



ECMWF Global Data Monitoring Report

April 2022

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**European Centre for Medium-Range Weather Forecasts
Europäisches Zentrum für mittelfristige Wettervorhersage
Centre européen pour les prévisions météorologiques à moyen terme**

Contents

1	Introduction	3
2	Data summary - History of events	4
2.1	Radiosondes	4
2.2	Drifting Buoys	6
3	Global monitoring statistics	6
3.1	Data Availability	6
3.2	Data Quality	6
3.2.1	Figure 1 - Availability - SYNOP PRESSURE	8
3.2.2	Figure 2 - Availability - DRIFTER PRESSURE	9
3.2.3	Figure 3 - Availability - TEMP 500 hPa geopotential	10
3.2.4	Figure 4 - Availability - TEMP/PILOT 300 hPa wind	11
3.2.5	Figure 5 - Availability - AIRCRAFT winds 300-150 hPa	12
3.2.6	Figure 6 - Availability - SATOB winds 400-150 hPa	13
3.2.7	Figure 7 - Availability - SATOB winds 1000-700 hPa	14
3.2.8	Figure 8 - Availability - NOAA15 ATOVS : AMSU-A	15
3.2.9	Figure 9.1 - Availability - NOAA18 ATOVS : AMSU-A	16
3.2.10	Figure 9.2 - Availability - AQUA ATOVS : AMSU-A	17
3.2.11	Figure 9.3 - Availability - METOP ATOVS : AMSU-A	18
3.2.12	Table 1 - Suspect ships and fixed marine platforms: Surface pressure - (hPa)	19
3.2.13	Table 2 - Suspect ships and fixed marine platforms: Wind speed (m/s)	21
3.2.14	Table 3 - Suspect ships and fixed marine platforms: Wind direction (DEGREES)	22
3.2.15	Table 4 - Suspect drifters: Surface pressure (HPA)	23
3.2.16	Table 5 - Suspect drifters: Wind speed (m/s)	24
3.2.17	Table 6 - Suspect drifters: Wind direction (degrees)	25
3.2.18	Table 7 - Suspect radiosondes: Geopotential height (metres)	27
3.2.19	Table 8 - Suspect radiosondes: Wind (m/s)	28
3.2.20	Table 9 - Suspect radiosondes: Wind direction (degrees)	29
3.2.21	Figure 10 - Suspect TEMP observations - geopotential : 00 UTC	30
3.2.22	Figure 11 - Suspect TEMP observations - geopotential : 12 UTC	31
3.2.23	Figure 12 - Suspect TEMP/PILOT observations - wind : 00 UTC	32
3.2.24	Figure 13 - Suspect TEMP/PILOT observations - wind : 12 UTC	33
3.2.25	Table 10 - Radiosonde monitoring statistics (SHIPs): Geopotential height (metres)	34
3.2.26	Table 11 - Radiosonde monitoring statistics (SHIPs): Wind (m/s)	35
3.2.27	Figure 14 - SATOB Winds: 700-1000hPa	36
3.2.28	Figure 15 - SATOB Winds: 150- 400hPa	37
3.2.29	Figure 16 - SATOB Winds: 700-1000hPa	38
3.2.30	Figure 17 - SATOB Winds: 150- 400hPa	39
3.2.31	Figure 18 - AIRCRAFT Winds: 150- 300hPa	40
3.2.32	Table 12 - Airep Monitoring Statistics For Airline Carriers (Global)	41
4	EUCOS Area Monitoring Statistics	48
4.1	Table 13 - Radiosonde Monitoring Statistics (EUCOS): 50 hPa Geopotential height (metres)	49
4.2	Table 14 - Radiosonde Monitoring Statistics (EUCOS):50 hPa Wind (m/s)	52
4.3	Table 15 - Radiosonde Monitoring Statistics (EUCOS): 100 hPa Geopotential height (metres)	55
4.4	Table 16 - Radiosonde Monitoring Statistics (EUCOS): 100 hPa Wind (m/s)	58
4.5	Table 17 - Radiosonde Monitoring Statistics (EUCOS): 500 hPa Geopotential height (metres)	61
4.6	Table 18 - Radiosonde Monitoring Statistics (EUCOS): 500 hPa Wind (m/s)	64
4.7	Table 19 - Radiosonde Monitoring Statistics (EUCOS): 850 hPa Geopotential height (metres)	67
4.8	Table 20 - Radiosonde Monitoring Statistics (EUCOS): 850 hPa Wind (m/s)	70
4.9	Table 21 - Drifter Monitoring Statistics (EUCOS): Surface pressure (hpa)	73
4.10	Table 22 - Drifter Monitoring Statistics (EUCOS): Wind speed (m/s)	84
4.11	Table 23 - Drifter Monitoring Statistics (EUCOS): Wind direction	88
4.12	Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations	93
4.13	Table 25 - List of BUFR Encoded Radiosonde Stations with no TAC Counterpart	94

5 Annex - Explanations of figures and tables	95
5.1 General	95
5.2 Data Availability	95
5.3 Data Quality	95

Summary of Revisions (in reverse order)

- Revision 28 (June 15) - Monitoring of SYNOP and SYNOP-SHIPs now includes BUFR encoded observations for those which were assimilated as well as for those without TAC counterpart.
- Revision 27 (Feb 15) - Selection criteria for SHIPs are modified as per SOT-7/Doc.9.1.1. Different criteria applied to Manual and Automatic SHIPs.
- Revision 26 (Dec 14) - Coverage chart for ATOVS AMSU-A for Noaa_16 removed
- Revision 25 (Mar 13) - Monitoring of Radiosondes and ASAPs now includes BUFR encoded observations for those which were assimilated as well as for those without TAC counterpart. Tables 24 and 25 are also added to show the identifiers of these BUFR observations separately.
- Revision 24 (Aug 06) - North Atlantic Monitoring statistics replaced by EUCOS Area Monitoring Statistics (tables 13 to 23). Airep tables removed from this section.
- Revision 23 (Dec 00) - Coverage charts for Noaa_14 MSU replaced by ATOVS AMSU-A for Noaa_16.
- Revision 22 (Aug 99) - Coverage charts for TOVS thickness 300-100 hPa replaced by (A)TOVS AMSU-A and MSU (Noaa_15 and Noaa_14).
- Revision 21 (May 99) - Monitoring statistics ceased for Noaa_11 as satellite is no more available.
- Revision 20 (Sep 98) - Changes to tables and annex to remove all mention about data usage. Two more levels (50 and 850 hPa) added to the COSNA statistics for Sondes.
- Revision 19 (Jul 98) - From June 29th, 1998 ECMWF model assimilates temperature data instead of geopotential from radiosondes. As a consequence the number of used geopotential data drops to zero in tables 7, 10, 13 and 15.
- Revision 18 (Apr 98) - Changes to tables and annex to introduce the usage of accepted numbers and observations instead of percentage of rejection.

1 Introduction

The ECMWF global data monitoring report is a monthly publication intended to give an overview of the availability and quality of observations from the Global Observing System within the World Weather Watch of the World Meteorological Organisation. It should be recognised that the statistics given in this report refer to data as received at ECMWF in time for the appropriate analysis. The annex of the report gives further explanations of the methods applied to compile the statistics and on the reference used to establish the quality of observations.

The information presented on data quality is based on differences between observations and the values of the most recent ECMWF forecast ("first guess") of the same parameter. Depending on the time of the observation, the forecast range is between 9 and 15 hours. It should be recognised that although the quality of the first-guess is of a generally high standard this is only true to a limited extent in certain areas, such as the tropics and data-sparse areas of both northern and southern hemispheres. The data quality results should therefore be used with care when assessing the absolute quality of a particular observing platform. Other indicators such as long-term trends of station performance, particularly in comparison with nearby stations, can be more useful in this respect.

The global monitoring results presented in this report are meant to serve a wider meteorological community as well as to support special WMO programmes such as TOGA and EUCOS. The contents of the report may therefore be adapted for special requirements as necessary.

As recommended at the ninth session of the Commission for Basic Systems at Geneva 1988, lead centres have been appointed for each main type of observation which should liaise with the participating centres and coordinate all the results, inform the WMO Secretariat immediately of obvious problems, and produce every six months a consolidated list of observations of that particular type believed to be of low quality. The presently nominated centres are: RSMC Exeter for marine surface observations; RSMC ECMWF for radiosonde and pilot observations; WMC Washington for aircraft and satellite observations.

ECMWF produces this monthly report as part of its routine monitoring activity in order to facilitate the exchange of monitoring information. Tables are presented according to the CBS recommended standards for the exchange of monitoring results. Copies of the report will be provided to major GDPS centres participating in data monitoring activities as initiated and recommended at the ninth session of the Commission for Basic Systems in Geneva 1988, and to the WMO Secretariat and the International TOGA office in Geneva.

Any comments on the contents and the format of the report are welcome and should be addressed to:

ECMWF
Attn. Head of Evaluation Section
Shinfield Park
Reading, Berkshire, RG2 9AX
United Kingdom

2 Data summary - History of events

2.1 Radiosondes

The following is a list of land-based stations showing a change in reporting frequency (of 500 hPa geopotential) of at least 10 observations compared with the average over the previous 3 months. The number of reports received at ECMWF for the current and previous month is shown in addition to the observation time.

Ident	Time	Mar	Apr	Ident	Time	Mar	Apr
03238	(12)	30	3	02365	(00)	17	28
03354	(12)	24	6	02365	(12)	16	28
03882	(12)	29	6	10954	(00)	0	12
03918	(12)	30	3	30758	(12)	18	29
17030	(00)	19	0	34122	(00)	0	13
17064	(00)	31	0	34122	(12)	0	16
17064	(12)	31	2	34731	(00)	8	28
17095	(00)	21	0	40875	(00)	15	26
17095	(12)	25	6	42667	(00)	2	15
17196	(00)	18	1	42724	(00)	0	22
17196	(12)	23	3	43333	(00)	0	30
17220	(00)	20	0	76225	(00)	1	14
17220	(12)	28	8	76405	(00)	0	23
17240	(00)	20	0	76405	(12)	3	22
17240	(12)	27	11	76458	(00)	13	28
17351	(00)	11	0	76644	(00)	0	16
22845	(00)	30	19	76644	(12)	0	23
29698	(12)	30	19	76679	(00)	0	17
30715	(00)	31	19	76692	(12)	2	20
37055	(00)	27	16	76743	(00)	0	21
37789	(00)	27	3	76743	(12)	17	28
40811	(00)	29	0	78583	(00)	12	29
41256	(00)	25	9	78583	(12)	11	30
41316	(00)	27	2	80398	(12)	0	17
68263	(00)	19	0	82400	(00)	0	15
68906	(00)	21	4	82400	(12)	0	15
68906	(12)	21	7	91680	(12)	0	20
72214	(12)	23	6	-	-	-	-
72518	(12)	33	13	-	-	-	-
72528	(12)	30	17	-	-	-	-
78866	(00)	30	14	-	-	-	-
78866	(12)	30	13	-	-	-	-
80028	(12)	13	0	-	-	-	-
80259	(12)	13	0	-	-	-	-
82332	(00)	20	6	-	-	-	-
82332	(12)	22	7	-	-	-	-
85586	(00)	11	0	-	-	-	-
87155	(12)	24	2	-	-	-	-
87576	(12)	24	3	-	-	-	-
87860	(12)	24	0	-	-	-	-
89009	(00)	26	4	-	-	-	-

2.2 Drifting Buoys

Surface pressure observations from **1668** drifting buoys were received during the month.

3 Global monitoring statistics

The following figures and tables provide information on both the availability and quality of various data types as received at ECMWF during the month. A brief description of each figure/table is given below. For a full explanation please refer to the Annex.

3.1 Data Availability

Figures 1-9 are global charts for each data type showing the average number of observations received in 24 hours in 5 degree boxes. The average daily number of observations (global) is also displayed with a breakdown, where appropriate, for each WMO region (figures 1, 3 and 4) and Ocean (figures 1-4).

Fig	Observation Type	Parameter	Level/Layer
1	SYNOP/SHIP	MSL Pressure	Surface
2	DRIFTER	MSL Pressure	Surface
3	TEMP	Geopotential	500 hPa
4	TEMP/PILOT	Wind	300 hPa
5	AIRCRAFT (AIREP/AMDAR etc.)	Wind	300-150 hPa
6	SATOB	Wind	400-150 hPa
7	SATOB	Wind	1000-700 hPa
9	TOVS (120 km) - NOAA14	Thickness	300-100 hPa

(Figure 1 includes data from fixed marine platforms e.g. moored buoys.)

3.2 Data Quality

Tables 1-8 contain lists of suspect stations in the format according to Recommendation 3 CBS-Ext(85).

Tab	Observation Type	Parameter	Level/Layer
1	SHIP	MSL Pressure	Surface
2	SHIP	Wind Speed	Surface
3	SHIP	Wind Direction	Surface
4	DRIFTER	MSL Pressure	Surface
5	DRIFTER	Wind Speed	Surface
6	DRIFTER	Wind Direction	Surface
7	TEMP	Geopotential	1000- 30 hPa
8	TEMP/PILOT	Wind	1000-100 hPa
9	TEMP/PILOT	Wind Direction	500-150 hPa

(SHIP tables include data from fixed marine platforms e.g. moored buoys.)

Figures 10-13 show the locations of suspect stations given in tables 7 and 8.

Fig	Observation Type	Parameter	Observation Time
10	TEMP	Geopotential	00 UTC
11	TEMP	Geopotential	12 UTC
12	TEMP/PILOT	Wind	00 UTC
13	TEMP/PILOT	Wind	12 UTC

Tables 10 and 11 provide quality statistics for all TEMPSHIPS and PILOTSHIPS received during the month.

Tab	Parameter	Observation Time
10	Geopotential	00 and 12 UTC
11	Wind	00 and 12 UTC

Figures 14-18 show global charts of SATOB and aircraft wind statistics in the form of wind vectors averaged over 5 degree boxes.

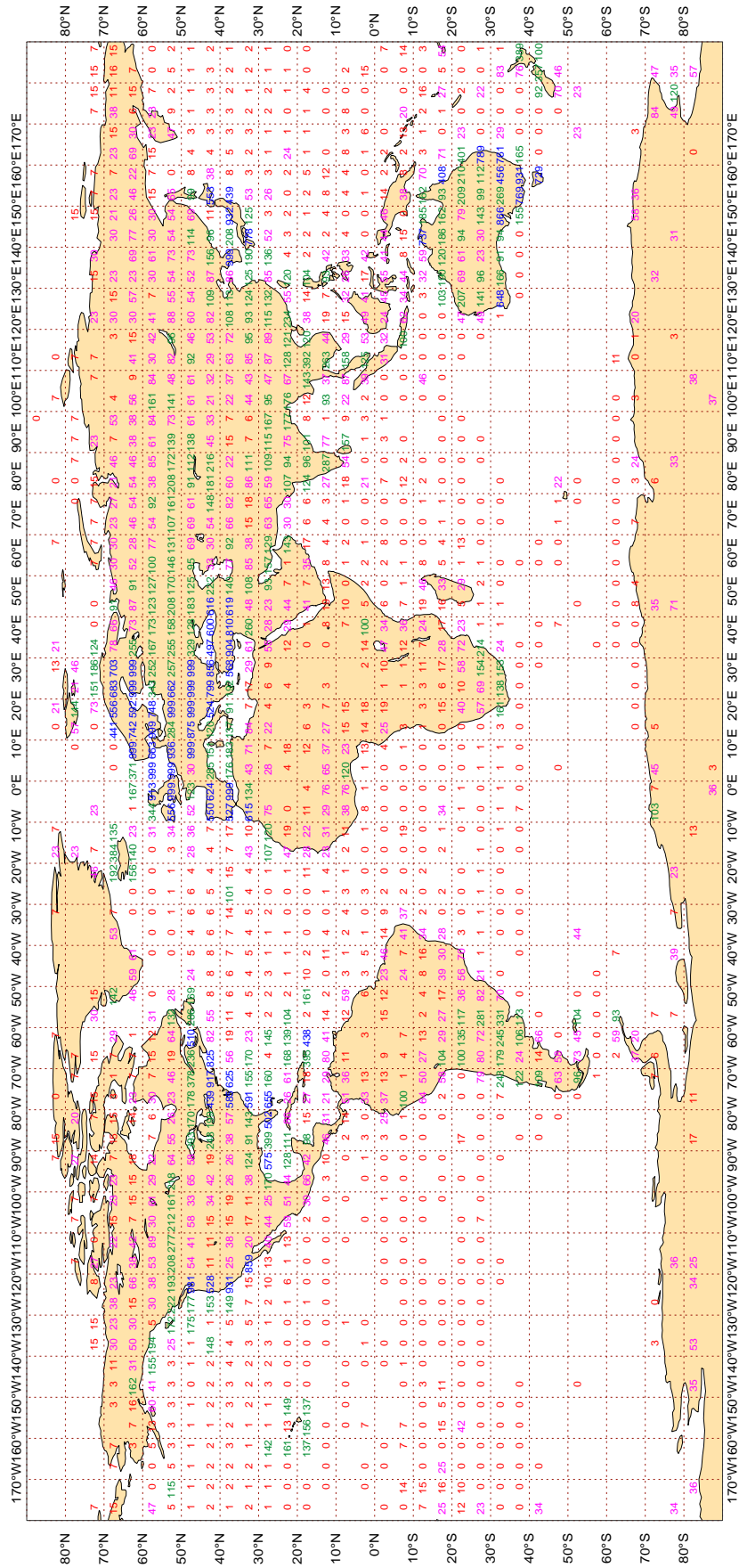
Fig	Parameter	Level/Layer
14	SATOB - Mean observed wind	1000-700 hPa
15	SATOB - Mean observed wind	400-150 hPa
16	SATOB - Mean observed minus first-guess wind	1000-700 hPa
17	SATOB - Mean observed minus first-guess wind	400-150 hPa
18	AIRCRAFT WIND - Mean observed minus first-guess	300-150 hPa

Table 12 provides quality statistics of aircraft wind observations stratified by airline carrier.

3.2.1 Figure 1 - Availability - SYNOP PRESSURE

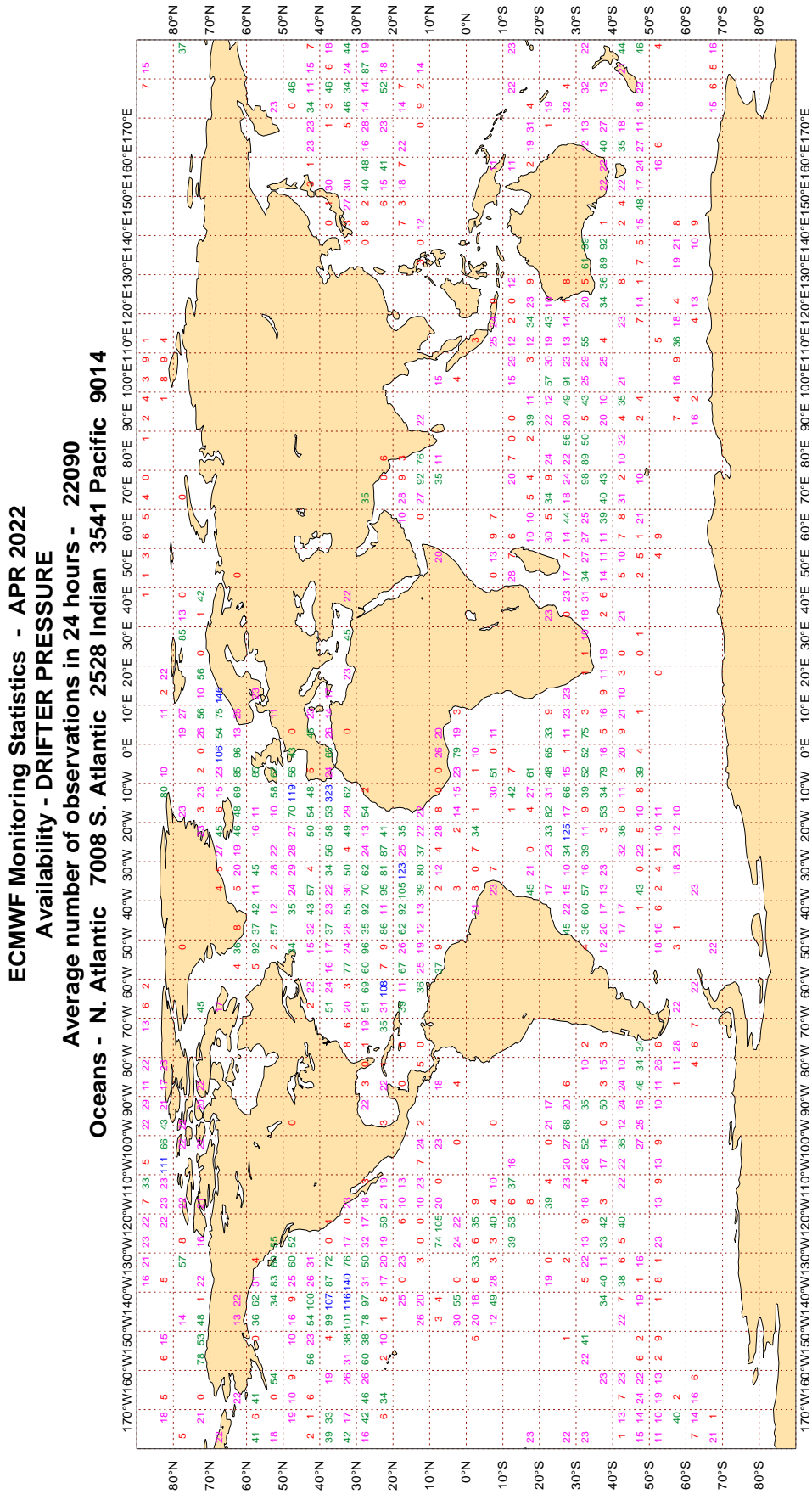
Figure 1

ECMWF Monitoring Statistics - APR 2022
 Availability - SYNOP/SHIP (manual, auto) pressure
 Average number of observations in 24 hours - 117219
 LAND - WMO Region I: 4712 II:19676 III: 4375 IV: 7099
 Region V:14541 VI:42558 Antarctic: 1654
 Oceans - N. Atlantic 11153 S. Atlantic 224 Indian 951 Pacific 10273



3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

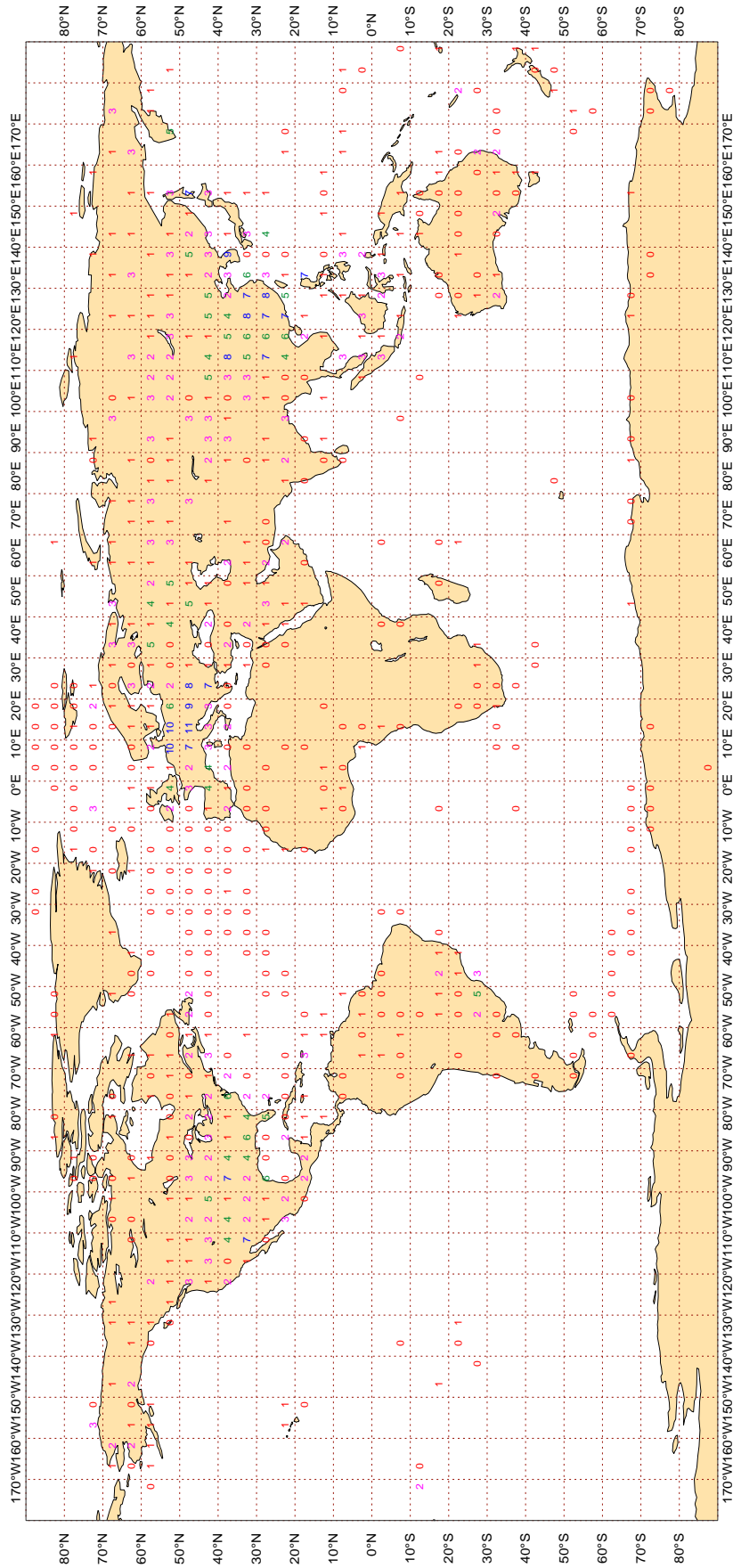
Figure 2



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential

Figure 3

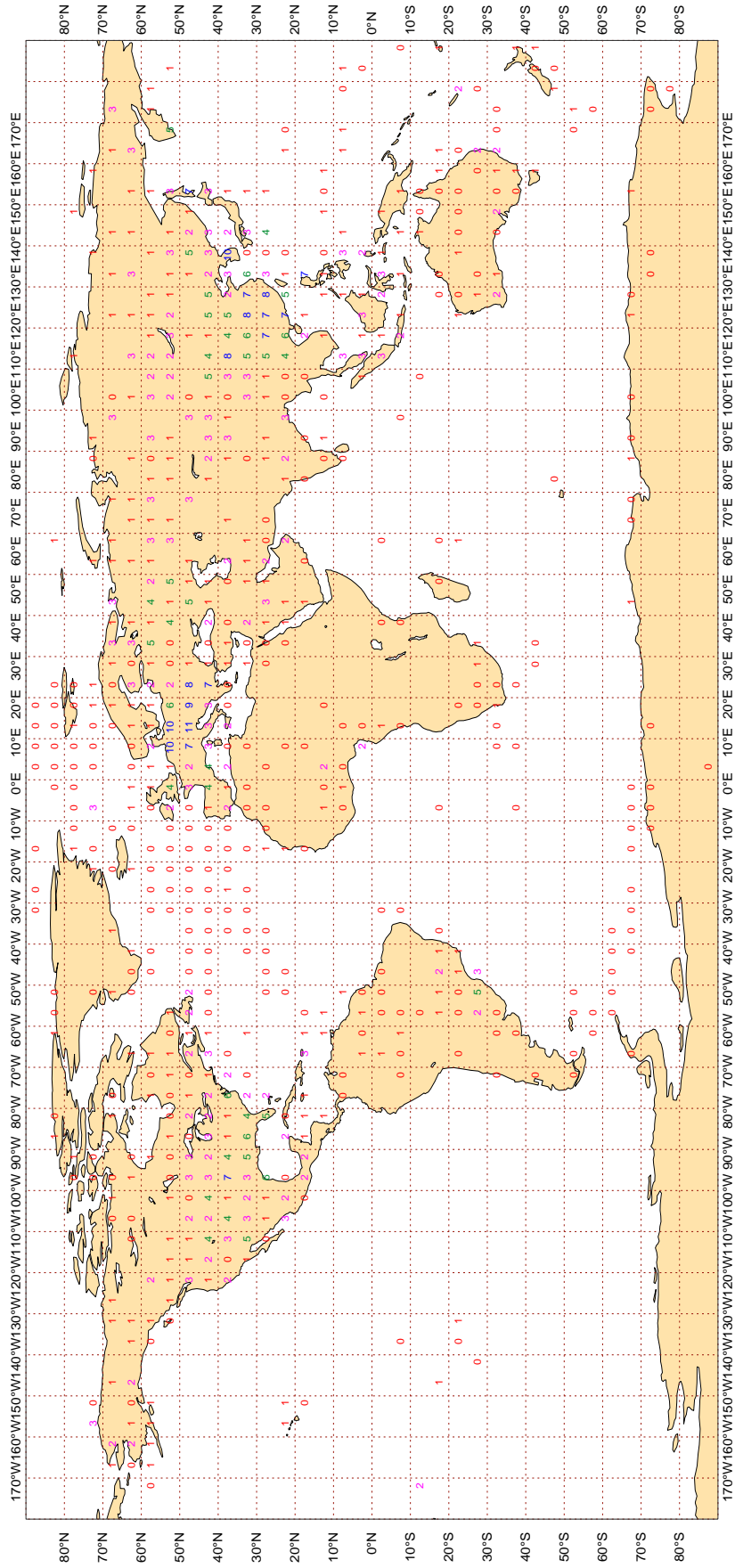
ECMWF Monitoring Statistics - APR 2022
 Availability - TEMP 500 hPa Geopotential
 Average number of observations in 24 hours - 1187
 LAND - WMO Region I: 35 II: 455 III: 49 IV: 260
 Region V: 131 VI: 235 Antarctic: 14
 Oceans - N. Atlantic 7 S. Atlantic 1 Indian 0 Pacific 0



3.2.4 Figure 4 - Availability - TEMP/PILOT 300 hPa wind

Figure 4

ECMWF Monitoring Statistics - APR 2022
 Availability - TEMP/PILOT 300 hPa wind
 Average number of observations in 24 hours - 1182
 LAND - WMO Region I: 38 II: 451 III: 49 IV: 260
 Region V: 130 VI: 232 Antarctic: 14
 Oceans - N. Atlantic 7 S. Atlantic 1 Indian 0 Pacific 0



