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**Meteorological Data Report at Chaivo, Northern Sakhalin,
October 2002 – November 2003^{*,**}**

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Abstract: Observations of meteorological and sea-ice variables were carried out at Chaivo, northern Sakhalin during the period from October 2002 to November 2003, as part of the Japan-Russia cooperative research project "Sea Ice Studies off the Okhotsk Sea Coast of Sakhalin". Time series data of wind, air and surface temperatures, humidity, solar radiation and atmospheric pressure were summarized in this report.

要旨:「日本・ロシア両国によるオホーツク海・サハリン沖海氷の共同調査」の一環として、北サハリンのチャイボで、気象及び海氷の観測調査を2002年10月から2003年11月まで実施した。本報告では、オホーツク海とチャイボ湾とを結ぶクレイエ海峡に面する気象観測所で収集した風速、気温、表面温度、湿度、日射量、大気圧等の観測資料を提示する。

Key words: Meteorological variables, Sea ice, Chaivo, Northern Sakhalin, Sea of Okhotsk

キーワード: 気象要素、海氷、チャイボ、北サハリン、オホーツク海

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** 北海道大学低温科学研究所 流氷研究施設 研究報告

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I. Introduction

As part of the Japan-Russia cooperative research project, "Sea Ice Studies off the Okhotsk Sea Coast of Sakhalin", observations of meteorological and sea-ice variables were carried out at Chaivo, northern Sakhalin (Fig. 1) during the period from October 2002 to November 2003 to characterize atmospheric variables and sea-ice formation in northern Sakhalin throughout all the year round. Time series of air and surface radiative temperatures, humidity, wind speed and direction, radiation and atmospheric pressure obtained at an automatic weather station of the Chaivo Research Station (Fig. 2), located near the shore of Kleye Strait are shown in this report. Prior to this study, field experiments of meteorological and sea-ice studies had been carried out at the Chaivo Research Station since 1992, as part of the Japan-Russia cooperative research project, "Sea Ice Studies off the Okhotsk Sea Coast of Sakhalin". Some of the meteorological variables and sea-ice characteristics obtained from this project were reported in Shirasawa *et al.* (1994, 1996, 1998, 2000, 2001 and 2002).

II. Meteorological variables at Chaivo Research Station

The Chaivo Research Station ($52^{\circ}21.50'N$, $143^{\circ}11.93'E$) is located near the shore of Kleye Strait, which links Chaivo Bay to the Sea of Okhotsk (Fig. 1). The Chaivo Research Station has been operated all the year round by the JSC Sakhalin Projects (former Sakhalin Oil and Gas Institute). An automatic weather station (Data Logger SQ-1201, Grant Instruments Ltd.) was installed on the roof of Chaivo Research Station about 6 m high from the ground in order to obtain general meteorological variables such as air temperature, humidity, wind speed and direction, radiation and atmospheric pressure through all the year round (Fig. 2). Two radiative temperature sensors (Tasco Co., Ltd.) were also installed at the edge of the shore near the station (Fig. 2). One sensor being faced to the sea surface to measure the surface temperature, the other was faced to the sky to measure the diffuse sky temperature.

Time series records of air temperature at 1 m, humidity at 1 m, wind speed and direction at 2.1 m and radiation at 0.85 m height from the roof of Chaivo Research Station (at 6 m high from the ground) are shown in Fig. 3. An atmospheric pressure sensor was installed in the cabin of the station. The maximum air temperature was observed at about $24^{\circ}C$ on 20 August 2003, and the minimum temperatures were about $-30^{\circ}C$ on 10 December 2002 and 12 January 2003. The relatively stronger winds over 15 m/s were observed on 14 October, 13 November and 5-6 December 2002, and 29 January, 11 February and 25 March 2003. Wind roses for each month from October 2002 through November 2003 shown in Fig. 4 indicate predominantly northwesterly winds during the period from December through March.

In this report the time is used in the Japanese Standard Time (JST). The wind direction is used in reference to the magnetic north, which is deviated 14° from the true north. The threshold value of wind speed is used as 0.3 m/s.

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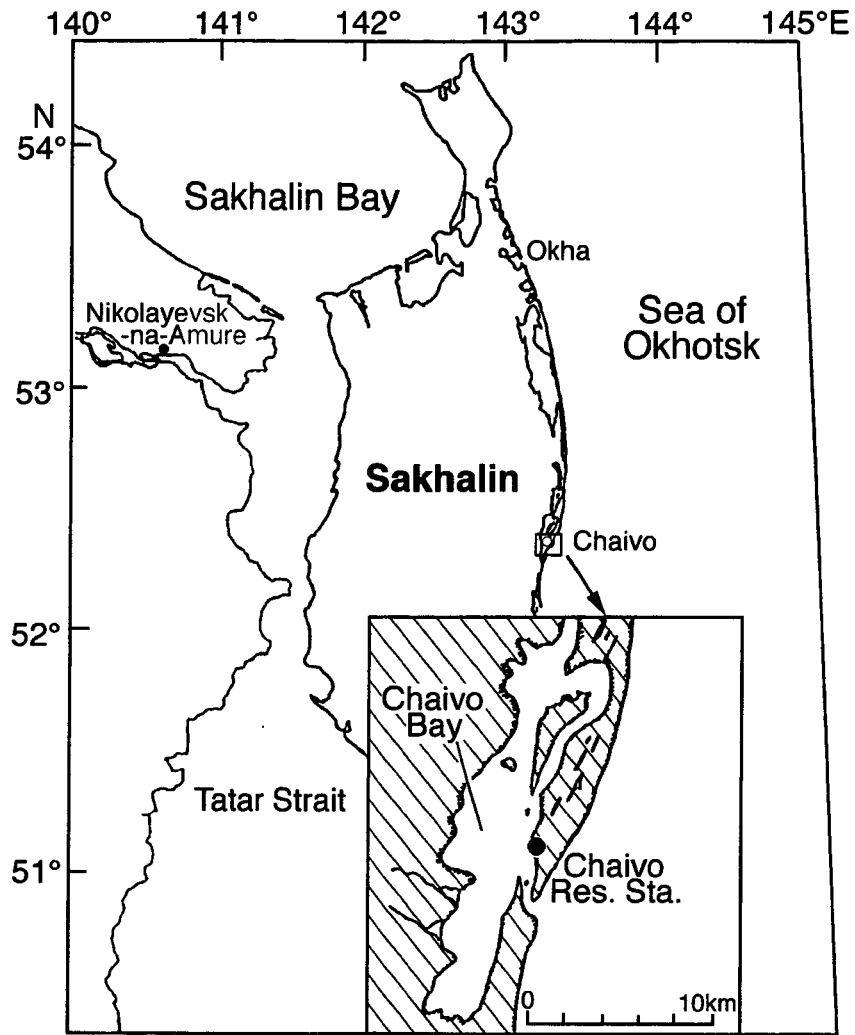


Fig. 1 Study area.

