



ECMWF Global Data Monitoring Report

June 2023

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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**

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Summary of Revisions (in reverse order)

- Revision 29 (Dec 22) - Coverage charts for ATOVS AMSU-A updated:
METOP-C replaces Aqua-ATOVS (Figure 9.2)
METOP-B replaces METOP-ATOVS (Figure 9.3)
SATOB figures updated with METEOSAT-9, Dual-Metop,
METEOSAT-11, GOES-16, HIMAWARI-9, GOES-17 satellites
- Revision 28 (Jun 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	May	Jun	Ident	Time	May	Jun
03023	(12)	32	0	17516	(00)	14	27
04089	(12)	13	0	37055	(00)	0	29
07145	(12)	31	20	37055	(12)	0	29
29231	(00)	28	6	42101	(00)	5	19
29231	(12)	26	14	42886	(00)	11	28
30372	(00)	30	7	43185	(00)	14	28
30372	(12)	30	6	43285	(00)	13	30
32150	(12)	30	17	43353	(00)	18	29
40179	(12)	31	20	72201	(00)	12	29
42667	(00)	19	6	72201	(12)	11	30
42867	(12)	28	7	74626	(12)	0	12
47122	(00)	31	16	76225	(00)	0	23
47122	(12)	30	16	76225	(12)	0	28
47158	(00)	30	16	76256	(00)	1	27
47158	(12)	29	15	76394	(12)	0	26
48568	(00)	23	0	76458	(00)	1	25
61415	(12)	15	0	76458	(12)	1	30
62423	(12)	12	0	76526	(00)	1	20
63741	(00)	22	0	76526	(12)	1	30
67083	(00)	20	5	76595	(12)	1	27
67083	(12)	24	6	76612	(00)	1	26
68110	(12)	30	10	76612	(12)	1	29
70026	(00)	31	11	76644	(00)	1	24
70026	(12)	31	8	76644	(12)	1	29
82332	(00)	22	8	76679	(00)	1	25
82824	(00)	20	0	76679	(12)	1	28
82917	(00)	11	0	76692	(12)	1	21
82917	(12)	30	4	76805	(00)	0	23
83928	(00)	20	0	78897	(00)	0	30
96441	(00)	26	3	82411	(12)	15	26
-	-	-	-	96011	(12)	0	27
-	-	-	-	96147	(00)	0	28
-	-	-	-	96147	(12)	0	29
-	-	-	-	96645	(00)	0	26
-	-	-	-	97502	(00)	0	27
-	-	-	-	98558	(00)	7	28
-	-	-	-	98558	(12)	8	28

2.2 Drifting Buoys

Surface pressure observations from **1407** 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.

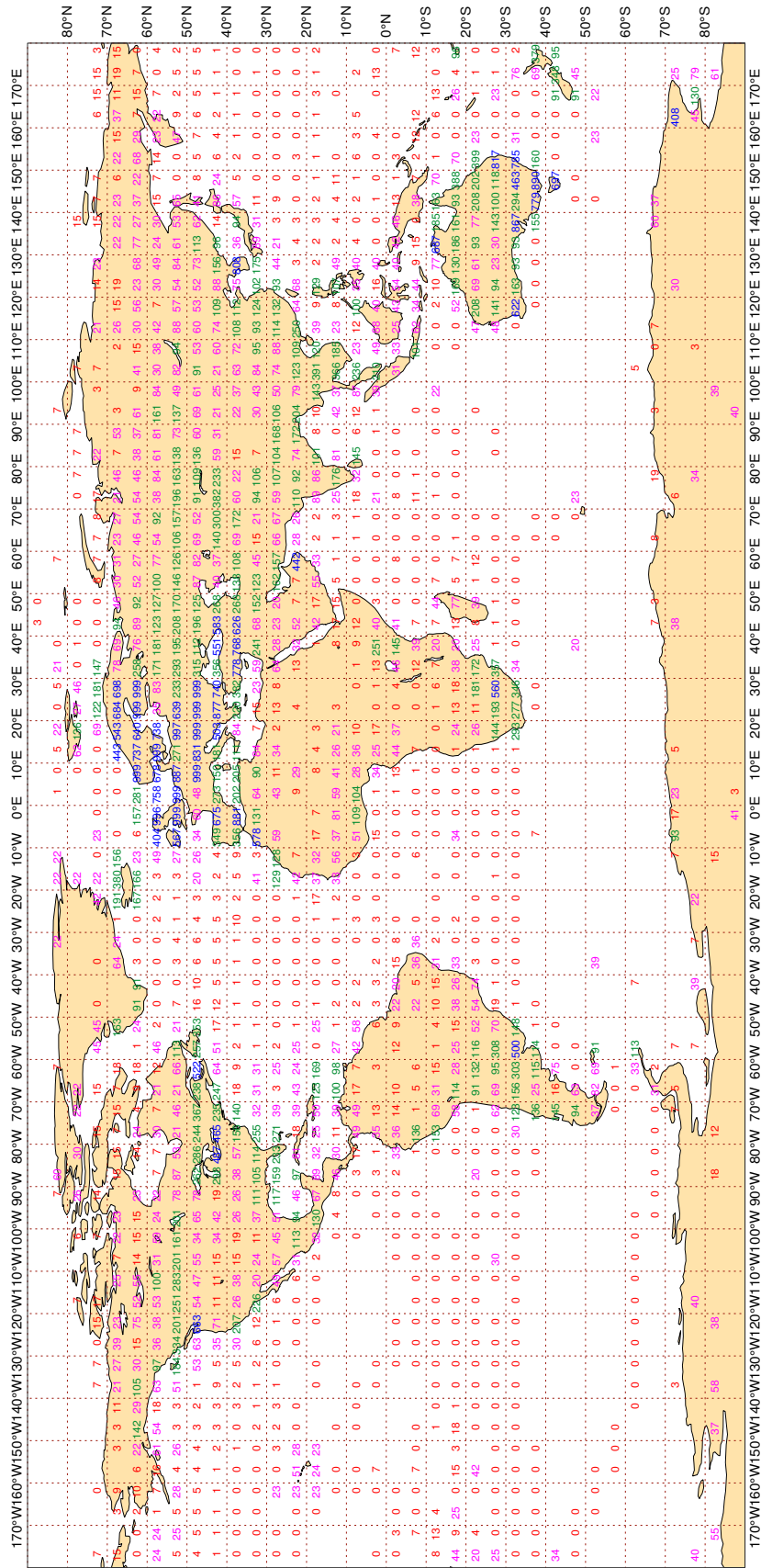
Fig	Parameter	Level/Layer
14	SATOB - Mean observed wind	1000-700 hPa
15	SATOB - Mean observed wind	400-150 hPa
16	SATOB - Mean observed minus first-guess wind	1000-700 hPa
17	SATOB - Mean observed minus first-guess wind	400-150 hPa
18	AIRCRAFT WIND - Mean observed minus first-guess	300-150 hPa

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

3.2.1 Figure 1 - Availability - SYNOP PRESSURE

ECMWF Monitoring Statistics - JUN 2023
 Availability - SYNOP/SHIP (manual, auto) pressure
 Average number of observations in 24 hours - 107339
 LAND - WMO Region I: 7001 II:17725 III: 4934 IV: 7760
 Region V:14821 VI:40978 Antarctic: 1839
 Oceans - N. Atlantic 6191 S. Atlantic 149 Indian 467 Pacific 5473

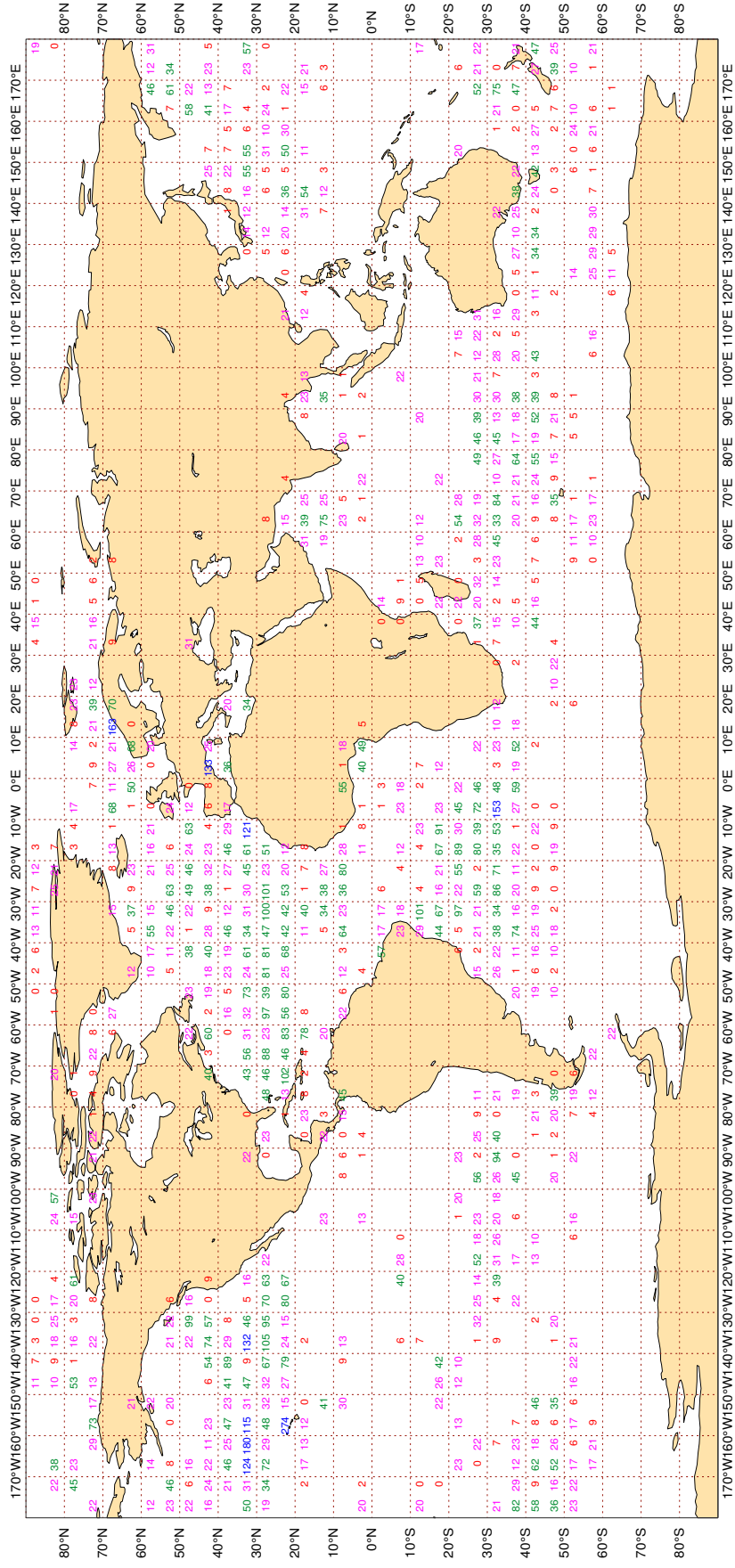
Figure 1



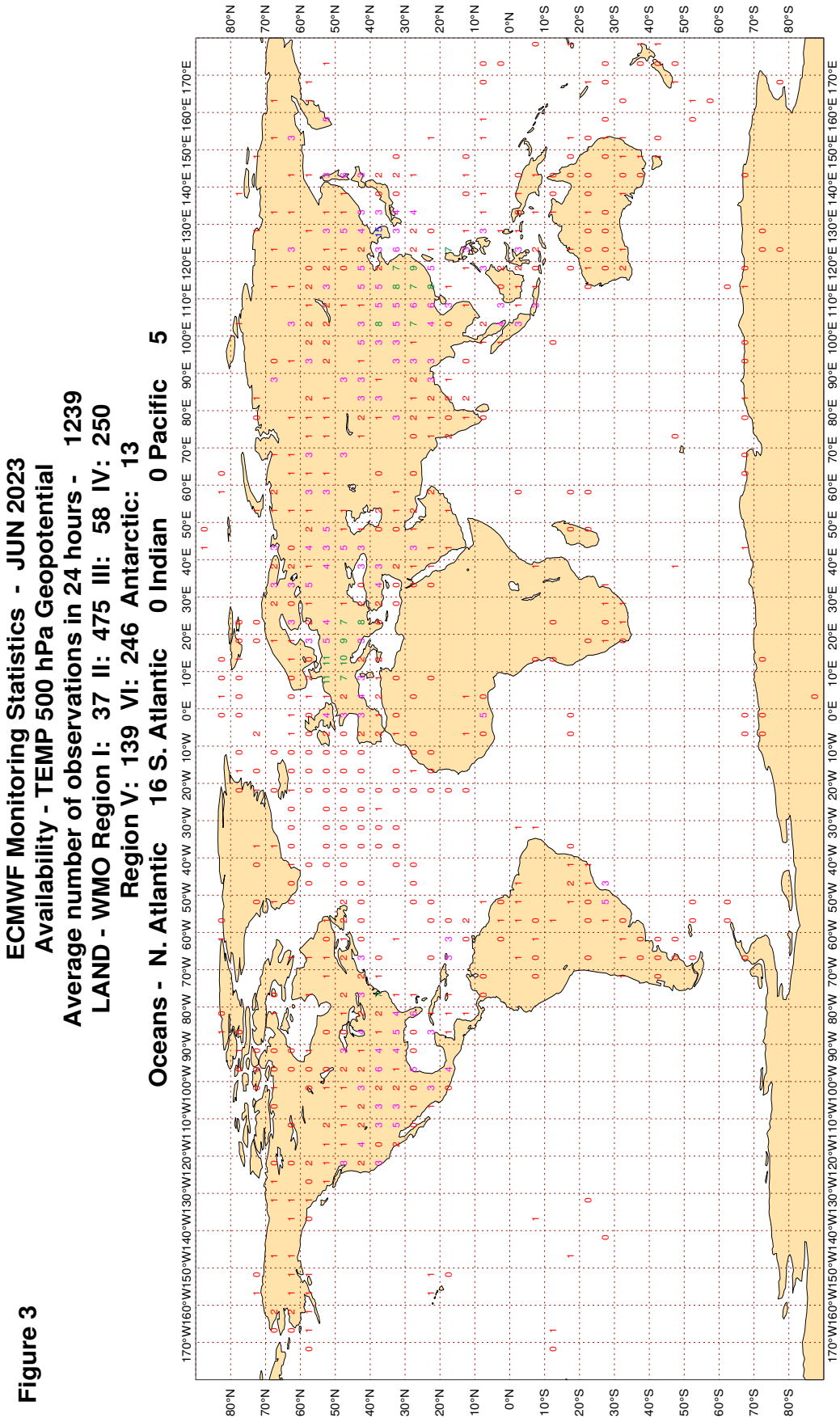
3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

Figure 2

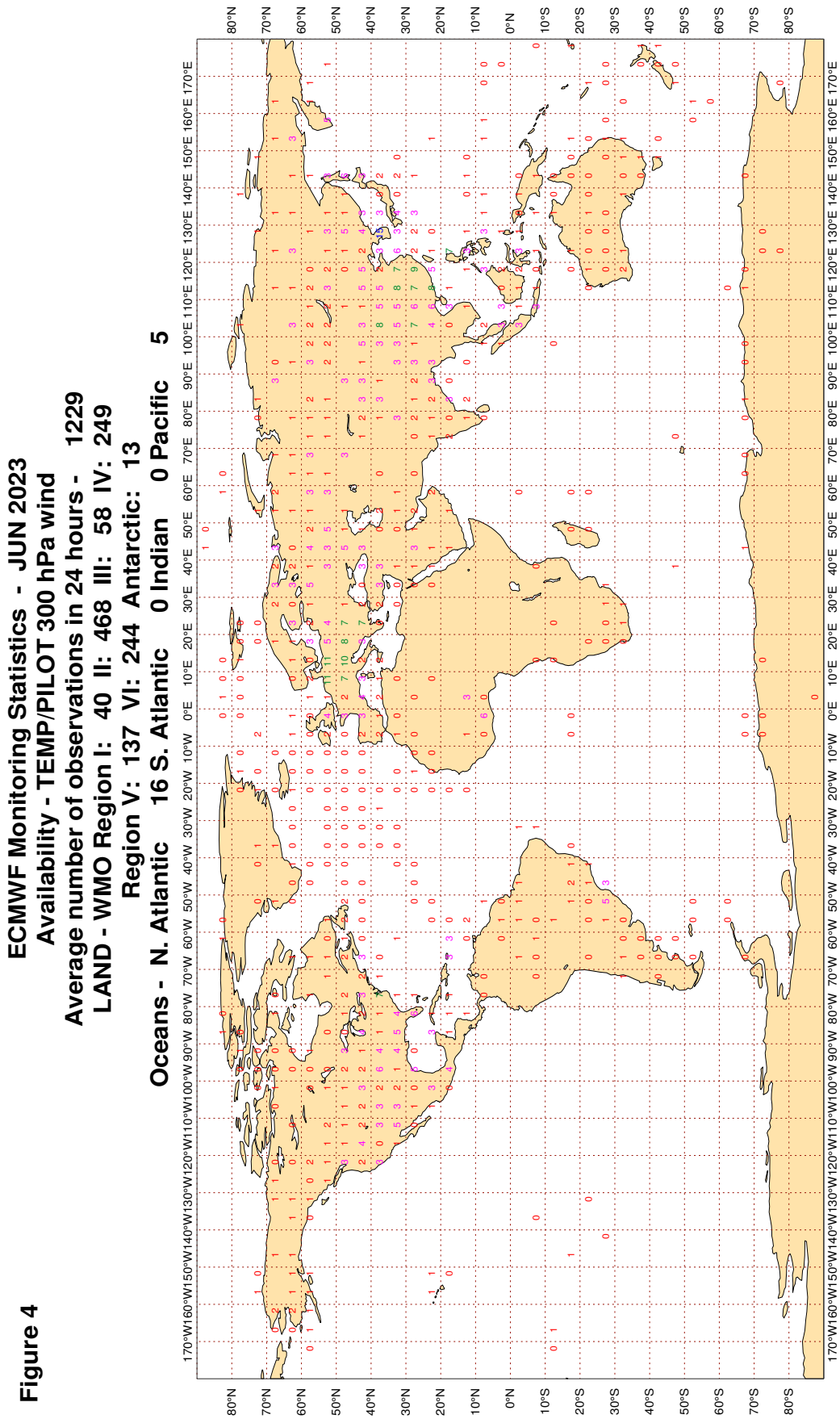
ECMWF Monitoring Statistics - JUN 2023
 Availability - DRIFTER PRESSURE
 Average number of observations in 24 hours - 19441
 Oceans - N. Atlantic 5593 S. Atlantic 2724 Indian 2867 Pacific 8257



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential



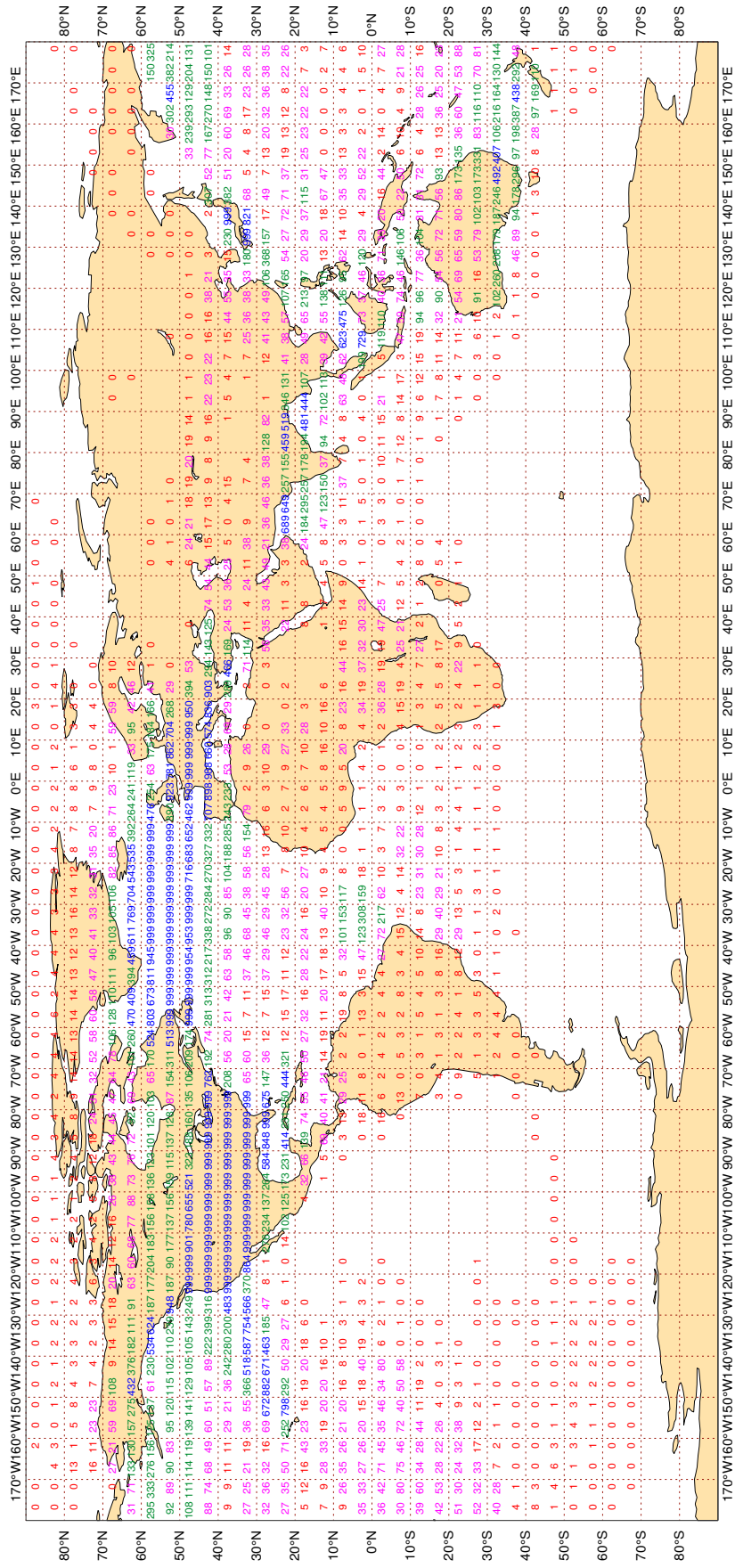
3.2.4 Figure 4 - Availability - TEMP/PILOT 300 hPa wind



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

Figure 5

ECMWF Monitoring Statistics - JUN 2023
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 224091



Magics 4.9.4

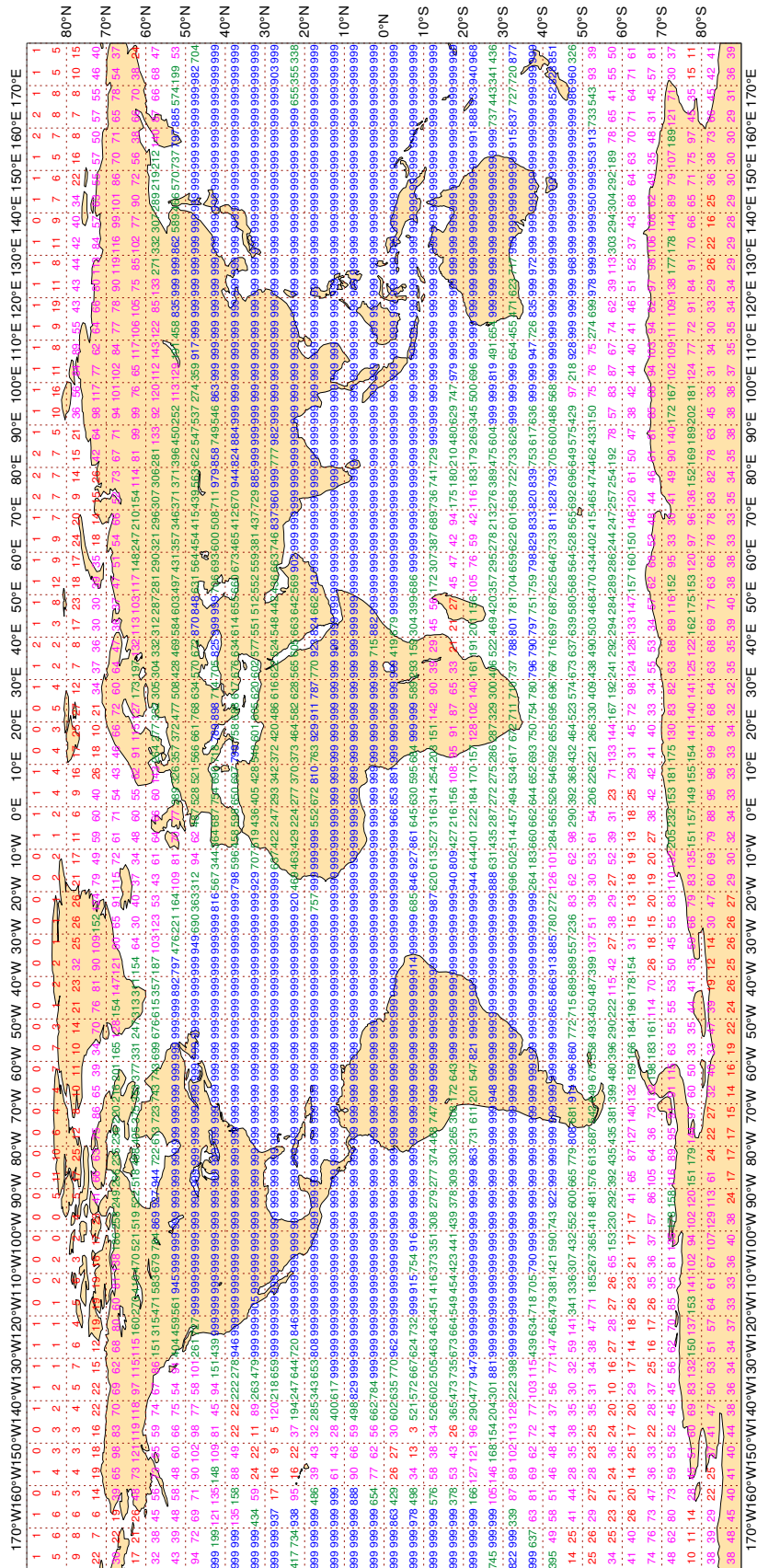


3.2.6 Figure 6 - Availability - SATOB winds 400-150 hPa

Figure 6

ECMWF Monitoring Statistics - JUN 2023
Availability - AMV winds 400-150 hPa

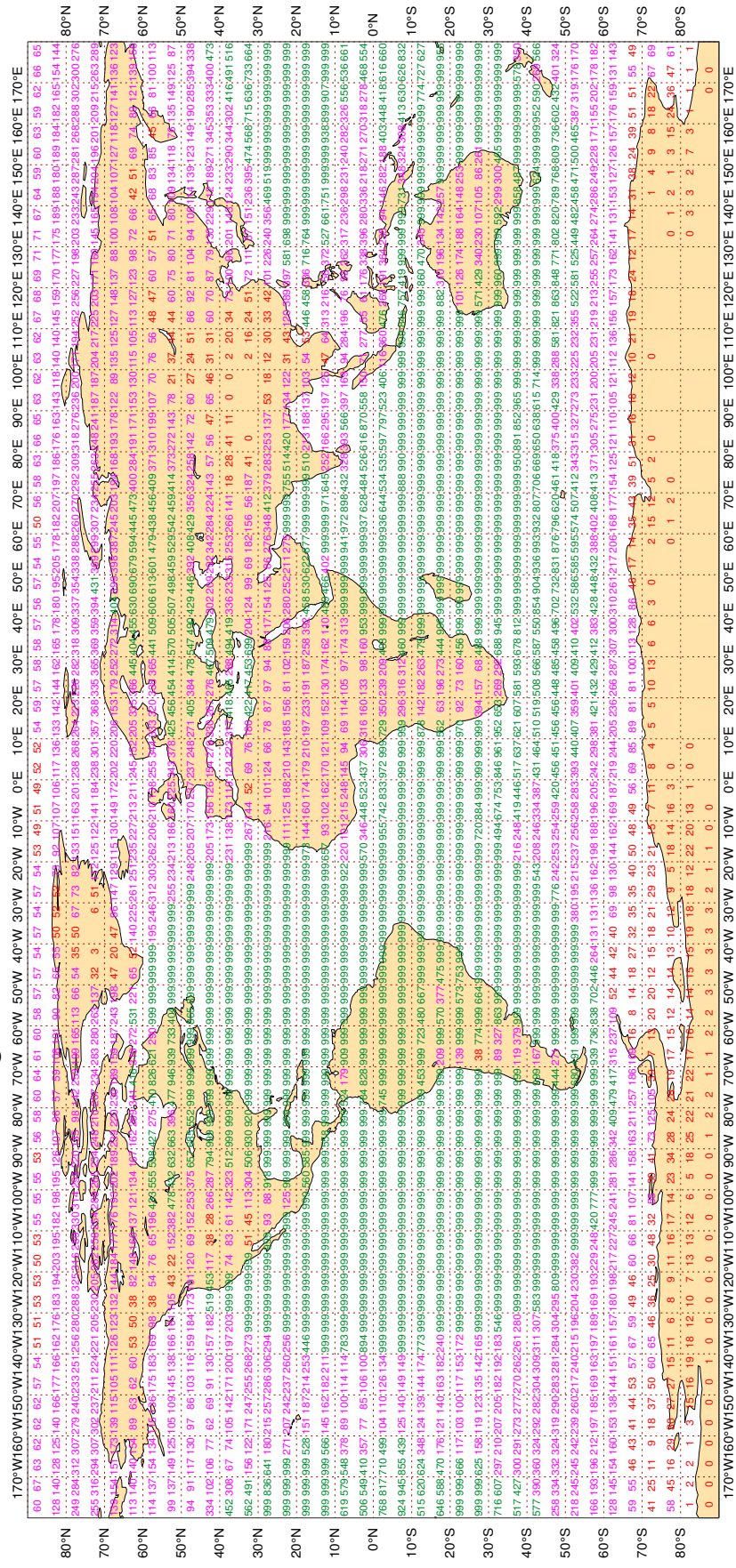
Average number of observations in 24 hours - 2501008



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

Figure 7

ECMWF Monitoring Statistics - JUN 2023
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 3536540

