



# ECMWF Global Data Monitoring Report

October 2020

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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 28 (June 15) - Monitoring of SYNOP and SYNOP-SHIPs now includes BUFR encoded observations for those which were assimilated as well as for those without TAC counterpart.
- Revision 27 (Feb 15) - Selection criteria for SHIPs are modified as per SOT-7/Doc.9.1.1. Different criteria applied to Manual and Automatic SHIPs.
- Revision 26 (Dec 14) - Coverage chart for ATOVS AMSU-A for Noaa\_16 removed
- Revision 25 (Mar 13) - Monitoring of Radiosondes and ASAPs now includes BUFR encoded observations for those which were assimilated as well as for those without TAC counterpart. Tables 24 and 25 are also added to show the identifiers of these BUFR observations separately.
- Revision 24 (Aug 06) - North Atlantic Monitoring statistics replaced by EUCOS Area Monitoring Statistics (tables 13 to 23). Airep tables removed from this section.
- Revision 23 (Dec 00) - Coverage charts for Noaa\_14 MSU replaced by ATOVS AMSU-A for Noaa\_16.
- Revision 22 (Aug 99) - Coverage charts for TOVS thickness 300-100 hPa replaced by (A)TOVS AMSU-A and MSU (Noaa\_15 and Noaa\_14).
- Revision 21 (May 99) - Monitoring statistics ceased for Noaa\_11 as satellite is no more available.
- Revision 20 (Sep 98) - Changes to tables and annex to remove all mention about data usage. Two more levels (50 and 850 hPa) added to the COSNA statistics for Sondes.
- Revision 19 (Jul 98) - From June 29th, 1998 ECMWF model assimilates temperature data instead of geopotential from radiosondes. As a consequence the number of used geopotential data drops to zero in tables 7, 10, 13 and 15.
- Revision 18 (Apr 98) - Changes to tables and annex to introduce the usage of accepted numbers and observations instead of percentage of rejection.

# 1 Introduction

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

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

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

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

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

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

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

## **2 Data summary - History of events**

### **2.1 Radiosondes**

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

Ident	Time	Sep	Oct	Ident	Time	Sep	Oct
10393	(00)	30	19	23955	(00)	2	21
17240	(00)	30	8	23955	(12)	0	23
17240	(12)	30	11	37011	(00)	5	31
25703	(00)	31	20	40948	(00)	15	31
30557	(00)	26	15	41640	(00)	0	13
30557	(12)	28	16	41640	(12)	0	14
42724	(00)	14	0	42027	(00)	13	27
43128	(00)	12	0	42971	(00)	16	27
43150	(00)	15	4	43185	(00)	2	28
48407	(00)	16	0	43371	(00)	7	25
48565	(00)	23	0	48097	(12)	0	18
48568	(00)	28	0	59981	(00)	0	31
60155	(00)	11	0	59981	(12)	0	31
60760	(00)	20	2	62306	(00)	8	20
61660	(12)	33	0	63985	(12)	7	27
61687	(12)	17	0	71701	(12)	1	22
63741	(00)	20	9	72240	(00)	0	32
70026	(00)	30	6	74006	(00)	25	40
70026	(12)	30	5	89664	(12)	10	31
70165	(00)	18	0	96011	(12)	0	16
70414	(12)	22	0	96035	(12)	0	16
71906	(12)	22	4	96163	(12)	0	17
71907	(00)	23	8	96237	(12)	0	16
71964	(00)	25	0	96253	(12)	0	16
74626	(00)	13	0	96581	(12)	0	17
74626	(12)	20	0	96645	(12)	0	16
74646	(00)	21	0	96685	(12)	0	17
74646	(12)	20	0	96749	(12)	0	16
74794	(12)	62	36	96805	(12)	0	15
78954	(00)	28	10	96935	(12)	0	15
78954	(12)	28	7	97014	(12)	0	17
82917	(12)	26	1	97180	(12)	0	17
82983	(12)	27	0	97372	(12)	0	16
96509	(00)	19	3	97560	(12)	0	17
-	-	-	-	97724	(12)	0	17
-	-	-	-	97900	(12)	0	17
-	-	-	-	97980	(12)	0	17

## 2.2 Drifting Buoys

Surface pressure observations from **1979** drifting buoys were received during the month.

## 3 Global monitoring statistics

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

### 3.1 Data Availability

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

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

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

### 3.2 Data Quality

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

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

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

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

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

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

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

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

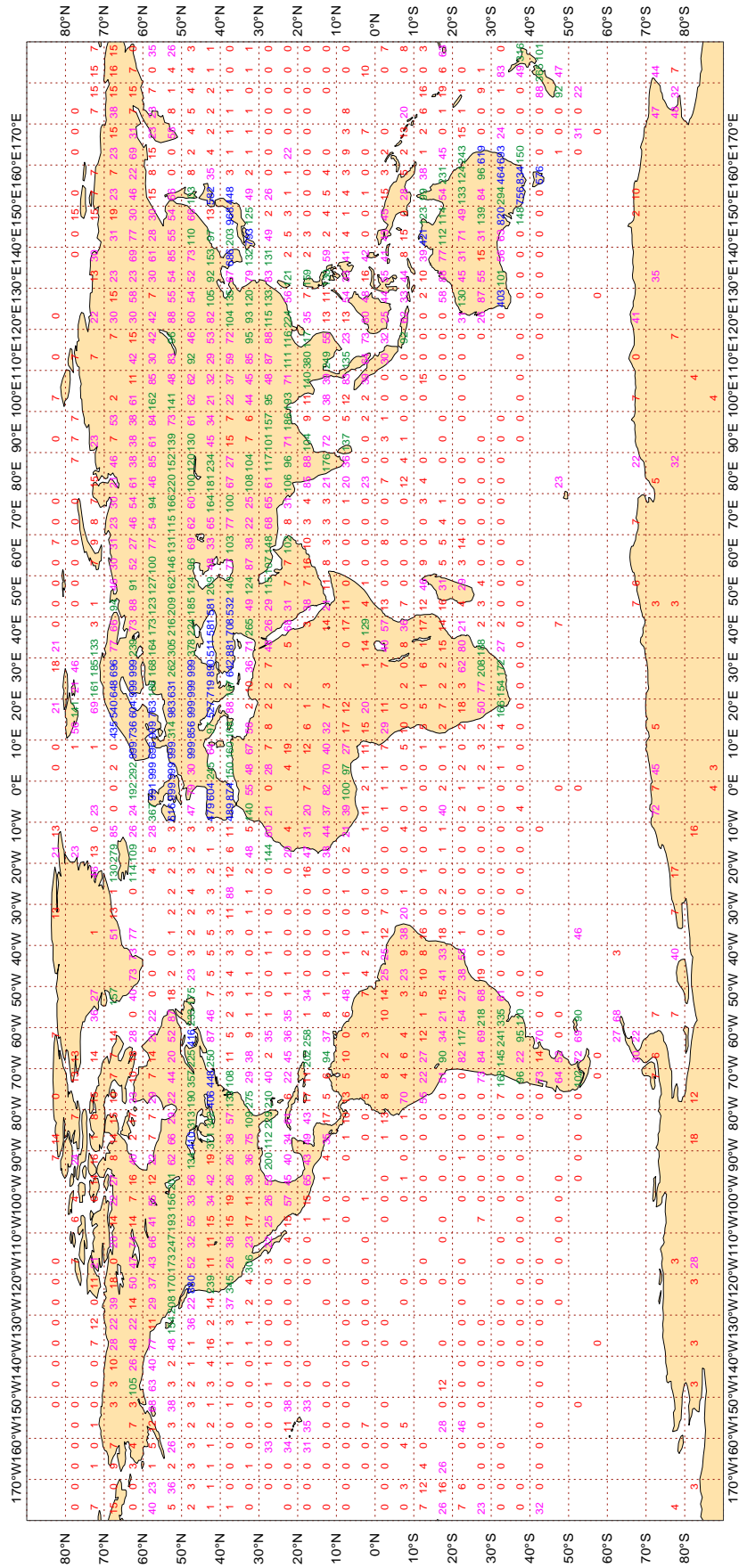
Fig	Parameter	Level/Layer
14	SATOB - Mean observed wind	1000-700 hPa
15	SATOB - Mean observed wind	400-150 hPa
16	SATOB - Mean observed minus first-guess wind	1000-700 hPa
17	SATOB - Mean observed minus first-guess wind	400-150 hPa
18	AIRCRAFT WIND - Mean observed minus first-guess	300-150 hPa

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



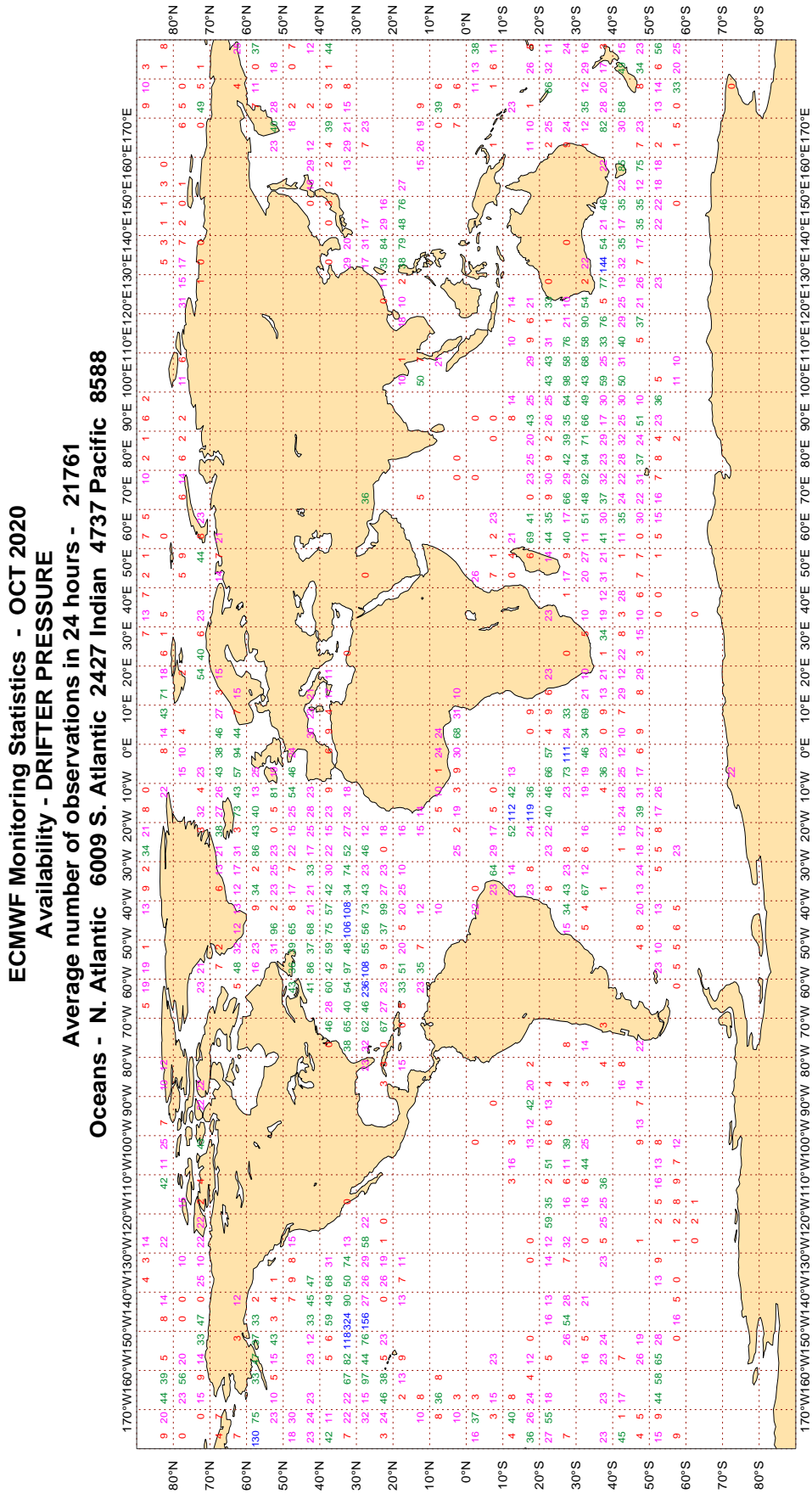
3.2.1 Figure 1 - Availability - SYNOP PRESSURE

**Figure 1**  
 ECMWF Monitoring Statistics - OCT 2020  
 Availability - SYNOP/SHIP (manual, auto) pressure  
 Average number of observations in 24 hours - 101335  
 LAND - WMO Region I: 3985 II: 19385 III: 3713 IV: 6693  
 Region V: 11932 VI: 41531 Antarctic: 862  
 Oceans - N. Atlantic 6839 S. Atlantic 127 Indian 541 Pacific 5726



3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

Figure 2

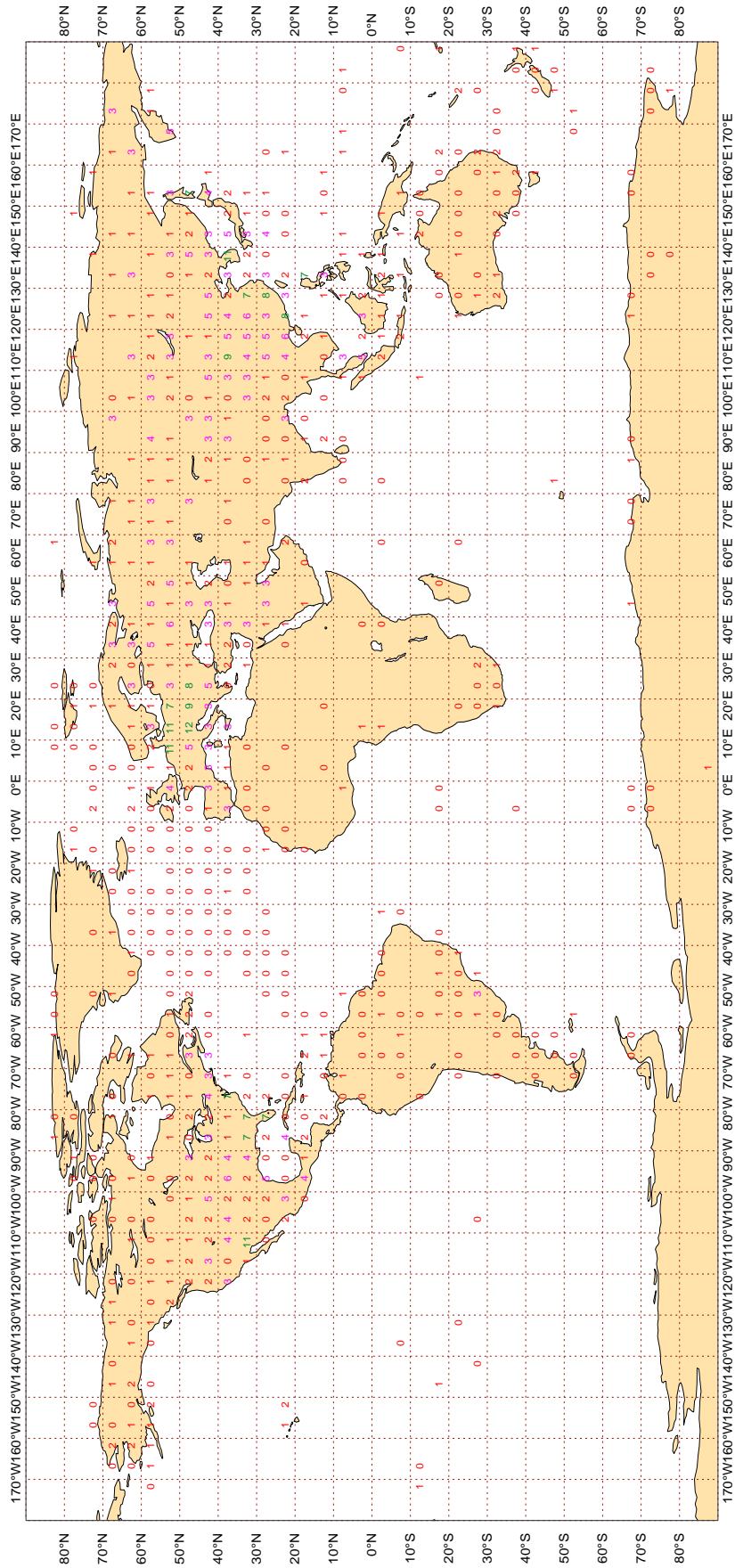


Magics 3.0.4 (64 bit)

3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential

Figure 3

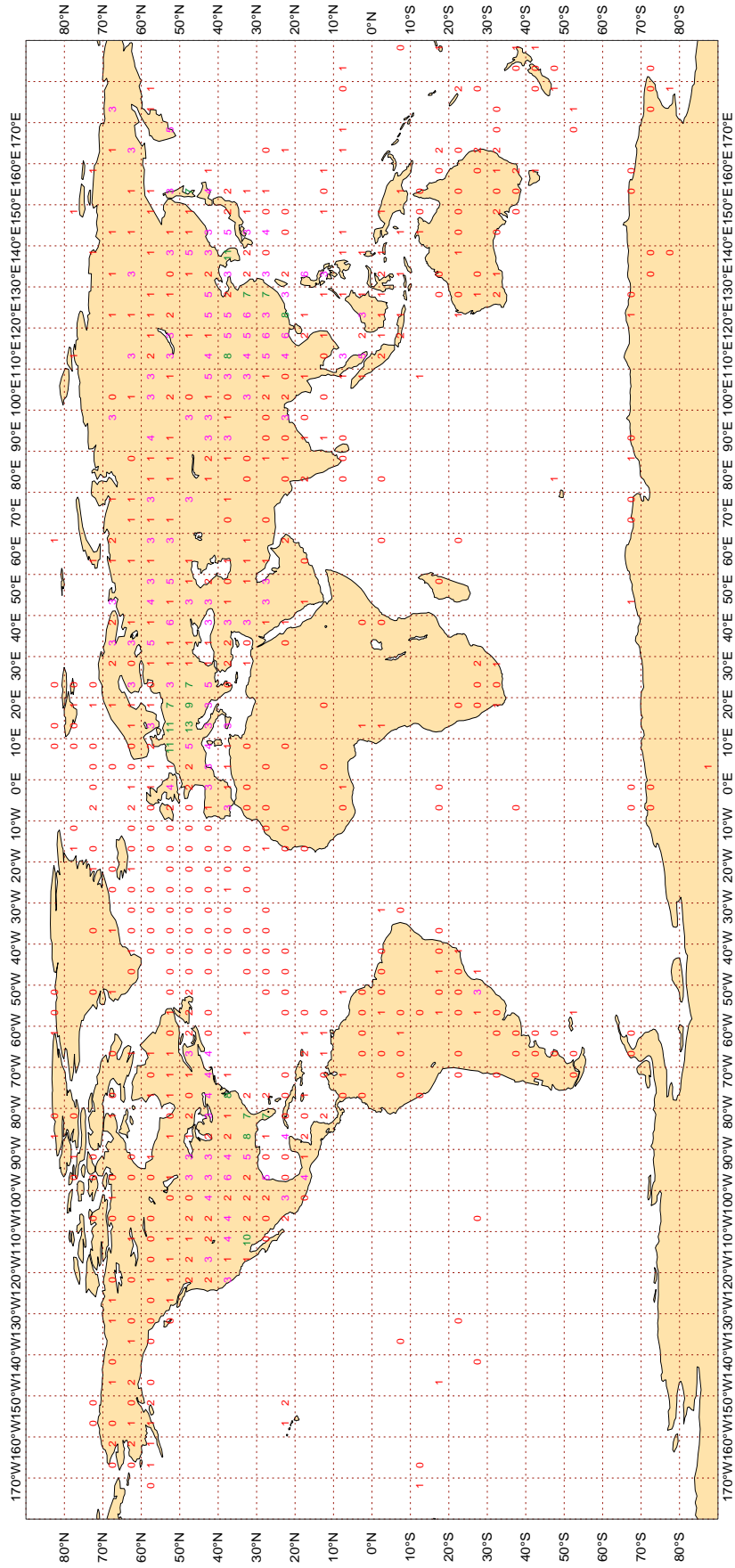
ECMWF Monitoring Statistics - OCT 2020  
 Availability - TEMP 500 hPa Geopotential  
 Average number of observations in 24 hours - 1212  
 LAND - WMO Region I: 28 II: 461 III: 51 IV: 263  
 Region V: 129 VI: 255 Antarctic: 14  
 Oceans - N. Atlantic 10 S. Atlantic 0 Indian 0 Pacific 0



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

Figure 4

ECMWF Monitoring Statistics - OCT 2020  
 Availability - TEMP/PILOT 300 hPa wind  
 Average number of observations in 24 hours - 1211  
 LAND - WMO Region I: 28 II: 455 III: 51 IV: 272  
 Region V: 128 VI: 253 Antarctic: 14  
 Oceans - N. Atlantic 10 S. Atlantic 0 Indian 0 Pacific 0



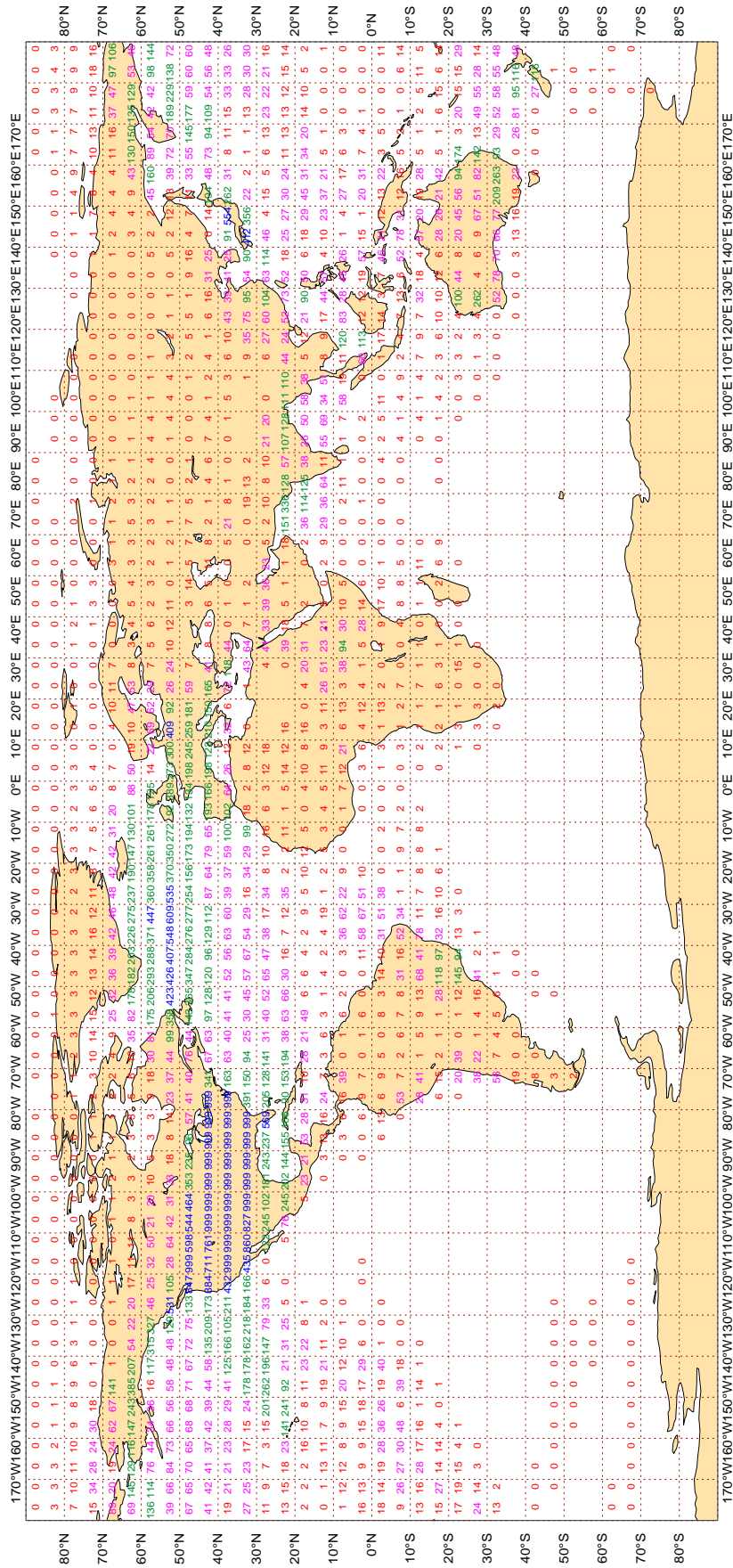
Magics 3.0.4 (64 bit)



