	12	17	8	20	3	0	0	0	0	0	0	0	3	18	22	121
3	4	1	11	34	46	13	1	0	0	0	0	0	2	15	7	4	138
4	0	0	14	45	31	20	3	0	0	0	0	0	0	0	0	0	113
5	4	11	33	7	0	0	0	0	0	0	0	0	1	3	6	9	74
6	1	7	34	8	0	1	0	0	0	0	0	0	0	1	7	6	65
7	4	8	17	6	0	4	2	0	0	0	0	0	2	8	6	2	59
8	3	3	25	19	1	18	2	0	3	13	2	2	0	0	0	0	91
9	1	6	10	3	0	0	4	5	50	27	3	0	0	0	2	3	114
10	0	0	0	0	0	0	1	26	43	64	7	0	0	1	0	0	142
11	2	8	5	10	4	5	0	15	15	11	1	0	1	9	4	3	93
12	1	2	3	4	4	0	1	0	7	4	1	0	0	1	2	4	34
13	0	0	14	20	0	1	0	6	33	19	1	1	3	2	2	0	102
14	0	0	0	0	0	0	0	1	61	34	2	0	6	31	6	0	141
15	7	0	0	0	0	0	0	0	0	0	0	0	0	3	59	75	144
16	35	0	0	0	0	0	0	0	0	0	0	0	0	0	11	98	144
17	55	0	0	0	0	0	0	0	0	0	0	0	0	0	5	84	144
18	8	0	7	22	3	4	4	2	2	7	1	0	1	3	15	16	95
19	0	7	5	16	12	10	2	2	37	26	5	0	0	0	0	0	122
20	2	8	15	18	6	1	1	2	4	1	1	0	0	2	2	1	64
21	0	6	17	27	5	3	1	1	8	14	1	0	0	0	0	0	83
22	0	3	12	13	11	12	3	9	13	6	3	1	0	0	0	0	86
23	5	0	0	0	0	1	2	1	10	12	2	0	0	5	42	27	107
24																	
25																	
26	0	0	19	11	0	5	9	5	24	13	4	0	0	0	0	0	90
27	5	12	9	17	20	8	1	4	15	32	7	0	2	1	0	2	135
28	1	8	22	39	12	10	5	3	4	0	0	0	0	0	0	1	105
29	0	0	0	0	2	4	3	13	60	37	8	1	1	0	0	0	129
30	3	6	6	10	16	8	4	2	3	12	10	2	1	0	0	0	83
31	0	0	4	22	85	20	5	1	2	0	0	0	0	0	0	0	139
Total	162	118	306	359	278	151	54	98	418	352	63	9	21	104	212	373	3078

August 1995 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	17.5	19.7	15.9	3.0	5.4	2.0	S	5.86	0.41	0.00
2	18.4	22.3	16.2	3.4	8.8	2.0	SSW	8.09	0.80	0.00
3	18.0	20.4	16.3	4.1	6.5	2.0	NNW	15.53	1.13	0.00
4	16.9	19.1	13.9	3.6	5.6	2.0	N	19.55	1.27	0.00
5	18.5	22.4	13.4	3.2	6.6	2.0	ENE	25.16	1.06	0.00
6	19.5	22.7	15.0	4.5	7.6	2.0	SSW	25.49	1.00	0.00
7	19.7	23.3	15.2	4.7	8.1	2.0	SSW	22.88	1.02	0.00
8	17.5	18.8	16.6	5.2	9.0	2.0	SE	4.86	0.24	0.00
9	18.3	20.0	16.8	4.1	6.6	2.1	SSE	7.00	0.42	0.00
10	17.8	18.5	17.0	4.3	7.1	2.0	E	8.59	0.51	0.00
11	18.5	21.1	16.4	3.5	6.0	2.0	S	12.71	0.71	0.00
12	18.3	20.1	16.4	3.2	5.7	2.1	NE	11.18	0.56	0.00
13	19.4	20.7	18.1	5.1	10.2	2.2	SSW	6.25	0.33	0.00
14	21.2	23.6	18.5	6.3	13.8	2.3	SSW	9.27	0.44	0.00
15	22.5	27.9	19.3	5.4	13.7	2.0	SSW	16.03	1.04	0.00
16	21.4	26.0	18.1	4.1	9.5	2.0	W	11.66	0.62	0.00
17	21.5	25.5	16.8	4.8	9.1	2.0	SW	26.11	0.93	0.00
18	19.9	23.2	17.2	4.6	7.8	2.1	SSW	6.37	0.31	0.00
19	18.3	19.9	16.5	3.2	5.3	2.0	NNW	11.60	1.03	0.00
20	18.7	22.2	15.0	4.6	12.1	2.0	S	9.18	0.49	0.00
21	18.0	19.6	14.8	6.2	12.6	2.0	NW	7.19	0.65	0.00
22	19.1	21.5	14.5	4.2	9.4	2.0	SSW	19.46	1.14	0.00
23	20.2	25.2	16.1	5.5	9.1	2.5	SSW	19.49	0.80	0.00
24	20.5	25.3	16.5	3.6	6.8	2.0	SSW	17.46	0.76	0.00
25	20.1	21.7	18.9	3.2	5.3	2.0	ENE	6.75	0.36	0.00
26	19.7	22.5	16.8	4.8	8.8	2.2	NNW	15.65	1.01	0.00
27	16.6	17.3	15.7	3.9	6.3	2.0	NE	9.74	0.70	0.00
28	15.7	17.4	14.2	3.5	6.4	2.0	SE	6.24	0.79	0.00
29	19.0	23.5	14.2	4.9	8.7	2.0	S	23.43	0.94	0.00
30	20.5	25.1	17.4	3.9	7.7	2.0	S	22.04	0.87	0.00
31	19.8	21.8	17.4	4.5	7.7	2.1	ENE	19.80	0.88	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0	0	0	0	2	10	11	13	35	14	13	1	0	0	0	0	99
2	1	1	14	4	7	2	5	4	26	47	5	0	0	1	0	0	117
3	34	5	1	1	0	1	0	0	1	10	2	1	0	3	5	35	99
4	33	29	2	0	0	0	4	3	3	3	0	0	0	0	1	13	91
5	2	2	16	26	6	8	3	4	25	15	7	0	0	0	0	0	114
6	1	2	17	24	7	3	4	3	11	34	11	2	0	0	0	0	119
7	1	0	23	15	5	10	4	3	23	43	3	0	0	0	0	0	130
8	0	0	0	0	0	24	48	22	30	16	0	0	0	0	0	0	140
9	0	0	0	0	0	10	32	73	26	0	0	0	0	0	0	0	141
10	0	0	26	29	30	16	11	7	2	0	0	0	0	0	0	0	121
11	0	0	0	0	17	16	7	8	52	33	2	0	0	0	0	0	135
12	1	5	22	10	1	1	0	6	7	15	2	0	0	0	1	6	77
13	0	0	0	0	0	1	0	3	60	64	7	3	0	0	0	0	138
14	0	0	0	0	0	0	0	0	41	92	9	1	0	0	0	0	143
15	2	4	7	1	0	0	0	3	18	31	4	2	8	5	7	3	95
16	0	1	2	0	0	0	0	2	1	11	8	19	21	15	3	1	84
17	0	0	0	0	0	0	0	0	1	15	37	20	25	33	0	0	131
18	0	0	0	0	1	1	0	4	30	64	12	7	1	0	0	0	120
19	19	4	0	0	0	0	0	1	7	2	0	1	14	16	23	87	
20	0	0	0	0	0	11	11	33	35	5	1	0	0	0	0	0	96
21	1	0	0	0	0	0	3	1	11	19	4	2	7	6	37	30	121
22	0	1	18	20	5	12	2	3	16	25	2	0	0	0	0	0	104
23	0	0	0	0	0	0	0	5	53	71	8	2	0	1	1	0	141
24	3	2	8	6	11	3	0	3	22	25	12	0	0	0	1	6	102
25	1	8	5	24	19	7	12	3	0	2	0	0	9	16	5	2	113
26	26	14	1	1	0	0	0	0	5	6	4	1	0	13	37	108	
27	5	25	40	14	11	16	1	1	0	0	0	0	0	0	1	114	
28	1	7	17	11	11	16	18	10	3	1	0	0	0	0	0	0	95
29	0	0	0	0	0	0	0	15	64	45	4	0	0	0	0	0	128
30	0	4	16	7	8	5	2	4	27	25	3	0	0	2	2	1	106
31	7	12	12	17	12	0	0	0	0	0	0	1	1	5	2	69	
Total	138	126	247	210	153	173	178	236	624	737	164	64	74	97	97	160	3478

September 1995 Kimuanepu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	18.7	19.3	17.7	3.6	5.8	2.0	NW	5.58	0.35	0.00
2	19.1	20.3	16.9	4.3	10.9	2.0	ENE	12.68	1.03	0.00
3	19.9	28.2	17.0	6.4	20.0	2.0	S	17.37	0.99	0.00
4	19.3	23.7	15.1	6.6	18.2	2.2	WSW	17.40	1.06	0.00
5	16.9	18.9	14.6	7.7	11.7	3.0	NW	15.22	0.91	0.00
6	16.1	18.5	13.2	3.3	7.9	2.1	WNW	14.70	1.04	0.00
7	15.1	16.2	12.8	6.8	10.1	2.0	N	6.16	0.72	0.00
8	15.0	18.1	10.6	4.1	8.2	2.0	SW	20.27	0.89	0.00
9	16.9	20.2	13.5	4.4	10.4	2.0	WNW	18.03	1.09	0.00
10	18.2	21.7	13.8	5.4	11.2	2.0	S	22.25	0.84	0.00
11	18.5	26.1	14.1	7.3	16.2	2.1	S	13.95	0.92	0.00
12	17.0	19.8	12.0	7.4	15.2	2.2	WNW	18.79	1.05	0.00
13	18.7	25.0	13.3	4.0	9.6	2.0	S	21.30	0.84	0.00
14	15.9	23.5	13.8	4.3	13.0	2.0	SSW	14.63	0.91	0.00
15	14.1	16.4	11.2	4.4	9.4	2.0	ENE	18.47	1.03	0.00
16	14.4	16.8	10.4	4.2	8.0	2.1	SSW	15.89	0.78	0.00
17	14.4	16.3	12.4	8.7	15.0	2.0	ENE	3.68	0.25	0.00
18	12.7	14.3	9.3	7.1	16.1	2.0	N	16.20	0.95	0.00
19	13.2	16.5	8.8	3.4	7.6	2.1	SSW	21.20	0.81	0.00
20	14.6	17.9	10.4	3.2	5.1	2.0	SSW	20.69	0.79	0.00
21	15.9	21.0	10.8	2.8	4.1	2.0	SSW	20.38	0.78	0.00
22	16.6	21.0	10.5	3.1	4.9	2.0	SSW	20.11	0.78	0.00
23	17.7	24.3	12.8	3.5	5.9	2.0	S	19.89	0.78	0.00
24	16.6	21.8	12.0	5.4	12.1	2.1	S	11.41	0.80	0.00
25	15.2	16.5	14.0	5.1	8.0	2.1	N	8.81	0.71	0.00
26	15.6	17.1	13.8	5.1	9.6	2.0	ENE	14.99	0.84	0.00
27	17.9	22.4	14.2	4.4	9.0	2.0	S	10.65	0.64	0.00
28	16.8	18.8	14.0	8.1	20.7	2.2	S	8.03	0.82	0.00
29	14.9	16.9	13.4	7.1	17.7	2.0	ESE	12.99	0.79	0.00
30	15.4	18.4	11.5	3.3	6.8	2.0	SSW	15.50	0.72	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	4	6	5	2	0	3	0	1	5	2	0	0	0	7	32	14	81
2	0	1	5	15	14	11	5	8	11	6	2	3	8	12	3	0	104
3	0	0	0	0	2	7	11	22	44	24	2	0	1	1	3	2	119
4	0	0	0	0	0	0	1	2	20	17	15	31	29	3	0	0	118
5	0	0	0	0	0	0	0	2	2	1	4	3	26	20	49	34	141
6	14	10	7	3	11	4	1	4	0	6	7	0	13	14	1	4	99
7	29	19	2	0	0	0	5	5	0	0	2	3	2	6	12	14	99
8	5	2	6	1	0	0	0	1	3	22	28	8	17	11	10	7	121
9	2	2	3	11	10	10	4	0	8	13	14	16	9	17	4	5	128
10	0	4	15	14	6	8	4	8	34	24	2	0	0	0	0	0	119
11	2	0	0	0	0	0	2	12	59	20	9	14	16	8	0	0	142
12	0	0	0	0	0	0	0	1	27	14	6	13	32	47	2	0	142
13	1	1	0	1	1	6	3	10	41	23	11	0	1	0	0	1	100
14	26	13	10	4	0	0	0	2	16	29	2	1	0	0	2	10	115
15	3	4	16	24	11	6	2	3	9	12	8	0	0	0	0	0	98
16	0	0	6	27	10	10	3	6	10	32	3	0	0	0	0	0	107
17	2	10	22	37	1	0	0	0	8	11	3	0	1	1	1	0	97
18	58	20	1	0	0	0	2	0	4	16	6	0	0	0	0	23	130
19	1	9	12	10	4	3	2	5	27	36	5	1	0	0	0	0	115
20	2	4	17	15	6	1	2	3	17	47	1	1	0	0	0	0	116
21	2	0	3	5	7	2	3	0	29	34	9	0	0	0	0	1	95
22	0	0	12	19	0	0	1	1	9	28	3	1	0	2	1	0	77
23	0	0	6	19	10	0	3	14	31	16	3	1	0	0	0	0	103
24	0	0	1	3	8	2	0	9	48	16	1	0	0	0	0	0	88
25	35	12	2	1	10	4	0	0	0	0	0	0	0	7	6	30	107
26	13	7	3	29	11	2	2	0	0	5	0	0	0	2	2	2	78
27	0	0	0	0	4	4	11	31	32	9	1	2	1	0	0	0	95
28	1	0	0	0	0	1	2	11	24	16	5	3	10	22	21	9	125
29	18	9	1	8	12	32	7	2	9	11	0	0	0	0	1	27	137
30	9	9	13	1	0	0	0	3	8	34	10	0	1	0	0	0	88
Total	227	142	168	249	138	116	76	166	535	524	162	101	167	180	150	183	3284