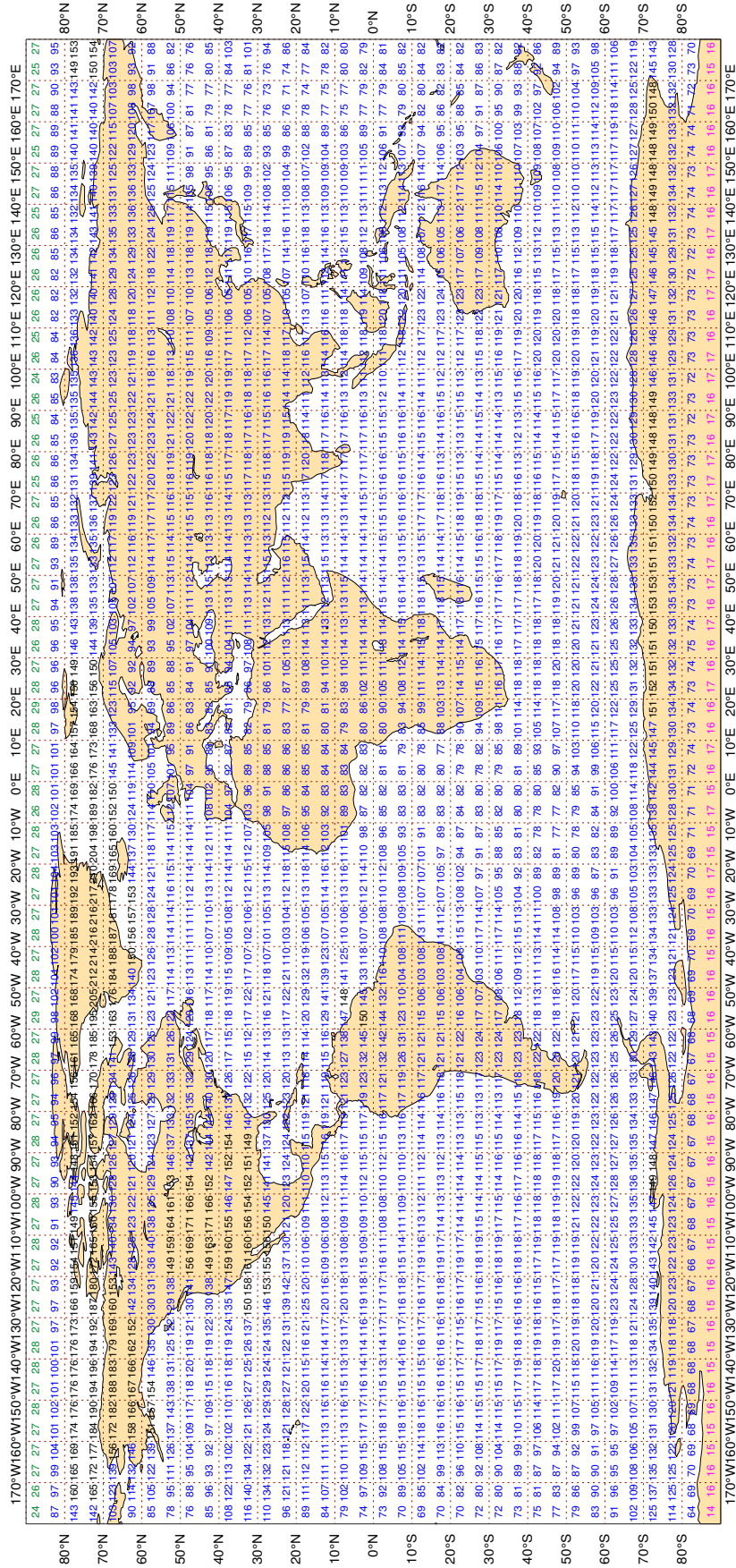


3.2.8 Figure 8 - Availability - NOAA15 ATOVS : AMSU-A

Figure 8

ECMWF Monitoring Statistics - JUN 2023
Availability - NOAA15 ATOVS : AMSU-A

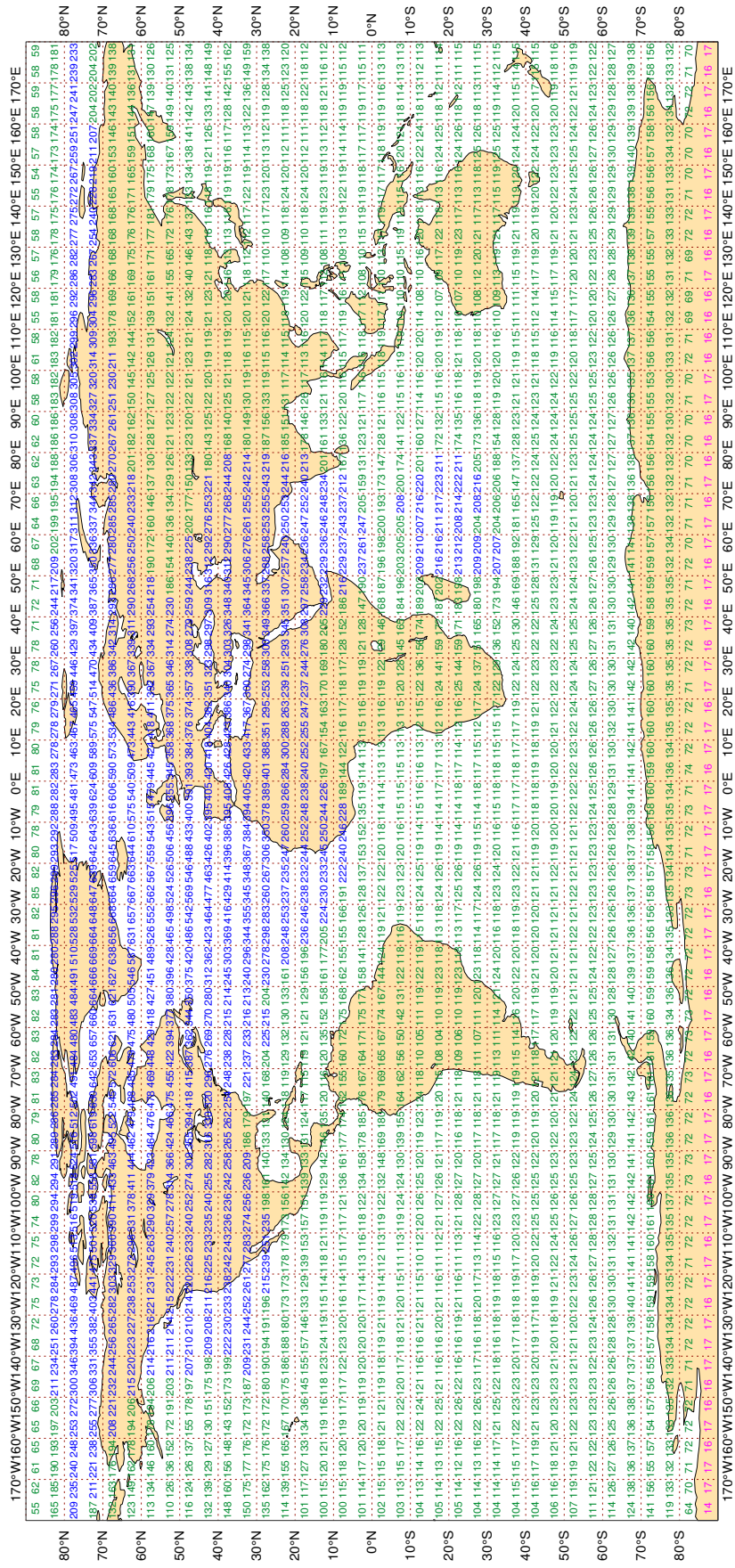
Average number of observations in 24 hours - 286939



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

Figure 9.1

ECMWF Monitoring Statistics - JUN 2023
Availability - NOAA18 ATOVS : AMSU-A
Average number of observations in 24 hours - 467515

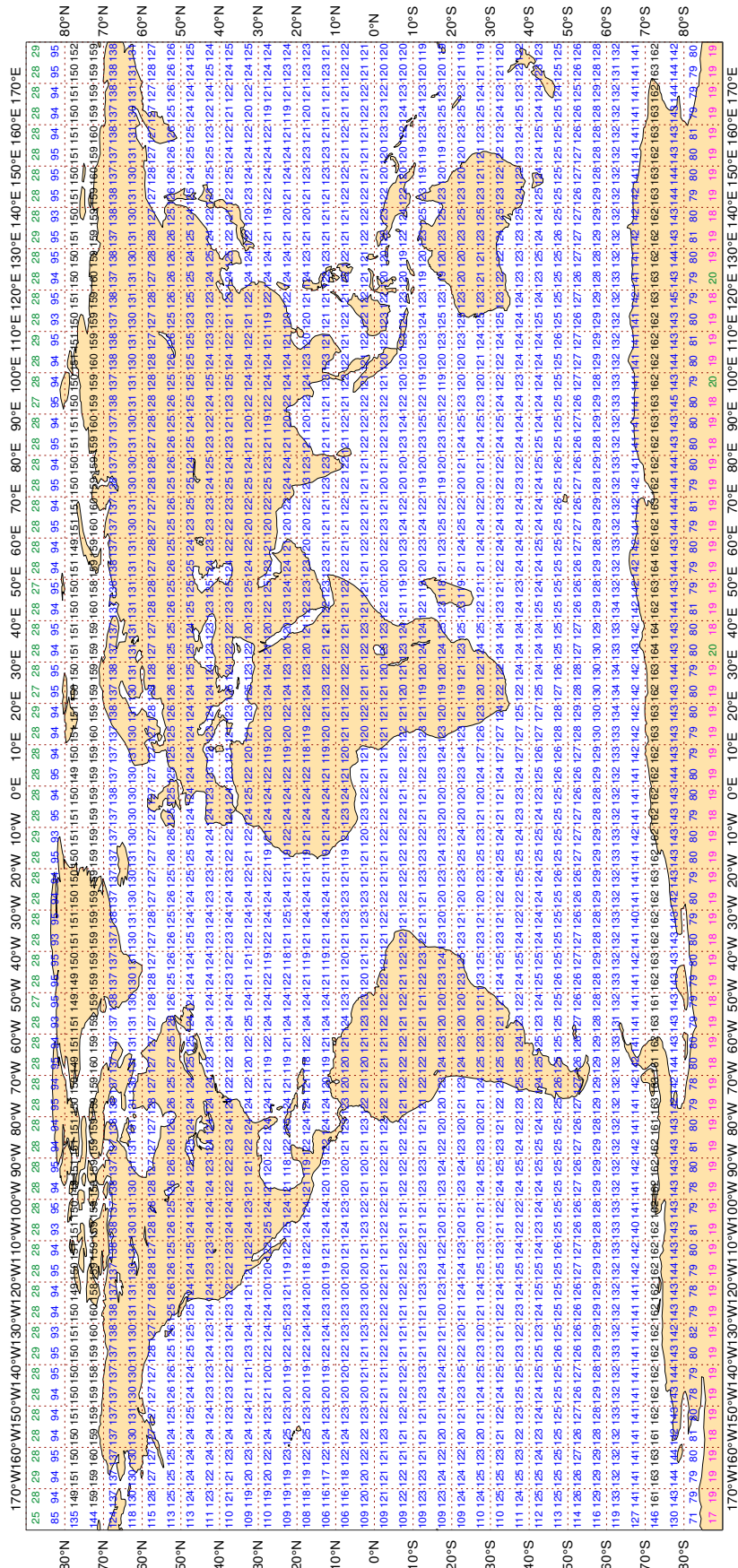


3.2.10 Figure 9.2 - Availability - AQUA ATOVS : AMSU-A

Figure 9.2

ECMWF Monitoring Statistics - JUN 2023
Availability - METOP-C ATOVS : AMSU-A

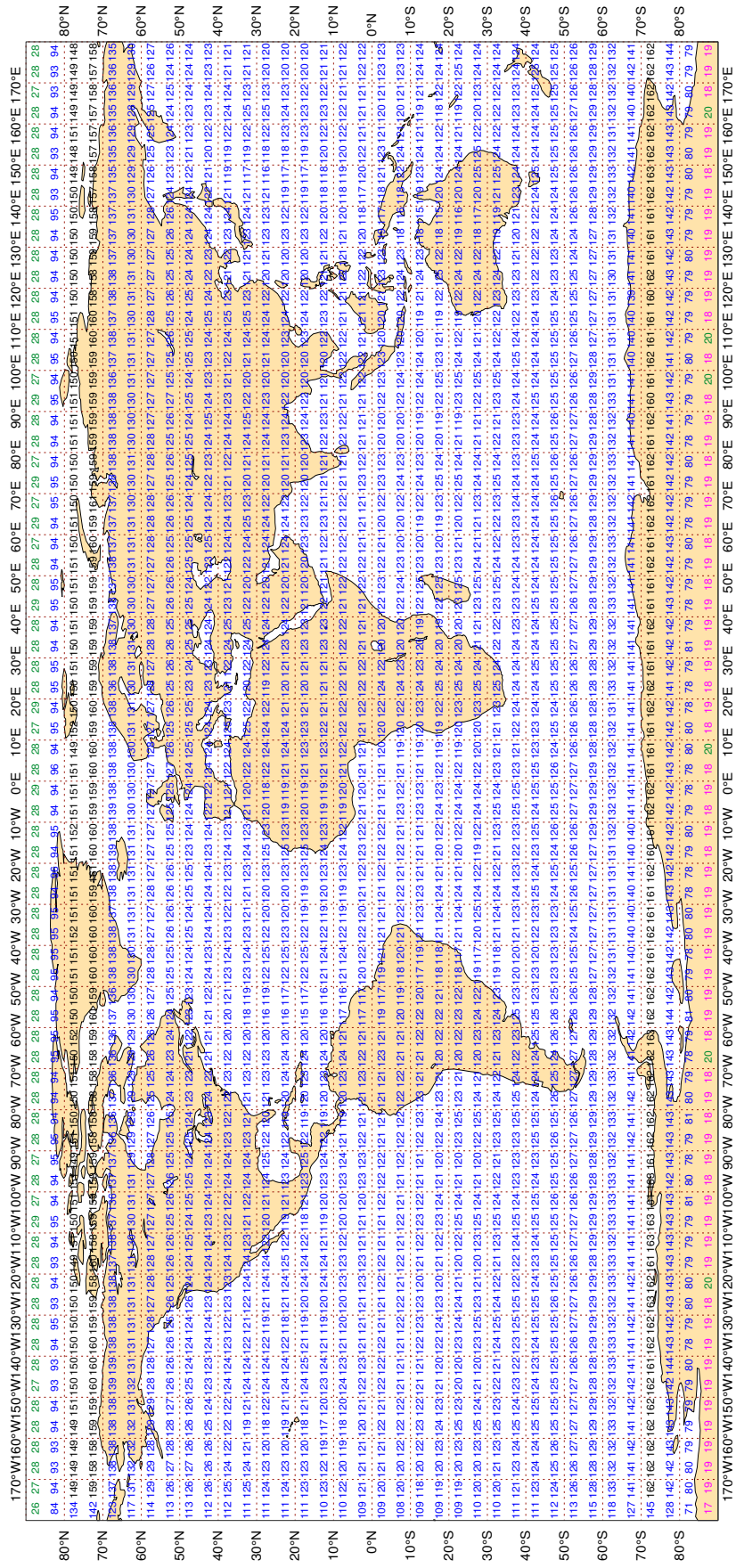
Average number of observations in 24 hours - 313530



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

Figure 9.3

ECMWF Monitoring Statistics - JUN 2023
Availability - METOP-B ATOVS : AMSU-A
Average number of observations in 24 hours - 312761



Magics 4.9.4



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 : JUN 2023
 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
00000	99	P	SUR	85	85	0.0	0.0	0.0
2CYD8	99	P	SUR	28	0	3.4	-4.1	5.3
3E3566	99	P	SUR	24	0	1.7	4.7	5.0
3EBY2	99	P	SUR	43	0	1.5	7.9	8.0
44064	99	P	SUR	114	13	5.4	0.8	5.5
45170	99	P	SUR	66	0	4.8	5.0	7.0
45201	99	P	SUR	120	22	4.0	7.8	8.7
9HA4638	99	P	SUR	59	0	2.2	6.3	6.7
9HA4960	99	P	SUR	26	0	2.5	3.6	4.4
9HA5063	99	P	SUR	63	0	0.9	3.4	3.5
9V2024	99	P	SUR	19	0	3.4	3.2	4.7
9V3913	99	P	SUR	62	0	3.0	4.1	5.1
9V7980	99	P	SUR	28	1	1.3	3.3	3.6
9V8043	99	P	SUR	20	0	1.6	6.2	6.4
9V8372	99	P	SUR	18	0	1.3	7.9	8.0
9V9404	99	P	SUR	25	0	1.2	7.7	7.8
9VPQ7	99	P	SUR	15	0	1.0	4.3	4.4
AUVM	99	P	SUR	40	0	0.7	3.7	3.7
BHJH	99	P	SUR	16	0	1.9	4.0	4.4
C6BQ8	99	P	SUR	21	1	3.7	3.1	4.8
C6PZ8	99	P	SUR	19	0	0.5	-3.0	3.1
C6TX6	99	P	SUR	26	0	4.3	3.4	5.5
C6UA2	99	P	SUR	77	0	0.5	-4.0	4.0
CQET6	99	P	SUR	23	0	1.5	4.2	4.5
JMJRCES	99	P	SUR	120	0	0.5	-5.9	5.9
LAJF7	99	P	SUR	44	0	2.1	3.4	4.0
LAQL7	99	P	SUR	22	0	1.1	4.7	4.9
MKKZ7	99	P	SUR	28	0	1.6	4.1	4.4
ONGI	99	P	SUR	27	0	1.0	3.1	3.2
OXFU2	99	P	SUR	18	0	1.2	6.0	6.1
SHIP	99	P	SUR	304	85	1.3	-0.3	1.3
SKEC	99	P	SUR	65	65	0.0	0.0	0.0

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
TBWUK76	99	P	SUR	21	0	4.3	5.4	6.9
UBBO5	99	P	SUR	25	0	0.7	-4.4	4.4
V7A6070	99	P	SUR	17	0	1.0	3.8	3.9
V7A6081	99	P	SUR	59	0	1.7	3.0	3.5
V7DQ3	99	P	SUR	16	0	0.8	4.7	4.8
V7QT7	99	P	SUR	20	0	0.6	4.7	4.7
VRBQ6	99	P	SUR	15	0	1.3	-3.3	3.6
VRCB4	99	P	SUR	20	0	0.5	-4.6	4.6
VRDB3	99	P	SUR	23	0	1.4	-4.2	4.4
VRDJ3	99	P	SUR	66	0	1.6	-3.1	3.5
VRFS2	99	P	SUR	17	0	2.6	4.3	5.0
VRHE3	99	P	SUR	37	0	1.2	3.5	3.7
VRLA2	99	P	SUR	24	0	1.8	4.5	4.9
VRPJ6	99	P	SUR	24	0	2.0	6.5	6.8
VRQX5	99	P	SUR	29	0	1.3	6.2	6.3
VRSJ8	99	P	SUR	68	0	2.0	-3.0	3.6
VRTF2	99	P	SUR	50	0	2.5	5.8	6.3
VRUO2	99	P	SUR	51	1	0.5	5.1	5.1
VRUX7	99	P	SUR	19	0	1.4	3.1	3.4
VRVC6	99	P	SUR	30	1	0.7	6.0	6.0
VTSJ	99	P	SUR	25	0	2.0	3.1	3.6
VWTI	99	P	SUR	96	0	0.7	3.4	3.5
WDF2493	99	P	SUR	16	0	0.6	4.1	4.2
WGEB	99	P	SUR	111	0	1.3	6.8	6.9

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 : JUN 2023
 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 : JUN 2023
 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
45168	99	DIRN	SUR	46	0	0	29.3	35.4	46.0
45176	99	DIRN	SUR	66	0	0	45.5	-74.1	86.9
45201	99	DIRN	SUR	24	0	0	84.7	16.5	86.2
45203	99	DIRN	SUR	57	0	0	56.5	-47.3	73.7
45204	99	DIRN	SUR	26	0	0	90.5	38.3	98.3
45205	99	DIRN	SUR	51	0	0	55.2	-45.0	71.3
46081	99	DIRN	SUR	39	0	0	33.5	36.2	49.3
46131	99	DIRN	SUR	55	0	0	86.4	3.9	86.5

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 : JUN 2023
 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
00000	99	P	SUR	44	-79	498	498	0.0	0.0	0.0
1301763	99	P	SUR	10	-40	31	27	6.7	9.8	11.9
1501696	99	P	SUR	-30	-11	682	0	0.6	-5.8	5.9
1501727	99	P	SUR	-16	-39	706	0	0.0	-7.4	7.4
1501729	99	P	SUR	-18	-29	704	0	0.0	-9.5	9.5
2302616	99	P	SUR	45	34	161	0	1.7	-7.0	7.2
2302621	99	P	SUR	45	34	156	0	1.6	-7.1	7.2
2302623	99	P	SUR	45	34	177	0	1.7	-7.0	7.2
2302627	99	P	SUR	45	34	138	0	1.4	-7.8	7.9
2302630	99	P	SUR	14	93	459	68	6.4	-3.4	7.2
2302635	99	P	SUR	45	34	174	0	1.7	-7.4	7.6
2302637	99	P	SUR	45	34	166	0	1.7	-7.2	7.4
3101511	99	P	SUR	-22	-20	482	104	3.3	-8.4	9.0
3301702	99	P	SUR	-47	-48	337	176	8.8	-5.4	10.3
3401637	99	P	SUR	-36	7	708	1	2.2	11.7	11.9
4101844	99	P	SUR	18	-70	133	0	1.8	8.4	8.6
4500170	99	P	SUR	42	-87	2255	1	4.8	5.1	7.0
4500201	99	P	SUR	42	83	4245	727	4.0	7.8	8.8
45170	99	P	SUR	42	-87	392	0	4.8	5.1	7.0
45201	99	P	SUR	42	83	720	123	4.0	7.9	8.8
4602577	99	P	SUR	41	-134	152	43	5.9	4.7	7.5
4602588	99	P	SUR	40	-122	293	0	0.7	-8.8	8.8
4602604	99	P	SUR	42	-140	556	145	4.9	3.5	6.0
4602608	99	P	SUR	45	-135	645	0	2.1	4.0	4.5
4701738	99	P	SUR	70	-67	697	697	0.0	0.0	0.0
4701744	99	P	SUR	78	-106	512	512	0.0	0.0	0.0
5102809	99	P	SUR	10	-109	719	612	2.3	-11.8	12.0
5102827	99	P	SUR	8	-80	714	425	3.5	-2.8	4.5
5301671	99	P	SUR	22	114	140	0	0.3	-4.1	4.1
5501656	99	P	SUR	-44	-177	513	0	0.0	-9.6	9.6
5501712	99	P	SUR	26	-80	40	28	0.3	-0.3	0.5
5501735	99	P	SUR	-46	179	718	333	2.3	1.0	2.5

LIST OF SUSPECT STATIONS : DRIFTER
MONITORING CENTRE : ECMWF
ELEMENT MONITORED : SURFACE PRESSURE (HPA)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	ME LAT	N LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	
6204605	99	P	SUR	40	2	699	372	3.7	9.9	10.5

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 : JUN 2023
 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
2300459	99	SPEED	SUR	14	87	51	0	0	1.3	-6.7	6.8
23459	99	SPEED	SUR	14	87	63	0	0	1.2	-6.4	6.6
4400069	99	SPEED	SUR	41	-73	1116	0	0	2.2	5.0	5.5

3.2.17 Table 6 - Suspect drifters: Wind direction (degrees)

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : JUN 2023
 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
2200101	99	DIRN	SUR	37	126	236	0	0	48.3	99.4	110.5
2200186	99	DIRN	SUR	36	126	340	0	0	66.0	0.1	66.0
2300092	99	DIRN	SUR	17	89	128	0	0	42.3	-88.3	98.0
2300093	99	DIRN	SUR	16	88	139	0	0	90.0	-93.7	129.9
2300095	99	DIRN	SUR	10	94	149	0	0	19.9	23.7	30.9
2300452	99	DIRN	SUR	12	69	132	0	0	49.1	-100.1	111.5
2300453	99	DIRN	SUR	8	73	149	0	0	14.9	-42.2	44.7
2300454	99	DIRN	SUR	10	73	142	0	0	76.6	-77.2	108.8
23092	99	DIRN	SUR	17	89	152	0	0	33.3	-86.0	92.2
23093	99	DIRN	SUR	16	88	151	0	0	99.6	-84.3	130.5
23095	99	DIRN	SUR	10	94	183	0	0	16.2	22.9	28.1
23452	99	DIRN	SUR	12	69	153	0	0	43.2	-95.7	105.0
23453	99	DIRN	SUR	8	73	167	0	0	14.3	-42.6	45.0
23454	99	DIRN	SUR	10	73	165	0	0	68.3	-79.2	104.7
23491	99	DIRN	SUR	12	93	213	0	0	49.7	-105.9	117.0
23497	99	DIRN	SUR	11	72	161	0	0	36.5	-80.8	88.7
4400008	99	DIRN	SUR	40	-69	2565	0	0	19.2	23.5	30.3
4400033	99	DIRN	SUR	44	-69	367	0	0	26.7	25.7	37.0
4400150	99	DIRN	SUR	43	-64	587	0	0	18.8	22.3	29.1
4400489	99	DIRN	SUR	45	-61	366	0	0	22.1	-20.8	30.3
44008	99	DIRN	SUR	41	-69	418	0	0	21.3	21.4	30.2
44033	99	DIRN	SUR	44	-69	350	0	0	27.6	25.6	37.7
44069	99	DIRN	SUR	41	-73	402	0	0	25.4	-21.2	33.1
44078	99	DIRN	SUR	60	-40	103	0	0	13.3	-20.1	24.1
44150	99	DIRN	SUR	43	-64	565	0	0	19.0	21.8	29.0
44489	99	DIRN	SUR	46	-61	456	0	0	19.6	-23.8	30.8
4500168	99	DIRN	SUR	42	-86	1725	0	0	25.0	31.5	40.2
4500176	99	DIRN	SUR	42	-82	2271	0	0	24.2	-76.7	80.4
4500187	99	DIRN	SUR	42	-88	1551	0	0	26.3	-20.6	33.4
4500197	99	DIRN	SUR	42	-82	1636	0	0	23.6	-22.0	32.2
4500201	99	DIRN	SUR	42	83	875	0	0	79.6	-1.8	79.6

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
4500203	99	DIRN	SUR	41	-83	1962	0	0	55.3	-45.9	71.9
4500204	99	DIRN	SUR	42	-82	1147	0	0	101.8	25.0	104.8
4500205	99	DIRN	SUR	42	-82	2047	0	0	56.5	-45.8	72.7
45168	99	DIRN	SUR	42	-86	265	0	0	27.2	31.3	41.5
45176	99	DIRN	SUR	42	-82	373	0	0	34.0	-74.7	82.0
45187	99	DIRN	SUR	43	-88	229	0	0	24.9	-23.3	34.1
45197	99	DIRN	SUR	42	-82	337	0	0	24.5	-22.3	33.2
45201	99	DIRN	SUR	42	83	143	0	0	81.7	0.5	81.8
45203	99	DIRN	SUR	41	-83	326	0	0	53.5	-46.8	71.1
45204	99	DIRN	SUR	42	-82	183	0	0	100.8	23.6	103.5
45205	99	DIRN	SUR	42	-82	309	0	0	53.9	-48.4	72.4
4600060	99	DIRN	SUR	61	-147	329	0	0	24.9	20.2	32.1
4600081	99	DIRN	SUR	61	-148	240	0	0	33.9	31.7	46.4
4600120	99	DIRN	SUR	48	-122	288	0	0	22.5	-23.0	32.2
4600145	99	DIRN	SUR	54	-132	30	0	0	15.8	20.4	25.8
4600204	99	DIRN	SUR	51	-129	552	0	0	13.5	26.7	29.9
46081	99	DIRN	SUR	61	-148	228	0	0	34.3	32.0	46.9
46120	99	DIRN	SUR	48	-122	49	0	0	20.6	-23.6	31.3
46131	99	DIRN	SUR	50	-125	348	0	0	85.9	-15.2	87.2
46145	99	DIRN	SUR	54	-132	29	0	0	16.6	20.1	26.1
46204	99	DIRN	SUR	51	-129	525	0	0	13.1	25.7	28.8
5202509	99	DIRN	SUR	13	137	547	0	0	162.3	-33.3	165.7
5300056	99	DIRN	SUR	-5	95	536	0	0	162.8	10.6	163.1
6101007	99	DIRN	SUR	36	25	28	0	0	24.7	21.0	32.4
6200050	99	DIRN	SUR	50	-4	104	0	0	24.1	-21.0	32.0
6200086	99	DIRN	SUR	55	6	327	0	0	12.7	26.0	29.0
6301004	99	DIRN	SUR	72	20	224	0	0	44.1	134.7	141.7
6600022	99	DIRN	SUR	54	14	34	0	0	19.8	20.5	28.5

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 : JUN 2023
 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	30	0	4.0	79.7	79.8
01400	12	Z	1000	57	3	29	0	4.0	78.2	78.3
32150	12	Z	250	47	143	17	0	56.5	53.9	78.1
38341	00	Z	250	43	71	24	0	42.3	95.1	104.1
38341	12	Z	250	43	71	28	1	39.1	75.8	85.3
41256	00	Z	50	24	58	13	0	117.5	109.9	160.9
42079	00	Z	50	32	77	10	1	174.5	37.8	178.5
42339	00	Z	850	26	73	19	0	22.7	31.5	38.8
42399	00	Z	50	27	89	17	3	66.2	147.1	161.3
42410	12	Z	850	26	92	28	2	21.8	49.4	54.0
42410	00	Z	850	26	92	28	1	18.3	38.9	43.0
42516	00	Z	50	26	92	12	0	74.2	188.1	202.2
42675	00	Z	200	23	80	23	8	74.6	49.1	89.3
42724	00	Z	925	24	91	29	2	27.7	29.8	40.7
42886	00	Z	70	22	84	16	4	105.1	111.3	153.1
43041	00	Z	925	19	82	27	0	20.5	33.2	39.0
43049	00	Z	100	19	85	14	2	84.2	105.8	135.2
43128	00	Z	100	17	78	13	3	71.1	127.2	145.7
43185	00	Z	50	16	81	18	3	62.4	127.0	141.5
52533	12	Z	30	40	98	27	0	95.6	221.1	240.9
52533	00	Z	30	40	98	30	0	114.9	270.2	293.6
55591	12	Z	50	30	91	27	0	57.6	205.9	213.8
55591	00	Z	50	30	91	30	0	43.0	165.3	170.8
57083	00	Z	70	35	114	30	1	130.3	175.0	218.2
61442	00	Z	700	18	-16	70	39	30.3	-64.1	70.9
61442	12	Z	925	18	-16	90	61	13.1	-44.4	46.3
62378	00	Z	400	30	31	20	0	42.1	55.3	69.5
62403	12	Z	700	26	33	14	2	37.8	33.8	50.7
68842	00	Z	1000	-34	26	30	0	26.0	16.3	30.7
68842	12	Z	1000	-34	26	29	0	29.0	32.7	43.7
76644	12	Z	100	21	-90	29	2	122.0	150.6	193.8