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

Figure 5

ECMWF Monitoring Statistics - OCT 2020  
Availability - Aircraft winds 300-150 hPa  
Average number of observations in 24 hours - 102514



Magics 3.0.4 (64 bit)

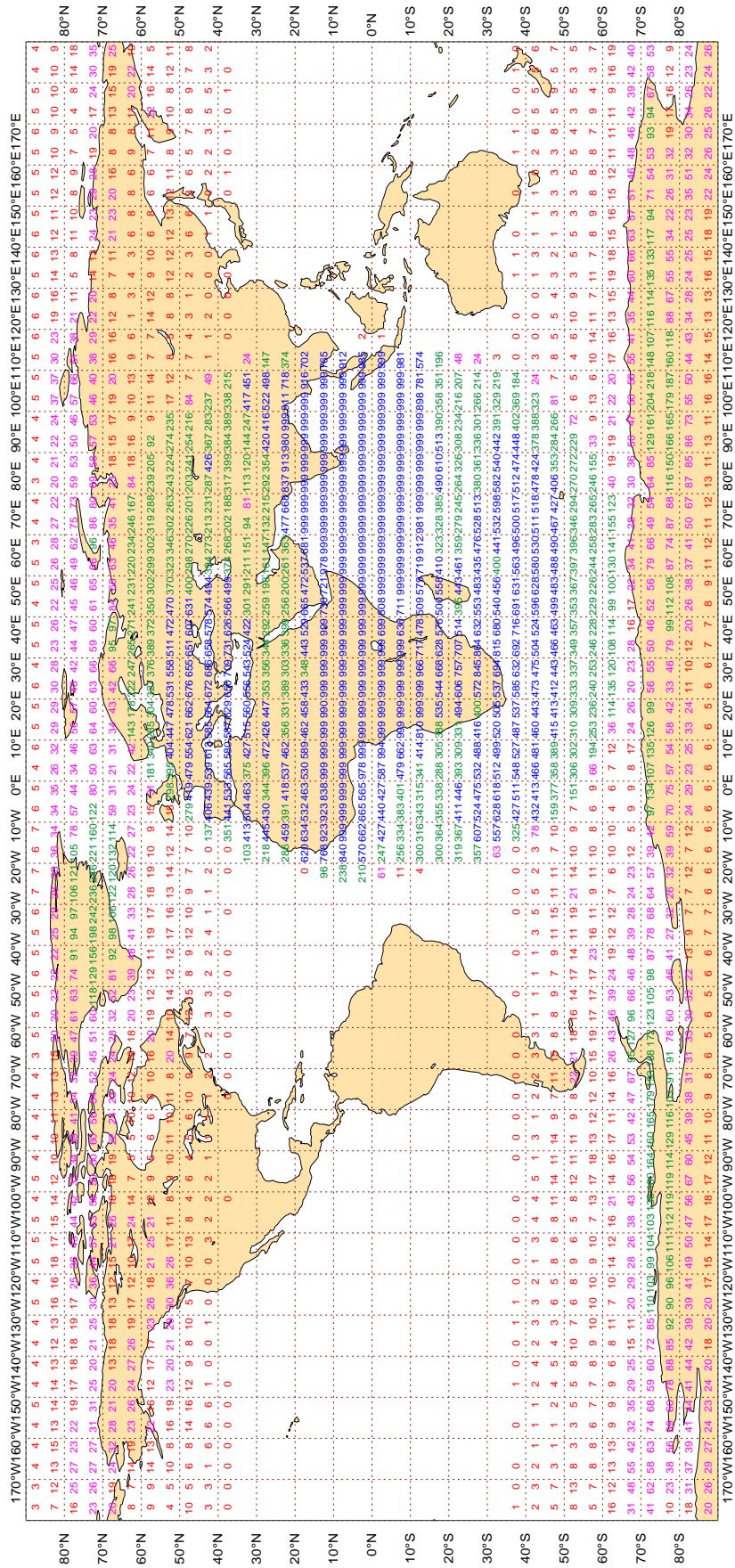




3.2.6 Figure 6 - Availability - SATOB winds 400-150 hPa

Figure 6

ECMWF Monitoring Statistics - OCT 2020  
Availability - AMV winds 400-150 hPa  
Average number of observations in 24 hours - 400771



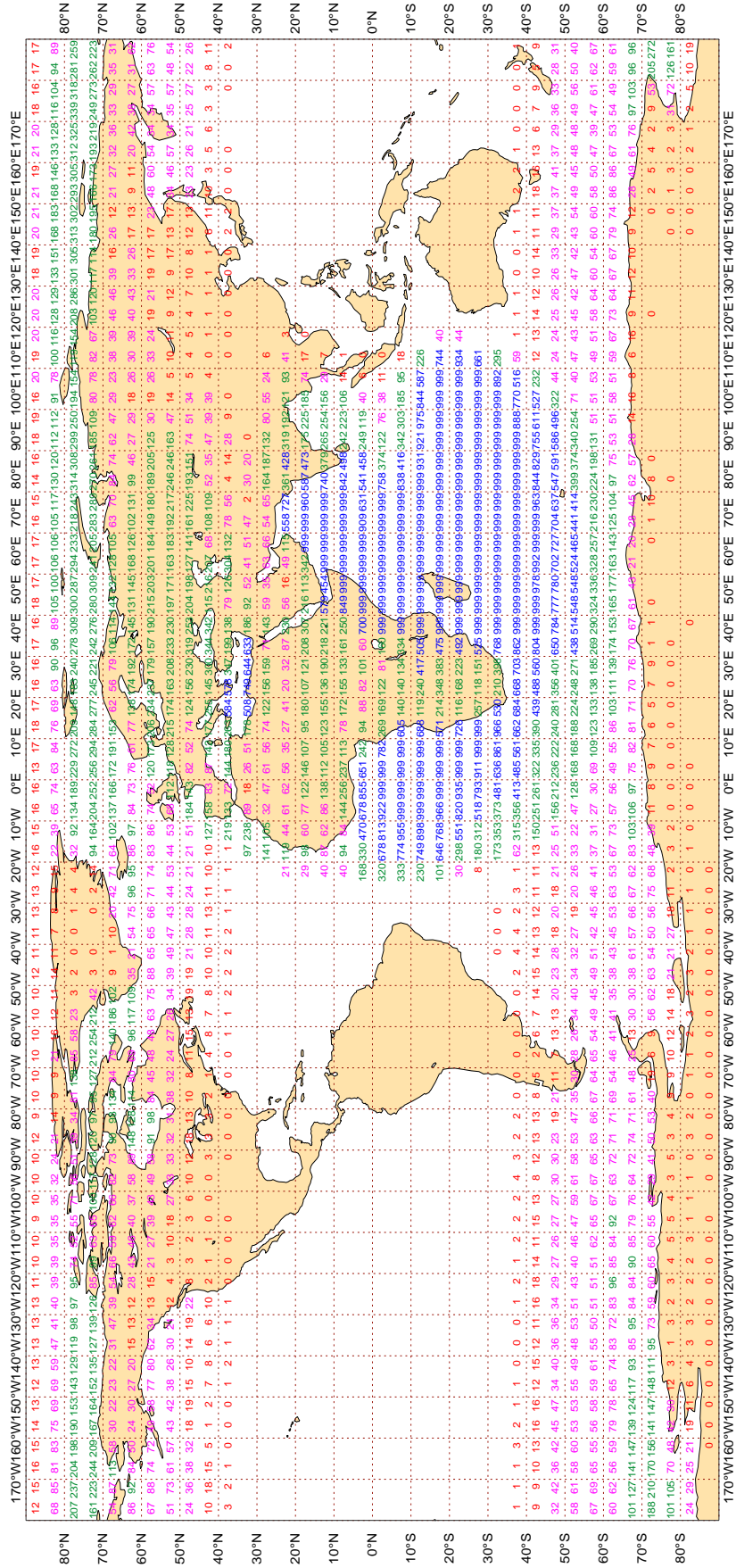
Magics 3.0.4 (64 bit)



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

Figure 7

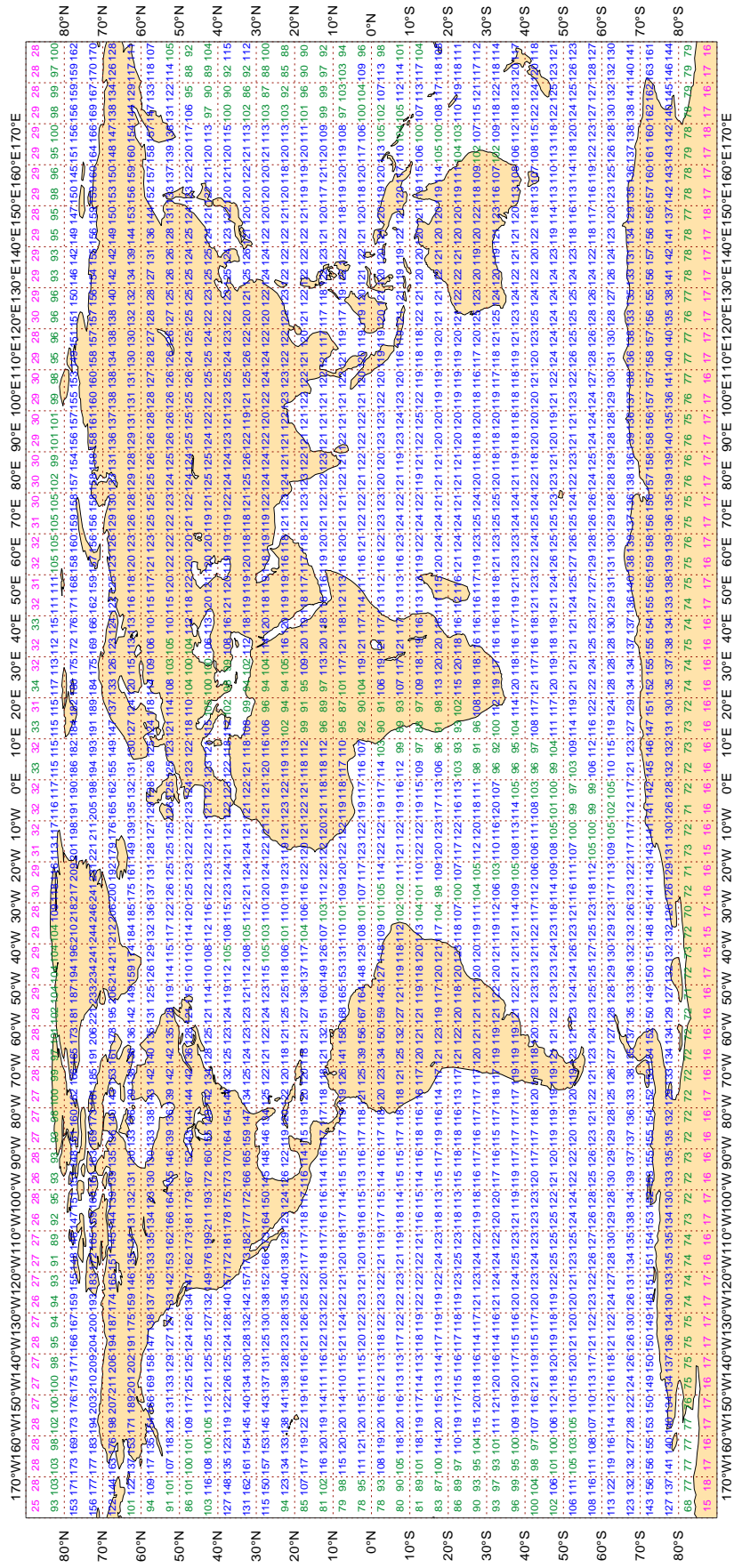
ECMWF Monitoring Statistics - OCT 2020  
Availability - AMV winds 1000-700 hPa  
Average number of observations in 24 hours - 399466



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

Figure 8

ECMWF Monitoring Statistics - OCT 2020  
Availability - NOAA15 ATOVS : AMSU-A  
Average number of observations in 24 hours - 309814



Magics 3.0.4 (64 bit)

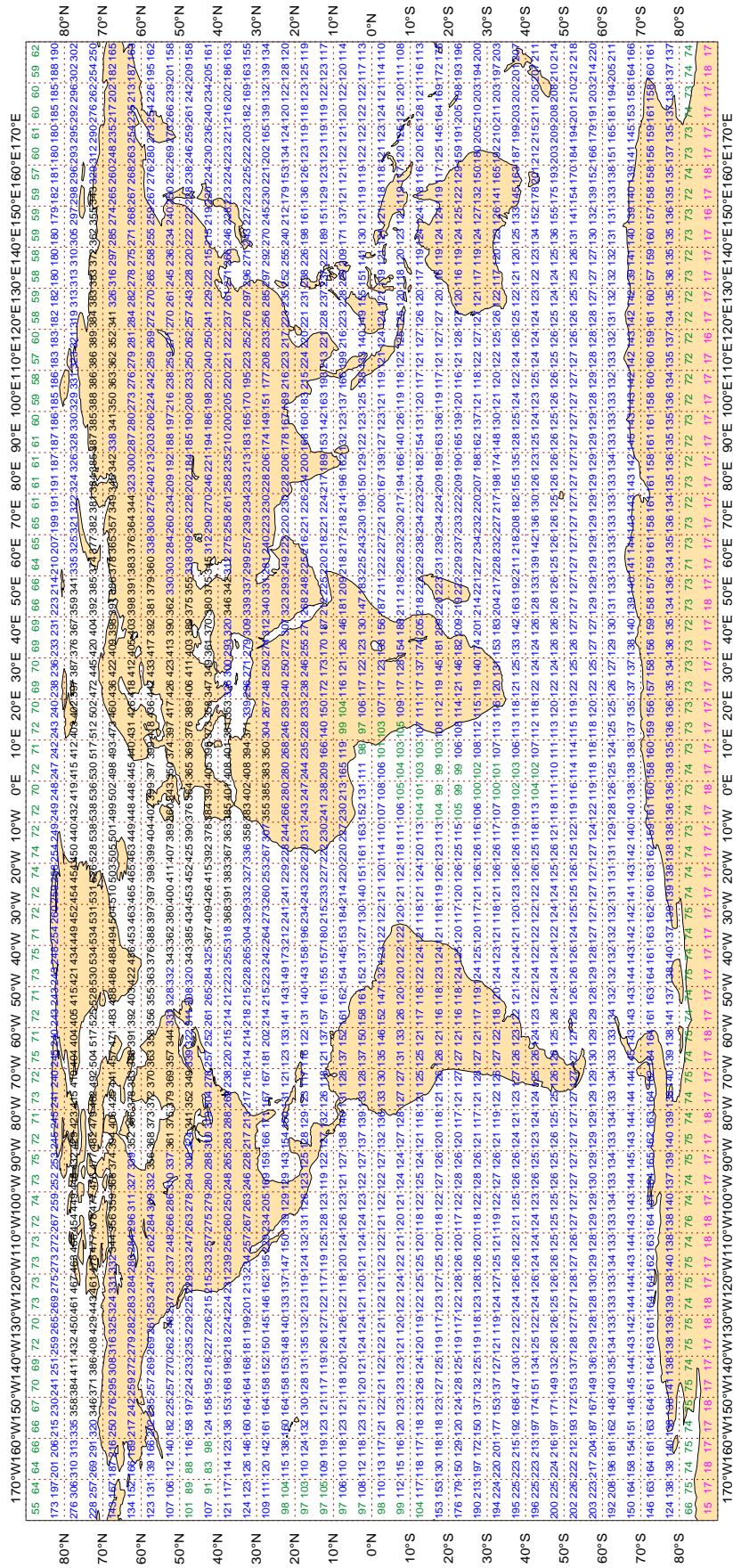




3.2.9 Figure 9.1 - Availability - NOAA18 ATOVS : AMSU-A

Figure 9.1

ECMWF Monitoring Statistics - OCT 2020  
 Availability - NOAA18 ATOVS : AMSU-A  
 Average number of observations in 24 hours - 490962



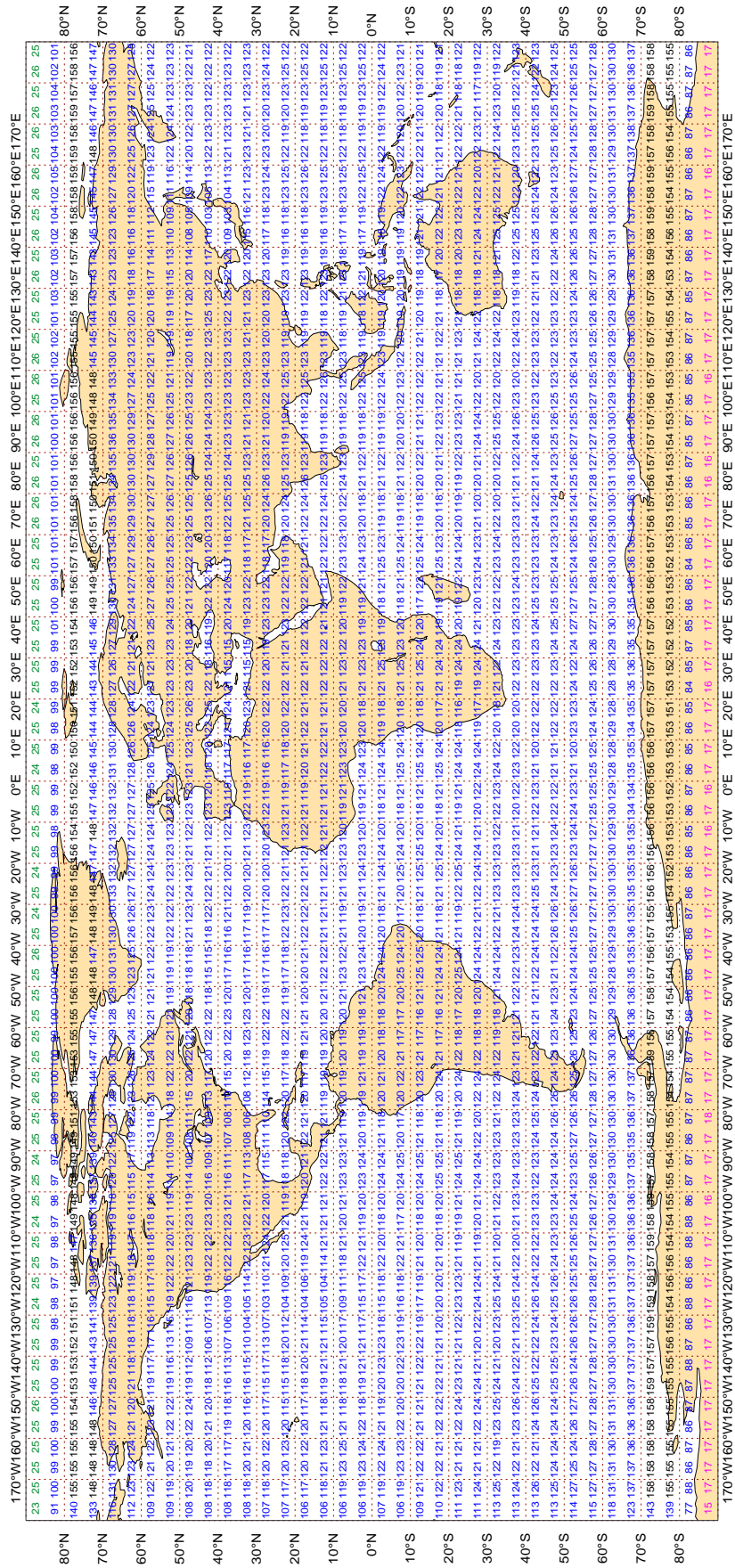
Magics 3.0.4 (64 bit)



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

Figure 9.2

ECMWF Monitoring Statistics - OCT 2020  
Availability - AQUA ATOVS : AMSU-A  
Average number of observations in 24 hours - 308407



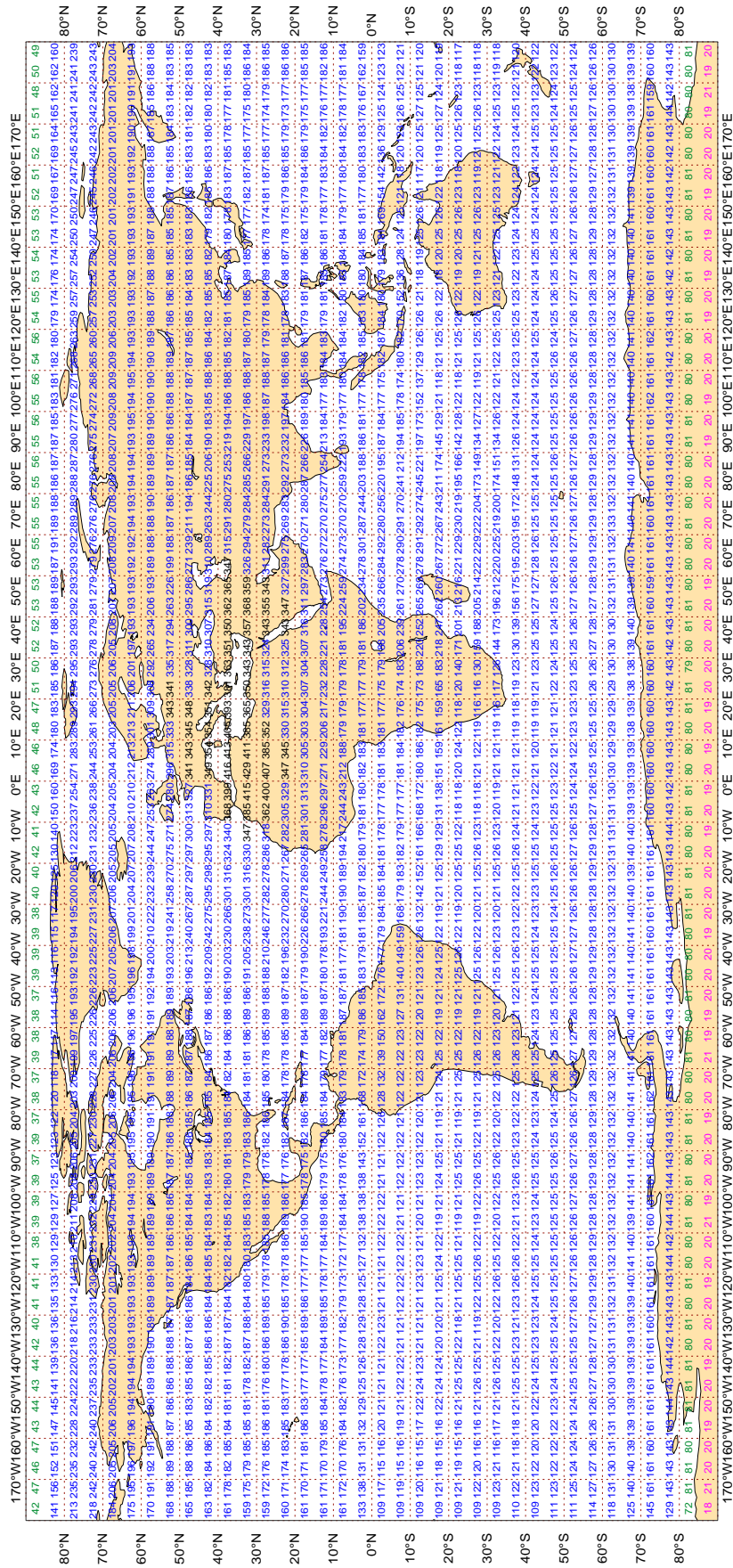
Magics 3.0.4 (64 bit)



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

Figure 9.3

ECMWF Monitoring Statistics - OCT 2020  
Availability - METOP ATOVS : AMSU-A  
Average number of observations in 24 hours - 432044