October 1995 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	16.3	23.4	10.4	3.7	6.7	2.0	S	18.12	0.76	0.00
2										
3										
4	11.9	14.7	8.6	3.9	7.4	2.0	SSW	7.40	0.69	0.00
5	13.4	16.0	11.6	4.7	8.7	2.1	SSW	9.96	0.63	0.00
6	10.5	12.4	6.9	9.4	18.7	3.8	W	10.43	0.80	0.00
7	10.2	13.2	6.7	4.7	11.3	2.1	WNW	13.91	0.87	0.00
8	10.6	15.9	5.5	3.8	7.3	2.0	SSW	9.15	0.68	0.00
9	11.5	13.8	7.7	3.9	8.3	2.0	N	13.73	0.76	0.00
10	10.5	13.5	6.8	4.3	9.8	2.0	WNW	17.40	0.71	0.00
11	11.6	16.3	6.9	4.5	9.6	2.1	SSW	17.06	0.70	0.00
12	12.2	15.4	8.5	4.2	8.9	2.0	SSW	16.60	0.68	0.00
13	12.7	15.7	8.7	4.1	7.7	2.0	SSW	15.37	0.72	0.00
14	16.2	21.6	10.1	4.6	8.1	2.2	SSW	12.77	0.72	0.00
15	12.8	18.2	10.8	4.8	12.9	2.1	ESE	2.40	0.23	0.00
16	14.3	17.1	11.1	4.3	9.5	2.1	SSE	7.72	0.58	0.00
17	15.7	19.2	13.3	4.8	11.2	2.0	SE	5.72	0.69	0.00
18	13.2	14.4	12.5	8.6	14.3	2.0	NW	4.93	0.34	0.00
19	13.8	16.4	12.0	3.6	6.3	2.1	S	6.18	0.52	0.00
20	12.0	12.8	11.1	5.8	9.5	2.0	NE	2.67	0.17	0.00
21	11.4	13.6	9.1	4.7	8.9	2.0	N	8.38	0.64	0.00
22	10.5	11.6	9.1	4.0	6.3	2.0	NE	4.39	0.28	0.00
23	9.3	12.4	6.7	3.1	5.3	2.0	SSW	8.96	0.65	0.00
24	11.9	16.5	7.2	4.1	9.0	2.2	SSW	7.82	0.44	0.00
25	13.7	16.1	11.3	8.2	26.1	2.0	SE	3.45	0.50	0.00
26	10.5	13.0	6.8	9.8	22.1	2.0	NW	7.32	0.77	0.00
27	8.5	9.5	7.0	10.3	15.0	2.7	WNW	8.87	0.73	0.00
28	6.9	9.4	4.3	5.9	12.6	2.0	WNW	13.35	0.60	0.00
29	9.5	13.1	4.5	4.8	9.5	2.0	SSW	5.45	0.34	0.00
30	13.7	17.0	10.0	5.7	11.4	2.1	SSW	3.67	0.47	0.00
31	11.7	16.4	8.7	4.9	11.7	2.0	S	5.11	0.38	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	0	0	0	0	0	0	0	10	60	45	5	0	0	0	0	0	120
2																	
3																	
4	0	0	0	0	1	17	14	17	19	25	9	2	0	4	0	0	108
5	1	2	15	12	6	10	4	2	20	28	7	8	6	0	1	0	122
6	0	0	0	0	0	0	0	0	0	0	13	40	55	35	1	0	144
7	8	0	0	0	0	0	0	0	5	17	5	20	19	25	14	12	125
8	0	0	0	1	1	0	1	6	31	38	10	6	7	5	0	0	106
9	31	17	2	0	0	0	0	3	6	4	7	0	2	9	9	12	102
10	2	7	3	5	12	5	4	1	12	19	8	2	13	25	7	2	127
11	1	7	8	5	7	6	0	2	32	38	16	0	0	0	0	0	122
12	1	20	8	8	0	3	4	2	4	56	12	2	0	0	0	0	120
13	0	1	11	18	3	0	0	0	16	48	6	4	1	0	0	2	110
14	0	0	0	0	0	0	1	4	40	57	9	11	16	1	1	0	140
15	20	4	12	15	17	25	9	0	0	0	4	5	8	1	3	3	126
16	0	0	0	0	1	19	35	53	27	2	1	0	0	0	0	0	138
17	1	1	0	1	2	4	23	18	3	1	0	0	2	15	6	8	85
18	8	6	0	0	0	4	4	1	1	1	0	0	0	0	37	26	88
19	0	0	0	0	5	10	7	24	46	18	2	0	0	0	0	0	112
20	16	23	43	17	12	11	5	0	0	0	0	0	0	0	0	5	132
21	25	6	20	4	3	0	0	0	0	3	2	0	18	19	2	11	113
22	0	0	34	6	11	24	15	7	7	1	0	0	0	0	0	0	105
23	5	8	0	0	0	0	0	4	10	19	2	0	0	0	2	0	50
24	0	0	0	0	2	14	12	16	43	45	6	0	0	0	0	0	138
25	0	0	0	0	0	15	30	11	1	1	1	13	15	11	20	4	122
26	3	0	0	0	0	0	0	3	4	5	3	4	19	30	46	16	133
27	0	0	0	0	0	0	0	0	0	0	0	2	30	45	37	29	143
28	2	0	4	5	4	4	8	3	10	7	3	1	16	32	18	8	125
29	0	0	0	0	0	2	4	44	45	18	0	3	2	1	0	0	119
30	0	0	2	0	4	1	0	5	45	61	5	4	5	1	0	0	133
31	4	6	5	2	3	8	4	20	52	27	0	0	0	0	1	3	135
Total	128	108	167	99	94	180	182	216	538	611	154	124	235	260	206	141	3443

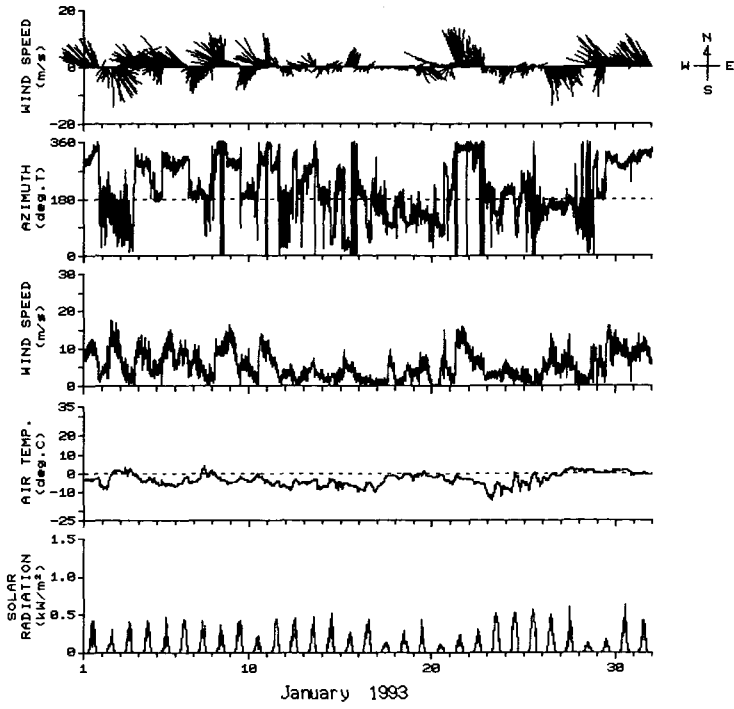
November 1995 Kimuaneppu, Saroma-ko Lagoon

Date	Air Temperature			Wind				Solar Radiation		
	Mean °C	Max. °C	Min. °C	Mean m/s	Max. m/s	Min. m/s	Most Freq. Dir.	Cumulative MJ/m ²	Max. kW/m ²	Min. kW/m ²
1	10.0	14.5	4.1	6.5	14.3	2.0	S	3.38	0.42	0.00
2	5.6	8.8	1.8	4.9	13.0	2.1	SSW	8.99	0.72	0.00
3	6.7	10.4	2.8	5.4	15.1	2.0	W	9.75	0.68	0.00
4	4.1	5.7	1.4	3.5	7.4	2.0	SW	1.65	0.10	0.00
5	5.3	6.9	1.9	6.8	11.7	2.0	NW	7.69	0.60	0.00
6	7.2	13.2	1.6	4.9	8.2	2.1	SSW	10.73	0.57	0.00
7	11.8	17.3	6.8	6.1	12.5	2.1	S	9.13	0.52	0.00
8	9.2	15.9	1.8	9.6	22.6	2.9	SW	9.57	0.61	0.00
9	4.2	7.4	0.5	6.6	13.9	2.2	WSW	6.40	0.67	0.00
10	5.4	8.7	1.3	5.5	13.4	2.0	W	7.97	0.62	0.00
11	4.5	6.8	0.9	3.5	8.3	2.0	WNW	3.51	0.23	0.00
12	4.9	8.1	0.7	6.0	12.8	2.0	W	8.37	0.53	0.00
13	7.8	12.4	1.4	5.1	8.8	2.2	S	8.18	0.52	0.00
14	13.5	16.9	10.5	8.1	18.0	2.6	S	6.56	0.67	0.00
15	5.3	12.3	1.4	10.5	16.4	2.3	NW	2.74	0.25	0.00
16	4.9	9.1	-0.3	5.4	15.2	2.0	S	10.09	0.51	0.00
17	5.2	8.3	0.8	7.8	13.6	2.3	W	7.73	0.61	0.00
18	4.9	6.5	1.8	9.9	15.7	3.6	WNW	5.73	0.54	0.00
19	5.7	9.4	0.2	5.8	13.5	2.0	S	6.73	0.52	0.00
20	9.8	16.6	4.3	8.7	15.0	2.8	S	5.89	0.59	0.00
21	2.4	4.3	-0.6	7.6	13.3	2.2	NW	9.66	0.61	0.00
22	3.9	7.9	0.3	6.5	14.8	2.0	S	9.87	0.49	0.00
23	8.4	11.9	5.6	7.9	13.9	2.0	S	7.38	0.49	0.00
24	1.8	6.3	-1.6	6.0	10.2	2.0	N	1.25	0.11	0.00
25	-0.9	1.7	-2.8	3.7	12.1	2.0	SSW	7.38	0.51	0.00
26	0.4	3.4	-2.6	6.1	10.5	2.0	S	8.29	0.52	0.00
27	3.4	5.9	0.7	6.8	13.2	2.0	WNW	3.73	0.36	0.00
28	3.1	3.9	1.9	14.9	21.6	9.9	WNW	1.89	0.14	0.00
29	2.7	3.7	1.4	14.6	18.6	9.7	NNW	1.16	0.06	0.00
30	2.6	3.8	1.6	7.2	13.8	2.1	WNW	2.99	0.29	0.00