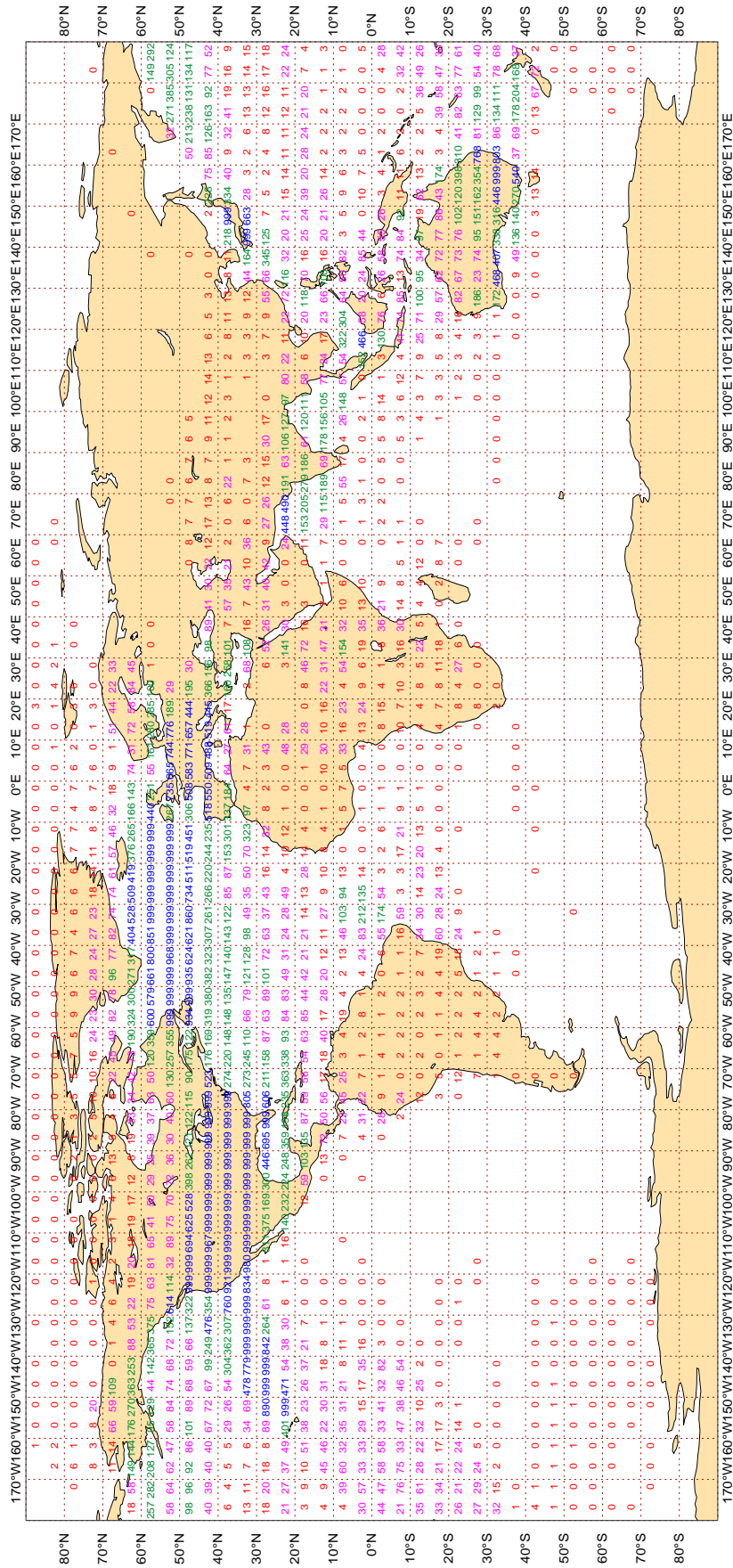
Magics 3.0.4 (64 bit)



3.2.5 Figure 5 - Availability - AIRCRAFT winds 300-150 hPa

Figure 5

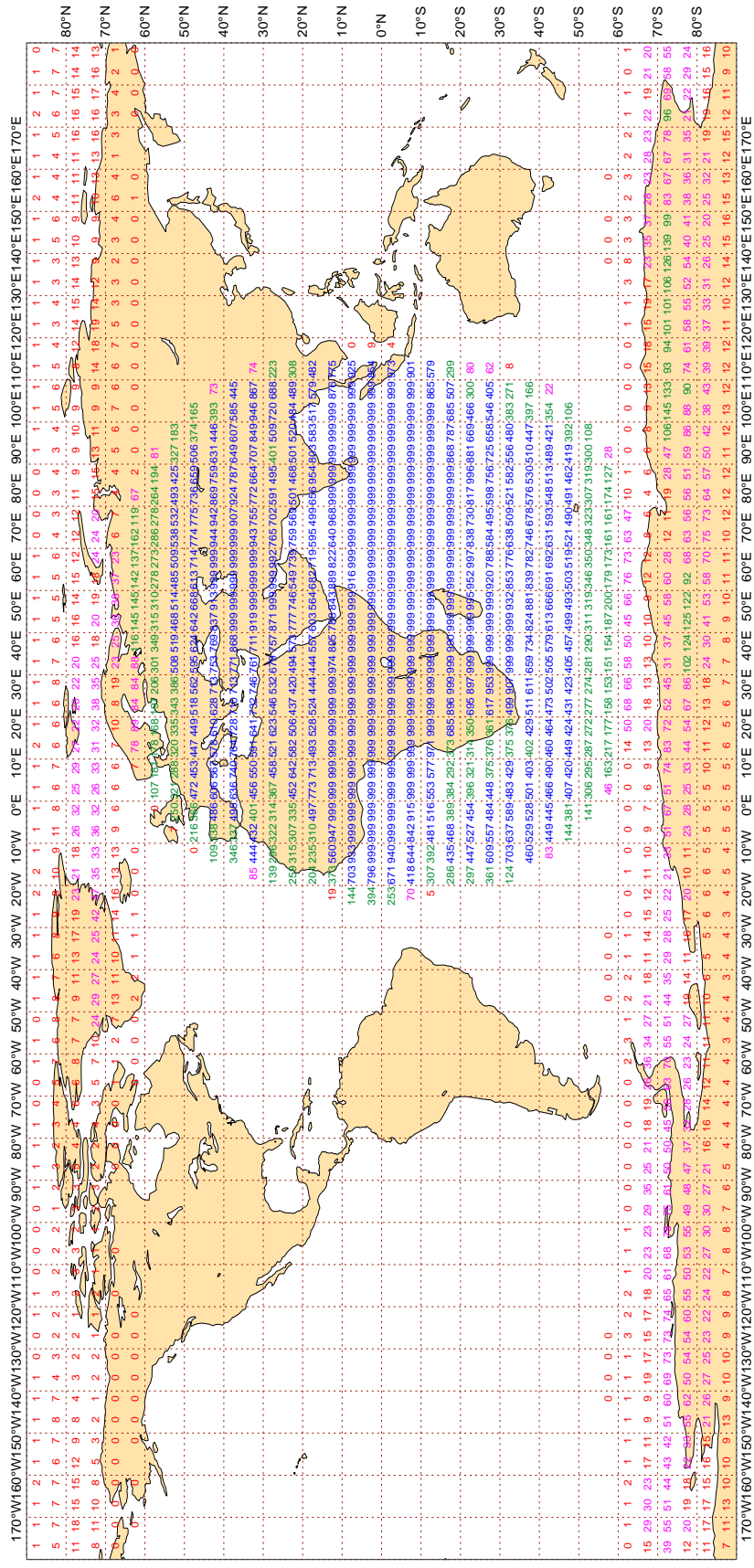
ECMWF Monitoring Statistics - APR 2022
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 191661



3.2.6 Figure 6 - Availability - SATOB winds 400-150 hPa

Figure 6

ECMWF Monitoring Statistics - APR 2022
Availability - AMV winds 400-150 hPa
Average number of observations in 24 hours - 436207



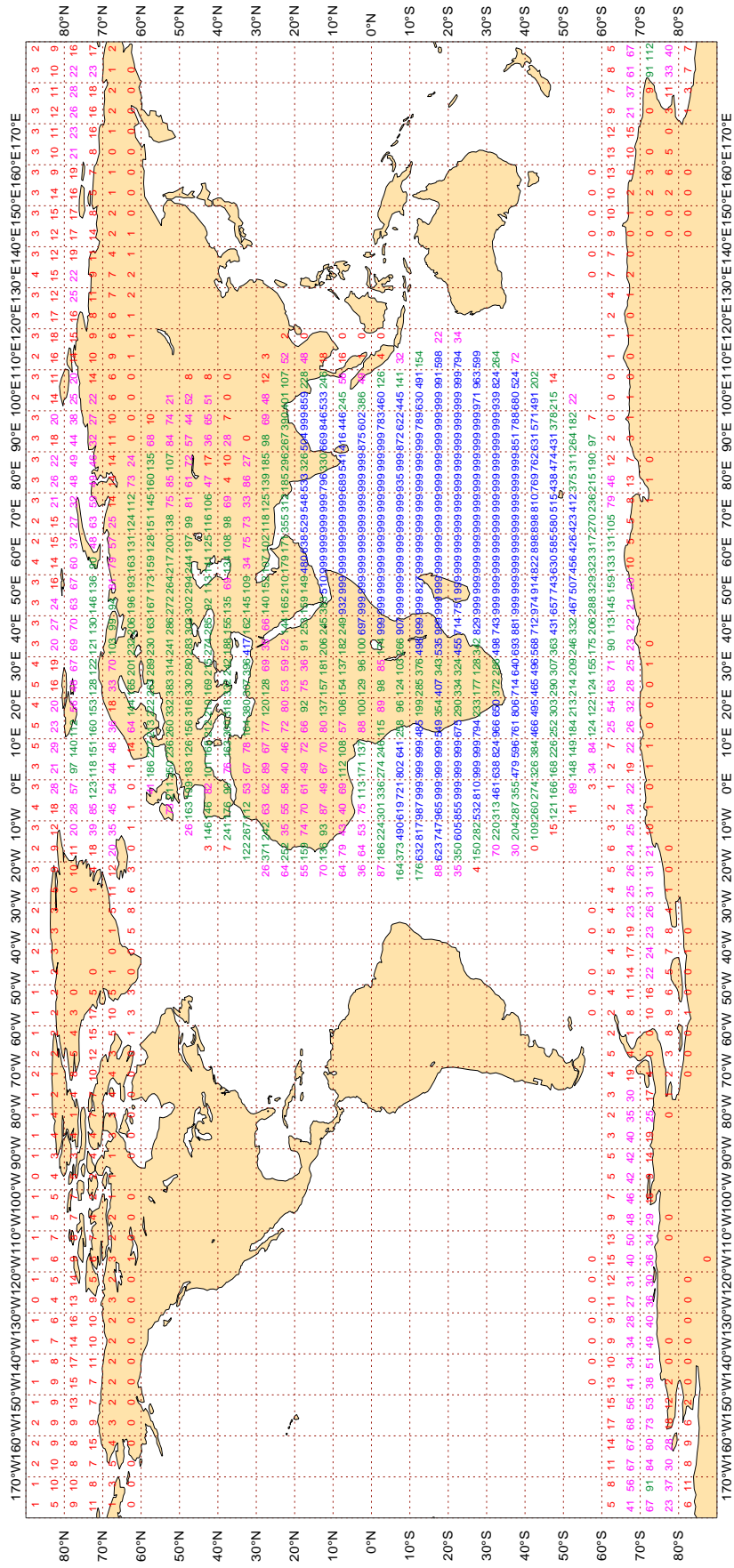
Magics 3.0.4 (64 bit)



3.2.7 Figure 7 - Availability - SATOB winds 1000-700 hPa

Figure 7

ECMWF Monitoring Statistics - APR 2022
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 297551

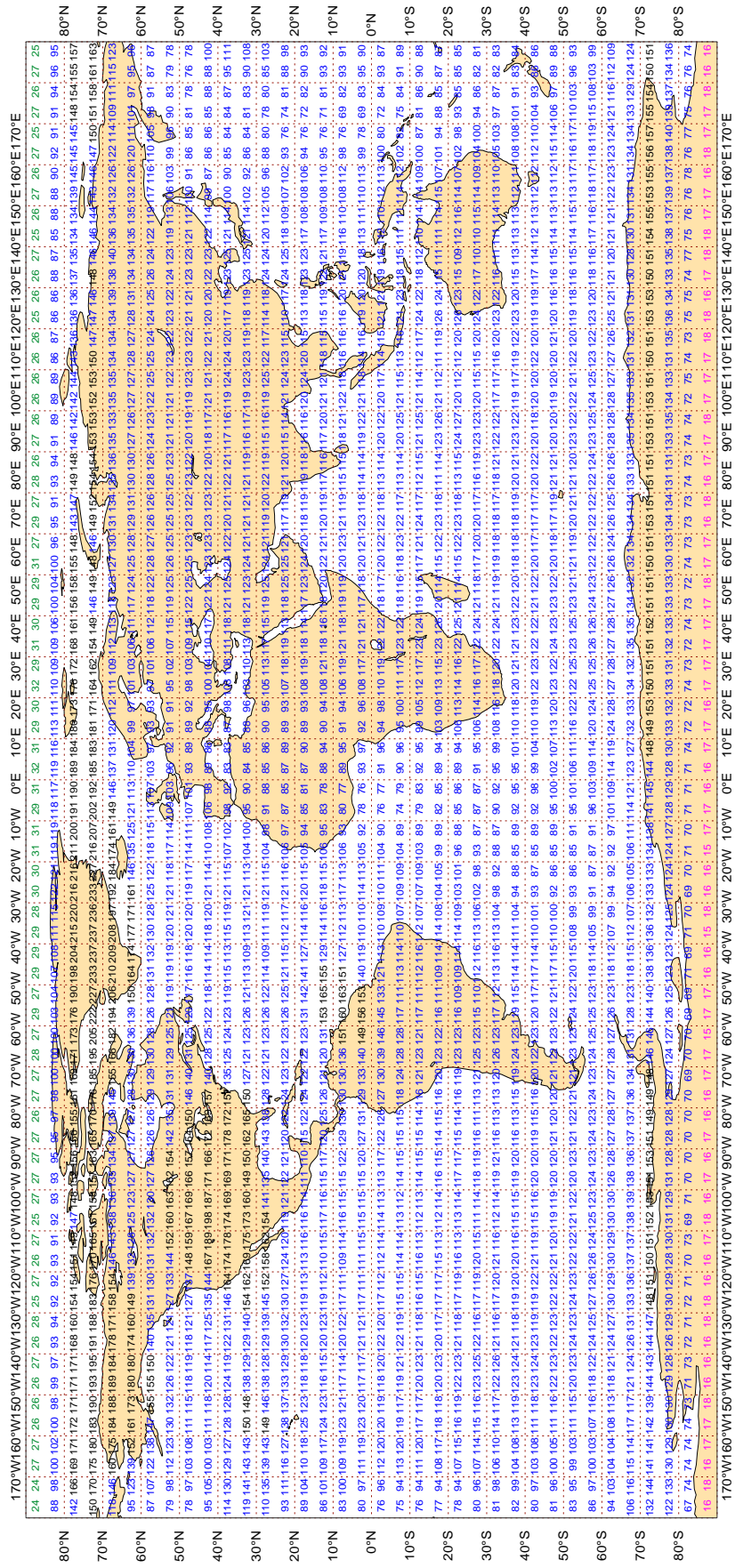


3.2.8 Figure 8 - Availability - NOAA15 ATOVS : AMSU-A

Figure 8

ECMWF Monitoring Statistics - APR 2022
Availability - NOAA15 ATOVS : AMSU-A

Average number of observations in 24 hours - 297292



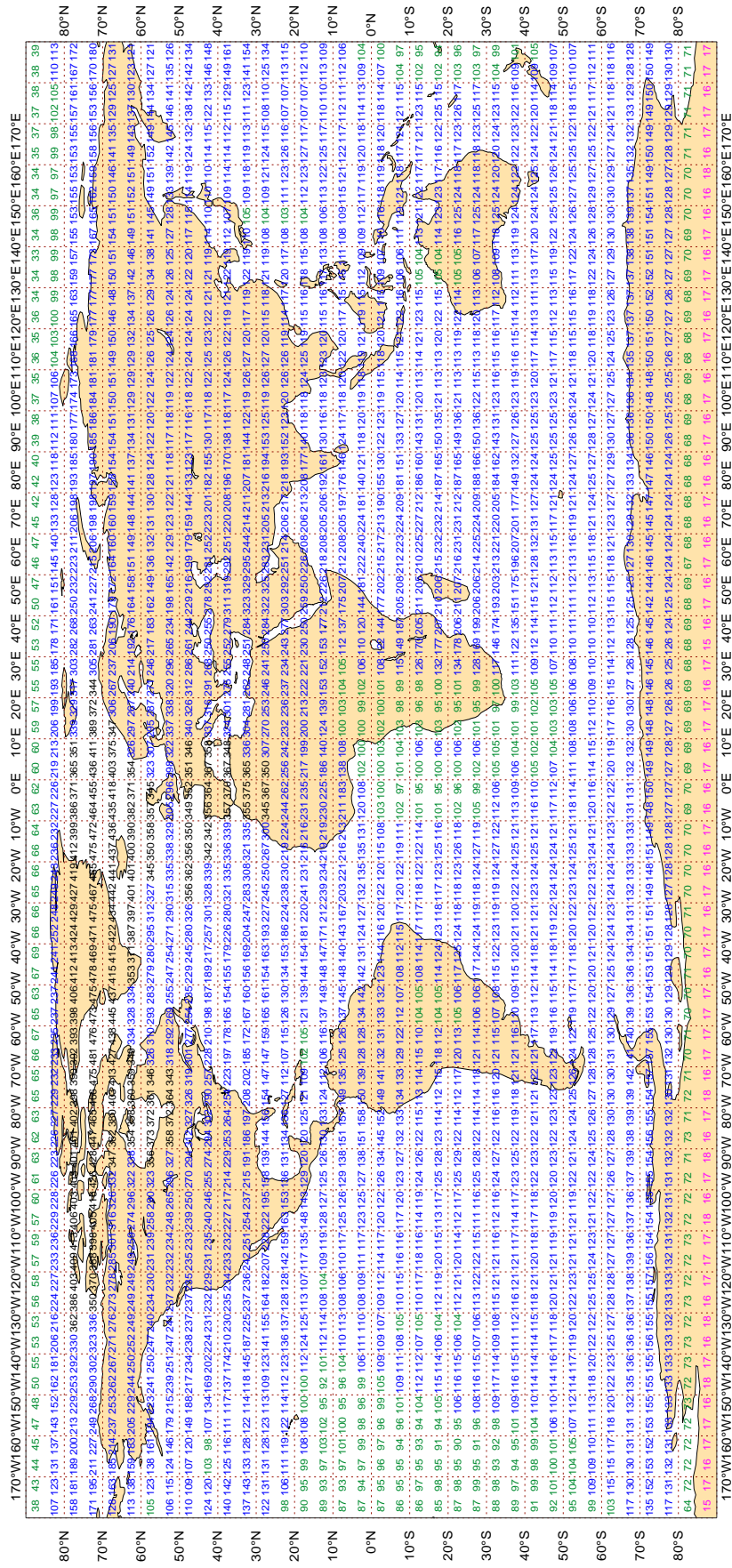
Magics 3.0.4 (64 bit)



3.2.9 Figure 9.1 - Availability - NOAA18 ATOVS : AMSU-A

Figure 9.1

ECMWF Monitoring Statistics - APR 2022
Availability - NOAA18 ATOVS : AMSU-A
Average number of observations in 24 hours - 402110



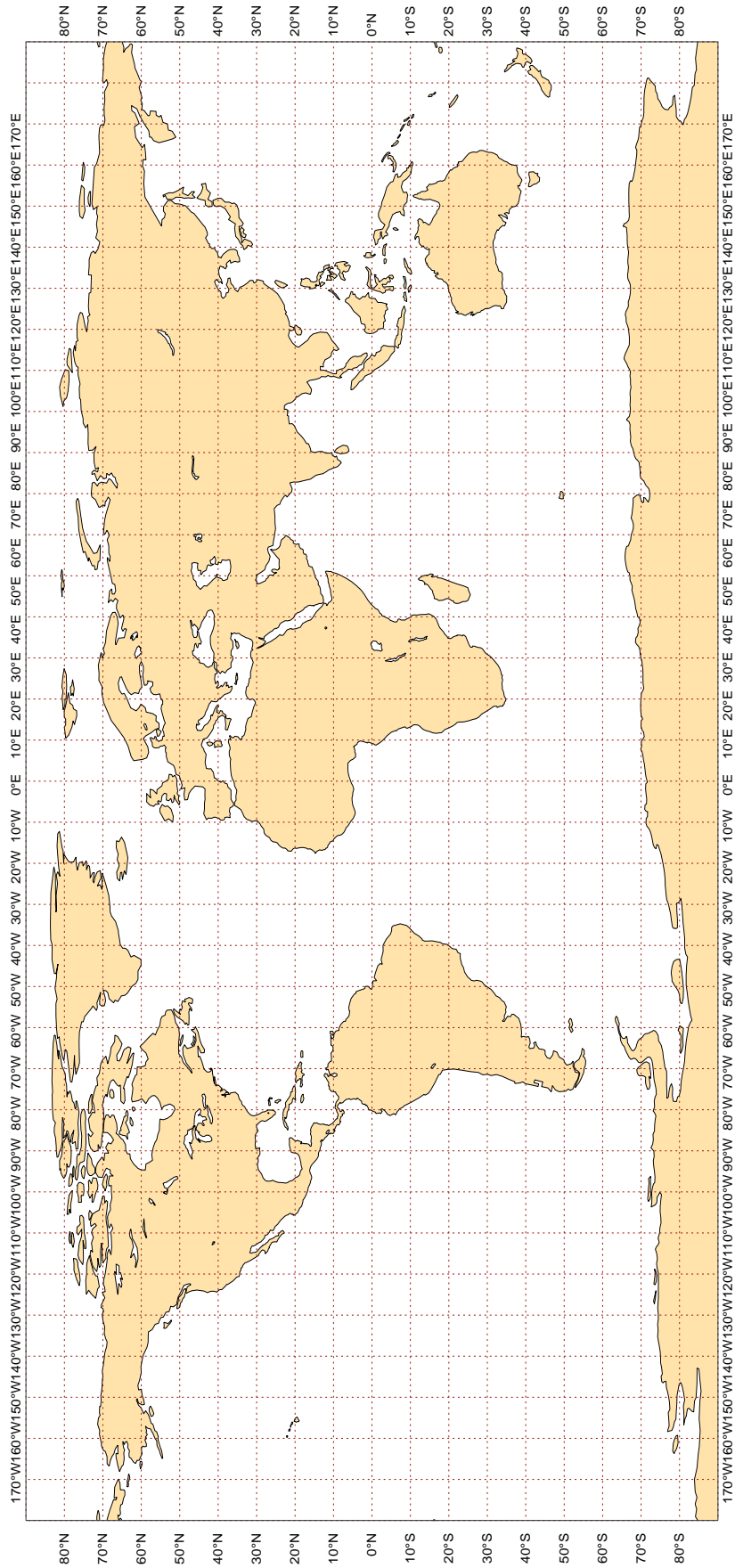
Magics 3.0.4 (64 bit)



3.2.10 Figure 9.2 - Availability - AQUA ATOVS : AMSU-A

Figure 9.2

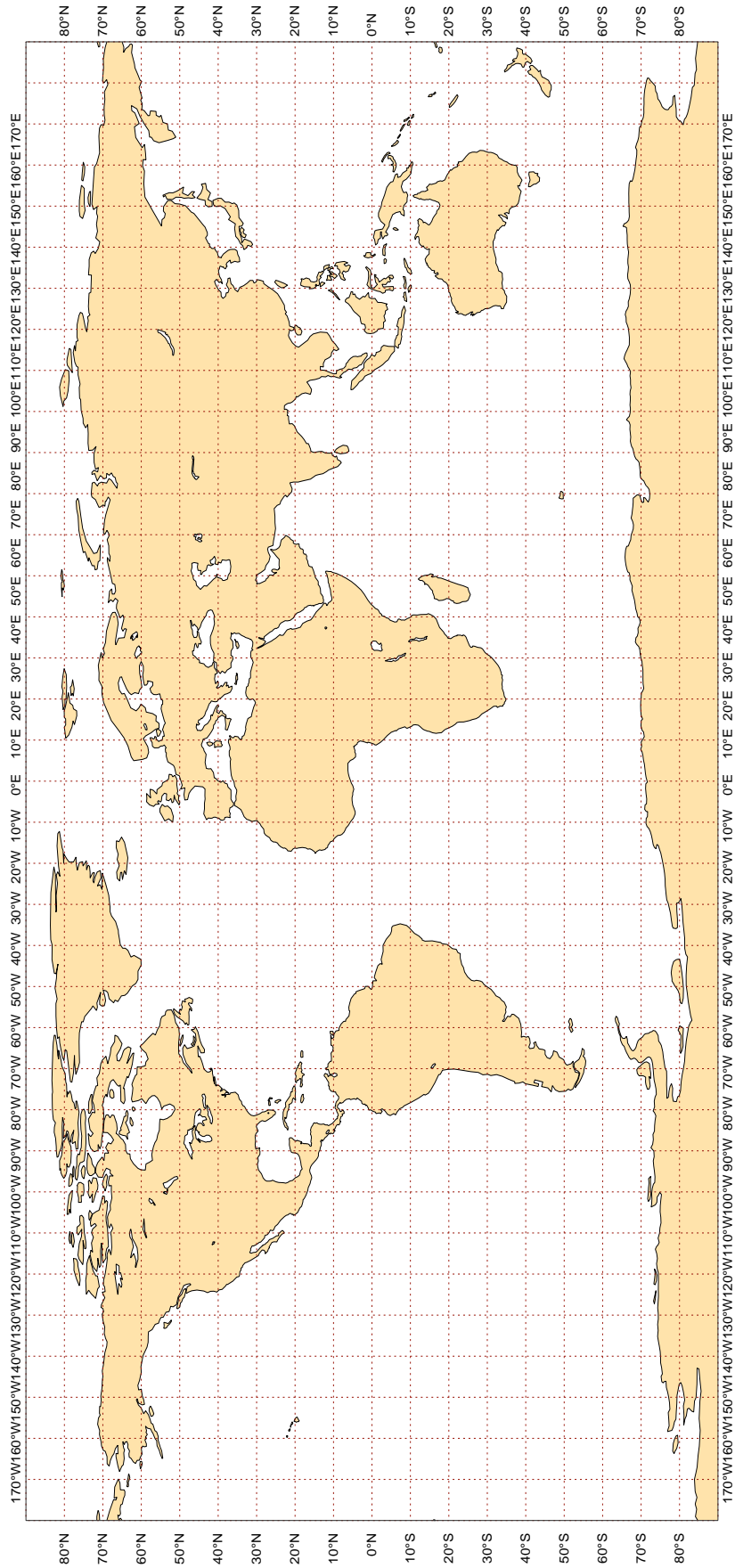
ECMWF Monitoring Statistics - APR 2022
Availability - AQUA ATOVS : AMSU-A
Average number of observations in 24 hours - 0



3.2.11 Figure 9.3 - Availability - METOP ATOVS : AMSU-A

Figure 9.3

ECMWF Monitoring Statistics - APR 2022
Availability - METOP ATOVS : AMSU-A
Average number of observations in 24 hours - 0



3.2.12 Table 1 - Suspect ships and fixed marine platforms: Surface pressure - (hPa)

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 15(50), AND,
 Manual (Automatic) ABSOLUTE BIAS >= 3(2) HPA, OR,
 STANDARD DEVIATION >= 5(4) HPA, OR,
 % GROSS ERROR >= 25(15)
 (GROSS ERROR LIMIT = 15 HPA)

TIME = 99 => AVERAGE OF 00, 06, 12 AND 18 UTC OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
2HDG3	99	P	SUR	28	0	1.9	5.0	5.4
3EVK3	99	P	SUR	24	0	1.2	-5.6	5.8
3FFA5	99	P	SUR	20	0	0.9	5.0	5.1
3FJB3	99	P	SUR	82	0	0.6	3.9	4.0
41056	99	P	SUR	488	0	0.5	4.8	4.8
44076	99	P	SUR	287	0	1.7	-6.7	6.9
45024	99	P	SUR	32	0	1.4	-4.2	4.4
9HA2066	99	P	SUR	27	0	3.7	-3.6	5.1
9HA4638	99	P	SUR	16	0	1.0	-4.3	4.4
9HA4902	99	P	SUR	44	0	0.7	3.5	3.6
9HA5197	99	P	SUR	26	2	1.0	4.9	5.0
9HA5209	99	P	SUR	101	8	4.3	9.5	10.4
9HJB9	99	P	SUR	28	0	1.5	3.3	3.6
9V3865	99	P	SUR	23	0	1.8	-3.8	4.2
9V5246	99	P	SUR	15	0	1.2	5.7	5.8
9V5456	99	P	SUR	27	2	2.2	6.9	7.3
9V5669	99	P	SUR	75	0	1.3	4.6	4.7
9V6408	99	P	SUR	242	2	1.9	-3.6	4.0
9V6416	99	P	SUR	242	0	2.1	6.7	7.0
9V8776	99	P	SUR	91	5	2.1	7.8	8.1
9V9290	99	P	SUR	24	0	2.5	7.6	8.0
9V9400	99	P	SUR	76	2	3.2	-5.5	6.3
9V9401	99	P	SUR	41	0	1.4	-5.0	5.2
9VBN2	99	P	SUR	33	0	1.9	5.6	5.9
A8OK4	99	P	SUR	15	0	0.5	-7.1	7.1
ATVK	99	P	SUR	31	31	0.0	0.0	0.0
BKIC	99	P	SUR	144	0	2.3	8.9	9.2
BKIY	99	P	SUR	50	0	1.7	4.1	4.4
BKIZ	99	P	SUR	78	0	1.2	4.7	4.9
C6FR3	99	P	SUR	51	0	5.0	-3.5	6.0
C6LG6	99	P	SUR	59	0	1.0	-4.4	4.5
C6PZ8	99	P	SUR	27	0	0.5	-4.5	4.6