LIST OF SUSPECT STATIONS (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
91680	00	Z	1000	-18	177	30	0	5.7	32.0	32.5
91680	12	Z	1000	-18	177	29	0	2.5	32.4	32.5
96315	00	Z	1000	5	115	30	0	8.3	56.6	57.2
96315	12	Z	1000	5	115	30	0	7.9	51.4	52.0
97690	00	Z	925	-3	141	29	0	4.2	88.4	88.5
KMPLHP	12	Z	1000	38	-72	10	0	20.8	43.8	48.5
KMPLHP	00	Z	1000	41	-68	10	0	11.7	48.2	49.6

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 : JUN 2023
 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
61442	12	V	925	18	-16	30	0	-5.4	-9.9	18.1
61442	00	V	925	18	-16	27	3	-12.6	-8.5	23.6

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

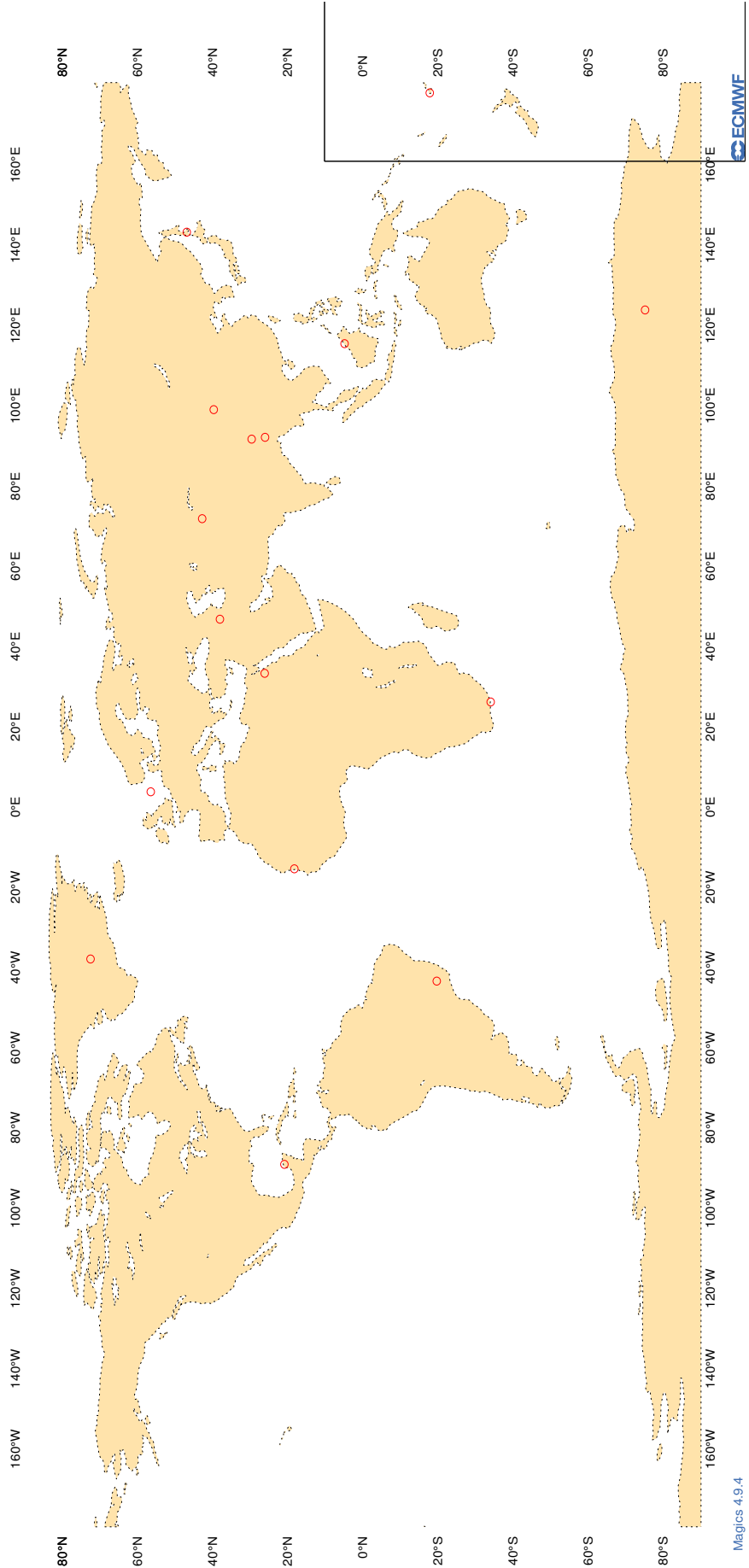
LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

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

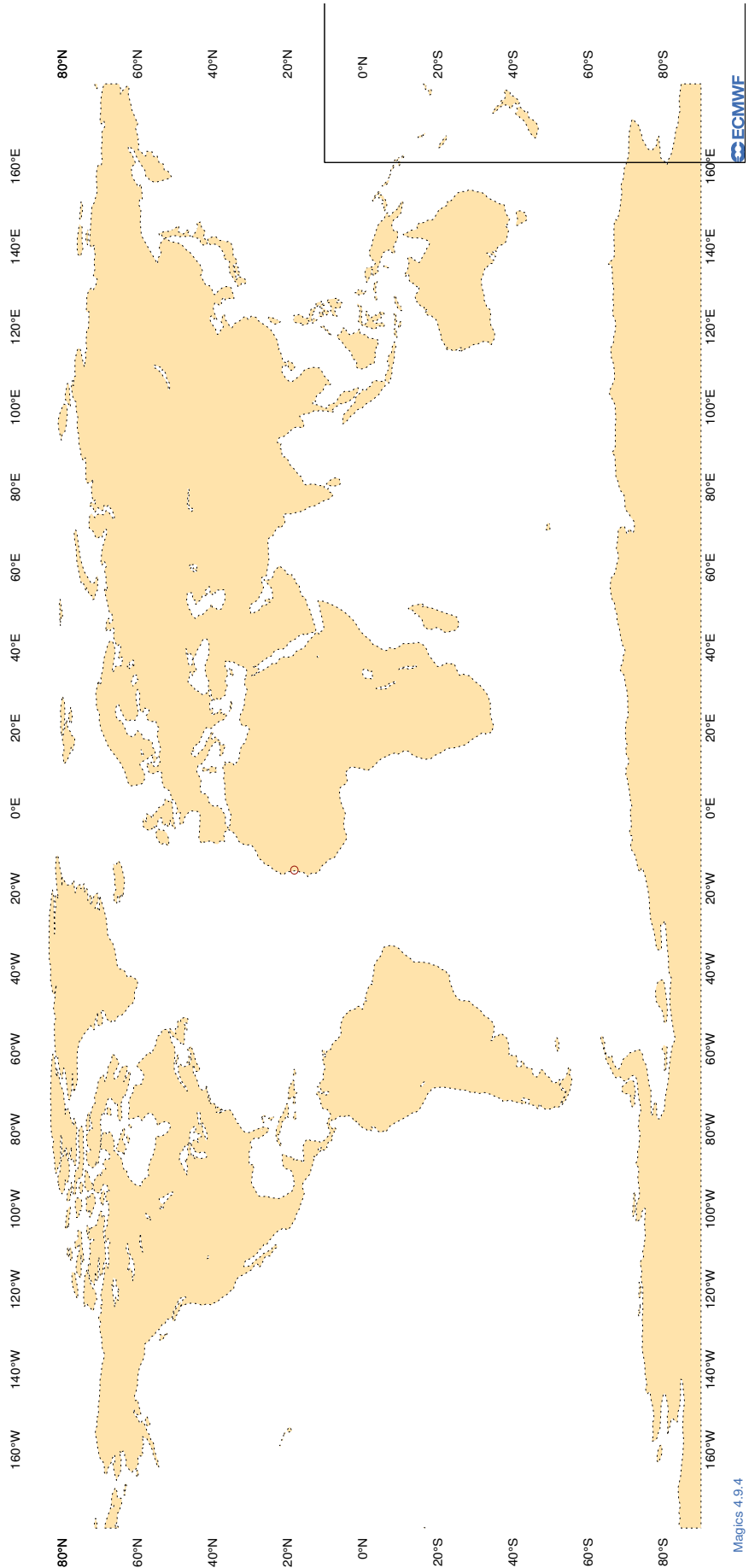
Figure 11
ECMWF Monitoring Statistics - JUN 2023 12 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 12

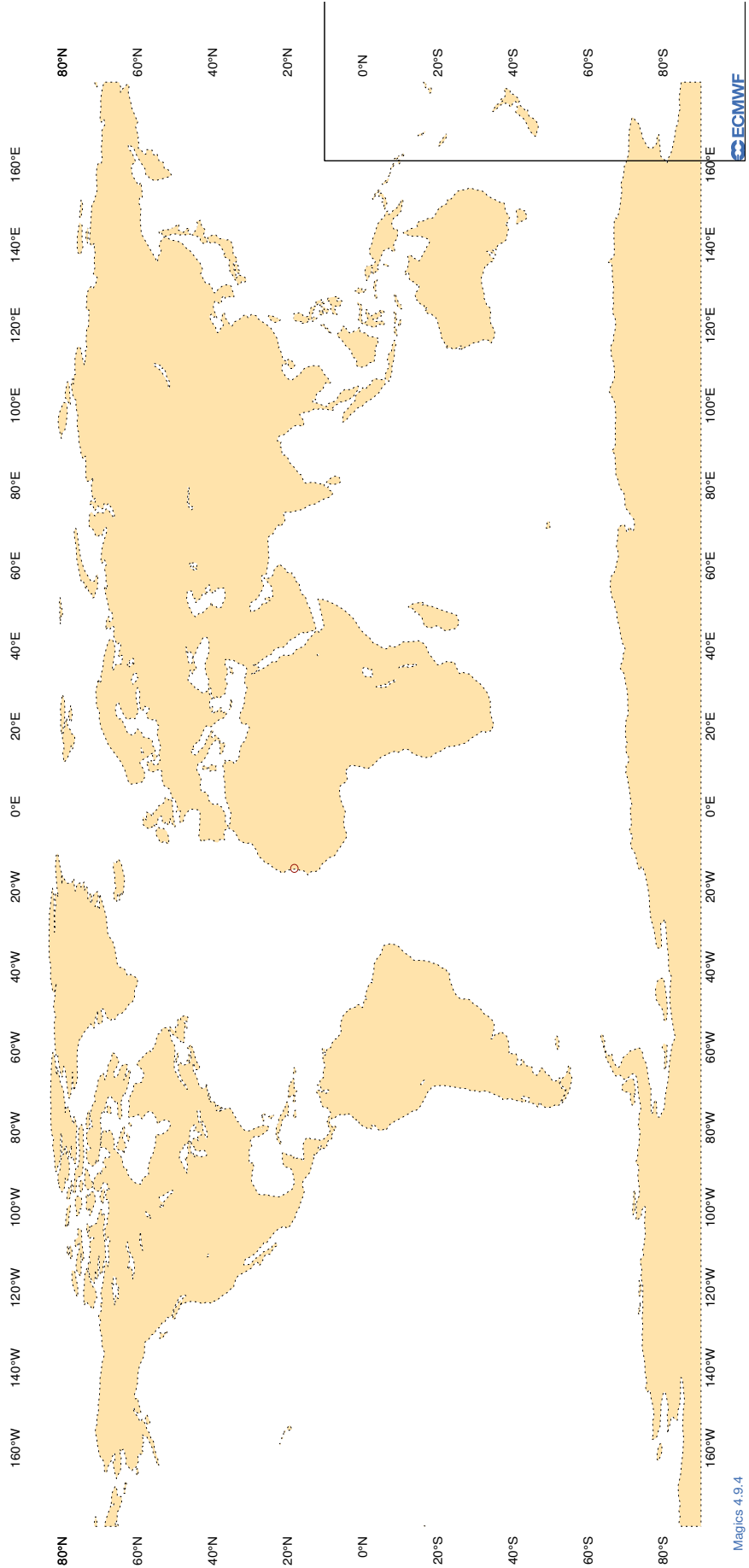
ECMWF Monitoring Statistics - JUN 2023 00 UTC
Suspect TEMP/PILOT observations - WIND



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

Figure 13

ECMWF Monitoring Statistics - JUN 2023 12 UTC
Suspect TEMP/PILOT observations - WIND



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 : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERVT	12	Z	100	11	14.1	-4.5
2EERVT	00	Z	100	14	14.1	-7.8
7JUNA4	12	Z	100	9	85.4	79.2
7JUNA4	00	Z	100	8	9.7	-3.0
9ZT9MR	12	Z	100	5	44.0	-36.2
9ZT9MR	00	Z	100	2	22.9	-22.9
ATGU3F	00	Z	100	6	24.9	-22.1
ATGU3F	12	Z	100	10	40.0	-3.8
BPMWB2	00	Z	100	9	11.9	-8.3
BPMWB2	12	Z	100	5	8.1	-7.4
DBLK	12	Z	100	25	13.6	13.1
FPUW5G	12	Z	100	16	16.2	14.1
GQBZLZ	12	Z	100	5	14.5	-11.8
GQBZLZ	00	Z	100	3	16.3	-15.4
JGQH	12	Z	100	1	11.0	-11.0
JGQH	00	Z	100	2	9.5	9.1
JNKN7J	00	Z	100	1	33.4	33.4
JNSR	00	Z	100	2	1.8	-1.7
JNSR	12	Z	100	3	3.3	2.9
JPBN	00	Z	100	3	6.9	-3.6
JPBN	12	Z	100	14	4.2	-0.9
JPNAK	00	Z	100	13	15.7	10.7
JPNAK	12	Z	100	18	10.8	5.2
KJJF9X	12	Z	100	9	25.0	7.0
KJJF9X	00	Z	100	8	7.6	6.0
KMPLHP	12	Z	100	10	52.7	35.5
KMPLHP	00	Z	100	9	31.2	28.9
LAGY8	12	Z	100	2	120.0	-120.0
LAGZ8	00	Z	100	1	74.3	-74.3
LAGZ8	12	Z	100	1	19.0	-19.0
LRYQE3	00	Z	100	14	12.1	-11.1
LRYQE3	12	Z	100	14	14.6	-11.3
SMLQ	12	Z	100	13	3.5	-1.5
SMLQ	00	Z	100	13	5.8	-3.4
UBQW2	00	Z	100	30	17.7	11.8
UBQW2	12	Z	100	12	34.1	27.1
UXK5JT	00	Z	100	8	6.1	-4.1
UXK5JT	12	Z	100	7	30.6	-12.0
WDK38H	12	Z	100	25	9.1	-8.3

RADIOSONDE MONITORING STATISTICS (SHIPS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
XKQLWQ	12	Z	100	26	27.7	25.8
XQFJRG	00	Z	100	8	16.6	-12.5
XQFJRG	12	Z	100	7	10.7	-6.1
YLV96W	12	Z	100	8	33.6	21.9
YLV96W	00	Z	100	6	5.9	-4.1
ZVQEQC	12	Z	100	20	9.9	8.7

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 : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERT	12	V	100	11	2.1	0.5	0.1
2EERT	00	V	100	14	3.5	-0.3	1.1
7JUNA4	12	V	100	9	2.4	0.2	-0.1
7JUNA4	00	V	100	8	2.5	0.2	0.3
9ZT9MR	12	V	100	5	1.9	-0.2	0.7
9ZT9MR	00	V	100	2	1.8	0.8	-1.2
ATGU3F	00	V	100	6	1.9	-0.5	0.2
ATGU3F	12	V	100	10	2.4	-0.1	1.0
BPMWB2	00	V	100	9	3.0	0.5	0.1
BPMWB2	12	V	100	5	4.1	0.6	1.6
DBLK	12	V	100	25	2.0	0.0	0.3
FPUW5G	12	V	100	15	2.7	0.2	0.4
GQBZLZ	12	V	100	5	1.7	0.2	0.0
GQBZLZ	00	V	100	3	1.7	-1.1	0.5
JGQH	12	V	100	1	3.2	2.8	1.5
JGQH	00	V	100	2	2.4	1.0	-1.0
JNKN7J	00	V	100	1	2.3	0.6	2.2
JNSR	00	V	100	2	3.4	-1.5	2.3
JNSR	12	V	100	3	1.6	-0.4	0.4
JPBN	00	V	100	3	6.4	-1.0	-2.7
JPBN	12	V	100	14	3.5	-0.5	-1.2
JPNAK	00	V	100	11	3.7	-0.7	0.9
JPNAK	12	V	100	15	4.3	0.7	0.2
KJJF9X	12	V	100	9	3.4	0.2	-0.8
KJJF9X	00	V	100	8	2.9	-0.5	-0.7
KMPLHP	12	V	100	10	2.3	1.0	0.3
KMPLHP	00	V	100	9	3.6	0.8	-0.1
LAGY8	12	V	100	2	3.6	-0.1	0.7
LAGZ8	00	V	100	1	2.9	2.0	2.1
LAGZ8	12	V	100	1	3.3	2.7	-1.9
LRYQE3	00	V	100	14	2.5	-0.3	-0.1
LRYQE3	12	V	100	14	2.6	0.1	0.2
SMLQ	12	V	100	13	2.1	-0.7	0.3
SMLQ	00	V	100	13	1.5	-0.2	0.8
UBQW2	00	V	100	30	1.9	-0.1	0.0
UBQW2	12	V	100	12	1.8	0.2	-0.1
UXK5JT	00	V	100	8	2.8	0.2	0.9
UXK5JT	12	V	100	7	5.0	0.4	-1.9
WDK38H	12	V	100	25	1.9	0.2	0.1

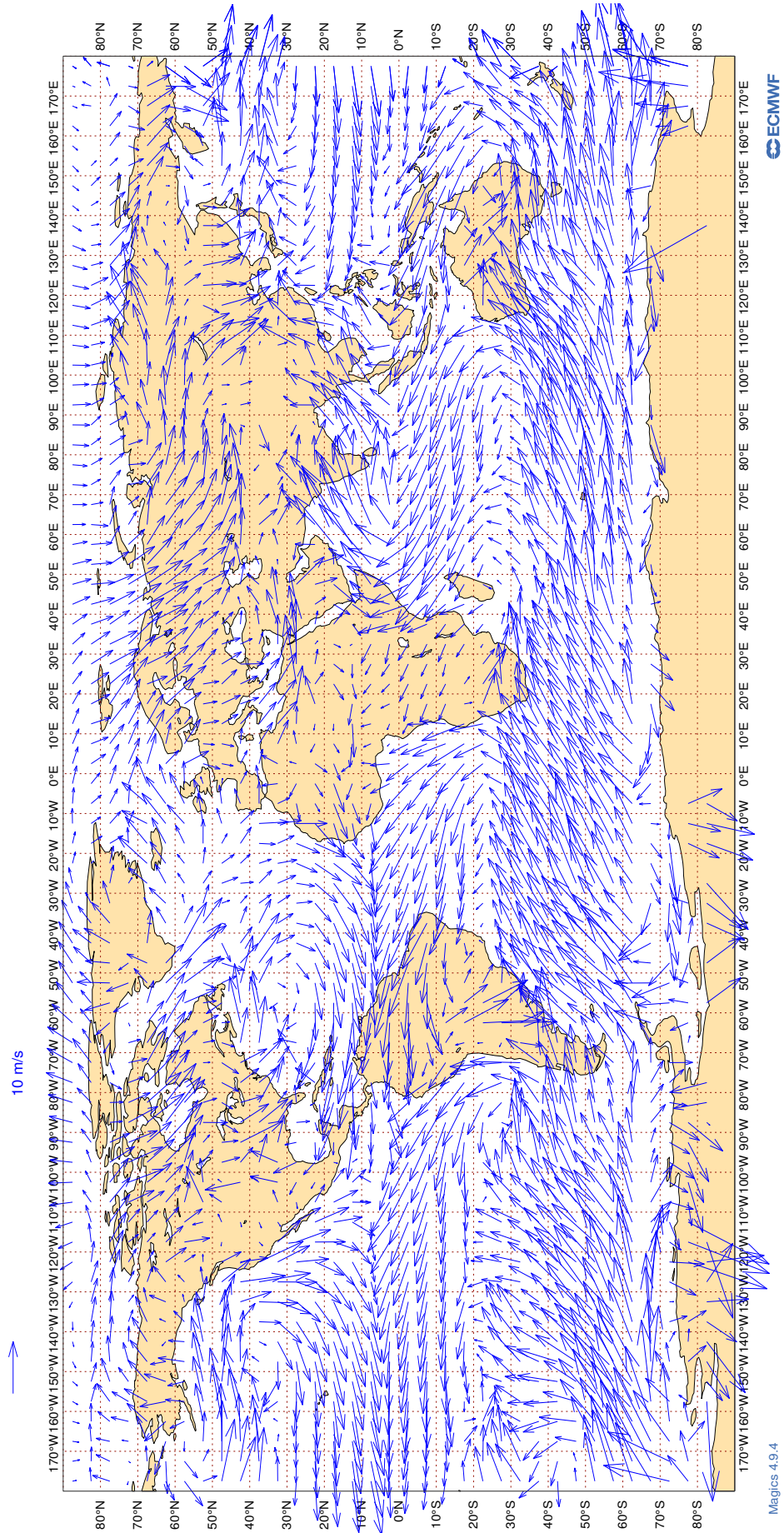
RADIOSONDE MONITORING STATISTICS (SHIPS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
XKQLWQ	12	V	100	25	2.7	0.6	0.3
XQFJRG	00	V	100	8	2.2	0.5	0.2
XQFJRG	12	V	100	7	2.4	-0.4	-0.8
YLV96W	12	V	100	8	4.3	-0.4	-0.6
YLV96W	00	V	100	6	2.7	0.3	0.9
ZVQEQC	12	V	100	20	2.9	0.3	0.9

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

Figure 14

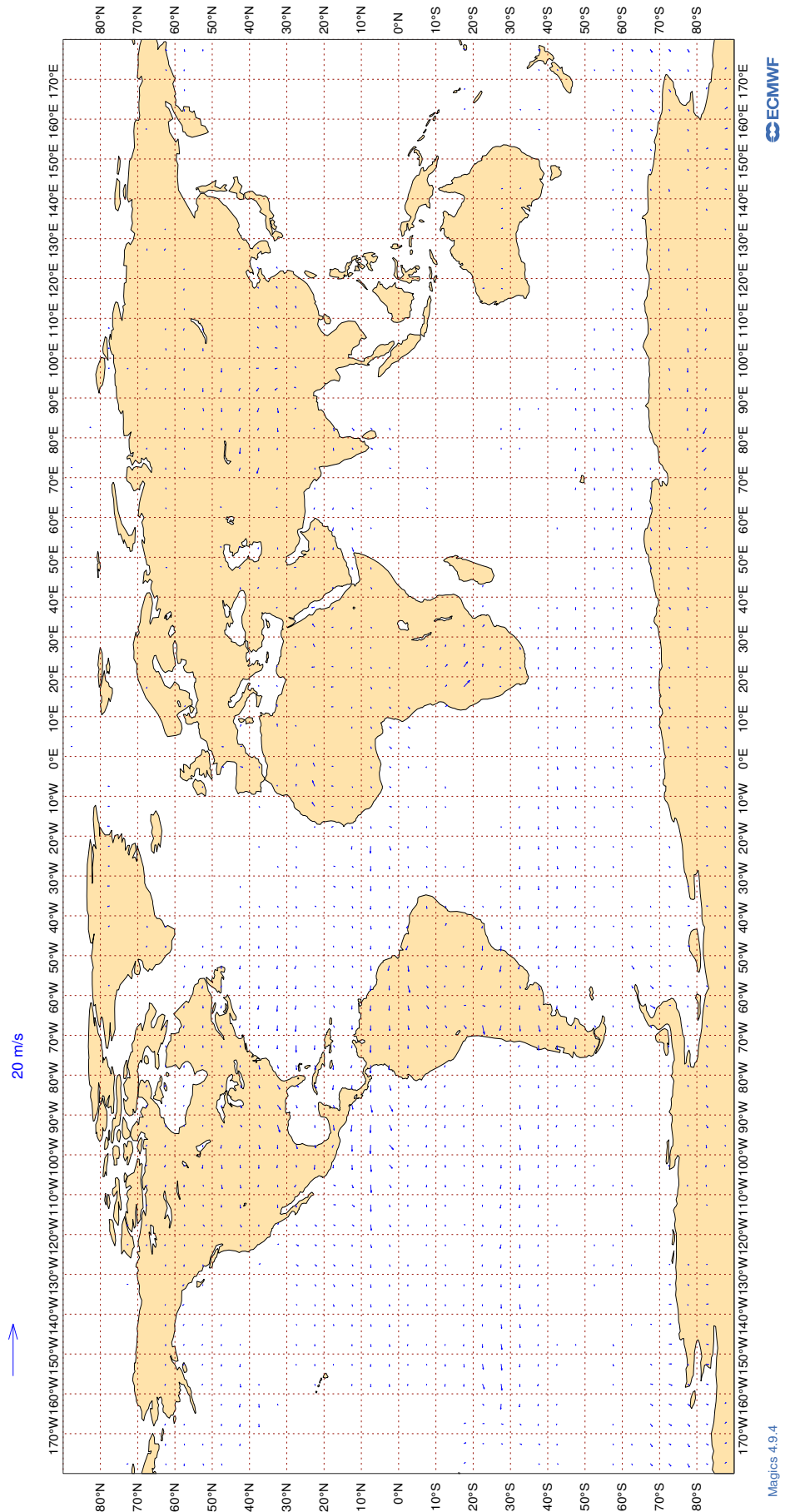
ECMWF Monitoring Statistics: Jun 2023
AMV Winds: 700-1000hPa
Mean Observed Wind



3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

Figure 15

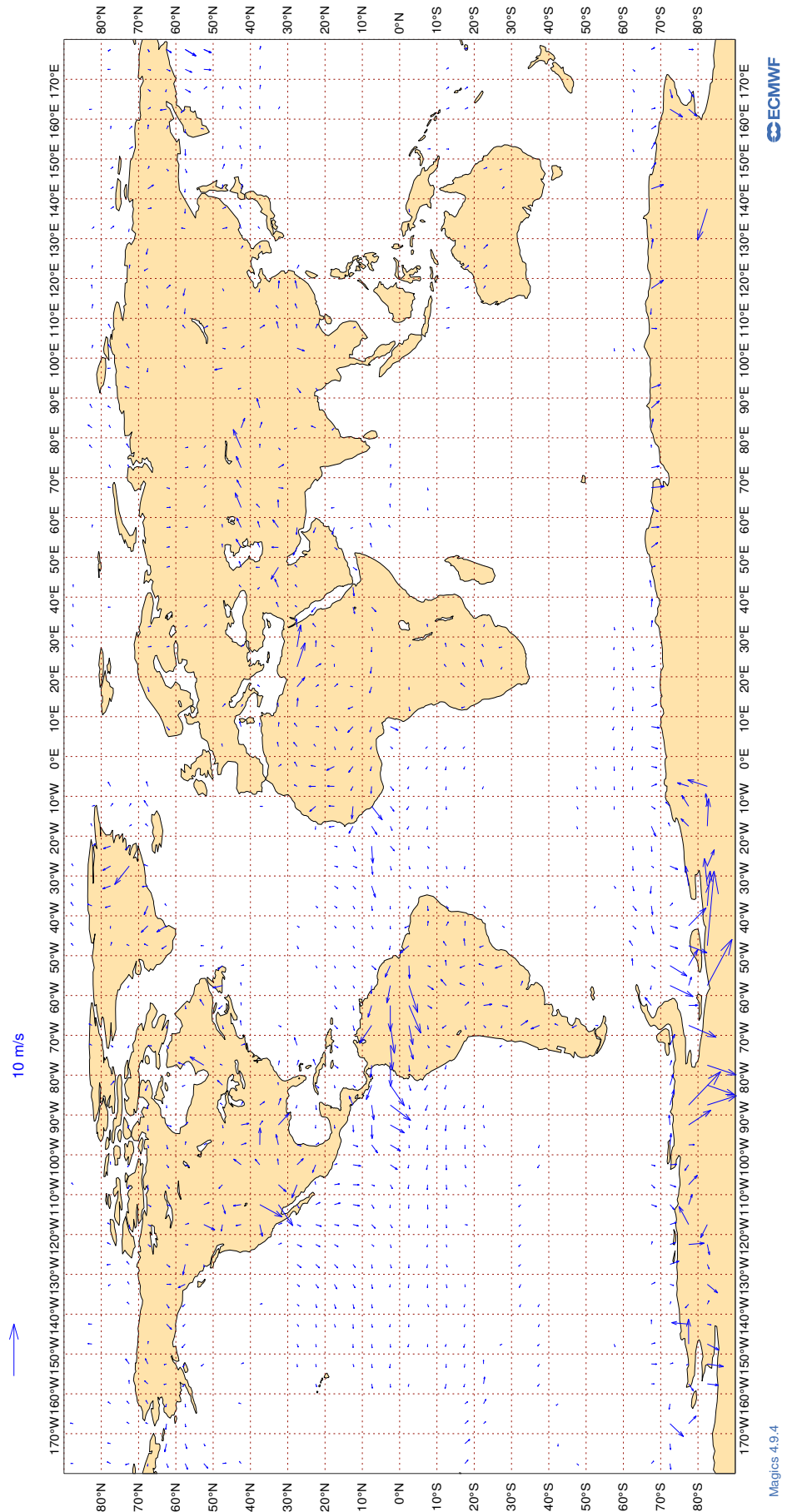
ECMWF Monitoring Statistics: Jun 2023
AMV Winds: 150- 400hPa
Wind bias: Observation - FG