Magics 3.0.4 (64 bit)



**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 : OCT 2020  
 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
2GNG3	99	P	SUR	15	0	2.1	-3.6	4.1
2HDF9	99	P	SUR	16	0	1.7	-3.1	3.5
3FWH8	99	P	SUR	37	0	1.7	3.3	3.7
8PSH	99	P	SUR	113	0	0.4	4.9	4.9
9HA4330	99	P	SUR	31	0	1.5	-3.6	3.9
9HY07	99	P	SUR	39	0	2.8	-3.6	4.5
9V2024	99	P	SUR	24	0	1.2	-3.5	3.7
9V2676	99	P	SUR	32	0	4.4	5.9	7.4
9V3092	99	P	SUR	34	0	2.8	-3.2	4.3
9V8739	99	P	SUR	34	0	1.0	3.5	3.6
9V8827	99	P	SUR	33	0	1.9	3.3	3.8
9V9726	99	P	SUR	18	0	5.1	0.9	5.2
9VHK7	99	P	SUR	15	0	0.7	11.2	11.2
ATVK	99	P	SUR	124	0	0.4	3.3	3.3
AUYL	99	P	SUR	36	0	1.8	3.8	4.2
C6AP3	99	P	SUR	16	0	1.3	7.8	7.9
C6LG6	99	P	SUR	89	0	1.3	-3.8	4.0
C6YM5	99	P	SUR	25	0	3.9	3.2	5.0
D5CN5	99	P	SUR	120	0	2.1	3.9	4.4
KLUX	99	P	SUR	28	0	0.6	3.6	3.7
KRAU	99	P	SUR	39	0	0.7	3.8	3.9
LAHR7	99	P	SUR	42	0	2.5	3.9	4.6
LAQM7	99	P	SUR	23	0	1.4	3.2	3.5
LAQQ7	99	P	SUR	22	0	1.7	5.2	5.5
LAZV5	99	P	SUR	72	0	0.5	3.4	3.5
MKKZ7	99	P	SUR	23	0	2.3	3.5	4.2
ONHA	99	P	SUR	163	0	1.7	-3.9	4.3
OUQK2	99	P	SUR	19	0	1.1	9.5	9.5
OZ2049	99	P	SUR	50	1	0.6	-7.7	7.7
S6CH6	99	P	SUR	23	0	2.3	10.0	10.3
TBWUK68	99	P	SUR	21	0	1.2	3.5	3.7
UBAW	99	P	SUR	33	0	2.3	-5.6	6.0

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
UCFT	99	P	SUR	19	1	4.9	-8.1	9.5
UFJN	99	P	SUR	58	0	1.2	-4.1	4.3
UHOW	99	P	SUR	75	2	6.9	-2.0	7.2
UNITED	99	P	SUR	21	0	1.8	5.0	5.4
V7A2557	99	P	SUR	39	1	1.9	4.8	5.2
V7DJ5	99	P	SUR	125	0	2.3	3.5	4.2
V7FA7	99	P	SUR	84	0	3.5	3.2	4.8
VHE2	99	P	SUR	16	0	1.0	4.9	5.0
VRCI9	99	P	SUR	35	0	1.6	3.3	3.7
VRGO6	99	P	SUR	20	0	2.4	4.2	4.9
VRJS2	99	P	SUR	23	0	0.8	-5.7	5.8
VRLI8	99	P	SUR	15	4	0.9	1.2	1.5
VRNS2	99	P	SUR	31	0	1.0	-3.9	4.0
VROQ8	99	P	SUR	17	0	0.9	-3.0	3.2
VRRB6	99	P	SUR	115	0	1.9	3.3	3.8
VTWS	99	P	SUR	112	112	0.0	0.0	0.0
WAPU	99	P	SUR	31	0	1.2	3.7	3.9
WDDI	99	P	SUR	38	0	0.7	3.8	3.9
WDG8362	99	P	SUR	27	0	4.6	-3.6	5.8

**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 : OCT 2020  
 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 : OCT 2020  
 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
44072	99	DIRN	SUR	194	0	0	27.0	-63.6	69.1
44139	99	DIRN	SUR	108	0	0	16.1	-30.0	34.1
44150	99	DIRN	SUR	96	0	0	14.3	-33.2	36.1
45141	99	DIRN	SUR	88	0	0	21.7	38.1	43.8
45150	99	DIRN	SUR	65	0	0	30.9	82.4	88.0
45169	99	DIRN	SUR	222	0	0	36.2	-36.6	51.5
45175	99	DIRN	SUR	236	0	0	93.7	-17.1	95.2
46118	99	DIRN	SUR	20	0	0	77.0	-14.6	78.4
66022	99	DIRN	SUR	41	0	0	132.9	66.6	148.7

**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 : OCT 2020  
 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
0022949	99	P	SUR	35	124	651	651	0.0	0.0	0.0
0022960	99	P	SUR	34	126	624	623	0.0	2.9	2.9
1401764	99	P	SUR	-31	81	742	0	0.6	-6.3	6.3
1701577	99	P	SUR	-43	11	742	2	2.7	4.0	4.8
2501540	99	P	SUR	73	159	750	748	8.8	3.6	9.5
2501668	99	P	SUR	85	171	744	744	0.0	0.0	0.0
2601503	99	P	SUR	76	127	569	0	4.7	4.1	6.2
3100866	99	P	SUR	-40	1	65	65	0.0	0.0	0.0
4101721	99	P	SUR	31	-52	205	102	3.1	6.4	7.1
4601598	99	P	SUR	60	-143	385	122	7.2	-0.7	7.3
4701658	99	P	SUR	72	-95	719	132	1.6	7.3	7.5
4801652	99	P	SUR	84	-113	634	470	4.7	10.5	11.5
4801670	99	P	SUR	80	-163	689	314	6.5	4.4	7.9
4801679	99	P	SUR	75	-165	201	18	3.2	-6.8	7.5
4801729	99	P	SUR	75	-163	722	296	3.4	0.4	3.4
4802542	99	P	SUR	75	-165	740	190	3.6	-1.3	3.8
5102719	99	P	SUR	33	-157	741	0	0.6	-5.6	5.6
5401554	99	P	SUR	-49	69	179	111	5.7	-6.8	8.8
5601551	99	P	SUR	-20	58	41	41	0.0	0.0	0.0
6202686	99	P	SUR	36	-1	210	210	0.0	0.0	0.0
6203581	99	P	SUR	74	-17	383	88	4.8	8.2	9.4



**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 : OCT 2020  
 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
4400069	99	SPEED	SUR	41	-73	1418	0	0	2.6	5.1	5.7
46082	99	SPEED	SUR	60	-143	25	0	0	5.2	-8.5	9.9

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

LIST OF SUSPECT STATIONS : DRIFTER  
 MONITORING CENTRE : ECMWF  
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)  
 PERIOD : OCT 2020  
 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
23091	99	DIRN	SUR	18	89	148	0	0	18.3	-23.5	29.8
23099	99	DIRN	SUR	13	80	131	0	0	59.0	52.4	78.9
23451	99	DIRN	SUR	15	69	139	0	0	12.8	-28.2	30.9
23452	99	DIRN	SUR	12	69	140	0	0	16.0	-34.6	38.2
23453	99	DIRN	SUR	8	73	183	0	0	15.0	-27.7	31.5
23454	99	DIRN	SUR	10	73	171	0	0	24.7	32.3	40.7
23497	99	DIRN	SUR	11	72	147	0	0	122.1	-60.7	136.3
4101808	99	DIRN	SUR	27	-62	45	0	0	103.8	1.5	103.8
4200043	99	DIRN	SUR	29	-95	514	0	0	26.9	-22.4	35.0
4200085	99	DIRN	SUR	18	-67	3631	0	0	23.5	22.2	32.4
42043	99	DIRN	SUR	29	-95	594	0	0	27.1	-22.0	34.9
42085	99	DIRN	SUR	18	-67	1867	0	0	21.9	20.3	29.8
4400072	99	DIRN	SUR	37	-76	3086	0	0	22.8	-65.1	69.0
44072	99	DIRN	SUR	37	-76	2159	0	0	24.2	-65.4	69.8
44137	99	DIRN	SUR	42	-62	1081	0	0	14.0	-28.0	31.3
44139	99	DIRN	SUR	44	-57	1127	0	0	16.2	-30.4	34.5
44150	99	DIRN	SUR	43	-64	1002	0	0	14.2	-33.4	36.2
4500023	99	DIRN	SUR	47	-89	3795	0	0	42.6	-20.3	47.2
4500025	99	DIRN	SUR	47	-88	3246	0	0	61.5	5.8	61.8
4500169	99	DIRN	SUR	42	-82	1536	0	0	34.7	-37.3	51.0
4500175	99	DIRN	SUR	46	-85	3411	0	0	94.0	-11.1	94.6
45023	99	DIRN	SUR	47	-89	2063	0	0	42.5	-20.5	47.2
45025	99	DIRN	SUR	47	-88	1771	0	0	62.6	7.1	63.1
45141	99	DIRN	SUR	61	-115	917	0	0	19.7	36.6	41.6
45150	99	DIRN	SUR	62	-114	726	0	0	23.5	84.5	87.7
45169	99	DIRN	SUR	42	-82	1850	0	0	35.6	-37.3	51.5
45175	99	DIRN	SUR	46	-85	1860	0	0	94.5	-11.0	95.2
45188	99	DIRN	SUR	44	-73	31	0	0	162.5	3.9	162.5
4600060	99	DIRN	SUR	61	-147	462	0	0	24.4	21.1	32.3
4600089	99	DIRN	SUR	46	-126	216	0	0	13.8	21.5	25.5
4600118	99	DIRN	SUR	49	-123	140	0	0	72.1	-24.9	76.3

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
46060	99	DIRN	SUR	61	-147	817	0	0	24.3	20.5	31.8
46089	99	DIRN	SUR	46	-126	392	0	0	14.3	21.5	25.8
46118	99	DIRN	SUR	49	-123	250	0	0	74.5	-21.4	77.5
5200311	99	DIRN	SUR	0	-180	670	0	0	10.3	-21.7	24.0
52311	99	DIRN	SUR	0	-180	663	0	0	10.6	-21.8	24.2
5300040	99	DIRN	SUR	-8	95	631	0	0	134.1	99.6	167.1
5300041	99	DIRN	SUR	-8	100	1742	0	0	65.4	39.7	76.5
5300056	99	DIRN	SUR	-5	95	477	0	0	153.9	38.2	158.6
53040	99	DIRN	SUR	-8	95	579	0	0	136.7	95.4	166.7
53056	99	DIRN	SUR	-5	95	431	0	0	154.9	40.2	160.0
6101007	99	DIRN	SUR	36	25	119	0	0	68.0	-3.7	68.1
6200083	99	DIRN	SUR	43	-9	581	0	0	40.4	43.5	59.4
6200199	99	DIRN	SUR	40	-9	488	0	0	166.4	13.2	166.9
6301004	99	DIRN	SUR	72	20	378	0	0	13.6	23.5	27.1
66022	99	DIRN	SUR	54	14	402	0	0	138.4	48.3	146.6

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

LIST OF SUSPECT STATIONS : RADIOSONDES  
 MONITORING CENTRE : ECMWF  
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)  
 AREA : GLOBAL  
 PERIOD : OCT 2020  
 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	27	0	11.0	75.9	76.7
01400	12	Z	1000	57	3	26	0	13.4	73.9	75.1
76394	12	Z	250	26	-100	12	9	13.0	211.1	211.5
97014	12	Z	1000	2	125	17	0	38.4	17.3	42.1
97014	00	Z	1000	2	125	31	0	36.9	19.8	41.9
98233	12	Z	1000	18	122	30	1	31.1	26.4	40.8
JNKN7J	12	Z	1000	51	-16	15	0	4.0	40.1	40.3
JNKN7J	00	Z	1000	51	-11	13	0	4.9	39.2	39.5
KMPLHP	12	Z	30	47	-48	10	0	65.9	254.6	263.0
VKB4L5	00	Z	1000	39	11	13	0	12.9	30.6	33.2

**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 : OCT 2020  
 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
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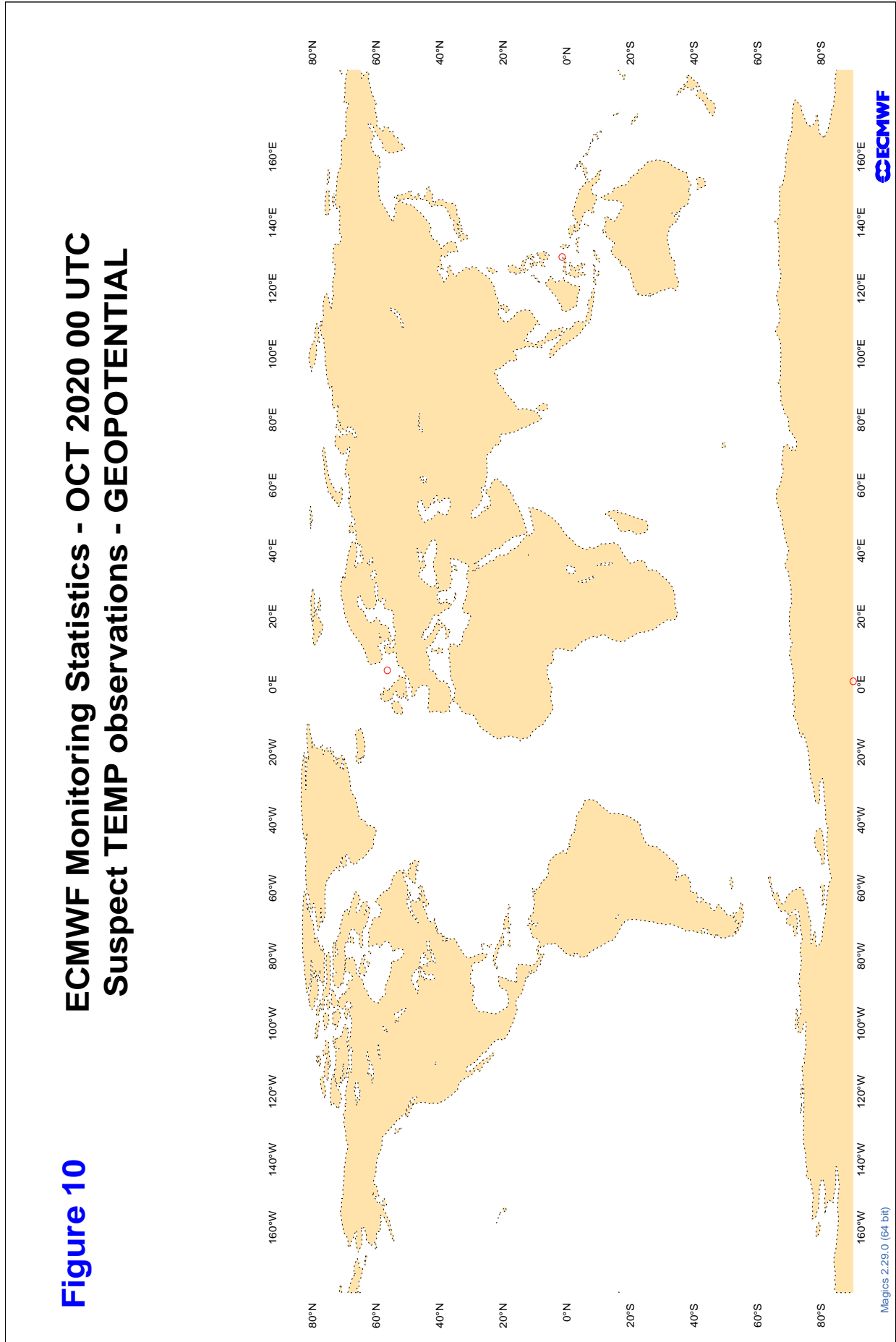
**3.2.20 Table 9 - Suspect radiosondes: Wind direction (degrees)**

LIST OF SUSPECT STATIONS : RADIOSONDES  
 MONITORING CENTRE : ECMWF  
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)  
 AREA : GLOBAL  
 PERIOD : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

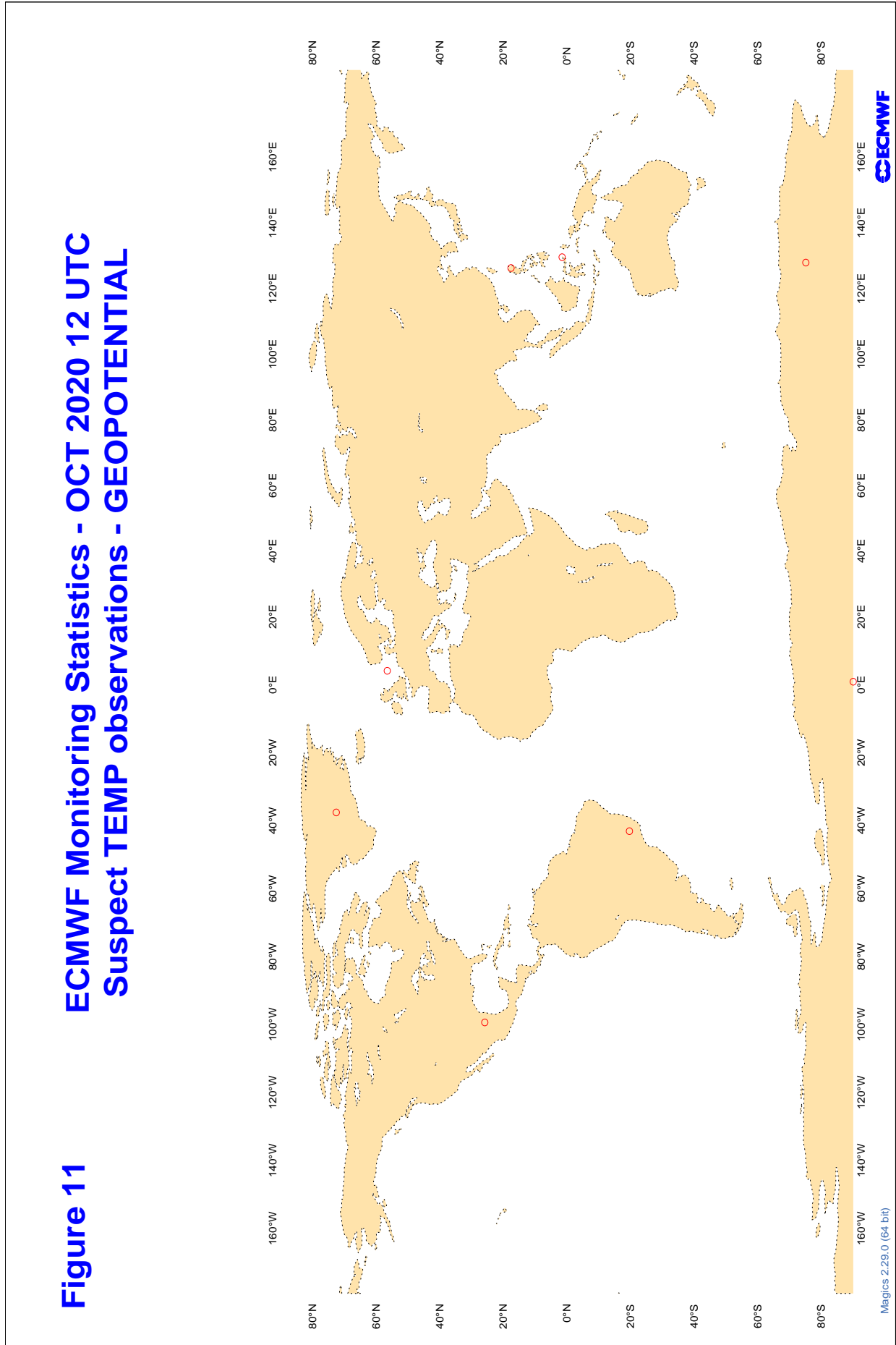
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS  $\geq$  5 M/S  
 NO. OF OBSERVATIONS  $\geq$  5, AND,  
 ABSOLUTE BIAS  $\geq$  10 DEGREES, WITH  
 STANDARD DEVIATION  $<$  30 DEGREES, AND,  
 VERTICAL SPREAD  $<$  10 DEGREES  
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
33791	12	DD	48	33	28	10.7	6.5	10.9