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
CQOL	99	P	SUR	25	0	1.2	4.7	4.8
D5U07	99	P	SUR	45	2	1.6	10.0	10.1
JMJRCES	99	P	SUR	124	37	6.0	-2.9	6.7
KIAB	99	P	SUR	81	0	1.8	5.7	6.0
LAHR7	99	P	SUR	125	0	1.4	4.2	4.5
LAOL5	99	P	SUR	35	0	2.1	3.9	4.5
LAVD4	99	P	SUR	79	0	0.5	3.4	3.5
PINX	99	P	SUR	76	0	0.7	-3.1	3.2
S6CH6	99	P	SUR	22	0	4.0	4.2	5.8
UASX	99	P	SUR	47	0	2.7	-5.3	5.9
UBAW	99	P	SUR	48	0	1.0	-10.7	10.7
UFHZ	99	P	SUR	16	4	0.5	3.2	3.3
UGYU	99	P	SUR	37	0	2.8	-3.2	4.2
V7A5144	99	P	SUR	54	0	2.5	-4.3	5.0
V7DR9	99	P	SUR	57	0	1.2	3.7	3.9
V7KD7	99	P	SUR	24	0	1.4	5.9	6.0
V7QJ3	99	P	SUR	40	0	0.8	5.1	5.2
V7QS7	99	P	SUR	145	0	1.9	-6.0	6.3
V7TM3	99	P	SUR	58	0	3.0	-4.1	5.1
V7UT6	99	P	SUR	27	14	6.5	3.4	7.3
VABC	99	P	SUR	16	1	3.4	6.8	7.6
VDRU8	99	P	SUR	30	0	0.8	-4.3	4.4
VRBU6	99	P	SUR	19	0	3.5	-3.7	5.1
VRDB3	99	P	SUR	28	1	0.8	-4.3	4.4
VRDE7	99	P	SUR	31	0	2.7	3.2	4.2
VRDN6	99	P	SUR	18	0	6.1	-2.3	6.5
VRIB2	99	P	SUR	128	2	0.8	7.2	7.2
VRID6	99	P	SUR	20	0	1.3	3.4	3.6
VRLX6	99	P	SUR	37	0	2.4	8.9	9.2
VRMX7	99	P	SUR	16	0	1.6	6.6	6.8
VRNR6	99	P	SUR	17	0	0.6	-6.1	6.2
VROO4	99	P	SUR	35	0	2.8	7.8	8.3
VRQS3	99	P	SUR	24	0	1.2	5.4	5.5
VRSM5	99	P	SUR	28	0	0.9	3.7	3.8
VRUC3	99	P	SUR	27	0	2.0	-3.2	3.7
VTSJ	99	P	SUR	141	0	4.2	3.5	5.5
WDC3031	99	P	SUR	32	0	3.0	3.0	4.2
WDG8555	99	P	SUR	36	0	0.5	-3.6	3.7
WDJ3199	99	P	SUR	122	0	2.6	4.2	4.9
WHDV	99	P	SUR	101	0	0.5	-3.2	3.2
ZGFY4	99	P	SUR	77	1	1.0	-12.0	12.0

3.2.13 Table 2 - Suspect ships and fixed marine platforms: Wind speed (m/s)

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 15(50), AND,
 Manual (Automatic) ABSOLUTE BIAS >= 4(4) M/S, OR,
 % GROSS ERROR >= 25(15)
 (GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S)

TIME = 99 => AVERAGE OF 00, 06, 12 AND 18 UTC OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
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3.2.14 Table 3 - Suspect ships and fixed marine platforms: Wind direction (DEGREES)

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 15 (50) (WIND SPEEDS > 3M/S), AND ,
 Manual (Automatic) ABSOLUTE BIAS >= 30 (25) DEGREES, OR,
 STANDARD DEVIATION >= 70 (50) DEGREES
 (GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S)

TIME = 99 => AVERAGE OF 00, 06, 12 AND 18 UTC OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
44139	99	DIRN	SUR	96	0	0	11.9	47.2	48.7
45186	99	DIRN	SUR	25	0	0	50.5	37.7	63.1
45187	99	DIRN	SUR	26	0	0	34.5	-41.0	53.6
46132	99	DIRN	SUR	61	4	0	82.6	-104.8	133.4
46146	99	DIRN	SUR	84	0	0	28.3	32.2	42.9
46303	99	DIRN	SUR	63	0	0	34.3	66.1	74.5

3.2.15 Table 4 - Suspect drifters: Surface pressure (HPA)

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20, AND,
 ABSOLUTE BIAS >= 4 HPA, OR,
 STANDARD DEVIATION >= 6 HPA, OR,
 % GROSS ERROR >= 25
 (GROSS ERROR LIMIT = 15 HPA)

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
2302618	99	P	SUR	5	91	628	238	9.0	-6.3	11.0
2302620	99	P	SUR	12	80	587	114	7.6	-1.2	7.7
4100056	99	P	SUR	18	-65	4208	0	0.5	4.8	4.9
41056	99	P	SUR	18	-66	3493	0	0.5	4.8	4.8
4400076	99	P	SUR	40	-71	1850	0	1.6	-6.8	7.0
44076	99	P	SUR	40	-71	2253	0	1.6	-6.8	7.0
4500024	99	P	SUR	44	-87	166	0	1.2	-4.2	4.4
45024	99	P	SUR	44	-87	250	0	1.2	-4.2	4.3
4601676	99	P	SUR	37	-131	179	146	0.7	-13.8	13.8
4601783	99	P	SUR	53	-139	336	336	0.0	0.0	0.0
4602507	99	P	SUR	52	-163	516	0	1.6	7.7	7.9
4701658	99	P	SUR	72	-95	638	638	0.0	0.0	0.0
4701735	99	P	SUR	72	-120	681	681	0.0	0.0	0.0
4701738	99	P	SUR	70	-67	697	697	0.0	0.0	0.0
4701744	99	P	SUR	81	-99	719	719	0.0	0.0	0.0
4801670	99	P	SUR	86	-130	686	289	8.3	-3.6	9.0
5201726	99	P	SUR	39	-177	648	41	4.5	4.2	6.2
5401768	99	P	SUR	-70	167	676	538	7.3	-5.2	8.9
6102797	99	P	SUR	37	-3	717	298	3.7	-0.2	3.7
6301570	99	P	SUR	64	-7	264	18	6.5	1.6	6.7
6402587	99	P	SUR	53	-49	581	15	3.0	8.5	9.0
6402656	99	P	SUR	56	-40	537	40	2.8	10.6	11.0
6501674	99	P	SUR	80	18	699	235	6.9	2.0	7.2
6501689	99	P	SUR	79	28	2655	1476	8.1	-5.1	9.5

3.2.16 Table 5 - Suspect drifters: Wind speed (m/s)

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20, AND,
 ABSOLUTE BIAS >= 5 M/S, OR,
 % GROSS ERROR >= 25
 (GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S)

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
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3.2.17 Table 6 - Suspect drifters: Wind direction (degrees)

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20 (WIND SPEEDS > 3M/S), AND ,
 ABSOLUTE BIAS >= 20 DEGREES, OR,
 STANDARD DEVIATION >= 60 DEGREES
 (GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S)

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
1300008	99	DIRN	SUR	15	-38	551	0	0	113.4	-8.8	113.8
1300131	99	DIRN	SUR	28	-17	394	0	0	54.1	-45.1	70.4
1500008	99	DIRN	SUR	-20	-10	203	0	0	25.5	-32.5	41.3
23093	99	DIRN	SUR	16	88	137	0	0	14.4	22.9	27.0
23099	99	DIRN	SUR	13	80	407	0	0	132.9	-60.1	145.8
23451	99	DIRN	SUR	15	69	54	0	0	16.9	27.6	32.3
23453	99	DIRN	SUR	8	73	70	0	0	37.3	-31.3	48.7
23492	99	DIRN	SUR	11	72	20	0	0	36.2	-31.0	47.6
23497	99	DIRN	SUR	11	72	44	0	0	60.4	-34.9	69.7
4100300	99	DIRN	SUR	16	-57	658	0	0	10.3	-31.5	33.1
42019	99	DIRN	SUR	28	-95	352	0	0	86.7	94.4	128.1
44025	99	DIRN	SUR	40	-73	284	3	0	97.2	-43.0	106.2
44139	99	DIRN	SUR	44	-57	588	0	0	13.4	47.3	49.2
4500024	99	DIRN	SUR	44	-87	134	0	0	7.4	-22.4	23.6
4500168	99	DIRN	SUR	42	-86	1715	0	0	37.1	29.7	47.5
4500186	99	DIRN	SUR	42	-88	141	0	0	65.1	26.2	70.2
4500187	99	DIRN	SUR	42	-88	135	0	0	36.0	-46.9	59.1
45024	99	DIRN	SUR	44	-87	196	0	0	7.2	-20.7	21.9
45029	99	DIRN	SUR	43	-86	111	0	0	103.2	-12.9	104.1
45168	99	DIRN	SUR	42	-86	2246	0	0	37.3	30.2	48.0
45186	99	DIRN	SUR	42	-88	176	0	0	66.8	21.3	70.2
45187	99	DIRN	SUR	43	-88	170	0	0	37.2	-46.8	59.7
46015	99	DIRN	SUR	43	-125	242	5	0	94.2	-17.2	95.7
46027	99	DIRN	SUR	42	-124	195	7	0	93.4	5.9	93.6
46072	99	DIRN	SUR	52	-172	237	5	0	100.2	-34.2	105.9
46073	99	DIRN	SUR	55	-172	78	0	0	110.6	10.8	111.1
46080	99	DIRN	SUR	58	-150	149	8	0	112.4	24.9	115.1
46132	99	DIRN	SUR	50	-128	382	32	0	83.5	-106.3	135.1
46146	99	DIRN	SUR	49	-124	433	0	0	31.9	29.2	43.2
46303	99	DIRN	SUR	49	-123	405	0	0	34.2	64.4	73.0
5100017	99	DIRN	SUR	-2	-125	650	0	0	69.7	-35.0	78.0

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
51017	99	DIRN	SUR	-2	-125	646	0	0	69.8	-35.1	78.1
5200001	99	DIRN	SUR	2	165	224	0	0	42.1	-38.8	57.2
52001	99	DIRN	SUR	2	165	225	0	0	42.4	-38.3	57.1
6200086	99	DIRN	SUR	55	6	450	0	0	11.6	27.4	29.8
6201065	99	DIRN	SUR	54	7	96	6	0	87.0	10.0	87.6
62129	99	DIRN	SUR	58	0	1193	0	0	11.1	22.6	25.1
62148	99	DIRN	SUR	54	2	1600	0	0	10.8	20.9	23.6

3.2.18 Table 7 - Suspect radiosondes: Geopotential height (metres)

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: AT LEAST 3 LEVELS WITH
 10 OBS AND 100 M WEIGHTED RMS

ONLY THE WORST LEVEL IS SHOWN (WITH UNWEIGHTED RMS)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
01400	00	Z	1000	57	3	26	0	5.5	75.2	75.4
01400	12	Z	1000	57	3	28	0	15.1	75.3	76.8
29698	12	Z	200	55	99	16	0	40.5	88.9	97.7
29698	00	Z	200	55	99	18	0	41.8	85.2	94.9
38064	12	Z	200	45	66	26	0	42.0	99.3	107.8
40437	00	Z	850	24	44	30	0	8.2	36.8	37.7
42647	12	Z	30	23	73	14	13	0.0	-408.0	408.0
42647	00	Z	1000	23	73	17	7	36.6	31.4	48.2
43150	00	Z	1000	18	83	30	0	25.8	38.2	46.1
43371	00	Z	1000	8	77	22	0	35.9	46.3	58.6
55591	00	Z	30	30	91	10	0	81.2	210.8	225.9
55591	12	Z	50	30	91	22	0	52.7	143.1	152.5
58424	00	Z	50	31	117	27	1	113.8	113.5	160.7
61442	00	Z	700	18	-16	72	15	41.3	-22.5	47.0
76692	00	Z	1000	19	-96	15	0	33.1	-2.9	33.2
91680	12	Z	925	-18	177	20	0	3.4	29.5	29.7
91680	00	Z	1000	-18	177	30	0	3.4	28.9	29.1
98233	00	Z	1000	18	122	25	0	30.8	31.6	44.1
98233	12	Z	1000	18	122	26	0	31.2	24.7	39.8
98558	12	Z	925	11	126	11	0	26.1	-29.0	39.0
98558	00	Z	1000	11	126	10	0	42.1	19.4	46.4
JNKN7J	00	Z	1000	45	-44	10	0	2.7	37.6	37.7

3.2.19 Table 8 - Suspect radiosondes: Wind (m/s)

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: AT LEAST 10 OBS AND 15 M/S RMS VECTOR WIND

STANDARD LEVEL (1000-100 HPA) WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	UBIAS	VBIAS	RMS
36003	00	V	300	52	77	28	0	-3.0	-1.4	15.8
61442	12	V	925	18	-16	8	13	-4.7	-7.0	17.0
61442	00	V	925	18	-16	20	4	-4.4	-4.6	16.5

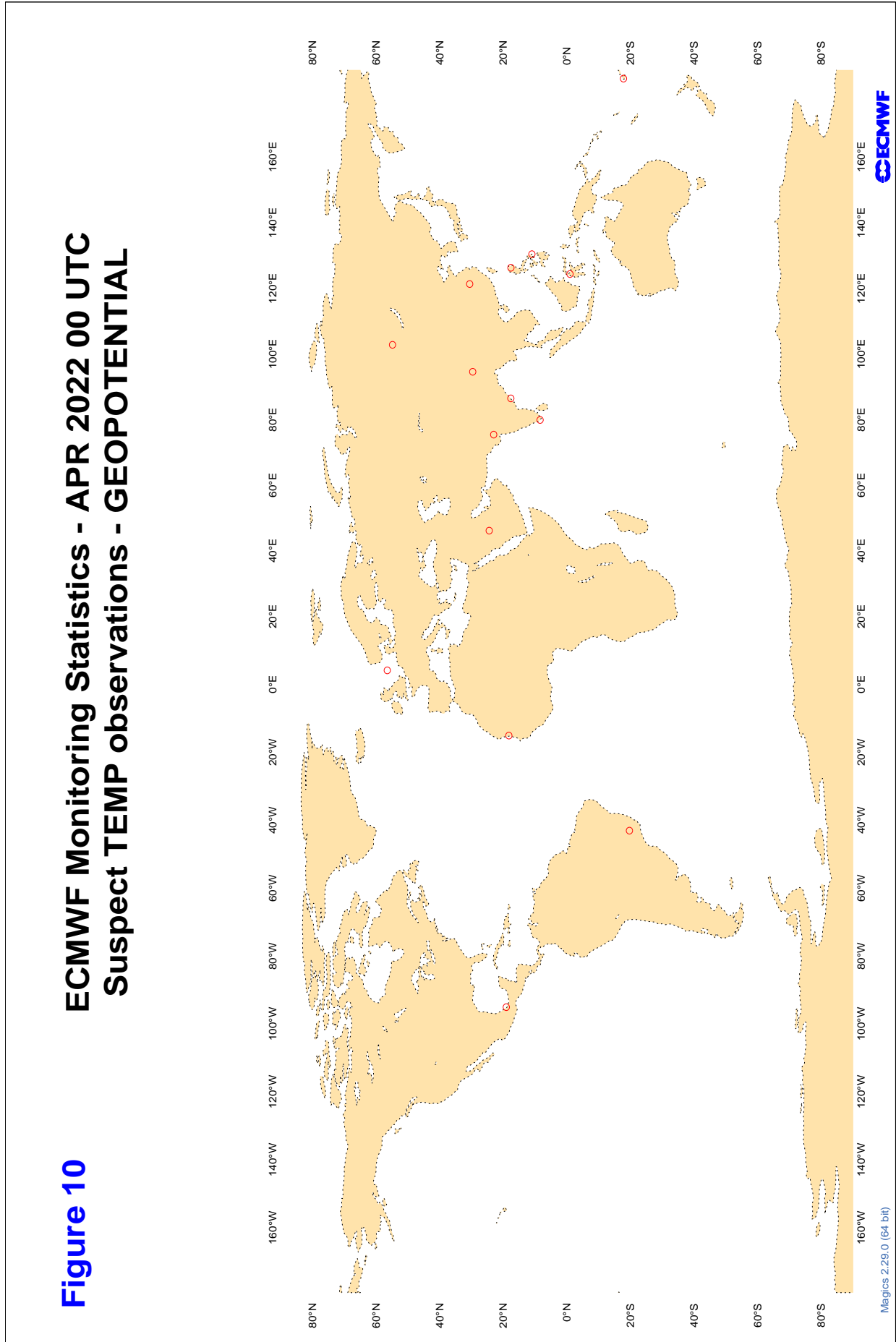
3.2.20 Table 9 - Suspect radiosondes: Wind direction (degrees)

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

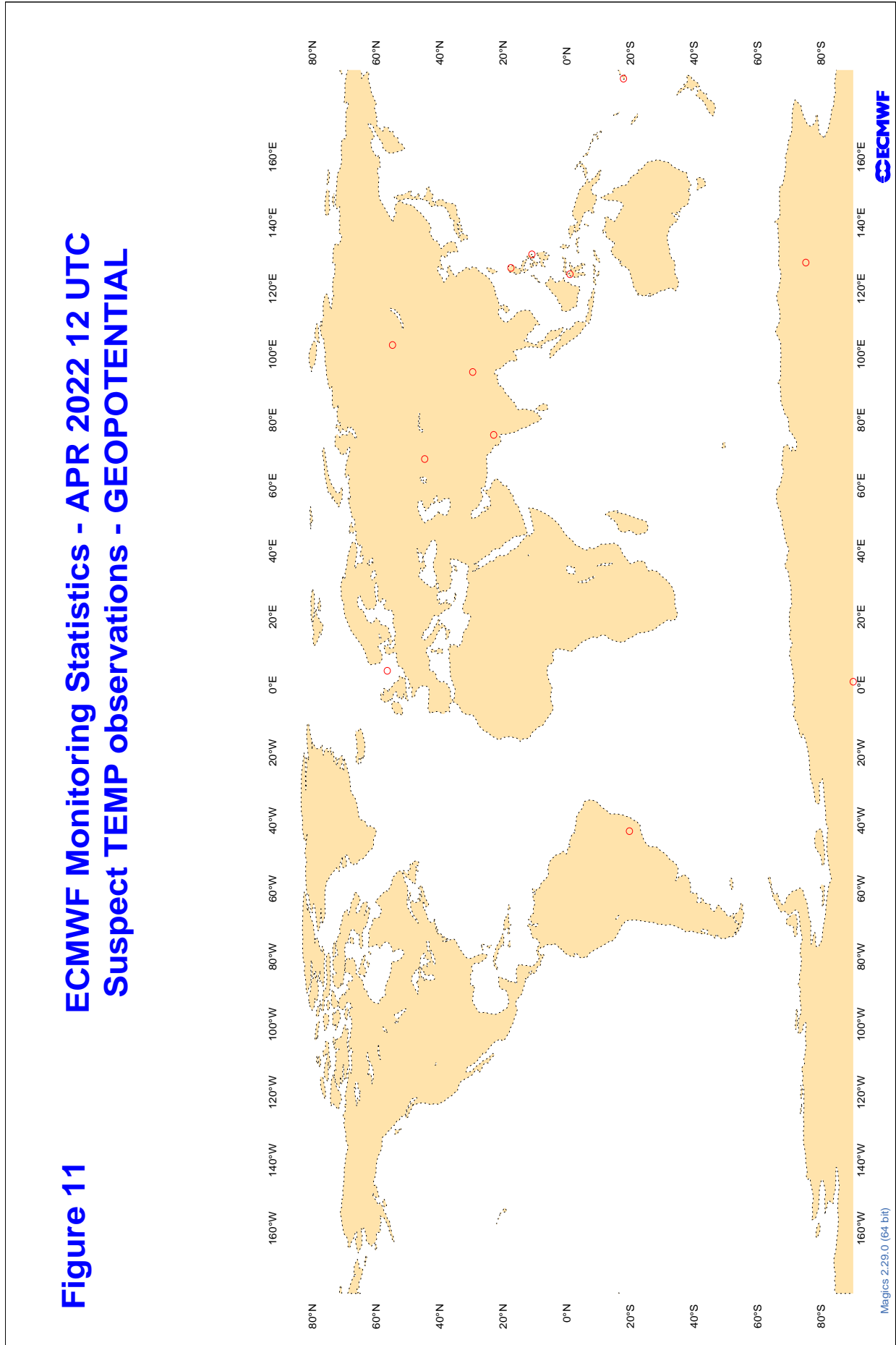
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS \geq 5 M/S
 NO. OF OBSERVATIONS \geq 5, AND,
 ABSOLUTE BIAS \geq 10 DEGREES, WITH
 STANDARD DEVIATION $<$ 30 DEGREES, AND,
 VERTICAL SPREAD $<$ 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
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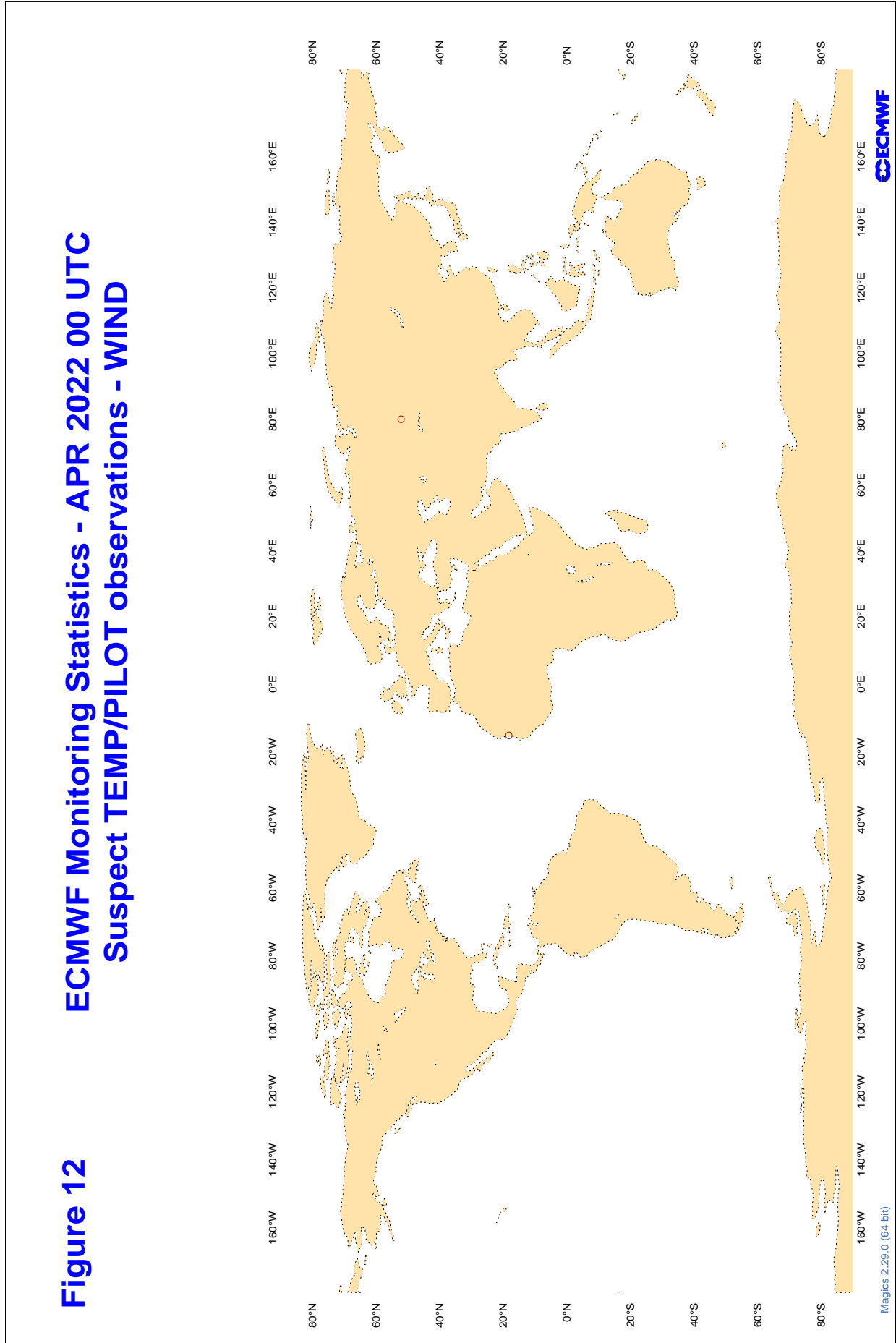
3.2.21 Figure 10 - Suspect TEMP observations - geopotential : 00 UTC



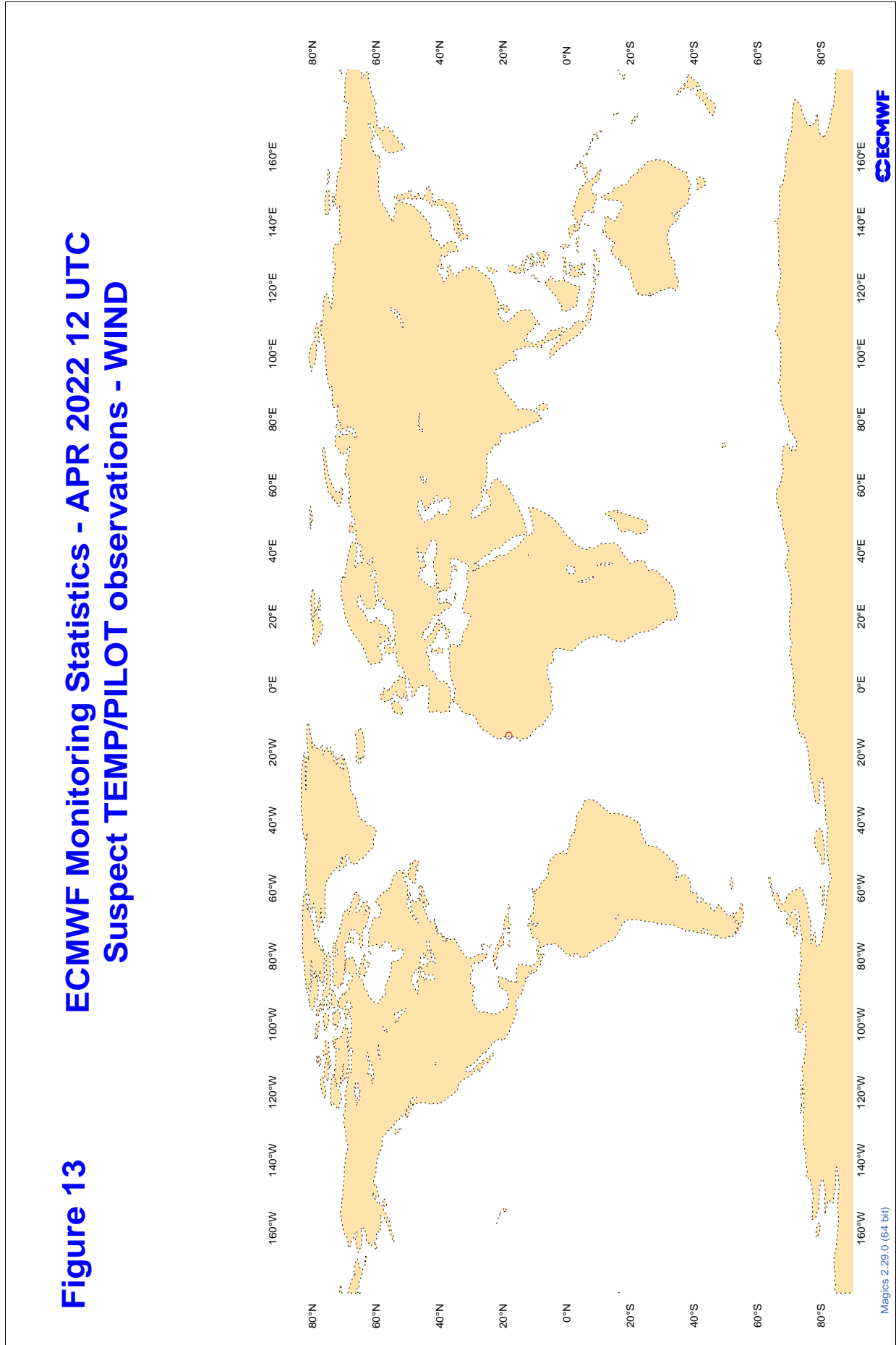
3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC



3.2.23 Figure 12 - Suspect TEMP/PILOT observations - wind : 00 UTC



3.2.24 Figure 13 - Suspect TEMP/PILOT observations - wind : 12 UTC



3.2.25 Table 10 - Radiosonde monitoring statistics (SHIPS): Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (SHIPS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERT	00	Z	100	2	11.7	-11.5
2EERT	12	Z	100	4	11.7	-11.6
7JUNA4	12	Z	100	8	33.3	7.8
7JUNA4	00	Z	100	1	12.7	-12.7
ASDE09	12	Z	100	5	12.1	11.5
BPMWB2	12	Z	100	2	11.8	2.7
BPMWB2	00	Z	100	3	17.8	6.8
DBLK	12	Z	100	26	9.3	5.8
HTXUH4	12	Z	100	4	39.0	33.1
HTXUH4	00	Z	100	4	19.7	9.9
JNKN7J	12	Z	100	6	27.6	26.2
JNKN7J	00	Z	100	11	25.3	23.7
KJJF9X	12	Z	100	7	11.7	10.8
KJJF9X	00	Z	100	5	10.9	8.0
KMPLHP	00	Z	100	8	31.8	31.1
KMPLHP	12	Z	100	5	68.2	56.3
LRYQE3	12	Z	100	6	19.1	-11.2
LRYQE3	00	Z	100	6	11.6	-10.6
UXK5JT	12	Z	100	4	9.1	4.1
UXK5JT	00	Z	100	5	8.3	-2.2
XQFJRG	12	Z	100	5	9.1	-7.8
XQFJRG	00	Z	100	3	20.1	5.3
YLV96W	12	Z	100	12	21.9	4.7
YLV96W	00	Z	100	8	10.0	-6.6
ZSNO	12	Z	100	3	16.5	15.3
ZVQEQC	12	Z	100	12	4.4	2.1