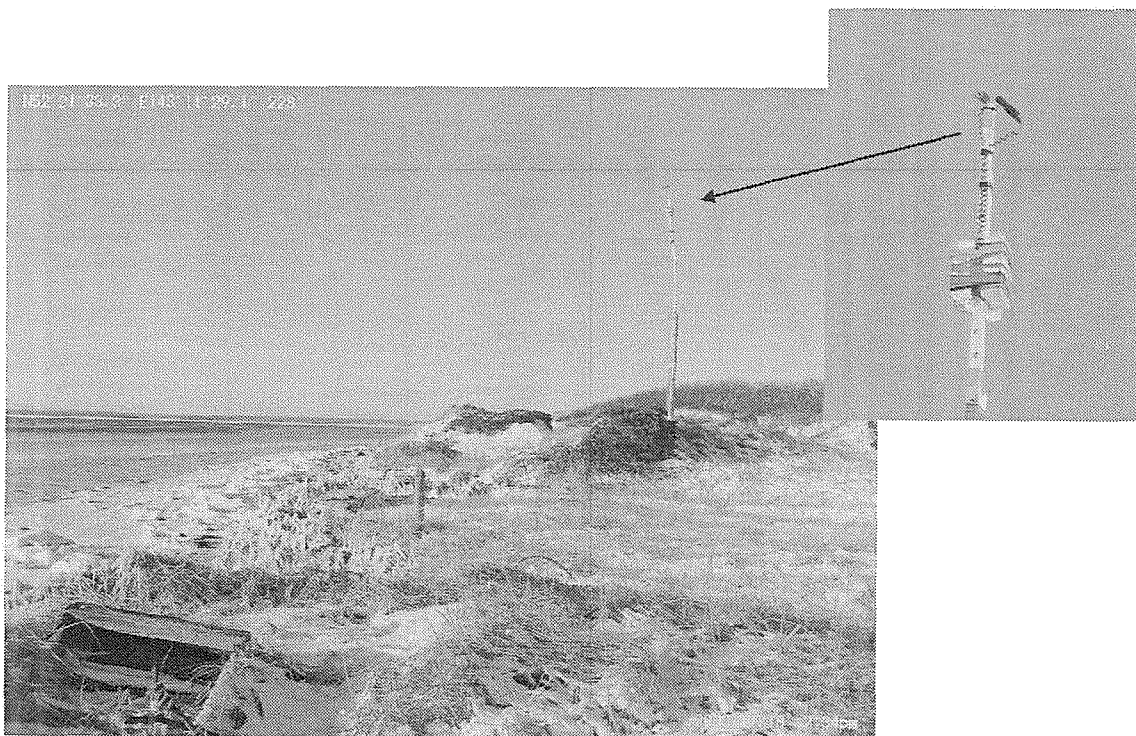
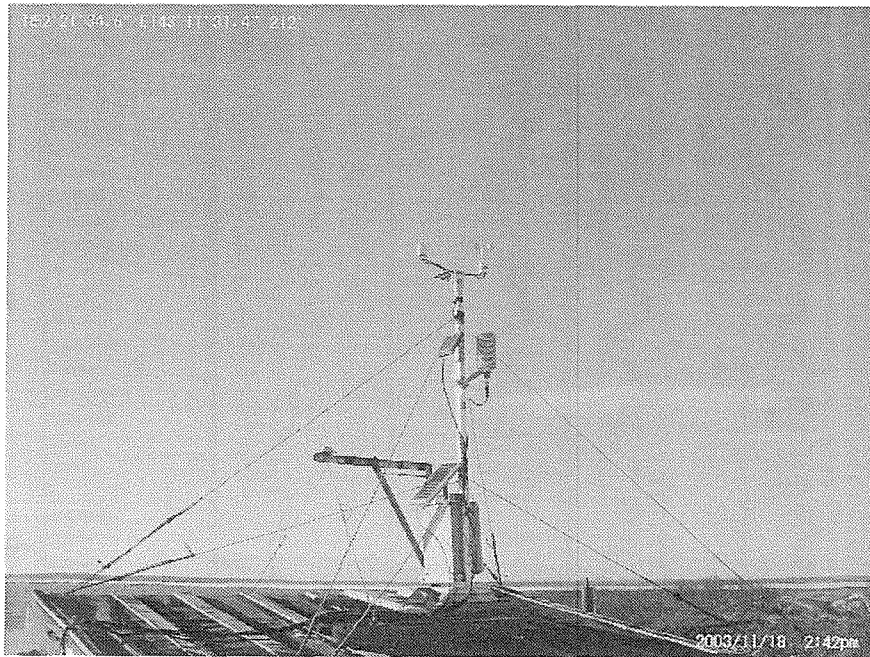


Fig.2 An automatic weather station (top) and surface radiative temperature sensors installed at the edge of the shore at Kleye Strait near Chaivo Research Station (bottom).