3.2.21 Figure 10 - Suspect TEMP observations - geopotential : 00 UTC

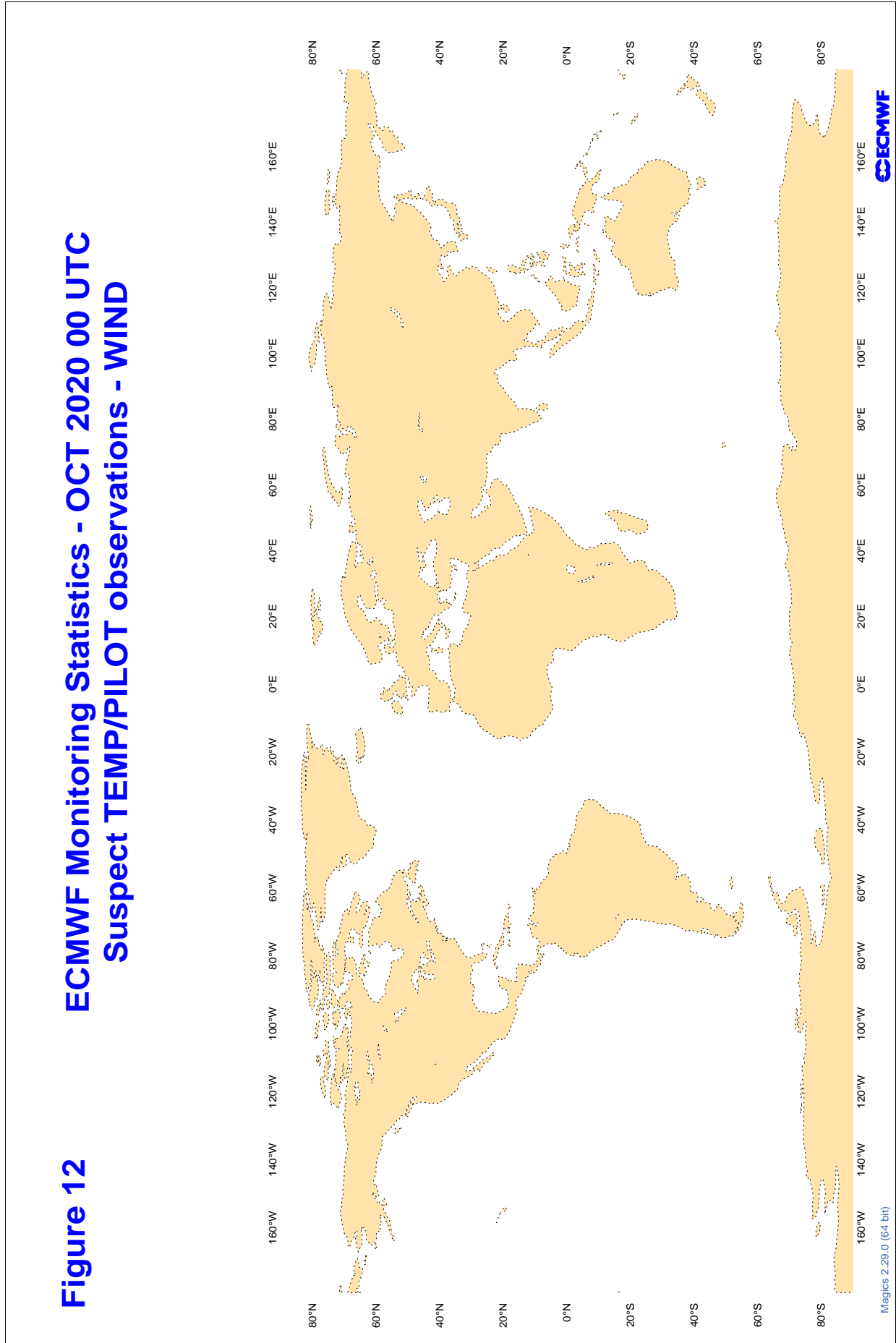


3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC

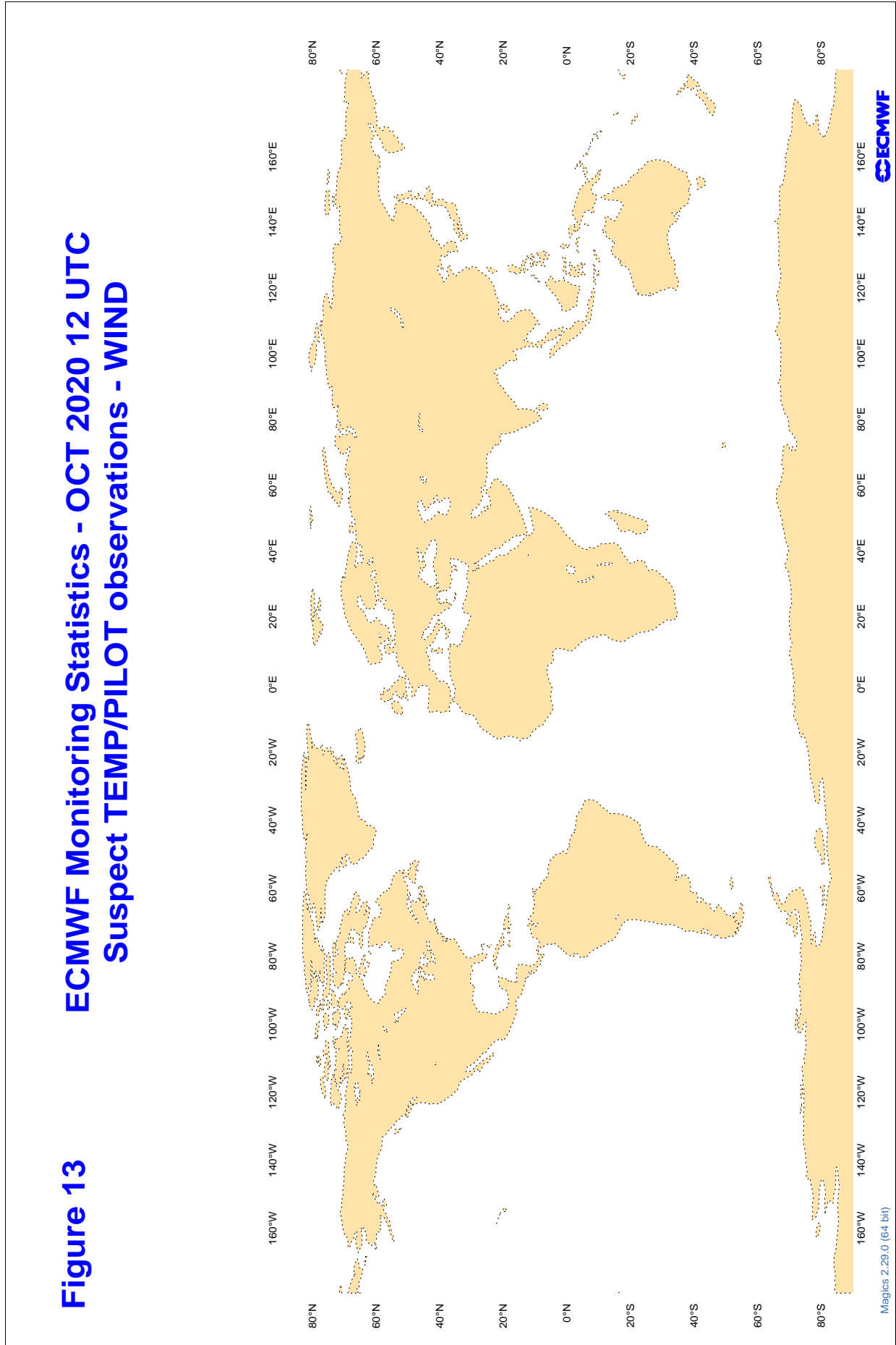




3.2.23 Figure 12 - Suspect TEMP/PILOT observations - wind : 00 UTC



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



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

#### RADIOSONDE MONITORING STATISTICS (SHIPS)

MONITORING CENTRE : ECMWF  
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)  
 LEVEL : 100 HPA  
 AREA : GLOBAL  
 PERIOD : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	100	6	16.0	13.4
7JUNA4	00	Z	100	8	5.7	3.1
ASDE09	12	Z	100	2	13.7	13.6
BPMWB2	12	Z	100	5	30.5	27.9
BPMWB2	00	Z	100	5	16.4	13.0
DBLK	12	Z	100	9	6.6	-5.8
DBLK	00	Z	100	1	4.0	-4.0
FPUW5G	12	Z	100	13	9.4	6.3
HTXUH4	12	Z	100	7	6.4	-2.1
HTXUH4	00	Z	100	7	7.7	0.7
JGQH	12	Z	100	1	8.7	8.7
JGQH	00	Z	100	4	3.4	1.7
JNKN7J	12	Z	100	11	71.3	65.6
JNKN7J	00	Z	100	12	36.8	31.4
KJJF9X	12	Z	100	11	12.9	10.1
KJJF9X	00	Z	100	14	12.9	6.0
KMPLHP	12	Z	100	11	105.1	92.7
KMPLHP	00	Z	100	8	13.9	3.2
LRYQE3	12	Z	100	8	72.0	63.0
LRYQE3	00	Z	100	7	37.4	36.1
UXK5JT	12	Z	100	2	4.4	1.0
UXK5JT	00	Z	100	2	12.9	10.2
VKB4L5	12	Z	100	7	28.8	27.8
VKB4L5	00	Z	100	12	40.0	38.0
WDK38H	12	Z	100	21	9.7	-8.8
XKQLWQ	12	Z	100	8	32.4	31.6
XQFJRG	12	Z	100	3	9.7	-9.1
XQFJRG	00	Z	100	6	13.2	-11.5
YLV96W	12	Z	100	3	39.4	38.1
YLV96W	00	Z	100	3	34.0	33.5
ZVQEQC	12	Z	100	6	13.2	-2.9

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

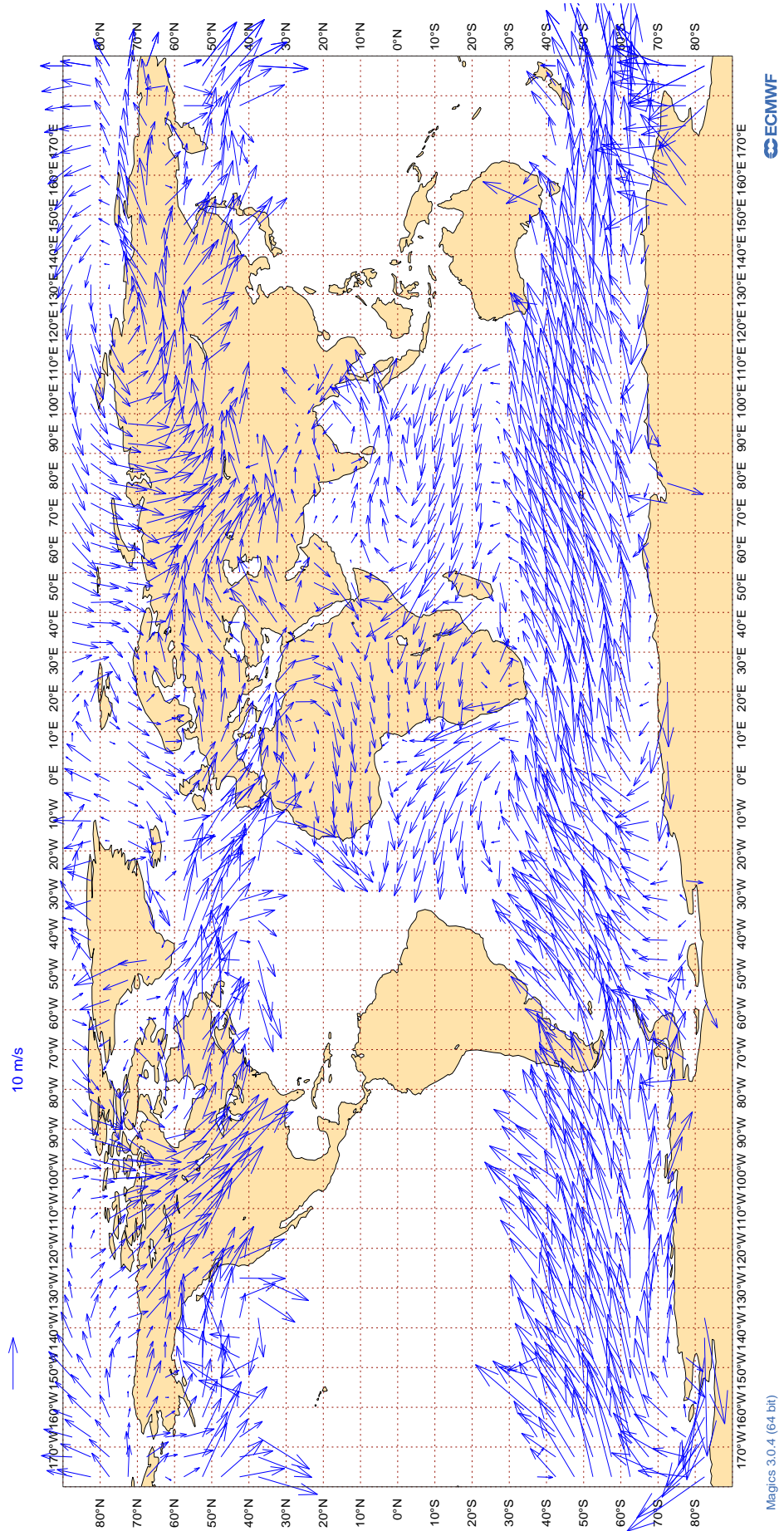
## RADIOSONDE MONITORING STATISTICS (SHIPS)

MONITORING CENTRE : ECMWF  
 ELEMENT MONITORED : WIND (M/S)  
 LEVEL : 100 HPA  
 AREA : GLOBAL  
 PERIOD : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	100	6	4.3	0.9	-2.6
7JUNA4	00	V	100	8	3.6	0.0	-0.5
ASDE09	12	V	100	2	3.7	1.9	-2.9
BPMWB2	12	V	100	5	3.0	0.8	0.0
BPMWB2	00	V	100	5	2.7	0.4	0.8
DBLK	12	V	100	8	3.0	0.9	-1.3
DBLK	00	V	100	1	1.7	-1.7	-0.4
FPUW5G	12	V	100	13	2.6	-0.6	-0.9
HTXUH4	12	V	100	7	3.5	0.4	0.6
HTXUH4	00	V	100	7	1.6	0.3	-0.6
JGQH	12	V	100	1	3.5	0.1	-3.5
JGQH	00	V	100	4	3.5	2.9	-1.0
JNKN7J	12	V	100	11	3.1	-0.9	0.4
JNKN7J	00	V	100	11	3.0	-0.4	1.9
KJJF9X	12	V	100	11	2.3	0.4	-0.1
KJJF9X	00	V	100	14	3.3	0.2	0.0
KMPLHP	12	V	100	11	3.9	-0.3	-0.1
KMPLHP	00	V	100	8	4.7	1.0	1.0
LRYQE3	12	V	100	8	3.9	0.0	0.0
LRYQE3	00	V	100	7	3.8	0.3	1.7
UXK5JT	12	V	100	2	2.1	-0.6	-0.1
UXK5JT	00	V	100	2	1.9	-1.6	-0.1
VKB4L5	12	V	100	7	3.2	0.2	0.1
VKB4L5	00	V	100	12	4.0	0.1	1.4
WDK38H	12	V	100	20	2.0	-0.1	-0.3
XKQLWQ	12	V	100	7	2.6	0.0	0.3
XQFJRG	12	V	100	3	3.6	2.5	1.6
XQFJRG	00	V	100	6	3.9	0.8	-0.5
YLV96W	12	V	100	3	2.4	1.1	0.1
YLV96W	00	V	100	3	2.1	0.4	-0.7
ZVQEQC	12	V	100	6	4.1	-0.2	-0.1

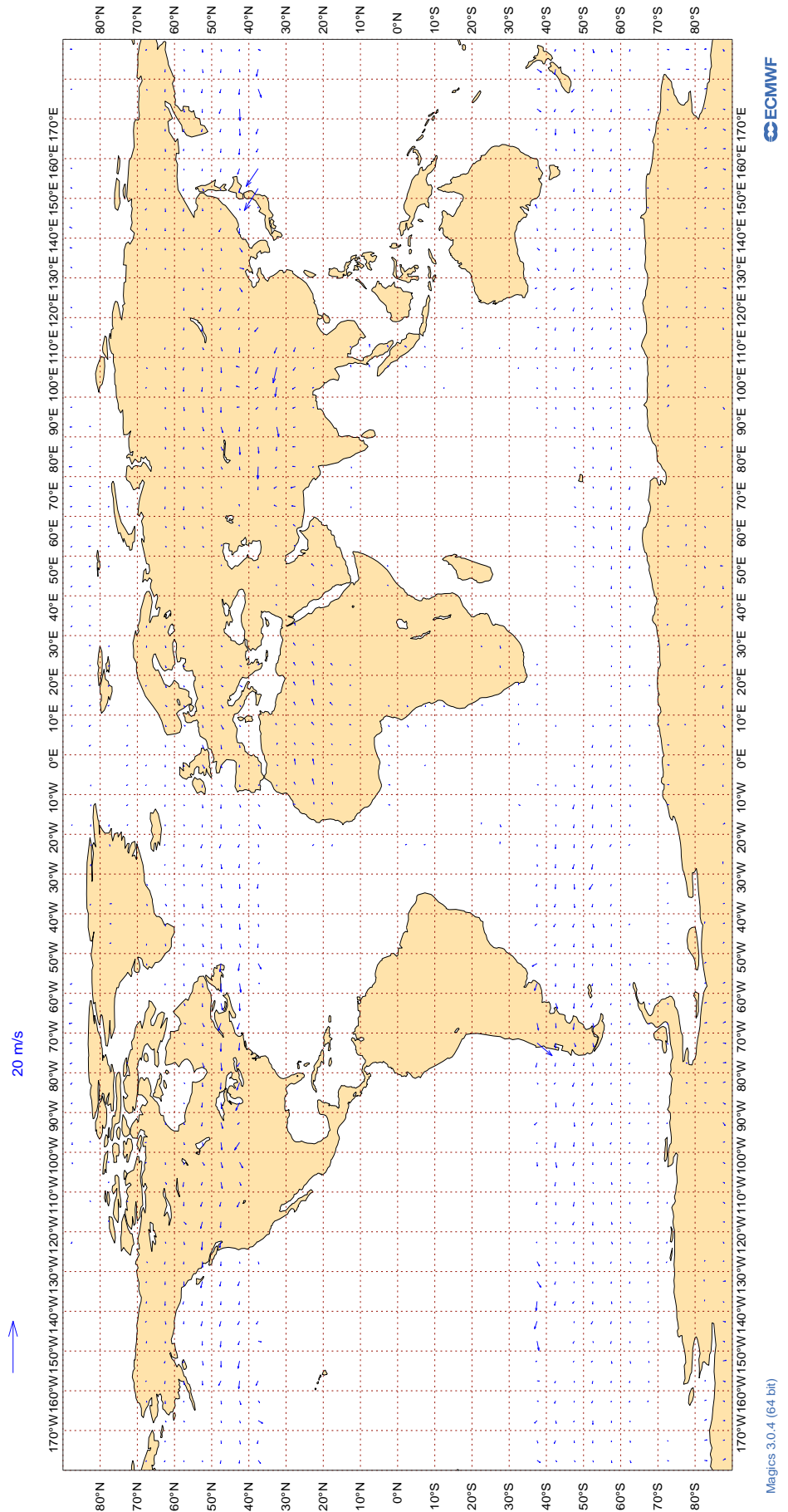
3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

**Figure 14**  
**ECMWF Monitoring Statistics: Oct 2020**  
**AMV Winds: 700-1000hPa**  
**Mean Observed Wind**



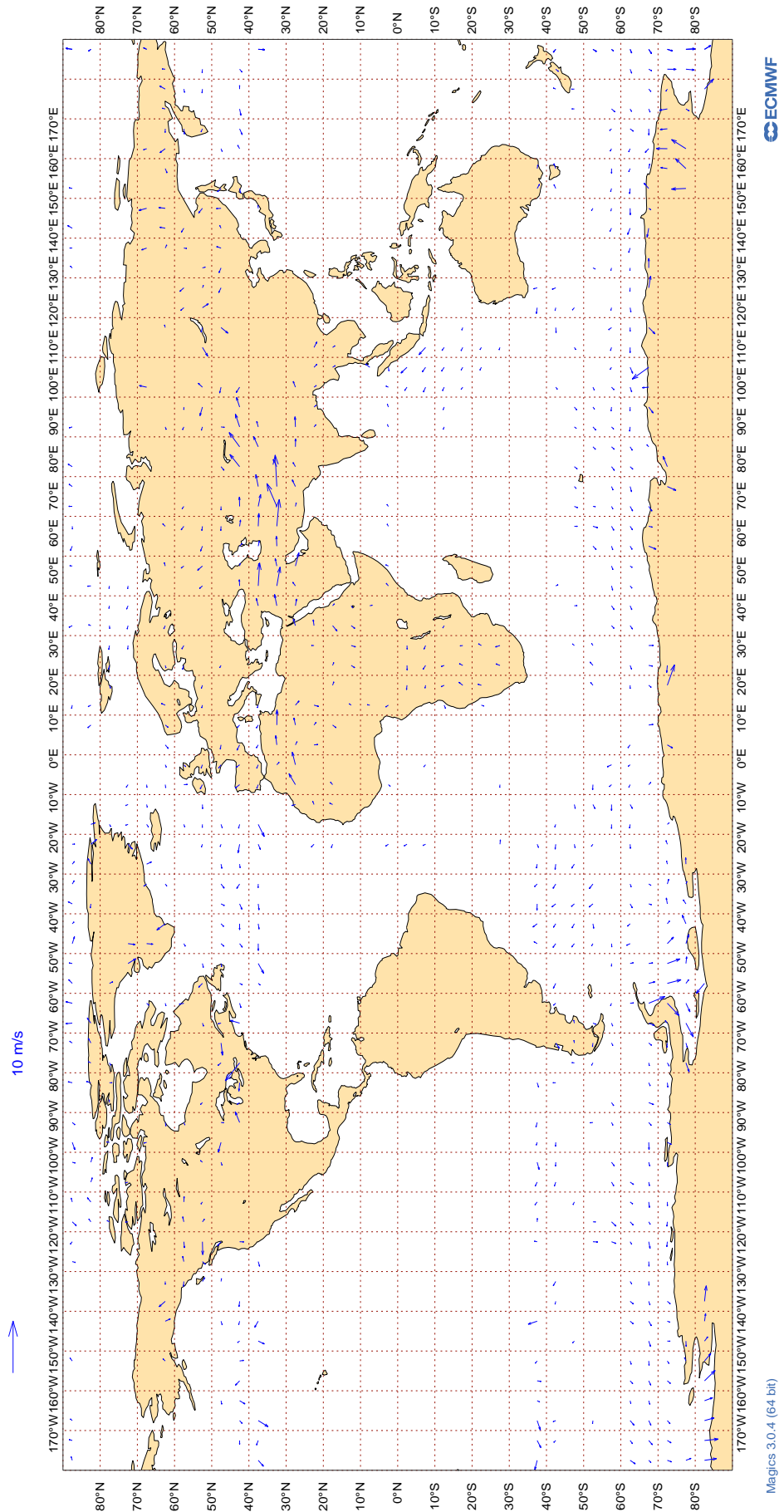
3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

**Figure 15**  
**ECMWF Monitoring Statistics: Oct 2020**  
**AMV Winds: 150- 400hPa**  
**Wind bias: Observation - FG**



3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

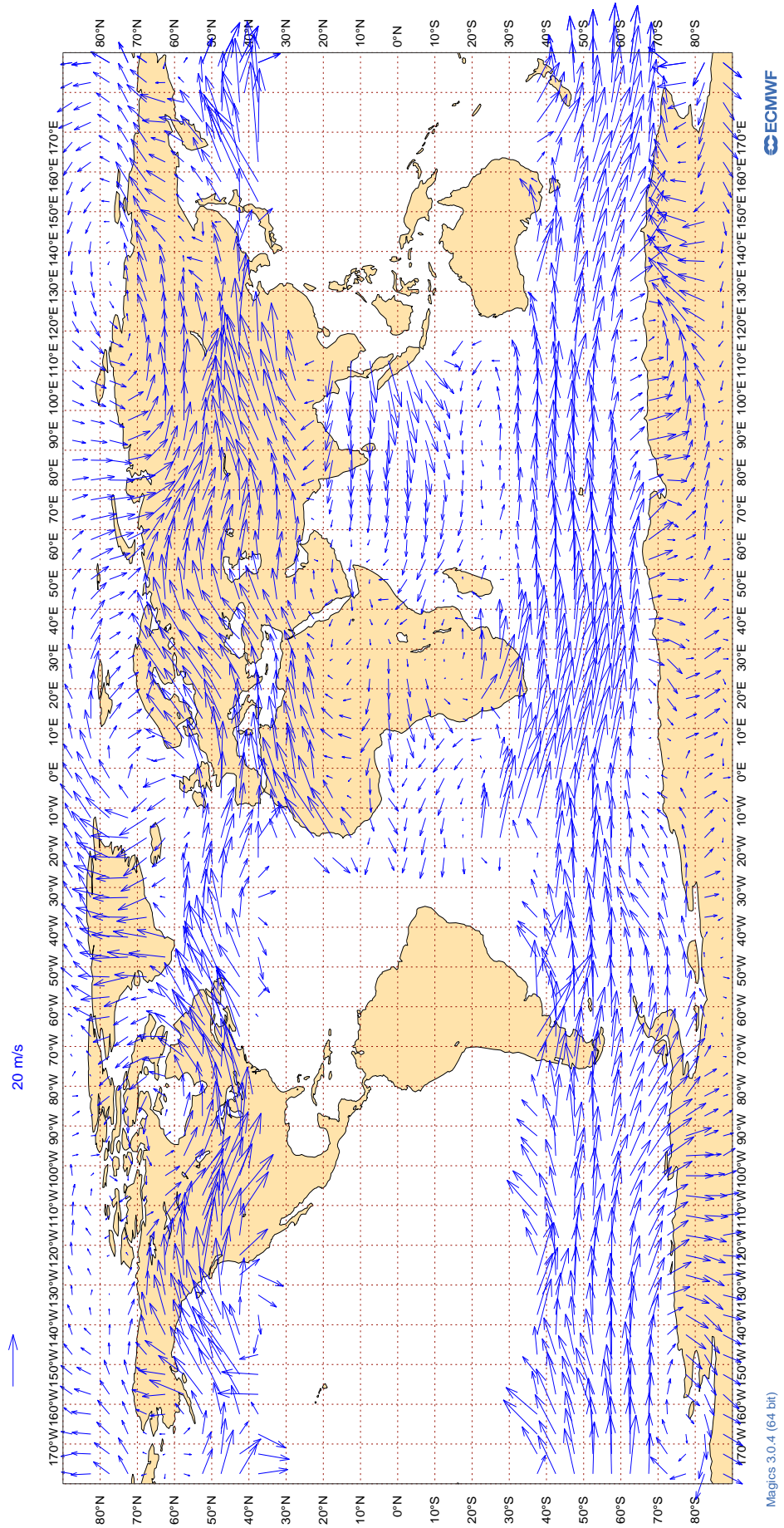
**Figure 16**  
**ECMWF Monitoring Statistics: Oct 2020**  
**AMV Winds: 700-1000hPa**  
**Wind bias: Observation - FG**