Frequency of Wind Direction

Date	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
1	5	1	0	0	1	4	6	6	53	21	2	3	4	14	7	6	133
2	0	0	0	0	0	0	0	2	24	34	24	24	21	9	0	0	138
3	0	0	0	0	0	0	0	0	14	23	22	32	42	8	0	0	141
4	0	0	0	0	0	0	0	0	4	14	25	20	19	3	0	0	85
5	0	0	0	0	0	0	0	0	5	18	5	8	19	39	45	1	140
6	1	0	3	1	1	2	4	10	47	50	2	8	1	0	1	0	131
7	0	0	0	0	0	0	4	5	88	42	1	0	0	0	0	0	140
8	0	0	0	1	4	2	4	13	30	18	50	19	3	0	0	0	144
9	0	0	0	0	0	0	0	0	1	18	21	13	37	30	18	0	138
10	0	0	0	0	0	0	0	1	0	5	10	20	30	32	8	0	106
11	0	0	0	0	0	0	0	3	5	12	9	7	4	10	16	8	81
12	0	0	0	0	0	0	0	5	0	11	10	27	35	20	18	0	126
13	0	0	0	0	0	0	0	12	78	43	3	0	0	0	0	0	136
14	0	0	0	0	0	0	0	21	98	21	2	2	0	0	0	0	144
15	0	0	0	0	0	0	1	0	0	1	0	0	12	42	57	26	139
16	0	0	0	0	2	2	8	4	40	27	6	7	11	13	5	0	125
17	1	2	0	0	0	0	0	0	0	0	3	16	46	33	26	9	136
18	0	0	0	0	0	0	0	0	0	0	0	0	19	74	36	15	144
19	0	0	0	0	0	1	2	7	87	37	3	1	1	0	0	0	139
20	0	0	0	0	0	0	0	3	54	21	8	8	2	6	36	6	144
21	3	0	0	0	0	0	0	0	5	3	4	14	18	28	45	22	142
22	0	0	0	0	0	4	0	18	87	31	1	0	0	0	0	0	141
23	0	0	0	0	3	5	5	21	62	29	6	2	0	0	1	1	135
24	52	3	0	0	0	0	0	0	8	9	0	3	14	11	38	138	
25	8	1	0	0	0	1	0	8	16	30	18	6	0	2	0	24	114
26	0	0	0	0	0	0	3	16	78	43	2	0	0	0	0	0	142
27	0	0	0	0	1	4	10	10	18	3	0	4	15	40	8	0	113
28	0	0	0	0	0	0	0	0	0	0	0	0	11	62	42	29	144
29	8	0	0	0	0	0	0	0	0	0	0	0	0	18	23	95	144
30	14	2	0	1	1	0	0	0	0	0	1	0	41	43	11	6	120
Total	92	9	3	3	13	25	51	167	923	568	247	272	395	510	380	285	3943

Kimuaneppu, Saroma-ko Lagoon



Kimuaneppu, Saroma-ko Lagoon

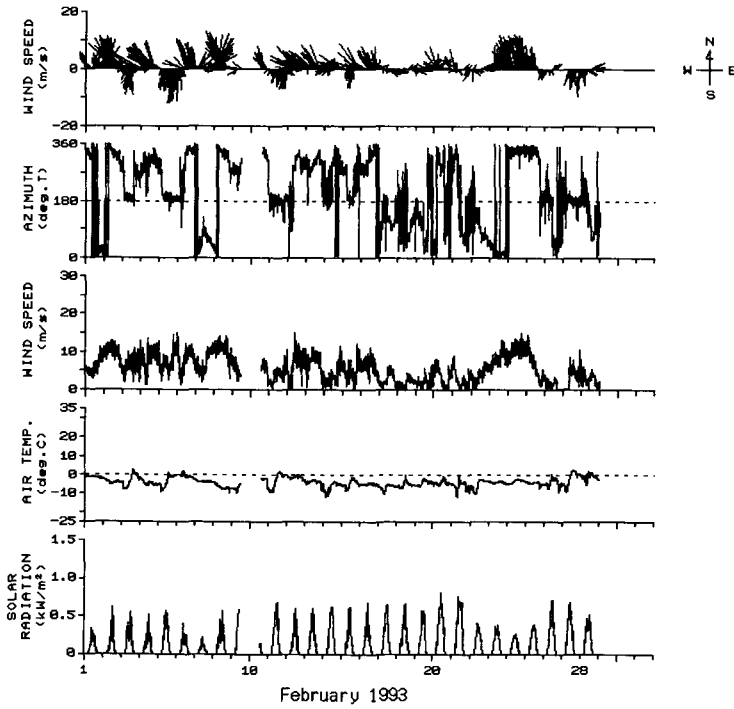
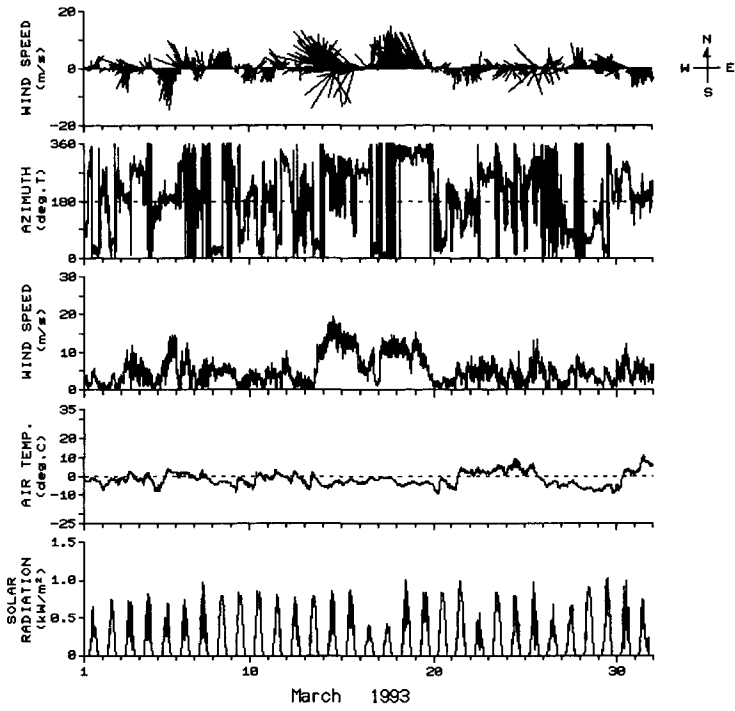
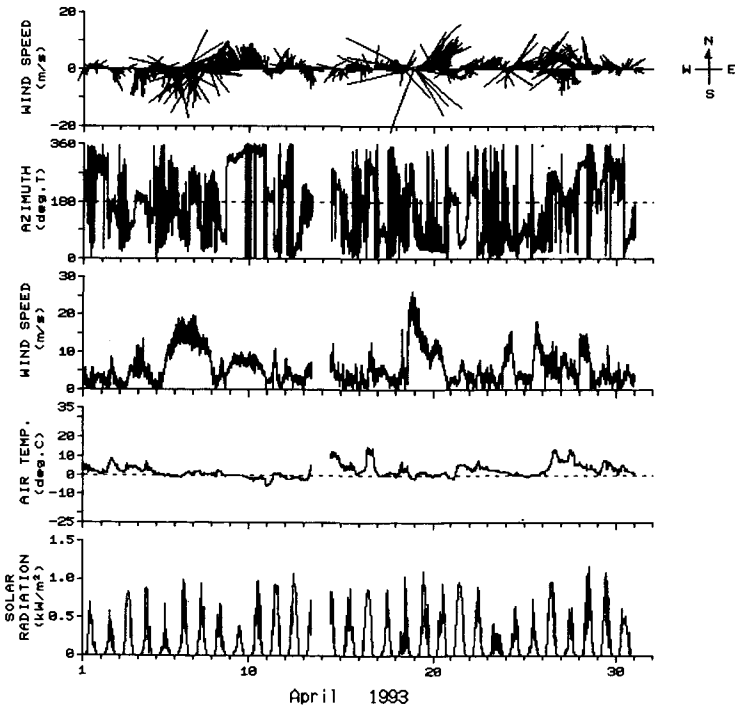


Fig. 4. Wind speed and azimuth, air temperature and solar radiation obtained at Kimuaneppu during the period between January 1993 and November 1995.