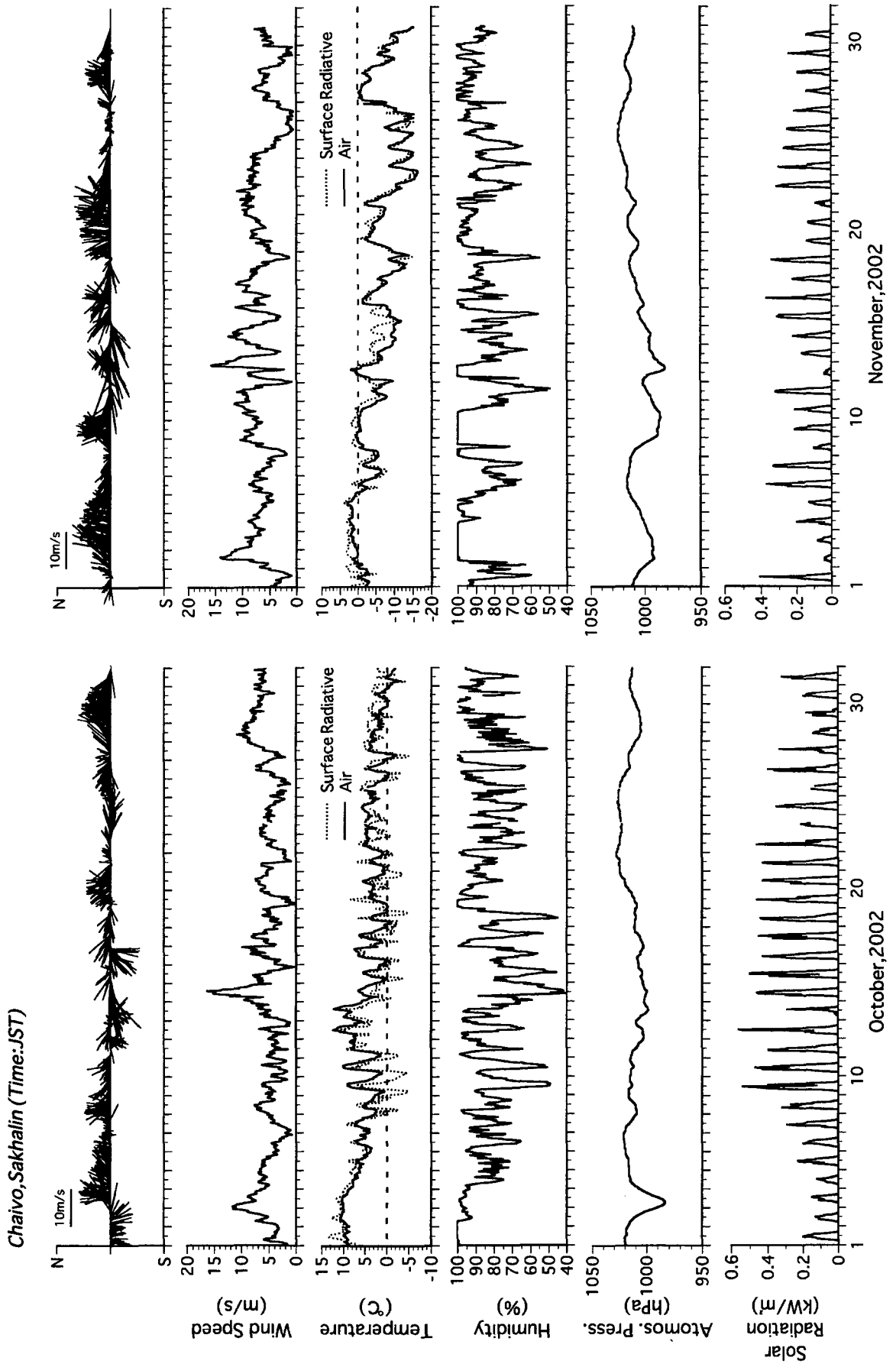
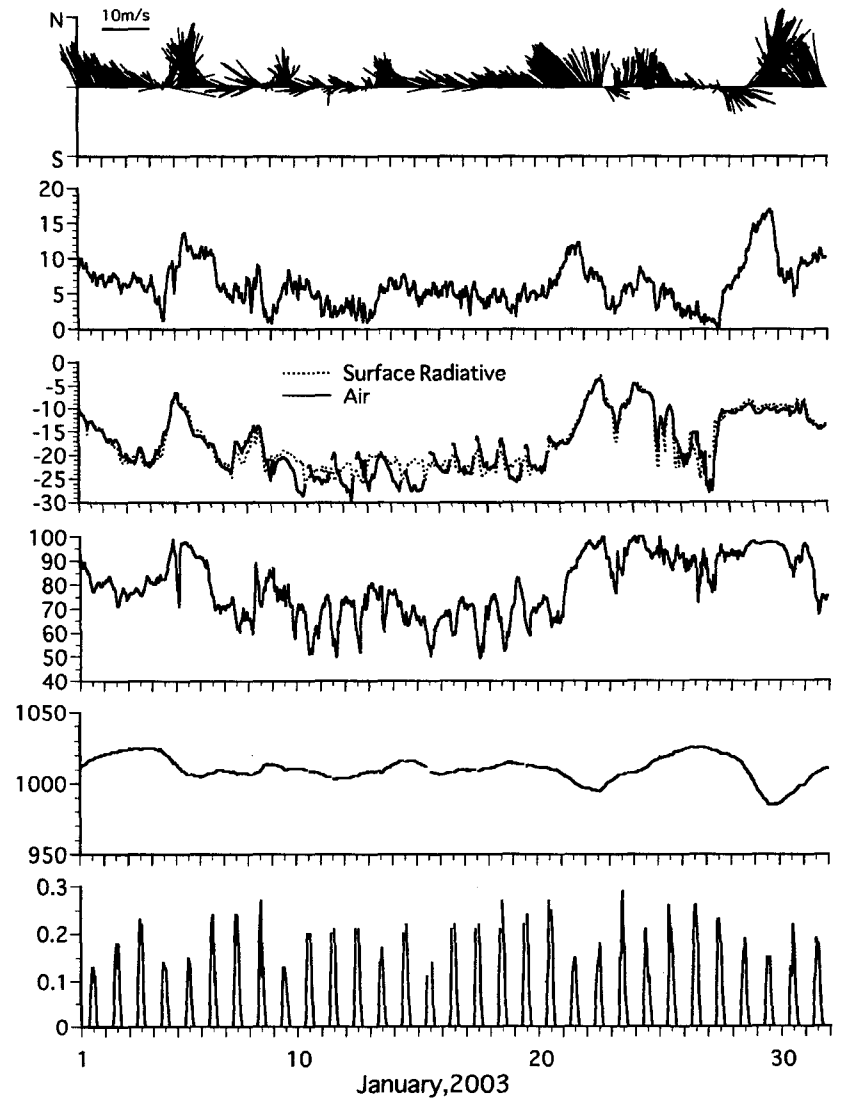
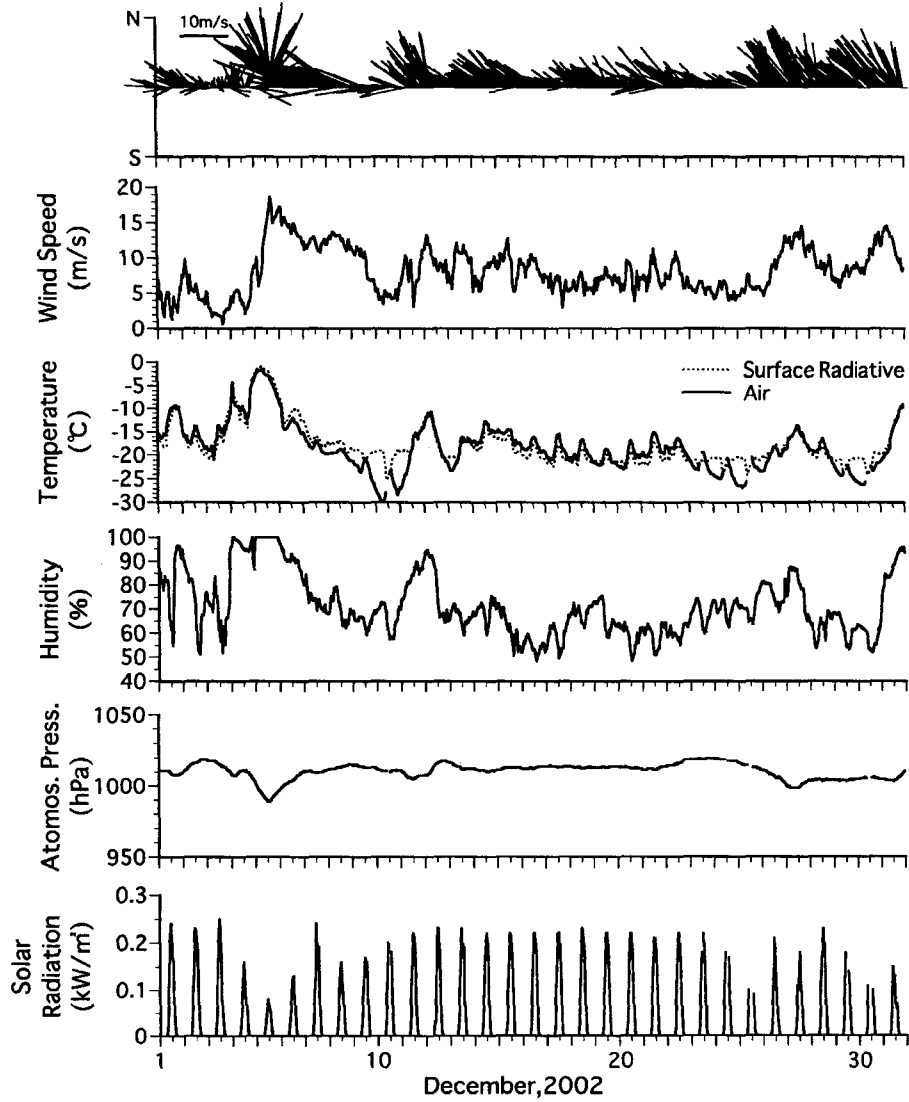