3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

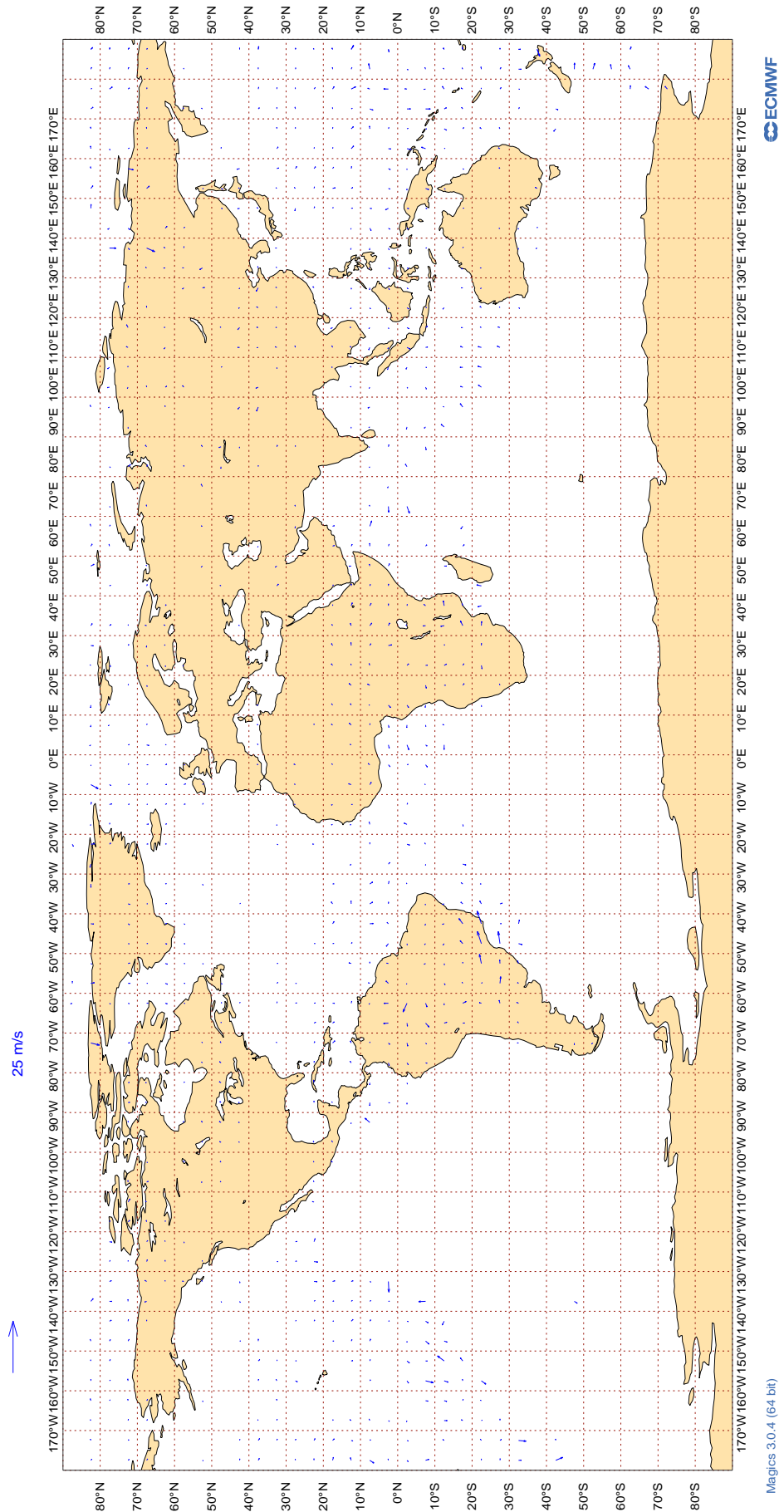
**Figure 17**  
**ECMWF Monitoring Statistics: Oct 2020**  
**AMV Winds: 150- 400hPa**  
**Mean Observed Wind**





3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

**Figure 18**  
**ECMWF Monitoring Statistics: Oct 2020**  
**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 : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. &gt;= 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
AAL	99	V	300-150	14448	5	0	5.4	0.1
AAR	99	V	300-150	200	0	0	4.3	-1.1
ABD	99	V	300-150	974	0	0	4.1	-0.4
ABW	99	V	300-150	527	0	0	3.8	-0.3
ABX	99	V	300-150	156	0	0	5.9	-0.5
ACA	99	V	300-150	10871	4	0	5.6	0.0
ACI	99	V	300-150	41	0	0	3.1	0.0
AEA	99	V	300-150	55	9	0	5.5	-0.5
AFL	99	V	300-150	402	0	0	3.5	0.1
AFR	99	V	300-150	14988	1	0	4.3	0.1
AHO	99	V	300-150	128	0	0	4.5	0.4
AIC	99	V	300-150	1252	3	0	5.3	0.0
AJT	99	V	300-150	903	0	0	4.1	0.1
ALK	99	V	300-150	198	0	0	4.3	1.2
AMX	99	V	300-150	1117	6	0	5.4	-0.1
ANZ	99	V	300-150	5513	2	0	6.8	0.3
AOJ	99	V	300-150	149	0	0	3.9	-0.0
ASL	99	V	300-150	358	0	0	4.7	-0.6
ASP	99	V	300-150	35	0	0	6.5	3.9
ATC	99	V	300-150	24	0	0	3.9	-0.3
ATN	99	V	300-150	116	0	0	4.3	0.4
AUA	99	V	300-150	1177	0	0	4.4	-0.8
AVL	99	V	300-150	102	0	0	2.9	0.5
AWC	99	V	300-150	69	0	0	4.3	-0.1
AWK	99	V	300-150	25	4	0	7.0	0.5
AXM	99	V	300-150	24	0	8	5.3	0.9
AXY	99	V	300-150	31	0	0	3.0	0.2
AYY	99	V	300-150	31	0	0	4.2	-0.9
AZA	99	V	300-150	936	0	0	3.8	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS  
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
AZG	99	V	300-150	562	0	0	3.4	-0.2
BAF	99	V	300-150	44	0	0	2.8	0.1
BAR	99	V	300-150	50	0	0	4.4	-1.2
BAW	99	V	300-150	16023	4	0	5.2	-0.0
BBC	99	V	300-150	145	1	0	6.5	0.6
BCS	99	V	300-150	1179	0	0	3.6	0.5
BLU	99	V	300-150	57	0	0	3.9	-0.1
BOX	99	V	300-150	2048	0	0	3.8	-0.0
BOX	99	V	300-150	63	0	0	3.0	0.1
BTX	99	V	300-150	73	0	0	4.0	0.5
CAL	99	V	300-150	298	0	0	3.9	0.1
CAZ	99	V	300-150	58	0	0	3.2	-0.7
CEB	99	V	300-150	50	0	0	2.8	0.8
CES	99	V	300-150	64	6	0	7.8	-0.0
CFC	99	V	300-150	420	0	0	4.7	0.4
CHH	99	V	300-150	25	0	0	2.4	0.5
CJT	99	V	300-150	1597	0	0	3.9	-0.3
CKS	99	V	300-150	2510	0	0	3.8	-0.0
CLE	99	V	300-150	99	0	0	3.9	0.2
CLU	99	V	300-150	830	0	0	3.8	-0.5
CLX	99	V	300-150	3792	0	0	4.1	-0.4
CMB	99	V	300-150	1337	0	0	4.0	-0.2
CNV	99	V	300-150	134	0	0	3.5	0.2
CPA	99	V	300-150	338	0	0	3.6	0.2
CRI	99	V	300-150	32	0	0	6.5	1.7
CRL	99	V	300-150	674	0	1	3.5	0.5
CSN	99	V	300-150	250	8	0	7.8	0.7
CTM	99	V	300-150	85	0	0	3.7	1.3
CXB	99	V	300-150	59	0	0	3.6	0.3
DAL	99	V	300-150	15197	0	0	3.5	0.2
DCM	99	V	300-150	49	0	0	4.9	0.8
DCS	99	V	300-150	25	0	0	3.4	-0.5
DHK	99	V	300-150	490	0	0	5.0	-0.6
DLH	99	V	300-150	8821	0	0	3.5	0.1
EDG	99	V	300-150	47	0	0	3.2	-0.1
EDW	99	V	300-150	127	0	0	3.5	0.1
EIN	99	V	300-150	3046	0	0	3.4	0.4
EJM	99	V	300-150	327	0	0	3.8	0.1
ELY	99	V	300-150	390	7	0	6.5	-0.1
ENV	99	V	300-150	74	0	0	4.8	0.3
ETD	99	V	300-150	3133	4	0	5.6	0.1
ETH	99	V	300-150	3574	4	0	5.3	-0.0
FBU	99	V	300-150	278	0	0	3.8	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS  
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FDX	99	V	300-150	6523	0	0	3.5	0.2
FIN	99	V	300-150	355	0	0	3.4	-0.1
FJI	99	V	300-150	384	0	0	4.3	0.8
FRH	99	V	300-150	891	0	0	4.2	-0.4
FWI	99	V	300-150	787	0	0	3.6	0.2
FWK	99	V	300-150	53	0	0	3.7	0.3
FYL	99	V	300-150	36	0	0	5.2	0.7
GAF	99	V	300-150	22	0	0	2.6	-0.7
GEC	99	V	300-150	2404	0	0	3.5	-0.0
GFA	99	V	300-150	46	0	0	9.4	0.1
GIA	99	V	300-150	50	0	0	3.1	0.8
GNJ	99	V	300-150	21	0	0	4.0	1.8
GOL	99	V	300-150	78	0	0	3.6	0.5
GTI	99	V	300-150	2254	0	0	4.0	-0.3
HAL	99	V	300-150	26	0	12	4.2	0.8
HRN	99	V	300-150	72	0	0	5.3	1.2
HUA	99	V	300-150	35	0	0	2.9	0.2
HZS	99	V	300-150	33	0	0	3.8	-0.9
IBE	99	V	300-150	702	0	0	3.9	0.2
ICE	99	V	300-150	187	0	1	3.9	1.4
ICV	99	V	300-150	311	0	0	3.8	-0.1
IFA	99	V	300-150	85	0	0	4.3	-0.6
IJM	99	V	300-150	97	0	0	3.8	-0.9
JCO	99	V	300-150	26	0	0	3.4	0.7
KAC	99	V	300-150	144	0	0	3.2	0.1
KAF	99	V	300-150	57	0	0	4.1	-0.1
KAI	99	V	300-150	52	0	0	5.5	0.3
KAL	99	V	300-150	25	4	0	5.8	0.2
KAY	99	V	300-150	351	0	0	3.6	0.4
KIW	99	V	300-150	43	0	2	5.5	-0.1
KLM	99	V	300-150	12535	4	0	5.1	0.0
KQA	99	V	300-150	91	0	0	7.6	0.5
LAN	99	V	300-150	104	7	0	5.3	0.1
LCO	99	V	300-150	298	0	0	4.2	-1.7
LNK	99	V	300-150	67	0	0	3.5	0.1
LOT	99	V	300-150	1150	9	0	7.5	0.1
LUC	99	V	300-150	32	0	0	2.8	0.8
LXJ	99	V	300-150	414	0	0	4.0	0.3
MAS	99	V	300-150	90	0	0	4.0	0.6
MAU	99	V	300-150	35	0	0	4.7	-0.5
MED	99	V	300-150	32	0	0	3.8	0.3
MLM	99	V	300-150	21	0	0	3.3	0.6
MLT	99	V	300-150	100	0	0	2.9	-0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS  
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
MMD	99	V	300-150	110	0	0	3.5	0.5
MMF	99	V	300-150	20	0	5	2.8	-0.8
MPH	99	V	300-150	729	0	0	3.9	-0.9
MSR	99	V	300-150	1007	2	0	5.0	0.2
NAF	99	V	300-150	33	0	0	5.8	1.1
NAS	99	V	300-150	39	0	0	3.5	-0.2
NJE	99	V	300-150	198	0	1	4.2	0.5
OAE	99	V	300-150	928	0	0	3.8	0.0
OLI	99	V	300-150	52	0	0	4.3	-0.2
OMA	99	V	300-150	90	0	0	3.4	0.5
PAC	99	V	300-150	128	0	0	4.3	-0.6
PAL	99	V	300-150	212	0	0	3.3	0.6
PEG	99	V	300-150	34	0	0	3.0	1.0
PHA	99	V	300-150	28	0	0	16.4	2.4
PIA	99	V	300-150	72	0	0	3.8	-0.4
PLF	99	V	300-150	21	0	0	3.9	-0.2
PLM	99	V	300-150	439	0	0	4.1	0.7
QFA	99	V	300-150	345	0	0	4.5	0.4
QQE	99	V	300-150	46	0	0	4.2	1.2
QTR	99	V	300-150	12366	0	0	3.8	0.1
RAM	99	V	300-150	181	7	0	5.4	-0.4
RCH	99	V	300-150	4239	0	0	4.7	0.2
RJA	99	V	300-150	305	3	0	6.8	0.1
RRR	99	V	300-150	401	0	0	4.2	0.1
RWD	99	V	300-150	39	0	0	3.8	0.4
RZO	99	V	300-150	51	0	4	4.4	1.5
SAM	99	V	300-150	422	0	0	3.9	0.5
SAS	99	V	300-150	1288	0	0	3.7	0.2
SAZ	99	V	300-150	58	0	0	4.1	-0.2
SCX	99	V	300-150	77	3	1	3.9	0.5
SEY	99	V	300-150	42	0	0	4.0	1.0
SGC	99	V	300-150	31	0	0	3.3	-0.4
SHE	99	V	300-150	69	0	0	3.2	0.3
SIA	99	V	300-150	1070	0	0	3.8	0.1
SLM	99	V	300-150	42	0	0	3.5	0.5
SOO	99	V	300-150	776	0	0	3.6	-0.0
SPA	99	V	300-150	88	0	0	4.5	0.9
SVA	99	V	300-150	1457	0	0	3.8	0.0
SWR	99	V	300-150	2787	0	1	3.7	0.3
SYB	99	V	300-150	34	0	0	2.8	-0.1
TAP	99	V	300-150	825	0	0	3.7	0.7
TAR	99	V	300-150	90	0	0	3.0	-0.0
TAY	99	V	300-150	307	0	0	4.1	-0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS  
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
TEU	99	V	300-150	61	0	0	3.4	0.3
TFL	99	V	300-150	583	8	0	6.5	-0.3
THT	99	V	300-150	1708	2	0	7.3	0.0
THY	99	V	300-150	5957	3	0	4.8	0.0
TMN	99	V	300-150	238	0	0	4.7	0.4
TOM	99	V	300-150	56	0	0	3.6	-0.0
TOW	99	V	300-150	77	0	0	3.8	-0.3
TPA	99	V	300-150	400	0	0	3.7	0.8
TSC	99	V	300-150	1515	0	0	4.0	0.6
TWY	99	V	300-150	330	0	0	3.9	-0.0
UAE	99	V	300-150	9031	0	0	3.5	0.3
UAF	99	V	300-150	35	0	0	4.2	-0.6
UAL	99	V	300-150	26071	6	2	6.2	0.0
ULC	99	V	300-150	54	0	0	3.9	0.2
UPS	99	V	300-150	4585	0	0	3.8	-0.2
UZB	99	V	300-150	37	32	0	17.6	-0.3
VAJ	99	V	300-150	21	0	0	2.5	0.7
VCG	99	V	300-150	63	0	0	3.3	0.4
VIR	99	V	300-150	5462	6	0	5.3	-0.1
VJT	99	V	300-150	484	0	0	3.8	0.4
VTE	99	V	300-150	67	70	0	22.7	-1.1
VTI	99	V	300-150	42	0	2	2.9	0.3
WGN	99	V	300-150	69	0	0	4.0	0.7
WJA	99	V	300-150	385	13	0	8.3	-0.2
XRO	99	V	300-150	127	0	0	3.7	0.5

## 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 : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	50	30	14.2	4.9
01001	00	Z	50	29	11.8	4.6
01028	00	Z	50	31	5.2	0.3
01028	12	Z	50	30	4.5	-1.2
01400	00	Z	50	22	84.8	84.6
01400	12	Z	50	23	76.1	74.3
01415	00	Z	50	20	7.3	3.6
01415	12	Z	50	31	7.4	0.8
02365	00	Z	50	29	6.6	3.2
02365	12	Z	50	27	5.9	-2.6
02836	12	Z	50	32	7.8	-0.5
02836	00	Z	50	31	6.6	1.2
02963	12	Z	50	28	4.9	-0.5
02963	00	Z	50	31	8.9	6.7
03005	12	Z	50	30	7.7	-3.8
03005	00	Z	50	31	6.5	1.1
03238	00	Z	50	31	9.4	4.9
03238	12	Z	50	4	3.6	3.1
03808	12	Z	50	31	9.6	-1.0
03808	00	Z	50	29	8.3	4.6
03918	00	Z	50	24	11.7	8.3
03918	12	Z	50	5	5.3	5.1
039184	00	Z	50	0	0.0	0.0
03953	12	Z	50	31	12.1	-7.7
03953	00	Z	50	28	11.2	-7.0
04018	00	Z	50	30	6.2	0.8
04018	12	Z	50	31	8.7	-2.8
04220	12	Z	50	30	7.6	0.6
04220	00	Z	50	30	7.1	2.2
04270	00	Z	50	30	12.3	-1.9
04270	12	Z	50	31	6.6	-2.5
04320	12	Z	50	31	5.8	-2.9
04320	00	Z	50	31	5.1	0.2
043202	12	Z	50	0	0.0	0.0
04339	12	Z	50	30	12.2	-4.2
04339	00	Z	50	31	12.3	-0.2
04360	00	Z	50	27	15.7	-10.7
04360	12	Z	50	25	12.5	-6.7
06011	00	Z	50	29	11.4	4.5



RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	50	31	15.5	13.6
06260	12	Z	50	5	11.2	4.3
06260	00	Z	50	31	7.6	4.6
06610	00	Z	50	30	8.5	5.9
06610	12	Z	50	30	11.5	4.5
066100	00	Z	50	0	0.0	0.0
066105	12	Z	50	0	0.0	0.0
066105	00	Z	50	0	0.0	0.0
07110	00	Z	50	30	9.2	1.8
07110	12	Z	50	30	14.1	1.0
07510	00	Z	50	29	16.9	13.7
07510	12	Z	50	29	22.5	18.8
07645	12	Z	50	31	21.2	18.2
07645	00	Z	50	31	15.3	12.1
07761	12	Z	50	31	19.3	16.7
07761	00	Z	50	31	19.3	15.3
08001	00	Z	50	26	8.5	5.9
08001	12	Z	50	28	6.3	1.1
08221	00	Z	50	31	13.2	10.3
08221	12	Z	50	31	9.0	4.9
082212	12	Z	50	0	0.0	0.0
08302	00	Z	50	30	9.0	0.7
08302	12	Z	50	31	11.3	-8.6
08508	12	Z	50	31	8.2	6.0
08508	00	Z	50	28	10.7	9.9
08522	12	Z	50	30	6.1	3.2
10035	12	Z	50	31	13.2	12.3
10035	00	Z	50	30	17.8	16.2
10393	00	Z	50	19	8.7	4.9
10393	12	Z	50	31	7.4	3.0
10410	00	Z	50	31	14.2	5.1
10410	12	Z	50	31	7.5	-2.3
10739	00	Z	50	31	10.2	7.5
10739	12	Z	50	31	10.5	7.0
11035	12	Z	50	31	26.2	20.8
11035	00	Z	50	31	18.9	14.6
12982	00	Z	50	30	9.7	8.9
12982	12	Z	50	30	6.3	3.4
16080	00	Z	50	28	6.9	3.9
16080	12	Z	50	31	7.6	-2.2
16245	12	Z	50	31	7.4	-2.7
16245	00	Z	50	29	7.7	2.3
16320	12	Z	50	27	8.4	4.3

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16320	00	Z	50	31	13.2	11.6
16429	00	Z	50	26	11.2	9.0
16429	12	Z	50	28	14.3	6.1
16622	00	Z	50	24	34.1	23.0
16754	00	Z	50	23	14.5	13.4
17607	12	Z	50	24	7.5	5.6
26435	12	Z	50	15	4.1	-0.1
60018	00	Z	50	23	12.2	11.3
60018	12	Z	50	30	6.5	2.1
7JUNA4	12	Z	50	6	23.4	20.7
7JUNA4	00	Z	50	7	6.0	2.1
ASDE09	12	Z	50	2	23.6	23.5
BPMWB2	12	Z	50	5	50.2	49.0
BPMWB2	00	Z	50	0	0.0	0.0
DBLK	12	Z	50	9	6.3	-4.5
DBLK	00	Z	50	1	1.2	1.2
FPUW5G	12	Z	50	10	11.2	8.8
HTXUH4	12	Z	50	7	8.0	-3.0
HTXUH4	00	Z	50	7	6.4	0.1
JNKN7J	12	Z	50	8	111.3	95.4
JNKN7J	00	Z	50	8	67.9	52.1
KJFF9X	12	Z	50	8	22.2	18.1
KJFF9X	00	Z	50	10	17.6	15.2
KMPLHP	12	Z	50	11	169.9	164.3
KMPLHP	00	Z	50	7	20.1	3.3
LRYQE3	12	Z	50	8	130.6	111.4
LRYQE3	00	Z	50	6	37.8	36.3
UXK5JT	12	Z	50	2	11.3	6.4
UXK5JT	00	Z	50	2	16.7	16.1
VKB4L5	12	Z	50	7	29.8	28.6
VKB4L5	00	Z	50	11	41.0	39.9
WDK38H	12	Z	50	20	8.4	-6.1
XKQLWQ	12	Z	50	8	43.1	41.9
XQFJRG	12	Z	50	2	7.0	-6.7
XQFJRG	00	Z	50	6	10.0	-4.7
YLV96W	12	Z	50	3	49.6	48.4
YLV96W	00	Z	50	2	36.6	36.1
ZVQEQC	12	Z	50	5	14.5	-3.7