3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

Figure 16

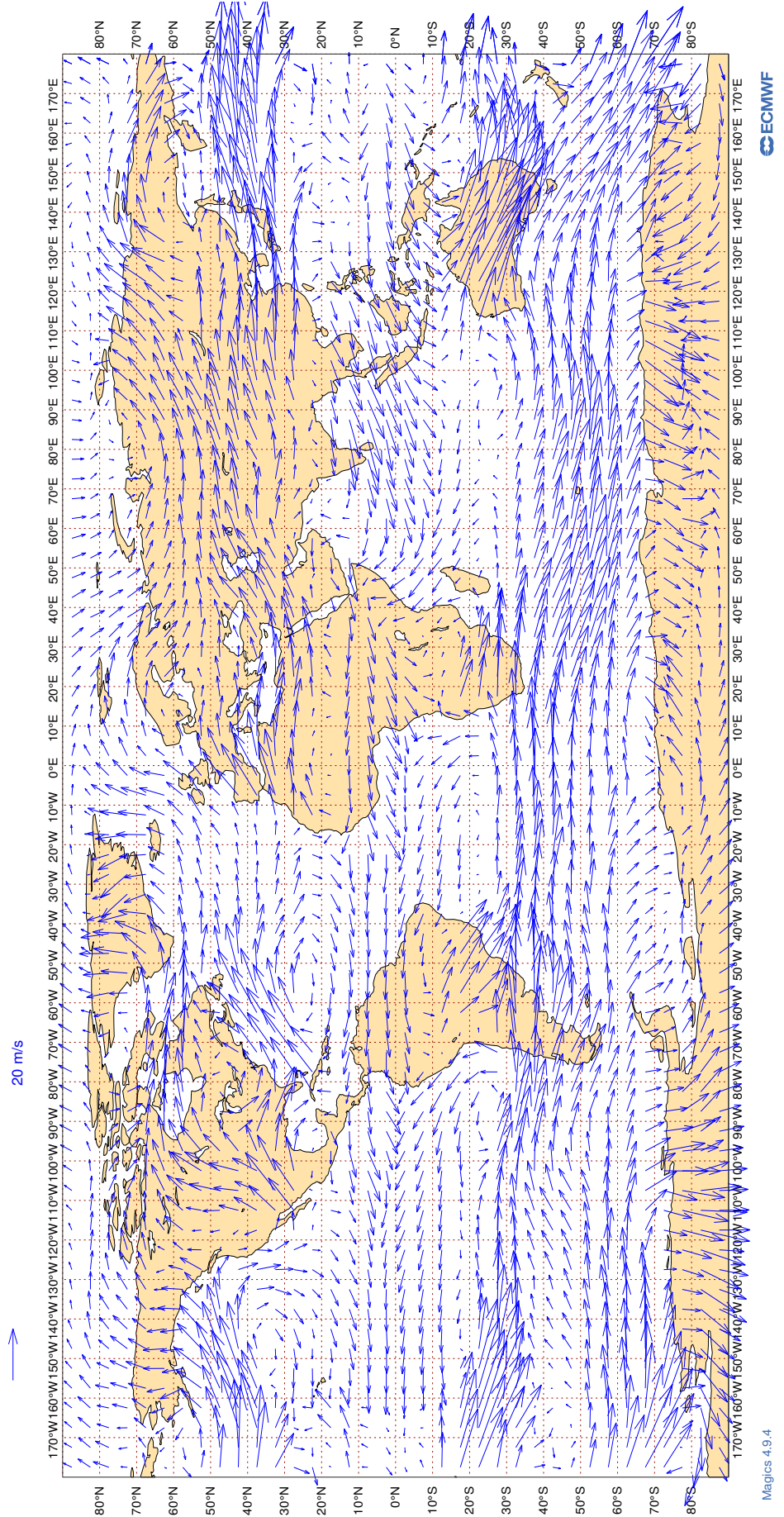
ECMWF Monitoring Statistics: Jun 2023
AMV Winds: 700-1000hPa
Wind bias: Observation - FG



3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17

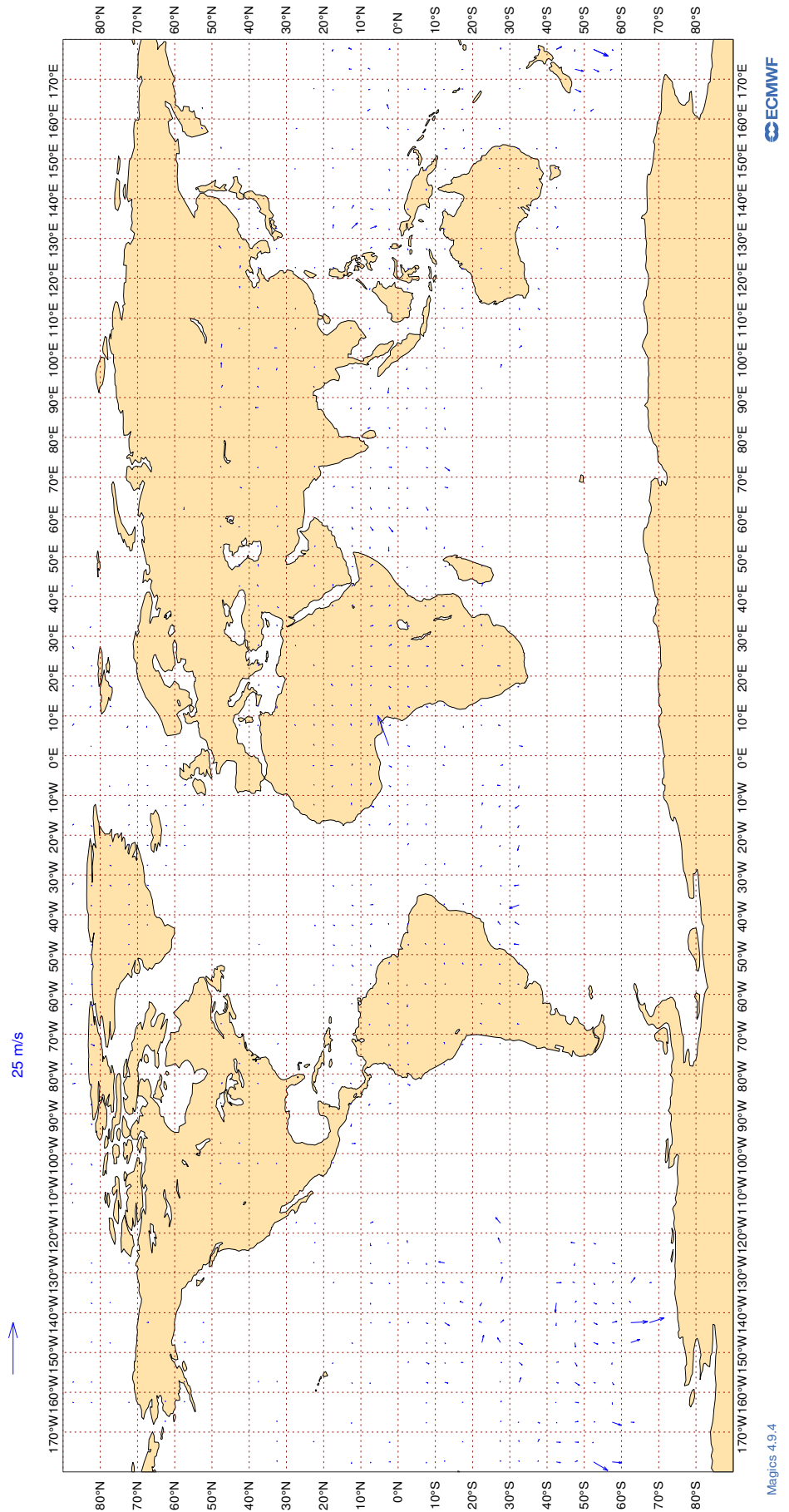
ECMWF Monitoring Statistics: Jun 2023
AMV Winds: 150- 400hPa
Mean Observed Wind



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

Figure 18

ECMWF Monitoring Statistics: Jun 2023
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 : JUN 2023
 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	22	0	0	3.4	0.6
AAL	99	V	300-150	58335	2	0	4.7	0.2
AAR	99	V	300-150	243	0	1	3.5	-0.2
ABD	99	V	300-150	1331	0	0	3.4	-0.3
ABF	99	V	300-150	20	0	0	3.0	0.7
ABX	99	V	300-150	178	0	0	3.2	0.3
ACA	99	V	300-150	37848	1	0	4.5	0.1
ACI	99	V	300-150	415	0	0	3.6	0.1
ADN	99	V	300-150	29	0	0	7.1	3.5
ADS	99	V	300-150	24	0	0	4.0	-1.0
ADY	99	V	300-150	32	0	0	3.1	0.3
AEA	99	V	300-150	655	5	2	6.7	0.2
AFR	99	V	300-150	37174	0	0	3.6	0.1
AHO	99	V	300-150	515	1	0	6.4	0.2
AIC	99	V	300-150	4780	1	2	5.2	0.3
AJT	99	V	300-150	230	0	0	2.8	-0.1
AKK	99	V	300-150	23	0	0	2.2	0.3
ALK	99	V	300-150	1346	0	0	4.2	0.4
AME	99	V	300-150	37	0	0	4.2	1.4
AMX	99	V	300-150	5262	5	0	7.5	0.1
ANA	99	V	300-150	265	4	3	6.7	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ANZ	99	V	300-150	18075	0	0	4.1	0.5
AOJ	99	V	300-150	329	0	0	2.8	0.3
AOJ	99	V	300-150	31	0	0	2.7	0.5
ARL	99	V	300-150	60	0	0	5.1	-0.4
ASA	99	V	300-150	24	0	4	5.5	1.3
ASL	99	V	300-150	1196	0	0	2.8	0.3
ASY	99	V	300-150	139	0	0	3.8	0.6
ATC	99	V	300-150	414	1	1	7.7	1.2
ATG	99	V	300-150	385	0	1	4.5	0.4
ATN	99	V	300-150	121	0	0	5.8	0.2
AUA	99	V	300-150	5261	0	0	3.5	0.1
AVA	99	V	300-150	448	6	0	7.7	0.0
AWC	99	V	300-150	27	0	0	4.8	0.8
AXM	99	V	300-150	74	0	1	5.0	0.8
AXY	99	V	300-150	166	0	0	2.6	0.1
AYJ	99	V	300-150	33	0	0	3.0	-0.2
AZG	99	V	300-150	795	0	0	3.4	0.0
BAF	99	V	300-150	106	0	0	2.8	-0.5
BAV	99	V	300-150	131	0	2	6.5	-0.1
BAW	99	V	300-150	49337	1	0	4.0	0.1
BBB	99	V	300-150	24	0	0	4.1	0.1
BBC	99	V	300-150	718	2	0	5.5	0.2
BCS	99	V	300-150	1855	0	0	3.0	0.2
BEL	99	V	300-150	1628	0	0	2.8	0.3
BFF	99	V	300-150	82	0	0	3.8	0.8
BFY	99	V	300-150	64	0	0	2.7	0.4
BMW	99	V	300-150	31	0	0	3.3	-0.4
BOE	99	V	300-150	78	5	0	2.7	-0.4
BOX	99	V	300-150	4601	0	0	3.3	0.2
BOX	99	V	300-150	100	0	0	2.6	0.0
BTX	99	V	300-150	23	0	0	2.7	-0.2
CAL	99	V	300-150	1570	0	2	4.2	0.5
CAZ	99	V	300-150	49	0	0	2.9	0.0
CBJ	99	V	300-150	185	0	4	4.5	0.3
CCA	99	V	300-150	122	1	1	4.0	0.9
CEB	99	V	300-150	1193	0	1	4.7	0.3
CES	99	V	300-150	852	0	1	3.9	0.3
CFC	99	V	300-150	340	0	0	3.4	0.3
CFG	99	V	300-150	6532	0	0	3.0	0.1
CHG	99	V	300-150	763	0	0	3.6	-0.3
CHH	99	V	300-150	58	0	0	3.4	-0.1
CJT	99	V	300-150	623	0	0	3.4	0.3
CKS	99	V	300-150	1614	0	0	3.1	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CLX	99	V	300-150	5091	0	0	3.5	-0.2
CLY	99	V	300-150	81	0	0	2.3	0.0
CMA	99	V	300-150	168	0	0	3.8	0.4
CMB	99	V	300-150	1505	0	0	3.2	0.0
CNK	99	V	300-150	66	0	0	4.1	1.0
CNV	99	V	300-150	128	0	0	3.2	0.4
CPA	99	V	300-150	1786	0	2	4.0	0.3
CPJ	99	V	300-150	24	0	0	2.7	0.5
CRL	99	V	300-150	1622	0	0	2.7	0.1
CRV	99	V	300-150	42	0	0	3.0	0.8
CSC	99	V	300-150	515	0	2	4.1	0.2
CSN	99	V	300-150	691	1	2	4.8	0.1
CSS	99	V	300-150	84	0	1	4.6	0.0
CTM	99	V	300-150	182	0	1	2.7	-0.1
CWG	99	V	300-150	60	0	0	3.2	0.7
CXF	99	V	300-150	30	0	0	2.6	0.5
DAH	99	V	300-150	1135	0	0	2.8	0.1
DAL	99	V	300-150	78209	0	0	2.9	0.1
DCM	99	V	300-150	102	0	0	5.8	0.5
DHK	99	V	300-150	2790	0	0	3.1	0.0
DHX	99	V	300-150	198	0	0	4.6	0.5
DJT	99	V	300-150	1940	0	0	2.8	0.4
DLH	99	V	300-150	30812	0	0	3.7	0.1
DSO	99	V	300-150	81	0	0	3.0	0.0
DUB	99	V	300-150	26	0	0	4.0	0.8
EAL	99	V	300-150	97	0	0	3.3	-0.3
EAU	99	V	300-150	48	0	0	3.1	0.1
EDG	99	V	300-150	423	0	0	3.2	0.5
EDW	99	V	300-150	1406	0	0	3.0	0.0
EIN	99	V	300-150	16986	0	0	2.7	0.2
EJM	99	V	300-150	1903	0	0	3.4	0.2
ELY	99	V	300-150	4595	2	0	6.0	0.0
ETD	99	V	300-150	11387	1	1	4.9	0.1
ETH	99	V	300-150	6109	0	0	4.9	0.3
EUK	99	V	300-150	1838	0	0	2.8	0.2
EUW	99	V	300-150	48	0	0	2.9	0.7
EVA	99	V	300-150	1329	0	3	5.0	0.5
EVE	99	V	300-150	187	0	1	3.2	0.5
EXS	99	V	300-150	1160	0	0	2.9	0.0
FAD	99	V	300-150	83	0	0	2.7	0.0
FBU	99	V	300-150	2796	0	0	3.2	0.1
FDX	99	V	300-150	7378	0	0	2.9	0.1
FFM	99	V	300-150	49	0	2	4.8	1.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FIN	99	V	300-150	1925	0	1	4.0	0.3
FJI	99	V	300-150	2685	0	0	3.4	0.5
FJO	99	V	300-150	97	0	0	2.6	0.3
FPY	99	V	300-150	3199	0	0	2.7	0.1
FWI	99	V	300-150	1009	0	0	2.7	0.1
FWK	99	V	300-150	105	0	0	2.9	0.1
FXT	99	V	300-150	91	0	0	3.1	0.5
FYG	99	V	300-150	30	0	0	3.3	-0.2
FYL	99	V	300-150	28	0	0	4.7	2.5
GAF	99	V	300-150	101	0	0	3.3	0.5
GCK	99	V	300-150	177	0	0	3.1	-0.2
GEC	99	V	300-150	1564	0	0	3.2	0.2
GES	99	V	300-150	105	0	1	2.5	0.1
GFA	99	V	300-150	1313	0	2	4.7	0.2
GIA	99	V	300-150	1751	0	0	4.2	0.4
GJE	99	V	300-150	157	0	0	3.1	0.0
GKY	99	V	300-150	38	0	0	3.1	-0.1
GRB	99	V	300-150	36	0	0	3.3	-0.3
GRP	99	V	300-150	33	0	0	3.2	1.3
GSM	99	V	300-150	103	0	0	3.1	1.2
GTI	99	V	300-150	1730	0	0	3.1	0.0
GTR	99	V	300-150	236	0	0	2.5	-0.1
HAL	99	V	300-150	900	0	0	3.9	0.4
HFM	99	V	300-150	81	0	0	2.7	0.4
HIM	99	V	300-150	23	0	0	5.5	-0.6
HKC	99	V	300-150	36	0	0	4.7	1.1
HLF	99	V	300-150	23	0	0	4.2	0.0
HRN	99	V	300-150	61	0	0	2.9	-1.0
HRT	99	V	300-150	116	0	0	4.1	-0.2
HTS	99	V	300-150	25	0	0	3.1	-0.4
HUA	99	V	300-150	33	0	0	2.7	0.7
HUE	99	V	300-150	101	0	0	5.8	2.4
HVN	99	V	300-150	764	0	3	5.5	0.3
HZS	99	V	300-150	33	0	0	2.9	0.4
IAM	99	V	300-150	141	0	0	3.9	-0.2
IBE	99	V	300-150	7423	0	0	3.0	0.1
ICE	99	V	300-150	9410	0	0	3.0	0.1
ICL	99	V	300-150	293	0	1	4.1	-0.4
ICV	99	V	300-150	372	0	1	4.0	-0.2
IFA	99	V	300-150	446	0	0	3.0	0.4
IGO	99	V	300-150	64	0	0	3.3	0.1
IJM	99	V	300-150	100	0	0	2.8	-0.4
IND	99	V	300-150	23	0	0	3.7	0.4

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ITY	99	V	300-150	6152	0	0	2.9	0.2
JAF	99	V	300-150	693	3	0	6.8	0.0
JAL	99	V	300-150	138	1	4	6.5	0.7
JAS	99	V	300-150	237	0	0	3.4	0.3
JBU	99	V	300-150	5288	0	0	2.8	0.3
JCO	99	V	300-150	108	0	0	2.4	0.0
JME	99	V	300-150	53	0	2	2.8	0.9
JML	99	V	300-150	30	0	0	2.8	0.7
JNY	99	V	300-150	63	0	2	3.2	-0.5
JST	99	V	300-150	70	0	0	3.4	0.8
KAC	99	V	300-150	2873	0	1	3.7	0.2
KAF	99	V	300-150	37	0	0	3.8	-1.4
KAI	99	V	300-150	137	0	0	4.6	-0.2
KAL	99	V	300-150	743	0	2	3.9	0.7
KAY	99	V	300-150	225	0	0	3.2	0.6
KCE	99	V	300-150	48	0	0	2.9	0.5
KIW	99	V	300-150	20	0	0	4.5	1.6
KLM	99	V	300-150	19096	1	0	5.2	0.1
KNE	99	V	300-150	215	0	1	3.7	-0.3
KQA	99	V	300-150	393	1	3	5.9	0.8
KRH	99	V	300-150	35	0	0	2.5	0.1
LAN	99	V	300-150	609	5	0	6.0	0.1
LCO	99	V	300-150	810	0	0	3.4	-0.3
LDX	99	V	300-150	195	0	0	2.9	0.0
LNK	99	V	300-150	32	0	0	2.8	0.5
LOT	99	V	300-150	4684	1	0	6.6	0.0
LRQ	99	V	300-150	35	0	0	2.8	0.0
LUC	99	V	300-150	83	0	0	2.4	0.1
LWG	99	V	300-150	69	0	0	3.5	0.7
LXA	99	V	300-150	39	0	0	2.7	-0.5
LXJ	99	V	300-150	1238	0	0	3.0	0.1
LYX	99	V	300-150	29	0	0	3.4	-0.5
MAA	99	V	300-150	86	0	1	2.6	0.0
MAS	99	V	300-150	2619	0	1	4.8	0.4
MAU	99	V	300-150	483	0	0	5.3	0.8
MHV	99	V	300-150	53	0	0	3.2	1.4
MJF	99	V	300-150	23	0	0	2.1	0.4
MLM	99	V	300-150	78	0	0	2.9	-0.2
MLN	99	V	300-150	30	0	0	3.7	-0.5
MMD	99	V	300-150	302	0	0	2.7	0.2
MNB	99	V	300-150	307	0	0	2.7	0.3
MPH	99	V	300-150	745	0	0	3.1	0.0
MSR	99	V	300-150	2083	1	0	4.4	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
MVJ	99	V	300-150	100	0	0	3.3	0.9
MYM	99	V	300-150	28	0	4	4.8	-0.2
NBT	99	V	300-150	2441	3	0	6.1	-0.1
NCR	99	V	300-150	546	0	1	3.5	-0.1
NEW	99	V	300-150	35	0	0	3.5	-0.1
NJE	99	V	300-150	520	0	0	2.9	0.3
NOJ	99	V	300-150	48	0	0	2.7	-0.9
NOS	99	V	300-150	1290	4	0	6.4	0.1
NSH	99	V	300-150	36	0	0	3.2	1.1
NSP	99	V	300-150	32	0	0	9.4	1.7
NUM	99	V	300-150	33	0	0	3.6	1.2
OAE	99	V	300-150	611	0	0	3.5	0.3
OCN	99	V	300-150	4272	0	0	2.7	0.1
OMA	99	V	300-150	2180	0	1	5.2	0.4
PAC	99	V	300-150	224	0	0	2.6	0.2
PAL	99	V	300-150	1646	0	1	4.5	0.3
PAT	99	V	300-150	104	0	0	2.7	-0.3
PEG	99	V	300-150	157	0	0	2.7	-0.1
PEX	99	V	300-150	127	0	0	2.7	0.2
PIA	99	V	300-150	395	0	0	4.0	0.4
PLF	99	V	300-150	65	0	0	2.2	0.3
PVA	99	V	300-150	187	0	0	2.5	-0.3
PVG	99	V	300-150	46	0	0	2.1	0.0
QAF	99	V	300-150	33	0	0	2.0	0.1
QFA	99	V	300-150	6058	0	0	5.5	0.5
QID	99	V	300-150	33	0	0	2.8	0.2
QQE	99	V	300-150	304	0	1	2.6	0.0
QTR	99	V	300-150	30884	0	1	4.0	0.2
RAM	99	V	300-150	816	3	0	4.5	0.3
RBA	99	V	300-150	190	1	5	6.9	0.0
RCH	99	V	300-150	4884	0	0	4.6	0.4
RCR	99	V	300-150	76	0	5	3.8	-0.2
RDN	99	V	300-150	179	0	0	3.0	0.1
RHH	99	V	300-150	43	0	0	6.3	0.8
RJA	99	V	300-150	2971	1	0	6.5	0.0
ROM	99	V	300-150	67	0	0	3.2	-0.2
RRR	99	V	300-150	281	0	0	3.5	0.2
RSF	99	V	300-150	35	0	0	2.5	-0.7
RYR	99	V	300-150	986	0	0	2.9	0.1
RZO	99	V	300-150	396	0	1	3.7	0.0
SAM	99	V	300-150	373	0	0	3.0	0.3
SAS	99	V	300-150	6754	0	0	2.7	0.2
SAZ	99	V	300-150	118	0	0	4.0	0.4

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
SCX	99	V	300-150	39	0	0	4.4	0.5
SEY	99	V	300-150	102	0	0	4.7	0.2
SIA	99	V	300-150	8665	0	0	4.5	0.3
SIO	99	V	300-150	103	0	2	3.2	-0.2
SIS	99	V	300-150	41	0	2	3.8	1.9
SLM	99	V	300-150	123	0	0	2.7	0.0
SON	99	V	300-150	69	0	0	2.8	-0.1
SPA	99	V	300-150	155	0	0	3.3	0.6
STV	99	V	300-150	35	0	0	3.4	0.2
SUI	99	V	300-150	27	0	4	4.0	-2.0
SVA	99	V	300-150	9368	0	1	4.2	0.3
SVW	99	V	300-150	277	0	0	2.8	0.0
SWR	99	V	300-150	10989	0	1	3.0	0.2
SWW	99	V	300-150	22	0	0	3.2	0.9
SYB	99	V	300-150	342	1	0	5.7	0.0
TAG	99	V	300-150	20	0	0	2.3	-0.1
TAI	99	V	300-150	20	0	0	3.1	-0.3
TAM	99	V	300-150	51	2	2	3.1	-0.5
TAP	99	V	300-150	3304	0	0	3.1	0.2
TAR	99	V	300-150	431	0	0	2.7	0.0
TAY	99	V	300-150	281	0	0	3.1	-0.2
TBJ	99	V	300-150	31	0	0	3.4	-0.2
TFF	99	V	300-150	178	0	0	2.9	0.2
TFL	99	V	300-150	1665	5	0	5.7	0.0
TGW	99	V	300-150	509	1	1	6.3	0.1
THA	99	V	300-150	5635	0	2	4.9	0.2
THT	99	V	300-150	3163	1	0	5.4	0.2
THY	99	V	300-150	19309	1	0	4.4	0.2
TIT	99	V	300-150	31	0	3	3.1	0.3
TMN	99	V	300-150	432	0	0	3.6	0.2
TOM	99	V	300-150	7287	3	0	6.2	0.0
TOW	99	V	300-150	69	0	0	2.8	0.0
TSC	99	V	300-150	18205	0	0	2.9	0.3
TWY	99	V	300-150	1255	0	0	2.9	0.0
UAE	99	V	300-150	28919	0	0	3.8	0.2
UAF	99	V	300-150	274	0	0	3.5	0.4
UAL	99	V	300-150	88514	1	1	4.7	0.1
UBT	99	V	300-150	2879	3	0	6.1	0.1
ULC	99	V	300-150	100	0	0	3.1	0.2
UPS	99	V	300-150	6683	0	0	3.2	-0.1
UZB	99	V	300-150	441	1	1	5.5	0.2
VCG	99	V	300-150	58	0	0	3.9	-0.3
VIR	99	V	300-150	22329	1	0	4.6	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
VJC	99	V	300-150	265	0	2	4.5	0.2
VJT	99	V	300-150	2353	0	0	3.0	0.3
VKG	99	V	300-150	33	0	0	3.3	-0.2
VTI	99	V	300-150	2686	0	1	4.5	0.4
VXS	99	V	300-150	82	0	0	3.8	0.2
WDY	99	V	300-150	48	0	0	2.5	0.6
WFL	99	V	300-150	117	0	0	3.4	0.1
WGN	99	V	300-150	83	0	0	2.6	-0.3
WJA	99	V	300-150	2330	4	0	8.3	0.0
WMN	99	V	300-150	72	0	0	4.2	1.4
WPT	99	V	300-150	44	0	0	3.4	0.8
WWI	99	V	300-150	61	0	0	3.4	0.2
XAX	99	V	300-150	502	0	0	4.2	0.4
XFL	99	V	300-150	37	0	0	2.4	-0.2
XOJ	99	V	300-150	54	0	0	3.5	1.5
XRO	99	V	300-150	55	0	0	4.2	-0.7

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 : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	50	29	8.4	-4.7
01001	00	Z	50	27	22.1	-16.8
01028	00	Z	50	29	6.5	-5.1
01028	12	Z	50	28	7.7	-5.5
01400	12	Z	50	17	75.1	74.8
01400	00	Z	50	21	82.7	82.5
01415	12	Z	50	29	6.7	-3.0
01415	00	Z	50	29	6.1	1.6
02365	12	Z	50	28	10.4	-8.5
02365	00	Z	50	29	8.2	-2.8
02591	00	Z	50	23	10.3	5.4
02591	12	Z	50	28	4.9	0.9
02836	00	Z	50	29	4.6	-0.9
02836	12	Z	50	31	8.2	-4.6
02963	00	Z	50	30	3.9	0.4
02963	12	Z	50	30	9.8	-5.9
03005	12	Z	50	31	9.5	-7.9
03005	00	Z	50	26	7.9	-3.8
03238	12	Z	50	1	2.2	2.2
03238	00	Z	50	24	7.0	0.4
03808	00	Z	50	27	5.1	2.0
03808	12	Z	50	29	21.1	0.0
03918	12	Z	50	5	7.3	1.0
03918	00	Z	50	29	20.8	9.8
03953	12	Z	50	1	7.4	7.4
03953	00	Z	50	0	0.0	0.0
04018	12	Z	50	25	4.9	-3.6
04018	00	Z	50	30	7.9	-5.6
04220	12	Z	50	29	17.3	-9.4
04220	00	Z	50	29	24.9	-20.3
04270	00	Z	50	30	30.1	-27.9
04270	12	Z	50	28	15.3	-12.7
04320	00	Z	50	30	12.4	-7.8
04320	12	Z	50	30	60.9	-5.4
04339	00	Z	50	30	28.7	-18.9
04339	12	Z	50	28	27.8	-12.5
04360	00	Z	50	30	15.2	-9.4
04360	12	Z	50	28	14.0	5.7
06011	00	Z	50	24	9.8	1.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	50	28	11.1	1.7
06260	12	Z	50	6	19.5	-8.8
06260	00	Z	50	30	7.1	4.0
06610	00	Z	50	32	7.9	5.0
06610	12	Z	50	36	6.7	-2.0
07110	00	Z	50	23	31.3	-30.5
07110	12	Z	50	27	34.5	-32.6
07510	00	Z	50	27	18.1	16.4
07510	12	Z	50	27	13.4	9.8
07645	00	Z	50	30	20.1	1.0
07645	12	Z	50	26	11.9	-0.1
07761	12	Z	50	28	26.3	-20.8
07761	00	Z	50	27	11.9	-7.6
08001	12	Z	50	30	9.7	-7.0
08001	00	Z	50	29	6.2	3.4
08221	00	Z	50	30	7.2	4.8
08221	12	Z	50	30	7.5	-1.1
08302	12	Z	50	30	11.1	-9.6
08302	00	Z	50	27	2.9	0.3
08508	12	Z	50	30	8.2	1.3
08522	12	Z	50	27	6.4	-2.8
10035	00	Z	50	30	16.3	15.7
10035	12	Z	50	30	9.6	7.7
10393	00	Z	50	30	6.2	1.6
10393	12	Z	50	30	10.8	-4.2
10410	00	Z	50	29	4.4	0.1
10410	12	Z	50	30	8.9	-7.1
10739	00	Z	50	30	7.4	6.2
10739	12	Z	50	30	7.1	-4.5
11035	00	Z	50	30	8.6	6.2
11035	12	Z	50	30	9.1	0.3
12982	12	Z	50	30	5.3	-0.4
12982	00	Z	50	28	11.6	7.2
16245	00	Z	50	28	7.8	6.4
16245	12	Z	50	30	6.1	-4.4
16429	00	Z	50	30	10.9	9.9
16429	12	Z	50	30	7.1	-0.6
16622	12	Z	50	1	8.8	8.8
16622	00	Z	50	27	16.9	15.8
16754	00	Z	50	23	13.5	12.3
17607	12	Z	50	21	7.7	1.2
26435	12	Z	50	14	5.5	-3.6
2EERV	12	Z	50	10	12.2	-4.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERV	00	Z	50	14	13.1	-5.1
60018	00	Z	50	28	7.8	4.7
60018	12	Z	50	29	7.9	-4.2
7JUNA4	12	Z	50	9	162.6	149.2
7JUNA4	00	Z	50	9	11.4	-3.6
9ZT9MR	12	Z	50	5	46.4	-38.8
9ZT9MR	00	Z	50	2	20.5	-20.3
ATGU3F	00	Z	50	6	26.8	-23.3
ATGU3F	12	Z	50	9	46.5	-0.4
BPMWB2	00	Z	50	9	8.2	0.0
BPMWB2	12	Z	50	5	10.8	-7.6
DBLK	12	Z	50	25	14.4	13.9
FPUW5G	12	Z	50	8	16.4	13.1
GQBZLZ	12	Z	50	3	12.4	-7.2
GQBZLZ	00	Z	50	3	13.5	-11.9
JNKN7J	00	Z	50	1	31.5	31.5
KJFF9X	12	Z	50	9	17.4	2.8
KJFF9X	00	Z	50	7	12.6	10.5
KMPLHP	12	Z	50	10	83.3	44.0
KMPLHP	00	Z	50	9	33.3	31.2
LAGY8	12	Z	50	2	132.1	-132.1
LAGZ8	00	Z	50	1	70.7	-70.7
LAGZ8	12	Z	50	1	39.8	-39.8
LRYQE3	00	Z	50	12	10.8	-9.1
LRYQE3	12	Z	50	13	23.7	-9.7
SMLQ	12	Z	50	13	4.1	1.5
SMLQ	00	Z	50	13	6.6	-2.2
UXK5JT	00	Z	50	7	8.6	-0.2
UXK5JT	12	Z	50	6	24.5	1.1
WDK38H	12	Z	50	22	7.6	-5.2
XKQLWQ	12	Z	50	26	35.2	33.3
XQFJRG	00	Z	50	5	21.6	-15.0
XQFJRG	12	Z	50	7	12.6	-1.7
YL96W	12	Z	50	5	56.7	30.9
YL96W	00	Z	50	6	4.4	0.8
ZVQEQC	12	Z	50	19	6.0	4.8