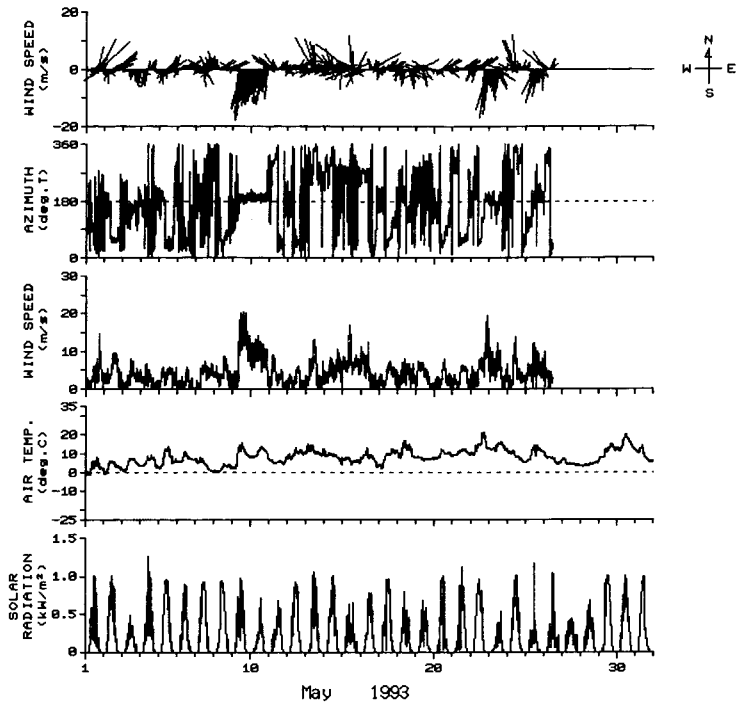
Kimuanepu, Saroma-ko Lagoon



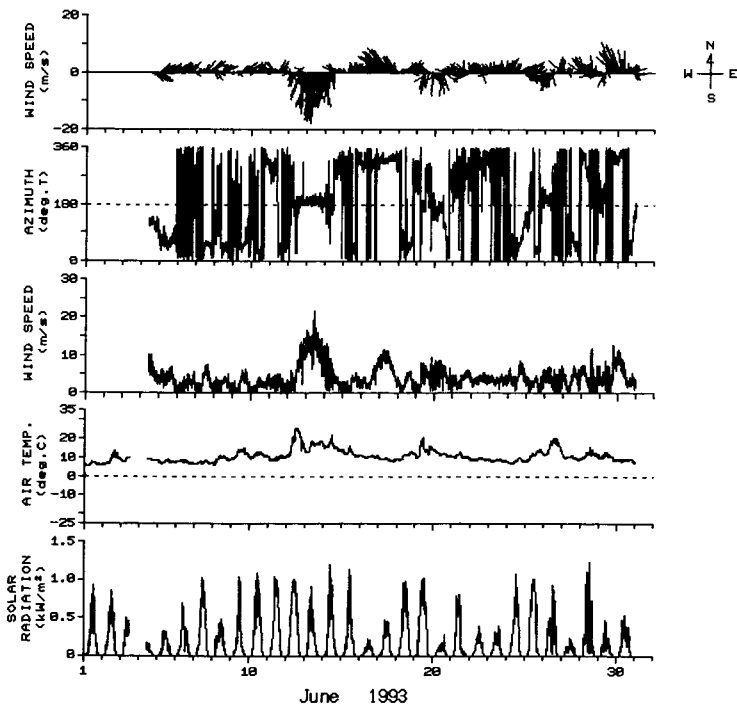
Kimuanepu, Saroma-ko Lagoon



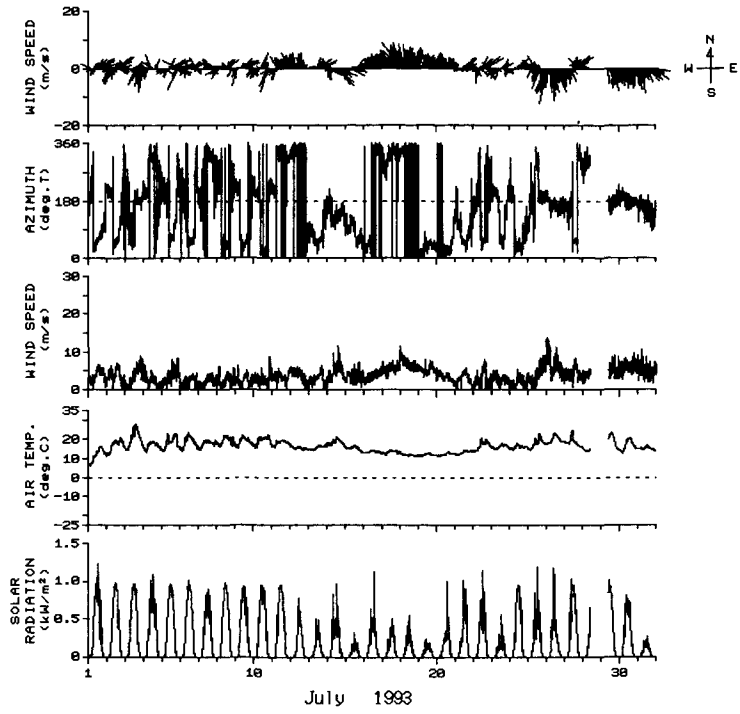
Kimuaneppu, Saroma-ko Lagoon



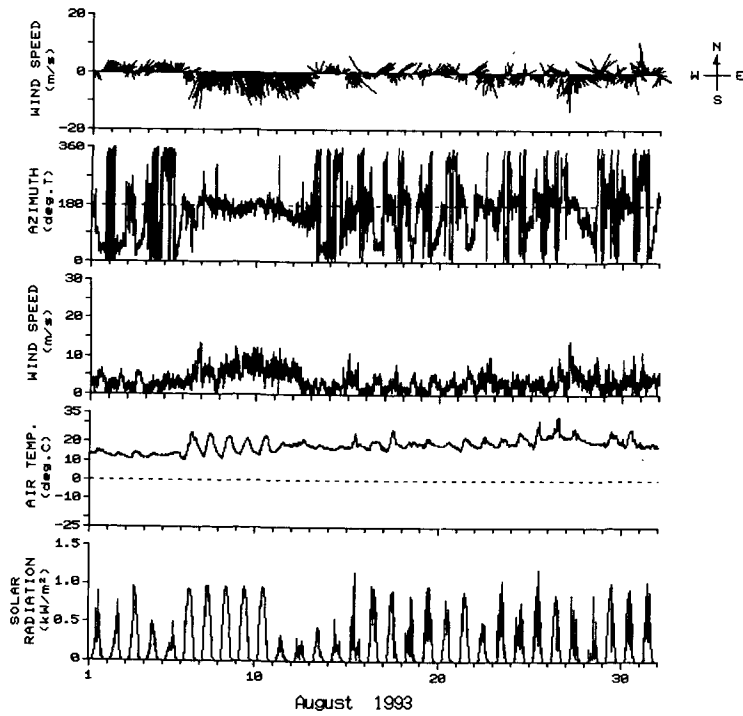
Kimuaneppu, Saroma-ko Lagoon



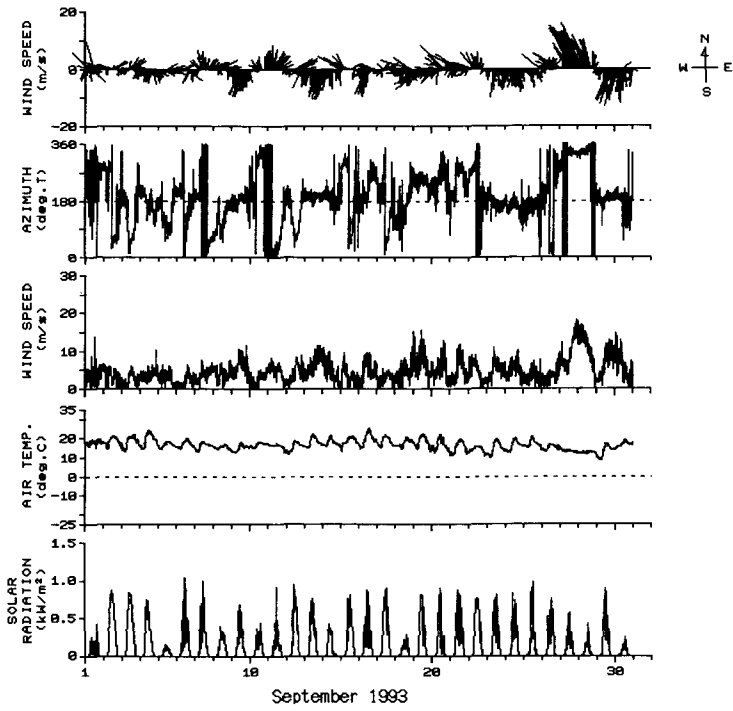
Kimuaneppu, Saroma-ko Lagoon



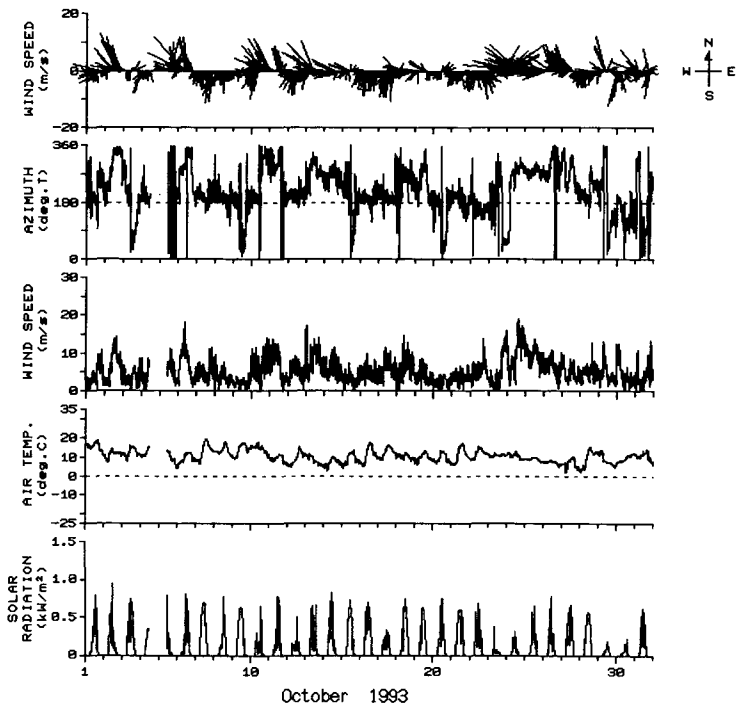
Kimuaneppu, Saroma-ko Lagoon



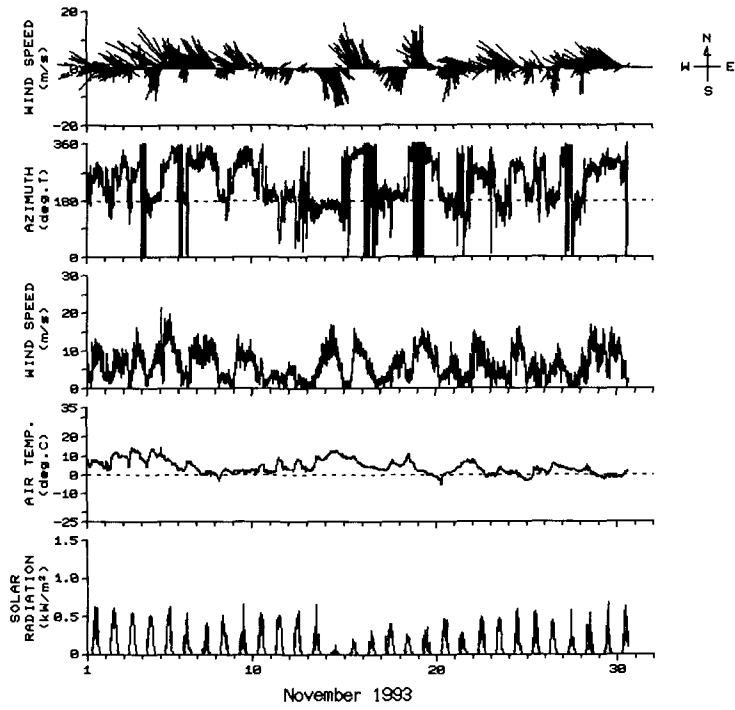
Kimuanepu, Saroma-ko Lagoon



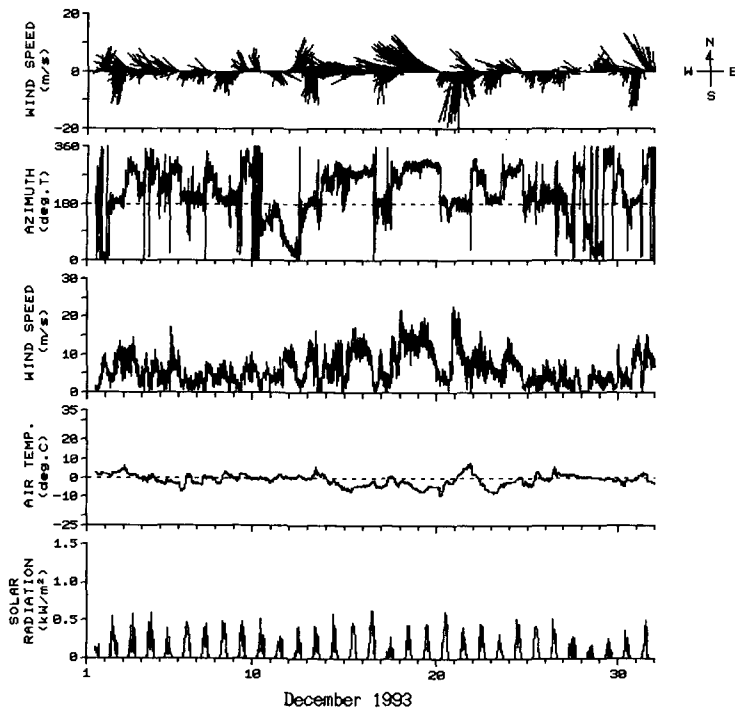
Kimuanepu, Saroma-ko Lagoon



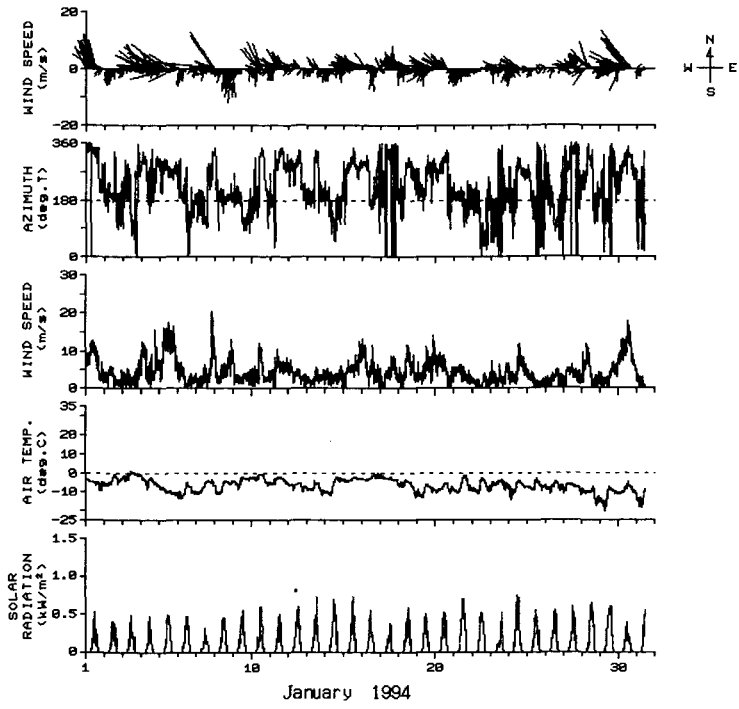