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

## RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF  
 ELEMENT MONITORED : WIND (M/S)  
 LEVEL : 50 HPA  
 AREA : 0 - 90N, 100W - 40E  
 PERIOD : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	50	30	2.8	-0.1	0.3
01001	00	V	50	23	3.1	0.5	0.2
01028	00	V	50	25	3.0	0.0	0.3
01028	12	V	50	30	3.2	0.0	0.5
01400	00	V	50	14	3.0	0.4	-0.2
01400	12	V	50	18	2.3	0.7	-0.1
01415	00	V	50	19	3.0	-0.2	-0.7
01415	12	V	50	31	3.7	0.3	0.0
02365	00	V	50	21	4.2	-0.6	-0.5
02365	12	V	50	26	3.2	0.0	0.2
02836	12	V	50	30	3.0	0.0	0.1
02836	00	V	50	26	2.8	0.4	0.2
02963	12	V	50	28	3.0	0.1	-0.1
02963	00	V	50	26	3.5	-0.1	-0.1
03005	12	V	50	30	2.8	0.0	-0.2
03005	00	V	50	25	3.6	0.9	0.1
03238	00	V	50	24	3.2	0.0	0.1
03238	12	V	50	4	2.2	1.5	0.0
03808	12	V	50	30	3.2	0.6	-0.6
03808	00	V	50	25	3.2	0.5	0.4
03918	00	V	50	19	4.4	-0.7	0.8
03918	12	V	50	5	2.7	-0.3	0.6
039184	00	V	50	0	0.0	0.0	0.0
03953	12	V	50	31	3.7	-0.3	-0.6
03953	00	V	50	23	3.0	0.2	0.0
04018	00	V	50	22	4.1	-1.0	0.7
04018	12	V	50	31	3.7	-0.9	0.3
04220	12	V	50	30	2.9	-0.1	0.4
04220	00	V	50	23	2.6	-0.1	1.1
04270	00	V	50	25	3.7	0.0	0.9
04270	12	V	50	31	3.7	-0.2	-0.5
04320	12	V	50	31	3.1	0.0	0.5
04320	00	V	50	28	2.8	0.3	-0.1
043202	12	V	50	0	0.0	0.0	0.0
04339	12	V	50	30	2.8	0.2	0.1
04339	00	V	50	26	3.1	0.2	-0.5
04360	00	V	50	22	3.8	1.0	-0.6
04360	12	V	50	25	3.5	-0.4	0.4
06011	00	V	50	23	2.7	0.3	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	50	31	3.0	0.5	-0.6
06260	12	V	50	5	3.0	0.5	-1.5
06260	00	V	50	23	3.1	0.4	0.1
06610	00	V	50	27	3.5	0.7	0.0
06610	12	V	50	29	3.8	0.3	0.5
066100	00	V	50	0	0.0	0.0	0.0
066105	12	V	50	0	0.0	0.0	0.0
066105	00	V	50	0	0.0	0.0	0.0
07110	00	V	50	25	3.7	0.0	-0.7
07110	12	V	50	30	2.8	0.3	-0.4
07510	00	V	50	25	3.8	0.1	-0.3
07510	12	V	50	29	3.6	0.1	-0.7
07645	12	V	50	31	3.0	0.2	0.0
07645	00	V	50	24	3.8	0.1	-0.3
07761	12	V	50	31	3.9	0.4	-1.1
07761	00	V	50	27	4.0	-0.2	-0.2
08001	00	V	50	19	3.3	-0.7	0.8
08001	12	V	50	25	3.3	0.4	0.1
08221	00	V	50	27	4.0	-0.3	0.4
08221	12	V	50	30	3.6	0.6	0.3
082212	12	V	50	0	0.0	0.0	0.0
08302	00	V	50	25	3.9	-0.3	-0.6
08302	12	V	50	31	4.2	0.1	0.0
08508	12	V	50	31	3.7	0.6	0.1
08508	00	V	50	21	3.8	-0.7	0.3
08522	12	V	50	30	3.4	0.6	0.5
10035	12	V	50	31	3.0	-0.5	0.1
10035	00	V	50	21	2.9	0.8	0.0
10393	00	V	50	18	2.3	0.7	-0.1
10393	12	V	50	31	3.3	-0.1	0.1
10410	00	V	50	29	3.1	-0.1	-0.3
10410	12	V	50	31	2.8	-0.2	-0.5
10739	00	V	50	30	3.0	-0.3	-0.5
10739	12	V	50	31	3.3	0.5	-0.1
11035	12	V	50	31	3.6	0.2	0.0
11035	00	V	50	23	3.2	0.1	-0.7
12982	00	V	50	22	3.3	0.2	-0.2
12982	12	V	50	30	3.2	0.3	-0.3
16080	00	V	50	21	3.7	1.1	0.3
16080	12	V	50	30	4.2	0.9	-0.3
16245	12	V	50	31	4.0	0.0	-0.4
16245	00	V	50	23	3.4	0.6	1.1
16320	12	V	50	27	3.9	0.4	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16320	00	V	50	26	4.2	-0.1	-0.7
16429	00	V	50	21	4.3	0.5	0.3
16429	12	V	50	28	4.3	0.0	-1.1
16622	00	V	50	16	3.6	0.0	-0.2
16754	00	V	50	16	3.5	-0.2	0.4
17607	12	V	50	16	3.0	0.4	-0.8
26435	12	V	50	15	3.0	-0.2	-1.4
60018	00	V	50	21	3.7	0.2	1.1
60018	12	V	50	30	4.0	-0.1	-0.5
7JUNA4	12	V	50	6	3.4	1.2	-0.7
7JUNA4	00	V	50	7	4.0	0.2	-1.5
ASDE09	12	V	50	2	4.1	-0.5	0.4
BPMWB2	12	V	50	5	3.7	-2.2	1.0
BPMWB2	00	V	50	0	0.0	0.0	0.0
DBLK	12	V	50	8	1.4	0.2	-1.0
DBLK	00	V	50	1	1.0	-0.5	0.9
FPUW5G	12	V	50	10	2.5	0.9	0.0
HTXUH4	12	V	50	7	2.5	1.2	0.1
HTXUH4	00	V	50	6	3.4	0.6	0.8
JNKN7J	12	V	50	8	3.9	0.5	2.0
JNKN7J	00	V	50	8	3.3	0.4	-0.4
KJJF9X	12	V	50	8	3.5	1.1	-1.4
KJJF9X	00	V	50	10	4.2	0.2	1.6
KMPLHP	12	V	50	11	4.4	0.2	1.2
KMPLHP	00	V	50	7	2.6	0.1	0.1
LRYQE3	12	V	50	7	2.8	0.0	-0.1
LRYQE3	00	V	50	6	2.3	-0.5	-0.1
UXK5JT	12	V	50	2	1.7	0.9	1.0
UXK5JT	00	V	50	2	1.8	0.6	-1.3
VKB4L5	12	V	50	7	2.4	-0.2	0.5
VKB4L5	00	V	50	10	3.1	0.3	-1.3
WDK38H	12	V	50	15	2.1	0.3	-0.3
XKQLWQ	12	V	50	8	2.5	-0.3	-1.0
XQFJRG	12	V	50	2	1.6	-0.9	0.2
XQFJRG	00	V	50	5	3.8	0.1	1.0
YLV96W	12	V	50	3	2.2	-1.4	-0.9
YLV96W	00	V	50	2	3.5	2.9	0.5
ZVQEQC	12	V	50	5	4.2	-0.2	2.0

### 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 : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	100	30	10.2	-3.7
01001	00	Z	100	29	10.2	-4.4
01028	00	Z	100	31	5.9	-4.4
01028	12	Z	100	30	6.7	-5.1
01400	00	Z	100	23	80.3	80.2
01400	12	Z	100	24	74.6	73.1
01415	00	Z	100	21	4.0	-0.5
01415	12	Z	100	31	6.3	-0.8
02365	00	Z	100	30	4.0	-0.9
02365	12	Z	100	31	6.0	-4.1
02836	12	Z	100	32	7.1	-4.0
02836	00	Z	100	31	5.5	-2.3
02963	12	Z	100	29	4.9	-2.4
02963	00	Z	100	31	4.6	1.4
03005	12	Z	100	31	6.3	-3.8
03005	00	Z	100	31	7.2	-3.2
03238	00	Z	100	31	7.1	1.7
03238	12	Z	100	4	3.7	-2.0
03808	12	Z	100	31	8.9	-2.0
03808	00	Z	100	30	7.0	2.3
03918	00	Z	100	26	9.0	6.5
03918	12	Z	100	5	2.7	1.7
039184	00	Z	100	0	0.0	0.0
03953	12	Z	100	31	12.1	-9.2
03953	00	Z	100	31	10.7	-7.8
04018	00	Z	100	31	5.4	-1.5
04018	12	Z	100	31	6.5	-4.4
04220	12	Z	100	30	7.0	-1.0
04220	00	Z	100	30	5.0	-0.1
04270	00	Z	100	30	8.6	-2.9
04270	12	Z	100	31	7.3	-4.2
04320	12	Z	100	31	6.4	-5.4
04320	00	Z	100	31	5.6	-3.3
043202	12	Z	100	0	0.0	0.0
04339	12	Z	100	30	11.8	-5.3
04339	00	Z	100	31	8.7	-3.1
04360	00	Z	100	27	16.2	-13.9
04360	12	Z	100	25	15.3	-13.1
06011	00	Z	100	29	10.2	1.6

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	100	31	10.2	8.6
06260	12	Z	100	5	9.3	3.2
06260	00	Z	100	31	5.2	1.8
06610	00	Z	100	31	5.4	1.5
06610	12	Z	100	34	6.9	0.8
066100	00	Z	100	0	0.0	0.0
066105	12	Z	100	0	0.0	0.0
066105	00	Z	100	0	0.0	0.0
07110	00	Z	100	31	9.5	-3.8
07110	12	Z	100	30	11.5	-4.4
07510	00	Z	100	30	9.7	6.0
07510	12	Z	100	30	12.5	9.0
07645	12	Z	100	31	12.0	8.5
07645	00	Z	100	31	9.5	4.6
07761	12	Z	100	31	11.7	7.2
07761	00	Z	100	31	12.0	6.0
08001	00	Z	100	31	6.0	2.5
08001	12	Z	100	30	6.4	1.4
08221	00	Z	100	31	9.7	7.3
08221	12	Z	100	31	10.4	3.5
082212	12	Z	100	0	0.0	0.0
08302	00	Z	100	31	8.1	-3.8
08302	12	Z	100	31	12.6	-9.8
08508	12	Z	100	31	7.6	5.1
08508	00	Z	100	28	8.4	6.9
08522	12	Z	100	30	6.9	5.3
10035	12	Z	100	31	12.0	11.0
10035	00	Z	100	33	13.3	12.3
10393	00	Z	100	19	5.2	1.1
10393	12	Z	100	31	5.1	0.2
10410	00	Z	100	31	9.8	0.7
10410	12	Z	100	31	8.3	-4.2
10739	00	Z	100	31	7.5	4.9
10739	12	Z	100	31	7.4	3.7
11035	12	Z	100	31	17.6	12.3
11035	00	Z	100	32	13.5	10.4
12982	00	Z	100	31	6.8	5.3
12982	12	Z	100	31	4.4	0.8
16080	00	Z	100	30	6.4	-0.5
16080	12	Z	100	31	6.4	-3.0
16245	12	Z	100	31	6.6	-4.2
16245	00	Z	100	30	6.4	0.9
16320	12	Z	100	30	8.7	3.4

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16320	00	Z	100	31	9.0	6.4
16429	00	Z	100	25	7.4	5.1
16429	12	Z	100	30	9.0	1.2
16622	00	Z	100	31	24.0	16.1
16754	00	Z	100	25	12.6	11.2
17607	12	Z	100	30	6.1	4.3
26435	12	Z	100	15	5.6	-4.3
60018	00	Z	100	23	9.4	8.4
60018	12	Z	100	31	6.6	3.3
7JUNA4	12	Z	100	6	16.0	13.4
7JUNA4	00	Z	100	8	5.7	3.1
ASDE09	12	Z	100	2	13.7	13.6
BPMWB2	12	Z	100	5	30.5	27.9
BPMWB2	00	Z	100	5	16.4	13.0
DBLK	12	Z	100	9	6.6	-5.8
DBLK	00	Z	100	1	4.0	-4.0
FPUW5G	12	Z	100	13	9.4	6.3
HTXUH4	12	Z	100	7	6.4	-2.1
HTXUH4	00	Z	100	7	7.7	0.7
JNKN7J	12	Z	100	11	71.3	65.6
JNKN7J	00	Z	100	12	36.8	31.4
KJJF9X	12	Z	100	11	12.9	10.1
KJJF9X	00	Z	100	14	12.9	6.0
KMPLHP	12	Z	100	11	105.1	92.7
KMPLHP	00	Z	100	8	13.9	3.2
LRYQE3	12	Z	100	8	72.0	63.0
LRYQE3	00	Z	100	7	37.4	36.1
UXK5JT	12	Z	100	2	4.4	1.0
UXK5JT	00	Z	100	2	12.9	10.2
VKB4L5	12	Z	100	7	28.8	27.8
VKB4L5	00	Z	100	12	40.0	38.0
WDK38H	12	Z	100	21	9.7	-8.8
XKQLWQ	12	Z	100	8	32.4	31.6
XQFJRG	12	Z	100	3	9.7	-9.1
XQFJRG	00	Z	100	6	13.2	-11.5
YLV96W	12	Z	100	3	39.4	38.1
YLV96W	00	Z	100	3	34.0	33.5
ZVQEQC	12	Z	100	6	13.2	-2.9



**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 : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	100	30	2.1	-0.1	0.0
01001	00	V	100	23	2.7	0.5	-0.1
01028	00	V	100	25	2.3	0.1	0.0
01028	12	V	100	30	2.4	-0.6	-0.5
01400	00	V	100	17	2.2	0.2	-0.3
01400	12	V	100	21	3.1	-0.2	-0.4
01415	00	V	100	19	3.1	0.3	-0.1
01415	12	V	100	31	2.9	0.6	0.1
02365	00	V	100	23	2.9	-0.4	-0.7
02365	12	V	100	30	2.9	-0.7	-0.3
02836	12	V	100	30	2.8	0.7	0.9
02836	00	V	100	26	2.3	-0.3	0.2
02963	12	V	100	29	2.8	0.1	0.1
02963	00	V	100	26	3.2	-0.5	0.2
03005	12	V	100	31	2.9	0.4	-0.7
03005	00	V	100	25	2.7	-0.1	-0.1
03238	00	V	100	24	3.0	0.0	0.0
03238	12	V	100	4	3.4	-0.5	0.7
03808	12	V	100	31	3.3	0.7	-0.1
03808	00	V	100	25	3.2	0.1	-0.7
03918	00	V	100	20	2.6	0.6	0.4
03918	12	V	100	5	2.5	0.8	0.1
039184	00	V	100	0	0.0	0.0	0.0
03953	12	V	100	31	3.0	0.8	-0.2
03953	00	V	100	23	3.0	0.3	0.2
04018	00	V	100	29	3.6	1.4	-0.7
04018	12	V	100	31	3.4	0.0	0.6
04220	12	V	100	30	2.7	0.2	-0.4
04220	00	V	100	29	3.4	-0.1	-0.1
04270	00	V	100	30	3.5	-0.2	0.3
04270	12	V	100	31	3.4	0.0	-0.2
04320	12	V	100	31	2.5	-0.1	0.0
04320	00	V	100	27	2.8	0.1	-0.1
043202	12	V	100	0	0.0	0.0	0.0
04339	12	V	100	30	2.9	-0.9	-0.2
04339	00	V	100	30	3.1	0.6	-0.1
04360	00	V	100	23	2.8	0.4	0.0
04360	12	V	100	25	3.2	-0.8	-0.2
06011	00	V	100	27	2.9	0.6	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	100	31	2.3	0.2	0.1
06260	12	V	100	5	2.9	-0.1	-0.7
06260	00	V	100	23	3.1	0.5	1.0
06610	00	V	100	30	3.7	-0.6	0.3
06610	12	V	100	30	3.8	-1.0	-0.5
066100	00	V	100	0	0.0	0.0	0.0
066105	12	V	100	0	0.0	0.0	0.0
066105	00	V	100	0	0.0	0.0	0.0
07110	00	V	100	26	2.9	-0.3	0.0
07110	12	V	100	30	3.0	0.8	0.0
07510	00	V	100	25	3.1	0.2	0.6
07510	12	V	100	30	3.3	0.2	0.5
07645	12	V	100	31	4.8	-0.8	0.9
07645	00	V	100	24	3.9	-0.1	0.4
07761	12	V	100	31	4.5	0.2	0.2
07761	00	V	100	27	4.7	-0.5	-0.3
08001	00	V	100	25	3.0	-0.1	-0.3
08001	12	V	100	29	4.0	-1.1	1.0
08221	00	V	100	28	4.2	0.5	0.8
08221	12	V	100	31	3.6	0.8	0.0
082212	12	V	100	0	0.0	0.0	0.0
08302	00	V	100	26	4.7	-0.1	-0.5
08302	12	V	100	31	3.5	0.5	0.6
08508	12	V	100	31	3.2	-0.3	0.2
08508	00	V	100	21	2.3	0.1	0.9
08522	12	V	100	30	3.0	0.4	0.3
10035	12	V	100	31	2.8	0.4	0.1
10035	00	V	100	29	3.2	0.5	-0.5
10393	00	V	100	18	2.1	0.3	-0.3
10393	12	V	100	31	2.7	0.4	-0.5
10410	00	V	100	30	3.3	0.1	0.2
10410	12	V	100	31	3.6	-0.2	-0.4
10739	00	V	100	30	3.5	0.5	0.3
10739	12	V	100	31	3.0	0.0	-0.1
11035	12	V	100	31	3.1	-0.7	-0.3
11035	00	V	100	24	3.0	-0.1	0.2
12982	00	V	100	24	3.8	-0.6	-0.4
12982	12	V	100	31	3.0	-0.2	0.1
16080	00	V	100	29	3.9	0.4	0.4
16080	12	V	100	31	3.8	-0.3	0.1
16245	12	V	100	31	3.5	0.4	0.4
16245	00	V	100	23	3.5	0.2	-0.5
16320	12	V	100	27	4.6	0.3	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16320	00	V	100	25	4.4	-0.8	0.3
16429	00	V	100	24	3.4	0.0	0.6
16429	12	V	100	28	3.7	0.2	-0.2
16622	00	V	100	25	4.0	0.5	0.1
16754	00	V	100	19	4.5	0.5	-1.4
17607	12	V	100	19	4.5	1.3	-0.7
26435	12	V	100	15	3.2	-0.3	0.2
60018	00	V	100	21	3.7	0.0	0.7
60018	12	V	100	31	4.2	0.7	-1.1
7JUNA4	12	V	100	6	4.3	0.9	-2.6
7JUNA4	00	V	100	8	3.6	0.0	-0.5
ASDE09	12	V	100	2	3.7	1.9	-2.9
BPMWB2	12	V	100	5	3.0	0.8	0.0
BPMWB2	00	V	100	5	2.7	0.4	0.8
DBLK	12	V	100	8	3.0	0.9	-1.3
DBLK	00	V	100	1	1.7	-1.7	-0.4
FPUW5G	12	V	100	13	2.6	-0.6	-0.9
HTXUH4	12	V	100	7	3.5	0.4	0.6
HTXUH4	00	V	100	7	1.6	0.3	-0.6
JNKN7J	12	V	100	11	3.1	-0.9	0.4
JNKN7J	00	V	100	11	3.0	-0.4	1.9
KJJF9X	12	V	100	11	2.3	0.4	-0.1
KJJF9X	00	V	100	14	3.3	0.2	0.0
KMPLHP	12	V	100	11	3.9	-0.3	-0.1
KMPLHP	00	V	100	8	4.7	1.0	1.0
LRQE3	12	V	100	8	3.9	0.0	0.0
LRQE3	00	V	100	7	3.8	0.3	1.7
UXK5JT	12	V	100	2	2.1	-0.6	-0.1
UXK5JT	00	V	100	2	1.9	-1.6	-0.1
VKB4L5	12	V	100	7	3.2	0.2	0.1
VKB4L5	00	V	100	12	4.0	0.1	1.4
WDK38H	12	V	100	20	2.0	-0.1	-0.3
XKQLWQ	12	V	100	7	2.6	0.0	0.3
XQFJRG	12	V	100	3	3.6	2.5	1.6
XQFJRG	00	V	100	6	3.9	0.8	-0.5
YLV96W	12	V	100	3	2.4	1.1	0.1
YLV96W	00	V	100	3	2.1	0.4	-0.7
ZVQEQC	12	V	100	6	4.1	-0.2	-0.1

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

##### RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF  
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)  
 LEVEL : 500 HPA  
 AREA : 0 - 90N, 100W - 40E  
 PERIOD : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	500	31	10.6	-7.5
01001	00	Z	500	31	9.9	-7.3
01028	00	Z	500	31	2.8	-0.2
01028	12	Z	500	31	3.4	-0.2
01400	00	Z	500	26	79.1	78.3
01400	12	Z	500	26	76.4	75.2
01415	00	Z	500	21	5.0	3.5
01415	12	Z	500	31	4.7	2.4
02365	00	Z	500	31	3.8	1.3
02365	12	Z	500	31	2.7	0.9
02836	12	Z	500	32	2.6	0.5
02836	00	Z	500	31	2.6	1.1
02963	12	Z	500	30	3.4	2.2
02963	00	Z	500	31	4.3	3.6
03005	12	Z	500	31	3.3	-1.9
03005	00	Z	500	31	3.0	-1.2
03238	00	Z	500	31	3.4	1.8
03238	12	Z	500	4	2.5	-0.1
03808	12	Z	500	31	3.6	1.4
03808	00	Z	500	30	4.6	2.3
03918	00	Z	500	26	7.5	6.8
03918	12	Z	500	5	4.8	4.3
039184	00	Z	500	0	0.0	0.0
03953	12	Z	500	31	5.8	-2.1
03953	00	Z	500	31	3.9	-2.4
04018	00	Z	500	31	3.2	1.3
04018	12	Z	500	31	3.5	-0.4
04220	12	Z	500	30	7.5	2.0
04220	00	Z	500	30	3.1	1.9
04270	00	Z	500	31	6.3	-0.2
04270	12	Z	500	31	3.6	-0.9
04320	12	Z	500	31	3.2	0.1
04320	00	Z	500	31	3.3	0.7
043202	12	Z	500	0	0.0	0.0
04339	12	Z	500	31	12.2	-2.7
04339	00	Z	500	31	5.7	1.8
04360	00	Z	500	28	11.7	-10.7
04360	12	Z	500	27	11.1	-10.1
06011	00	Z	500	31	7.4	5.8

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	500	31	8.1	6.7
06260	12	Z	500	5	3.6	0.0
06260	00	Z	500	31	3.4	1.1
06610	00	Z	500	32	3.6	2.2
06610	12	Z	500	34	2.4	0.7
066100	00	Z	500	0	0.0	0.0
066105	12	Z	500	1	5.6	5.6
066105	00	Z	500	1	1.1	-1.1
07110	00	Z	500	31	8.3	-6.4
07110	12	Z	500	31	19.9	-1.6
07510	00	Z	500	31	5.2	0.3
07510	12	Z	500	31	5.5	3.3
07645	12	Z	500	31	4.8	-0.4
07645	00	Z	500	32	4.9	-1.8
07761	12	Z	500	31	5.4	-1.3
07761	00	Z	500	31	4.8	-3.1
08001	00	Z	500	31	4.0	2.4
08001	12	Z	500	31	4.1	2.8
08221	00	Z	500	31	6.1	5.2
08221	12	Z	500	31	6.5	5.5
082212	12	Z	500	0	0.0	0.0
08302	00	Z	500	31	5.7	-5.1
08302	12	Z	500	31	7.5	-7.0
08508	12	Z	500	31	7.2	6.7
08508	00	Z	500	28	6.2	5.5
08522	12	Z	500	31	7.1	6.6
10035	12	Z	500	31	13.0	12.5
10035	00	Z	500	33	13.4	13.1
10393	00	Z	500	19	3.0	1.9
10393	12	Z	500	31	2.7	0.3
10410	00	Z	500	31	2.5	0.4
10410	12	Z	500	31	3.9	-2.1
10739	00	Z	500	31	5.5	5.1
10739	12	Z	500	31	4.6	3.5
11035	12	Z	500	33	12.9	9.6
11035	00	Z	500	32	9.2	8.7
12982	00	Z	500	31	3.7	2.6
12982	12	Z	500	31	3.6	0.6
16080	00	Z	500	30	3.4	-1.4
16080	12	Z	500	31	4.5	-3.0
16245	12	Z	500	31	4.8	-3.6
16245	00	Z	500	30	3.9	-2.3
16320	12	Z	500	33	5.9	3.2

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16320	00	Z	500	31	5.6	3.1
16429	00	Z	500	27	4.7	3.2
16429	12	Z	500	31	4.2	2.0
16622	00	Z	500	31	11.1	10.4
16754	00	Z	500	27	6.1	4.1
17607	12	Z	500	30	5.4	5.0
26435	12	Z	500	15	2.4	0.1
60018	00	Z	500	23	3.9	3.2
60018	12	Z	500	31	4.9	3.9
7JUNA4	12	Z	500	8	7.1	5.4
7JUNA4	00	Z	500	11	9.0	6.2
ASDE09	12	Z	500	2	21.5	19.0
BPMWB2	12	Z	500	5	15.7	14.1
BPMWB2	00	Z	500	7	7.3	5.4
DBLK	12	Z	500	9	3.7	0.0
DBLK	00	Z	500	1	0.3	-0.3
FPUW5G	12	Z	500	13	10.5	9.4
HTXUH4	12	Z	500	7	4.9	3.4
HTXUH4	00	Z	500	7	6.7	2.5
JNKN7J	12	Z	500	14	40.0	39.7
JNKN7J	00	Z	500	12	37.5	37.1
KJFF9X	12	Z	500	11	7.0	6.1
KJFF9X	00	Z	500	14	8.4	-0.8
KMPLHP	12	Z	500	11	11.6	7.0
KMPLHP	00	Z	500	8	8.5	7.6
LRQE3	12	Z	500	8	36.3	35.0
LRQE3	00	Z	500	7	43.7	43.5
UXK5JT	12	Z	500	2	10.4	6.1
UXK5JT	00	Z	500	2	3.2	2.8
VKB4L5	12	Z	500	8	31.7	30.7
VKB4L5	00	Z	500	13	38.4	35.3
WDK38H	12	Z	500	21	6.4	-5.4
XKQLWQ	12	Z	500	8	19.7	19.3
XQFJRG	12	Z	500	3	18.3	-15.5
XQFJRG	00	Z	500	6	12.0	-11.8
YLV96W	12	Z	500	8	43.5	42.2
YLV96W	00	Z	500	8	41.3	39.2
ZVQEQC	12	Z	500	6	15.1	-2.3