3.2.26 Table 11 - Radiosonde monitoring statistics (SHIPs): Wind (m/s)

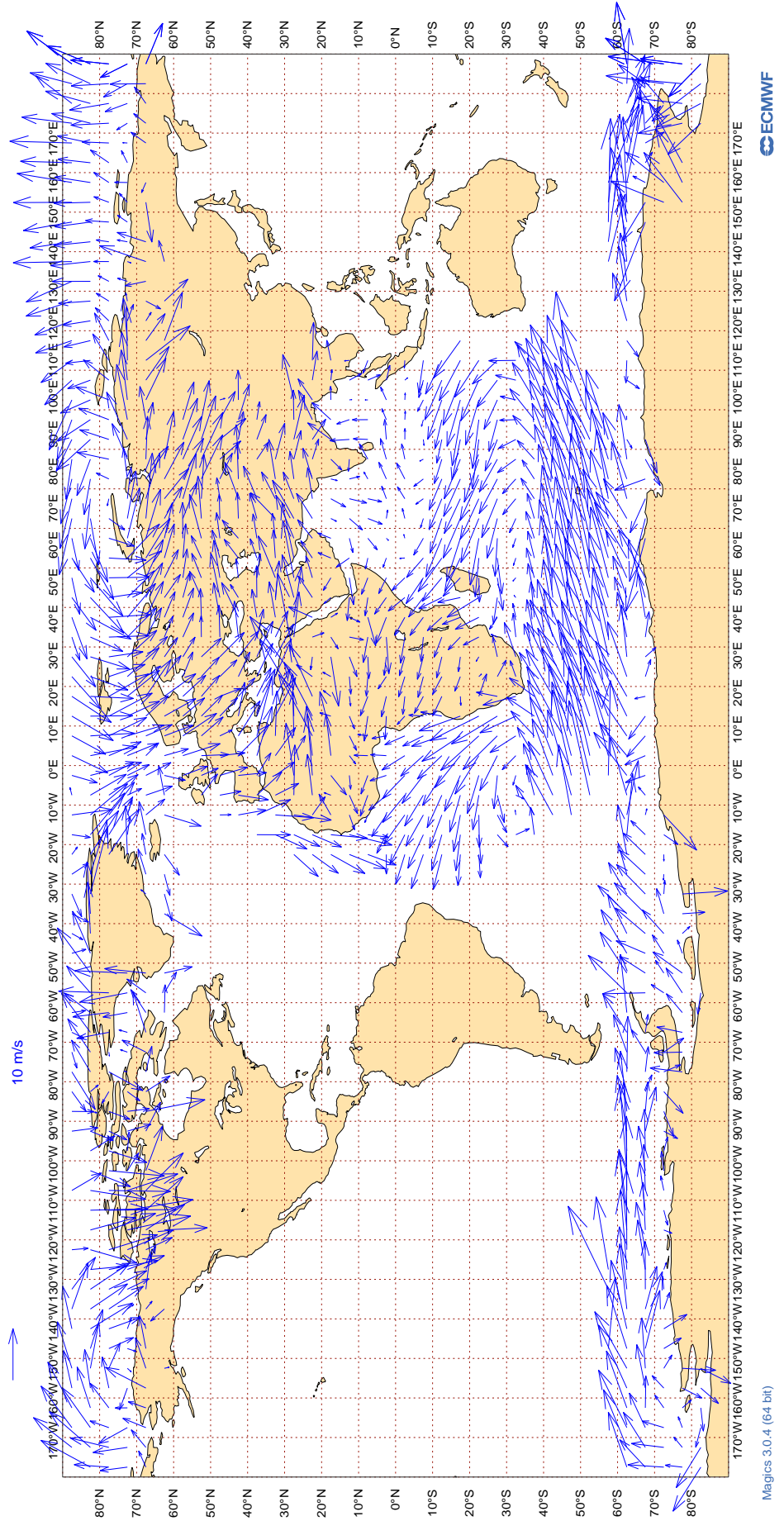
RADIOSONDE MONITORING STATISTICS (SHIPS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERT	00	V	100	2	0.9	0.5	0.5
2EERT	12	V	100	4	3.0	0.1	-0.6
7JUNA4	12	V	100	7	4.0	-1.0	0.0
7JUNA4	00	V	100	1	2.1	-1.7	-1.3
ASDE09	12	V	100	5	2.3	-0.6	0.4
BPMWB2	12	V	100	2	2.6	2.2	-0.3
BPMWB2	00	V	100	3	3.1	-0.1	1.0
DBLK	12	V	100	25	3.0	-0.3	-1.0
HTXUH4	12	V	100	4	3.6	-0.4	1.9
HTXUH4	00	V	100	4	1.7	0.5	0.1
JNKN7J	12	V	100	6	2.1	0.3	0.4
JNKN7J	00	V	100	11	3.0	0.4	0.1
KJJF9X	12	V	100	7	4.3	-0.6	-0.2
KJJF9X	00	V	100	5	3.2	1.2	1.4
KMPLHP	00	V	100	8	3.5	1.0	-1.0
KMPLHP	12	V	100	5	1.5	-0.6	-0.3
LRYQE3	12	V	100	6	2.9	-1.0	-1.6
LRYQE3	00	V	100	6	2.1	0.7	0.4
UXK5JT	12	V	100	4	3.7	0.7	-1.6
UXK5JT	00	V	100	5	1.6	0.0	-0.2
XQFJRG	12	V	100	5	2.0	-0.6	-0.7
XQFJRG	00	V	100	2	4.4	1.9	-2.9
YLV96W	12	V	100	12	2.9	-0.5	0.2
YLV96W	00	V	100	8	2.7	0.0	1.1
ZSNO	12	V	100	3	3.8	-0.7	1.6
ZVQEQC	12	V	100	12	4.5	-0.8	1.4

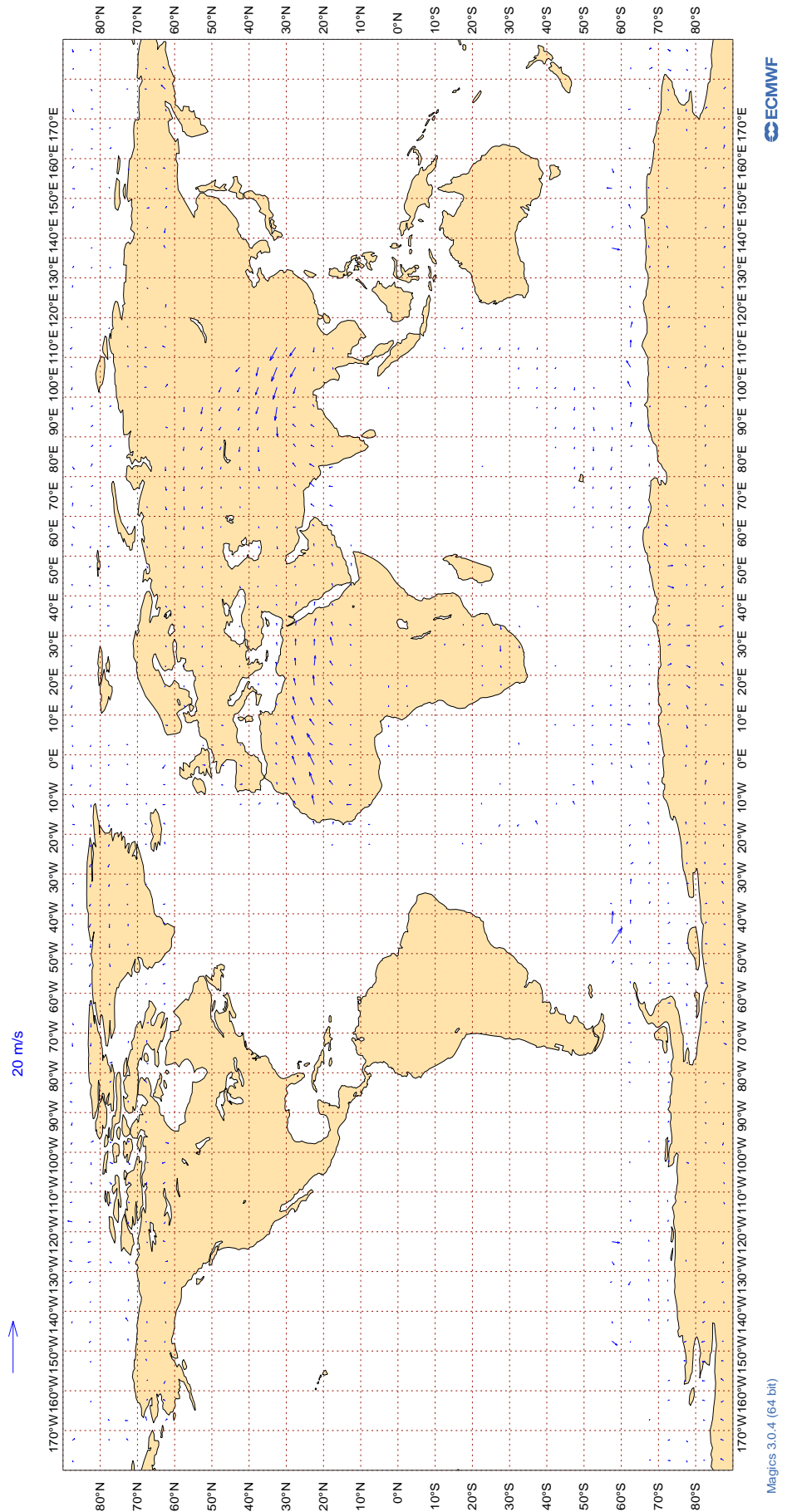
3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

Figure 14
ECMWF Monitoring Statistics: Apr 2022
AMV Winds: 700-1000hPa
Mean Observed Wind



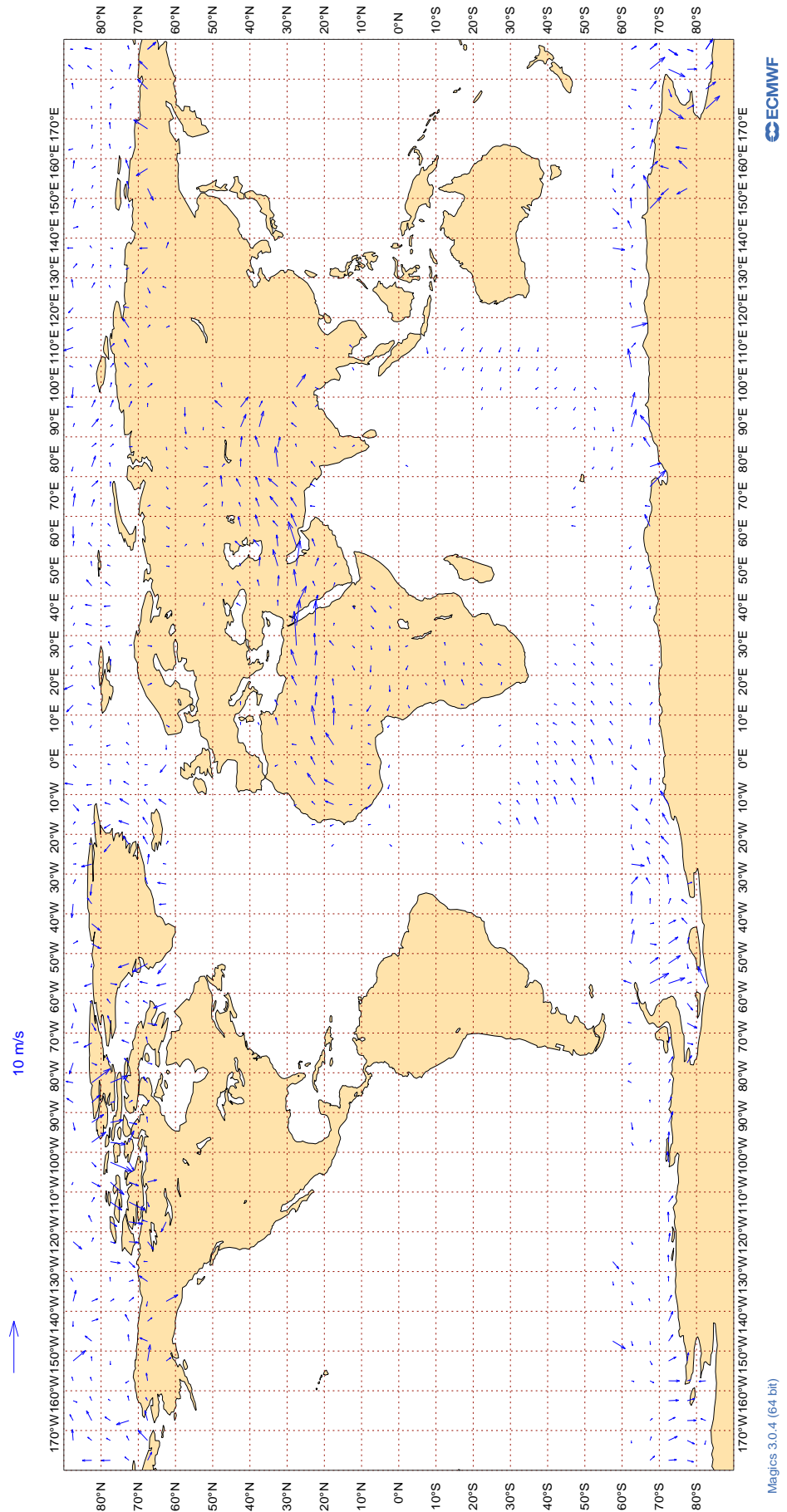
3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

Figure 15
ECMWF Monitoring Statistics: Apr 2022
AMV Winds: 150- 400hPa
Wind bias: Observation - FG



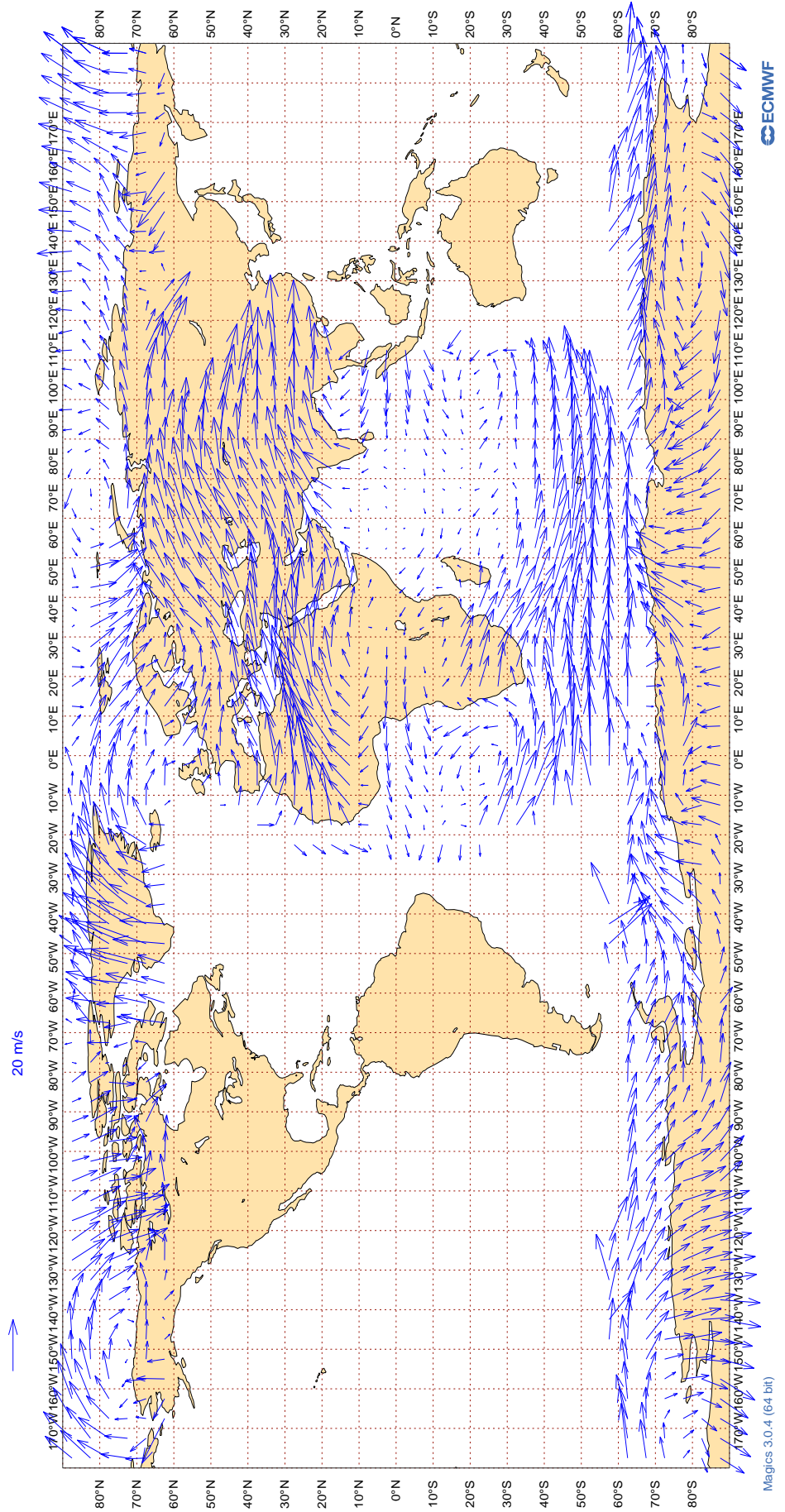
3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

Figure 16
ECMWF Monitoring Statistics: Apr 2022
AMV Winds: 700-1000hPa
Wind bias: Observation - FG



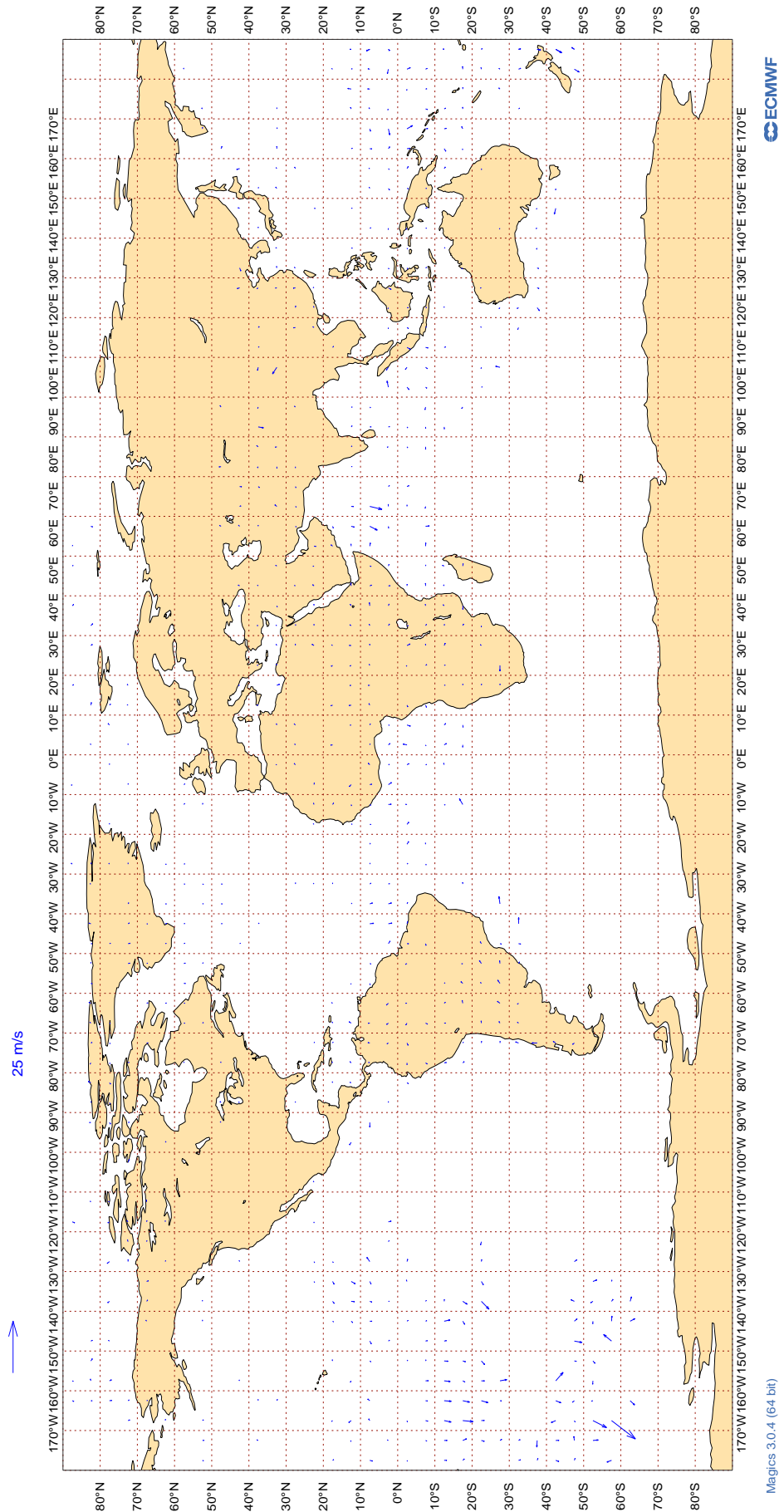
3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17
ECMWF Monitoring Statistics: Apr 2022
AMV Winds: 150- 400hPa
Mean Observed Wind



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

Figure 18
ECMWF Monitoring Statistics: Apr 2022
Aircraft Winds: 150- 300hPa
Wind bias: Observation - FG



3.2.32 Table 12 - Airep Monitoring Statistics For Airline Carriers (Global)

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : VECTOR WIND (M/S)
 AREA : GLOBAL
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20

TIME = 99 => AVERAGE OF ALL OBSERVATIONS
 GROSS ERROR LIMIT ON VECTOR WIND = 40 M/S

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
AAB	99	V	300-150	105	0	0	3.6	-0.2
AAL	99	V	300-150	42370	2	0	5.5	0.2
AAR	99	V	300-150	192	0	0	3.7	-0.4
ABB	99	V	300-150	1696	0	0	3.3	0.2
ABD	99	V	300-150	1166	0	0	3.8	0.1
ABP	99	V	300-150	160	0	0	3.6	0.8
ABX	99	V	300-150	260	0	0	3.4	-0.0
ACA	99	V	300-150	19343	1	0	5.3	0.1
ACI	99	V	300-150	242	0	0	4.5	1.0
AEA	99	V	300-150	903	8	0	7.8	0.5
AFR	99	V	300-150	32814	0	0	3.8	0.2
AHO	99	V	300-150	500	0	0	3.6	0.3
AIC	99	V	300-150	2279	7	0	6.9	-0.0
AIZ	99	V	300-150	24	0	0	2.3	0.5
AJT	99	V	300-150	911	0	0	3.5	-0.1
ALK	99	V	300-150	2238	0	0	3.1	0.5
AMX	99	V	300-150	2956	6	0	7.6	0.3
ANZ	99	V	300-150	10639	3	0	6.3	0.5
AOJ	99	V	300-150	94	0	0	2.9	0.3
ASA	99	V	300-150	23	0	0	4.9	-0.3
ASL	99	V	300-150	417	0	0	3.2	0.4
ASY	99	V	300-150	155	0	0	4.9	0.5
ATC	99	V	300-150	121	6	0	10.6	0.1
ATN	99	V	300-150	163	0	0	4.0	0.4
AUA	99	V	300-150	4306	0	0	3.8	0.3
AVA	99	V	300-150	559	6	1	5.6	0.1
AWC	99	V	300-150	218	0	0	2.9	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
AXA	99	V	300-150	33	0	0	3.2	-0.1
AXB	99	V	300-150	31	0	0	3.1	1.2
AXM	99	V	300-150	196	0	3	5.3	1.5
AXY	99	V	300-150	206	0	0	3.2	0.1
AYJ	99	V	300-150	39	0	3	3.3	-0.8
AYY	99	V	300-150	79	0	0	5.0	1.2
AZG	99	V	300-150	702	0	0	3.4	0.0
BAF	99	V	300-150	28	0	0	3.8	-1.1
BAW	99	V	300-150	40285	1	0	4.8	0.2
BBC	99	V	300-150	526	11	0	4.1	0.8
BCS	99	V	300-150	2584	0	0	3.3	0.3
BEL	99	V	300-150	1392	0	0	3.1	0.2
BFY	99	V	300-150	187	0	0	3.3	0.1
BLU	99	V	300-150	128	0	0	3.8	-0.3
BLX	99	V	300-150	277	0	0	7.6	0.2
BMW	99	V	300-150	45	0	0	3.2	0.4
BOX	99	V	300-150	3288	0	0	3.2	0.2
BOX	99	V	300-150	105	0	0	2.9	0.1
BRJ	99	V	300-150	76	0	0	3.5	0.1
BRK	99	V	300-150	26	0	0	8.4	1.4
BTX	99	V	300-150	72	0	0	3.2	0.3
BVR	99	V	300-150	63	0	0	3.6	0.2
CAL	99	V	300-150	362	0	0	3.8	0.9
CAZ	99	V	300-150	128	0	0	3.0	0.3
CEB	99	V	300-150	163	0	0	2.9	0.4
CEF	99	V	300-150	94	0	0	3.1	0.2
CES	99	V	300-150	33	0	0	4.0	0.6
CFC	99	V	300-150	415	0	0	4.1	0.1
CFG	99	V	300-150	2748	0	0	4.1	0.2
CHG	99	V	300-150	865	0	0	4.0	0.2
CHH	99	V	300-150	104	3	0	6.2	0.0
CJT	99	V	300-150	2730	0	0	3.7	0.1
CKS	99	V	300-150	1059	0	0	3.8	0.4
CLE	99	V	300-150	28	0	0	3.6	1.6
CLF	99	V	300-150	135	0	0	3.1	0.0
CLX	99	V	300-150	5067	0	0	3.6	-0.0
CMB	99	V	300-150	1554	0	0	3.6	0.0
CNV	99	V	300-150	146	0	0	3.2	0.3
CPA	99	V	300-150	254	0	1	3.5	0.6
CPI	99	V	300-150	36	0	0	4.6	-0.5
CRL	99	V	300-150	1424	0	0	3.4	0.1
CRV	99	V	300-150	51	0	0	3.5	0.7
CSC	99	V	300-150	113	0	0	2.7	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CSN	99	V	300-150	205	3	0	8.2	0.2
CTM	99	V	300-150	97	0	0	3.3	0.5
DAH	99	V	300-150	460	0	0	3.5	0.2
DAL	99	V	300-150	38966	0	0	3.3	0.2
DCS	99	V	300-150	121	0	0	3.8	-0.2
DGX	99	V	300-150	102	0	0	3.0	-0.0
DHK	99	V	300-150	1924	0	0	3.5	0.2
DHX	99	V	300-150	74	0	0	3.2	0.7
DJT	99	V	300-150	1171	0	0	3.5	0.3
DLH	99	V	300-150	25141	0	0	3.2	0.1
DSO	99	V	300-150	31	0	0	3.2	1.0
DTA	99	V	300-150	61	0	0	3.3	0.3
DUB	99	V	300-150	94	0	0	3.9	-0.2
EAL	99	V	300-150	144	0	0	3.2	0.6
EAU	99	V	300-150	84	0	1	2.6	0.0
ECC	99	V	300-150	33	0	0	3.2	0.7
EDG	99	V	300-150	105	0	0	4.1	-0.1
EDW	99	V	300-150	1575	0	0	3.3	0.3
EIN	99	V	300-150	12794	0	0	3.2	0.3
EJM	99	V	300-150	795	0	0	3.6	-0.0
ELY	99	V	300-150	4372	6	0	8.1	0.1
ETD	99	V	300-150	8207	6	0	7.8	0.2
ETH	99	V	300-150	4381	2	0	5.5	0.1
EUK	99	V	300-150	1685	0	0	3.2	0.1
EVE	99	V	300-150	39	0	0	3.3	-0.4
EXS	99	V	300-150	82	0	0	2.7	-0.3
EXV	99	V	300-150	37	0	0	3.6	1.2
FBU	99	V	300-150	1546	0	0	3.9	0.3
FDX	99	V	300-150	7993	0	0	3.2	0.2
FIN	99	V	300-150	2245	0	0	3.0	0.2
FJI	99	V	300-150	1560	0	0	4.3	0.8
FLI	99	V	300-150	33	0	0	4.3	0.8
FPY	99	V	300-150	606	0	0	3.1	0.0
FSY	99	V	300-150	28	0	0	2.7	0.7
FWI	99	V	300-150	2186	0	0	3.3	0.2
FXT	99	V	300-150	56	0	0	2.4	-0.2
FYG	99	V	300-150	122	0	0	4.0	0.2
GAF	99	V	300-150	219	0	0	3.4	-0.2
GBG	99	V	300-150	69	0	0	3.0	-0.0
GCK	99	V	300-150	74	0	0	3.5	-0.3
GEC	99	V	300-150	1848	0	0	3.3	0.2
GES	99	V	300-150	152	2	0	3.8	0.7
GFA	99	V	300-150	332	14	0	7.1	0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
GIA	99	V	300-150	326	0	0	3.4	0.2
GJE	99	V	300-150	42	0	0	2.9	0.2
GJI	99	V	300-150	23	0	0	4.3	2.5
GKY	99	V	300-150	51	0	0	2.5	-0.0
GLJ	99	V	300-150	47	0	0	4.3	1.3
GMA	99	V	300-150	79	0	0	3.1	0.9
GTI	99	V	300-150	2304	0	0	3.7	0.0
HAL	99	V	300-150	316	0	0	3.8	0.4
HFM	99	V	300-150	22	0	5	4.4	2.3
HFY	99	V	300-150	88	0	0	3.4	-0.3
HKC	99	V	300-150	50	0	0	3.8	0.6
HRN	99	V	300-150	68	0	0	3.8	0.6
HRT	99	V	300-150	54	0	0	3.2	-0.2
HUA	99	V	300-150	119	0	0	3.6	-0.1
HYP	99	V	300-150	70	0	0	3.0	0.1
IAM	99	V	300-150	45	0	0	4.1	0.8
IBE	99	V	300-150	4973	0	0	3.4	0.2
ICE	99	V	300-150	4635	0	0	3.2	0.3
ICL	99	V	300-150	316	0	0	3.4	0.3
ICV	99	V	300-150	478	0	0	3.6	0.3
IFA	99	V	300-150	263	0	1	3.3	-0.0
IJM	99	V	300-150	189	0	0	4.3	0.5
ITY	99	V	300-150	4580	0	0	3.3	0.3
IXR	99	V	300-150	27	0	0	3.0	-0.6
JAF	99	V	300-150	1275	4	0	6.4	0.1
JAL	99	V	300-150	32	3	0	10.3	-0.3
JAS	99	V	300-150	152	8	0	9.7	0.5
JBU	99	V	300-150	2116	0	0	3.4	0.1
JCO	99	V	300-150	57	0	0	2.4	0.2
JEF	99	V	300-150	34	0	0	2.8	0.0
JET	99	V	300-150	83	0	0	3.9	1.0
JME	99	V	300-150	83	0	0	3.3	-0.1
JNY	99	V	300-150	62	0	0	3.3	-0.3
JST	99	V	300-150	91	3	3	5.5	0.6
KAC	99	V	300-150	1086	0	0	3.1	0.3
KAF	99	V	300-150	39	0	0	4.1	0.1
KAI	99	V	300-150	106	2	0	3.6	0.3
KAL	99	V	300-150	163	3	0	5.5	0.2
KAY	99	V	300-150	117	0	1	2.9	0.4
KCE	99	V	300-150	33	0	0	2.9	-0.3
KFE	99	V	300-150	54	0	0	3.8	-0.1
KIW	99	V	300-150	33	0	0	6.0	1.7
KLM	99	V	300-150	18243	2	0	5.7	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
KOC	99	V	300-150	49	0	0	3.2	0.6
KQA	99	V	300-150	150	7	0	8.0	0.5
LAN	99	V	300-150	578	7	0	7.2	0.3
LCO	99	V	300-150	297	0	0	3.5	-0.4
LDX	99	V	300-150	137	0	0	2.9	-0.3
LEA	99	V	300-150	34	0	0	2.8	-0.9
LGT	99	V	300-150	132	0	0	3.8	-0.2
LMJ	99	V	300-150	24	0	0	3.1	-0.1
LNI	99	V	300-150	421	0	0	3.1	0.5
LNK	99	V	300-150	98	0	0	3.6	0.3
LOT	99	V	300-150	3583	3	0	7.9	0.2
LUC	99	V	300-150	36	0	0	2.8	0.3
LXJ	99	V	300-150	404	0	1	3.4	0.3
LYX	99	V	300-150	37	0	0	3.3	0.3
MAA	99	V	300-150	236	0	0	2.9	0.1
MAS	99	V	300-150	2257	0	0	3.5	0.6
MAU	99	V	300-150	298	0	0	4.3	0.9
MGE	99	V	300-150	31	0	0	4.9	-0.1
MHV	99	V	300-150	52	0	0	4.8	0.5
MJF	99	V	300-150	56	0	0	2.9	0.0
MLM	99	V	300-150	83	0	0	3.8	0.5
MLT	99	V	300-150	41	0	0	3.4	0.0
MMD	99	V	300-150	358	0	0	3.1	0.3
MMZ	99	V	300-150	34	0	0	3.5	-0.1
MNB	99	V	300-150	235	0	0	3.2	-0.0
MPH	99	V	300-150	698	0	0	3.7	-0.4
MSR	99	V	300-150	1917	3	0	5.5	0.0
NCA	99	V	300-150	34	0	0	3.0	-0.1
NCR	99	V	300-150	418	0	0	3.2	0.2
NJE	99	V	300-150	886	0	0	3.3	0.4
NOS	99	V	300-150	851	6	0	7.7	-0.1
NSP	99	V	300-150	168	0	0	8.0	1.5
OAE	99	V	300-150	933	0	0	4.1	-0.1
OCN	99	V	300-150	3278	0	0	3.2	0.2
OLI	99	V	300-150	49	0	0	3.4	0.9
OMA	99	V	300-150	721	9	0	7.9	0.2
PAC	99	V	300-150	591	0	0	3.7	-0.1
PAL	99	V	300-150	322	0	0	3.2	0.1
PAT	99	V	300-150	32	0	0	3.0	0.8
PAV	99	V	300-150	22	0	0	3.8	1.1
PIA	99	V	300-150	129	0	0	3.0	0.4
PLF	99	V	300-150	91	0	0	2.7	-0.2
PLM	99	V	300-150	152	0	1	2.7	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
PVA	99	V	300-150	249	0	0	3.2	0.0
PVG	99	V	300-150	116	0	0	3.0	0.0
QFA	99	V	300-150	4533	3	0	6.7	0.6
QQE	99	V	300-150	255	0	0	3.3	0.2
QTR	99	V	300-150	25325	1	0	4.2	0.2
RAM	99	V	300-150	436	8	1	7.8	0.1
RAP	99	V	300-150	38	0	0	5.1	1.4
RBA	99	V	300-150	37	8	0	5.0	0.2
RCH	99	V	300-150	4529	0	0	4.5	0.3
RHH	99	V	300-150	80	0	0	8.5	-0.5
RJA	99	V	300-150	1723	3	0	8.3	0.2
ROJ	99	V	300-150	26	0	0	3.2	0.1
RRR	99	V	300-150	210	0	0	4.2	0.0
RYR	99	V	300-150	149	0	0	3.0	0.3
RZO	99	V	300-150	150	0	3	4.6	1.0
SAM	99	V	300-150	197	0	0	3.7	0.2
SAS	99	V	300-150	4683	0	0	3.0	0.1
SAZ	99	V	300-150	27	0	0	4.6	2.0
SCX	99	V	300-150	35	0	3	7.4	0.1
SEY	99	V	300-150	63	0	0	3.6	0.7
SHE	99	V	300-150	92	0	0	2.9	0.1
SIA	99	V	300-150	8712	0	0	3.6	0.5
SIN	99	V	300-150	23	0	0	3.2	0.8
SIO	99	V	300-150	131	0	0	3.7	0.2
SLM	99	V	300-150	138	0	0	3.4	0.2
SON	99	V	300-150	98	0	0	2.7	0.6
SPA	99	V	300-150	182	0	0	3.8	0.3
SVA	99	V	300-150	5928	2	0	4.8	0.2
SVW	99	V	300-150	291	0	0	3.3	0.2
SWR	99	V	300-150	7950	0	1	3.4	0.2
SWW	99	V	300-150	40	0	8	3.0	0.3
SYB	99	V	300-150	131	0	1	3.1	0.2
TAG	99	V	300-150	60	0	0	3.3	1.2
TAM	99	V	300-150	67	1	1	3.1	0.1
TAP	99	V	300-150	2557	0	1	3.9	0.4
TAR	99	V	300-150	147	0	0	3.2	0.3
TAX	99	V	300-150	127	0	0	3.0	0.2
TAY	99	V	300-150	506	0	0	3.7	-0.1
TBJ	99	V	300-150	20	0	0	3.7	-0.2
TEU	99	V	300-150	154	0	0	3.5	-0.4
TFF	99	V	300-150	59	0	0	3.6	0.1
TFL	99	V	300-150	1575	3	0	6.3	0.5
TGW	99	V	300-150	706	6	0	8.3	0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
THA	99	V	300-150	422	0	0	6.8	0.4
THT	99	V	300-150	3116	1	0	5.7	0.6
THY	99	V	300-150	16456	1	0	4.6	0.2
TMN	99	V	300-150	293	0	0	3.9	0.4
TOM	99	V	300-150	6631	5	0	7.6	0.2
TOW	99	V	300-150	71	0	0	3.2	0.2
TPA	99	V	300-150	127	0	0	3.3	0.4
TSC	99	V	300-150	3940	0	0	3.5	0.3
TUR	99	V	300-150	35	0	0	6.4	3.0
TVR	99	V	300-150	29	0	0	4.0	2.8
TVS	99	V	300-150	21	0	0	2.8	-0.5
TWY	99	V	300-150	793	0	0	3.6	0.4
UAE	99	V	300-150	23122	0	0	3.3	0.3
UAF	99	V	300-150	25	0	0	3.5	0.5
UAL	99	V	300-150	62140	2	1	5.8	0.2
ULC	99	V	300-150	72	0	0	3.9	0.1
UPS	99	V	300-150	5562	0	0	3.5	-0.0
URO	99	V	300-150	139	0	0	4.1	0.2
UZB	99	V	300-150	60	3	0	11.5	-0.0
VCG	99	V	300-150	86	0	0	3.4	0.3
VCJ	99	V	300-150	41	0	0	2.4	1.1
VIR	99	V	300-150	19647	2	0	6.1	0.1
VJT	99	V	300-150	1826	0	0	3.3	0.4
VLJ	99	V	300-150	29	0	0	2.5	0.4
VMP	99	V	300-150	134	0	0	6.0	1.5
VTI	99	V	300-150	127	0	0	2.8	0.4
VXS	99	V	300-150	35	0	0	3.6	0.0
WDY	99	V	300-150	20	0	0	4.3	0.7
WFL	99	V	300-150	57	0	0	4.0	0.1
WJA	99	V	300-150	2221	3	0	7.7	0.2
WRC	99	V	300-150	102	0	0	3.7	0.6
WWI	99	V	300-150	72	0	0	4.0	0.7
XRO	99	V	300-150	262	0	0	4.0	0.1
w	99	V	300-150	3988	0	0	4.0	0.3