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 : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	50	29	2.3	0.0	-0.2
01001	00	V	50	27	2.1	-0.2	0.0
01028	00	V	50	28	2.2	-0.2	0.6
01028	12	V	50	28	2.5	-0.3	0.6
01400	12	V	50	14	2.0	-0.2	0.2
01400	00	V	50	15	2.4	0.1	0.3
01415	12	V	50	29	2.2	0.0	-0.3
01415	00	V	50	29	2.4	-0.3	0.4
02365	12	V	50	28	2.3	-0.2	-1.1
02365	00	V	50	28	2.4	-0.1	-0.8
02591	00	V	50	18	2.8	0.6	0.6
02591	12	V	50	27	2.5	0.0	-0.1
02836	00	V	50	29	2.6	0.8	0.3
02836	12	V	50	29	2.4	0.6	-0.2
02963	00	V	50	30	2.2	-0.2	-0.1
02963	12	V	50	29	2.1	-0.1	-0.4
03005	12	V	50	30	4.6	0.2	0.7
03005	00	V	50	26	2.3	0.1	0.1
03238	12	V	50	1	3.9	2.6	2.9
03238	00	V	50	24	2.4	-0.1	-0.4
03808	00	V	50	27	2.7	-0.3	-0.2
03808	12	V	50	28	2.9	0.0	0.2
03918	12	V	50	5	2.4	-1.8	0.0
03918	00	V	50	29	2.3	-0.5	0.1
03953	12	V	50	1	2.7	1.5	2.3
03953	00	V	50	0	0.0	0.0	0.0
04018	12	V	50	25	2.3	0.5	0.0
04018	00	V	50	24	2.4	0.0	0.2
04220	12	V	50	29	2.6	0.8	-0.1
04220	00	V	50	27	2.5	-0.2	0.5
04270	00	V	50	30	2.5	-0.9	0.2
04270	12	V	50	28	2.4	-0.3	0.6
04320	00	V	50	30	2.4	-0.3	-0.3
04320	12	V	50	30	2.2	-0.5	-0.3
04339	00	V	50	30	2.4	0.3	0.7
04339	12	V	50	28	2.5	-0.1	0.2
04360	00	V	50	30	3.2	-0.3	-0.8
04360	12	V	50	28	2.7	0.4	-0.8
06011	00	V	50	24	2.2	-0.1	-0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	50	28	2.5	0.0	-0.5
06260	12	V	50	6	3.5	0.3	0.0
06260	00	V	50	30	2.3	-0.7	0.1
06610	00	V	50	29	3.0	0.3	0.2
06610	12	V	50	30	2.9	0.5	-0.6
07110	00	V	50	22	2.7	-0.9	-0.1
07110	12	V	50	27	2.7	-0.3	-0.2
07510	00	V	50	26	3.3	-0.6	0.2
07510	12	V	50	27	3.0	0.3	0.1
07645	00	V	50	29	3.3	0.4	-0.4
07645	12	V	50	26	2.8	-0.2	-0.1
07761	12	V	50	28	3.5	0.0	-0.8
07761	00	V	50	27	3.1	-0.7	0.3
08001	12	V	50	30	3.5	0.9	-0.1
08001	00	V	50	29	3.0	-0.4	0.2
08221	00	V	50	30	3.2	-0.4	0.0
08221	12	V	50	30	3.1	0.0	-0.2
08302	12	V	50	30	2.9	-0.4	-0.1
08302	00	V	50	27	3.0	-0.1	0.4
08508	12	V	50	30	2.6	0.4	-0.2
08522	12	V	50	27	3.4	-0.1	0.1
10035	00	V	50	29	2.9	0.9	0.5
10035	12	V	50	30	2.5	0.0	0.0
10393	00	V	50	30	2.3	0.0	0.0
10393	12	V	50	30	2.5	0.3	-0.3
10410	00	V	50	29	2.4	0.0	0.2
10410	12	V	50	30	2.6	-0.1	0.1
10739	00	V	50	30	3.0	0.2	0.2
10739	12	V	50	30	3.3	0.0	-0.3
11035	00	V	50	29	3.3	0.5	0.5
11035	12	V	50	30	3.0	0.0	-0.5
12982	12	V	50	30	2.7	0.0	-0.8
12982	00	V	50	28	3.3	0.2	-0.2
16245	00	V	50	28	3.1	0.4	0.1
16245	12	V	50	30	3.7	-0.6	-0.4
16429	00	V	50	28	3.3	0.0	0.7
16429	12	V	50	30	2.8	0.3	-0.1
16622	12	V	50	1	4.0	3.9	-0.9
16622	00	V	50	24	3.0	0.1	-0.2
16754	00	V	50	22	3.7	0.9	-0.3
17607	12	V	50	2	6.3	2.8	-5.4
26435	12	V	50	14	2.6	0.3	0.2
2EERV	12	V	50	10	2.5	0.8	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERV	00	V	50	14	2.6	-0.4	-0.5
60018	00	V	50	27	3.6	-0.9	0.7
60018	12	V	50	29	3.4	-0.2	-0.3
7JUNA4	12	V	50	9	3.1	1.1	0.7
7JUNA4	00	V	50	9	3.7	-0.8	-0.3
9ZT9MR	12	V	50	5	2.6	0.6	-0.6
9ZT9MR	00	V	50	2	1.2	-0.5	0.2
ATGU3F	00	V	50	6	2.1	0.2	-0.1
ATGU3F	12	V	50	9	2.5	-0.2	1.4
BPMWB2	00	V	50	9	3.1	1.3	0.1
BPMWB2	12	V	50	5	4.4	-1.2	1.8
DBLK	12	V	50	25	2.5	-0.6	0.4
FPUW5G	12	V	50	5	2.5	0.1	0.6
GQBZLZ	12	V	50	3	1.8	-0.3	-0.2
GQBZLZ	00	V	50	3	1.9	0.2	0.3
JNKN7J	00	V	50	1	2.5	1.7	1.9
KJFF9X	12	V	50	9	2.7	0.1	-0.4
KJFF9X	00	V	50	7	2.1	0.0	0.3
KMPLHP	12	V	50	10	2.0	-0.3	0.2
KMPLHP	00	V	50	9	3.0	0.4	0.9
LAGY8	12	V	50	2	3.8	-0.1	2.4
LAGZ8	00	V	50	1	1.2	0.5	-1.1
LAGZ8	12	V	50	1	0.9	-0.2	-0.9
LRYQE3	00	V	50	12	2.5	0.2	0.1
LRYQE3	12	V	50	13	2.5	0.1	-0.3
SMLQ	12	V	50	13	2.8	0.0	0.8
SMLQ	00	V	50	13	2.8	-0.2	0.8
UXK5JT	00	V	50	7	2.3	-0.6	0.1
UXK5JT	12	V	50	6	3.4	-0.5	-0.4
WDK38H	12	V	50	16	2.7	-0.3	-0.8
XKQLWQ	12	V	50	26	3.1	0.1	-0.6
XQFJRG	00	V	50	4	3.7	1.8	-1.7
XQFJRG	12	V	50	7	2.1	-0.2	-0.6
YLV96W	12	V	50	5	2.4	0.3	-0.6
YLV96W	00	V	50	6	1.7	0.4	-0.4
ZVQEQC	12	V	50	18	2.9	-0.8	0.5

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 : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	100	29	9.0	-6.3
01001	00	Z	100	29	19.4	-17.2
01028	00	Z	100	29	7.0	-6.1
01028	12	Z	100	28	7.5	-6.4
01400	12	Z	100	22	74.8	74.7
01400	00	Z	100	21	79.9	79.7
01415	12	Z	100	29	5.9	-4.2
01415	00	Z	100	29	4.5	0.1
02365	12	Z	100	29	8.0	-6.0
02365	00	Z	100	30	5.9	-4.0
02591	00	Z	100	29	5.0	3.2
02591	12	Z	100	29	3.7	0.1
02836	00	Z	100	30	6.0	-4.1
02836	12	Z	100	31	7.5	-5.9
02963	00	Z	100	30	3.8	-2.6
02963	12	Z	100	30	8.8	-5.1
03005	12	Z	100	31	12.0	-9.5
03005	00	Z	100	28	7.5	-6.5
03238	12	Z	100	1	1.0	1.0
03238	00	Z	100	24	5.5	-1.0
03808	00	Z	100	28	3.5	-0.8
03808	12	Z	100	30	20.3	-0.6
03918	12	Z	100	5	4.0	0.5
03918	00	Z	100	29	14.9	4.8
03953	12	Z	100	30	9.9	-8.4
03953	00	Z	100	30	10.5	-9.3
04018	12	Z	100	27	5.8	-4.8
04018	00	Z	100	30	8.1	-6.9
04220	12	Z	100	30	14.4	-10.4
04220	00	Z	100	30	20.0	-17.1
04270	00	Z	100	30	23.5	-22.4
04270	12	Z	100	28	14.0	-12.6
04320	00	Z	100	30	11.6	-8.1
04320	12	Z	100	30	8.4	2.8
04339	00	Z	100	30	23.5	-19.3
04339	12	Z	100	29	18.2	-10.8
04360	00	Z	100	30	11.5	-9.4
04360	12	Z	100	30	11.1	-1.8
06011	00	Z	100	24	6.0	-0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	100	28	10.1	1.0
06260	12	Z	100	6	20.4	-10.1
06260	00	Z	100	30	4.9	1.2
06610	00	Z	100	31	5.3	0.0
06610	12	Z	100	35	6.3	-3.9
07110	00	Z	100	25	27.7	-27.1
07110	12	Z	100	28	29.2	-28.3
07510	00	Z	100	28	12.0	10.6
07510	12	Z	100	29	10.3	7.9
07645	00	Z	100	30	14.0	-4.3
07645	12	Z	100	29	9.8	-4.8
07761	12	Z	100	29	21.8	-17.5
07761	00	Z	100	28	10.8	-7.8
08001	12	Z	100	30	7.3	-5.0
08001	00	Z	100	30	4.4	0.7
08221	00	Z	100	30	6.1	1.1
08221	12	Z	100	30	6.2	-1.5
08302	12	Z	100	30	10.9	-9.6
08302	00	Z	100	28	7.0	-5.5
08508	12	Z	100	30	6.9	3.0
08522	12	Z	100	28	5.6	2.6
10035	00	Z	100	30	12.6	12.0
10035	12	Z	100	30	7.9	6.6
10393	00	Z	100	30	4.2	-1.3
10393	12	Z	100	30	7.9	-3.6
10410	00	Z	100	29	4.4	-1.4
10410	12	Z	100	30	8.0	-7.3
10739	00	Z	100	30	5.2	3.3
10739	12	Z	100	30	4.8	-3.6
11035	00	Z	100	30	6.1	3.1
11035	12	Z	100	30	6.5	-3.7
12982	12	Z	100	30	5.5	-2.6
12982	00	Z	100	30	7.9	3.8
16245	00	Z	100	28	4.6	1.1
16245	12	Z	100	30	6.5	-5.2
16429	00	Z	100	30	6.0	4.7
16429	12	Z	100	30	6.2	-2.3
16622	12	Z	100	1	9.6	9.6
16622	00	Z	100	29	13.5	12.4
16754	00	Z	100	25	11.8	11.2
17607	12	Z	100	21	6.2	-0.5
26435	12	Z	100	15	7.5	-6.4
2EERV	12	Z	100	11	14.1	-4.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERV	00	Z	100	14	14.1	-7.8
60018	00	Z	100	30	7.3	6.0
60018	12	Z	100	30	5.8	0.0
7JUNA4	12	Z	100	9	85.4	79.2
7JUNA4	00	Z	100	8	9.7	-3.0
9ZT9MR	12	Z	100	5	44.0	-36.2
9ZT9MR	00	Z	100	2	22.9	-22.9
ATGU3F	00	Z	100	6	24.9	-22.1
ATGU3F	12	Z	100	10	40.0	-3.8
BPMWB2	00	Z	100	9	11.9	-8.3
BPMWB2	12	Z	100	5	8.1	-7.4
DBLK	12	Z	100	25	13.6	13.1
FPUW5G	12	Z	100	16	16.2	14.1
GQBZLZ	12	Z	100	5	14.5	-11.8
GQBZLZ	00	Z	100	3	16.3	-15.4
JNKN7J	00	Z	100	1	33.4	33.4
KJJF9X	12	Z	100	9	25.0	7.0
KJJF9X	00	Z	100	8	7.6	6.0
KMPLHP	12	Z	100	10	52.7	35.5
KMPLHP	00	Z	100	9	31.2	28.9
LAGY8	12	Z	100	2	120.0	-120.0
LAGZ8	00	Z	100	1	74.3	-74.3
LAGZ8	12	Z	100	1	19.0	-19.0
LRYQE3	00	Z	100	14	12.1	-11.1
LRYQE3	12	Z	100	14	14.6	-11.3
SMLQ	12	Z	100	13	3.5	-1.5
SMLQ	00	Z	100	13	5.8	-3.4
UXK5JT	00	Z	100	8	6.1	-4.1
UXK5JT	12	Z	100	7	30.6	-12.0
WDK38H	12	Z	100	25	9.1	-8.3
XKQLWQ	12	Z	100	26	27.7	25.8
XQFJRG	00	Z	100	8	16.6	-12.5
XQFJRG	12	Z	100	7	10.7	-6.1
YL96W	12	Z	100	8	33.6	21.9
YL96W	00	Z	100	6	5.9	-4.1
ZVQEQC	12	Z	100	20	9.9	8.7

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 : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	100	29	2.3	0.5	-0.2
01001	00	V	100	29	2.4	0.1	-0.1
01028	00	V	100	28	2.4	0.3	-0.1
01028	12	V	100	28	2.1	0.1	-0.4
01400	12	V	100	20	2.1	0.4	-0.2
01400	00	V	100	17	2.3	0.9	0.8
01415	12	V	100	29	2.4	0.8	-0.2
01415	00	V	100	29	2.8	-0.4	-0.2
02365	12	V	100	29	2.5	-0.6	-0.7
02365	00	V	100	30	2.5	-0.1	-0.1
02591	00	V	100	26	2.3	0.0	-0.5
02591	12	V	100	29	2.2	-0.3	-0.1
02836	00	V	100	30	2.4	-0.1	0.1
02836	12	V	100	29	2.4	-0.4	0.4
02963	00	V	100	30	2.5	0.3	-0.3
02963	12	V	100	30	2.7	0.1	-0.6
03005	12	V	100	30	3.5	0.2	1.1
03005	00	V	100	27	1.9	0.6	0.2
03238	12	V	100	1	4.9	4.8	0.9
03238	00	V	100	24	2.1	0.4	0.1
03808	00	V	100	27	2.5	0.6	0.3
03808	12	V	100	29	2.6	0.1	0.2
03918	12	V	100	5	2.2	-0.1	-0.7
03918	00	V	100	29	1.8	0.5	-0.5
03953	12	V	100	30	2.5	0.2	0.4
03953	00	V	100	25	2.6	0.4	1.0
04018	12	V	100	27	2.5	0.1	0.0
04018	00	V	100	30	2.1	-0.1	0.4
04220	12	V	100	30	2.4	0.0	-0.2
04220	00	V	100	30	2.4	0.2	-0.9
04270	00	V	100	30	2.6	-0.2	-0.1
04270	12	V	100	28	3.0	-0.5	0.3
04320	00	V	100	30	2.2	-0.1	-0.3
04320	12	V	100	30	2.4	0.2	-0.3
04339	00	V	100	30	2.4	-0.2	-0.4
04339	12	V	100	29	2.1	0.1	-0.1
04360	00	V	100	30	2.1	0.0	0.1
04360	12	V	100	30	2.1	-0.1	0.5
06011	00	V	100	24	2.0	-0.3	-0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	100	28	2.6	1.0	0.0
06260	12	V	100	6	1.6	-0.2	0.2
06260	00	V	100	30	2.3	0.7	-0.3
06610	00	V	100	29	2.9	0.7	0.4
06610	12	V	100	30	2.7	-0.3	0.5
07110	00	V	100	23	2.7	-0.5	-0.1
07110	12	V	100	28	2.1	1.0	-0.1
07510	00	V	100	27	3.4	0.7	0.3
07510	12	V	100	29	3.0	-0.7	-0.5
07645	00	V	100	29	3.8	1.3	-0.4
07645	12	V	100	29	2.8	0.1	-0.3
07761	12	V	100	29	3.0	-0.3	-0.7
07761	00	V	100	28	3.3	-0.7	-0.2
08001	12	V	100	30	3.2	1.2	-0.6
08001	00	V	100	30	2.8	0.4	0.1
08221	00	V	100	30	3.3	-0.6	0.5
08221	12	V	100	30	2.9	0.5	-0.1
08302	12	V	100	30	3.5	0.2	0.4
08302	00	V	100	28	4.0	-0.1	0.3
08508	12	V	100	30	3.2	0.4	0.3
08522	12	V	100	28	3.5	-0.1	0.0
10035	00	V	100	30	2.3	-0.1	-0.1
10035	12	V	100	30	2.2	0.0	-0.1
10393	00	V	100	30	2.6	0.1	-0.1
10393	12	V	100	30	2.4	0.1	-0.6
10410	00	V	100	29	2.3	0.1	0.0
10410	12	V	100	30	2.1	0.5	-0.4
10739	00	V	100	30	2.5	0.7	0.2
10739	12	V	100	30	3.0	0.0	0.2
11035	00	V	100	29	3.2	0.4	0.2
11035	12	V	100	30	2.9	0.2	-0.8
12982	12	V	100	30	2.9	0.5	-0.7
12982	00	V	100	29	3.0	0.8	0.3
16245	00	V	100	28	2.9	0.8	-0.6
16245	12	V	100	30	3.0	0.8	-0.3
16429	00	V	100	29	3.3	-0.4	0.4
16429	12	V	100	30	4.0	0.8	0.1
16622	12	V	100	1	2.3	-2.0	-1.1
16622	00	V	100	28	3.3	0.2	-0.4
16754	00	V	100	24	3.8	0.3	0.5
17607	12	V	100	4	6.8	1.1	-0.6
26435	12	V	100	14	1.6	0.1	-0.1
2EERV	12	V	100	11	2.1	0.5	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERV	00	V	100	14	3.5	-0.3	1.1
60018	00	V	100	29	3.7	-0.6	0.0
60018	12	V	100	30	4.2	-0.7	-0.5
7JUNA4	12	V	100	9	2.4	0.2	-0.1
7JUNA4	00	V	100	8	2.5	0.2	0.3
9ZT9MR	12	V	100	5	1.9	-0.2	0.7
9ZT9MR	00	V	100	2	1.8	0.8	-1.2
ATGU3F	00	V	100	6	1.9	-0.5	0.2
ATGU3F	12	V	100	10	2.4	-0.1	1.0
BPMWB2	00	V	100	9	3.0	0.5	0.1
BPMWB2	12	V	100	5	4.1	0.6	1.6
DBLK	12	V	100	25	2.0	0.0	0.3
FPUW5G	12	V	100	15	2.7	0.2	0.4
GQBZLZ	12	V	100	5	1.7	0.2	0.0
GQBZLZ	00	V	100	3	1.7	-1.1	0.5
JNKN7J	00	V	100	1	2.3	0.6	2.2
KJJF9X	12	V	100	9	3.4	0.2	-0.8
KJJF9X	00	V	100	8	2.9	-0.5	-0.7
KMPLHP	12	V	100	10	2.3	1.0	0.3
KMPLHP	00	V	100	9	3.6	0.8	-0.1
LAGY8	12	V	100	2	3.6	-0.1	0.7
LAGZ8	00	V	100	1	2.9	2.0	2.1
LAGZ8	12	V	100	1	3.3	2.7	-1.9
LRYQE3	00	V	100	14	2.5	-0.3	-0.1
LRYQE3	12	V	100	14	2.6	0.1	0.2
SMLQ	12	V	100	13	2.1	-0.7	0.3
SMLQ	00	V	100	13	1.5	-0.2	0.8
UXK5JT	00	V	100	8	2.8	0.2	0.9
UXK5JT	12	V	100	7	5.0	0.4	-1.9
WDK38H	12	V	100	25	1.9	0.2	0.1
XKQLWQ	12	V	100	25	2.7	0.6	0.3
XQFJRG	00	V	100	8	2.2	0.5	0.2
XQFJRG	12	V	100	7	2.4	-0.4	-0.8
YL96W	12	V	100	8	4.3	-0.4	-0.6
YL96W	00	V	100	6	2.7	0.3	0.9
ZVQEQC	12	V	100	20	2.9	0.3	0.9

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 : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	500	31	6.4	-2.5
01001	00	Z	500	31	10.8	-9.1
01028	00	Z	500	29	2.5	-0.4
01028	12	Z	500	29	3.0	-0.8
01400	12	Z	500	29	79.2	79.2
01400	00	Z	500	30	81.3	81.2
01415	12	Z	500	29	3.9	2.6
01415	00	Z	500	29	3.0	2.2
02365	12	Z	500	29	2.8	1.1
02365	00	Z	500	30	3.9	2.0
02591	00	Z	500	29	7.5	7.2
02591	12	Z	500	30	8.4	8.2
02836	00	Z	500	30	2.3	0.6
02836	12	Z	500	31	2.5	0.9
02963	00	Z	500	30	3.1	2.2
02963	12	Z	500	30	3.7	2.2
03005	12	Z	500	31	17.5	-6.5
03005	00	Z	500	28	3.8	-2.4
03238	12	Z	500	1	7.6	7.6
03238	00	Z	500	24	3.2	2.1
03808	00	Z	500	29	2.5	1.4
03808	12	Z	500	30	24.2	5.9
03918	12	Z	500	5	6.4	5.6
03918	00	Z	500	29	7.9	6.8
03953	12	Z	500	30	4.2	-2.7
03953	00	Z	500	30	3.6	-2.6
04018	12	Z	500	28	2.2	0.9
04018	00	Z	500	30	4.5	-1.0
04220	12	Z	500	30	8.9	-7.0
04220	00	Z	500	30	9.1	-7.1
04270	00	Z	500	30	10.1	-8.9
04270	12	Z	500	30	7.5	-5.5
04320	00	Z	500	30	7.8	0.5
04320	12	Z	500	30	7.4	5.2
04339	00	Z	500	30	10.3	-8.3
04339	12	Z	500	29	8.3	-4.6
04360	00	Z	500	30	6.4	-5.2
04360	12	Z	500	30	7.0	-4.6
06011	00	Z	500	24	5.6	0.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	500	29	12.8	3.6
06260	12	Z	500	6	10.7	-2.1
06260	00	Z	500	30	3.9	1.6
06610	00	Z	500	32	2.6	1.3
06610	12	Z	500	34	2.9	1.0
07110	00	Z	500	27	11.4	-11.1
07110	12	Z	500	31	9.4	-9.1
07510	00	Z	500	31	7.4	6.9
07510	12	Z	500	31	8.7	8.0
07645	00	Z	500	30	5.5	-3.5
07645	12	Z	500	30	5.3	-2.5
07761	12	Z	500	29	5.4	-3.4
07761	00	Z	500	28	5.3	-2.7
08001	12	Z	500	30	3.5	2.0
08001	00	Z	500	30	3.2	2.1
08221	00	Z	500	30	3.9	3.0
08221	12	Z	500	31	3.7	2.5
08302	12	Z	500	30	7.5	-6.9
08302	00	Z	500	28	6.1	-5.5
08508	12	Z	500	30	8.6	8.0
08522	12	Z	500	30	7.1	6.4
10035	00	Z	500	30	13.7	13.6
10035	12	Z	500	30	12.6	12.3
10393	00	Z	500	30	2.3	0.0
10393	12	Z	500	30	2.5	-0.1
10410	00	Z	500	29	2.7	0.5
10410	12	Z	500	31	2.1	-0.4
10739	00	Z	500	30	5.0	4.6
10739	12	Z	500	30	3.8	2.6
11035	00	Z	500	30	4.0	2.5
11035	12	Z	500	30	3.4	-0.5
12982	12	Z	500	30	2.3	1.7
12982	00	Z	500	30	4.7	4.0
16245	00	Z	500	28	3.9	2.6
16245	12	Z	500	30	2.1	1.4
16429	00	Z	500	30	4.6	4.3
16429	12	Z	500	30	3.6	1.7
16622	12	Z	500	1	9.7	9.7
16622	00	Z	500	30	12.3	10.5
16754	00	Z	500	25	6.1	4.9
17607	12	Z	500	21	3.3	1.3
26435	12	Z	500	15	1.4	0.2
2EERV	12	Z	500	12	9.5	-4.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERV	00	Z	500	14	10.7	-6.5
60018	00	Z	500	30	3.5	1.9
60018	12	Z	500	30	4.3	1.7
7JUNA4	12	Z	500	9	16.9	15.2
7JUNA4	00	Z	500	11	7.6	-2.2
9ZT9MR	12	Z	500	5	48.4	-30.1
9ZT9MR	00	Z	500	3	17.2	-16.0
ATGU3F	00	Z	500	8	21.1	-18.0
ATGU3F	12	Z	500	10	18.9	-16.5
BPMWB2	00	Z	500	10	10.1	-9.1
BPMWB2	12	Z	500	9	6.9	-0.7
DBLK	12	Z	500	25	17.2	17.1
FPUW5G	12	Z	500	19	13.3	12.1
GQBZLZ	12	Z	500	6	18.5	-17.3
GQBZLZ	00	Z	500	6	22.1	-20.5
JNKN7J	00	Z	500	1	39.9	39.9
KJFF9X	12	Z	500	9	6.3	-1.7
KJFF9X	00	Z	500	8	6.0	-2.7
KMPLHP	12	Z	500	10	44.6	40.6
KMPLHP	00	Z	500	9	41.5	40.4
LAGY8	12	Z	500	2	135.7	-135.7
LAGZ8	00	Z	500	1	72.1	-72.1
LAGZ8	12	Z	500	1	19.9	-19.9
LRYQE3	00	Z	500	14	7.6	-3.5
LRYQE3	12	Z	500	15	5.8	-3.9
SMLQ	12	Z	500	13	3.0	-1.5
SMLQ	00	Z	500	13	3.0	-1.7
UXK5JT	00	Z	500	9	3.5	-2.9
UXK5JT	12	Z	500	8	5.2	-0.4
WDK38H	12	Z	500	26	9.0	-8.5
XKQLWQ	12	Z	500	26	18.5	17.5
XQFJRG	00	Z	500	8	7.2	-6.3
XQFJRG	12	Z	500	7	5.5	-3.7
YLV96W	12	Z	500	9	7.1	0.7
YLV96W	00	Z	500	8	5.3	-1.0
ZVQEQC	12	Z	500	20	7.9	7.6