Kimuanepu, Saroma-ko Lagoon



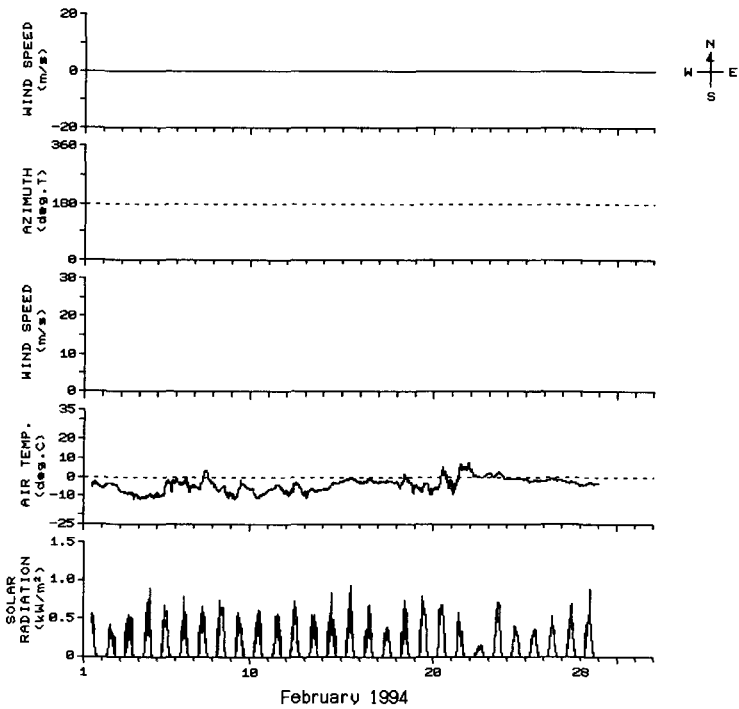
Kimuanepu, Saroma-ko Lagoon



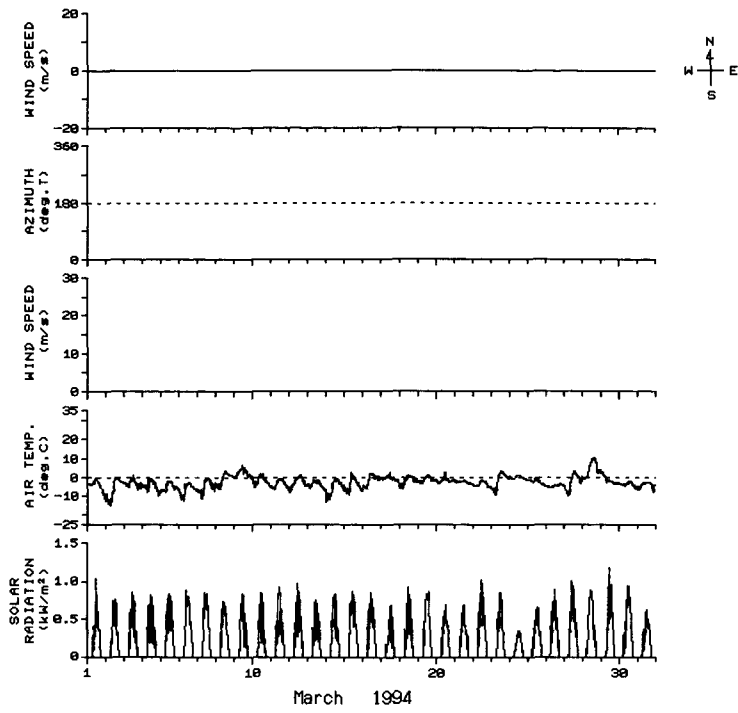
Kimuaneppu, Saroma-ko Lagoon



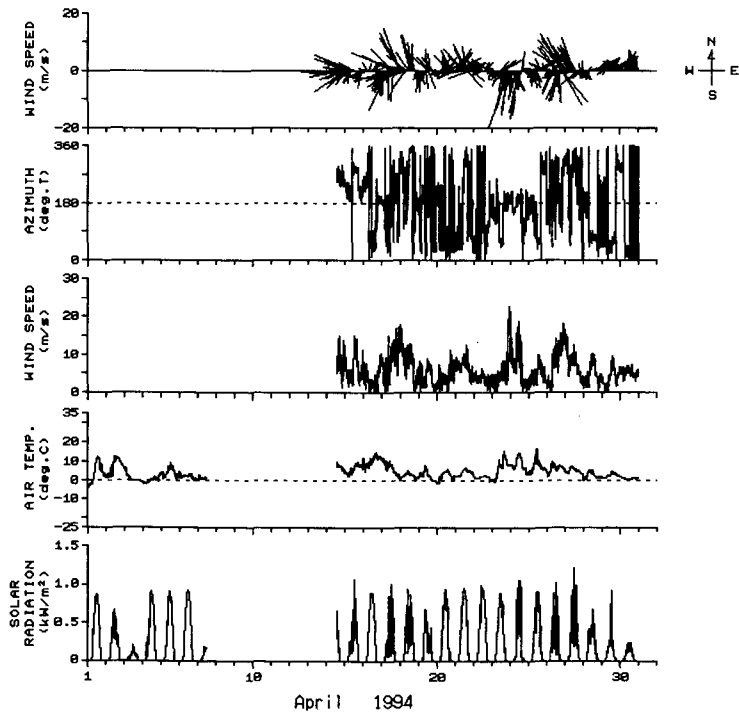
Kimuaneppu, Saroma-ko Lagoon



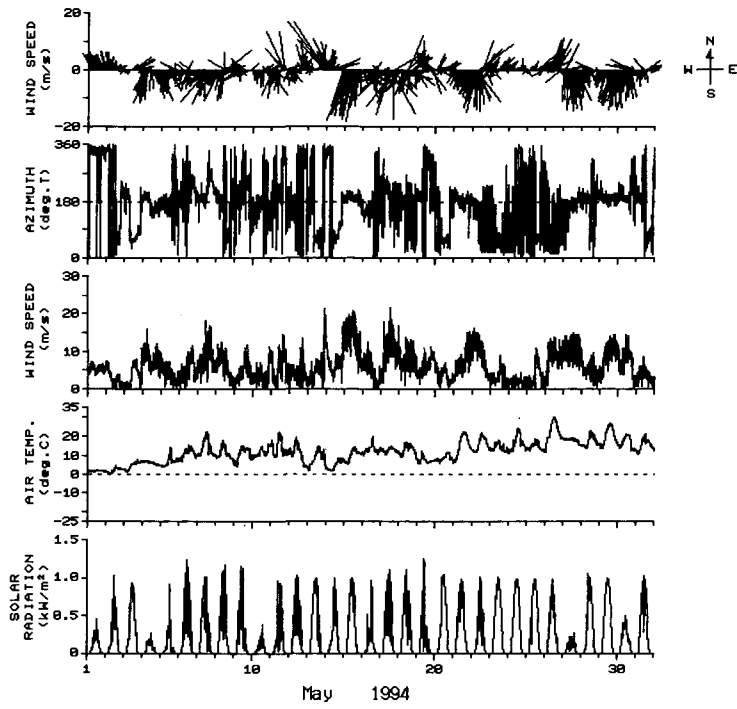
Kimuaneppu, Saroma-ko Lagoon



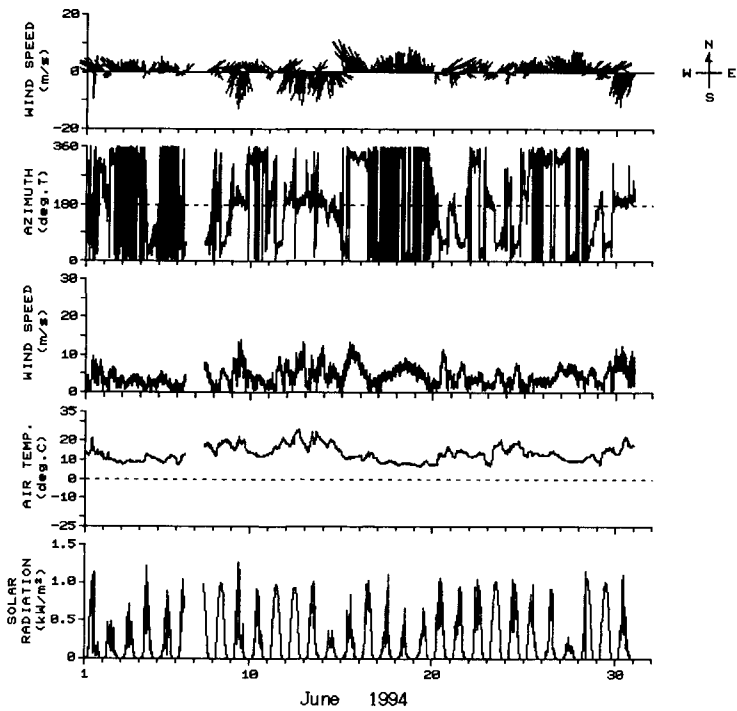
Kimuaneppu, Saroma-ko Lagoon



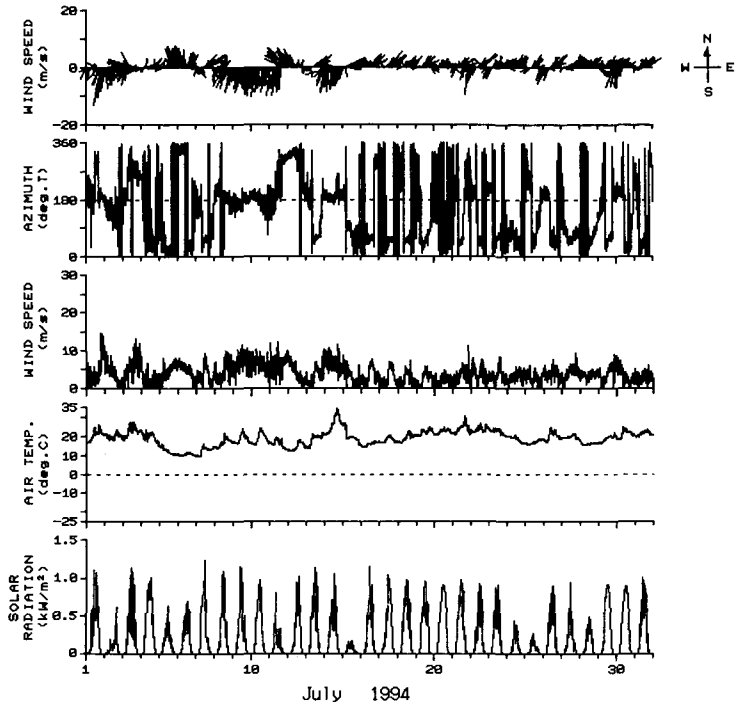
Kimuanepu, Saroma-ko Lagoon



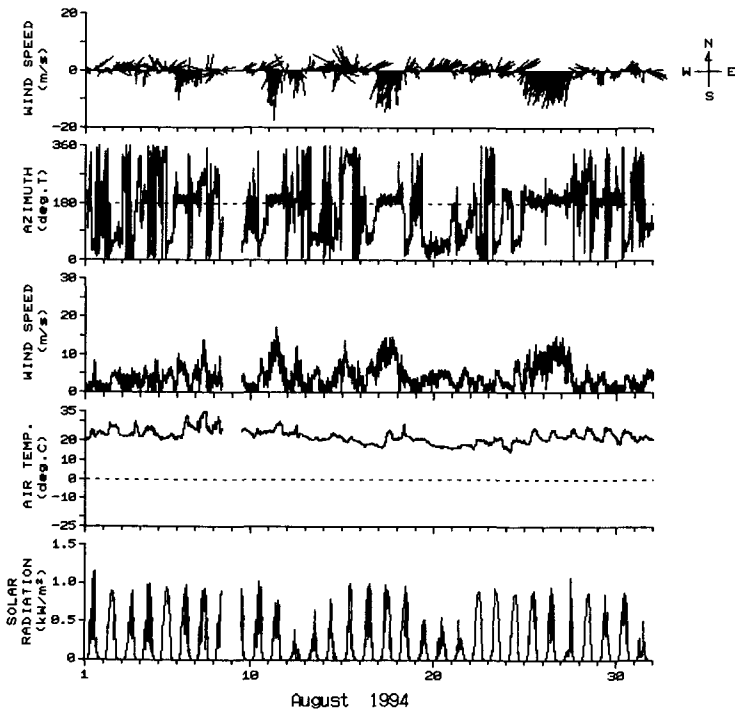
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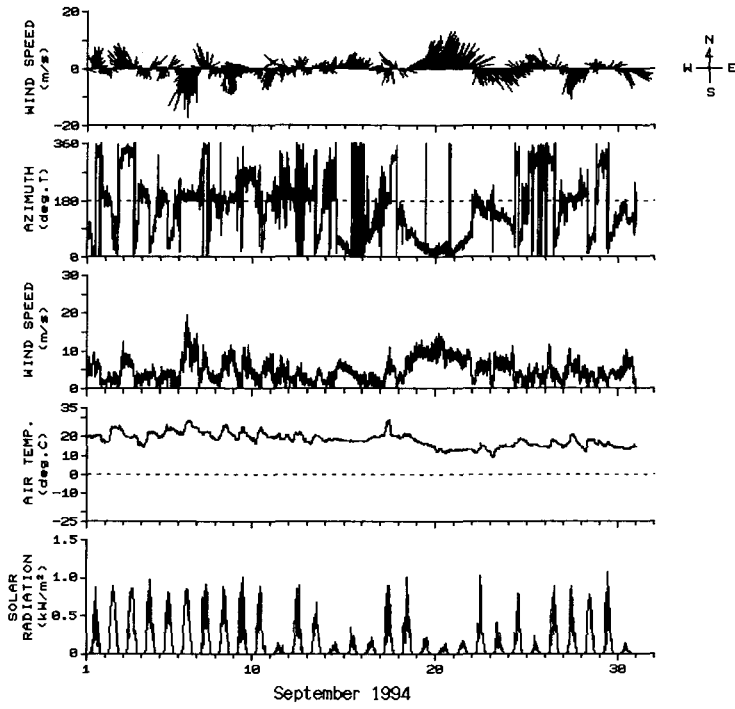
Kimuanepu, Saroma-ko Lagoon