4 EUCOS Area Monitoring Statistics

The following tables provide information on the quality of upper-air data and surface DRIFTER data over the EUCOS area as received at ECMWF during the month.

Tables 13, 14 (50 hPa level), 15, 16 (100 hPa level) 17, 18 (500 hPa level) 19 and 20 (850 hPa level) provide quality statistics for all TEMPSHIPS and PILOTSHIPS received during the month in the area 10°N - 90°N, 70°W - 40°E and for TEMPS and PILOTS from selected land stations within the same area. The statistics are in the same form as tables 10 and 11.

Tables 21-23 provides quality statistics of pressure and wind for all DRIFTER reports received in the area 10°N - 90°N, 70°W - 40°E. The statistics are in the same form as tables 4-6.

4.1 Table 13 - Radiosonde Monitoring Statistics (EUCOS): 50 hPa Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 50 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	50	30	13.1	-1.5
01001	00	Z	50	30	12.6	-1.9
01028	12	Z	50	33	5.9	-2.5
01028	00	Z	50	29	7.2	-3.7
01400	12	Z	50	11	70.7	67.5
01400	00	Z	50	15	79.7	78.9
01415	00	Z	50	28	9.5	4.3
01415	12	Z	50	29	9.6	2.6
02365	00	Z	50	24	6.3	4.0
02365	12	Z	50	27	6.6	-1.4
02836	12	Z	50	32	6.8	-1.5
02836	00	Z	50	30	5.6	0.8
02963	12	Z	50	30	7.2	-2.0
02963	00	Z	50	23	6.3	3.9
03005	12	Z	50	30	5.7	-2.7
03005	00	Z	50	27	5.3	-0.6
03238	00	Z	50	29	7.4	3.3
03238	12	Z	50	3	4.5	3.2
03808	12	Z	50	30	6.2	-1.0
03808	00	Z	50	27	6.2	3.8
03918	12	Z	50	3	5.5	1.9
03918	00	Z	50	29	8.6	6.7
03953	12	Z	50	30	13.1	-5.8
03953	00	Z	50	30	11.8	-7.5
04018	12	Z	50	28	5.3	-1.2
04018	00	Z	50	27	6.2	0.2
04220	12	Z	50	29	7.2	1.5
04220	00	Z	50	30	8.6	0.0
04270	12	Z	50	21	10.8	-4.9
04270	00	Z	50	22	11.4	-5.8
04320	12	Z	50	25	12.1	8.1
04320	00	Z	50	24	9.4	4.2
04339	12	Z	50	22	10.8	9.1
04339	00	Z	50	27	13.1	3.0
04360	00	Z	50	24	19.5	-11.6
04360	12	Z	50	23	30.8	0.1
06011	12	Z	50	26	19.6	18.5
06011	00	Z	50	29	9.0	3.2
06260	12	Z	50	3	2.9	0.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	50	30	6.9	1.1
06610	12	Z	50	30	7.2	2.5
06610	00	Z	50	30	8.6	4.3
07110	00	Z	50	26	14.2	-8.7
07110	12	Z	50	30	34.7	2.1
07510	00	Z	50	29	16.0	-9.1
07510	12	Z	50	30	30.6	9.0
07645	00	Z	50	30	30.4	2.9
07645	12	Z	50	30	16.0	-12.0
07761	12	Z	50	29	16.9	-5.6
07761	00	Z	50	30	16.9	-6.4
08001	00	Z	50	27	10.0	8.1
08001	12	Z	50	30	8.7	5.8
08221	00	Z	50	28	15.1	13.7
08221	12	Z	50	29	9.7	6.5
08302	00	Z	50	30	6.6	2.5
08302	12	Z	50	30	11.2	-6.9
08508	12	Z	50	29	9.9	3.3
08522	12	Z	50	28	6.3	1.1
10035	00	Z	50	30	14.4	13.2
10035	12	Z	50	29	9.7	7.9
10393	12	Z	50	30	7.7	-1.5
10393	00	Z	50	28	6.7	0.7
10410	12	Z	50	28	7.6	-2.6
10410	00	Z	50	30	6.3	1.1
10739	00	Z	50	30	10.1	4.4
10739	12	Z	50	29	8.6	4.0
11035	00	Z	50	26	10.1	4.7
11035	12	Z	50	30	10.6	4.8
12982	12	Z	50	31	6.2	2.9
12982	00	Z	50	29	9.7	7.6
16245	12	Z	50	30	9.1	0.8
16245	00	Z	50	29	10.4	8.7
16429	00	Z	50	30	11.7	7.1
16429	12	Z	50	30	6.9	-0.2
16622	00	Z	50	23	17.6	15.9
16754	00	Z	50	27	14.2	11.7
17607	12	Z	50	13	10.5	1.0
26435	12	Z	50	15	6.0	-0.4
2EERV	00	Z	50	2	8.7	-7.8
2EERV	12	Z	50	4	9.5	-9.3
60018	12	Z	50	30	6.5	-0.7
60018	00	Z	50	30	6.8	3.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	50	9	68.6	29.0
7JUNA4	00	Z	50	2	19.0	-12.0
ASDE09	12	Z	50	4	11.3	11.2
BPMWB2	12	Z	50	2	41.2	29.8
BPMWB2	00	Z	50	3	26.2	12.5
HTXUH4	12	Z	50	4	39.8	34.2
HTXUH4	00	Z	50	4	21.5	13.2
JNKN7J	12	Z	50	6	36.3	33.0
JNKN7J	00	Z	50	10	30.1	27.4
KJJF9X	12	Z	50	7	16.7	15.6
KJJF9X	00	Z	50	5	18.0	17.2
KMPLHP	00	Z	50	8	34.9	33.5
KMPLHP	12	Z	50	4	84.7	61.4
LRYQE3	12	Z	50	4	27.3	-24.7
LRYQE3	00	Z	50	6	13.8	-12.3
UXK5JT	12	Z	50	3	19.4	12.3
UXK5JT	00	Z	50	5	10.4	5.6
XQFJRG	12	Z	50	4	15.6	-14.1
XQFJRG	00	Z	50	1	6.7	6.7
YLV96W	12	Z	50	9	24.2	4.9
YLV96W	00	Z	50	7	14.8	-6.7

4.2 Table 14 - Radiosonde Monitoring Statistics (EUCOS):50 hPa Wind (m/s)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 50 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	50	30	2.2	-0.3	0.1
01001	00	V	50	24	2.2	-0.3	0.1
01028	12	V	50	29	2.6	-0.1	-0.4
01028	00	V	50	24	2.8	-0.2	-0.3
01400	12	V	50	10	2.9	0.3	0.4
01400	00	V	50	11	2.3	-0.1	0.3
01415	00	V	50	22	2.5	-0.7	0.3
01415	12	V	50	28	3.2	0.6	0.1
02365	00	V	50	18	2.6	0.0	-0.4
02365	12	V	50	27	2.8	-0.4	-0.5
02836	12	V	50	30	3.0	-0.2	0.2
02836	00	V	50	22	3.2	0.0	-0.2
02963	12	V	50	29	2.5	0.0	-0.6
02963	00	V	50	18	2.4	-0.6	-0.6
03005	12	V	50	29	3.0	0.5	-0.1
03005	00	V	50	22	2.1	-0.1	0.0
03238	00	V	50	22	3.8	-0.5	0.0
03238	12	V	50	3	3.4	-1.5	0.3
03808	12	V	50	30	2.7	0.5	-0.1
03808	00	V	50	22	3.2	-0.4	-0.3
03918	12	V	50	3	3.7	1.7	2.3
03918	00	V	50	21	2.4	-0.4	-0.5
03953	12	V	50	30	2.7	-0.3	0.3
03953	00	V	50	26	2.9	0.5	0.2
04018	12	V	50	28	3.0	-0.1	0.4
04018	00	V	50	21	2.1	0.0	-0.6
04220	12	V	50	29	2.0	0.1	-0.3
04220	00	V	50	27	2.1	0.4	-0.1
04270	12	V	50	21	2.5	0.3	-0.1
04270	00	V	50	19	1.8	0.2	-0.5
04320	12	V	50	25	2.8	0.2	-0.6
04320	00	V	50	18	3.3	-0.5	0.1
04339	12	V	50	22	3.0	-0.2	-0.5
04339	00	V	50	21	2.6	-0.4	-0.7
04360	00	V	50	22	2.5	0.5	-0.1
04360	12	V	50	23	2.5	-0.1	0.0
06011	12	V	50	26	2.4	0.6	0.3
06011	00	V	50	26	2.8	-0.5	-0.3
06260	12	V	50	3	3.3	1.5	1.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	50	22	3.1	-0.3	-0.1
06610	12	V	50	30	3.0	0.5	0.2
06610	00	V	50	21	3.3	-0.3	-0.3
07110	00	V	50	23	2.9	-0.4	-0.5
07110	12	V	50	30	3.0	0.1	0.6
07510	00	V	50	23	3.3	-0.7	-0.2
07510	12	V	50	30	3.4	-0.1	-0.2
07645	00	V	50	23	4.0	-0.5	0.0
07645	12	V	50	30	3.1	-0.2	-0.4
07761	12	V	50	29	3.7	-0.2	-1.1
07761	00	V	50	27	3.8	0.8	-1.0
08001	00	V	50	22	2.9	1.0	0.2
08001	12	V	50	30	3.3	0.3	0.1
08221	00	V	50	21	3.5	1.1	-0.1
08221	12	V	50	29	2.8	-0.3	0.2
08302	00	V	50	26	3.1	-0.2	-0.3
08302	12	V	50	30	3.9	-0.2	-1.2
08508	12	V	50	29	1.9	-0.4	-0.4
08522	12	V	50	28	3.3	0.2	0.2
10035	00	V	50	29	3.3	0.3	0.1
10035	12	V	50	29	2.8	-0.1	-0.1
10393	12	V	50	30	2.9	-0.4	-0.2
10393	00	V	50	27	3.2	0.1	-0.3
10410	12	V	50	28	2.2	0.1	-0.2
10410	00	V	50	28	2.8	0.0	0.2
10739	00	V	50	29	3.1	-0.2	-1.5
10739	12	V	50	28	3.4	0.8	-0.1
11035	00	V	50	21	3.5	0.4	-1.2
11035	12	V	50	30	3.4	0.4	-0.4
12982	12	V	50	30	3.1	0.7	-0.7
12982	00	V	50	24	2.9	0.1	-0.1
16245	12	V	50	30	3.7	0.4	-0.6
16245	00	V	50	22	3.7	-0.3	-0.2
16429	00	V	50	26	4.7	-1.0	0.3
16429	12	V	50	30	4.5	-0.5	0.6
16622	00	V	50	17	4.1	1.9	0.1
16754	00	V	50	21	4.6	0.5	-1.2
17607	12	V	50	0	0.0	0.0	0.0
26435	12	V	50	15	2.5	-0.2	-0.8
2EERV	00	V	50	2	3.3	-1.8	0.8
2EERV	12	V	50	4	2.8	-0.6	0.1
60018	12	V	50	30	3.5	0.0	0.3
60018	00	V	50	23	3.8	-0.6	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	50	9	3.9	-0.6	-0.4
7JUNA4	00	V	50	2	1.9	1.5	0.5
ASDE09	12	V	50	4	2.6	-1.1	1.4
BPMWB2	12	V	50	2	7.0	4.1	4.0
BPMWB2	00	V	50	2	2.5	0.2	1.7
HTXUH4	12	V	50	4	2.7	-1.9	-0.2
HTXUH4	00	V	50	4	4.3	2.5	0.7
JNKN7J	12	V	50	6	3.3	1.1	1.0
JNKN7J	00	V	50	10	3.0	-0.4	-0.1
KJJF9X	12	V	50	7	4.3	0.3	-1.2
KJJF9X	00	V	50	5	2.0	0.0	0.2
KMPLHP	00	V	50	8	2.2	-0.1	-0.4
KMPLHP	12	V	50	4	2.6	1.0	1.2
LRYQE3	12	V	50	4	1.9	0.2	0.3
LRYQE3	00	V	50	6	1.8	0.5	1.5
UXK5JT	12	V	50	3	1.9	0.3	1.4
UXK5JT	00	V	50	5	4.1	-0.4	1.7
XQFJRG	12	V	50	4	2.1	0.5	-1.0
XQFJRG	00	V	50	1	3.2	0.2	-3.2
YLV96W	12	V	50	9	3.1	-0.1	0.2
YLV96W	00	V	50	7	2.5	1.0	-0.2

4.3 Table 15 - Radiosonde Monitoring Statistics (EUCOS): 100 hPa Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 100 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	100	30	12.4	-6.3
01001	00	Z	100	30	10.8	-6.9
01028	12	Z	100	33	6.4	-5.0
01028	00	Z	100	29	6.7	-5.1
01400	12	Z	100	19	69.9	67.7
01400	00	Z	100	20	75.2	75.0
01415	00	Z	100	28	6.1	-0.1
01415	12	Z	100	29	5.7	-0.4
02365	00	Z	100	28	4.1	-0.7
02365	12	Z	100	28	5.6	-2.9
02836	12	Z	100	32	5.7	-1.9
02836	00	Z	100	30	4.3	-3.2
02963	12	Z	100	30	4.7	-2.4
02963	00	Z	100	23	3.6	-0.4
03005	12	Z	100	31	5.9	-4.6
03005	00	Z	100	29	4.9	-3.5
03238	00	Z	100	30	5.8	0.4
03238	12	Z	100	3	1.9	0.2
03808	12	Z	100	30	5.9	-3.2
03808	00	Z	100	29	5.0	0.0
03918	12	Z	100	3	2.1	1.9
03918	00	Z	100	29	5.9	2.7
03953	12	Z	100	30	12.3	-7.2
03953	00	Z	100	30	12.6	-10.6
04018	12	Z	100	28	5.4	-3.9
04018	00	Z	100	30	5.8	-2.7
04220	12	Z	100	29	7.3	-1.1
04220	00	Z	100	30	8.0	-2.0
04270	12	Z	100	26	12.7	-9.3
04270	00	Z	100	28	12.9	-10.4
04320	12	Z	100	28	8.0	3.5
04320	00	Z	100	29	8.2	-0.4
04339	12	Z	100	26	5.6	1.0
04339	00	Z	100	29	12.2	-2.0
04360	00	Z	100	24	19.3	-15.4
04360	12	Z	100	23	20.5	-5.3
06011	12	Z	100	27	12.1	11.3
06011	00	Z	100	30	4.3	1.7
06260	12	Z	100	3	6.1	-5.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	100	30	4.8	-1.4
06610	12	Z	100	30	4.4	0.1
06610	00	Z	100	30	7.2	0.2
07110	00	Z	100	28	13.8	-12.1
07110	12	Z	100	30	24.6	-4.1
07510	00	Z	100	30	13.6	-10.2
07510	12	Z	100	30	19.5	0.7
07645	00	Z	100	30	10.4	-8.2
07645	12	Z	100	30	14.4	-12.4
07761	12	Z	100	29	16.3	-11.9
07761	00	Z	100	30	18.1	-12.8
08001	00	Z	100	28	6.1	2.4
08001	12	Z	100	30	6.0	3.4
08221	00	Z	100	29	8.3	6.6
08221	12	Z	100	30	7.0	3.4
08302	00	Z	100	30	6.9	-5.2
08302	12	Z	100	30	14.3	-11.1
08508	12	Z	100	29	9.0	3.1
08522	12	Z	100	30	5.3	1.4
10035	00	Z	100	31	10.4	9.5
10035	12	Z	100	30	9.0	7.6
10393	12	Z	100	30	5.1	-2.3
10393	00	Z	100	29	5.8	-1.3
10410	12	Z	100	28	7.2	-4.3
10410	00	Z	100	30	5.9	-2.7
10739	00	Z	100	30	4.9	0.7
10739	12	Z	100	30	5.3	0.7
11035	00	Z	100	30	5.3	-0.3
11035	12	Z	100	30	8.0	-0.1
12982	12	Z	100	30	4.1	-0.1
12982	00	Z	100	30	5.6	2.3
16245	12	Z	100	30	6.7	-1.5
16245	00	Z	100	30	5.7	3.2
16429	00	Z	100	30	5.6	2.6
16429	12	Z	100	30	7.0	-2.2
16622	00	Z	100	28	17.6	8.4
16754	00	Z	100	28	11.5	8.2
17607	12	Z	100	27	7.5	0.5
26435	12	Z	100	15	5.1	-2.8
2EERVT	00	Z	100	2	11.7	-11.5
2EERVT	12	Z	100	4	11.7	-11.6
60018	12	Z	100	30	5.2	0.2
60018	00	Z	100	30	6.0	3.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	100	8	33.3	7.8
7JUNA4	00	Z	100	1	12.7	-12.7
ASDE09	12	Z	100	5	12.1	11.5
BPMWB2	12	Z	100	2	11.8	2.7
BPMWB2	00	Z	100	3	17.8	6.8
HTXUH4	12	Z	100	4	39.0	33.1
HTXUH4	00	Z	100	4	19.7	9.9
JNKN7J	12	Z	100	6	27.6	26.2
JNKN7J	00	Z	100	11	25.3	23.7
KJJF9X	12	Z	100	7	11.7	10.8
KJJF9X	00	Z	100	5	10.9	8.0
KMPLHP	00	Z	100	8	31.8	31.1
KMPLHP	12	Z	100	5	68.2	56.3
LRYQE3	12	Z	100	6	19.1	-11.2
LRYQE3	00	Z	100	6	11.6	-10.6
UXK5JT	12	Z	100	4	9.1	4.1
UXK5JT	00	Z	100	5	8.3	-2.2
XQFJRG	12	Z	100	5	9.1	-7.8
XQFJRG	00	Z	100	3	20.1	5.3
YLV96W	12	Z	100	12	21.9	4.7
YLV96W	00	Z	100	8	10.0	-6.6

4.4 Table 16 - Radiosonde Monitoring Statistics (EUCOS): 100 hPa Wind (m/s)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	100	30	2.0	0.2	0.1
01001	00	V	100	23	2.2	0.0	0.0
01028	12	V	100	29	2.5	0.0	-0.3
01028	00	V	100	24	1.9	-0.1	0.2
01400	12	V	100	15	2.1	0.1	0.4
01400	00	V	100	15	2.1	0.6	0.4
01415	00	V	100	21	2.5	0.8	-0.1
01415	12	V	100	28	2.5	0.4	0.1
02365	00	V	100	24	2.4	0.0	0.4
02365	12	V	100	28	2.5	-0.4	-0.4
02836	12	V	100	30	2.3	-0.6	0.0
02836	00	V	100	23	2.4	-0.3	0.1
02963	12	V	100	29	2.8	-0.2	-0.2
02963	00	V	100	18	2.7	-0.3	0.2
03005	12	V	100	30	2.3	0.3	0.3
03005	00	V	100	22	2.1	0.3	0.2
03238	00	V	100	23	2.8	0.9	-0.2
03238	12	V	100	3	3.5	1.5	0.8
03808	12	V	100	30	2.2	0.2	-0.2
03808	00	V	100	22	2.3	0.0	0.1
03918	12	V	100	3	2.3	0.8	-0.4
03918	00	V	100	21	3.0	0.1	0.2
03953	12	V	100	30	2.6	0.2	0.1
03953	00	V	100	26	2.5	0.1	-0.1
04018	12	V	100	28	2.2	0.4	-0.7
04018	00	V	100	27	2.5	0.0	-0.2
04220	12	V	100	29	2.9	-0.6	0.3
04220	00	V	100	25	3.7	-0.8	-0.1
04270	12	V	100	26	2.8	-0.1	0.0
04270	00	V	100	22	2.8	-0.6	-0.7
04320	12	V	100	28	2.8	0.2	0.0
04320	00	V	100	26	3.4	-0.8	-0.9
04339	12	V	100	26	2.6	0.2	-0.1
04339	00	V	100	24	2.8	-0.5	0.8
04360	00	V	100	19	2.9	-0.2	0.0
04360	12	V	100	23	2.3	0.3	0.1
06011	12	V	100	27	2.2	0.2	0.3
06011	00	V	100	27	2.1	-0.4	0.5
06260	12	V	100	3	2.1	-0.4	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	100	23	2.3	0.0	0.2
06610	12	V	100	30	3.3	0.4	0.9
06610	00	V	100	27	2.3	0.0	0.8
07110	00	V	100	23	2.3	0.4	-0.2
07110	12	V	100	30	2.0	-0.1	-0.4
07510	00	V	100	24	2.8	0.9	0.0
07510	12	V	100	30	2.2	0.1	-0.5
07645	00	V	100	23	3.5	0.7	-0.2
07645	12	V	100	30	2.7	0.1	-0.5
07761	12	V	100	29	3.6	0.8	0.2
07761	00	V	100	27	4.8	1.9	-0.8
08001	00	V	100	23	2.8	0.3	-0.3
08001	12	V	100	30	2.9	0.9	0.4
08221	00	V	100	23	2.6	0.7	-0.8
08221	12	V	100	30	2.9	0.6	0.0
08302	00	V	100	26	3.0	0.7	-0.6
08302	12	V	100	30	3.4	1.3	0.7
08508	12	V	100	29	3.3	-0.4	-0.2
08522	12	V	100	29	2.7	0.9	0.1
10035	00	V	100	30	1.9	0.4	-0.2
10035	12	V	100	30	2.1	-0.1	0.1
10393	12	V	100	30	2.3	-0.2	-0.1
10393	00	V	100	28	2.5	0.0	0.4
10410	12	V	100	27	1.9	0.1	0.2
10410	00	V	100	30	2.0	0.4	0.4
10739	00	V	100	30	2.1	0.1	0.4
10739	12	V	100	30	2.8	0.1	-0.3
11035	00	V	100	22	2.7	1.2	-0.4
11035	12	V	100	30	2.6	-0.2	0.1
12982	12	V	100	30	2.3	-0.2	0.2
12982	00	V	100	27	2.6	-0.4	-0.1
16245	12	V	100	30	3.3	0.0	0.4
16245	00	V	100	27	3.5	0.1	0.3
16429	00	V	100	26	3.6	1.0	-0.1
16429	12	V	100	30	3.3	0.2	-0.1
16622	00	V	100	22	3.8	0.6	-0.3
16754	00	V	100	21	5.5	1.2	0.1
17607	12	V	100	8	4.5	0.6	-0.8
26435	12	V	100	15	2.7	-0.2	0.3
2EERVT	00	V	100	2	0.9	0.5	0.5
2EERVT	12	V	100	4	3.0	0.1	-0.6
60018	12	V	100	30	3.3	0.1	-0.2
60018	00	V	100	23	4.2	0.6	-0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	100	7	4.0	-1.0	0.0
7JUNA4	00	V	100	1	2.1	-1.7	-1.3
ASDE09	12	V	100	5	2.3	-0.6	0.4
BPMWB2	12	V	100	2	2.6	2.2	-0.3
BPMWB2	00	V	100	3	3.1	-0.1	1.0
HTXUH4	12	V	100	4	3.6	-0.4	1.9
HTXUH4	00	V	100	4	1.7	0.5	0.1
JNKN7J	12	V	100	6	2.1	0.3	0.4
JNKN7J	00	V	100	11	3.0	0.4	0.1
KJJF9X	12	V	100	7	4.3	-0.6	-0.2
KJJF9X	00	V	100	5	3.2	1.2	1.4
KMPLHP	00	V	100	8	3.5	1.0	-1.0
KMPLHP	12	V	100	5	1.5	-0.6	-0.3
LRYQE3	12	V	100	6	2.9	-1.0	-1.6
LRYQE3	00	V	100	6	2.1	0.7	0.4
UXK5JT	12	V	100	4	3.7	0.7	-1.6
UXK5JT	00	V	100	5	1.6	0.0	-0.2
XQFJRG	12	V	100	5	2.0	-0.6	-0.7
XQFJRG	00	V	100	2	4.4	1.9	-2.9
YLV96W	12	V	100	12	2.9	-0.5	0.2
YLV96W	00	V	100	8	2.7	0.0	1.1