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 : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	500	30	1.9	-0.2	0.3
01001	00	V	500	30	2.5	-0.1	-0.2
01028	00	V	500	29	2.1	0.3	-0.2
01028	12	V	500	29	1.8	0.2	-0.6
01400	12	V	500	29	2.1	0.0	-0.2
01400	00	V	500	29	1.9	0.6	-0.3
01415	12	V	500	29	2.4	0.1	0.2
01415	00	V	500	29	2.3	0.2	0.2
02365	12	V	500	29	2.2	0.5	0.0
02365	00	V	500	30	2.3	0.2	-0.1
02591	00	V	500	29	1.8	0.1	0.3
02591	12	V	500	30	1.7	-0.2	-0.2
02836	00	V	500	30	2.0	0.0	-0.2
02836	12	V	500	29	1.8	0.2	0.2
02963	00	V	500	30	2.1	0.5	-0.2
02963	12	V	500	30	1.7	0.2	0.1
03005	12	V	500	30	2.7	0.5	-0.7
03005	00	V	500	27	1.9	0.1	0.4
03238	12	V	500	1	1.7	-1.7	0.2
03238	00	V	500	24	2.2	-0.4	0.4
03808	00	V	500	29	2.5	-0.2	-0.1
03808	12	V	500	29	2.1	0.2	-0.2
03918	12	V	500	5	3.9	-0.6	-0.6
03918	00	V	500	29	1.8	0.4	0.4
03953	12	V	500	30	2.1	0.0	0.2
03953	00	V	500	30	2.6	-0.2	0.6
04018	12	V	500	28	2.3	0.2	-0.5
04018	00	V	500	30	2.4	-0.1	0.2
04220	12	V	500	30	3.3	0.1	0.0
04220	00	V	500	30	2.8	0.6	-0.5
04270	00	V	500	30	2.9	-0.6	0.2
04270	12	V	500	30	2.6	0.1	0.5
04320	00	V	500	30	2.3	0.2	-0.7
04320	12	V	500	30	2.9	-0.4	-0.3
04339	00	V	500	30	2.7	-0.5	0.0
04339	12	V	500	29	2.2	-0.2	0.4
04360	00	V	500	30	2.8	-0.2	0.0
04360	12	V	500	30	3.1	0.0	0.6
06011	00	V	500	24	2.6	-0.3	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	500	29	2.1	-0.2	0.0
06260	12	V	500	6	1.5	0.4	-0.3
06260	00	V	500	30	2.5	-0.2	0.2
06610	00	V	500	30	3.0	0.3	0.7
06610	12	V	500	30	2.1	0.3	0.0
07110	00	V	500	27	2.8	0.1	-0.1
07110	12	V	500	29	2.5	0.9	0.4
07510	00	V	500	30	2.8	0.0	-0.9
07510	12	V	500	30	2.7	-0.1	0.0
07645	00	V	500	30	2.3	0.4	0.5
07645	12	V	500	29	2.4	0.7	-0.1
07761	12	V	500	29	2.6	0.8	-0.2
07761	00	V	500	28	3.0	1.1	0.2
08001	12	V	500	30	2.3	0.1	-0.3
08001	00	V	500	30	2.7	0.1	0.4
08221	00	V	500	30	2.4	0.4	0.6
08221	12	V	500	30	2.3	-0.2	-0.6
08302	12	V	500	30	2.3	0.1	0.4
08302	00	V	500	28	3.3	0.8	0.4
08508	12	V	500	30	2.7	0.3	-0.4
08522	12	V	500	30	2.5	0.4	0.1
10035	00	V	500	30	2.7	-0.1	-0.3
10035	12	V	500	30	2.1	0.3	0.4
10393	00	V	500	30	2.3	0.6	-0.2
10393	12	V	500	30	2.3	-0.3	0.6
10410	00	V	500	29	2.0	0.3	0.0
10410	12	V	500	30	2.1	0.2	-0.5
10739	00	V	500	30	2.7	0.3	-0.4
10739	12	V	500	30	1.9	0.3	-0.5
11035	00	V	500	30	2.9	0.4	-0.5
11035	12	V	500	30	1.8	0.1	0.2
12982	12	V	500	30	2.4	-0.2	-0.2
12982	00	V	500	30	3.3	0.4	0.0
16245	00	V	500	28	1.9	0.0	-0.1
16245	12	V	500	30	2.1	0.8	0.2
16429	00	V	500	29	2.4	0.6	0.2
16429	12	V	500	30	3.1	0.8	-0.2
16622	12	V	500	1	1.9	0.4	-1.9
16622	00	V	500	30	2.6	-0.3	-0.2
16754	00	V	500	25	2.8	1.1	-1.0
17607	12	V	500	19	3.5	2.0	-0.5
26435	12	V	500	15	2.1	0.4	-0.1
2EERV	12	V	500	12	2.8	0.7	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERV	00	V	500	14	2.1	-0.5	-0.5
60018	00	V	500	29	2.0	0.2	-0.3
60018	12	V	500	30	2.3	0.4	-0.2
7JUNA4	12	V	500	9	1.9	0.1	-0.1
7JUNA4	00	V	500	11	2.5	0.4	0.5
9ZT9MR	12	V	500	5	1.9	-0.5	1.3
9ZT9MR	00	V	500	3	1.0	-0.3	0.0
ATGU3F	00	V	500	8	2.2	-0.8	-0.5
ATGU3F	12	V	500	10	1.8	0.6	0.1
BPMWB2	00	V	500	10	1.9	0.1	0.7
BPMWB2	12	V	500	9	2.7	-0.2	0.3
DBLK	12	V	500	25	1.6	0.3	0.1
FPUW5G	12	V	500	19	2.8	0.6	0.2
GQBZLZ	12	V	500	6	2.0	0.5	-0.1
GQBZLZ	00	V	500	6	2.0	0.0	0.4
JNKN7J	00	V	500	1	2.2	-2.2	0.4
KJJF9X	12	V	500	9	2.7	0.4	0.4
KJJF9X	00	V	500	8	1.7	0.1	-0.5
KMPLHP	12	V	500	10	2.7	-0.2	1.0
KMPLHP	00	V	500	9	2.1	-1.1	0.6
LAGY8	12	V	500	2	1.1	0.5	-0.5
LAGZ8	00	V	500	1	0.1	0.0	0.1
LAGZ8	12	V	500	1	3.2	-3.1	-0.6
LRYQE3	00	V	500	14	2.2	-0.2	0.2
LRYQE3	12	V	500	15	1.9	0.5	-0.3
SMLQ	12	V	500	13	1.8	0.4	-0.2
SMLQ	00	V	500	13	1.8	-0.3	0.8
UXK5JT	00	V	500	9	2.4	0.0	-0.3
UXK5JT	12	V	500	8	1.9	0.7	0.1
WDK38H	12	V	500	26	2.4	-0.4	-0.6
XKQLWQ	12	V	500	26	2.6	0.3	0.2
XQFJRG	00	V	500	8	2.6	-0.1	-0.2
XQFJRG	12	V	500	7	3.1	1.0	-0.1
YLV96W	12	V	500	9	3.0	-1.0	-0.3
YLV96W	00	V	500	8	2.0	-0.1	0.1
ZVQEQC	12	V	500	20	2.0	0.2	0.1

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 : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	850	31	5.8	-2.6
01001	00	Z	850	31	9.0	-7.7
01028	00	Z	850	29	3.0	1.1
01028	12	Z	850	29	3.5	0.0
01400	12	Z	850	29	79.0	78.9
01400	00	Z	850	30	80.6	80.5
01415	12	Z	850	29	3.6	3.2
01415	00	Z	850	29	3.8	3.5
02365	12	Z	850	29	3.3	2.2
02365	00	Z	850	30	3.9	2.6
02591	00	Z	850	29	7.1	6.9
02591	12	Z	850	30	8.5	8.4
02836	00	Z	850	30	3.3	2.8
02836	12	Z	850	29	3.4	2.7
02963	00	Z	850	30	3.8	3.4
02963	12	Z	850	30	4.1	3.7
03005	12	Z	850	31	3.2	-1.3
03005	00	Z	850	28	3.0	-2.1
03238	12	Z	850	1	1.2	1.2
03238	00	Z	850	24	3.0	2.2
03808	00	Z	850	30	2.5	1.6
03808	12	Z	850	30	2.7	1.9
03918	12	Z	850	5	6.9	6.8
03918	00	Z	850	29	7.0	6.5
03953	12	Z	850	30	3.1	-1.3
03953	00	Z	850	30	2.7	-1.8
04018	12	Z	850	28	2.0	0.3
04018	00	Z	850	30	3.0	0.7
04220	12	Z	850	30	5.9	-5.0
04220	00	Z	850	30	5.5	-4.6
04270	00	Z	850	30	8.4	-7.8
04270	12	Z	850	30	6.1	-5.3
04320	00	Z	850	30	7.0	1.8
04320	12	Z	850	30	6.3	4.1
04339	00	Z	850	30	9.2	-8.4
04339	12	Z	850	29	8.8	-6.2
04360	00	Z	850	30	6.7	-5.6
04360	12	Z	850	30	6.3	-5.4
06011	00	Z	850	24	2.8	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	850	29	3.5	0.5
06260	12	Z	850	6	11.9	-3.5
06260	00	Z	850	30	2.6	0.3
06610	00	Z	850	32	2.0	1.3
06610	12	Z	850	34	4.5	2.7
07110	00	Z	850	27	7.2	-6.9
07110	12	Z	850	31	6.9	-6.6
07510	00	Z	850	32	3.6	2.6
07510	12	Z	850	31	5.0	4.2
07645	00	Z	850	30	6.9	-6.4
07645	12	Z	850	30	5.7	-5.0
07761	12	Z	850	29	2.1	0.2
07761	00	Z	850	28	2.2	-0.5
08001	12	Z	850	30	2.2	1.4
08001	00	Z	850	30	2.7	0.8
08221	00	Z	850	30	3.1	1.6
08221	12	Z	850	31	2.5	1.6
08302	12	Z	850	30	7.7	-7.5
08302	00	Z	850	28	8.0	-7.7
08508	12	Z	850	30	5.6	4.9
08522	12	Z	850	30	3.9	3.5
10035	00	Z	850	30	12.3	12.1
10035	12	Z	850	30	13.1	13.0
10393	00	Z	850	31	3.1	0.7
10393	12	Z	850	30	2.7	1.3
10410	00	Z	850	29	2.5	-1.1
10410	12	Z	850	31	1.7	0.1
10739	00	Z	850	30	4.1	3.7
10739	12	Z	850	30	5.0	4.6
11035	00	Z	850	30	4.6	3.2
11035	12	Z	850	30	3.4	2.4
12982	12	Z	850	30	4.4	4.1
12982	00	Z	850	30	5.2	4.0
16245	00	Z	850	28	3.4	3.2
16245	12	Z	850	30	3.9	3.5
16429	00	Z	850	30	3.5	3.1
16429	12	Z	850	30	3.0	2.4
16622	12	Z	850	1	11.7	11.7
16622	00	Z	850	30	11.4	9.8
16754	00	Z	850	25	4.1	2.6
17607	12	Z	850	21	2.8	1.9
26435	12	Z	850	15	2.1	0.6
2EERV	12	Z	850	13	8.0	-4.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERTV	00	Z	850	14	8.5	-3.1
60018	00	Z	850	30	2.0	-0.9
60018	12	Z	850	30	1.7	0.4
7JUNA4	12	Z	850	9	8.2	7.3
7JUNA4	00	Z	850	10	5.1	2.9
9ZT9MR	12	Z	850	5	9.7	-9.3
9ZT9MR	00	Z	850	3	14.7	-13.4
ATGU3F	00	Z	850	8	24.9	-21.0
ATGU3F	12	Z	850	10	22.7	-21.1
BPMWB2	00	Z	850	10	8.0	-7.4
BPMWB2	12	Z	850	9	5.7	-5.0
DBLK	12	Z	850	25	17.9	17.8
FPUW5G	12	Z	850	19	9.8	8.4
GQBZLZ	12	Z	850	6	20.8	-20.4
GQBZLZ	00	Z	850	6	16.0	-15.2
JNKN7J	00	Z	850	1	42.0	42.0
KJFF9X	12	Z	850	9	6.5	-3.9
KJFF9X	00	Z	850	8	6.0	-3.4
KMPLHP	12	Z	850	10	49.4	44.7
KMPLHP	00	Z	850	10	48.4	47.0
LAGY8	12	Z	850	2	0.0	0.0
LAGZ8	00	Z	850	1	80.0	-80.0
LAGZ8	12	Z	850	1	22.9	-22.9
LRYQE3	00	Z	850	14	6.1	-0.6
LRYQE3	12	Z	850	15	5.0	-1.9
SMLQ	12	Z	850	13	1.8	-0.1
SMLQ	00	Z	850	13	2.3	-0.6
UXK5JT	00	Z	850	9	3.4	-2.1
UXK5JT	12	Z	850	8	3.1	-0.2
WDK38H	12	Z	850	27	10.7	-9.8
XKQLWQ	12	Z	850	26	12.0	10.9
XQFJRG	00	Z	850	9	7.7	-7.5
XQFJRG	12	Z	850	7	8.3	-7.1
YL96W	12	Z	850	9	4.9	0.2
YL96W	00	Z	850	8	5.0	1.1
ZVQEQC	12	Z	850	20	2.9	2.5