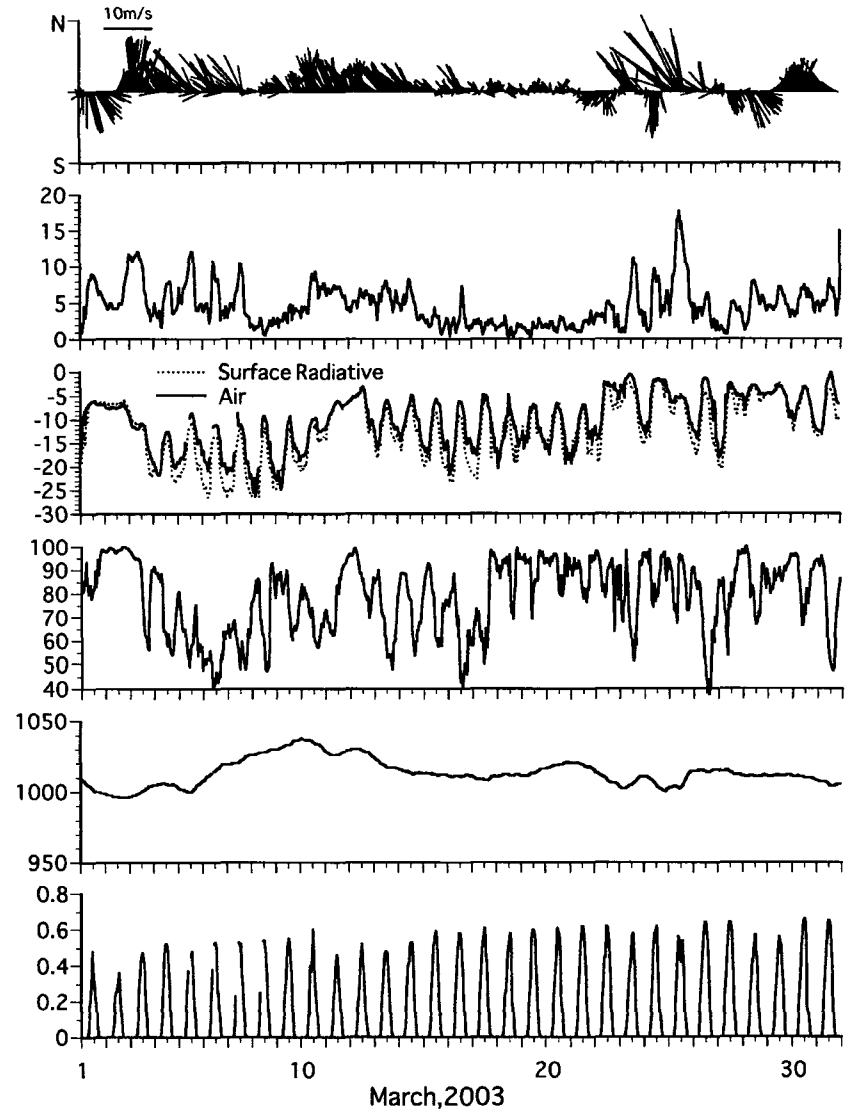
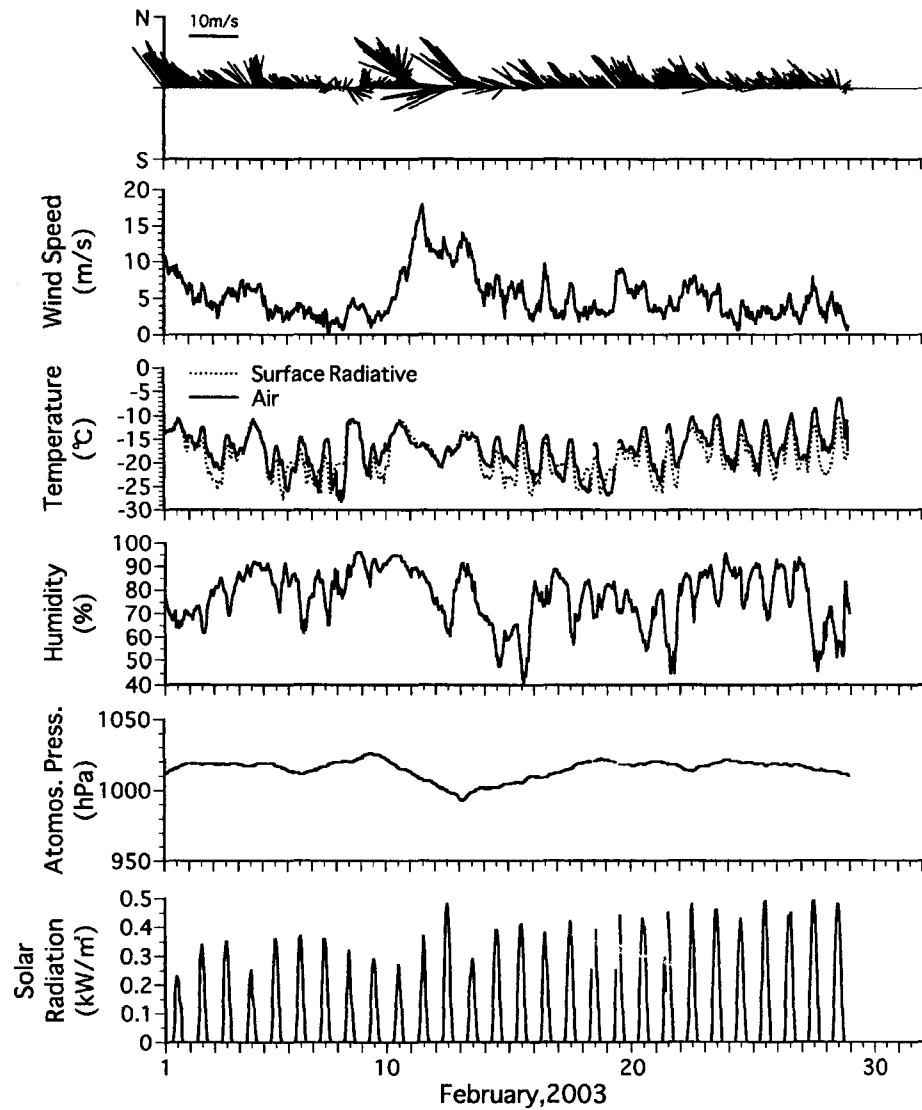