4.5 Table 17 - Radiosonde Monitoring Statistics (EUCOS): 500 hPa Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 500 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	500	30	9.1	-7.8
01001	00	Z	500	30	9.8	-8.4
01028	12	Z	500	31	3.7	-0.9
01028	00	Z	500	28	3.2	-2.1
01400	12	Z	500	28	78.5	77.0
01400	00	Z	500	26	77.8	77.7
01415	00	Z	500	29	4.1	3.6
01415	12	Z	500	29	6.2	5.3
02365	00	Z	500	28	3.8	1.5
02365	12	Z	500	28	3.9	2.1
02836	12	Z	500	32	3.8	0.8
02836	00	Z	500	30	3.0	-0.1
02963	12	Z	500	30	3.5	2.4
02963	00	Z	500	23	3.9	2.9
03005	12	Z	500	32	2.5	0.0
03005	00	Z	500	30	1.8	-0.8
03238	00	Z	500	30	2.2	1.7
03238	12	Z	500	3	2.7	2.5
03808	12	Z	500	30	3.4	2.0
03808	00	Z	500	29	3.5	2.2
03918	12	Z	500	3	6.3	6.2
03918	00	Z	500	29	6.6	6.0
03953	12	Z	500	31	5.5	-1.3
03953	00	Z	500	30	5.7	-4.0
04018	12	Z	500	29	2.8	0.0
04018	00	Z	500	30	3.2	0.4
04220	12	Z	500	29	7.7	1.2
04220	00	Z	500	30	7.8	2.0
04270	12	Z	500	28	9.3	-6.8
04270	00	Z	500	29	10.1	-8.5
04320	12	Z	500	29	4.2	0.5
04320	00	Z	500	29	3.9	0.8
04339	12	Z	500	26	6.0	-3.3
04339	00	Z	500	29	12.9	-4.0
04360	00	Z	500	24	11.1	-9.9
04360	12	Z	500	23	9.7	-9.0
06011	12	Z	500	28	9.2	8.5
06011	00	Z	500	30	8.2	7.7
06260	12	Z	500	3	2.2	1.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	500	30	2.9	-0.8
06610	12	Z	500	30	2.3	1.4
06610	00	Z	500	30	4.1	1.1
07110	00	Z	500	29	10.2	-5.1
07110	12	Z	500	31	7.1	-3.9
07510	00	Z	500	30	5.2	-3.9
07510	12	Z	500	30	4.1	0.7
07645	00	Z	500	31	7.7	-7.1
07645	12	Z	500	30	6.7	-5.9
07761	12	Z	500	29	8.2	-7.1
07761	00	Z	500	30	13.3	-11.8
08001	00	Z	500	28	4.5	3.1
08001	12	Z	500	30	3.4	2.9
08221	00	Z	500	29	5.6	4.7
08221	12	Z	500	30	5.4	4.6
08302	00	Z	500	30	5.7	-5.0
08302	12	Z	500	30	8.0	-6.6
08508	12	Z	500	29	6.1	3.7
08522	12	Z	500	30	5.8	4.8
10035	00	Z	500	31	13.1	12.9
10035	12	Z	500	30	13.8	13.5
10393	12	Z	500	31	3.2	-0.1
10393	00	Z	500	31	2.7	0.5
10410	12	Z	500	28	2.7	-0.4
10410	00	Z	500	31	2.7	0.0
10739	00	Z	500	30	5.0	4.2
10739	12	Z	500	30	4.8	3.9
11035	00	Z	500	30	2.9	0.5
11035	12	Z	500	30	4.8	-1.7
12982	12	Z	500	30	3.1	1.7
12982	00	Z	500	30	3.7	1.7
16245	12	Z	500	30	2.6	1.3
16245	00	Z	500	30	2.8	1.6
16429	00	Z	500	31	4.3	3.1
16429	12	Z	500	30	3.2	2.2
16622	00	Z	500	30	16.2	6.0
16754	00	Z	500	29	7.7	5.8
17607	12	Z	500	27	5.8	5.1
26435	12	Z	500	15	2.7	1.7
2EERVT	00	Z	500	2	10.1	-9.0
2EERVT	12	Z	500	4	7.1	-4.0
60018	12	Z	500	30	4.2	2.7
60018	00	Z	500	30	2.9	1.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	500	10	8.8	-4.1
7JUNA4	00	Z	500	8	23.8	3.6
ASDE09	12	Z	500	5	29.8	29.8
BPMWB2	12	Z	500	6	12.4	5.8
BPMWB2	00	Z	500	6	8.7	4.9
HTXUH4	12	Z	500	4	43.9	38.3
HTXUH4	00	Z	500	4	25.0	14.1
JNKN7J	12	Z	500	6	32.9	32.7
JNKN7J	00	Z	500	11	34.8	34.3
KJJF9X	12	Z	500	8	7.8	6.6
KJJF9X	00	Z	500	5	6.7	2.5
KMPLHP	00	Z	500	8	44.3	43.3
KMPLHP	12	Z	500	6	42.0	40.4
LRYQE3	12	Z	500	8	5.5	1.3
LRYQE3	00	Z	500	6	4.2	-3.2
UXK5JT	12	Z	500	4	5.0	-3.2
UXK5JT	00	Z	500	5	9.4	-8.8
XQFJRG	12	Z	500	9	9.5	-7.5
XQFJRG	00	Z	500	8	10.7	-8.8
YLV96W	12	Z	500	12	4.3	-1.6
YLV96W	00	Z	500	8	5.1	-2.2

4.6 Table 18 - Radiosonde Monitoring Statistics (EUCOS): 500 hPa Wind (m/s)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 500 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	500	30	2.3	0.4	0.3
01001	00	V	500	30	2.4	-0.5	-0.2
01028	12	V	500	29	3.0	0.4	-0.5
01028	00	V	500	28	2.1	0.1	-0.1
01400	12	V	500	28	2.4	0.4	-0.2
01400	00	V	500	26	1.6	0.4	0.5
01415	00	V	500	29	1.9	-0.1	-0.1
01415	12	V	500	29	2.0	0.5	0.2
02365	00	V	500	27	1.6	0.1	0.0
02365	12	V	500	28	2.2	0.4	0.0
02836	12	V	500	30	2.4	-0.4	-0.4
02836	00	V	500	30	2.9	-0.4	0.4
02963	12	V	500	29	2.1	0.4	-0.2
02963	00	V	500	23	2.6	0.3	0.4
03005	12	V	500	30	2.2	0.0	0.3
03005	00	V	500	26	1.7	-0.1	0.2
03238	00	V	500	30	2.5	0.2	-0.1
03238	12	V	500	3	3.0	2.2	0.8
03808	12	V	500	30	2.7	-0.3	-0.8
03808	00	V	500	28	2.0	0.5	-0.3
03918	12	V	500	3	3.6	2.9	-1.3
03918	00	V	500	29	2.8	0.6	-0.3
03953	12	V	500	30	2.5	0.3	0.5
03953	00	V	500	30	2.4	-0.1	0.5
04018	12	V	500	29	2.4	-0.1	-0.2
04018	00	V	500	30	2.1	0.2	-0.1
04220	12	V	500	29	3.0	0.5	-0.1
04220	00	V	500	30	2.5	0.1	-0.4
04270	12	V	500	28	3.1	0.3	0.5
04270	00	V	500	29	2.7	-0.7	0.4
04320	12	V	500	29	2.4	0.2	0.2
04320	00	V	500	29	2.5	-0.5	0.1
04339	12	V	500	26	1.9	0.5	-0.4
04339	00	V	500	29	2.5	-0.2	-0.2
04360	00	V	500	24	2.6	0.0	0.5
04360	12	V	500	23	2.9	0.8	1.0
06011	12	V	500	28	2.6	0.8	0.2
06011	00	V	500	30	2.4	0.5	0.0
06260	12	V	500	3	4.0	2.6	2.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	500	30	2.3	-0.2	-0.3
06610	12	V	500	30	2.3	0.3	0.2
06610	00	V	500	30	2.7	0.0	-0.3
07110	00	V	500	29	1.9	0.1	0.0
07110	12	V	500	30	2.2	0.6	0.1
07510	00	V	500	30	2.3	0.0	0.4
07510	12	V	500	30	2.5	0.0	0.5
07645	00	V	500	30	2.5	0.2	-0.3
07645	12	V	500	30	1.8	0.0	0.1
07761	12	V	500	29	3.3	0.3	0.8
07761	00	V	500	30	3.3	0.7	-0.1
08001	00	V	500	28	3.0	-0.3	-1.3
08001	12	V	500	30	2.7	-0.1	-0.1
08221	00	V	500	28	2.6	0.3	0.7
08221	12	V	500	30	2.7	0.5	-0.4
08302	00	V	500	30	2.6	0.2	0.0
08302	12	V	500	30	3.3	0.6	0.9
08508	12	V	500	29	3.1	0.0	0.1
08522	12	V	500	30	2.3	0.2	-0.7
10035	00	V	500	30	1.9	0.2	0.2
10035	12	V	500	30	1.8	0.2	0.3
10393	12	V	500	30	2.6	0.1	0.4
10393	00	V	500	28	2.6	-0.4	0.6
10410	12	V	500	28	1.6	-0.1	0.1
10410	00	V	500	30	2.2	0.2	0.0
10739	00	V	500	30	2.0	0.1	-0.1
10739	12	V	500	30	2.2	0.1	-0.1
11035	00	V	500	30	2.7	0.2	0.1
11035	12	V	500	30	2.4	-0.3	-0.1
12982	12	V	500	30	2.7	0.6	0.5
12982	00	V	500	30	2.9	0.1	0.5
16245	12	V	500	30	2.4	0.2	-0.6
16245	00	V	500	30	2.7	-0.2	0.1
16429	00	V	500	30	2.4	0.7	0.1
16429	12	V	500	30	2.6	1.0	0.2
16622	00	V	500	30	3.2	0.7	0.0
16754	00	V	500	24	4.3	0.5	-0.1
17607	12	V	500	13	2.1	0.9	0.0
26435	12	V	500	15	1.6	0.5	-0.6
2EERV	00	V	500	2	3.3	-1.5	-2.2
2EERV	12	V	500	4	4.5	0.4	-1.0
60018	12	V	500	30	1.9	0.6	0.3
60018	00	V	500	30	2.5	0.5	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	500	10	4.1	1.3	-0.1
7JUNA4	00	V	500	8	3.4	1.5	0.0
ASDE09	12	V	500	5	1.9	-0.3	1.0
BPMWB2	12	V	500	6	2.4	0.0	0.1
BPMWB2	00	V	500	6	2.4	1.0	1.2
HTXUH4	12	V	500	4	3.5	0.4	-2.1
HTXUH4	00	V	500	4	2.9	0.3	0.0
JNKN7J	12	V	500	6	3.0	1.1	-0.2
JNKN7J	00	V	500	11	2.1	-0.5	0.6
KJJF9X	12	V	500	8	2.1	0.2	0.1
KJJF9X	00	V	500	5	3.1	-1.7	-1.5
KMPLHP	00	V	500	8	3.5	-0.4	-0.7
KMPLHP	12	V	500	6	1.9	0.3	0.1
LRYQE3	12	V	500	8	3.3	-0.2	2.0
LRYQE3	00	V	500	6	1.7	0.4	-0.7
UXK5JT	12	V	500	4	1.8	0.2	-1.0
UXK5JT	00	V	500	5	2.2	0.9	0.5
XQFJRG	12	V	500	9	2.5	0.8	-0.3
XQFJRG	00	V	500	8	3.9	-2.2	0.0
YLV96W	12	V	500	12	1.4	-0.2	0.2
YLV96W	00	V	500	8	2.6	-0.6	-0.2

4.7 Table 19 - Radiosonde Monitoring Statistics (EUCOS): 850 hPa Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 850 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	850	31	8.6	-7.9
01001	00	Z	850	30	10.2	-9.7
01028	12	Z	850	31	3.3	-1.8
01028	00	Z	850	28	2.6	-1.3
01400	12	Z	850	28	77.8	76.3
01400	00	Z	850	26	76.7	76.6
01415	00	Z	850	29	3.6	3.0
01415	12	Z	850	29	3.6	3.1
02365	00	Z	850	28	3.6	2.9
02365	12	Z	850	28	3.6	2.8
02836	12	Z	850	30	2.9	2.3
02836	00	Z	850	30	2.5	1.9
02963	12	Z	850	30	3.0	2.5
02963	00	Z	850	23	2.9	2.2
03005	12	Z	850	32	2.2	-0.4
03005	00	Z	850	30	3.0	-1.2
03238	00	Z	850	30	2.9	2.2
03238	12	Z	850	3	3.0	2.8
03808	12	Z	850	30	2.7	1.7
03808	00	Z	850	29	4.0	2.3
03918	12	Z	850	3	7.0	6.8
03918	00	Z	850	29	6.0	5.7
03953	12	Z	850	31	3.5	-0.7
03953	00	Z	850	30	2.0	-1.3
04018	12	Z	850	29	2.1	-0.7
04018	00	Z	850	30	1.9	0.1
04220	12	Z	850	30	7.3	2.8
04220	00	Z	850	30	7.4	2.5
04270	12	Z	850	28	6.3	-4.9
04270	00	Z	850	29	6.4	-5.8
04320	12	Z	850	29	3.2	-0.6
04320	00	Z	850	29	3.9	-0.1
04339	12	Z	850	26	6.6	-5.4
04339	00	Z	850	29	14.6	-5.9
04360	00	Z	850	24	8.6	-8.1
04360	12	Z	850	23	8.4	-7.8
06011	12	Z	850	28	6.1	5.4
06011	00	Z	850	30	5.5	5.1
06260	12	Z	850	3	1.2	0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	850	30	2.3	-0.5
06610	12	Z	850	30	2.2	0.8
06610	00	Z	850	30	2.0	0.9
07110	00	Z	850	29	2.8	-2.4
07110	12	Z	850	31	2.9	-1.6
07510	00	Z	850	30	3.2	2.5
07510	12	Z	850	30	3.3	2.7
07645	00	Z	850	32	4.4	-3.9
07645	12	Z	850	32	3.6	-2.8
07761	12	Z	850	29	6.0	-5.1
07761	00	Z	850	30	5.6	-5.1
08001	00	Z	850	28	2.1	1.2
08001	12	Z	850	30	2.4	1.1
08221	00	Z	850	31	3.5	2.6
08221	12	Z	850	30	3.3	2.7
08302	00	Z	850	30	7.5	-7.0
08302	12	Z	850	30	7.2	-6.8
08508	12	Z	850	29	4.8	3.6
08522	12	Z	850	30	3.8	3.4
10035	00	Z	850	31	13.0	12.8
10035	12	Z	850	30	12.9	12.7
10393	12	Z	850	31	2.2	0.7
10393	00	Z	850	28	1.6	0.6
10410	12	Z	850	28	2.1	-0.7
10410	00	Z	850	31	2.3	-0.9
10739	00	Z	850	30	4.4	3.8
10739	12	Z	850	30	4.3	3.5
11035	00	Z	850	30	2.5	1.0
11035	12	Z	850	30	4.2	-0.2
12982	12	Z	850	30	3.3	2.2
12982	00	Z	850	30	2.2	0.8
16245	12	Z	850	30	2.6	1.1
16245	00	Z	850	30	2.9	1.8
16429	00	Z	850	31	3.2	2.3
16429	12	Z	850	31	2.3	0.9
16622	00	Z	850	30	15.6	5.9
16754	00	Z	850	29	4.8	2.5
17607	12	Z	850	28	3.2	2.0
26435	12	Z	850	15	2.0	0.7
2EERVT	00	Z	850	2	11.0	-10.4
2EERVT	12	Z	850	4	7.2	-2.1
60018	12	Z	850	30	3.0	0.9
60018	00	Z	850	30	2.1	-1.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	850	11	5.4	-1.2
7JUNA4	00	Z	850	8	5.3	-0.9
ASDE09	12	Z	850	5	34.2	34.1
BPMWB2	12	Z	850	7	7.1	5.2
BPMWB2	00	Z	850	7	10.4	6.7
HTXUH4	12	Z	850	4	53.6	45.9
HTXUH4	00	Z	850	4	25.6	14.8
JNKN7J	12	Z	850	6	37.0	36.8
JNKN7J	00	Z	850	11	37.6	37.4
KJJF9X	12	Z	850	8	6.5	6.0
KJJF9X	00	Z	850	5	7.1	4.9
KMPLHP	00	Z	850	8	50.7	49.5
KMPLHP	12	Z	850	6	36.7	35.2
LRYQE3	12	Z	850	9	5.0	0.0
LRYQE3	00	Z	850	6	8.2	-6.0
UXK5JT	12	Z	850	4	8.2	-7.0
UXK5JT	00	Z	850	5	10.1	-9.7
XQFJRG	12	Z	850	10	9.6	-8.6
XQFJRG	00	Z	850	9	11.4	-10.3
YLV96W	12	Z	850	12	3.5	-1.5
YLV96W	00	Z	850	8	3.5	-1.7

4.8 Table 20 - Radiosonde Monitoring Statistics (EUCOS): 850 hPa Wind (m/s)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 850 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	850	30	3.4	0.7	-0.7
01001	00	V	850	30	2.8	0.7	-0.2
01028	12	V	850	29	2.7	0.6	-0.3
01028	00	V	850	28	2.4	-0.2	0.1
01400	12	V	850	28	2.1	-0.3	0.6
01400	00	V	850	26	2.1	0.5	0.2
01415	00	V	850	29	2.2	-0.5	0.2
01415	12	V	850	29	2.7	0.3	-0.6
02365	00	V	850	28	2.4	0.3	-0.5
02365	12	V	850	28	2.5	0.1	-0.8
02836	12	V	850	30	2.5	0.3	0.2
02836	00	V	850	30	2.8	0.9	0.1
02963	12	V	850	29	2.5	-0.2	0.2
02963	00	V	850	23	1.9	-0.4	0.2
03005	12	V	850	30	2.6	-0.3	0.2
03005	00	V	850	26	2.8	0.1	-0.4
03238	00	V	850	30	2.2	-0.4	0.3
03238	12	V	850	3	1.7	-0.1	0.9
03808	12	V	850	30	2.5	-0.2	0.1
03808	00	V	850	28	3.1	0.3	0.1
03918	12	V	850	3	1.7	1.4	0.1
03918	00	V	850	29	2.1	-0.2	0.0
03953	12	V	850	30	3.0	-0.4	0.5
03953	00	V	850	30	3.1	-0.1	0.0
04018	12	V	850	29	2.4	0.0	0.0
04018	00	V	850	30	3.1	0.8	-0.2
04220	12	V	850	30	3.1	0.5	0.7
04220	00	V	850	30	2.6	-0.1	0.0
04270	12	V	850	28	4.9	1.1	-0.4
04270	00	V	850	29	4.6	-0.1	-0.1
04320	12	V	850	29	3.6	0.2	-0.1
04320	00	V	850	29	3.2	-0.3	1.3
04339	12	V	850	26	2.9	0.0	0.3
04339	00	V	850	29	4.0	1.4	0.6
04360	00	V	850	24	4.2	1.3	0.8
04360	12	V	850	23	3.0	0.5	0.3
06011	12	V	850	28	2.7	-0.2	-0.2
06011	00	V	850	30	2.2	-0.7	-0.3
06260	12	V	850	3	1.8	0.8	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	850	30	2.6	0.4	-0.2
06610	12	V	850	30	2.5	0.5	0.5
06610	00	V	850	30	2.4	0.5	0.2
07110	00	V	850	29	2.3	-0.2	-0.1
07110	12	V	850	30	3.0	0.1	0.3
07510	00	V	850	30	2.3	-0.5	0.0
07510	12	V	850	30	2.4	-0.2	0.0
07645	00	V	850	30	4.1	-0.7	0.1
07645	12	V	850	30	3.5	0.4	-0.7
07761	12	V	850	29	3.0	0.6	-0.1
07761	00	V	850	30	2.8	0.1	0.2
08001	00	V	850	28	2.9	-0.1	-0.2
08001	12	V	850	30	2.2	-0.1	-0.6
08221	00	V	850	30	2.6	0.5	0.4
08221	12	V	850	30	2.8	-0.2	0.2
08302	00	V	850	30	2.8	0.1	0.4
08302	12	V	850	30	3.2	0.5	-0.5
08508	12	V	850	29	3.0	-0.1	-0.5
08522	12	V	850	30	3.3	-0.6	-0.7
10035	00	V	850	30	2.0	0.0	0.1
10035	12	V	850	30	2.4	0.0	0.1
10393	12	V	850	30	2.9	0.0	0.3
10393	00	V	850	28	2.3	0.0	0.3
10410	12	V	850	28	2.5	-0.3	0.3
10410	00	V	850	30	1.8	0.2	0.2
10739	00	V	850	30	2.9	0.0	-0.2
10739	12	V	850	30	2.7	-0.2	0.5
11035	00	V	850	30	4.0	0.1	-1.0
11035	12	V	850	30	2.7	0.2	-0.4
12982	12	V	850	30	2.8	-0.5	0.0
12982	00	V	850	30	3.1	0.0	-0.9
16245	12	V	850	30	3.0	0.2	0.1
16245	00	V	850	30	3.5	0.5	-0.1
16429	00	V	850	30	2.8	0.2	-0.3
16429	12	V	850	30	2.8	0.0	-0.2
16622	00	V	850	30	2.4	0.1	0.4
16754	00	V	850	29	3.7	0.2	-0.3
17607	12	V	850	27	3.1	0.3	0.5
26435	12	V	850	15	3.1	0.5	0.0
2EERVT	00	V	850	2	1.0	-0.3	-0.4
2EERVT	12	V	850	4	1.5	-0.4	-0.2
60018	12	V	850	30	3.0	-0.1	-0.5
60018	00	V	850	30	4.3	-0.9	1.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	850	11	3.7	-1.6	0.5
7JUNA4	00	V	850	8	4.6	1.3	1.8
ASDE09	12	V	850	5	2.5	-0.3	-0.1
BPMWB2	12	V	850	7	2.4	-0.9	-0.1
BPMWB2	00	V	850	7	1.8	-0.3	-0.2
HTXUH4	12	V	850	4	2.1	-0.1	-0.4
HTXUH4	00	V	850	4	1.9	-0.2	-1.1
JNKN7J	12	V	850	6	2.6	0.7	1.3
JNKN7J	00	V	850	11	1.9	-0.6	0.2
KJJF9X	12	V	850	8	2.6	0.3	0.0
KJJF9X	00	V	850	5	1.9	-0.6	0.9
KMPLHP	00	V	850	8	2.4	0.8	0.6
KMPLHP	12	V	850	6	3.4	0.0	0.8
LRYQE3	12	V	850	9	3.0	-1.2	0.2
LRYQE3	00	V	850	6	2.8	-0.8	1.1
UXK5JT	12	V	850	4	2.1	-1.0	0.0
UXK5JT	00	V	850	5	1.2	0.1	0.0
XQFJRG	12	V	850	10	3.3	0.4	0.7
XQFJRG	00	V	850	9	3.3	0.3	0.4
YLV96W	12	V	850	12	2.7	-0.1	-1.1
YLV96W	00	V	850	8	2.8	-0.9	-0.3

4.9 Table 21 - Drifter Monitoring Statistics (EUCOS): Surface pressure (hpa)

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

TIME = 99 => AVERAGE OF ALL OBSERVATIONS
 GROSS ERROR LIMIT = 15 HPA

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
03380	99	P	SUR	54	0	1865	0	0.3	-0.3	0.5
1300001	99	P	SUR	11	-23	586	0	0.3	0.2	0.4
1300008	99	P	SUR	15	-38	572	0	0.3	0.2	0.3
1300130	99	P	SUR	28	-16	720	0	0.3	0.1	0.3
1300131	99	P	SUR	28	-17	719	0	0.4	-0.0	0.4
1301603	99	P	SUR	38	-53	718	0	0.5	0.1	0.5
1301608	99	P	SUR	30	-61	719	0	0.3	-0.0	0.3
1301610	99	P	SUR	53	-10	565	0	0.4	-0.3	0.5
1301612	99	P	SUR	26	-37	718	0	0.3	-0.1	0.4
1301699	99	P	SUR	27	-32	712	0	0.3	-0.5	0.6
1301700	99	P	SUR	15	-37	717	0	0.3	-0.0	0.3
1301701	99	P	SUR	13	-31	720	0	0.3	0.3	0.4
1301706	99	P	SUR	19	-36	713	0	0.4	0.0	0.4
1301708	99	P	SUR	14	-17	698	0	0.4	-0.3	0.5
1301711	99	P	SUR	11	-27	720	0	0.3	-0.1	0.3
1301712	99	P	SUR	16	-30	718	0	0.3	0.1	0.3
1301713	99	P	SUR	19	-31	720	0	0.3	0.1	0.3
1301714	99	P	SUR	20	-33	718	0	0.2	0.0	0.2
1301715	99	P	SUR	15	-25	513	0	0.3	0.1	0.3
1301718	99	P	SUR	24	-23	719	0	0.3	0.2	0.4
1301719	99	P	SUR	22	-27	718	0	0.3	0.4	0.5
1301720	99	P	SUR	27	-25	719	0	0.3	0.1	0.3
1301721	99	P	SUR	37	-12	8637	3	0.3	-0.2	0.3
1301722	99	P	SUR	18	-30	720	0	0.3	0.0	0.3
1301723	99	P	SUR	38	-10	720	0	0.3	0.6	0.7
1301724	99	P	SUR	34	-16	719	0	0.3	0.0	0.3
1301735	99	P	SUR	27	-42	720	0	0.3	-0.2	0.4
1301736	99	P	SUR	27	-42	720	0	0.3	0.2	0.4
1301737	99	P	SUR	22	-51	720	0	0.2	-0.1	0.2
1301741	99	P	SUR	11	-25	720	0	0.3	0.1	0.3
1801607	99	P	SUR	37	-59	2934	0	0.8	0.5	1.0
4100040	99	P	SUR	15	-53	4316	0	0.3	0.5	0.6
4100043	99	P	SUR	21	-65	4276	0	0.2	-1.4	1.4
4100044	99	P	SUR	22	-59	4309	0	0.2	0.3	0.4
4100046	99	P	SUR	24	-68	4309	0	0.3	0.3	0.5
4100048	99	P	SUR	32	-70	4309	0	0.4	0.4	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4100049	99	P	SUR	27	-63	4316	0	0.3	-1.1	1.1
4100052	99	P	SUR	18	-65	4316	0	0.3	-1.1	1.1
4100053	99	P	SUR	18	-66	4318	0	0.3	-0.4	0.5
4100056	99	P	SUR	18	-65	4208	0	0.5	4.8	4.9
4100139	99	P	SUR	20	-38	694	0	0.2	0.1	0.2
4100300	99	P	SUR	16	-57	679	0	0.3	-0.0	0.3
4101557	99	P	SUR	41	-21	720	0	0.3	0.1	0.3
4101609	99	P	SUR	22	-32	720	0	0.2	-0.0	0.2
4101613	99	P	SUR	27	-45	720	0	0.3	0.3	0.5
4101616	99	P	SUR	29	-37	720	0	0.3	-0.1	0.3
4101618	99	P	SUR	24	-35	720	0	0.3	0.1	0.3
4101621	99	P	SUR	27	-31	720	0	0.4	0.2	0.4
4101654	99	P	SUR	73	6	709	0	0.4	-0.1	0.4
4101656	99	P	SUR	60	-46	254	0	3.3	3.0	4.5
4101657	99	P	SUR	73	6	688	0	0.4	-0.1	0.4
4101659	99	P	SUR	74	36	719	0	0.5	0.1	0.6
4101663	99	P	SUR	32	-32	720	0	0.3	-0.1	0.3
4101664	99	P	SUR	48	-41	720	0	0.4	-0.2	0.4
4101665	99	P	SUR	62	-9	708	0	0.3	-0.4	0.5
4101696	99	P	SUR	34	-40	720	0	0.4	-0.2	0.4
4101702	99	P	SUR	41	-19	719	0	0.3	0.0	0.3
4101714	99	P	SUR	29	-57	687	0	2.2	-0.4	2.2
4101717	99	P	SUR	38	-10	717	0	0.2	0.0	0.2
4101718	99	P	SUR	39	-48	717	0	0.5	0.3	0.6
4101719	99	P	SUR	36	-34	719	14	1.9	-0.2	1.9
4101720	99	P	SUR	34	-21	719	0	1.0	-0.0	1.0
4101722	99	P	SUR	13	-34	719	0	0.4	0.3	0.5
4101723	99	P	SUR	24	-64	720	0	0.3	0.0	0.3
4101724	99	P	SUR	16	-67	719	0	0.3	0.0	0.3
4101725	99	P	SUR	16	-58	718	0	0.3	-0.1	0.3
4101726	99	P	SUR	17	-49	719	0	0.3	0.1	0.3
4101743	99	P	SUR	31	-56	719	0	0.4	-0.0	0.4
4101753	99	P	SUR	31	-59	719	0	0.3	0.3	0.4
4101755	99	P	SUR	27	-53	720	0	0.2	0.1	0.3
4101756	99	P	SUR	12	-62	636	0	0.3	-0.7	0.8
4101842	99	P	SUR	66	11	710	0	0.3	-0.3	0.4
4101843	99	P	SUR	65	0	709	0	0.3	0.0	0.3
4101844	99	P	SUR	15	-46	708	0	0.3	0.3	0.4
4101845	99	P	SUR	61	-9	709	0	0.3	0.1	0.3
4101848	99	P	SUR	22	-63	714	0	0.2	0.3	0.4
4101849	99	P	SUR	11	-46	710	0	0.3	0.3	0.4
4101850	99	P	SUR	45	-11	713	0	0.3	0.0	0.3
4101851	99	P	SUR	18	-46	709	0	0.2	0.0	0.2