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 : JUN 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	850	30	4.4	-0.3	-0.8
01001	00	V	850	30	4.3	0.4	-0.9
01028	00	V	850	29	2.2	0.2	0.4
01028	12	V	850	29	1.7	-0.2	-0.3
01400	12	V	850	29	1.8	0.1	-0.2
01400	00	V	850	29	1.4	0.1	0.0
01415	12	V	850	29	2.2	0.2	0.0
01415	00	V	850	29	2.4	0.1	0.8
02365	12	V	850	29	2.8	0.1	-0.6
02365	00	V	850	30	2.7	0.5	0.2
02591	00	V	850	29	2.6	-0.6	0.2
02591	12	V	850	30	2.8	-0.4	0.4
02836	00	V	850	30	2.5	0.1	0.4
02836	12	V	850	29	2.7	-0.1	-0.2
02963	00	V	850	30	2.5	-0.5	0.1
02963	12	V	850	30	2.3	-0.6	-0.1
03005	12	V	850	30	2.3	-0.4	0.0
03005	00	V	850	27	2.4	0.4	-0.2
03238	12	V	850	1	3.1	3.1	-0.5
03238	00	V	850	24	2.1	0.4	-0.1
03808	00	V	850	29	2.5	0.4	0.1
03808	12	V	850	29	2.9	0.9	0.1
03918	12	V	850	5	1.7	0.3	-0.2
03918	00	V	850	29	2.1	0.0	0.4
03953	12	V	850	30	2.2	0.2	0.3
03953	00	V	850	30	2.1	0.2	0.6
04018	12	V	850	28	2.6	-0.2	-0.1
04018	00	V	850	30	2.5	0.2	-0.5
04220	12	V	850	30	3.3	-0.4	-1.1
04220	00	V	850	30	3.1	0.1	0.0
04270	00	V	850	30	3.0	0.1	0.1
04270	12	V	850	30	2.7	0.0	-0.3
04320	00	V	850	30	2.2	-0.2	-0.4
04320	12	V	850	30	2.8	-0.3	-0.5
04339	00	V	850	30	2.8	-0.2	-0.6
04339	12	V	850	29	3.5	0.2	-0.4
04360	00	V	850	30	3.7	0.8	0.1
04360	12	V	850	30	3.7	0.2	0.4
06011	00	V	850	24	2.3	-0.5	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	850	29	2.3	0.0	-0.5
06260	12	V	850	6	2.9	1.2	-0.4
06260	00	V	850	30	2.8	0.2	-0.4
06610	00	V	850	30	3.3	0.9	-0.1
06610	12	V	850	30	3.2	1.1	0.7
07110	00	V	850	27	2.2	0.1	0.0
07110	12	V	850	29	2.1	-0.4	-0.2
07510	00	V	850	30	3.0	0.2	0.5
07510	12	V	850	30	2.7	0.3	0.0
07645	00	V	850	30	2.4	-0.4	-0.5
07645	12	V	850	29	3.0	-0.2	0.4
07761	12	V	850	29	3.1	0.0	-0.2
07761	00	V	850	28	2.5	0.3	0.1
08001	12	V	850	30	2.1	0.3	0.3
08001	00	V	850	30	2.6	0.5	0.0
08221	00	V	850	30	3.5	0.6	-0.1
08221	12	V	850	30	2.4	0.7	0.3
08302	12	V	850	30	2.9	0.2	-0.1
08302	00	V	850	28	2.1	0.1	-0.1
08508	12	V	850	30	3.7	0.7	-0.4
08522	12	V	850	30	2.5	0.1	-0.6
10035	00	V	850	30	2.3	-0.5	0.1
10035	12	V	850	30	2.1	0.5	-0.2
10393	00	V	850	30	3.2	-0.2	-0.8
10393	12	V	850	30	2.9	0.8	-0.6
10410	00	V	850	29	2.7	0.9	-0.6
10410	12	V	850	30	2.1	0.0	-0.4
10739	00	V	850	30	2.8	0.5	0.1
10739	12	V	850	30	2.2	0.3	-0.3
11035	00	V	850	30	2.4	0.5	0.1
11035	12	V	850	30	2.3	0.6	0.1
12982	12	V	850	30	2.5	0.3	0.0
12982	00	V	850	30	2.9	0.4	-0.2
16245	00	V	850	28	2.5	-0.4	-0.5
16245	12	V	850	30	2.3	-0.1	-0.1
16429	00	V	850	30	2.2	-0.1	-0.6
16429	12	V	850	30	2.4	-0.4	-0.2
16622	12	V	850	1	2.4	1.6	-1.8
16622	00	V	850	30	2.4	0.2	-0.2
16754	00	V	850	25	2.1	-0.5	-0.6
17607	12	V	850	21	3.0	0.1	0.6
26435	12	V	850	15	2.2	0.1	0.8
2EERV	12	V	850	13	2.3	0.1	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERV	00	V	850	14	2.9	0.2	-0.2
60018	00	V	850	29	2.8	-0.6	0.5
60018	12	V	850	30	3.3	-0.8	-0.1
7JUNA4	12	V	850	9	1.6	0.0	0.2
7JUNA4	00	V	850	10	3.1	-1.0	-0.6
9ZT9MR	12	V	850	5	1.9	-0.8	0.9
9ZT9MR	00	V	850	3	1.1	-0.1	0.5
ATGU3F	00	V	850	8	3.0	0.0	-1.7
ATGU3F	12	V	850	10	2.1	-0.2	0.0
BPMWB2	00	V	850	10	2.8	0.2	-0.2
BPMWB2	12	V	850	9	2.7	1.0	0.5
DBLK	12	V	850	25	2.5	-0.5	0.1
FPUW5G	12	V	850	19	2.2	-0.5	-0.1
GQBZLZ	12	V	850	6	2.5	-0.2	-0.4
GQBZLZ	00	V	850	6	2.6	-0.1	0.0
JNKN7J	00	V	850	1	4.1	-4.1	0.1
KJFF9X	12	V	850	9	2.7	0.0	-0.6
KJFF9X	00	V	850	8	2.9	-0.7	1.0
KMPLHP	12	V	850	10	1.8	0.6	0.6
KMPLHP	00	V	850	10	2.7	-0.5	1.2
LAGY8	12	V	850	2	1.8	0.6	1.6
LAGZ8	00	V	850	1	2.5	-0.1	-2.5
LAGZ8	12	V	850	1	5.8	-2.9	-5.0
LRYQE3	00	V	850	14	2.2	0.3	0.1
LRYQE3	12	V	850	15	2.3	0.3	-0.1
SMLQ	12	V	850	13	2.3	-0.7	0.0
SMLQ	00	V	850	13	2.7	-1.1	0.5
UXK5JT	00	V	850	9	1.6	0.1	-0.7
UXK5JT	12	V	850	8	1.8	-0.7	-0.2
WDK38H	12	V	850	27	2.1	-0.1	0.5
XKQLWQ	12	V	850	26	2.7	0.2	0.3
XQFJRG	00	V	850	9	2.5	-0.7	0.2
XQFJRG	12	V	850	7	1.4	-0.6	0.7
YLV96W	12	V	850	9	3.3	1.0	-0.5
YLV96W	00	V	850	8	2.0	-0.2	0.2
ZVQEQC	12	V	850	20	2.1	0.7	-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 : JUN 2023
 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	1439	0	0.2	-0.1	0.3
1300001	99	P	SUR	11	-23	594	0	0.4	0.2	0.5
1300008	99	P	SUR	15	-38	594	0	0.3	0.2	0.3
1300130	99	P	SUR	28	-16	714	0	0.3	0.2	0.4
1300131	99	P	SUR	28	-17	715	0	0.3	0.2	0.4
1301603	99	P	SUR	30	-43	268	5	0.7	-0.5	0.9
1301608	99	P	SUR	30	-52	718	0	0.3	0.1	0.3
1301619	99	P	SUR	41	-26	717	0	0.3	-0.2	0.3
1301629	99	P	SUR	20	-37	719	0	0.3	0.0	0.3
1301700	99	P	SUR	24	-61	720	0	0.4	0.0	0.4
1301706	99	P	SUR	22	-63	703	0	0.4	0.1	0.4
1301712	99	P	SUR	20	-56	719	0	0.4	0.1	0.4
1301713	99	P	SUR	16	-60	719	0	0.3	0.1	0.3
1301714	99	P	SUR	23	-54	719	0	0.4	0.3	0.5
1301718	99	P	SUR	27	-44	720	0	0.3	0.2	0.4
1301719	99	P	SUR	21	-53	719	0	0.5	0.8	0.9
1301720	99	P	SUR	23	-33	629	0	0.2	0.1	0.3
1301723	99	P	SUR	27	-19	719	0	0.3	0.8	0.8
1301725	99	P	SUR	21	-27	713	0	0.3	0.1	0.3
1301726	99	P	SUR	21	-31	717	0	0.3	0.1	0.3
1301728	99	P	SUR	13	-37	84	0	0.2	0.1	0.2
1301731	99	P	SUR	22	-30	714	0	0.3	0.2	0.4
1301735	99	P	SUR	28	-40	715	0	0.3	-0.6	0.7
1301736	99	P	SUR	27	-45	717	0	0.3	0.2	0.4
1301737	99	P	SUR	26	-59	717	0	0.4	0.1	0.4
1301763	99	P	SUR	10	-40	31	27	6.7	9.8	11.9
1301767	99	P	SUR	34	-16	716	0	0.2	-0.4	0.5
1301769	99	P	SUR	33	-13	328	0	0.2	1.2	1.2
1301770	99	P	SUR	33	-13	718	0	0.2	0.1	0.3
1301771	99	P	SUR	33	-13	716	0	0.2	0.0	0.2
1301772	99	P	SUR	33	-17	9	1	0.2	-0.6	0.6
1301778	99	P	SUR	30	-20	96	0	0.2	0.1	0.3
1301781	99	P	SUR	26	-25	45	0	0.2	0.3	0.4
1301792	99	P	SUR	18	-34	701	0	0.3	-0.5	0.6
1301793	99	P	SUR	54	-19	703	0	0.3	0.2	0.3
1301794	99	P	SUR	45	-20	709	0	0.3	0.2	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
1301795	99	P	SUR	11	-30	696	0	0.4	0.0	0.4
1301796	99	P	SUR	13	-29	694	0	0.3	0.1	0.3
1301797	99	P	SUR	13	-31	690	0	0.3	0.2	0.4
1301798	99	P	SUR	39	-22	711	0	0.3	0.3	0.4
1301799	99	P	SUR	29	-26	709	0	0.3	0.1	0.3
1801735	99	P	SUR	50	-9	715	0	0.3	0.2	0.3
2302616	99	P	SUR	45	34	161	0	1.7	-7.0	7.2
2302621	99	P	SUR	45	34	156	0	1.6	-7.1	7.2
2302623	99	P	SUR	45	34	177	0	1.7	-7.0	7.2
2302627	99	P	SUR	45	34	138	0	1.4	-7.8	7.9
2302635	99	P	SUR	45	34	174	0	1.7	-7.4	7.6
2302637	99	P	SUR	45	34	166	0	1.7	-7.2	7.4
2601716	99	P	SUR	86	34	37	0	0.3	-0.1	0.3
2801988	99	P	SUR	46	-1	2	0	0.4	-0.9	0.9
3801550	99	P	SUR	85	-26	717	0	0.4	-0.3	0.5
3801586	99	P	SUR	76	15	705	0	0.3	-0.6	0.7
3801588	99	P	SUR	73	16	718	0	0.3	0.2	0.3
3801596	99	P	SUR	38	-40	681	0	0.3	-0.2	0.3
4100040	99	P	SUR	15	-53	4312	0	0.3	-0.2	0.4
4100043	99	P	SUR	21	-65	4313	0	0.4	-0.2	0.5
4100044	99	P	SUR	22	-59	4311	0	0.4	-0.4	0.6
4100046	99	P	SUR	24	-68	4313	0	0.5	0.1	0.5
4100048	99	P	SUR	32	-70	4313	0	0.5	-0.2	0.5
4100049	99	P	SUR	28	-63	4312	0	0.5	-0.3	0.5
4100052	99	P	SUR	18	-65	4269	0	0.4	-1.0	1.0
4100053	99	P	SUR	18	-66	4117	0	0.4	-0.5	0.7
4100056	99	P	SUR	18	-65	4300	0	0.4	-0.9	0.9
4100139	99	P	SUR	20	-38	718	0	0.3	0.2	0.3
4100300	99	P	SUR	16	-57	664	0	0.3	0.2	0.4
4101613	99	P	SUR	27	-56	566	0	0.4	0.5	0.6
4101616	99	P	SUR	30	-38	692	0	0.2	0.0	0.2
4101618	99	P	SUR	29	-49	604	0	0.3	0.2	0.4
4101663	99	P	SUR	26	-33	662	0	0.3	0.0	0.3
4101665	99	P	SUR	71	4	707	0	0.4	0.0	0.4
4101696	99	P	SUR	29	-33	719	0	0.3	-0.1	0.3
4101717	99	P	SUR	16	-62	718	0	0.4	-1.2	1.3
4101719	99	P	SUR	29	-19	718	0	0.3	-0.1	0.3
4101724	99	P	SUR	30	-69	716	0	0.9	-0.1	0.9
4101725	99	P	SUR	18	-63	713	0	0.3	0.0	0.3
4101727	99	P	SUR	28	-24	718	0	0.2	-0.1	0.2
4101728	99	P	SUR	32	-45	719	0	0.3	0.3	0.4
4101729	99	P	SUR	28	-48	718	0	0.3	0.0	0.3
4101731	99	P	SUR	16	-62	183	0	0.3	0.0	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4101743	99	P	SUR	43	-25	719	0	0.3	0.0	0.3
4101753	99	P	SUR	32	-43	719	0	0.3	0.4	0.5
4101755	99	P	SUR	33	-56	719	0	0.4	0.2	0.5
4101756	99	P	SUR	12	-62	625	0	0.4	-0.8	0.9
4101842	99	P	SUR	69	16	719	0	0.4	-0.5	0.6
4101843	99	P	SUR	72	14	719	0	0.3	-0.1	0.3
4101844	99	P	SUR	18	-70	133	0	1.8	8.4	8.6
4101845	99	P	SUR	69	3	719	0	0.4	0.1	0.4
4101851	99	P	SUR	28	-55	716	0	0.4	-0.2	0.4
4102547	99	P	SUR	26	-61	711	0	0.4	0.4	0.6
4102559	99	P	SUR	41	-64	686	0	0.4	-0.1	0.4
4102636	99	P	SUR	30	-66	692	0	0.5	0.3	0.6
41040	99	P	SUR	15	-53	720	0	0.3	-0.2	0.4
41043	99	P	SUR	21	-65	720	0	0.4	-0.2	0.5
41044	99	P	SUR	22	-59	720	0	0.5	-0.4	0.6
41046	99	P	SUR	24	-68	720	0	0.5	0.1	0.5
41048	99	P	SUR	32	-70	720	0	0.5	-0.2	0.5
41049	99	P	SUR	28	-63	720	0	0.5	-0.3	0.5
41052	99	P	SUR	18	-65	719	0	0.4	-0.9	1.0
41053	99	P	SUR	19	-66	719	0	0.4	-0.5	0.7
41056	99	P	SUR	18	-66	715	0	0.4	-0.9	1.0
4200059	99	P	SUR	15	-67	4310	0	0.4	-0.2	0.5
4200060	99	P	SUR	16	-63	4309	0	0.3	-0.3	0.5
4200085	99	P	SUR	18	-67	1852	0	0.4	-0.7	0.8
42059	99	P	SUR	15	-68	720	0	0.5	-0.2	0.5
42060	99	P	SUR	16	-63	720	0	0.4	-0.3	0.5
42085	99	P	SUR	18	-67	692	0	0.4	-0.7	0.8
4400005	99	P	SUR	43	-69	4313	0	0.4	-0.2	0.5
4400008	99	P	SUR	40	-69	4312	0	0.4	-0.7	0.8
4400011	99	P	SUR	41	-67	4311	0	0.5	-0.5	0.7
4400032	99	P	SUR	44	-69	714	0	0.4	-0.9	1.0
4400033	99	P	SUR	44	-69	716	0	0.4	-0.8	0.9
4400150	99	P	SUR	43	-64	674	0	0.4	0.0	0.4
4400488	99	P	SUR	45	-61	534	0	0.4	0.1	0.5
4400489	99	P	SUR	45	-61	546	0	0.4	0.0	0.4
44005	99	P	SUR	43	-69	720	0	0.5	-0.3	0.5
4400777	99	P	SUR	34	-34	382	0	0.3	-0.2	0.4
44008	99	P	SUR	41	-69	720	0	0.4	-0.7	0.8
44011	99	P	SUR	41	-67	720	0	0.5	-0.5	0.7
4401581	99	P	SUR	31	-65	719	0	0.5	0.0	0.5
4401582	99	P	SUR	27	-32	718	0	0.3	0.3	0.4
4401584	99	P	SUR	30	-43	719	0	0.3	-0.1	0.3
4401585	99	P	SUR	22	-43	719	0	0.3	0.2	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4401587	99	P	SUR	77	12	718	0	0.3	0.2	0.4
4401588	99	P	SUR	62	0	719	0	0.3	0.0	0.3
4401863	99	P	SUR	17	-62	100	0	0.4	-1.6	1.6
4401864	99	P	SUR	23	-65	720	0	0.4	0.0	0.4
4401867	99	P	SUR	36	-49	714	0	0.3	-0.1	0.3
4401872	99	P	SUR	29	-67	635	0	0.5	0.0	0.5
4402603	99	P	SUR	67	11	719	0	0.3	0.0	0.3
4402606	99	P	SUR	62	2	719	0	0.3	0.2	0.4
4402607	99	P	SUR	48	-12	75	0	0.8	0.5	1.0
4402611	99	P	SUR	49	-11	93	0	0.8	1.2	1.4
4402613	99	P	SUR	38	-18	709	0	0.7	0.3	0.7
4402618	99	P	SUR	28	-62	720	0	0.4	0.3	0.5
4402656	99	P	SUR	31	-34	720	0	0.2	0.2	0.3
4402660	99	P	SUR	27	-38	708	0	0.3	0.3	0.5
4402663	99	P	SUR	44	-11	716	0	0.2	-0.1	0.3
4402670	99	P	SUR	21	-47	719	0	0.3	0.0	0.3
4402672	99	P	SUR	21	-52	718	0	0.3	0.0	0.3
4402674	99	P	SUR	19	-64	719	0	0.4	0.4	0.5
4402675	99	P	SUR	23	-37	720	0	0.2	0.0	0.2
4402676	99	P	SUR	33	-37	720	0	0.3	0.1	0.3
4402721	99	P	SUR	46	-13	719	0	0.3	0.2	0.3
4402726	99	P	SUR	54	-34	709	0	0.3	0.1	0.3
4402727	99	P	SUR	65	7	716	0	0.3	0.0	0.3
4402732	99	P	SUR	45	-32	710	0	0.3	0.1	0.3
4402733	99	P	SUR	46	-51	715	0	0.3	0.0	0.3
4402735	99	P	SUR	43	-41	709	0	0.4	-0.2	0.5
4402736	99	P	SUR	45	-26	714	0	0.4	0.1	0.4
4402737	99	P	SUR	47	-42	714	0	0.4	-0.2	0.4
4402742	99	P	SUR	51	-28	708	0	0.3	-0.1	0.3
4402743	99	P	SUR	42	-53	720	0	0.4	-0.5	0.6
4402744	99	P	SUR	43	-60	692	0	0.4	0.0	0.4
4402746	99	P	SUR	47	-22	714	0	0.4	0.0	0.4
4402747	99	P	SUR	46	-45	709	0	0.4	0.0	0.4
4402749	99	P	SUR	53	-38	719	0	0.3	0.0	0.3
4402750	99	P	SUR	56	-38	716	0	0.3	-0.4	0.5
4402878	99	P	SUR	40	-62	694	0	0.4	0.5	0.6
4402879	99	P	SUR	38	-54	656	0	0.4	0.5	0.6
4402880	99	P	SUR	40	-41	648	0	0.4	0.4	0.6
4402881	99	P	SUR	49	-26	275	0	0.5	0.3	0.6
4402882	99	P	SUR	31	-66	706	0	0.5	0.5	0.7
44032	99	P	SUR	44	-69	715	0	0.4	-0.9	1.0
44033	99	P	SUR	44	-69	716	0	0.4	-0.9	1.0
4403557	99	P	SUR	60	2	686	0	0.3	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
4403558	99	P	SUR	47	-14	718	0	0.3	0.0	0.3
4403568	99	P	SUR	41	-51	718	0	0.4	0.2	0.4
4403569	99	P	SUR	46	-27	718	0	0.5	0.0	0.5
44078	99	P	SUR	60	-40	113	0	0.4	-0.4	0.6
44150	99	P	SUR	43	-64	678	0	0.4	0.0	0.4
44258	99	P	SUR	45	-63	696	0	0.4	-0.1	0.4
44488	99	P	SUR	45	-61	680	0	0.5	0.2	0.5
44489	99	P	SUR	46	-61	676	0	0.4	0.0	0.4
4601782	99	P	SUR	35	-20	718	0	0.8	0.3	0.9
4601812	99	P	SUR	79	-8	692	0	0.4	0.3	0.5
4601818	99	P	SUR	88	-52	716	0	0.3	0.2	0.4
4701518	99	P	SUR	75	-19	20	0	0.3	0.0	0.3
4701738	99	P	SUR	70	-67	697	697	0.0	0.0	0.0
4801663	99	P	SUR	84	-56	683	0	0.4	-0.2	0.4
4801723	99	P	SUR	77	22	716	0	0.3	-0.2	0.4
4801761	99	P	SUR	65	-25	714	0	1.0	0.5	1.2
4801763	99	P	SUR	84	-30	710	0	0.4	-0.5	0.6
4801771	99	P	SUR	67	-60	717	0	0.4	0.0	0.4
4802506	99	P	SUR	58	-38	717	0	0.3	0.0	0.3
4802602	99	P	SUR	64	-34	685	0	0.4	0.0	0.4
4802663	99	P	SUR	70	-64	717	0	0.4	0.1	0.4
4803978	99	P	SUR	84	-27	717	0	0.4	-0.2	0.5
5802034	99	P	SUR	49	-12	717	0	0.3	-0.1	0.3
6100001	99	P	SUR	43	8	719	0	0.3	0.1	0.3
6100002	99	P	SUR	42	5	714	0	0.4	0.1	0.4
6100131	99	P	SUR	42	8	10	0	0.3	-0.1	0.3
6100196	99	P	SUR	42	4	711	0	0.4	0.4	0.5
6100198	99	P	SUR	37	-2	711	0	0.4	0.5	0.6
6100280	99	P	SUR	41	1	712	0	0.4	0.8	0.9
6100281	99	P	SUR	40	0	712	0	0.5	0.6	0.8
6100417	99	P	SUR	38	0	712	0	0.4	0.7	0.8
6100430	99	P	SUR	40	2	713	0	0.3	0.4	0.5
6101007	99	P	SUR	36	25	35	0	0.4	-0.2	0.4
6101009	99	P	SUR	35	25	113	0	0.5	-0.2	0.5
6101031	99	P	SUR	42	8	336	0	0.4	0.2	0.4
6102732	99	P	SUR	33	19	708	0	0.4	0.1	0.4
6102809	99	P	SUR	35	16	686	0	0.4	-0.7	0.8
6102810	99	P	SUR	38	1	711	0	0.5	0.0	0.5
6102812	99	P	SUR	41	3	711	0	0.4	0.0	0.4
6200001	99	P	SUR	45	-5	716	0	0.3	0.2	0.4
6200024	99	P	SUR	44	-3	707	0	0.4	0.3	0.5
6200025	99	P	SUR	44	-6	707	0	0.4	0.4	0.6
6200029	99	P	SUR	49	-12	716	0	0.2	-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
6200050	99	P	SUR	50	-4	105	0	0.2	0.0	0.2
6200081	99	P	SUR	51	-13	717	0	0.3	0.0	0.3
6200082	99	P	SUR	44	-8	707	0	0.3	0.5	0.6
6200083	99	P	SUR	43	-9	705	0	0.3	0.3	0.5
6200084	99	P	SUR	42	-9	708	0	0.3	0.4	0.5
6200085	99	P	SUR	36	-7	712	0	0.3	0.3	0.5
6200086	99	P	SUR	55	6	372	0	0.3	-0.2	0.3
6200087	99	P	SUR	55	7	374	0	0.3	-0.2	0.4
6200091	99	P	SUR	53	-5	718	0	0.3	-0.1	0.3
6200092	99	P	SUR	51	-11	718	0	0.3	-0.1	0.3
6200093	99	P	SUR	55	-10	718	0	0.3	-0.1	0.3
6200094	99	P	SUR	52	-7	709	0	0.3	0.0	0.3
6200095	99	P	SUR	53	-16	718	0	0.3	-0.1	0.4
6200103	99	P	SUR	50	-3	597	0	0.3	-0.3	0.4
6200163	99	P	SUR	47	-8	718	0	0.3	-0.1	0.3
6200191	99	P	SUR	41	-10	223	0	0.4	-0.5	0.7
6200192	99	P	SUR	40	-10	223	0	0.4	0.2	0.5
6200199	99	P	SUR	40	-9	220	0	0.3	-0.1	0.3
6200200	99	P	SUR	36	-8	132	0	0.2	-0.3	0.4
6201065	99	P	SUR	54	7	690	0	0.3	1.0	1.0
6201081	99	P	SUR	38	-9	224	0	0.3	-0.4	0.5
6202597	99	P	SUR	48	-39	719	0	0.5	0.0	0.5
6202598	99	P	SUR	42	-39	717	0	0.4	0.1	0.4
6202623	99	P	SUR	73	40	719	0	0.3	-0.2	0.4
6202627	99	P	SUR	67	13	650	0	0.3	-0.2	0.4
6202637	99	P	SUR	67	-8	719	0	0.3	0.1	0.3
6202639	99	P	SUR	29	-37	685	0	0.2	-0.1	0.3
6202640	99	P	SUR	35	-28	645	0	0.3	-0.1	0.3
6202644	99	P	SUR	40	-39	480	0	0.7	0.5	0.8
62029	99	P	SUR	49	-13	1435	0	0.2	-0.1	0.3
6203516	99	P	SUR	46	-19	700	0	0.4	-0.1	0.4
6203607	99	P	SUR	33	-29	718	0	0.3	0.3	0.4
6203612	99	P	SUR	29	-58	719	0	0.4	0.3	0.5
6203613	99	P	SUR	48	-24	719	0	0.4	0.2	0.4
6203616	99	P	SUR	26	-68	719	0	0.5	0.2	0.5
6203621	99	P	SUR	27	-28	716	0	0.2	-0.1	0.2
6203624	99	P	SUR	34	-54	719	0	0.4	-0.2	0.4
6203625	99	P	SUR	29	-31	719	0	0.3	-0.2	0.3
6203632	99	P	SUR	26	-46	719	0	0.3	0.2	0.4
6203633	99	P	SUR	68	15	744	44	0.4	-0.2	0.4
6203634	99	P	SUR	28	-35	719	0	0.3	0.3	0.4
6203639	99	P	SUR	34	-26	719	0	0.3	-0.2	0.4
6203640	99	P	SUR	23	-66	716	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
6203651	99	P	SUR	45	-26	719	0	0.3	0.3	0.5
6203737	99	P	SUR	21	-52	718	0	0.3	0.4	0.5
6203741	99	P	SUR	63	-7	716	0	0.3	0.1	0.3
6203744	99	P	SUR	68	11	625	0	0.3	0.3	0.5
6203753	99	P	SUR	60	-49	720	0	0.3	-0.3	0.4
6203755	99	P	SUR	34	-13	710	0	0.5	-0.1	0.5
6203765	99	P	SUR	28	-53	147	0	0.8	0.5	1.0
6203768	99	P	SUR	29	-18	719	0	0.2	0.2	0.3
6203771	99	P	SUR	25	-35	719	0	0.3	0.0	0.3
6203772	99	P	SUR	27	-68	720	0	0.5	0.2	0.5
6203773	99	P	SUR	30	-52	720	0	0.3	-0.3	0.5
6203776	99	P	SUR	28	-29	720	0	0.3	0.0	0.3
6203825	99	P	SUR	66	-11	688	0	0.3	0.2	0.4
6203827	99	P	SUR	66	12	714	0	0.3	-0.1	0.3
6203838	99	P	SUR	22	-66	712	0	0.4	0.5	0.6
6203839	99	P	SUR	28	-55	719	0	0.3	0.0	0.3
6203840	99	P	SUR	22	-43	718	0	0.3	0.2	0.4
6203842	99	P	SUR	34	-24	720	0	0.4	0.0	0.4
6203844	99	P	SUR	44	-18	710	0	0.2	0.3	0.4
6203845	99	P	SUR	54	-10	720	0	0.2	0.0	0.2
6203846	99	P	SUR	31	-27	720	0	0.3	-0.1	0.3
6203848	99	P	SUR	50	-27	710	0	0.3	0.1	0.3
6203849	99	P	SUR	25	-28	719	0	0.2	0.1	0.3
6203853	99	P	SUR	67	12	710	0	0.4	0.2	0.4
6203854	99	P	SUR	63	-25	718	0	0.3	0.2	0.3
6203855	99	P	SUR	68	12	696	0	0.4	-0.4	0.5
6203856	99	P	SUR	61	5	712	2	1.4	0.5	1.5
6203857	99	P	SUR	64	8	3	0	0.1	-0.3	0.4
6203859	99	P	SUR	20	-19	711	0	0.5	0.5	0.7
6203861	99	P	SUR	23	-25	708	0	0.3	0.1	0.3
6203864	99	P	SUR	63	-1	720	0	0.3	0.0	0.3
6203865	99	P	SUR	61	-32	686	0	0.3	0.0	0.3
6203866	99	P	SUR	69	15	710	0	0.3	0.1	0.3
6204603	99	P	SUR	40	3	706	0	0.4	0.5	0.6
6204604	99	P	SUR	40	2	706	0	0.4	-0.7	0.8
6204605	99	P	SUR	40	2	699	372	3.7	9.9	10.5
6204607	99	P	SUR	40	3	709	0	0.4	0.3	0.5
6204608	99	P	SUR	39	1	707	0	0.4	0.4	0.5
6204609	99	P	SUR	39	1	712	0	0.4	-0.3	0.5
62050	99	P	SUR	50	-4	404	0	0.3	0.0	0.3
62081	99	P	SUR	51	-13	1438	0	0.3	0.0	0.3
62091	99	P	SUR	53	-5	718	0	0.3	-0.1	0.3
62092	99	P	SUR	51	-11	718	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
62093	99	P	SUR	55	-10	718	0	0.3	-0.1	0.3
62094	99	P	SUR	52	-7	709	0	0.3	0.0	0.3
62095	99	P	SUR	53	-16	718	0	0.3	-0.1	0.4
62102	99	P	SUR	58	2	1439	0	0.3	0.3	0.4
62103	99	P	SUR	50	-3	1399	0	0.3	-0.3	0.4
62104	99	P	SUR	57	1	1439	0	0.3	0.1	0.3
62105	99	P	SUR	55	-13	1432	0	0.3	-0.1	0.3
62107	99	P	SUR	50	-6	1418	0	0.3	-0.1	0.3
62112	99	P	SUR	58	0	1439	0	0.3	0.4	0.5
62113	99	P	SUR	58	0	1439	0	0.3	0.0	0.3
62114	99	P	SUR	58	0	1131	0	0.2	0.4	0.5
62115	99	P	SUR	58	-3	1419	0	0.3	0.1	0.3
62116	99	P	SUR	58	1	1435	0	0.3	0.1	0.3
62118	99	P	SUR	58	1	1435	0	0.2	0.5	0.6
62119	99	P	SUR	57	2	1435	0	0.3	0.1	0.3
62120	99	P	SUR	56	2	1432	0	0.3	0.1	0.3
62121	99	P	SUR	54	3	1421	0	0.3	0.3	0.4
62122	99	P	SUR	57	2	1267	0	0.3	0.2	0.3
62124	99	P	SUR	54	-4	1423	0	0.3	0.1	0.3
62127	99	P	SUR	54	1	1439	0	0.2	0.8	0.8
62129	99	P	SUR	58	0	515	0	0.3	0.2	0.4
62130	99	P	SUR	59	1	1303	0	0.3	0.2	0.3
62131	99	P	SUR	54	1	813	0	0.3	0.7	0.7
62132	99	P	SUR	56	2	1435	0	0.3	0.5	0.6
62133	99	P	SUR	57	1	1435	0	0.3	0.2	0.4
62134	99	P	SUR	58	1	694	0	0.2	0.8	0.8
62140	99	P	SUR	57	1	1439	0	0.3	0.3	0.4
62143	99	P	SUR	58	2	1437	0	0.3	0.6	0.7
62144	99	P	SUR	53	2	1423	0	0.3	0.3	0.4
62145	99	P	SUR	53	3	1437	0	0.2	0.5	0.5
62146	99	P	SUR	57	2	1439	0	0.3	0.0	0.3
62148	99	P	SUR	54	2	1327	0	0.3	0.7	0.7
62149	99	P	SUR	54	1	1439	0	0.3	0.8	0.9
62151	99	P	SUR	57	2	892	0	0.3	0.3	0.4
62152	99	P	SUR	57	2	1437	0	0.3	0.4	0.5
62154	99	P	SUR	56	2	1439	0	0.3	0.1	0.3
62155	99	P	SUR	58	1	1439	0	0.3	0.4	0.5
62157	99	P	SUR	58	0	1439	0	0.3	0.2	0.3
62160	99	P	SUR	57	2	1399	0	0.3	0.3	0.4
62161	99	P	SUR	58	1	1439	0	0.3	-0.1	0.3
62162	99	P	SUR	57	1	1425	0	0.3	0.3	0.4
62163	99	P	SUR	48	-9	1439	0	0.3	-0.1	0.3
62164	99	P	SUR	57	1	1427	0	0.3	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
62165	99	P	SUR	54	1	1437	0	0.3	0.3	0.4
62168	99	P	SUR	58	1	1439	0	0.3	0.2	0.3
62170	99	P	SUR	51	2	1439	0	0.3	0.0	0.3
62296	99	P	SUR	53	2	86	0	0.2	0.1	0.2
62297	99	P	SUR	59	2	1439	0	0.2	0.2	0.3
62302	99	P	SUR	61	-2	1267	0	0.3	0.1	0.3
62304	99	P	SUR	51	2	1437	0	0.4	-0.1	0.4
62305	99	P	SUR	50	0	1439	0	0.3	0.0	0.3
62442	99	P	SUR	49	-16	1104	0	0.3	-0.2	0.3
6301001	99	P	SUR	64	5	691	0	0.3	-0.1	0.3
6301004	99	P	SUR	72	20	378	0	0.2	-0.2	0.3
6301572	99	P	SUR	53	-31	719	12	1.1	0.0	1.1
6301575	99	P	SUR	55	-40	719	0	0.3	0.1	0.3
6301577	99	P	SUR	67	-8	719	0	0.3	0.0	0.3
63055	99	P	SUR	61	2	1433	0	0.3	-0.1	0.3
63056	99	P	SUR	60	2	1437	0	0.4	0.4	0.5
63057	99	P	SUR	59	2	1439	0	0.3	0.1	0.3
63058	99	P	SUR	53	2	798	0	0.2	0.2	0.3
63059	99	P	SUR	58	-1	1437	0	0.3	0.6	0.7
63101	99	P	SUR	61	1	1437	0	0.4	0.2	0.4
63102	99	P	SUR	61	1	1435	0	0.3	0.0	0.3
63103	99	P	SUR	61	1	1439	0	0.4	0.3	0.5
63108	99	P	SUR	61	2	1437	0	0.4	-0.1	0.4
63109	99	P	SUR	60	2	1439	0	0.3	-0.2	0.4
63110	99	P	SUR	60	2	1439	0	0.3	-0.1	0.3
63111	99	P	SUR	61	2	1437	0	0.3	0.0	0.3
63112	99	P	SUR	61	1	1437	0	0.3	-0.2	0.3
63115	99	P	SUR	62	1	1439	0	0.3	0.0	0.3
63117	99	P	SUR	61	1	1439	0	0.4	0.4	0.5
63118	99	P	SUR	58	1	1439	0	0.3	0.0	0.3
6400045	99	P	SUR	59	-12	719	0	0.2	-0.1	0.3
6400046	99	P	SUR	61	-4	718	0	0.2	-0.1	0.3
6401583	99	P	SUR	61	-35	718	0	0.3	0.2	0.4
6401584	99	P	SUR	68	-6	716	0	0.4	0.3	0.5
6401587	99	P	SUR	75	-19	719	0	0.5	0.0	0.5
6401590	99	P	SUR	74	30	719	0	0.3	0.1	0.3
6401592	99	P	SUR	73	13	719	0	0.3	0.1	0.3
6401759	99	P	SUR	56	-37	719	0	0.5	0.0	0.5
6401762	99	P	SUR	62	-5	719	0	0.3	0.2	0.4
6401763	99	P	SUR	66	12	719	0	0.4	0.1	0.4
6402539	99	P	SUR	71	30	642	0	0.3	0.0	0.3
6402551	99	P	SUR	52	-26	690	0	0.4	0.3	0.5
6402594	99	P	SUR	53	-30	663	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
6402597	99	P	SUR	56	-23	674	0	0.3	0.1	0.3
6402611	99	P	SUR	52	-29	1	0	0.0	-12.3	12.3
6402615	99	P	SUR	19	-61	718	0	0.4	0.3	0.5
6402616	99	P	SUR	28	-43	719	0	0.4	-0.2	0.4
6402617	99	P	SUR	25	-47	719	0	0.3	0.4	0.5
6402618	99	P	SUR	24	-42	720	0	0.3	0.2	0.3
6402619	99	P	SUR	37	-13	712	0	0.3	0.0	0.3
6402620	99	P	SUR	43	-5	252	2	0.3	0.6	0.6
6402621	99	P	SUR	39	-11	720	0	0.2	0.4	0.4
6402622	99	P	SUR	34	-15	718	0	0.2	0.1	0.3
64041	99	P	SUR	61	-3	1365	0	0.3	0.2	0.3
64045	99	P	SUR	59	-12	1439	0	0.2	-0.1	0.3
64046	99	P	SUR	61	-4	1438	0	0.2	-0.1	0.3
6600021	99	P	SUR	55	14	297	0	0.3	-1.0	1.0
6600022	99	P	SUR	54	14	53	0	0.3	-0.1	0.3
6600024	99	P	SUR	55	13	195	0	0.2	-1.2	1.3
6801791	99	P	SUR	42	-42	715	0	0.4	0.3	0.5
7801552	99	P	SUR	87	-45	717	0	0.4	-0.2	0.5
7801563	99	P	SUR	45	-65	717	0	0.6	0.4	0.7

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 : JUN 2023
 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	594	0	0	1.0	0.6	1.2
1300002	99	SPEED	SUR	20	-23	585	0	0	0.9	-0.3	1.0
1300008	99	SPEED	SUR	15	-38	594	0	0	0.7	-0.3	0.8
1300131	99	SPEED	SUR	28	-17	654	0	0	1.9	0.8	2.1
4100026	99	SPEED	SUR	12	-38	235	0	0	0.8	-0.3	0.9
4100040	99	SPEED	SUR	15	-53	4311	0	0	1.0	-0.3	1.0
4100043	99	SPEED	SUR	21	-65	4313	0	0	1.0	-0.1	1.0
4100044	99	SPEED	SUR	22	-59	4311	0	0	0.9	-0.2	0.9
4100046	99	SPEED	SUR	24	-68	4312	0	0	1.5	-0.4	1.5
4100048	99	SPEED	SUR	32	-70	4312	0	0	1.6	-0.4	1.7
4100049	99	SPEED	SUR	28	-63	4312	0	0	1.4	-0.4	1.4
4100052	99	SPEED	SUR	18	-65	4304	0	0	0.9	-0.5	1.0
4100053	99	SPEED	SUR	18	-66	4117	0	0	1.3	0.7	1.5
4100056	99	SPEED	SUR	18	-65	4303	0	0	1.1	-0.6	1.3
4100139	99	SPEED	SUR	20	-38	718	0	0	0.7	-0.2	0.7
4100300	99	SPEED	SUR	16	-57	661	0	0	0.9	-0.6	1.0
41040	99	SPEED	SUR	15	-53	720	0	0	1.0	-0.3	1.1
41043	99	SPEED	SUR	21	-65	720	0	0	1.0	-0.1	1.0
41044	99	SPEED	SUR	22	-59	720	0	0	0.9	-0.2	0.9
41046	99	SPEED	SUR	24	-68	720	0	0	1.5	-0.4	1.6
41048	99	SPEED	SUR	32	-70	720	0	0	1.6	-0.3	1.7
41049	99	SPEED	SUR	28	-63	720	0	0	1.3	-0.3	1.4
41052	99	SPEED	SUR	18	-65	720	0	0	1.0	-0.3	1.0
41053	99	SPEED	SUR	19	-66	719	0	0	1.3	0.2	1.3
41056	99	SPEED	SUR	18	-66	716	0	0	1.2	-0.4	1.2
4200059	99	SPEED	SUR	15	-67	4309	0	0	0.7	0.0	0.8
4200060	99	SPEED	SUR	16	-63	4309	0	0	1.1	0.0	1.1
4200085	99	SPEED	SUR	18	-67	1847	0	0	1.1	-0.5	1.2
42059	99	SPEED	SUR	15	-68	720	0	0	0.8	0.1	0.8
42060	99	SPEED	SUR	16	-63	720	0	0	1.2	0.1	1.2
42085	99	SPEED	SUR	18	-67	692	0	0	1.1	-0.2	1.1
4400005	99	SPEED	SUR	43	-69	4313	0	0	1.2	-0.3	1.2
4400008	99	SPEED	SUR	40	-69	4311	0	0	1.4	-0.8	1.6
4400011	99	SPEED	SUR	41	-67	4310	0	0	1.3	-0.6	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
4400027	99	SPEED	SUR	44	-67	4305	0	0	1.3	-0.4	1.4
4400032	99	SPEED	SUR	44	-69	714	0	0	1.5	-0.6	1.7
4400033	99	SPEED	SUR	44	-69	716	0	0	1.4	-0.4	1.4
4400034	99	SPEED	SUR	44	-68	719	0	0	1.4	-0.7	1.6
4400150	99	SPEED	SUR	43	-64	672	0	0	1.3	-0.2	1.3
4400488	99	SPEED	SUR	45	-61	236	0	0	1.7	-0.2	1.7
4400489	99	SPEED	SUR	45	-61	546	0	0	1.6	0.7	1.8
44005	99	SPEED	SUR	43	-69	720	0	0	1.2	-0.5	1.3
44008	99	SPEED	SUR	41	-69	720	0	0	1.5	-0.8	1.6
44011	99	SPEED	SUR	41	-67	720	0	0	1.3	-0.5	1.4
44027	99	SPEED	SUR	44	-67	720	0	0	1.3	-0.3	1.4
44032	99	SPEED	SUR	44	-69	715	0	0	1.6	-0.5	1.7
44033	99	SPEED	SUR	44	-69	716	0	0	1.4	-0.2	1.4
44034	99	SPEED	SUR	44	-68	719	0	0	1.5	-0.7	1.6
44078	99	SPEED	SUR	60	-40	122	0	0	1.2	-0.9	1.5
44150	99	SPEED	SUR	43	-64	676	0	0	1.3	-0.3	1.4
44258	99	SPEED	SUR	45	-63	696	0	0	1.5	-0.2	1.5
44488	99	SPEED	SUR	45	-61	257	0	0	1.7	0.2	1.7
44489	99	SPEED	SUR	46	-61	676	0	0	1.6	0.7	1.8
6100001	99	SPEED	SUR	43	8	718	0	0	1.5	-0.1	1.5
6100002	99	SPEED	SUR	42	5	714	0	0	1.2	0.0	1.2
6100131	99	SPEED	SUR	42	8	10	0	0	1.0	0.3	1.1
6100196	99	SPEED	SUR	42	4	689	0	0	1.7	-0.9	1.9
6100198	99	SPEED	SUR	37	-2	694	0	0	1.6	-1.1	2.0
6100280	99	SPEED	SUR	41	1	677	0	0	1.4	-0.3	1.4
6100281	99	SPEED	SUR	40	0	689	0	0	1.7	0.3	1.7
6100417	99	SPEED	SUR	38	0	702	0	0	1.2	-0.2	1.2
6100430	99	SPEED	SUR	40	2	702	0	0	1.3	0.3	1.3
6101007	99	SPEED	SUR	36	25	37	0	0	1.0	0.3	1.0
6101008	99	SPEED	SUR	37	22	122	0	0	2.5	-4.2	4.9
6101009	99	SPEED	SUR	35	25	113	0	0	1.5	0.9	1.8
6101031	99	SPEED	SUR	42	8	363	0	0	1.3	-0.1	1.3
6200001	99	SPEED	SUR	45	-5	714	0	0	1.2	-0.5	1.3
6200024	99	SPEED	SUR	44	-3	682	0	0	1.4	-0.5	1.5
6200025	99	SPEED	SUR	44	-6	692	0	0	1.2	-0.2	1.2
6200029	99	SPEED	SUR	49	-12	716	0	0	0.9	0.5	1.1
6200050	99	SPEED	SUR	50	-4	105	0	0	0.7	-0.3	0.8
6200081	99	SPEED	SUR	51	-13	717	0	0	1.0	0.2	1.0
6200082	99	SPEED	SUR	44	-8	101	0	0	0.6	-0.6	0.8
6200083	99	SPEED	SUR	43	-9	700	0	0	1.2	-0.8	1.4
6200084	99	SPEED	SUR	42	-9	101	0	0	0.8	-1.2	1.4

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
6200085	99	SPEED	SUR	36	-7	683	0	0	1.3	-0.6	1.4
6200086	99	SPEED	SUR	55	6	371	0	0	1.4	0.9	1.6
6200087	99	SPEED	SUR	55	7	371	0	0	1.1	1.0	1.5
6200091	99	SPEED	SUR	53	-5	718	0	0	1.3	0.5	1.4
6200092	99	SPEED	SUR	51	-11	718	0	0	0.9	-0.1	0.9
6200093	99	SPEED	SUR	55	-10	718	0	0	1.2	0.3	1.2
6200094	99	SPEED	SUR	52	-7	709	0	0	1.1	0.5	1.2
6200095	99	SPEED	SUR	53	-16	718	0	0	1.1	-0.2	1.2
6200103	99	SPEED	SUR	50	-3	483	0	0	1.4	-0.5	1.5
6200163	99	SPEED	SUR	47	-8	718	0	0	1.0	0.3	1.0
6200191	99	SPEED	SUR	41	-10	75	0	0	0.9	0.1	0.9
6200200	99	SPEED	SUR	36	-8	162	0	0	1.2	0.1	1.2
6201065	99	SPEED	SUR	54	7	690	0	0	1.3	-0.8	1.5
6201081	99	SPEED	SUR	38	-9	140	0	0	1.2	0.8	1.5
62029	99	SPEED	SUR	49	-13	1435	0	0	1.0	0.5	1.1
62050	99	SPEED	SUR	50	-4	404	0	0	0.8	0.3	0.9
62081	99	SPEED	SUR	51	-13	1438	0	0	1.0	0.7	1.2
62091	99	SPEED	SUR	53	-5	718	0	0	1.3	0.5	1.4
62092	99	SPEED	SUR	51	-11	718	0	0	1.0	0.0	1.0
62093	99	SPEED	SUR	55	-10	718	0	0	1.2	0.3	1.3
62094	99	SPEED	SUR	52	-7	709	0	0	1.2	0.6	1.3
62095	99	SPEED	SUR	53	-16	718	0	0	1.2	-0.2	1.2
62102	99	SPEED	SUR	58	2	1439	0	0	1.2	0.4	1.3
62103	99	SPEED	SUR	50	-3	1160	0	0	1.4	-0.7	1.6
62104	99	SPEED	SUR	57	1	1439	0	0	1.2	-0.3	1.2
62105	99	SPEED	SUR	55	-13	1432	0	0	1.1	0.4	1.2
62107	99	SPEED	SUR	50	-6	945	0	0	1.4	0.3	1.4
62112	99	SPEED	SUR	58	0	1439	0	0	1.2	0.0	1.2
62113	99	SPEED	SUR	58	0	1439	0	0	1.3	0.2	1.3
62114	99	SPEED	SUR	58	0	1131	0	0	1.3	0.5	1.4
62118	99	SPEED	SUR	58	1	1435	0	0	1.2	0.4	1.3
62119	99	SPEED	SUR	57	2	1435	0	0	1.0	-0.3	1.1
62120	99	SPEED	SUR	56	2	1432	0	0	1.1	0.1	1.1
62121	99	SPEED	SUR	54	3	1421	0	0	1.2	-0.1	1.2
62122	99	SPEED	SUR	57	2	1267	0	0	1.0	0.2	1.0
62129	99	SPEED	SUR	58	0	515	0	0	1.4	0.3	1.4
62131	99	SPEED	SUR	54	1	1439	0	0	2.4	-1.4	2.8
62132	99	SPEED	SUR	56	2	1435	0	0	1.6	-0.9	1.9
62133	99	SPEED	SUR	57	1	1435	0	0	1.3	0.4	1.3
62134	99	SPEED	SUR	58	1	694	0	0	1.3	0.3	1.3
62140	99	SPEED	SUR	57	1	1439	0	0	1.0	0.0	1.0