**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 : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	500	31	2.1	-0.3	0.1
01001	00	V	500	30	2.5	0.1	0.1
01028	00	V	500	30	1.8	-0.2	0.0
01028	12	V	500	31	2.2	0.1	-0.5
01400	00	V	500	25	2.6	0.1	0.0
01400	12	V	500	26	2.9	0.0	0.2
01415	00	V	500	21	3.5	0.8	-0.6
01415	12	V	500	31	3.4	-0.6	0.7
02365	00	V	500	30	3.3	0.0	0.0
02365	12	V	500	31	3.2	-0.1	-0.1
02836	12	V	500	30	2.3	0.5	-0.2
02836	00	V	500	30	2.5	-0.1	0.1
02963	12	V	500	30	2.1	0.2	0.0
02963	00	V	500	30	2.8	-0.2	0.2
03005	12	V	500	31	3.0	0.3	-0.1
03005	00	V	500	30	2.8	0.1	-0.3
03238	00	V	500	30	3.2	0.2	-0.2
03238	12	V	500	4	2.8	1.3	0.3
03808	12	V	500	31	3.6	0.6	0.5
03808	00	V	500	29	3.2	0.2	0.0
03918	00	V	500	25	2.6	0.9	-0.4
03918	12	V	500	5	2.2	1.3	-0.2
039184	00	V	500	0	0.0	0.0	0.0
03953	12	V	500	31	3.4	-0.1	0.1
03953	00	V	500	30	2.6	0.0	0.3
04018	00	V	500	30	3.2	-0.1	-0.6
04018	12	V	500	31	3.4	-0.2	-0.2
04220	12	V	500	30	2.7	0.1	-0.2
04220	00	V	500	29	2.8	0.0	0.0
04270	00	V	500	30	3.0	0.1	0.5
04270	12	V	500	31	3.0	-0.1	0.7
04320	12	V	500	31	2.5	0.1	0.1
04320	00	V	500	30	2.8	1.3	-0.2
043202	12	V	500	0	0.0	0.0	0.0
04339	12	V	500	31	3.0	0.3	0.0
04339	00	V	500	30	2.5	-0.2	-0.1
04360	00	V	500	28	2.7	-0.4	0.3
04360	12	V	500	27	3.3	-0.1	-0.2
06011	00	V	500	30	3.0	0.5	-0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	500	31	3.0	0.6	0.4
06260	12	V	500	5	3.2	0.7	1.0
06260	00	V	500	30	2.8	0.1	0.1
06610	00	V	500	30	3.0	0.3	0.0
06610	12	V	500	31	3.5	1.0	0.4
066100	00	V	500	0	0.0	0.0	0.0
066105	12	V	500	1	3.4	-3.3	-0.8
066105	00	V	500	1	13.3	-0.4	13.3
07110	00	V	500	30	3.3	0.2	-0.3
07110	12	V	500	31	2.8	0.2	-0.2
07510	00	V	500	30	3.3	0.6	0.5
07510	12	V	500	31	2.4	0.1	0.4
07645	12	V	500	31	2.7	0.5	0.1
07645	00	V	500	30	2.5	0.1	0.0
07761	12	V	500	31	3.1	-0.6	0.1
07761	00	V	500	30	2.6	0.1	-0.1
08001	00	V	500	30	3.0	-0.1	0.5
08001	12	V	500	31	3.0	0.7	0.5
08221	00	V	500	30	2.8	0.5	0.2
08221	12	V	500	31	2.7	-0.3	0.3
082212	12	V	500	0	0.0	0.0	0.0
08302	00	V	500	30	2.6	-0.4	-0.1
08302	12	V	500	31	2.4	0.9	-0.5
08508	12	V	500	31	2.8	0.4	-0.2
08508	00	V	500	28	2.3	0.4	0.0
08522	12	V	500	31	2.4	0.1	-0.2
10035	12	V	500	31	2.8	-0.5	0.0
10035	00	V	500	30	2.7	0.2	0.2
10393	00	V	500	18	2.7	0.1	0.2
10393	12	V	500	31	2.8	0.8	0.1
10410	00	V	500	30	2.3	0.3	0.1
10410	12	V	500	31	3.1	0.0	0.0
10739	00	V	500	30	3.2	0.2	-0.3
10739	12	V	500	31	3.6	0.2	-0.7
11035	12	V	500	31	3.8	-0.6	0.0
11035	00	V	500	30	3.6	0.0	1.1
12982	00	V	500	30	3.3	0.2	0.3
12982	12	V	500	31	2.9	0.3	0.1
16080	00	V	500	29	3.2	0.0	0.1
16080	12	V	500	31	2.6	0.3	0.4
16245	12	V	500	31	3.0	0.7	0.1
16245	00	V	500	29	2.7	0.2	0.2
16320	12	V	500	30	3.3	0.4	-0.3



RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16320	00	V	500	30	2.9	0.2	0.2
16429	00	V	500	25	2.5	0.4	-0.1
16429	12	V	500	29	2.5	0.5	0.6
16622	00	V	500	30	2.7	0.2	0.1
16754	00	V	500	25	3.1	-0.1	-0.7
17607	12	V	500	29	2.0	0.0	-0.1
26435	12	V	500	15	1.8	0.5	0.5
60018	00	V	500	23	2.4	0.4	-0.2
60018	12	V	500	31	2.6	-0.3	-0.2
7JUNA4	12	V	500	7	2.4	0.4	-0.1
7JUNA4	00	V	500	11	1.7	-0.3	-0.1
ASDE09	12	V	500	2	1.8	-0.7	1.0
BPMWB2	12	V	500	5	1.7	0.8	0.4
BPMWB2	00	V	500	7	1.8	-0.5	-0.2
DBLK	12	V	500	8	3.8	-0.6	-0.9
DBLK	00	V	500	1	2.2	2.1	0.8
FPUW5G	12	V	500	13	3.6	0.4	0.9
HTXUH4	12	V	500	7	2.5	0.4	0.4
HTXUH4	00	V	500	7	3.5	0.8	-1.1
JNKN7J	12	V	500	14	2.8	0.0	-0.3
JNKN7J	00	V	500	12	3.3	0.1	0.4
KJJF9X	12	V	500	11	2.5	1.2	-0.4
KJJF9X	00	V	500	14	2.4	-0.4	0.0
KMPLHP	12	V	500	11	3.7	-0.6	1.1
KMPLHP	00	V	500	8	4.3	-1.2	-2.0
LRYQE3	12	V	500	8	4.2	-0.2	-2.5
LRYQE3	00	V	500	7	2.2	0.3	0.1
UXK5JT	12	V	500	2	1.7	-0.7	0.1
UXK5JT	00	V	500	2	0.4	-0.1	0.3
VKB4L5	12	V	500	8	2.1	-0.7	0.3
VKB4L5	00	V	500	12	2.7	-0.5	0.7
WDK38H	12	V	500	21	1.9	0.6	-0.1
XKQLWQ	12	V	500	8	2.0	0.6	0.0
XQFJRG	12	V	500	3	2.0	1.0	0.6
XQFJRG	00	V	500	6	4.0	0.7	1.2
YLV96W	12	V	500	8	2.1	-0.2	-0.9
YLV96W	00	V	500	8	2.4	0.3	-0.6
ZVQEQC	12	V	500	6	2.6	0.2	-0.2

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF  
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)  
 LEVEL : 850 HPA  
 AREA : 0 - 90N, 100W - 40E  
 PERIOD : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	850	31	8.3	-7.5
01001	00	Z	850	31	8.1	-7.1
01028	00	Z	850	31	2.6	0.3
01028	12	Z	850	31	3.0	0.2
01400	00	Z	850	27	77.7	76.8
01400	12	Z	850	26	75.6	74.3
01415	00	Z	850	21	4.0	3.2
01415	12	Z	850	31	4.0	3.2
02365	00	Z	850	31	2.7	1.6
02365	12	Z	850	31	2.4	1.2
02836	12	Z	850	30	2.8	2.1
02836	00	Z	850	31	3.2	2.2
02963	12	Z	850	30	3.3	2.5
02963	00	Z	850	31	3.3	2.8
03005	12	Z	850	31	2.7	-1.6
03005	00	Z	850	31	3.3	-1.8
03238	00	Z	850	31	3.1	1.7
03238	12	Z	850	4	3.6	3.0
03808	12	Z	850	31	3.0	1.2
03808	00	Z	850	30	2.9	1.6
03918	00	Z	850	26	6.2	5.7
03918	12	Z	850	5	4.7	4.6
039184	00	Z	850	1	84.3	-84.3
03953	12	Z	850	31	3.6	-2.0
03953	00	Z	850	31	3.9	-1.4
04018	00	Z	850	31	2.7	0.4
04018	12	Z	850	31	2.1	-0.6
04220	12	Z	850	30	7.3	1.6
04220	00	Z	850	30	2.4	1.1
04270	00	Z	850	31	3.2	-0.2
04270	12	Z	850	31	4.4	-0.8
04320	12	Z	850	31	2.8	-0.6
04320	00	Z	850	31	3.4	-0.1
043202	12	Z	850	1	7.7	-7.7
04339	12	Z	850	31	14.0	-3.4
04339	00	Z	850	31	4.9	-0.3
04360	00	Z	850	28	10.3	-9.5
04360	12	Z	850	27	10.0	-9.3
06011	00	Z	850	31	5.6	5.2

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	850	31	5.5	4.8
06260	12	Z	850	5	1.6	-1.5
06260	00	Z	850	31	2.9	1.5
06610	00	Z	850	32	2.7	1.7
06610	12	Z	850	34	2.6	1.2
066100	00	Z	850	1	0.0	0.0
066105	12	Z	850	1	0.5	0.5
066105	00	Z	850	1	2.3	-2.3
07110	00	Z	850	30	3.6	-2.9
07110	12	Z	850	31	3.5	-1.5
07510	00	Z	850	31	3.7	2.5
07510	12	Z	850	31	5.6	4.8
07645	12	Z	850	31	2.7	-0.6
07645	00	Z	850	32	3.1	-0.2
07761	12	Z	850	31	2.7	-1.0
07761	00	Z	850	31	2.7	-0.7
08001	00	Z	850	31	2.6	0.6
08001	12	Z	850	31	2.4	1.2
08221	00	Z	850	31	4.1	3.2
08221	12	Z	850	31	4.0	3.4
082212	12	Z	850	1	11.3	-11.3
08302	00	Z	850	31	8.1	-7.8
08302	12	Z	850	31	8.6	-8.4
08508	12	Z	850	31	4.2	3.0
08508	00	Z	850	28	4.4	3.7
08522	12	Z	850	31	3.9	3.4
10035	12	Z	850	31	13.0	12.6
10035	00	Z	850	33	12.5	12.3
10393	00	Z	850	19	1.6	0.5
10393	12	Z	850	31	2.5	-0.6
10410	00	Z	850	31	2.1	-0.9
10410	12	Z	850	31	2.7	-1.0
10739	00	Z	850	31	3.5	3.0
10739	12	Z	850	31	4.5	3.8
11035	12	Z	850	33	12.4	10.4
11035	00	Z	850	32	9.6	8.7
12982	00	Z	850	31	2.7	1.5
12982	12	Z	850	31	2.3	-0.2
16080	00	Z	850	30	4.3	-2.7
16080	12	Z	850	31	4.7	-3.8
16245	12	Z	850	31	4.4	-3.8
16245	00	Z	850	30	4.0	-3.3
16320	12	Z	850	33	5.1	2.5

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16320	00	Z	850	31	4.7	1.2
16429	00	Z	850	27	3.7	1.0
16429	12	Z	850	31	2.6	-0.3
16622	00	Z	850	31	11.4	10.4
16754	00	Z	850	27	3.2	-0.2
17607	12	Z	850	30	2.7	1.9
26435	12	Z	850	15	1.2	0.1
60018	00	Z	850	23	3.0	-1.4
60018	12	Z	850	31	2.3	0.8
7JUNA4	12	Z	850	9	5.8	2.1
7JUNA4	00	Z	850	11	8.5	4.1
ASDE09	12	Z	850	2	24.2	19.9
BPMWB2	12	Z	850	5	5.4	4.4
BPMWB2	00	Z	850	7	4.4	1.6
DBLK	12	Z	850	9	2.1	0.3
DBLK	00	Z	850	1	1.2	1.2
FPUW5G	12	Z	850	13	7.9	7.3
HTXUH4	12	Z	850	7	2.2	-0.3
HTXUH4	00	Z	850	7	4.4	1.6
JNKN7J	12	Z	850	15	40.1	39.8
JNKN7J	00	Z	850	13	39.6	39.4
KJF9X	12	Z	850	12	7.1	4.6
KJF9X	00	Z	850	14	4.3	1.5
KMPLHP	12	Z	850	11	6.6	4.0
KMPLHP	00	Z	850	8	10.0	7.5
LRQE3	12	Z	850	8	39.0	38.6
LRQE3	00	Z	850	7	46.2	46.0
UXK5JT	12	Z	850	2	9.6	8.2
UXK5JT	00	Z	850	2	7.0	6.9
VKB4L5	12	Z	850	8	30.1	29.6
VKB4L5	00	Z	850	13	34.5	32.2
WDK38H	12	Z	850	21	6.3	-5.6
XKQLWQ	12	Z	850	8	16.2	15.1
XQFJRG	12	Z	850	3	17.3	-16.3
XQFJRG	00	Z	850	6	14.4	-13.9
YLV96W	12	Z	850	8	44.8	43.1
YLV96W	00	Z	850	8	44.5	42.1
ZVQEQC	12	Z	850	6	15.7	-5.1

**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 : OCT 2020  
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	850	31	3.3	-0.3	1.0
01001	00	V	850	30	3.3	-0.4	1.3
01028	00	V	850	30	2.8	0.4	0.1
01028	12	V	850	31	3.1	0.0	-0.2
01400	00	V	850	26	2.3	0.5	-0.6
01400	12	V	850	26	2.4	0.3	0.0
01415	00	V	850	21	3.8	0.2	-0.8
01415	12	V	850	31	4.7	1.4	0.6
02365	00	V	850	30	2.5	-0.3	-0.2
02365	12	V	850	31	3.0	0.3	-0.2
02836	12	V	850	30	2.5	0.0	-0.6
02836	00	V	850	30	2.2	0.1	-0.3
02963	12	V	850	30	2.4	0.1	0.0
02963	00	V	850	30	3.1	0.2	0.3
03005	12	V	850	31	2.7	0.0	-0.2
03005	00	V	850	30	2.6	0.2	-0.2
03238	00	V	850	30	2.2	0.2	0.6
03238	12	V	850	4	2.0	-0.3	0.2
03808	12	V	850	31	3.3	0.8	-0.4
03808	00	V	850	29	2.2	0.2	-0.1
03918	00	V	850	25	2.5	-0.4	0.1
03918	12	V	850	5	2.2	0.1	0.3
039184	00	V	850	1	27.2	11.7	24.5
03953	12	V	850	31	2.8	0.0	0.9
03953	00	V	850	30	2.9	0.2	-0.2
04018	00	V	850	30	3.0	0.3	-0.3
04018	12	V	850	31	3.2	-0.1	0.6
04220	12	V	850	30	2.5	0.2	0.4
04220	00	V	850	29	3.7	-0.4	0.4
04270	00	V	850	30	4.1	0.6	-0.1
04270	12	V	850	31	3.7	-0.6	-0.5
04320	12	V	850	31	3.2	0.4	0.9
04320	00	V	850	30	3.3	-0.2	1.2
043202	12	V	850	1	7.6	-2.7	7.1
04339	12	V	850	31	3.7	0.4	-0.9
04339	00	V	850	30	3.1	-0.5	-0.5
04360	00	V	850	28	6.0	1.9	0.7
04360	12	V	850	27	4.9	2.0	0.3
06011	00	V	850	30	2.5	0.1	-0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	850	31	3.3	-0.4	-0.6
06260	12	V	850	5	3.6	-0.7	-1.8
06260	00	V	850	30	2.7	-0.4	-0.1
06610	00	V	850	30	3.1	0.4	0.3
06610	12	V	850	31	3.3	0.4	-0.1
066100	00	V	850	1	29.9	23.0	-19.1
066105	12	V	850	1	4.0	1.3	3.8
066105	00	V	850	1	2.0	1.2	1.6
07110	00	V	850	29	2.9	-0.3	0.0
07110	12	V	850	31	2.4	-0.4	0.7
07510	00	V	850	30	3.3	0.6	0.3
07510	12	V	850	31	3.5	0.2	0.6
07645	12	V	850	31	2.8	-0.2	-0.4
07645	00	V	850	30	3.9	-1.3	1.0
07761	12	V	850	31	3.3	-0.5	-0.1
07761	00	V	850	30	2.0	-0.1	-0.5
08001	00	V	850	30	3.2	0.1	-0.1
08001	12	V	850	31	2.8	0.2	0.4
08221	00	V	850	30	3.6	1.0	0.4
08221	12	V	850	31	3.5	0.3	0.3
082212	12	V	850	1	4.4	4.3	-1.0
08302	00	V	850	30	2.7	0.1	0.3
08302	12	V	850	31	2.5	0.1	0.4
08508	12	V	850	31	2.7	0.2	-0.6
08508	00	V	850	28	2.9	0.4	0.2
08522	12	V	850	31	2.4	-0.3	0.3
10035	12	V	850	31	2.8	-0.6	0.0
10035	00	V	850	30	2.6	0.3	-0.4
10393	00	V	850	18	2.6	-0.1	0.5
10393	12	V	850	31	3.3	0.9	0.3
10410	00	V	850	30	2.5	0.0	-0.4
10410	12	V	850	31	2.3	0.5	-0.1
10739	00	V	850	30	2.6	0.2	0.0
10739	12	V	850	31	3.8	0.5	0.2
11035	12	V	850	31	3.0	-0.1	0.0
11035	00	V	850	30	3.0	0.0	-0.8
12982	00	V	850	30	2.7	-0.1	-0.1
12982	12	V	850	31	2.8	-0.1	-0.6
16080	00	V	850	29	3.2	-0.6	-0.2
16080	12	V	850	31	3.4	-0.4	-0.7
16245	12	V	850	31	3.0	-0.2	-0.3
16245	00	V	850	29	3.5	0.7	0.2
16320	12	V	850	30	2.5	-0.2	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16320	00	V	850	30	3.2	0.3	-0.6
16429	00	V	850	25	2.8	0.0	0.0
16429	12	V	850	29	2.7	-0.1	-0.3
16622	00	V	850	30	2.6	0.1	-0.1
16754	00	V	850	26	3.7	-0.3	-0.3
17607	12	V	850	30	2.8	0.3	0.6
26435	12	V	850	15	2.2	0.1	-0.2
60018	00	V	850	23	3.3	-0.4	0.6
60018	12	V	850	31	3.6	0.1	-0.1
7JUNA4	12	V	850	9	2.2	1.3	0.3
7JUNA4	00	V	850	11	2.3	-0.2	-0.1
ASDE09	12	V	850	2	3.4	0.6	2.7
BPMWB2	12	V	850	5	1.6	0.4	-0.3
BPMWB2	00	V	850	7	1.7	0.2	0.2
DBLK	12	V	850	8	3.3	-0.5	-0.9
DBLK	00	V	850	1	2.8	-2.6	-0.9
FPUW5G	12	V	850	13	3.3	0.0	-0.1
HTXUH4	12	V	850	7	3.9	1.8	0.7
HTXUH4	00	V	850	7	4.1	-1.6	-1.1
JNKN7J	12	V	850	15	3.6	-0.3	-1.0
JNKN7J	00	V	850	13	3.0	-0.8	0.8
KJJF9X	12	V	850	12	2.4	0.1	0.1
KJJF9X	00	V	850	14	2.1	-0.2	0.3
KMPLHP	12	V	850	11	2.7	-0.1	-1.0
KMPLHP	00	V	850	8	3.0	-1.0	1.3
LRQE3	12	V	850	8	3.0	1.4	-1.0
LRQE3	00	V	850	7	2.3	0.7	-0.4
UXK5JT	12	V	850	2	1.8	-0.5	0.1
UXK5JT	00	V	850	2	2.4	-1.2	-1.6
VKB4L5	12	V	850	8	2.9	0.0	-0.1
VKB4L5	00	V	850	12	2.4	-0.3	0.2
WDK38H	12	V	850	21	3.2	1.6	0.1
XKQLWQ	12	V	850	8	2.8	0.1	-1.6
XQFJRG	12	V	850	3	2.4	1.9	0.6
XQFJRG	00	V	850	6	3.0	0.2	-0.3
YLV96W	12	V	850	8	2.1	0.3	-0.7
YLV96W	00	V	850	8	2.2	-0.7	0.0
ZVQEQC	12	V	850	6	2.2	0.1	1.3

**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 : OCT 2020  
 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	2083	0	0.3	-0.2	0.4
0640046	99	P	SUR	60	-4	694	0	0.3	-0.2	0.4
1300001	99	P	SUR	11	-23	600	0	0.3	0.1	0.3
1300130	99	P	SUR	28	-16	739	0	0.3	0.2	0.4
1300131	99	P	SUR	28	-17	739	0	0.4	0.2	0.4
1301569	99	P	SUR	24	-47	742	0	0.3	-0.5	0.6
1301603	99	P	SUR	34	-58	742	0	0.5	-0.1	0.5
1301608	99	P	SUR	29	-55	743	0	0.8	-0.7	1.1
1301610	99	P	SUR	36	-68	739	9	2.2	0.2	2.2
1301612	99	P	SUR	32	-42	738	0	0.3	-0.2	0.4
1301619	99	P	SUR	28	-41	742	0	0.3	0.2	0.4
1301620	99	P	SUR	20	-65	743	0	0.3	0.2	0.4
1501531	99	P	SUR	32	-47	23	0	0.4	-0.8	0.9
1701631	99	P	SUR	18	-56	743	0	0.4	0.3	0.5
1701632	99	P	SUR	18	-56	743	0	0.4	0.1	0.4
1701633	99	P	SUR	19	-55	743	0	0.4	0.6	0.7
1701634	99	P	SUR	15	-56	742	0	0.4	-0.1	0.5
1701635	99	P	SUR	16	-57	594	0	0.5	0.1	0.5
2501538	99	P	SUR	85	-29	709	0	1.0	-0.1	1.0
2501543	99	P	SUR	81	1	745	1	0.3	-0.3	0.5
2501544	99	P	SUR	79	-4	744	0	0.6	0.1	0.6
4100040	99	P	SUR	15	-53	4412	0	0.4	-0.3	0.5
4100043	99	P	SUR	21	-65	4459	0	0.3	0.2	0.4
4100044	99	P	SUR	22	-59	4325	0	0.3	0.0	0.3
4100046	99	P	SUR	24	-68	4323	0	0.3	0.1	0.3
4100048	99	P	SUR	32	-70	4334	0	0.4	-0.0	0.4
4100049	99	P	SUR	27	-63	4316	0	0.3	-0.2	0.3
4100052	99	P	SUR	18	-65	4394	0	0.4	-1.1	1.2
4100053	99	P	SUR	18	-66	4428	0	0.4	-1.0	1.0
4100056	99	P	SUR	18	-65	4400	0	0.4	-1.0	1.0
4100139	99	P	SUR	20	-38	614	0	0.3	-0.1	0.3
4100300	99	P	SUR	16	-57	742	0	0.4	0.0	0.4
4101531	99	P	SUR	28	-28	740	0	0.3	0.4	0.5
4101557	99	P	SUR	27	-59	742	0	0.3	0.1	0.3
4101560	99	P	SUR	19	-32	740	0	0.3	0.4	0.5
4101564	99	P	SUR	26	-46	737	0	0.3	-0.1	0.4