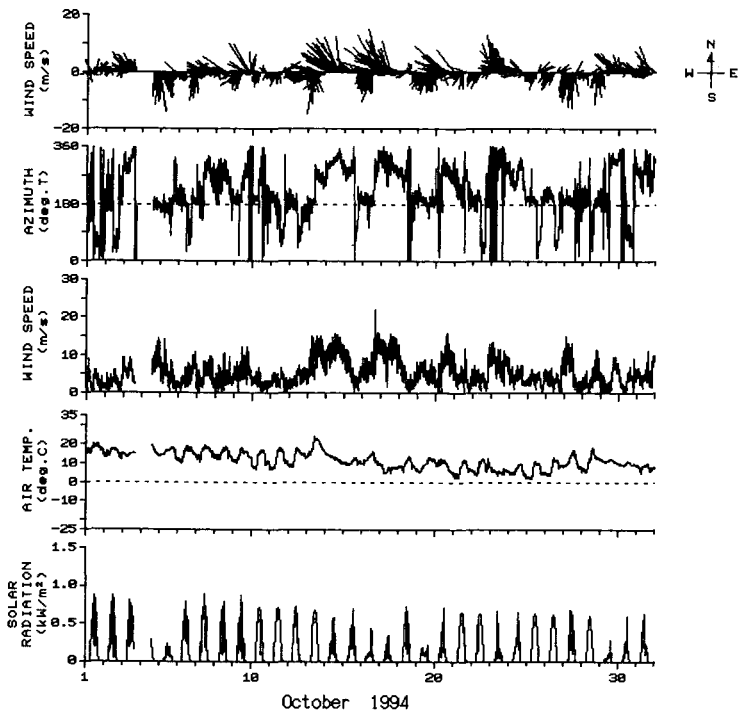
Kimuanepu, Saroma-ko Lagoon



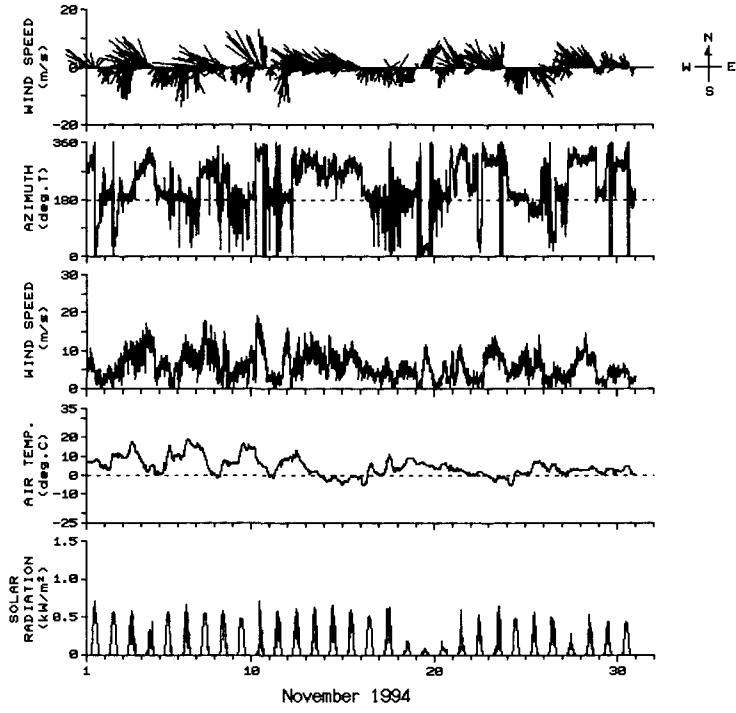
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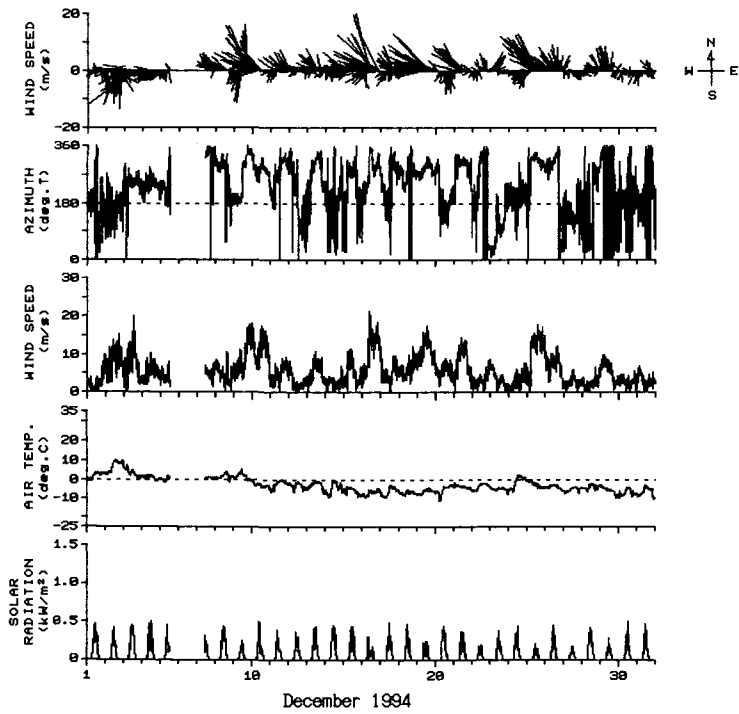
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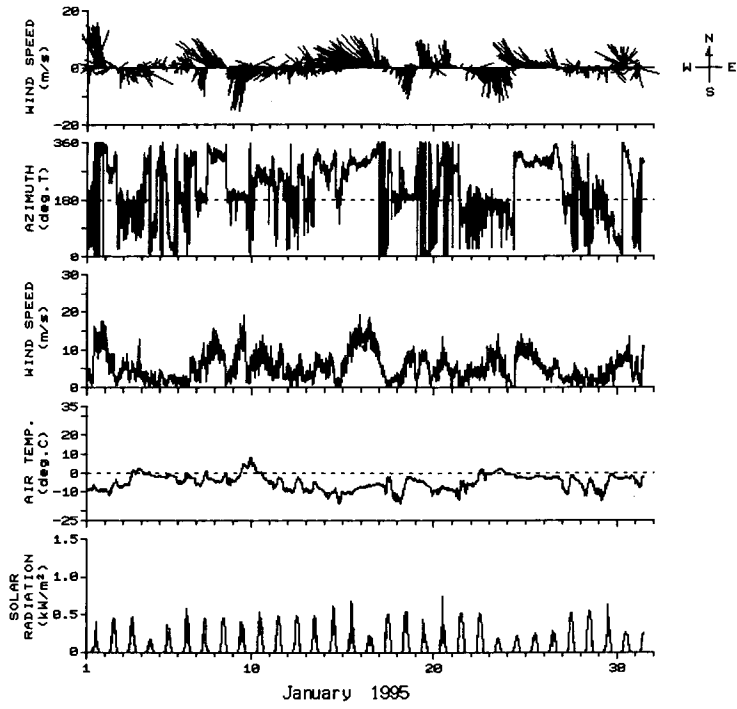
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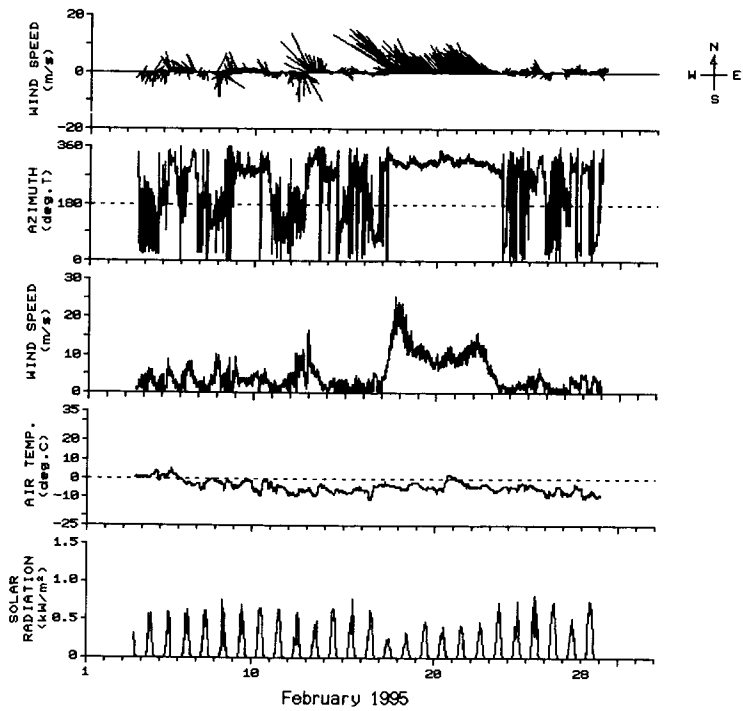
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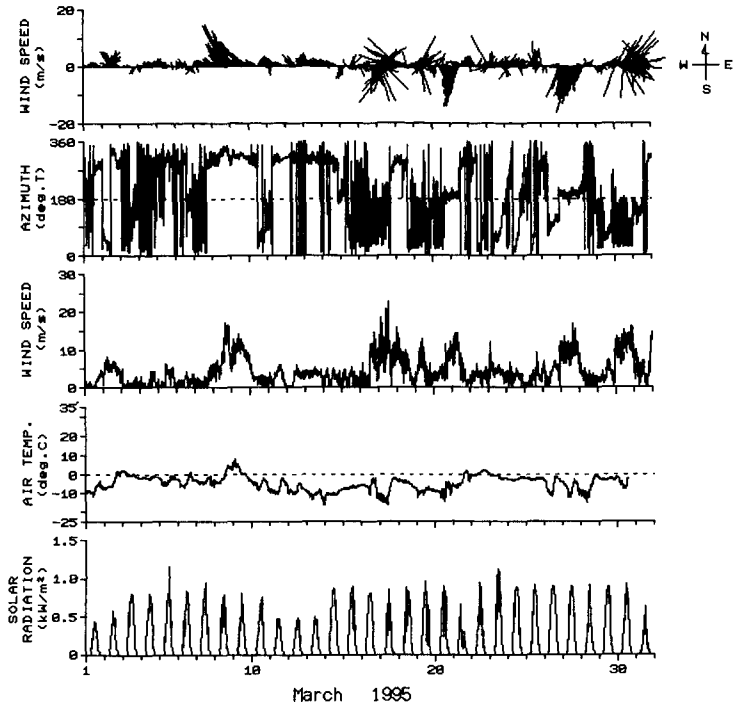
Kimuanepu, Saroma-ko Lagoon