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
62143	99	SPEED	SUR	58	2	1437	0	0	1.3	0.0	1.3
62144	99	SPEED	SUR	53	2	1417	0	0	1.7	-0.4	1.7
62145	99	SPEED	SUR	53	3	1437	0	0	1.6	1.1	2.0
62146	99	SPEED	SUR	57	2	1433	0	0	1.2	0.2	1.2
62148	99	SPEED	SUR	54	2	1423	0	0	1.3	-0.3	1.4
62149	99	SPEED	SUR	54	1	1439	0	0	1.2	0.0	1.2
62152	99	SPEED	SUR	57	2	1437	0	0	1.1	-0.4	1.2
62153	99	SPEED	SUR	57	2	1363	0	0	1.7	-0.8	1.9
62154	99	SPEED	SUR	56	2	1439	0	0	1.4	0.2	1.4
62155	99	SPEED	SUR	58	1	1439	0	0	1.1	0.0	1.1
62163	99	SPEED	SUR	48	-9	1439	0	0	1.0	0.6	1.2
62164	99	SPEED	SUR	57	1	1427	0	0	1.0	-0.8	1.3
62165	99	SPEED	SUR	54	1	1439	0	0	1.2	-0.2	1.2
62170	99	SPEED	SUR	51	2	1439	0	0	1.4	0.2	1.5
62304	99	SPEED	SUR	51	2	1395	0	0	1.5	0.6	1.7
62442	99	SPEED	SUR	49	-16	1104	0	0	1.0	0.4	1.1
6301001	99	SPEED	SUR	64	5	691	0	0	1.0	0.2	1.0
6301004	99	SPEED	SUR	72	20	378	0	0	1.0	-0.3	1.1
63055	99	SPEED	SUR	61	2	1433	0	0	1.2	-0.6	1.3
63056	99	SPEED	SUR	60	2	1437	0	0	1.1	0.3	1.2
63057	99	SPEED	SUR	59	2	1439	0	0	1.5	-0.4	1.5
63058	99	SPEED	SUR	53	2	795	0	0	1.4	0.4	1.5
63101	99	SPEED	SUR	61	1	1437	0	0	1.3	0.0	1.3
63103	99	SPEED	SUR	61	1	1439	0	0	1.4	-0.3	1.5
63106	99	SPEED	SUR	61	2	1437	0	0	1.4	-0.7	1.6
63108	99	SPEED	SUR	61	2	1437	0	0	1.6	-0.1	1.6
63109	99	SPEED	SUR	60	2	1325	0	0	1.4	0.2	1.4
63110	99	SPEED	SUR	60	2	1341	0	0	1.2	0.1	1.2
63112	99	SPEED	SUR	61	1	1437	0	0	1.3	-0.1	1.3
63115	99	SPEED	SUR	62	1	1439	0	0	1.3	-0.2	1.3
63117	99	SPEED	SUR	61	1	1439	0	0	1.3	0.0	1.3
6400045	99	SPEED	SUR	59	-12	719	0	0	1.1	0.0	1.1
64041	99	SPEED	SUR	61	-3	1365	0	0	1.3	-0.2	1.3
64045	99	SPEED	SUR	59	-12	1439	0	0	1.1	0.5	1.2
6600021	99	SPEED	SUR	55	14	297	0	0	1.1	0.4	1.2
6600022	99	SPEED	SUR	54	14	53	0	0	1.4	0.1	1.4
6600024	99	SPEED	SUR	55	13	145	0	0	1.3	0.2	1.3

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 : JUN 2023
 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	459	0	0	19.5	2.5	19.7
1300002	99	DIRN	SUR	20	-23	472	0	0	10.2	0.3	10.2
1300008	99	DIRN	SUR	15	-38	499	0	0	9.7	2.8	10.1
1300131	99	DIRN	SUR	28	-17	224	0	0	22.8	-5.2	23.3
4100001	99	DIRN	SUR	35	-72	3500	0	0	19.4	10.7	22.2
4100002	99	DIRN	SUR	32	-75	3509	0	0	22.8	10.1	25.0
4100004	99	DIRN	SUR	33	-79	3373	0	0	19.8	4.6	20.3
4100008	99	DIRN	SUR	31	-81	1810	0	0	24.5	5.6	25.2
4100009	99	DIRN	SUR	29	-80	3130	0	0	33.4	7.4	34.2
4100013	99	DIRN	SUR	33	-78	3426	0	0	21.8	4.5	22.2
4100024	99	DIRN	SUR	34	-78	536	0	0	26.0	3.6	26.2
4100025	99	DIRN	SUR	35	-75	3397	0	0	23.0	7.6	24.2
4100026	99	DIRN	SUR	12	-38	235	0	0	10.0	3.9	10.7
4100029	99	DIRN	SUR	33	-80	547	0	0	20.7	-1.5	20.8
4100033	99	DIRN	SUR	32	-80	582	0	0	23.0	3.9	23.4
4100037	99	DIRN	SUR	34	-77	572	0	0	22.8	1.3	22.8
4100038	99	DIRN	SUR	34	-78	489	0	0	22.5	4.6	23.0
4100040	99	DIRN	SUR	15	-53	4288	0	0	11.1	5.5	12.4
4100043	99	DIRN	SUR	21	-65	4202	0	0	10.9	8.8	14.1
4100044	99	DIRN	SUR	22	-59	4020	0	0	14.3	5.7	15.4
4100046	99	DIRN	SUR	24	-68	3760	0	0	20.0	6.7	21.1
4100047	99	DIRN	SUR	27	-71	3130	0	0	26.6	11.1	28.9
4100048	99	DIRN	SUR	32	-70	3558	0	0	24.8	15.5	29.2
4100049	99	DIRN	SUR	28	-63	3675	0	0	17.3	6.8	18.6
4100052	99	DIRN	SUR	18	-65	4227	0	0	12.4	5.9	13.7
4100053	99	DIRN	SUR	18	-66	3125	0	0	16.7	13.7	21.6
4100056	99	DIRN	SUR	18	-65	4163	0	0	13.9	8.0	16.0
4100064	99	DIRN	SUR	34	-77	569	0	0	22.7	0.2	22.7
4100066	99	DIRN	SUR	33	-80	539	0	0	20.8	5.3	21.5
41001	99	DIRN	SUR	35	-72	575	0	0	19.0	10.0	21.5
4100139	99	DIRN	SUR	20	-38	567	0	0	9.2	2.4	9.5
41002	99	DIRN	SUR	32	-75	575	0	0	20.9	10.5	23.4

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
4100300	99	DIRN	SUR	16	-57	652	0	0	9.2	-11.8	14.9
41004	99	DIRN	SUR	33	-79	557	0	0	18.9	4.4	19.4
41008	99	DIRN	SUR	31	-81	577	0	0	24.9	0.6	24.9
41009	99	DIRN	SUR	29	-80	506	0	0	33.7	7.5	34.5
41013	99	DIRN	SUR	33	-78	566	0	0	20.6	4.3	21.0
41024	99	DIRN	SUR	34	-79	540	0	0	26.7	3.0	26.9
41025	99	DIRN	SUR	35	-76	555	0	0	22.8	7.0	23.9
41029	99	DIRN	SUR	33	-80	542	0	0	20.8	-1.0	20.9
41033	99	DIRN	SUR	32	-80	559	0	0	24.9	4.8	25.3
41037	99	DIRN	SUR	34	-77	563	0	0	23.0	1.0	23.0
41038	99	DIRN	SUR	34	-78	476	0	0	23.0	4.5	23.4
41040	99	DIRN	SUR	15	-53	713	0	0	11.0	5.0	12.1
41043	99	DIRN	SUR	21	-65	701	0	0	11.4	8.2	14.0
41044	99	DIRN	SUR	22	-59	663	0	0	16.1	5.1	16.9
41046	99	DIRN	SUR	24	-68	613	0	0	18.6	7.0	19.9
41047	99	DIRN	SUR	28	-72	503	0	0	27.8	12.3	30.4
41048	99	DIRN	SUR	32	-70	577	0	0	23.6	14.5	27.7
41049	99	DIRN	SUR	28	-63	602	0	0	18.6	6.4	19.7
41052	99	DIRN	SUR	18	-65	705	0	0	12.8	5.5	13.9
41053	99	DIRN	SUR	19	-66	578	0	0	16.6	11.4	20.2
41056	99	DIRN	SUR	18	-66	686	0	0	13.8	9.0	16.5
41064	99	DIRN	SUR	34	-77	564	0	0	24.7	0.0	24.7
41066	99	DIRN	SUR	33	-80	523	0	0	20.1	5.4	20.8
4200013	99	DIRN	SUR	27	-83	922	0	0	30.0	-0.8	30.0
4200022	99	DIRN	SUR	28	-84	953	0	0	28.7	0.5	28.7
4200023	99	DIRN	SUR	26	-83	718	0	0	26.7	-0.3	26.8
4200026	99	DIRN	SUR	25	-83	620	0	0	27.7	-3.3	27.9
4200036	99	DIRN	SUR	29	-85	3336	0	0	27.1	7.4	28.1
4200056	99	DIRN	SUR	20	-85	3586	0	0	19.1	4.5	19.6
4200057	99	DIRN	SUR	17	-82	1012	0	0	13.7	7.3	15.5
4200058	99	DIRN	SUR	15	-75	4044	0	0	8.4	5.4	10.0
4200059	99	DIRN	SUR	15	-67	4309	0	0	7.9	9.7	12.5
4200060	99	DIRN	SUR	16	-63	4199	0	0	10.2	7.7	12.7
4200085	99	DIRN	SUR	18	-67	1807	0	0	22.0	15.7	27.0
42013	99	DIRN	SUR	27	-83	442	0	0	31.6	1.0	31.6
42022	99	DIRN	SUR	28	-84	457	0	0	30.2	2.2	30.3
42023	99	DIRN	SUR	26	-83	321	0	0	26.9	1.0	26.9
42026	99	DIRN	SUR	25	-84	280	0	0	28.1	0.0	28.1
42036	99	DIRN	SUR	29	-85	538	0	0	26.6	7.4	27.6
42056	99	DIRN	SUR	20	-85	593	0	0	20.5	5.0	21.1
42057	99	DIRN	SUR	17	-82	168	0	0	14.6	6.3	15.9

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
42058	99	DIRN	SUR	15	-75	675	0	0	9.3	5.1	10.6
42059	99	DIRN	SUR	15	-68	719	0	0	8.4	9.2	12.5
42060	99	DIRN	SUR	16	-63	697	0	0	10.8	7.3	13.0
42085	99	DIRN	SUR	18	-67	663	0	0	17.5	12.0	21.2
4400005	99	DIRN	SUR	43	-69	2765	0	0	15.9	12.5	20.3
4400007	99	DIRN	SUR	44	-70	2261	0	0	24.0	10.6	26.2
4400008	99	DIRN	SUR	40	-69	2565	0	0	19.2	23.5	30.3
4400009	99	DIRN	SUR	38	-75	3108	0	0	24.7	5.1	25.2
4400011	99	DIRN	SUR	41	-67	2802	0	0	17.7	15.6	23.5
4400013	99	DIRN	SUR	42	-71	2777	0	0	21.4	8.3	22.9
4400014	99	DIRN	SUR	37	-75	1769	0	0	27.4	18.3	32.9
4400018	99	DIRN	SUR	42	-70	3012	0	0	17.4	8.3	19.3
4400020	99	DIRN	SUR	41	-70	3022	0	0	19.9	4.3	20.4
4400022	99	DIRN	SUR	41	-74	640	0	0	29.9	4.3	30.2
4400027	99	DIRN	SUR	44	-67	2610	0	0	15.8	16.2	22.6
4400029	99	DIRN	SUR	43	-71	489	0	0	19.1	7.0	20.4
4400030	99	DIRN	SUR	43	-70	392	0	0	25.3	6.3	26.1
4400032	99	DIRN	SUR	44	-69	356	0	0	21.6	7.3	22.8
4400033	99	DIRN	SUR	44	-69	367	0	0	26.7	25.7	37.0
4400034	99	DIRN	SUR	44	-68	412	0	0	20.6	9.0	22.5
4400039	99	DIRN	SUR	41	-73	322	0	0	46.9	18.5	50.4
4400040	99	DIRN	SUR	41	-74	5	0	0	153.4	29.6	156.2
4400041	99	DIRN	SUR	37	-77	954	0	0	19.6	4.5	20.1
4400042	99	DIRN	SUR	38	-76	3799	0	0	27.2	1.1	27.2
4400058	99	DIRN	SUR	38	-76	4575	0	0	29.1	-1.1	29.1
4400062	99	DIRN	SUR	39	-76	4231	0	0	27.5	0.7	27.5
4400063	99	DIRN	SUR	39	-76	3808	0	0	24.4	0.5	24.4
4400064	99	DIRN	SUR	37	-76	4342	0	0	29.7	9.6	31.2
4400066	99	DIRN	SUR	40	-73	3215	0	0	24.7	6.9	25.6
4400072	99	DIRN	SUR	37	-76	4443	0	0	29.2	5.8	29.8
4400150	99	DIRN	SUR	43	-64	587	0	0	18.8	22.3	29.1
4400488	99	DIRN	SUR	45	-61	195	0	0	22.3	-13.3	26.0
4400489	99	DIRN	SUR	45	-61	366	0	0	22.1	-20.8	30.3
44005	99	DIRN	SUR	43	-69	444	0	0	15.3	11.5	19.2
44007	99	DIRN	SUR	44	-70	356	0	0	25.5	10.9	27.7
44008	99	DIRN	SUR	41	-69	418	0	0	21.3	21.4	30.2
44009	99	DIRN	SUR	39	-75	508	0	0	25.1	3.9	25.4
44011	99	DIRN	SUR	41	-67	448	0	0	18.5	14.5	23.5
44013	99	DIRN	SUR	42	-71	413	0	0	20.0	8.0	21.5
44014	99	DIRN	SUR	37	-75	284	0	0	25.7	18.8	31.8
44018	99	DIRN	SUR	42	-70	478	0	0	18.2	8.9	20.2

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
44020	99	DIRN	SUR	42	-70	480	0	0	19.6	4.0	20.0
44022	99	DIRN	SUR	41	-74	186	0	0	31.0	4.1	31.3
44027	99	DIRN	SUR	44	-67	412	0	0	15.6	14.6	21.3
44029	99	DIRN	SUR	43	-71	470	0	0	20.6	6.4	21.5
44030	99	DIRN	SUR	43	-70	374	0	0	25.4	5.6	26.1
44032	99	DIRN	SUR	44	-69	344	0	0	21.8	7.2	23.0
44033	99	DIRN	SUR	44	-69	350	0	0	27.6	25.6	37.7
44034	99	DIRN	SUR	44	-68	381	0	0	20.7	9.2	22.7
44039	99	DIRN	SUR	41	-73	317	0	0	48.9	17.8	52.1
44040	99	DIRN	SUR	41	-74	2	0	0	156.2	20.8	157.6
44041	99	DIRN	SUR	37	-77	92	0	0	15.7	4.3	16.3
44042	99	DIRN	SUR	38	-76	421	0	0	26.6	1.9	26.6
44058	99	DIRN	SUR	38	-76	437	0	0	26.0	1.8	26.1
44062	99	DIRN	SUR	39	-76	464	0	0	26.6	0.7	26.7
44063	99	DIRN	SUR	39	-76	404	0	0	28.8	1.7	28.9
44064	99	DIRN	SUR	37	-76	485	0	0	30.6	9.7	32.1
44066	99	DIRN	SUR	40	-73	515	0	0	25.4	6.8	26.3
44069	99	DIRN	SUR	41	-73	402	0	0	25.4	-21.2	33.1
44072	99	DIRN	SUR	37	-76	475	0	0	28.2	7.1	29.1
44078	99	DIRN	SUR	60	-40	103	0	0	13.3	-20.1	24.1
44150	99	DIRN	SUR	43	-64	565	0	0	19.0	21.8	29.0
44258	99	DIRN	SUR	45	-63	489	0	0	22.3	2.4	22.4
44488	99	DIRN	SUR	45	-61	202	0	0	21.2	-17.5	27.5
44489	99	DIRN	SUR	46	-61	456	0	0	19.6	-23.8	30.8
4500005	99	DIRN	SUR	42	-82	2916	0	0	24.2	3.3	24.4
4500008	99	DIRN	SUR	44	-82	2297	0	0	15.9	14.6	21.6
4500012	99	DIRN	SUR	44	-77	2260	0	0	20.5	14.7	25.2
4500132	99	DIRN	SUR	42	-81	491	0	0	23.5	-2.3	23.6
4500135	99	DIRN	SUR	44	-77	378	0	0	27.5	6.5	28.3
4500137	99	DIRN	SUR	46	-81	374	0	0	26.3	16.4	31.0
4500139	99	DIRN	SUR	43	-80	279	0	0	29.1	3.0	29.3
4500142	99	DIRN	SUR	43	-79	397	0	0	28.3	4.0	28.5
4500143	99	DIRN	SUR	45	-81	386	0	0	21.3	7.2	22.5
4500159	99	DIRN	SUR	44	-79	392	0	0	27.0	3.3	27.2
4500162	99	DIRN	SUR	45	-83	1138	0	0	21.1	1.5	21.1
4500163	99	DIRN	SUR	44	-84	1345	0	0	24.1	4.4	24.5
4500165	99	DIRN	SUR	42	-83	2625	0	0	29.1	-5.4	29.6
4500175	99	DIRN	SUR	46	-85	3227	0	0	33.6	-1.1	33.6
4500176	99	DIRN	SUR	42	-82	2271	0	0	24.2	-76.7	80.4
4500196	99	DIRN	SUR	42	-82	1617	0	0	22.3	-7.1	23.3
4500197	99	DIRN	SUR	42	-82	1636	0	0	23.6	-22.0	32.2

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
4500200	99	DIRN	SUR	42	-83	1222	0	0	27.6	8.3	28.8
4500203	99	DIRN	SUR	41	-83	1962	0	0	55.3	-45.9	71.9
4500204	99	DIRN	SUR	42	-82	1147	0	0	101.8	25.0	104.8
4500205	99	DIRN	SUR	42	-82	2047	0	0	56.5	-45.8	72.7
4500209	99	DIRN	SUR	43	-82	986	0	0	22.6	-3.5	22.8
45005	99	DIRN	SUR	42	-82	472	0	0	26.0	1.4	26.0
45008	99	DIRN	SUR	44	-82	355	0	0	15.8	13.9	21.0
45012	99	DIRN	SUR	44	-77	351	0	0	22.2	14.4	26.4
45132	99	DIRN	SUR	43	-81	471	0	0	22.4	-3.1	22.6
45135	99	DIRN	SUR	44	-77	340	0	0	27.0	6.0	27.7
45137	99	DIRN	SUR	46	-81	325	0	0	24.4	14.9	28.6
45139	99	DIRN	SUR	43	-80	288	0	0	24.7	4.4	25.1
45142	99	DIRN	SUR	43	-79	373	0	0	27.3	2.2	27.4
45143	99	DIRN	SUR	45	-81	327	0	0	20.5	4.5	21.0
45147	99	DIRN	SUR	42	-83	392	0	0	23.8	5.6	24.5
45149	99	DIRN	SUR	44	-82	356	0	0	17.3	-3.9	17.7
45151	99	DIRN	SUR	45	-79	293	0	0	20.7	2.2	20.8
45152	99	DIRN	SUR	46	-80	250	0	0	24.7	-4.0	25.0
45154	99	DIRN	SUR	46	-83	297	1	0	28.5	14.5	31.9
45159	99	DIRN	SUR	44	-79	338	0	0	25.5	2.3	25.6
45162	99	DIRN	SUR	45	-83	358	0	0	21.3	0.9	21.3
45163	99	DIRN	SUR	44	-84	434	0	0	25.1	4.1	25.5
45165	99	DIRN	SUR	42	-83	449	0	0	29.6	-4.8	30.0
45175	99	DIRN	SUR	46	-85	242	0	0	36.9	-1.5	36.9
45176	99	DIRN	SUR	42	-82	373	0	0	34.0	-74.7	82.0
45196	99	DIRN	SUR	42	-82	347	0	0	20.4	-7.2	21.7
45197	99	DIRN	SUR	42	-82	337	0	0	24.5	-22.3	33.2
45200	99	DIRN	SUR	42	-83	219	0	0	28.0	9.5	29.6
45203	99	DIRN	SUR	41	-83	326	0	0	53.5	-46.8	71.1
45204	99	DIRN	SUR	42	-82	183	0	0	100.8	23.6	103.5
45205	99	DIRN	SUR	42	-82	309	0	0	53.9	-48.4	72.4
45209	99	DIRN	SUR	43	-82	159	0	0	25.0	-3.7	25.3
6100198	99	DIRN	SUR	37	-2	430	0	0	16.9	-0.6	16.9
6100281	99	DIRN	SUR	40	0	211	0	0	38.9	-1.2	39.0
6100417	99	DIRN	SUR	38	0	364	0	0	16.3	10.1	19.2
6200001	99	DIRN	SUR	45	-5	469	0	0	16.3	-1.7	16.4
6200024	99	DIRN	SUR	44	-3	291	0	0	22.8	7.7	24.0
6200025	99	DIRN	SUR	44	-6	289	0	0	15.9	5.7	16.8
6200029	99	DIRN	SUR	49	-12	677	0	0	17.3	-0.7	17.3
6200050	99	DIRN	SUR	50	-4	104	0	0	24.1	-21.0	32.0
6200081	99	DIRN	SUR	51	-13	595	0	0	13.1	-4.8	14.0

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
6200082	99	DIRN	SUR	44	-8	95	0	0	14.3	2.8	14.6
6200083	99	DIRN	SUR	43	-9	338	0	0	16.2	8.8	18.4
6200084	99	DIRN	SUR	42	-9	101	0	0	6.0	-2.4	6.5
6200085	99	DIRN	SUR	36	-7	401	0	0	23.4	13.6	27.1
6200091	99	DIRN	SUR	53	-5	518	0	0	15.2	12.2	19.5
6200092	99	DIRN	SUR	51	-11	619	0	0	11.5	6.5	13.2
6200093	99	DIRN	SUR	55	-10	580	0	0	13.7	4.3	14.4
6200094	99	DIRN	SUR	52	-7	583	0	0	12.9	9.1	15.7
6200095	99	DIRN	SUR	53	-16	537	0	0	11.9	0.3	11.9
6200103	99	DIRN	SUR	50	-3	362	0	0	23.1	2.5	23.2
6200163	99	DIRN	SUR	47	-8	603	0	0	17.9	8.7	19.9
6200191	99	DIRN	SUR	41	-10	44	0	0	12.0	3.2	12.4
6200200	99	DIRN	SUR	36	-8	99	0	0	12.7	8.1	15.1
6201081	99	DIRN	SUR	38	-9	130	0	0	12.1	0.7	12.1
62029	99	DIRN	SUR	49	-13	1356	0	0	17.7	-0.6	17.7
62050	99	DIRN	SUR	50	-4	401	0	0	34.5	-9.9	35.9
62081	99	DIRN	SUR	51	-13	1165	0	0	12.8	-4.8	13.7
62091	99	DIRN	SUR	53	-5	511	0	0	15.2	12.3	19.6
62092	99	DIRN	SUR	51	-11	600	0	0	11.2	5.7	12.6
62093	99	DIRN	SUR	55	-10	572	0	0	13.9	3.5	14.3
62094	99	DIRN	SUR	52	-7	574	0	0	13.0	8.5	15.5
62095	99	DIRN	SUR	53	-16	535	0	0	12.2	0.0	12.2
62103	99	DIRN	SUR	50	-3	898	0	0	21.8	4.1	22.2
62105	99	DIRN	SUR	55	-13	1074	0	0	13.1	-3.9	13.7
62107	99	DIRN	SUR	50	-6	760	0	0	20.3	0.3	20.3
62112	99	DIRN	SUR	58	0	1085	0	0	19.5	-7.0	20.7
62114	99	DIRN	SUR	58	0	866	0	0	14.0	-5.8	15.1
62163	99	DIRN	SUR	48	-9	1196	0	0	18.0	8.8	20.0
62442	99	DIRN	SUR	49	-16	971	0	0	12.3	1.2	12.3
6400045	99	DIRN	SUR	59	-12	555	0	0	13.8	-8.1	16.0
64041	99	DIRN	SUR	61	-3	1070	0	0	13.1	5.7	14.3
64045	99	DIRN	SUR	59	-12	1088	0	0	13.2	-8.6	15.8

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ATGU3FT	BPMWB2N	DBLK	FPUW5GN	GQBZLZL	JGQH	JNKN7JF	JNSR	JPBN
KJJF9XN	KMPLHPW	LAGY8	LAGZ8	LRYQE3U	SMLQ	USSIO	UXK5JTU	WDK38HS
XKQLWQB	XQFJRGX	YLV96WM	ZVQEQCM	2EERVTP	7JUNA4N	9ZT9MRK	01001	01004
01010	01028	01241	01400	01415	01492	02365	02591	02836
02963	03005	03238	03354	03502	03743	03808	03882	03918
03953	04018	04220	04270	04320	04339	04360	04417	06011
06260	06458	06610	07110	07145	07510	07645	07761	08001
08023	08190	08221	08302	08383	08430	08508	08522	08536
10035	10113	10184	10238	10304	10393	10410	10548	10618
10739	10771	10868	10954	10962	11010	11035	11120	11240
11520	11747	11952	12120	12374	12425	12575	12843	12982
13275	13388	14015	14240	15420	15614	16045	16064	16113
16144	16224	16245	16332	16429	16546	16622	16716	16754
17030	17064	17095	17196	17220	17240	17351	17516	17607
20046	20674	22008	22820	22845	23205	23472	23884	23921
23955	24641	24908	26038	26435	26629	26708	27459	27707
27713	27962	28225	28661	28695	29612	29698	30557	30673
30935	31770	34122	34172	34731	35121	35671	40179	40186
42369	42971	43150	43333	45004	47102	47104	47138	47155
47169	47183	47186	47194	47230	47401	47412	47582	47600
47646	47678	47778	47807	47827	47909	47918	47945	47971
47991	48601	48615	48698	50527	50557	50578	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	54511
54662	54727	54857	55299	55591	56029	56046	56080	56137
56146	56187	56492	56571	56651	56691	56739	56778	56964
56985	57083	57127	57131	57178	57245	57461	57494	57516
57541	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	60018	60096	60155	60253	60390	60571	60630
60656	60680	60715	60760	61901	61980	61998	63894	63985
65344	66160	67083	68263	68424	68442	68512	68816	68842
70026	70133	70200	70219	70231	70261	70273	70308	70316
70326	70350	70361	70398	71043	71081	71082	71109	71119
71603	71722	71802	71811	71815	71816	71823	71845	71867
71906	71907	71908	71909	71913	71917	71924	71925	71926
71934	71945	71957	71964	72201	72202	72206	72208	72210
72214	72215	72230	72233	72235	72240	72248	72249	72250
72251	72261	72265	72274	72293	72305	72317	72318	72327
72340	72357	72363	72364	72365	72376	72388	72402	72403
72413	72426	72440	72451	72456	72476	72489	72493	72501
72520	72528	72558	72562	72572	72582	72597	72632	72634
72645	72649	72659	72662	72672	72681	72694	72712	72747
72764	72768	72776	72786	72797	73033	73110	74389	74455
74560	78384	78397	78583	78866	78897	78954	78970	80001
81405	82965	85442	85586	85799	85934	87155	87344	87418
87582	87623	87715	87860	88889	89002	89055	89062	89564
89571	89592	89611	89625	89642	91165	91212	91285	91334
91348	91376	91408	91413	91592	91765	91925	91938	91948
91958	93112	93417	93817	93844	94001	94120	94150	94170
94203	94299	94302	94312	94326	94332	94403	94430	94461
94510	94578	94610	94637	94638	94653	94659	94672	94711
94767	94776	94802	94821	94866	94910	94975	94995	94996
94998	95282	95527	96413	96471	96996			

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

ATGU3FT	BPMWB2N	DBLK	FPUW5GN	GQBZLZL	JNKN7JF	KJJF9XN	KMPLHPW	LAGY8
LAGZ8	LRVQE3U	SMLQ	UXK5JTU	WDK38HS	winnipeg		XKQLWQB	XQFJRGX
YLV96WM	ZVQEQCM	2EERVTP	7JUNA4N	9ZT9MRK	01010	01028	01415	02365
02591	02836	02963	06610	07110	07145	07510	07645	07761
08001	08023	08190	08221	08302	08383	08430	08508	08522
08536	11010	11035	11120	11240	12575	17607	40186	47183
47194	47230	48698	50527	50557	50578	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	54511	54662
54727	54857	55299	55591	56029	56046	56080	56137	56146
56187	56492	56571	56651	56691	56739	56778	56964	56985
57083	57127	57131	57178	57245	57461	57494	57516	57541
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	60253	65344	72413	89002	89642	91925	91938	91948
91958	93817	94001	94653	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.