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4102547	99	P	SUR	13	-55	666	0	0.3	0.2	0.4
4102548	99	P	SUR	20	-62	677	0	0.3	-0.1	0.3
4102549	99	P	SUR	18	-49	602	0	0.2	0.4	0.5
4102551	99	P	SUR	14	-42	423	0	0.3	0.0	0.3
4102632	99	P	SUR	25	-66	718	0	0.3	-0.9	0.9
41040	99	P	SUR	15	-53	5311	0	0.3	0.6	0.7
41043	99	P	SUR	21	-65	4724	0	0.3	-1.4	1.4
41044	99	P	SUR	22	-59	3665	0	0.3	0.3	0.4
41046	99	P	SUR	24	-68	5957	0	0.3	0.3	0.5
41048	99	P	SUR	32	-70	6447	0	0.5	0.4	0.6
41049	99	P	SUR	28	-63	5857	0	0.3	-1.1	1.1
41052	99	P	SUR	18	-65	3428	0	0.3	-1.0	1.1
41053	99	P	SUR	19	-66	3663	0	0.3	-0.4	0.5
41056	99	P	SUR	18	-66	3493	0	0.5	4.8	4.8
4200059	99	P	SUR	15	-67	4315	0	0.3	-1.5	1.5
4200060	99	P	SUR	16	-63	4314	0	0.3	0.0	0.3
4200085	99	P	SUR	18	-67	4019	0	0.3	-0.0	0.3
4201703	99	P	SUR	40	-41	499	0	0.7	-0.2	0.8
42059	99	P	SUR	15	-68	4724	0	0.3	-1.5	1.5
42060	99	P	SUR	16	-63	4266	0	0.3	0.0	0.3
42085	99	P	SUR	18	-67	3790	0	0.3	-0.0	0.3
4400005	99	P	SUR	43	-69	720	0	0.6	-0.3	0.6
4400008	99	P	SUR	40	-69	4315	0	0.5	-0.9	1.0
4400011	99	P	SUR	41	-67	4317	0	0.5	0.3	0.6
4400027	99	P	SUR	44	-67	720	0	0.5	0.2	0.6
4400032	99	P	SUR	44	-69	720	0	0.6	-0.1	0.6
4400033	99	P	SUR	44	-69	719	0	0.6	0.2	0.6
4400034	99	P	SUR	44	-68	720	0	0.5	-0.3	0.7
4400037	99	P	SUR	43	-68	545	0	0.5	-1.0	1.2
44005	99	P	SUR	43	-69	2005	0	0.6	-0.3	0.6
4400777	99	P	SUR	39	-26	720	0	0.4	0.2	0.4
44008	99	P	SUR	41	-69	5927	0	0.5	-0.9	1.0
4400857	99	P	SUR	31	-57	718	3	2.3	-0.1	2.3
44011	99	P	SUR	41	-67	5233	0	0.5	0.3	0.6
4401557	99	P	SUR	27	-56	162	0	2.5	-3.2	4.1
4401563	99	P	SUR	26	-22	719	0	0.3	-0.3	0.4
4401572	99	P	SUR	25	-64	719	0	0.8	-0.0	0.8
4401576	99	P	SUR	28	-53	717	0	0.3	0.3	0.4
4401581	99	P	SUR	28	-52	720	0	0.3	0.4	0.5
4401582	99	P	SUR	38	-20	718	0	0.2	0.2	0.3
4401584	99	P	SUR	31	-33	719	0	0.3	0.3	0.5
4401585	99	P	SUR	34	-41	720	0	0.3	0.2	0.4
4401828	99	P	SUR	63	-14	461	0	0.4	0.3	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4401837	99	P	SUR	39	-19	122	0	0.2	0.1	0.2
4401848	99	P	SUR	54	-10	702	0	0.4	-0.3	0.5
4401850	99	P	SUR	67	13	697	0	0.4	-0.5	0.6
4401851	99	P	SUR	48	-5	707	0	0.3	0.4	0.5
4401854	99	P	SUR	25	-69	720	0	0.3	-0.6	0.7
4401859	99	P	SUR	14	-37	720	0	0.4	0.2	0.5
4401864	99	P	SUR	13	-55	715	0	0.3	-0.2	0.4
4401866	99	P	SUR	11	-57	709	0	0.4	-0.2	0.5
4401867	99	P	SUR	37	-54	720	0	0.4	-0.0	0.4
4401870	99	P	SUR	26	-51	720	0	0.2	-0.0	0.2
4401872	99	P	SUR	30	-57	720	0	0.3	-0.1	0.3
4401874	99	P	SUR	18	-57	720	0	0.2	0.2	0.3
4402603	99	P	SUR	55	-20	717	0	0.4	0.1	0.4
4402604	99	P	SUR	47	-20	709	0	0.4	-0.1	0.4
4402605	99	P	SUR	59	-8	715	0	0.3	0.3	0.4
4402606	99	P	SUR	53	-31	711	0	0.4	0.2	0.4
4402607	99	P	SUR	47	-26	709	0	0.4	-0.1	0.4
4402608	99	P	SUR	57	-33	712	0	0.4	0.0	0.4
4402609	99	P	SUR	60	-16	711	0	0.3	0.1	0.3
4402610	99	P	SUR	46	-22	714	0	0.4	-0.1	0.4
4402611	99	P	SUR	48	-18	709	0	0.3	-0.2	0.4
4402612	99	P	SUR	46	-38	709	0	0.4	0.0	0.5
4402613	99	P	SUR	45	-14	703	0	0.3	-0.0	0.3
4402614	99	P	SUR	53	-12	706	0	0.3	0.0	0.3
4402615	99	P	SUR	47	-15	703	0	0.3	0.2	0.4
4402618	99	P	SUR	25	-50	716	0	0.2	0.2	0.3
4402656	99	P	SUR	42	-52	699	0	0.5	0.2	0.5
4402660	99	P	SUR	34	-11	719	0	0.3	0.3	0.4
4402663	99	P	SUR	45	-11	720	0	0.3	-0.1	0.3
4402665	99	P	SUR	24	-32	719	0	0.3	0.3	0.4
4402670	99	P	SUR	21	-27	715	0	0.2	0.0	0.2
4402671	99	P	SUR	15	-34	716	0	0.3	0.2	0.3
4402672	99	P	SUR	16	-31	694	0	0.2	0.1	0.2
4402673	99	P	SUR	16	-31	710	0	0.2	0.3	0.4
4402674	99	P	SUR	15	-32	712	0	0.3	0.3	0.4
4402675	99	P	SUR	36	-44	714	0	0.4	-0.0	0.4
4402676	99	P	SUR	20	-34	707	0	0.3	0.3	0.4
44027	99	P	SUR	44	-67	2004	0	0.5	0.2	0.6
4402712	99	P	SUR	68	-66	557	0	0.4	0.1	0.4
4402717	99	P	SUR	70	-68	719	0	0.6	0.3	0.7
4402721	99	P	SUR	47	-42	720	0	0.4	0.1	0.4
4402723	99	P	SUR	46	-52	720	0	0.5	0.1	0.5
4402726	99	P	SUR	52	-49	720	0	0.5	0.0	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4402727	99	P	SUR	47	-35	720	0	0.5	-0.3	0.6
44032	99	P	SUR	44	-69	1205	0	0.6	-0.1	0.6
44033	99	P	SUR	44	-69	1202	0	0.6	0.2	0.6
44034	99	P	SUR	44	-68	1205	0	0.6	-0.3	0.7
4403556	99	P	SUR	44	-41	720	0	1.0	0.2	1.1
4403557	99	P	SUR	52	-27	717	0	0.3	0.3	0.5
4403558	99	P	SUR	43	-51	718	0	0.5	0.3	0.6
4403568	99	P	SUR	49	-53	179	0	0.4	0.2	0.4
4403569	99	P	SUR	49	-52	171	0	0.4	0.3	0.5
44037	99	P	SUR	44	-68	922	0	0.5	-1.0	1.2
44137	99	P	SUR	42	-62	680	0	0.5	-0.3	0.6
44139	99	P	SUR	44	-57	708	0	0.5	0.0	0.5
44150	99	P	SUR	43	-64	715	0	0.5	-0.2	0.5
44258	99	P	SUR	45	-63	702	0	0.5	-0.2	0.5
44488	99	P	SUR	45	-61	720	0	0.5	0.0	0.5
44489	99	P	SUR	46	-61	714	0	0.4	0.0	0.5
44490	99	P	SUR	45	-66	705	0	0.6	0.1	0.6
4601782	99	P	SUR	39	-37	703	0	0.6	0.3	0.6
4701518	99	P	SUR	83	-13	688	0	0.4	0.0	0.4
4701519	99	P	SUR	83	-13	689	0	0.4	-0.1	0.4
4701738	99	P	SUR	70	-67	697	697	0.0	0.0	0.0
4801668	99	P	SUR	88	-69	689	0	0.4	-0.1	0.4
4801723	99	P	SUR	70	-1	720	0	0.4	0.1	0.4
4801727	99	P	SUR	78	1	592	0	2.0	-1.1	2.3
6100001	99	P	SUR	43	8	571	0	0.6	-0.2	0.6
6100002	99	P	SUR	42	5	386	0	0.4	-0.0	0.4
6100196	99	P	SUR	42	4	720	0	0.6	0.2	0.6
6100197	99	P	SUR	40	4	720	0	0.5	0.3	0.6
6100198	99	P	SUR	37	-2	720	0	0.5	0.3	0.6
6100280	99	P	SUR	41	1	720	0	0.5	-0.0	0.5
6100417	99	P	SUR	38	0	720	0	0.4	0.2	0.5
6100430	99	P	SUR	40	2	720	0	0.4	0.3	0.5
6101003	99	P	SUR	40	25	153	0	0.5	-0.1	0.5
6101007	99	P	SUR	36	25	141	0	0.6	-0.4	0.7
6101008	99	P	SUR	37	22	150	0	0.6	-0.3	0.6
6101009	99	P	SUR	35	25	17	17	0.0	0.0	0.0
6102784	99	P	SUR	32	35	711	0	0.3	-0.3	0.4
6102786	99	P	SUR	32	16	715	0	0.7	0.6	0.9
6102787	99	P	SUR	33	25	715	0	0.5	0.2	0.6
6102789	99	P	SUR	31	28	709	0	1.6	-0.7	1.8
6102791	99	P	SUR	37	10	551	0	0.6	-0.0	0.7
6102792	99	P	SUR	39	8	434	0	0.4	-0.1	0.5
6102793	99	P	SUR	40	1	720	0	0.5	0.5	0.8

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6102796	99	P	SUR	40	7	720	0	0.4	0.1	0.4
6102797	99	P	SUR	37	-3	717	298	3.7	-0.2	3.7
6102798	99	P	SUR	36	-3	706	0	0.4	0.4	0.6
6102799	99	P	SUR	40	3	720	0	0.5	0.2	0.5
6102800	99	P	SUR	38	-1	718	1	1.3	0.6	1.5
6102801	99	P	SUR	38	0	720	0	0.4	0.2	0.5
6200024	99	P	SUR	44	-3	719	0	0.4	0.3	0.5
6200025	99	P	SUR	44	-6	720	0	0.5	0.4	0.6
6200082	99	P	SUR	44	-8	720	0	0.4	0.2	0.4
6200083	99	P	SUR	43	-9	720	0	0.4	0.3	0.5
6200084	99	P	SUR	42	-9	720	0	0.4	0.2	0.4
6200085	99	P	SUR	36	-7	720	0	0.4	0.1	0.4
6200086	99	P	SUR	55	6	480	0	0.3	-0.3	0.4
6200087	99	P	SUR	55	7	477	0	0.4	-0.4	0.5
6200091	99	P	SUR	53	-5	719	0	0.3	-0.1	0.3
6200092	99	P	SUR	51	-11	719	0	0.4	-0.1	0.4
6200093	99	P	SUR	55	-10	719	0	0.3	-0.2	0.4
6200094	99	P	SUR	52	-7	718	0	0.4	-0.0	0.4
6200095	99	P	SUR	53	-16	107	0	0.2	-0.0	0.2
62001	99	P	SUR	45	-5	1979	0	0.4	0.0	0.4
6201065	99	P	SUR	54	7	899	0	0.3	0.8	0.9
6201066	99	P	SUR	55	7	980	0	0.3	0.2	0.4
6202614	99	P	SUR	22	-62	720	0	0.3	-0.2	0.3
6202623	99	P	SUR	68	9	720	0	0.4	-0.3	0.5
6202624	99	P	SUR	61	-8	720	0	0.3	0.0	0.3
6202627	99	P	SUR	64	-17	711	0	0.3	0.0	0.3
6202630	99	P	SUR	46	-3	720	0	0.3	-0.0	0.3
6202632	99	P	SUR	61	-27	720	0	0.4	0.0	0.4
6202633	99	P	SUR	64	5	719	0	0.4	-0.1	0.4
6202635	99	P	SUR	73	34	720	0	0.4	0.2	0.5
6202637	99	P	SUR	68	-4	720	0	0.3	-0.0	0.3
6202639	99	P	SUR	29	-34	720	0	0.3	-0.1	0.3
6202640	99	P	SUR	29	-41	720	0	0.3	-0.5	0.6
6202643	99	P	SUR	25	-63	720	0	0.2	-0.1	0.2
6202644	99	P	SUR	29	-44	720	0	0.3	-0.4	0.5
6202645	99	P	SUR	27	-61	720	0	0.3	-0.4	0.5
62029	99	P	SUR	49	-12	1850	0	0.3	-0.1	0.3
6203516	99	P	SUR	44	-61	700	0	0.4	-0.1	0.5
6203588	99	P	SUR	58	-44	716	0	0.4	0.5	0.7
6203601	99	P	SUR	32	-50	718	0	0.4	-0.3	0.5
6203607	99	P	SUR	34	-51	717	0	0.3	0.3	0.5
6203612	99	P	SUR	27	-43	720	0	0.3	0.2	0.4
6203613	99	P	SUR	22	-64	719	0	0.3	0.3	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203614	99	P	SUR	28	-62	720	7	1.7	0.6	1.8
6203615	99	P	SUR	21	-66	719	0	0.3	-0.2	0.3
6203616	99	P	SUR	20	-45	718	0	0.2	0.3	0.4
6203617	99	P	SUR	16	-41	720	0	0.3	0.2	0.3
6203621	99	P	SUR	39	-23	717	0	0.4	-0.3	0.5
6203622	99	P	SUR	45	-28	720	0	0.4	0.3	0.5
6203625	99	P	SUR	38	-28	720	0	0.4	-0.4	0.5
6203626	99	P	SUR	60	-1	720	0	0.2	-0.2	0.3
6203627	99	P	SUR	22	-60	720	0	0.2	0.2	0.3
6203632	99	P	SUR	27	-29	720	0	0.3	0.1	0.3
6203633	99	P	SUR	62	-2	718	0	0.3	0.2	0.4
6203634	99	P	SUR	31	-23	719	0	0.3	0.1	0.3
6203635	99	P	SUR	21	-56	720	0	0.3	-0.1	0.3
6203639	99	P	SUR	38	-20	719	0	0.4	-0.5	0.6
6203640	99	P	SUR	35	-16	718	0	0.3	-0.3	0.4
6203642	99	P	SUR	15	-37	720	0	0.3	0.3	0.4
6203643	99	P	SUR	25	-57	718	0	0.2	0.4	0.5
6203649	99	P	SUR	50	-15	719	0	0.8	0.2	0.8
6203730	99	P	SUR	20	-49	704	0	0.2	0.1	0.3
6203732	99	P	SUR	19	-67	419	0	0.4	-1.6	1.7
6203734	99	P	SUR	16	-23	677	0	0.3	0.1	0.3
6203735	99	P	SUR	18	-67	385	0	1.6	1.1	1.9
6203737	99	P	SUR	28	-39	715	0	0.3	0.3	0.4
6203747	99	P	SUR	61	-5	712	0	0.3	0.1	0.3
6203749	99	P	SUR	71	16	712	0	0.4	-0.0	0.4
6203750	99	P	SUR	65	7	714	0	0.3	0.1	0.4
6203751	99	P	SUR	72	15	261	0	1.1	2.0	2.3
6203753	99	P	SUR	59	-21	708	0	0.4	-0.2	0.4
6203755	99	P	SUR	46	-7	716	0	0.3	-0.8	0.8
6203760	99	P	SUR	58	10	715	0	0.4	0.2	0.4
6203765	99	P	SUR	23	-39	714	0	0.3	0.5	0.6
6203767	99	P	SUR	19	-41	716	0	0.2	-0.5	0.5
6203768	99	P	SUR	37	-15	1	0	0.0	1.2	1.2
6203771	99	P	SUR	23	-27	708	0	0.3	0.1	0.3
6203772	99	P	SUR	21	-45	715	0	0.2	0.2	0.3
6203773	99	P	SUR	30	-43	714	0	0.4	-0.3	0.5
6203776	99	P	SUR	37	-26	544	0	0.3	-0.1	0.3
6203777	99	P	SUR	22	-65	714	0	0.3	0.1	0.3
6203825	99	P	SUR	65	-4	720	0	0.8	0.3	0.8
6203827	99	P	SUR	64	-13	720	0	0.3	0.1	0.3
6203838	99	P	SUR	15	-44	720	0	0.3	0.3	0.4
6203839	99	P	SUR	19	-36	720	0	0.2	-0.1	0.2
6203840	99	P	SUR	23	-33	720	0	0.4	0.2	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203841	99	P	SUR	29	-16	720	0	0.3	-0.0	0.3
6203842	99	P	SUR	40	-40	720	0	0.7	-0.0	0.7
6203843	99	P	SUR	28	-18	557	0	0.3	-0.7	0.7
6203844	99	P	SUR	43	-23	460	0	0.3	0.2	0.4
6203845	99	P	SUR	42	-44	718	0	0.4	-0.2	0.4
6203846	99	P	SUR	28	-20	719	0	0.3	-0.0	0.3
6203848	99	P	SUR	38	-56	25	0	0.3	-0.1	0.3
6203849	99	P	SUR	46	-28	251	0	0.3	-0.1	0.3
6203850	99	P	SUR	45	-31	226	0	0.4	-0.1	0.4
6203851	99	P	SUR	37	-54	55	0	0.3	-0.1	0.3
62050	99	P	SUR	50	-4	1724	0	0.3	-0.1	0.3
62081	99	P	SUR	51	-13	1919	0	0.3	-0.2	0.4
62102	99	P	SUR	58	2	1918	0	0.4	0.1	0.4
62103	99	P	SUR	50	-3	1916	0	0.3	-0.2	0.4
62104	99	P	SUR	57	1	1869	0	0.3	-0.1	0.3
62107	99	P	SUR	50	-6	2611	0	0.3	-0.2	0.4
62112	99	P	SUR	58	0	1966	0	0.3	0.2	0.3
62113	99	P	SUR	58	0	1865	0	0.3	-0.3	0.4
62114	99	P	SUR	58	0	3020	0	0.3	0.2	0.4
62115	99	P	SUR	58	-3	1816	0	0.3	-0.2	0.4
62116	99	P	SUR	58	1	1917	0	0.3	-0.1	0.3
62118	99	P	SUR	58	1	1917	0	0.3	0.3	0.5
62119	99	P	SUR	57	2	1918	0	0.3	0.0	0.3
62120	99	P	SUR	56	2	1883	0	0.4	-0.1	0.4
62121	99	P	SUR	54	3	1874	0	0.3	0.0	0.3
62122	99	P	SUR	57	2	2577	0	0.3	-0.1	0.3
62124	99	P	SUR	54	-4	1906	0	0.3	-0.0	0.3
62127	99	P	SUR	54	1	1918	0	0.3	0.5	0.6
62129	99	P	SUR	58	0	1515	0	0.2	-0.1	0.3
62130	99	P	SUR	59	1	1912	0	0.8	-0.3	0.8
62131	99	P	SUR	54	1	1874	0	0.3	0.4	0.5
62132	99	P	SUR	56	2	1883	0	0.5	0.3	0.6
62133	99	P	SUR	57	1	1924	0	0.4	0.0	0.4
62135	99	P	SUR	54	2	25	0	0.2	0.2	0.2
62138	99	P	SUR	54	0	2507	0	0.3	0.3	0.5
62140	99	P	SUR	57	1	2517	0	0.3	0.1	0.3
62141	99	P	SUR	58	0	1850	0	0.9	0.0	0.9
62143	99	P	SUR	58	2	1923	0	0.4	0.5	0.7
62144	99	P	SUR	53	2	1930	0	0.3	0.1	0.3
62145	99	P	SUR	53	3	2573	0	0.3	0.3	0.4
62146	99	P	SUR	57	2	1924	0	0.3	-0.2	0.4
62149	99	P	SUR	54	1	1913	0	0.3	0.6	0.7
62151	99	P	SUR	57	2	2290	0	0.3	0.1	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62152	99	P	SUR	57	2	1919	0	0.3	0.2	0.3
62153	99	P	SUR	57	2	2573	0	0.4	1.0	1.1
62154	99	P	SUR	56	2	1935	0	0.3	-0.2	0.3
62155	99	P	SUR	58	1	1904	0	0.3	0.2	0.4
62157	99	P	SUR	58	0	1856	0	0.3	-0.1	0.3
62160	99	P	SUR	57	2	2583	0	0.3	0.5	0.5
62161	99	P	SUR	58	1	1851	0	0.3	-0.2	0.4
62162	99	P	SUR	57	1	1879	0	0.3	-0.0	0.3
62163	99	P	SUR	48	-8	1988	0	0.3	0.3	0.4
62164	99	P	SUR	57	1	1878	0	0.3	0.2	0.4
62165	99	P	SUR	54	1	1895	0	0.5	0.5	0.7
62168	99	P	SUR	58	1	1784	0	0.3	-0.1	0.3
62170	99	P	SUR	51	2	1920	0	0.3	-0.2	0.4
62296	99	P	SUR	53	2	1876	0	0.3	-0.1	0.3
62297	99	P	SUR	59	2	2485	0	0.3	-0.0	0.3
62302	99	P	SUR	61	-2	1973	0	0.3	-0.2	0.4
62304	99	P	SUR	51	2	1848	0	0.4	-0.4	0.6
62305	99	P	SUR	50	0	2566	0	0.4	-0.1	0.4
62442	99	P	SUR	49	-16	1724	0	0.3	-0.4	0.5
6301001	99	P	SUR	64	5	720	0	0.3	-0.2	0.4
6301003	99	P	SUR	74	24	675	0	0.4	-0.3	0.5
6301004	99	P	SUR	72	20	686	0	0.5	-0.5	0.8
6301570	99	P	SUR	64	-7	264	18	6.5	1.6	6.7
6301572	99	P	SUR	71	-16	575	0	1.8	-0.6	1.9
6301573	99	P	SUR	83	-13	718	0	0.4	0.0	0.4
6301575	99	P	SUR	83	-12	719	0	0.5	-0.0	0.5
6301576	99	P	SUR	68	-24	719	0	0.4	-0.4	0.6
6301577	99	P	SUR	66	2	717	0	0.3	0.2	0.4
6301578	99	P	SUR	70	-12	496	0	0.7	-0.1	0.7
63055	99	P	SUR	61	2	1927	0	0.3	-0.3	0.4
63056	99	P	SUR	60	2	1922	0	0.4	0.2	0.4
63057	99	P	SUR	59	2	1919	0	0.2	-0.1	0.3
63058	99	P	SUR	53	2	3249	0	0.6	0.3	0.7
63059	99	P	SUR	58	-1	1945	0	0.4	0.5	0.6
63101	99	P	SUR	61	1	1926	0	0.4	-0.0	0.4
63102	99	P	SUR	61	1	1930	0	0.3	-0.1	0.3
63103	99	P	SUR	61	1	1365	0	0.3	-0.1	0.3
63108	99	P	SUR	61	2	1920	0	0.3	-0.4	0.5
63109	99	P	SUR	60	2	1871	0	0.3	-0.4	0.5
63110	99	P	SUR	60	2	1922	0	0.3	-0.2	0.4
63111	99	P	SUR	61	2	2500	0	0.3	-0.4	0.5
63112	99	P	SUR	61	1	1886	0	0.3	-0.5	0.6
63115	99	P	SUR	62	1	1913	0	0.5	-0.1	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
63117	99	P	SUR	61	1	2515	0	0.4	0.2	0.5
63118	99	P	SUR	58	-4	1892	0	0.4	-0.1	0.4
6401531	99	P	SUR	53	-9	677	0	0.3	-0.2	0.4
6401574	99	P	SUR	63	-6	718	0	0.7	0.2	0.7
6401575	99	P	SUR	69	14	720	0	0.4	0.1	0.4
6401576	99	P	SUR	72	-22	720	0	0.5	-0.3	0.6
6401578	99	P	SUR	78	-19	720	0	0.4	0.3	0.5
6401592	99	P	SUR	63	-6	717	0	0.4	0.2	0.4
6401759	99	P	SUR	55	-41	720	0	0.5	0.2	0.5
6401760	99	P	SUR	60	-54	718	0	0.4	0.3	0.5
6401761	99	P	SUR	56	-52	720	0	0.6	0.5	0.8
6401762	99	P	SUR	66	-5	720	0	0.3	0.2	0.3
6401763	99	P	SUR	66	12	716	0	0.3	-0.4	0.5
6401839	99	P	SUR	68	11	445	0	0.3	0.0	0.3
6401843	99	P	SUR	62	-3	500	0	0.3	0.2	0.4
6402539	99	P	SUR	58	-8	716	0	0.3	0.1	0.3
6402543	99	P	SUR	59	-33	672	0	0.4	0.2	0.4
6402544	99	P	SUR	72	9	707	0	0.4	0.0	0.4
6402547	99	P	SUR	55	-31	712	0	0.4	0.1	0.4
6402550	99	P	SUR	75	32	409	0	0.5	0.1	0.5
6402551	99	P	SUR	57	-52	681	0	0.4	0.2	0.4
6402552	99	P	SUR	67	-1	533	0	0.3	0.1	0.3
6402554	99	P	SUR	71	18	77	0	0.4	0.4	0.6
6402557	99	P	SUR	72	2	710	0	0.3	0.0	0.3
6402559	99	P	SUR	57	-55	217	0	0.3	0.4	0.5
6402560	99	P	SUR	67	-4	608	0	0.3	-0.1	0.3
6402561	99	P	SUR	68	-23	571	0	0.6	0.2	0.6
6402562	99	P	SUR	59	-51	714	0	0.4	0.0	0.4
6402563	99	P	SUR	69	9	674	0	0.3	0.2	0.4
6402587	99	P	SUR	53	-49	581	15	3.0	8.5	9.0
6402592	99	P	SUR	60	-52	613	0	0.3	-0.6	0.7
6402594	99	P	SUR	59	-54	594	0	0.3	0.1	0.4
6402596	99	P	SUR	56	-35	560	0	0.4	0.0	0.4
6402597	99	P	SUR	56	-55	624	0	0.4	0.0	0.4
6402599	99	P	SUR	53	-49	558	0	0.5	0.2	0.5
6402611	99	P	SUR	46	-44	424	0	0.4	0.3	0.5
6402615	99	P	SUR	17	-41	719	0	0.3	0.2	0.3
6402616	99	P	SUR	19	-39	709	0	0.3	0.2	0.3
6402617	99	P	SUR	19	-33	708	0	0.2	0.3	0.4
6402618	99	P	SUR	21	-25	712	0	0.3	0.2	0.3
6402619	99	P	SUR	40	-12	714	0	0.3	0.2	0.3
6402620	99	P	SUR	48	-10	710	0	0.3	0.5	0.6
6402621	99	P	SUR	44	-13	713	0	0.2	0.4	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6402622	99	P	SUR	40	-14	708	0	0.2	0.2	0.3
6402654	99	P	SUR	59	-10	522	0	0.3	0.0	0.3
6402655	99	P	SUR	66	-1	565	0	0.3	0.1	0.3
6402656	99	P	SUR	56	-40	537	40	2.8	10.6	11.0
6402659	99	P	SUR	70	19	711	0	0.9	0.2	0.9
6402660	99	P	SUR	66	-23	604	0	0.4	-0.6	0.7
6402661	99	P	SUR	63	-14	497	0	0.3	0.1	0.3
6402663	99	P	SUR	65	-26	610	0	0.4	-0.1	0.4
6402665	99	P	SUR	68	5	600	1	0.4	0.2	0.5
6402666	99	P	SUR	64	-21	711	0	0.3	-0.4	0.5
6402667	99	P	SUR	64	-20	704	0	0.4	-1.0	1.1
6402668	99	P	SUR	67	1	710	0	0.3	0.5	0.6
64041	99	P	SUR	61	-3	1963	0	0.3	-0.1	0.3
64045	99	P	SUR	59	-12	1925	0	0.3	-0.1	0.4
6501670	99	P	SUR	78	8	707	0	1.1	-0.3	1.2
6501671	99	P	SUR	80	12	550	3	1.2	-0.1	1.2
6501674	99	P	SUR	80	18	699	235	6.9	2.0	7.2
6501675	99	P	SUR	74	-8	67	0	0.2	0.4	0.4
6501679	99	P	SUR	72	-12	711	0	0.4	0.1	0.5
6501689	99	P	SUR	79	28	2655	1476	8.1	-5.1	9.5
6600021	99	P	SUR	55	14	10	10	0.0	0.0	0.0
6600022	99	P	SUR	54	14	151	0	0.3	-0.4	0.5

4.10 Table 22 - Drifter Monitoring Statistics (EUCOS): Wind speed (m/s)

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
1300001	99	SPEED	SUR	11	-23	586	0	0	0.7	0.4	0.8
1300002	99	SPEED	SUR	20	-23	580	0	0	0.8	0.0	0.8
1300008	99	SPEED	SUR	15	-38	572	0	0	0.7	-0.1	0.7
1300130	99	SPEED	SUR	28	-16	715	0	0	1.0	-0.2	1.0
1300131	99	SPEED	SUR	28	-17	710	0	0	2.1	1.3	2.5
1801607	99	SPEED	SUR	37	-59	2688	0	0	2.9	0.8	3.1
4100040	99	SPEED	SUR	15	-53	4314	0	0	0.7	0.0	0.7
4100043	99	SPEED	SUR	21	-65	4311	0	0	0.9	-0.1	0.9
4100046	99	SPEED	SUR	24	-68	4307	0	0	1.1	0.0	1.1
4100048	99	SPEED	SUR	32	-70	4282	0	0	1.2	-0.1	1.2
4100049	99	SPEED	SUR	27	-63	4310	0	0	1.1	-0.1	1.1
4100052	99	SPEED	SUR	18	-65	4316	0	0	0.8	-0.2	0.9
4100053	99	SPEED	SUR	18	-66	4318	0	0	1.4	1.3	1.9
4100056	99	SPEED	SUR	18	-65	4211	0	0	0.9	-0.5	1.1
4100139	99	SPEED	SUR	20	-38	694	0	0	0.9	-0.0	0.9
4100300	99	SPEED	SUR	16	-57	676	0	0	1.0	-0.9	1.3
41040	99	SPEED	SUR	15	-53	5309	0	0	0.7	-0.2	0.8
41043	99	SPEED	SUR	21	-65	4844	0	0	0.9	-0.1	0.9
41044	99	SPEED	SUR	22	-59	4	0	0	0.7	-0.0	0.7
41046	99	SPEED	SUR	24	-68	5955	0	0	1.1	-0.1	1.1
41048	99	SPEED	SUR	32	-70	6401	0	0	1.3	-0.2	1.3
41049	99	SPEED	SUR	28	-63	5848	0	0	1.1	-0.2	1.1
41052	99	SPEED	SUR	18	-65	3428	0	0	0.9	-0.1	0.9
41053	99	SPEED	SUR	19	-66	3663	0	0	1.4	0.5	1.5
41056	99	SPEED	SUR	18	-66	3495	0	0	1.0	-0.3	1.0
4200059	99	SPEED	SUR	15	-67	4315	0	0	0.7	0.2	0.7
4200085	99	SPEED	SUR	18	-67	4025	0	0	1.2	-0.3	1.3
42059	99	SPEED	SUR	15	-68	4724	0	0	0.8	0.0	0.8
42060	99	SPEED	SUR	16	-63	3	0	0	0.5	0.3	0.6
42085	99	SPEED	SUR	18	-67	3797	0	0	1.3	-0.0	1.3
4400005	99	SPEED	SUR	43	-69	720	0	0	1.4	0.0	1.4
4400008	99	SPEED	SUR	40	-69	4314	0	0	1.4	-0.2	1.4
4400027	99	SPEED	SUR	44	-67	720	0	0	1.6	0.2	1.6
4400032	99	SPEED	SUR	44	-69	720	0	0	1.5	-0.0	1.5