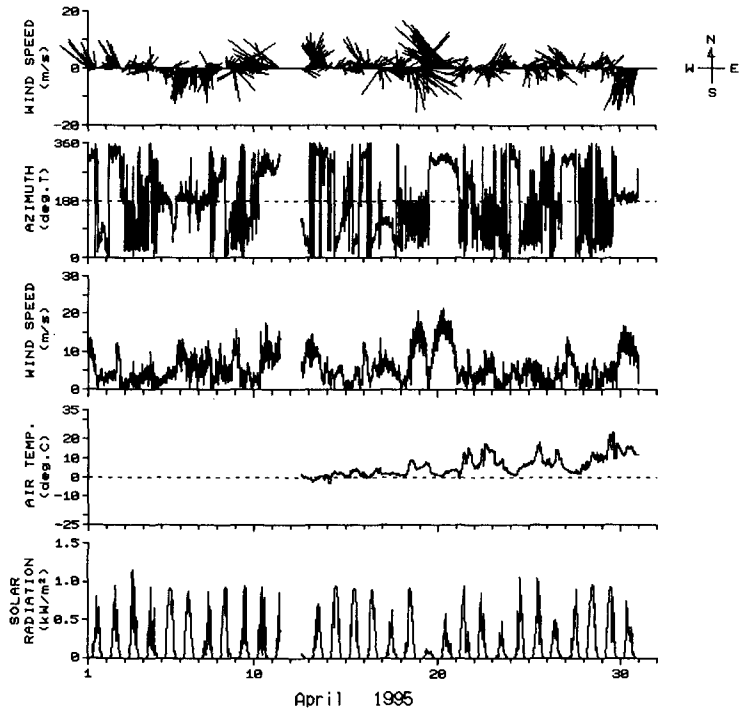
Kimuanepu, Saroma-ko Lagoon



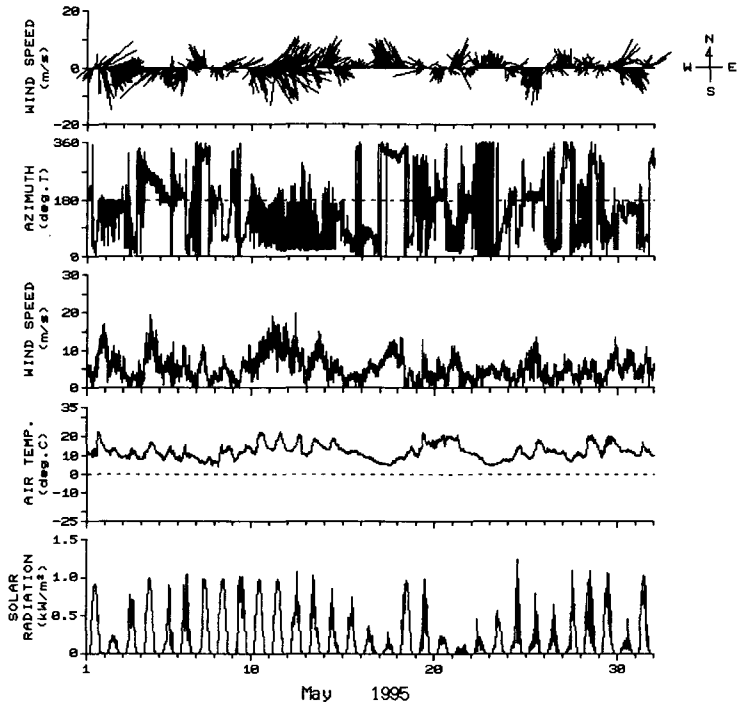
Kimuanepu, Saroma-ko Lagoon



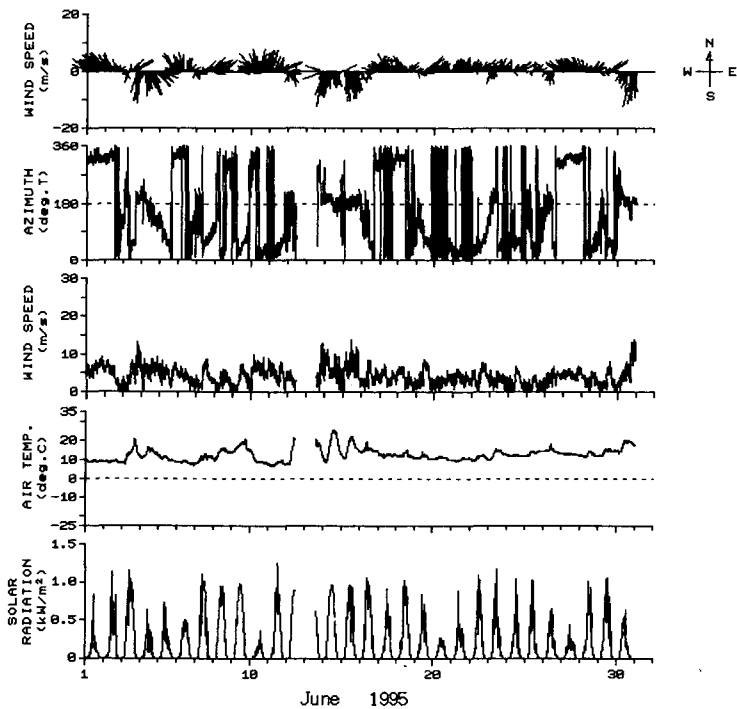
Kimuanepu, Saroma-ko Lagoon



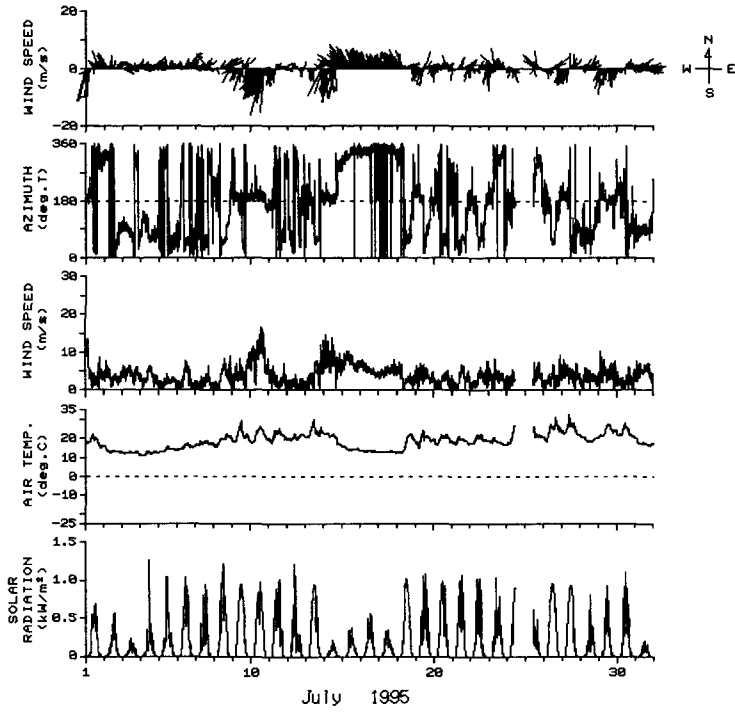
Kimuanepu, Saroma-ko Lagoon



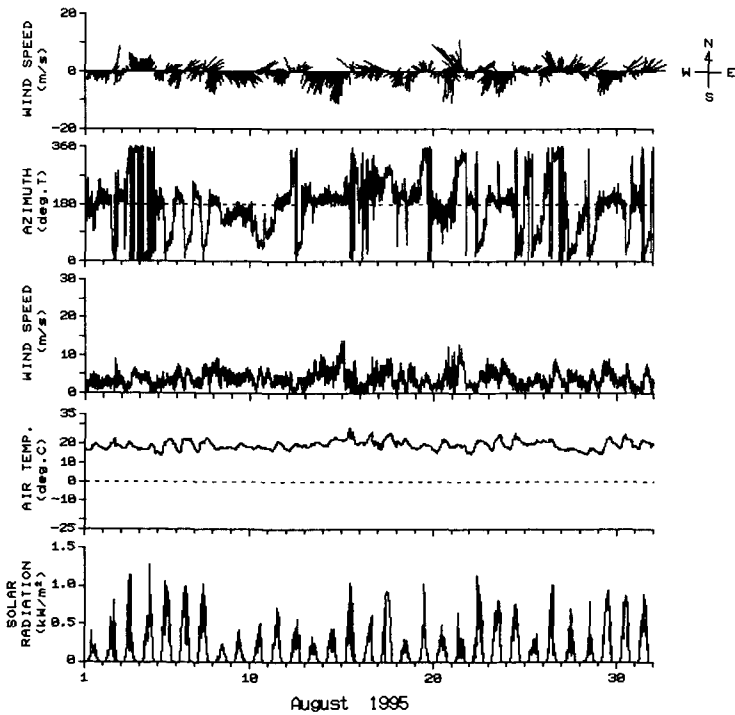
Kimuanepu, Saroma-ko Lagoon



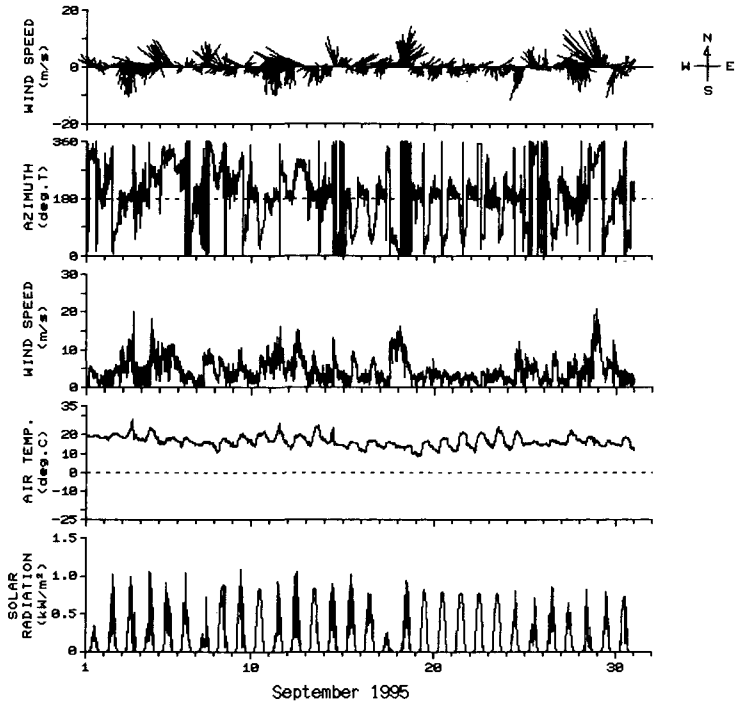
Kimuaneppu, Saroma-ko Lagoon



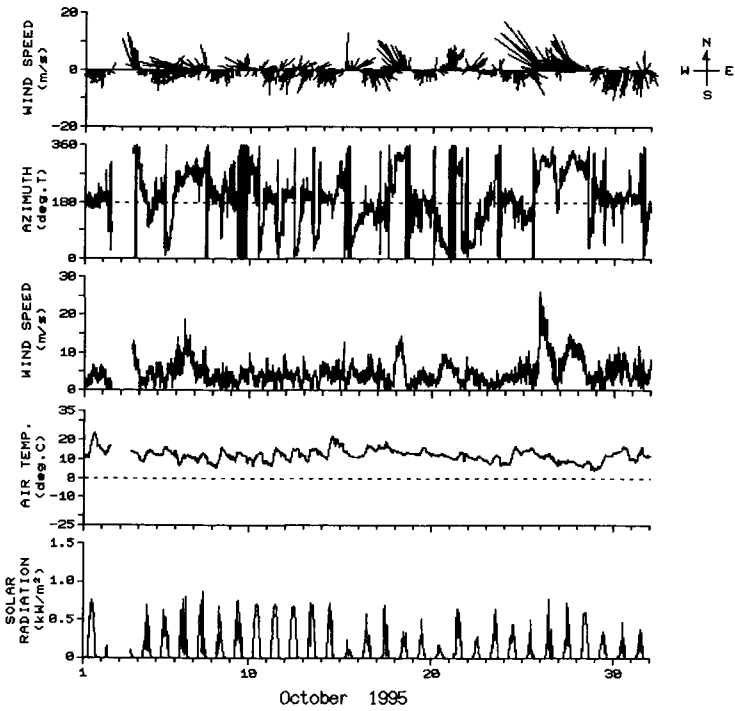
Kimuaneppu, Saroma-ko Lagoon



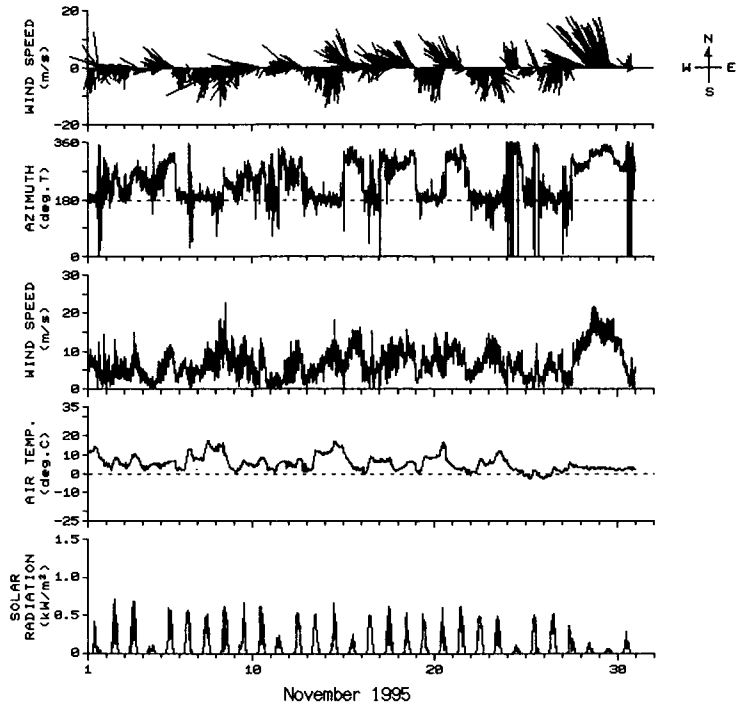
Kimuanepu, Saroma-ko Lagoon



Kimuanepu, Saroma-ko Lagoon



Kimuanepu, Saroma-ko Lagoon



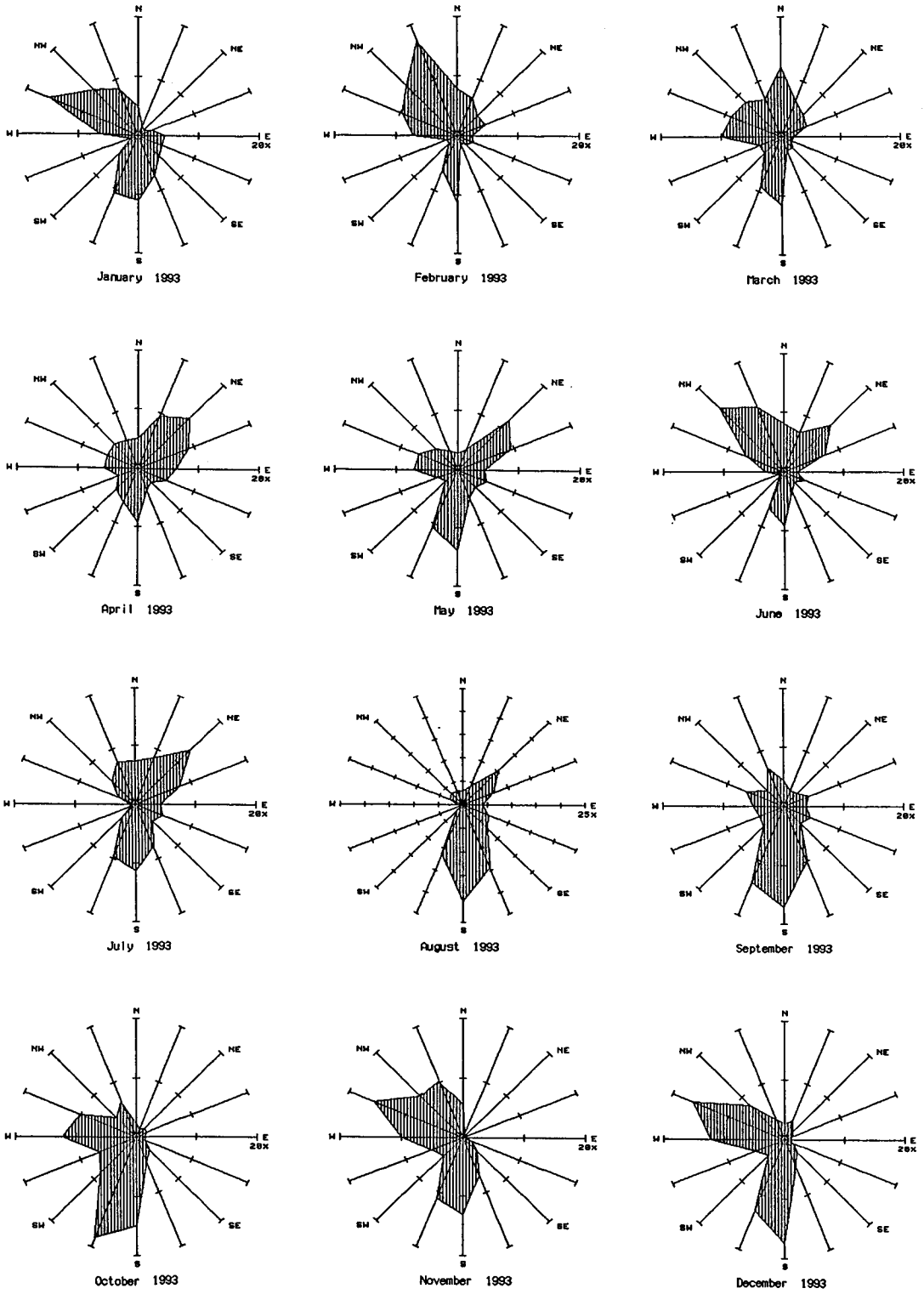
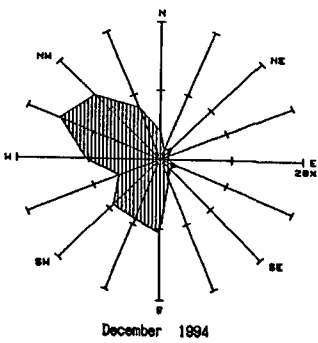
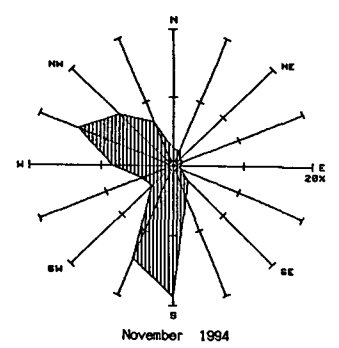
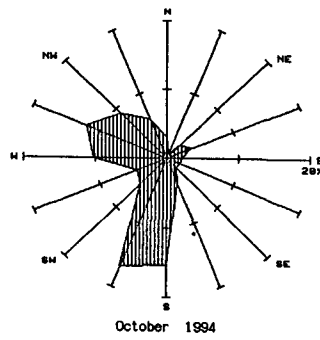
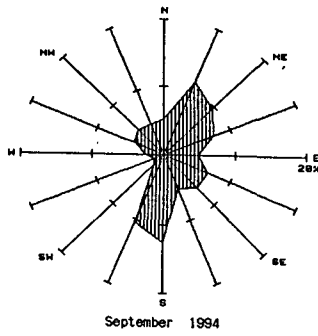
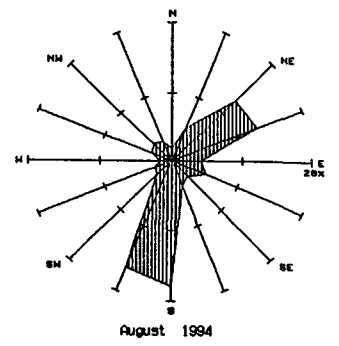
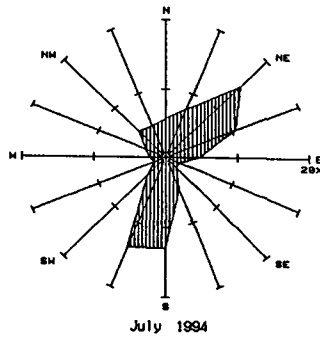
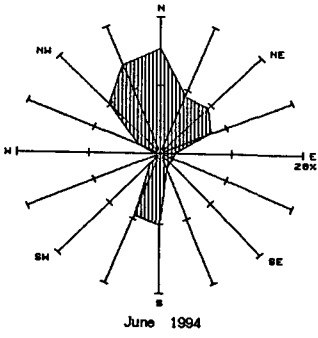