Fig.3 Daily values of air and surface temperatures, humidity, wind speed, incoming radiation and atmospheric pressure during the period from October 2002 to November 2003 at Chaivo Research Station.

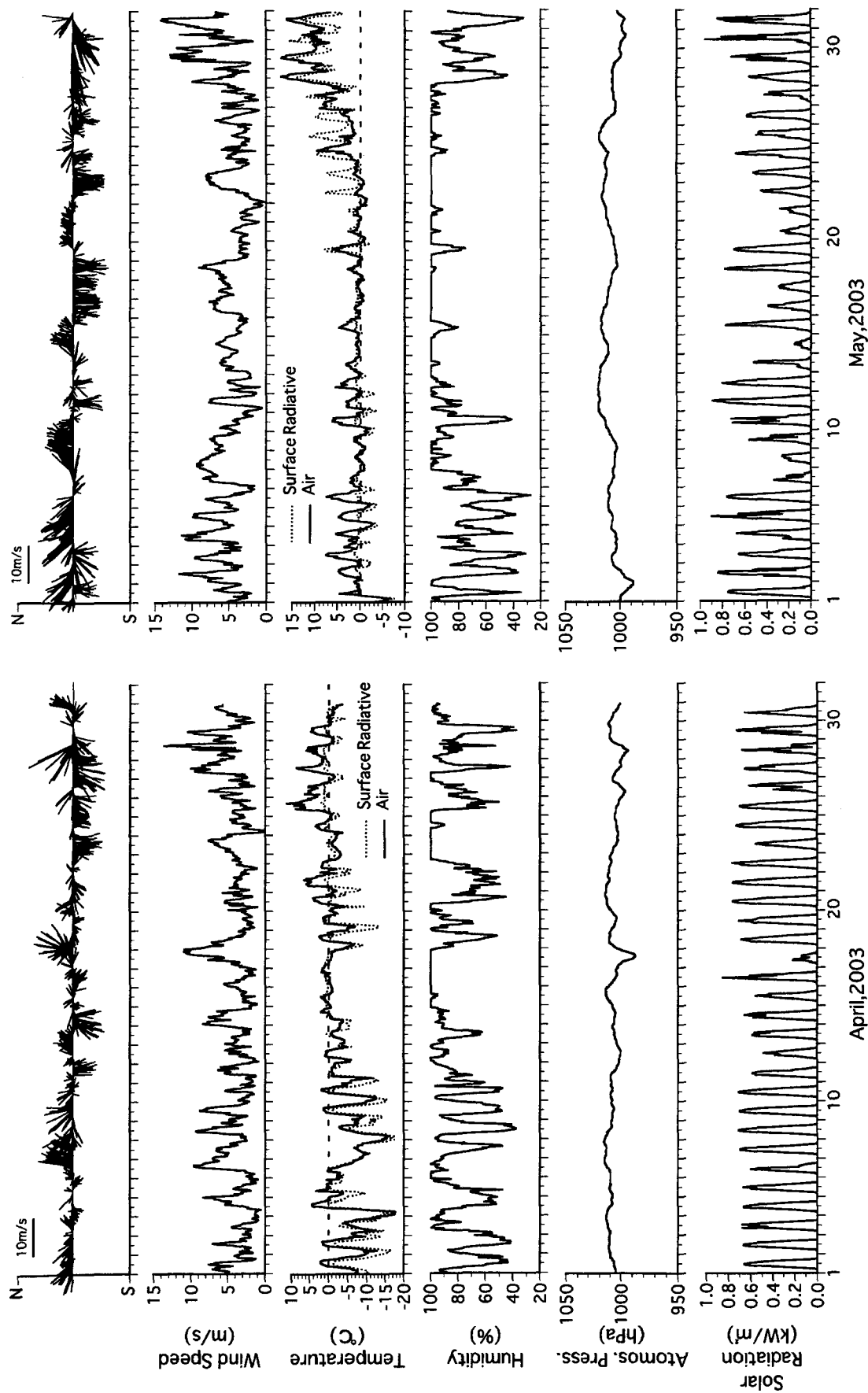
Chaivo, Sakhalin (Time: JST)