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4400033	99	SPEED	SUR	44	-69	720	0	0	1.6	0.2	1.6
4400034	99	SPEED	SUR	44	-68	720	0	0	1.5	-0.4	1.6
4400037	99	SPEED	SUR	43	-68	624	0	0	1.2	-0.3	1.2
44005	99	SPEED	SUR	43	-69	2005	0	0	1.4	0.0	1.4
44008	99	SPEED	SUR	41	-69	5926	0	0	1.4	-0.5	1.5
44027	99	SPEED	SUR	44	-67	2004	0	0	1.6	0.3	1.6
44032	99	SPEED	SUR	44	-69	1205	0	0	1.6	0.0	1.6
44033	99	SPEED	SUR	44	-69	1204	0	0	1.6	0.5	1.7
44034	99	SPEED	SUR	44	-68	1205	0	0	1.6	-0.3	1.6
44037	99	SPEED	SUR	44	-68	1054	0	0	1.3	-0.2	1.3
44137	99	SPEED	SUR	42	-62	683	0	0	1.4	0.5	1.5
44139	99	SPEED	SUR	44	-57	712	0	0	1.3	0.2	1.3
44150	99	SPEED	SUR	43	-64	715	0	0	1.4	-0.2	1.4
44258	99	SPEED	SUR	45	-63	702	0	0	1.5	-0.4	1.5
44489	99	SPEED	SUR	46	-61	707	0	0	1.7	0.7	1.9
44490	99	SPEED	SUR	45	-66	705	0	0	1.6	-0.5	1.7
6100001	99	SPEED	SUR	43	8	715	0	0	2.1	-0.9	2.3
6100002	99	SPEED	SUR	42	5	384	0	0	1.3	-0.6	1.4
6100196	99	SPEED	SUR	42	4	711	0	0	1.8	-0.2	1.8
6100197	99	SPEED	SUR	40	4	707	0	0	1.3	-0.5	1.4
6100198	99	SPEED	SUR	37	-2	698	0	0	1.7	-0.5	1.8
6100280	99	SPEED	SUR	41	1	694	0	0	1.7	-0.6	1.8
6100417	99	SPEED	SUR	38	0	717	0	0	1.4	-0.4	1.5
6100430	99	SPEED	SUR	40	2	714	0	0	1.6	-0.4	1.7
6101003	99	SPEED	SUR	40	25	155	0	0	1.6	-0.3	1.6
6101007	99	SPEED	SUR	36	25	141	0	0	2.3	-1.1	2.5
6101008	99	SPEED	SUR	37	22	150	0	0	1.9	-0.1	1.9
6101009	99	SPEED	SUR	35	25	21	0	0	4.4	-2.6	5.1
6200024	99	SPEED	SUR	44	-3	688	0	0	1.6	-1.0	1.9
6200025	99	SPEED	SUR	44	-6	709	0	0	1.6	-0.2	1.6
6200082	99	SPEED	SUR	44	-8	707	0	0	1.1	-0.6	1.2
6200083	99	SPEED	SUR	43	-9	714	0	0	1.0	-0.6	1.2
6200084	99	SPEED	SUR	42	-9	718	0	0	1.1	-0.5	1.2
6200085	99	SPEED	SUR	36	-7	715	0	0	1.1	-0.4	1.2
6200086	99	SPEED	SUR	55	6	477	0	0	1.4	1.2	1.8
6200087	99	SPEED	SUR	55	7	478	0	0	1.2	1.2	1.7
6200091	99	SPEED	SUR	53	-5	719	0	0	1.2	0.0	1.2
6200092	99	SPEED	SUR	51	-11	719	0	0	1.0	0.5	1.2
6200093	99	SPEED	SUR	55	-10	719	0	0	1.2	-0.3	1.2
6200094	99	SPEED	SUR	52	-7	718	0	0	1.2	-0.3	1.2
6200095	99	SPEED	SUR	53	-16	107	0	0	0.6	-0.3	0.7

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
62001	99	SPEED	SUR	45	-5	1979	0	0	1.3	0.5	1.4
6201065	99	SPEED	SUR	54	7	108	6	0	1.5	-0.7	1.7
6201066	99	SPEED	SUR	55	7	979	0	0	1.2	0.2	1.2
62029	99	SPEED	SUR	49	-12	1850	0	0	1.0	0.8	1.3
62081	99	SPEED	SUR	51	-13	1917	0	0	1.0	0.9	1.3
62102	99	SPEED	SUR	58	2	1918	0	0	1.5	0.2	1.5
62103	99	SPEED	SUR	50	-3	1916	0	0	1.3	-0.4	1.3
62104	99	SPEED	SUR	57	1	1869	0	0	1.3	-0.3	1.3
62112	99	SPEED	SUR	58	0	1971	0	0	1.4	-0.2	1.4
62113	99	SPEED	SUR	58	0	1865	0	0	1.5	0.0	1.5
62114	99	SPEED	SUR	58	0	3016	0	0	1.4	0.5	1.5
62118	99	SPEED	SUR	58	1	1917	0	0	1.5	0.4	1.6
62119	99	SPEED	SUR	57	2	1918	0	0	1.4	-0.6	1.5
62120	99	SPEED	SUR	56	2	1883	0	0	1.2	-0.0	1.2
62121	99	SPEED	SUR	54	3	1874	0	0	1.2	-0.2	1.2
62122	99	SPEED	SUR	57	2	2577	0	0	1.5	-0.2	1.5
62129	99	SPEED	SUR	58	0	1515	0	0	1.4	-0.1	1.4
62131	99	SPEED	SUR	54	1	1874	0	0	2.4	-1.2	2.7
62132	99	SPEED	SUR	56	2	1883	0	0	2.3	-1.5	2.8
62133	99	SPEED	SUR	57	1	1924	0	0	1.6	0.2	1.7
62140	99	SPEED	SUR	57	1	2517	0	0	1.3	-0.1	1.3
62143	99	SPEED	SUR	58	2	1923	0	0	1.6	-0.5	1.6
62144	99	SPEED	SUR	53	2	1930	0	0	1.6	-0.4	1.6
62145	99	SPEED	SUR	53	3	2573	0	0	1.6	0.8	1.8
62146	99	SPEED	SUR	57	2	206	0	0	1.4	-0.2	1.5
62148	99	SPEED	SUR	54	2	1746	0	0	1.5	-0.5	1.5
62149	99	SPEED	SUR	54	1	1913	0	0	1.2	-0.1	1.2
62152	99	SPEED	SUR	57	2	1919	0	0	2.6	-2.3	3.5
62153	99	SPEED	SUR	57	2	2573	0	0	2.1	-1.2	2.4
62154	99	SPEED	SUR	56	2	1935	0	0	1.4	0.1	1.4
62155	99	SPEED	SUR	58	1	624	0	0	1.5	-0.3	1.6
62164	99	SPEED	SUR	57	1	1860	0	0	1.4	-1.1	1.8
62165	99	SPEED	SUR	54	1	1895	0	0	1.2	-0.3	1.2
62170	99	SPEED	SUR	51	2	1920	0	0	1.3	0.5	1.4
62304	99	SPEED	SUR	51	2	1845	0	0	1.6	0.8	1.8
62305	99	SPEED	SUR	50	0	2566	0	0	1.4	0.9	1.7
6301001	99	SPEED	SUR	64	5	720	0	0	1.3	-0.1	1.3
6301003	99	SPEED	SUR	74	24	675	0	0	1.4	-1.2	1.9
6301004	99	SPEED	SUR	72	20	686	0	0	1.4	-1.0	1.7
63055	99	SPEED	SUR	61	2	1927	0	0	1.2	-0.6	1.3
63056	99	SPEED	SUR	60	2	1922	0	0	1.1	0.2	1.2

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
63057	99	SPEED	SUR	59	2	1919	0	0	1.4	-0.4	1.5
63058	99	SPEED	SUR	53	2	2099	0	0	1.5	-0.0	1.5
63101	99	SPEED	SUR	61	1	1924	0	0	1.2	-0.4	1.2
63103	99	SPEED	SUR	61	1	1365	0	0	1.3	-0.7	1.5
63106	99	SPEED	SUR	61	2	1696	0	0	1.7	-0.8	1.9
63108	99	SPEED	SUR	61	2	1920	0	0	1.8	-1.0	2.1
63109	99	SPEED	SUR	60	2	1808	0	0	1.2	0.1	1.2
63110	99	SPEED	SUR	60	2	1922	0	0	1.4	-0.4	1.5
63112	99	SPEED	SUR	61	1	1886	0	0	1.2	-0.5	1.3
63115	99	SPEED	SUR	62	1	1913	0	0	1.3	-0.7	1.5
63117	99	SPEED	SUR	61	1	2515	0	0	1.2	-0.5	1.3
64041	99	SPEED	SUR	61	-3	1167	0	0	1.2	-0.5	1.3
64045	99	SPEED	SUR	59	-12	1919	0	0	1.3	1.1	1.7
6600021	99	SPEED	SUR	55	14	99	0	0	1.3	0.2	1.3
6600022	99	SPEED	SUR	54	14	151	0	0	1.1	0.0	1.1
66022	99	SPEED	SUR	54	14	545	0	0	1.1	0.2	1.2

4.11 Table 23 - Drifter Monitoring Statistics (EUCOS): Wind direction

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : APR 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

TIME = 99 => AVERAGE OF ALL OBSERVATIONS
 GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S
 WIND SPEEDS > 3M/S USED

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
1300001	99	DIRN	SUR	11	-23	586	0	0	8.0	0.3	8.0
1300002	99	DIRN	SUR	20	-23	541	0	0	9.7	-3.4	10.3
1300008	99	DIRN	SUR	15	-38	551	0	0	113.4	-8.8	113.8
1300130	99	DIRN	SUR	28	-16	598	0	0	10.2	3.4	10.8
1300131	99	DIRN	SUR	28	-17	394	0	0	54.1	-45.1	70.4
1801607	99	DIRN	SUR	37	-59	2526	0	0	49.5	-4.0	49.6
4100001	99	DIRN	SUR	35	-72	3925	0	0	17.8	9.6	20.2
4100002	99	DIRN	SUR	32	-75	3425	0	0	18.4	5.8	19.2
4100004	99	DIRN	SUR	33	-79	3606	0	0	19.8	4.9	20.4
4100008	99	DIRN	SUR	31	-81	544	0	0	20.4	1.4	20.4
4100009	99	DIRN	SUR	29	-80	3339	0	0	17.2	1.4	17.2
4100010	99	DIRN	SUR	29	-78	3657	0	0	18.8	8.2	20.5
4100013	99	DIRN	SUR	33	-78	3607	0	0	20.4	6.4	21.4
4100024	99	DIRN	SUR	34	-78	543	0	0	21.0	1.9	21.1
4100025	99	DIRN	SUR	35	-75	3764	0	0	17.7	1.8	17.8
4100029	99	DIRN	SUR	33	-80	550	0	0	20.1	7.1	21.4
4100033	99	DIRN	SUR	32	-80	569	0	0	17.1	8.7	19.2
4100037	99	DIRN	SUR	34	-77	589	0	0	22.3	5.9	23.1
4100038	99	DIRN	SUR	34	-78	557	0	0	22.3	-18.0	28.6
4100040	99	DIRN	SUR	15	-53	4205	0	0	8.1	2.8	8.5
4100043	99	DIRN	SUR	21	-65	4137	0	0	10.5	0.5	10.5
4100046	99	DIRN	SUR	24	-68	3949	0	0	13.1	7.9	15.3
4100047	99	DIRN	SUR	27	-71	3890	0	0	20.3	5.5	21.0
4100048	99	DIRN	SUR	32	-70	3709	0	0	13.0	6.6	14.6
4100049	99	DIRN	SUR	27	-63	3744	0	0	13.4	6.0	14.7
4100052	99	DIRN	SUR	18	-65	4306	0	0	11.5	6.8	13.3
4100053	99	DIRN	SUR	18	-66	3743	0	0	13.4	4.4	14.1
4100056	99	DIRN	SUR	18	-65	4142	0	0	10.8	4.8	11.9
4100064	99	DIRN	SUR	34	-77	619	0	0	17.9	-16.3	24.2
4100066	99	DIRN	SUR	33	-80	547	0	0	20.1	9.8	22.4
41001	99	DIRN	SUR	35	-72	5332	0	0	17.4	8.9	19.5
4100139	99	DIRN	SUR	20	-38	484	0	0	14.9	-0.7	14.9

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND DIRECTION (DEGREES)

(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
41002	99	DIRN	SUR	32	-75	4541	0	0	18.3	5.1	19.0
4100300	99	DIRN	SUR	16	-57	658	0	0	10.3	-31.5	33.1
41004	99	DIRN	SUR	33	-79	5265	0	0	19.5	3.4	19.8
41008	99	DIRN	SUR	31	-81	1465	0	0	21.4	1.0	21.4
41009	99	DIRN	SUR	29	-80	4550	0	0	19.0	-0.6	19.0
41010	99	DIRN	SUR	29	-79	4946	0	0	19.0	8.2	20.7
41013	99	DIRN	SUR	33	-78	4841	0	0	20.9	5.5	21.6
41024	99	DIRN	SUR	34	-79	957	0	0	21.9	0.8	22.0
41025	99	DIRN	SUR	35	-76	5011	0	0	17.9	0.8	18.0
41029	99	DIRN	SUR	33	-80	1259	0	0	21.1	5.9	21.9
41033	99	DIRN	SUR	32	-80	968	0	0	17.2	8.3	19.1
41037	99	DIRN	SUR	34	-77	994	0	0	22.2	5.3	22.9
41038	99	DIRN	SUR	34	-78	939	0	0	21.2	-17.8	27.7
41040	99	DIRN	SUR	15	-53	5156	0	0	8.6	2.2	8.9
41043	99	DIRN	SUR	21	-65	4548	0	0	11.0	0.7	11.0
41044	99	DIRN	SUR	22	-59	2	0	0	60.1	15.1	62.0
41046	99	DIRN	SUR	24	-68	5320	0	0	13.4	7.7	15.4
41047	99	DIRN	SUR	28	-72	5365	0	0	20.0	5.5	20.8
41048	99	DIRN	SUR	32	-70	5496	0	0	13.4	6.1	14.8
41049	99	DIRN	SUR	28	-63	4878	0	0	13.9	5.1	14.8
41052	99	DIRN	SUR	18	-65	3413	0	0	12.2	6.2	13.8
41053	99	DIRN	SUR	19	-66	3323	0	0	13.6	2.8	13.9
41056	99	DIRN	SUR	18	-66	3434	0	0	11.2	5.2	12.3
41064	99	DIRN	SUR	34	-77	1081	0	0	17.6	-16.5	24.1
41066	99	DIRN	SUR	33	-80	951	0	0	20.0	9.7	22.3
4200013	99	DIRN	SUR	27	-83	995	0	0	22.0	-0.6	22.0
4200022	99	DIRN	SUR	28	-84	1085	0	0	22.6	-4.9	23.1
4200023	99	DIRN	SUR	26	-83	1015	0	0	25.7	-2.2	25.8
4200026	99	DIRN	SUR	25	-83	1148	0	0	19.0	-0.6	19.0
4200036	99	DIRN	SUR	29	-85	3093	0	0	20.7	3.7	21.0
4200056	99	DIRN	SUR	20	-85	3303	0	0	7.8	6.8	10.4
4200059	99	DIRN	SUR	15	-67	4313	0	0	8.7	1.4	8.8
4200085	99	DIRN	SUR	18	-67	3871	0	0	14.0	8.9	16.6
42013	99	DIRN	SUR	27	-83	1263	0	0	21.9	-1.6	22.0
42022	99	DIRN	SUR	28	-84	1336	0	0	23.0	-5.9	23.7
42023	99	DIRN	SUR	26	-83	1444	0	0	26.3	-1.8	26.3
42026	99	DIRN	SUR	25	-84	1510	0	0	19.5	-0.6	19.5
42036	99	DIRN	SUR	29	-85	4226	0	0	21.1	2.7	21.2
42056	99	DIRN	SUR	20	-85	3565	0	0	8.4	6.0	10.4
42059	99	DIRN	SUR	15	-68	4722	0	0	9.2	1.0	9.3
42060	99	DIRN	SUR	16	-63	3	0	0	11.1	66.0	66.9

DRIFTER MONITORING STATISTICS (EUCOS)
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
42085	99	DIRN	SUR	18	-67	3606	0	0	13.8	8.5	16.2
4400005	99	DIRN	SUR	43	-69	639	0	0	14.0	2.2	14.1
4400007	99	DIRN	SUR	44	-70	3178	0	0	19.9	5.4	20.6
4400008	99	DIRN	SUR	40	-69	3888	0	0	14.4	9.0	17.0
4400009	99	DIRN	SUR	38	-75	3702	0	0	22.0	6.2	22.9
4400013	99	DIRN	SUR	42	-71	3300	0	0	17.7	5.8	18.6
4400014	99	DIRN	SUR	37	-75	2749	0	0	17.9	6.4	19.0
4400017	99	DIRN	SUR	41	-72	3769	0	0	15.2	6.6	16.6
4400020	99	DIRN	SUR	41	-70	3734	0	0	24.6	3.8	24.9
4400022	99	DIRN	SUR	41	-74	573	0	0	30.7	5.7	31.2
4400027	99	DIRN	SUR	44	-67	608	0	0	16.1	4.7	16.8
4400029	99	DIRN	SUR	43	-71	564	0	0	17.4	1.7	17.5
4400030	99	DIRN	SUR	43	-70	568	0	0	18.6	14.5	23.6
4400032	99	DIRN	SUR	44	-69	594	0	0	16.4	2.7	16.6
4400033	99	DIRN	SUR	44	-69	556	0	0	18.0	0.0	18.0
4400034	99	DIRN	SUR	44	-68	599	0	0	18.3	7.5	19.8
4400037	99	DIRN	SUR	43	-68	541	0	0	15.8	3.4	16.2
4400039	99	DIRN	SUR	41	-73	175	0	0	31.7	2.8	31.8
4400040	99	DIRN	SUR	41	-74	619	0	0	30.0	4.5	30.3
4400041	99	DIRN	SUR	37	-77	143	0	0	13.4	0.7	13.4
4400042	99	DIRN	SUR	38	-76	4757	0	0	22.9	2.0	23.0
4400058	99	DIRN	SUR	38	-76	5586	0	0	29.0	1.3	29.1
4400062	99	DIRN	SUR	39	-76	4583	0	0	25.0	5.2	25.5
4400063	99	DIRN	SUR	39	-76	4750	0	0	23.9	0.2	23.9
4400065	99	DIRN	SUR	40	-74	3491	0	0	17.3	10.9	20.4
4400072	99	DIRN	SUR	37	-76	4914	0	0	29.9	-5.0	30.4
4400073	99	DIRN	SUR	43	-71	224	0	0	16.4	5.1	17.2
4400075	99	DIRN	SUR	40	-71	1743	0	0	12.0	-12.1	17.0
4400076	99	DIRN	SUR	40	-71	1694	0	0	14.2	-14.8	20.6
4400077	99	DIRN	SUR	40	-71	1632	0	0	12.1	-16.1	20.2
44005	99	DIRN	SUR	43	-69	1748	0	0	15.0	1.7	15.1
44007	99	DIRN	SUR	44	-70	4786	0	0	19.7	5.1	20.4
44008	99	DIRN	SUR	41	-69	5220	0	0	14.8	8.5	17.1
44009	99	DIRN	SUR	39	-75	5066	0	0	22.5	5.4	23.2
44013	99	DIRN	SUR	42	-71	4626	0	0	18.7	5.6	19.5
44014	99	DIRN	SUR	37	-75	4063	0	0	18.7	4.9	19.3
44017	99	DIRN	SUR	41	-72	4939	0	0	15.2	5.9	16.3
44020	99	DIRN	SUR	42	-70	5039	0	0	24.9	3.4	25.1
44022	99	DIRN	SUR	41	-74	801	0	0	30.7	6.1	31.3
44025	99	DIRN	SUR	40	-73	284	3	0	97.2	-43.0	106.2
44027	99	DIRN	SUR	44	-67	1652	0	0	16.6	3.7	17.0

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND DIRECTION (DEGREES)

(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
44029	99	DIRN	SUR	43	-71	1376	0	0	18.0	0.9	18.1
44030	99	DIRN	SUR	43	-70	922	0	0	17.1	14.4	22.3
44032	99	DIRN	SUR	44	-69	978	0	0	16.4	2.9	16.6
44033	99	DIRN	SUR	44	-69	901	0	0	18.0	0.2	18.0
44034	99	DIRN	SUR	44	-68	976	0	0	18.9	7.5	20.3
44037	99	DIRN	SUR	44	-68	911	0	0	16.0	3.0	16.2
44039	99	DIRN	SUR	41	-73	287	0	0	32.3	4.6	32.6
44040	99	DIRN	SUR	41	-74	1008	0	0	29.4	6.5	30.1
44041	99	DIRN	SUR	37	-77	193	0	0	15.0	1.1	15.1
44042	99	DIRN	SUR	38	-76	5386	0	0	25.1	2.1	25.2
44058	99	DIRN	SUR	38	-76	6179	0	0	28.9	-0.4	28.9
44062	99	DIRN	SUR	39	-76	6041	0	0	25.4	4.9	25.9
44063	99	DIRN	SUR	39	-76	6132	0	0	23.1	0.4	23.1
44065	99	DIRN	SUR	40	-74	4469	0	0	17.7	9.6	20.1
44072	99	DIRN	SUR	37	-76	5644	0	0	32.3	-4.9	32.7
44073	99	DIRN	SUR	43	-71	366	0	0	17.0	6.0	18.0
44075	99	DIRN	SUR	40	-71	2093	0	0	13.2	-12.1	17.9
44076	99	DIRN	SUR	40	-71	2023	0	0	14.4	-14.1	20.2
44077	99	DIRN	SUR	40	-71	1973	0	0	12.3	-15.9	20.1
44137	99	DIRN	SUR	42	-62	629	0	0	15.6	10.3	18.7
44139	99	DIRN	SUR	44	-57	588	0	0	13.4	47.3	49.2
44150	99	DIRN	SUR	43	-64	636	0	0	16.5	8.4	18.5
44258	99	DIRN	SUR	45	-63	517	0	0	16.9	3.7	17.2
44489	99	DIRN	SUR	46	-61	555	0	0	23.1	3.9	23.5
44490	99	DIRN	SUR	45	-66	568	0	0	23.0	2.3	23.1
4500012	99	DIRN	SUR	44	-77	2235	0	0	27.9	15.9	32.1
45012	99	DIRN	SUR	44	-77	2933	0	0	27.9	15.4	31.9
45132	99	DIRN	SUR	43	-81	195	0	0	26.9	3.7	27.2
45135	99	DIRN	SUR	44	-77	183	0	0	24.9	7.2	25.9
45137	99	DIRN	SUR	46	-81	41	0	0	16.3	-6.5	17.5
45142	99	DIRN	SUR	43	-79	154	0	0	21.5	-5.1	22.0
45143	99	DIRN	SUR	45	-81	40	0	0	18.2	-5.5	19.1
45149	99	DIRN	SUR	44	-82	14	0	0	14.9	18.8	24.0
45159	99	DIRN	SUR	44	-79	184	0	0	19.5	1.2	19.5
6100198	99	DIRN	SUR	37	-2	459	0	0	19.1	3.7	19.5
6100417	99	DIRN	SUR	38	0	510	0	0	18.1	9.5	20.4
6200024	99	DIRN	SUR	44	-3	407	0	0	18.5	-0.8	18.5
6200025	99	DIRN	SUR	44	-6	444	0	0	20.9	1.4	21.0
6200082	99	DIRN	SUR	44	-8	521	0	0	15.2	-2.7	15.4
6200083	99	DIRN	SUR	43	-9	573	0	0	15.2	8.4	17.4
6200084	99	DIRN	SUR	42	-9	628	0	0	51.5	0.3	51.5

DRIFTER MONITORING STATISTICS (EUCOS)
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6200085	99	DIRN	SUR	36	-7	565	0	0	13.8	6.3	15.2
6200091	99	DIRN	SUR	53	-5	637	0	0	12.8	4.9	13.7
6200092	99	DIRN	SUR	51	-11	645	0	0	13.6	3.4	14.0
6200093	99	DIRN	SUR	55	-10	648	0	0	13.7	5.2	14.7
6200094	99	DIRN	SUR	52	-7	603	0	0	13.7	5.9	14.9
6200095	99	DIRN	SUR	53	-16	107	0	0	7.2	6.3	9.5
62001	99	DIRN	SUR	45	-5	1343	0	0	18.7	1.9	18.8
62029	99	DIRN	SUR	49	-12	1612	0	0	13.2	10.1	16.7
62081	99	DIRN	SUR	51	-13	1729	0	0	11.2	-3.7	11.8
62103	99	DIRN	SUR	50	-3	1615	0	0	13.8	6.4	15.2
62112	99	DIRN	SUR	58	0	1554	0	0	12.8	-5.2	13.9
62114	99	DIRN	SUR	58	0	2445	0	0	12.1	-2.2	12.3
62305	99	DIRN	SUR	50	0	2235	0	0	13.2	8.8	15.8
64041	99	DIRN	SUR	61	-3	1024	0	0	11.8	7.5	14.0
64045	99	DIRN	SUR	59	-12	1708	0	0	15.4	-7.3	17.1
9857860	99	DIRN	SUR	20	-83	2	0	0	0.0	-14.3	14.3

4.13 Table 25 - List of BUFR Encoded Radiosonde Stations with no TAC Counterpart

ASDE09	BPMWB2N	HTXUH4H	JNKN7JF	KJJF9XN	KMPLHPW	LRYQE3U	UXK5JTU	XQFJRGX
YLV96WM	ZVQEQCM	2EERVTP	7JUNA4N	01010	01028	01415	01492	02365
02527	02836	02963	03953	06610	07110	07145	07510	07645
07761	08001	08023	08190	08221	08302	08383	08430	08536
11010	11035	11120	11240	17607	40186	47155	50527	50557
50774	50953	51076	51243	51431	51463	51644	51656	51709
51777	51828	51839	52203	52267	52323	52418	52533	52652
52681	52818	52836	52866	52983	53068	53463	53513	53543
53614	53772	53845	53915	54102	54135	54161	54218	54292
54374	54662	54727	54857	55299	55591	56029	56046	56080
56137	56146	56187	56492	56571	56651	56691	56739	56778
56964	56985	57083	57127	57131	57178	57245	57447	57461
57494	57516	57687	57749	57816	57957	57972	57993	58027
58150	58203	58238	58362	58424	58457	58606	58633	58665
58725	58847	59023	59134	59211	59265	59280	59293	59316
59431	59758	59981	66160	72413	76743	76903	89642	89859
91925	91938	93817	94767					

5 Annex - Explanations of figures and tables

5.1 General

All information presented in this report is based on data received at ECMWF before the appropriate analysis. Approximate cut-off times (UTC) are shown below:

Analysis	Obs Time	Cut-off
0000	2101-0300	1530 (16 hours)
1200	0901-1500	1900 (7 hours)

5.2 Data Availability

For each observation type/parameter the average number of reports received per day is displayed in boxes of 5 degrees square. The numbers plotted are the nearest integer values - e.g. if 40 reports were received during the month then the average daily value plotted will be 1. If the average number is greater than 1000 then 999 will be plotted. If the average number is less than 0.5 then the digit 0 will be plotted. If no observations were received then the box will be left blank.

5.3 Data Quality

The information presented on data quality is based on differences between observations and the values of the most recent ECMWF forecast ("first guess") of the same parameter. Depending on the time of the observation, the forecast range is between 9 and 15 hours. The ability of a modern data assimilation system to provide the diagnostic facilities to monitor the performance of the observational network is demonstrated by A. Hollingsworth et. al., *Monthly Weather Review*, Vol 114, No. 5, May 1986.

It should be noted that:

- (i) all results are based on software that may undergo further development;
- (ii) although the quality of the ECMWF first-guess fields is of a generally high standard this is only true to a limited extent in the tropics, where small-scale processes such as convection are of much greater importance than in mid-latitudes, and the observations will sometimes not be representative of the scales of motion given by the first-guess;
- (iii) the first-guess fields themselves will vary in accuracy depending on the density and quality of data, particularly in the upstream regions and over Antarctica and the southern hemisphere mid-latitudes. Direct comparisons between stations (or airlines) should preferably be restricted to observations in a reasonably homogeneous climatic region.

Tables 1-9 contain lists of SHIPs (including fixed marine platforms), DRIFTERS, TEMPs and TEMPs/PILOTs believed to have supplied suspect reports of surface pressure, geopotential height or wind during the month. The format of the tables is according to Recommendation 3 CBS-Ext(85) and the criteria for stations or data platforms to be classified as suspect are given at the top of each table. For tables 7 and 8 data for the worst

standard pressure level are shown. Units of RMS, standard deviation and bias are hPa in tables 1 and 4, m in table 7 and ms^{-1} in tables 2, 5 and 8. In tables 7 and 8 the station position is indicated; in the case of TEMPSHIPS and PILOTSHIPS this position is obtained from the first report of the month. The gross error limits for first-guess deviations of geopotential in table 7 are as follows:

Level	Geop
1000	100m
925	100m
850	100m
700	100m
500	150m
400	175m
300	200m
250	225m
200	250m
150	275m
100	300m
70	375m
50	400m
30	450m

The corresponding limits for wind (table 8) are:

Level	Wind
1000	35ms^{-1}
925	35ms^{-1}
850	35ms^{-1}
700	40ms^{-1}
500	45ms^{-1}
400	50ms^{-1}
300	60ms^{-1}
250	60ms^{-1}
200	50ms^{-1}
150	50ms^{-1}
100	45ms^{-1}

In table 7 the weighted RMS values at standard levels are calculated using the following weights:

Level	Weight
1000	3.70
925	3.55
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

Tables 10 and 11 provide geopotential and wind quality statistics (100 hPa level) for TEMPSHIPs and PILOTSHIPs received during the month. Units and display format are identical to those in tables 7 and 8 respectively. Tables 13, 14 (50 hPa), 15 and 16 (100 hPa), 17 and 18 (500hPa), 19 and 20 (850hPa) provide similar radiosonde statistics for the EUCOS area.

Tables 21-23 are similar to tables 4-6 with data coverage restricted to the EUCOS area.

Figures 14-18 show global charts of SATOB and aircraft wind quality, where the statistics have been averaged over latitude/longitude boxes of 5 degrees square, and the mean observed minus first-guess (or 'bias') wind vectors have been plotted. All observations in the specified layers have been used. For comparison the mean observed wind (from the SATOB reports only) for each layer is shown in figures 14 and 15. A reference value of wind speed is plotted in the top right corner of each figure. An arrow is only plotted if 10 or more observations have been received in that 5 degree square.

Table 12 provides quality statistics of aircraft wind observations in the layer 300-150 hPa stratified by airline carrier. The format and specifications of the table have been defined by NMC Washington, the lead centre for the monitoring of aircraft and satellite data.

Table 24 shows list of Assimilated BUFR Encoded Radiosonde Stations monitored within the month.

Table 25 shows list of BUFR Encoded Radiosonde Stations with no TAC Counterpart monitored within the month.