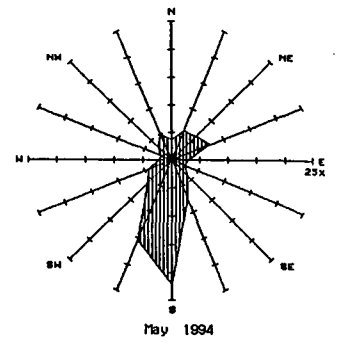
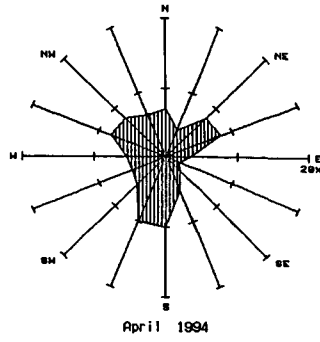
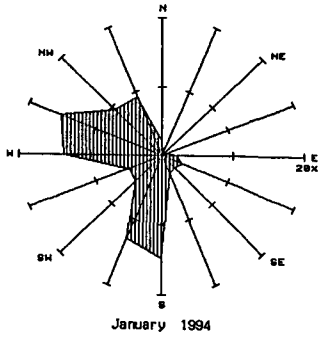


Fig. 5. Windroses for each month during the period between January 1993 and November 1995 at Kimuanepu.



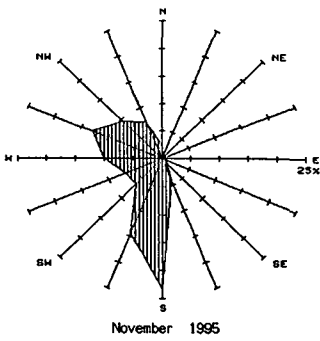
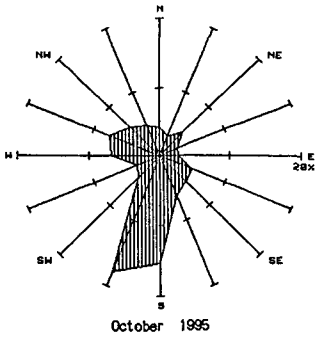
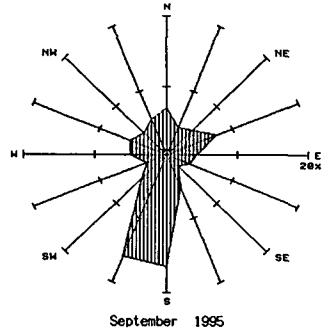
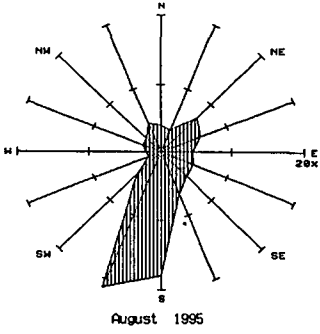
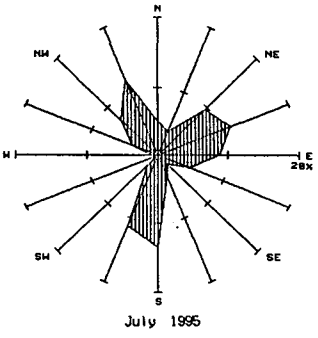
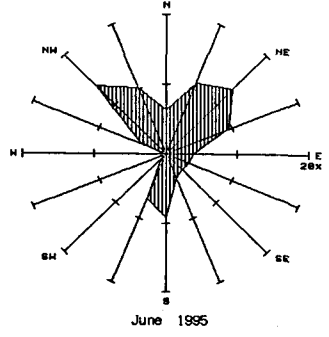
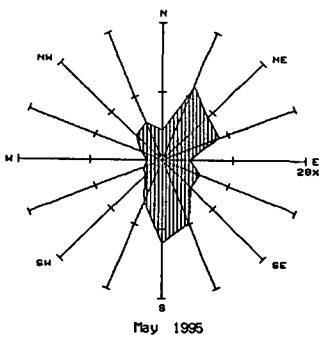
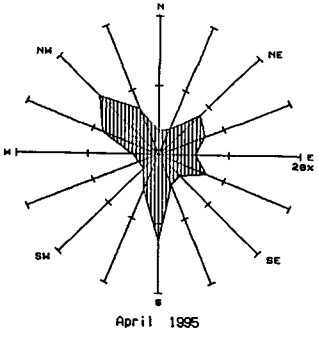
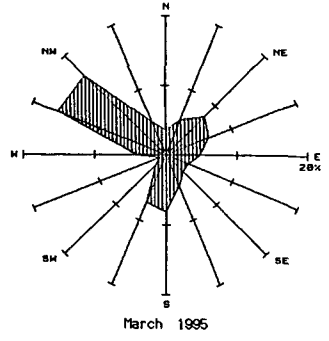
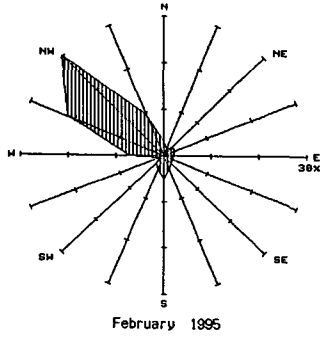
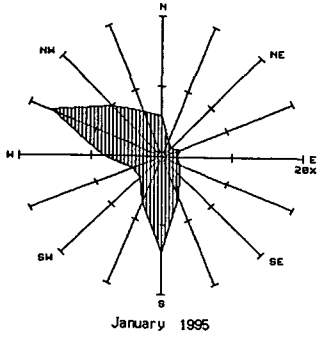


Table 2. Freezing, ice breakup and duration of complete ice coverage at Saroma-ko Lagoon during the period between 1992 and 1995.

Year	Date of freezing	Date of breakup	Duration of complete ice coverage (day)
1992	05 February	04 April	59
1993			0
1994	03 February	17 April	73
1995	03 February	10 April	66