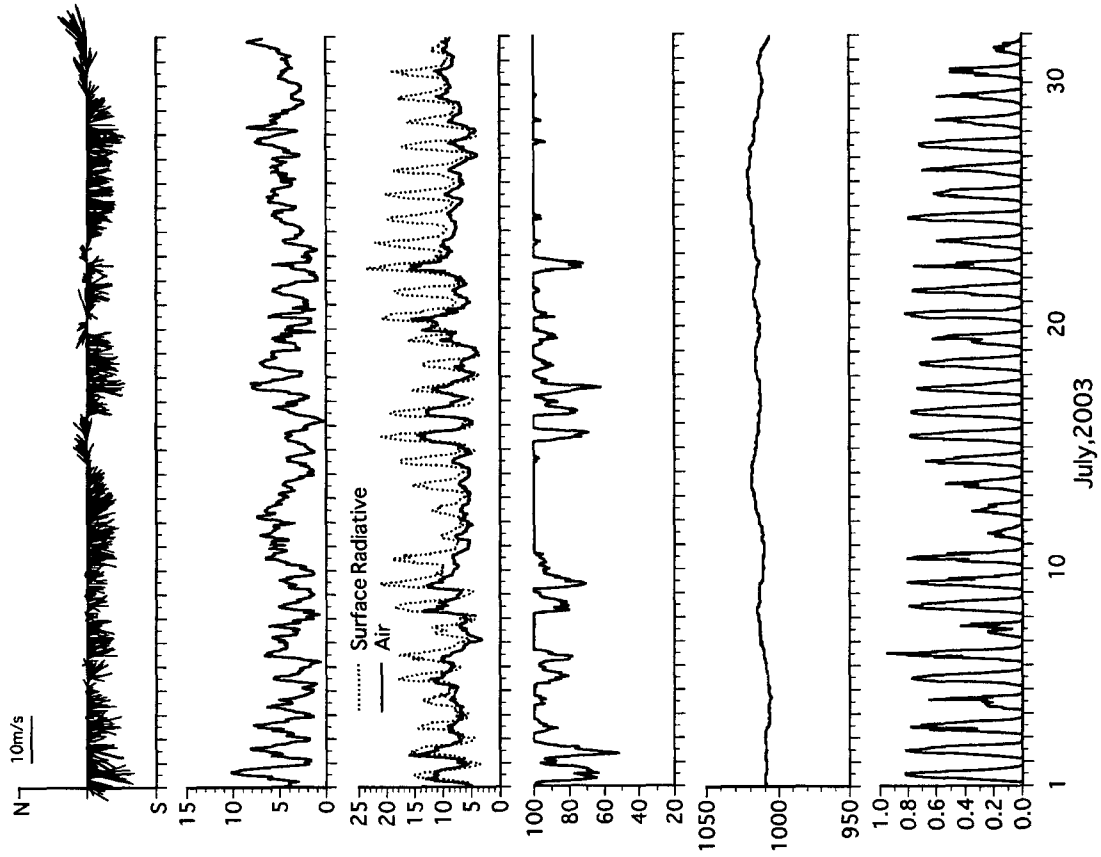
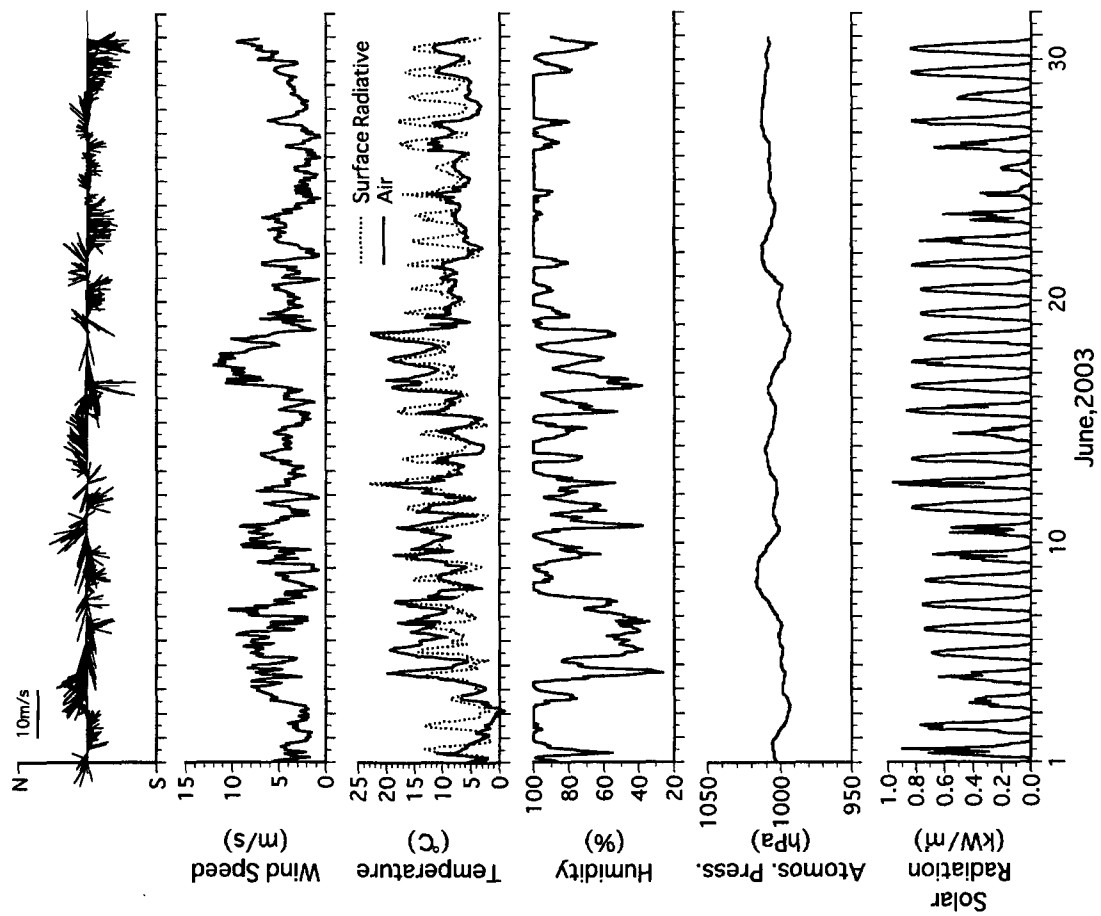
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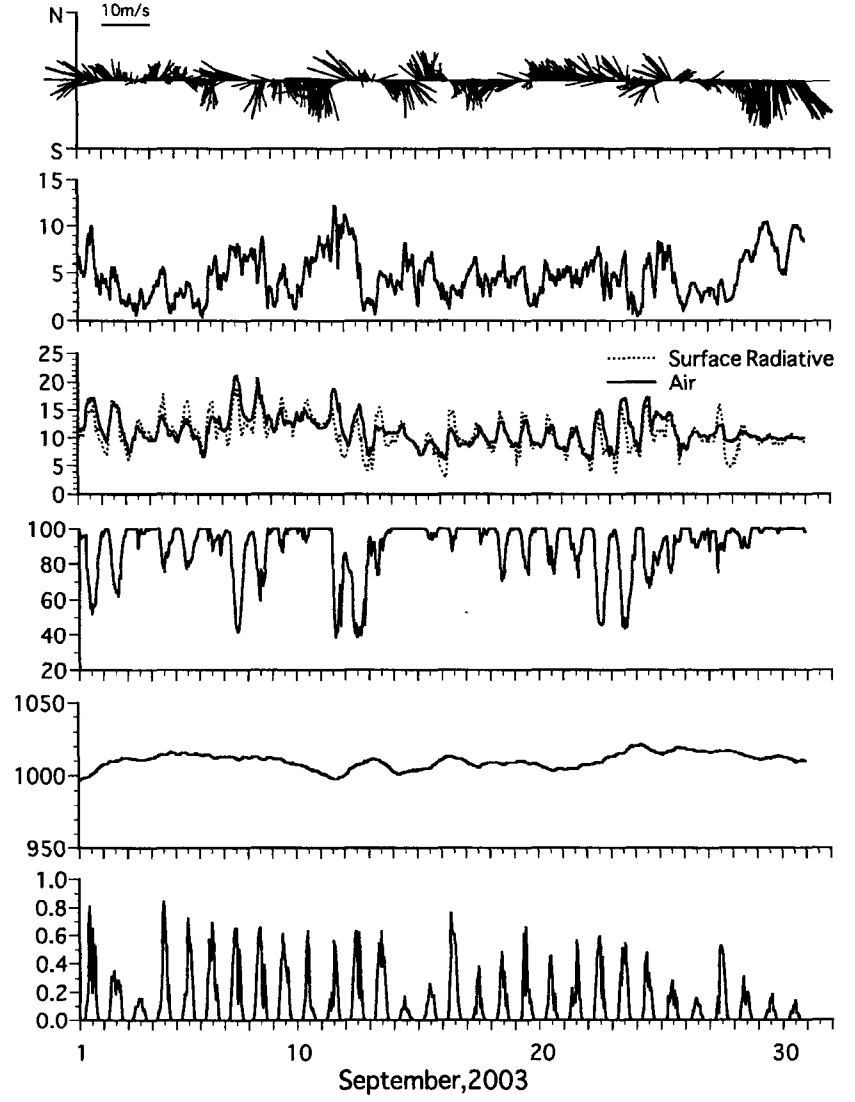
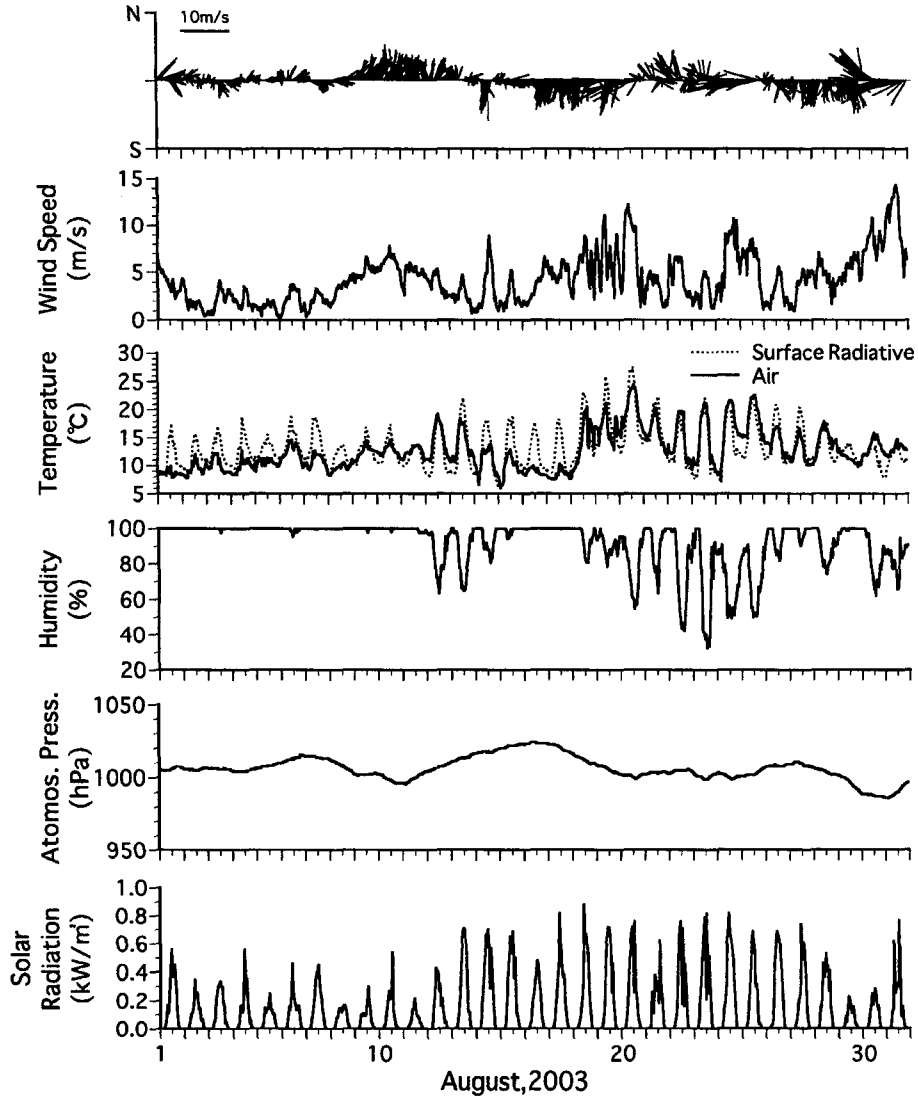
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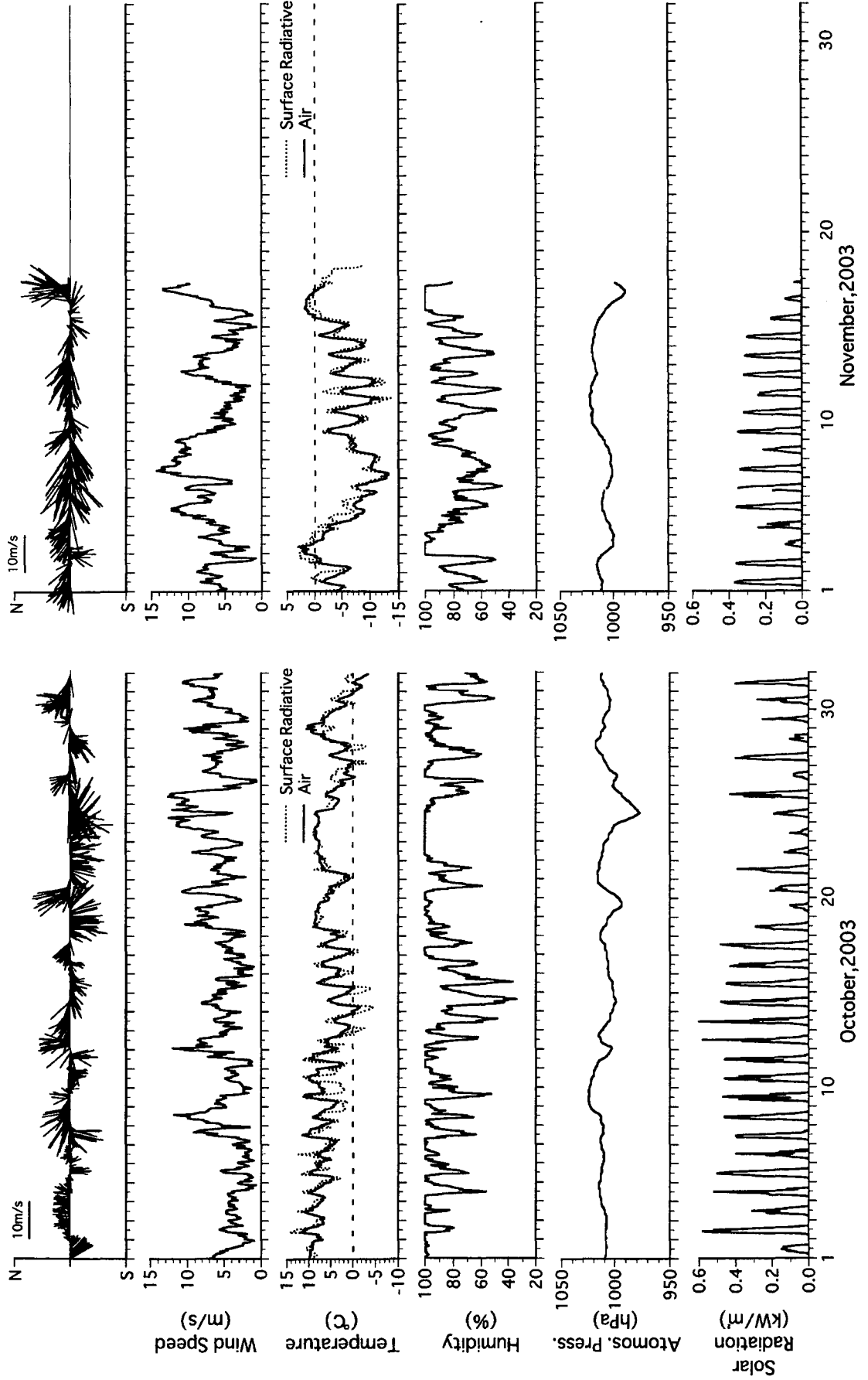
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Chaivo, Sakhalin (Time:JST)



Chaivo, Sakhalin

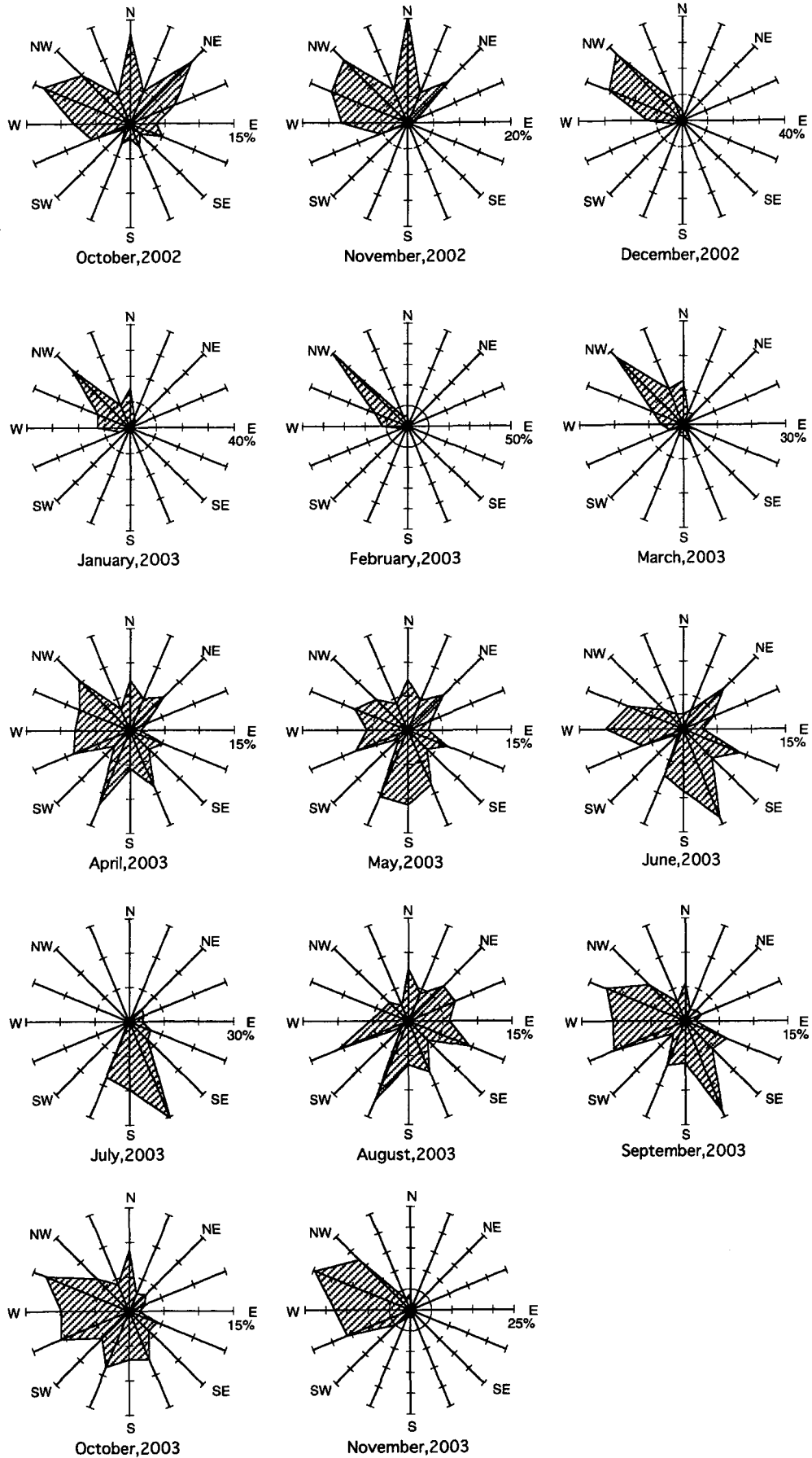


Fig.4 Wind roses for each month from October 2002 through November 2003 at Chaivo Research Station.