DRIFTER MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4101565	99	P	SUR	30	-55	741	0	0.4	0.1	0.4
4101567	99	P	SUR	32	-40	742	0	0.3	0.4	0.5
4101570	99	P	SUR	27	-69	740	0	0.3	0.1	0.3
4101573	99	P	SUR	32	-49	740	0	0.4	0.1	0.4
4101574	99	P	SUR	31	-39	743	0	0.4	0.3	0.5
4101598	99	P	SUR	18	-65	17	0	0.6	0.2	0.6
4101609	99	P	SUR	36	-18	743	0	0.3	0.2	0.3
4101613	99	P	SUR	30	-25	743	0	0.3	0.4	0.5
4101614	99	P	SUR	30	-20	743	0	0.4	-0.0	0.4
4101616	99	P	SUR	37	-24	743	1	0.3	-0.0	0.3
4101617	99	P	SUR	26	-28	743	0	0.3	0.4	0.5
4101618	99	P	SUR	32	-30	743	0	0.3	0.1	0.3
4101621	99	P	SUR	35	-34	743	0	0.3	0.2	0.4
4101622	99	P	SUR	64	-2	693	0	0.3	0.1	0.3
4101627	99	P	SUR	57	-54	743	0	0.5	-0.1	0.5
4101630	99	P	SUR	42	-59	743	0	0.4	0.1	0.4
4101652	99	P	SUR	63	-17	255	0	0.4	-0.2	0.4
4101653	99	P	SUR	63	1	743	0	0.3	-0.3	0.4
4101655	99	P	SUR	62	1	743	0	0.3	-0.0	0.3
4101656	99	P	SUR	62	-19	743	0	0.3	0.0	0.3
4101657	99	P	SUR	63	-8	743	0	0.3	-0.2	0.3
4101658	99	P	SUR	58	-28	743	0	0.4	-0.1	0.5
4101659	99	P	SUR	70	20	743	0	0.3	0.0	0.3
4101661	99	P	SUR	68	7	390	0	0.8	0.2	0.8
4101662	99	P	SUR	70	32	743	0	0.3	0.0	0.3
4101663	99	P	SUR	40	-49	741	0	0.4	0.1	0.4
4101664	99	P	SUR	65	-32	743	0	0.5	0.2	0.5
4101669	99	P	SUR	25	-57	743	0	0.3	-0.0	0.3
4101690	99	P	SUR	45	-14	648	0	0.4	0.1	0.4
4101696	99	P	SUR	26	-54	743	0	0.4	-0.1	0.5
4101698	99	P	SUR	13	-60	739	0	1.0	-0.8	1.3
4101699	99	P	SUR	13	-61	742	0	0.4	-1.0	1.1
4101702	99	P	SUR	35	-69	696	15	3.1	-1.1	3.3
4101707	99	P	SUR	31	-26	743	0	0.4	-0.3	0.4
4101708	99	P	SUR	33	-49	743	7	2.9	-1.4	3.2
4101714	99	P	SUR	29	-32	743	0	0.3	-0.2	0.4
4101715	99	P	SUR	36	-41	665	0	1.6	-0.2	1.6
4101717	99	P	SUR	38	-62	743	5	2.1	-0.7	2.2
4101718	99	P	SUR	26	-44	743	0	0.3	-0.2	0.3
4101719	99	P	SUR	32	-46	743	0	0.5	-0.0	0.5
4101720	99	P	SUR	33	-35	739	0	0.4	0.5	0.6
4101721	99	P	SUR	31	-52	205	102	3.1	6.4	7.1
4101742	99	P	SUR	32	-46	743	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
4101752	99	P	SUR	45	-47	741	0	0.5	-0.0	0.5
4101753	99	P	SUR	27	-39	743	0	0.3	0.1	0.3
4101755	99	P	SUR	24	-44	743	0	0.3	0.0	0.3
4101781	99	P	SUR	39	-49	1481	0	0.5	-0.0	0.5
4101782	99	P	SUR	28	-65	1470	0	0.3	0.2	0.3
4101783	99	P	SUR	27	-62	1464	0	0.3	0.1	0.3
4101784	99	P	SUR	30	-63	1466	0	0.3	0.3	0.4
4101785	99	P	SUR	30	-61	1432	0	0.6	0.4	0.7
4101806	99	P	SUR	36	-61	428	0	1.0	-0.0	1.0
4101807	99	P	SUR	30	-60	1476	4	0.7	0.3	0.8
4101808	99	P	SUR	27	-62	1093	0	0.3	0.3	0.5
4101809	99	P	SUR	29	-63	610	0	0.3	0.4	0.5
4101810	99	P	SUR	30	-62	1480	0	0.4	0.1	0.5
4101815	99	P	SUR	63	-13	255	0	0.3	0.2	0.4
4101816	99	P	SUR	36	-60	423	0	0.6	0.1	0.6
4101817	99	P	SUR	36	-60	411	0	0.8	-0.0	0.8
4101821	99	P	SUR	36	-60	17	0	0.3	-0.4	0.5
4101822	99	P	SUR	37	-60	28	0	0.7	-0.4	0.8
4101823	99	P	SUR	37	-62	19	0	0.5	-0.3	0.6
4101824	99	P	SUR	36	-63	18	0	0.6	-0.7	0.9
4101825	99	P	SUR	35	-64	21	0	0.5	-0.1	0.5
41040	99	P	SUR	15	-53	1092	0	0.4	-0.3	0.5
41043	99	P	SUR	21	-65	1116	0	0.4	0.2	0.5
41044	99	P	SUR	22	-59	1095	0	0.4	0.0	0.4
41046	99	P	SUR	24	-68	2960	0	0.3	0.1	0.3
41048	99	P	SUR	32	-70	2986	0	0.4	-0.0	0.4
41049	99	P	SUR	28	-63	2943	0	0.3	-0.2	0.4
41052	99	P	SUR	18	-65	2203	0	0.4	-1.1	1.1
41053	99	P	SUR	19	-66	1701	0	0.4	-1.0	1.0
41056	99	P	SUR	18	-66	1753	0	0.4	-1.0	1.1
4200059	99	P	SUR	15	-67	2452	0	0.4	-0.0	0.5
4200060	99	P	SUR	16	-63	4387	0	0.4	-0.1	0.4
4200085	99	P	SUR	18	-67	4350	0	0.4	-0.8	0.9
4201528	99	P	SUR	42	-56	1438	0	0.5	0.2	0.6
4201530	99	P	SUR	39	-47	1444	0	0.9	2.2	2.4
42059	99	P	SUR	15	-68	586	0	0.5	-0.1	0.5
42060	99	P	SUR	16	-63	1096	0	0.4	-0.1	0.4
42085	99	P	SUR	18	-67	2479	0	0.4	-0.9	1.0
4400005	99	P	SUR	43	-69	100	0	0.5	0.6	0.7
4400008	99	P	SUR	41	-69	4436	0	0.4	0.5	0.7
4400032	99	P	SUR	44	-69	738	0	0.5	0.2	0.6
4400033	99	P	SUR	44	-69	726	0	0.5	-1.4	1.5
4400034	99	P	SUR	44	-68	735	0	0.5	0.7	0.9

DRIFTER MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4400037	99	P	SUR	43	-68	726	0	0.4	-0.2	0.5
44005	99	P	SUR	43	-69	277	0	0.4	0.6	0.7
4400777	99	P	SUR	35	-66	743	0	0.4	-0.0	0.4
44008	99	P	SUR	41	-69	2949	0	0.4	0.5	0.7
4400857	99	P	SUR	27	-43	743	0	0.3	0.1	0.3
4401531	99	P	SUR	20	-39	742	0	0.3	0.2	0.3
4401539	99	P	SUR	29	-55	742	0	2.6	-0.3	2.7
4401540	99	P	SUR	35	-37	273	64	4.0	1.9	4.5
4401541	99	P	SUR	30	-39	742	0	0.3	-0.5	0.5
4401542	99	P	SUR	26	-67	742	0	0.3	0.3	0.4
4401551	99	P	SUR	24	-42	675	0	0.3	0.1	0.3
4401557	99	P	SUR	29	-48	743	0	0.3	0.1	0.3
4401562	99	P	SUR	29	-57	743	0	0.7	-0.7	1.0
4401563	99	P	SUR	32	-34	743	0	0.3	-0.4	0.5
4401565	99	P	SUR	63	-16	743	0	0.5	0.2	0.5
4401569	99	P	SUR	55	-22	743	0	0.4	0.0	0.5
4401572	99	P	SUR	31	-25	728	0	0.4	0.3	0.5
4401574	99	P	SUR	60	-53	743	0	0.6	-0.1	0.6
4401576	99	P	SUR	34	-18	493	1	2.2	-0.3	2.2
4401577	99	P	SUR	39	-28	741	0	0.3	0.2	0.4
4401578	99	P	SUR	23	-35	743	0	0.3	-0.0	0.3
4401580	99	P	SUR	41	-17	743	0	0.4	0.2	0.5
4401581	99	P	SUR	37	-42	743	0	0.4	0.4	0.6
4401582	99	P	SUR	42	-23	739	0	0.4	0.2	0.4
4401750	99	P	SUR	65	-5	615	0	0.3	-1.3	1.4
4401751	99	P	SUR	71	23	724	0	0.4	-0.2	0.4
4401827	99	P	SUR	44	-64	447	0	0.4	0.2	0.4
4401828	99	P	SUR	51	-36	695	0	0.5	0.3	0.6
4401829	99	P	SUR	48	-27	735	0	0.4	0.1	0.4
4401831	99	P	SUR	40	-35	710	0	0.7	1.2	1.3
4401837	99	P	SUR	42	-30	743	0	0.4	0.1	0.4
4401838	99	P	SUR	46	-19	735	0	0.5	0.4	0.6
4401840	99	P	SUR	52	-34	700	0	0.4	0.7	0.8
4401848	99	P	SUR	44	-58	740	0	0.5	0.0	0.5
4401850	99	P	SUR	45	-58	739	0	0.5	0.1	0.5
4401851	99	P	SUR	40	-65	738	3	2.5	0.3	2.5
4401854	99	P	SUR	28	-62	741	0	0.3	-0.5	0.6
4401870	99	P	SUR	25	-37	743	0	0.3	0.0	0.3
4401872	99	P	SUR	24	-42	743	0	0.4	-0.0	0.4
4401873	99	P	SUR	19	-39	743	0	0.3	-0.1	0.3
4401874	99	P	SUR	24	-31	743	0	0.2	0.2	0.3
4401894	99	P	SUR	56	-27	717	0	0.4	0.1	0.5
4402603	99	P	SUR	54	-55	742	0	0.5	0.2	0.5

DRIFTER MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4402604	99	P	SUR	51	-50	741	0	0.5	-0.0	0.5
4402605	99	P	SUR	52	-50	742	0	0.4	0.2	0.4
4402606	99	P	SUR	52	-50	743	0	0.4	0.2	0.4
4402607	99	P	SUR	49	-50	743	0	0.4	0.0	0.4
4402608	99	P	SUR	52	-50	741	0	0.4	0.1	0.4
4402609	99	P	SUR	53	-52	741	0	0.4	0.1	0.4
4402610	99	P	SUR	50	-49	743	0	0.4	0.2	0.5
4402657	99	P	SUR	45	-63	743	0	0.3	-0.9	1.0
4402659	99	P	SUR	45	-58	743	0	0.4	0.5	0.7
4402660	99	P	SUR	46	-51	742	0	0.5	0.3	0.6
4402661	99	P	SUR	71	-64	742	4	2.1	-0.0	2.1
4402662	99	P	SUR	44	-63	743	0	0.4	0.6	0.7
4402663	99	P	SUR	44	-61	743	0	0.4	0.0	0.4
4402664	99	P	SUR	46	-51	686	0	0.4	0.5	0.7
4402665	99	P	SUR	45	-56	743	0	0.5	0.4	0.6
4402687	99	P	SUR	38	-38	717	0	0.4	0.1	0.4
44032	99	P	SUR	44	-69	1358	0	0.5	0.2	0.6
44033	99	P	SUR	44	-69	1335	0	0.5	-1.4	1.5
44034	99	P	SUR	44	-68	1354	0	0.6	0.7	0.9
44037	99	P	SUR	44	-68	1335	0	0.4	-0.2	0.5
44078	99	P	SUR	60	-40	3987	0	0.6	-0.9	1.1
44137	99	P	SUR	42	-62	1260	0	0.5	-0.1	0.5
44139	99	P	SUR	44	-57	1299	0	0.5	-0.2	0.5
44150	99	P	SUR	43	-64	1264	0	0.5	-0.2	0.5
4700546	99	P	SUR	36	-54	697	11	3.3	-1.0	3.4
4801625	99	P	SUR	86	-61	719	0	0.4	-0.1	0.4
4801722	99	P	SUR	81	20	182	0	1.0	-0.1	1.0
4801723	99	P	SUR	82	32	170	0	1.8	-0.3	1.9
4801725	99	P	SUR	60	11	285	20	1.7	-0.2	1.7
4801727	99	P	SUR	60	11	289	19	2.0	-0.5	2.0
6100001	99	P	SUR	43	8	736	0	0.4	0.3	0.5
6100002	99	P	SUR	42	5	738	0	0.4	0.0	0.4
6100196	99	P	SUR	42	4	718	0	0.6	0.3	0.7
6100197	99	P	SUR	40	4	739	0	0.4	0.4	0.6
6100198	99	P	SUR	37	-2	738	0	0.4	0.4	0.5
6100280	99	P	SUR	41	1	738	0	0.4	0.3	0.5
6100281	99	P	SUR	40	0	737	0	0.5	0.5	0.7
6100417	99	P	SUR	38	0	739	0	0.3	0.5	0.6
6100430	99	P	SUR	40	2	738	0	0.4	0.2	0.4
6101003	99	P	SUR	40	25	146	0	0.6	0.7	0.9
6101007	99	P	SUR	36	25	197	0	0.5	-0.3	0.6
6101008	99	P	SUR	37	22	223	0	0.6	-0.4	0.7
6101009	99	P	SUR	35	25	161	0	0.5	-0.9	1.0

DRIFTER MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6200024	99	P	SUR	44	-3	714	0	0.6	0.0	0.6
6200025	99	P	SUR	44	-6	734	0	0.5	0.4	0.6
6200082	99	P	SUR	44	-8	729	0	0.5	0.1	0.5
6200083	99	P	SUR	43	-9	739	0	0.5	0.2	0.5
6200084	99	P	SUR	42	-9	727	0	0.4	0.4	0.6
6200085	99	P	SUR	36	-7	718	0	0.3	0.5	0.6
6200091	99	P	SUR	53	-5	741	0	0.4	-0.2	0.5
6200092	99	P	SUR	51	-11	204	0	0.6	-0.6	0.9
6200093	99	P	SUR	55	-10	741	0	0.4	-0.2	0.5
6200094	99	P	SUR	52	-7	741	0	0.4	-0.1	0.4
6200095	99	P	SUR	53	-16	740	0	0.5	-0.2	0.5
62001	99	P	SUR	45	-5	1996	0	0.4	-0.0	0.4
6200199	99	P	SUR	40	-9	698	0	0.3	-0.6	0.7
6200200	99	P	SUR	36	-8	706	5	2.5	-1.9	3.2
6201030	99	P	SUR	44	-4	585	0	0.5	0.0	0.5
6201065	99	P	SUR	54	7	569	0	0.4	0.8	0.9
6201066	99	P	SUR	55	7	741	0	0.4	0.2	0.4
62023	99	P	SUR	51	-8	2196	0	0.5	-0.3	0.6
6202613	99	P	SUR	23	-39	743	0	0.3	0.0	0.3
6202614	99	P	SUR	24	-43	743	0	0.9	-0.4	1.0
6202623	99	P	SUR	65	3	743	0	0.3	-0.1	0.3
6202624	99	P	SUR	59	-27	743	0	0.5	-0.1	0.5
6202625	99	P	SUR	49	-8	744	0	0.4	0.1	0.4
6202626	99	P	SUR	51	-13	743	0	0.5	0.0	0.5
6202627	99	P	SUR	55	-30	743	0	0.5	-0.1	0.5
6202628	99	P	SUR	62	-30	743	0	0.5	-0.0	0.5
6202629	99	P	SUR	44	-41	1219	0	0.5	-1.4	1.5
6202630	99	P	SUR	49	-15	743	0	0.5	0.0	0.5
6202631	99	P	SUR	54	-20	743	0	0.5	-0.0	0.5
6202632	99	P	SUR	55	-14	743	0	0.5	0.0	0.5
6202633	99	P	SUR	55	-27	743	0	0.5	-0.2	0.5
6202634	99	P	SUR	64	0	743	0	0.3	0.0	0.3
6202635	99	P	SUR	68	-10	1219	0	0.3	0.1	0.3
6202636	99	P	SUR	68	-12	1219	0	0.3	0.2	0.4
6202637	99	P	SUR	63	-11	743	0	0.3	0.0	0.3
6202638	99	P	SUR	19	-63	743	0	0.3	-0.3	0.5
6202639	99	P	SUR	33	-40	743	0	0.3	-0.1	0.3
6202640	99	P	SUR	28	-65	743	0	0.3	-0.3	0.4
6202642	99	P	SUR	29	-66	189	0	0.3	-0.3	0.4
6202644	99	P	SUR	30	-48	743	0	0.6	-1.4	1.5
6202645	99	P	SUR	25	-62	743	2	0.4	0.1	0.4
6202646	99	P	SUR	26	-60	743	0	0.3	-0.2	0.4
6202677	99	P	SUR	69	17	491	0	0.4	-0.1	0.4

DRIFTER MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6202678	99	P	SUR	60	-61	621	0	0.4	0.2	0.5
6202680	99	P	SUR	64	10	477	0	0.5	0.1	0.5
6202681	99	P	SUR	70	16	372	0	0.3	0.1	0.3
6202683	99	P	SUR	70	18	699	0	0.3	0.2	0.4
6202684	99	P	SUR	66	-6	713	0	0.3	0.5	0.6
6202685	99	P	SUR	39	13	576	0	0.8	0.3	0.9
6202686	99	P	SUR	36	-1	210	210	0.0	0.0	0.0
6202687	99	P	SUR	38	15	364	0	0.3	-2.6	2.7
6202688	99	P	SUR	37	8	70	0	0.3	-2.6	2.6
6202690	99	P	SUR	42	10	690	0	0.4	-0.2	0.5
6202691	99	P	SUR	40	6	607	0	0.4	0.2	0.5
6202692	99	P	SUR	40	3	743	0	0.4	0.1	0.4
6202693	99	P	SUR	41	2	742	0	0.4	-0.3	0.5
6202694	99	P	SUR	40	3	2	2	0.0	0.0	0.0
6202695	99	P	SUR	40	3	3	3	0.0	0.0	0.0
6203523	99	P	SUR	78	3	161	0	0.4	-1.6	1.6
6203529	99	P	SUR	35	-47	743	0	0.4	-0.8	0.9
6203574	99	P	SUR	52	-41	740	0	0.4	0.3	0.5
6203580	99	P	SUR	64	-3	614	0	0.3	0.4	0.5
6203581	99	P	SUR	74	-17	383	88	4.8	8.2	9.4
6203582	99	P	SUR	62	-57	733	0	0.5	0.4	0.6
6203583	99	P	SUR	60	-8	634	0	0.4	0.1	0.4
6203585	99	P	SUR	72	18	698	0	0.4	0.3	0.5
6203587	99	P	SUR	67	5	594	0	0.4	-0.1	0.4
6203588	99	P	SUR	57	-39	683	0	0.5	0.6	0.7
6203601	99	P	SUR	29	-53	743	0	0.5	0.4	0.6
6203607	99	P	SUR	22	-43	742	0	0.3	0.1	0.3
6203609	99	P	SUR	34	-15	743	0	0.3	-0.3	0.5
6203612	99	P	SUR	33	-34	742	0	0.3	0.0	0.3
6203613	99	P	SUR	35	-26	743	0	0.3	0.3	0.4
6203626	99	P	SUR	58	-13	743	0	0.4	0.4	0.6
6203631	99	P	SUR	25	-53	743	0	0.5	-0.4	0.6
6203633	99	P	SUR	58	-31	743	0	0.6	0.0	0.6
6203634	99	P	SUR	44	-18	742	0	0.5	0.1	0.5
6203637	99	P	SUR	56	-24	737	0	0.5	0.2	0.5
6203639	99	P	SUR	46	-35	742	0	0.6	0.2	0.6
6203640	99	P	SUR	46	-33	742	0	0.4	0.1	0.5
6203641	99	P	SUR	45	-4	740	0	0.6	0.5	0.8
6203646	99	P	SUR	72	-57	743	0	0.4	0.2	0.5
6203730	99	P	SUR	21	-23	741	0	0.3	0.4	0.5
6203732	99	P	SUR	15	-22	741	0	0.3	0.2	0.4
6203733	99	P	SUR	12	-20	743	0	0.4	0.1	0.4
6203754	99	P	SUR	50	-9	741	0	0.4	-0.0	0.4

DRIFTER MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203755	99	P	SUR	49	-14	742	0	0.5	-0.1	0.5
6203756	99	P	SUR	51	-13	742	0	0.5	-0.5	0.7
6203757	99	P	SUR	49	-10	740	0	0.4	-0.5	0.7
6203758	99	P	SUR	56	-8	741	0	0.4	0.1	0.4
6203760	99	P	SUR	54	-14	742	0	0.4	-0.1	0.4
6203761	99	P	SUR	50	-11	741	0	0.4	-0.1	0.4
62087	99	P	SUR	55	7	705	0	0.4	-0.5	0.6
62091	99	P	SUR	53	-5	741	0	0.4	-0.2	0.5
62092	99	P	SUR	51	-11	204	0	0.6	-0.6	0.9
62093	99	P	SUR	55	-10	741	0	0.4	-0.2	0.5
62094	99	P	SUR	52	-7	741	0	0.4	-0.1	0.4
62095	99	P	SUR	53	-16	740	0	0.5	-0.2	0.5
62102	99	P	SUR	58	2	2081	0	0.5	0.3	0.6
62103	99	P	SUR	50	-3	2020	9	0.5	0.4	0.6
62104	99	P	SUR	57	1	2083	0	0.4	0.1	0.4
62107	99	P	SUR	50	-6	2692	0	0.4	0.2	0.5
62112	99	P	SUR	58	0	2091	0	0.3	0.4	0.5
62113	99	P	SUR	58	0	2080	0	0.5	0.2	0.5
62114	99	P	SUR	58	0	2764	0	0.4	0.4	0.5
62115	99	P	SUR	58	-3	2091	0	0.4	0.0	0.4
62116	99	P	SUR	58	1	2085	0	0.5	0.2	0.5
62118	99	P	SUR	58	1	2085	0	0.4	0.5	0.6
62119	99	P	SUR	57	2	2046	0	0.4	0.2	0.4
62120	99	P	SUR	56	2	2079	0	0.3	-0.0	0.3
62121	99	P	SUR	54	3	824	0	0.6	0.5	0.8
62122	99	P	SUR	57	2	2745	0	0.4	0.1	0.4
62124	99	P	SUR	54	-4	2078	0	0.3	0.0	0.3
62127	99	P	SUR	54	1	2082	0	0.5	0.7	0.8
62129	99	P	SUR	58	0	2080	0	0.4	0.1	0.5
62130	99	P	SUR	59	1	1972	0	0.4	0.0	0.4
62131	99	P	SUR	54	1	2080	0	0.5	0.6	0.8
62132	99	P	SUR	56	2	2080	0	0.4	0.4	0.6
62133	99	P	SUR	57	1	2083	0	0.6	0.3	0.6
62134	99	P	SUR	58	1	2072	0	0.3	0.6	0.7
62135	99	P	SUR	54	2	2084	0	0.4	0.5	0.6
62138	99	P	SUR	54	0	2757	0	0.6	0.8	1.0
62140	99	P	SUR	57	1	2757	0	0.4	0.2	0.4
62143	99	P	SUR	58	2	2083	0	0.4	0.6	0.7
62144	99	P	SUR	53	2	2084	0	0.4	0.4	0.6
62145	99	P	SUR	53	3	2753	0	0.4	0.4	0.6
62146	99	P	SUR	57	2	2057	0	0.4	-0.0	0.4
62149	99	P	SUR	54	1	2083	0	0.4	0.8	0.9
62150	99	P	SUR	54	1	2083	0	0.4	1.4	1.5

DRIFTER MONITORING STATISTICS (EUCOS)  
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62151	99	P	SUR	57	2	2755	0	0.3	0.3	0.4
62152	99	P	SUR	57	2	2073	0	0.4	0.4	0.6
62153	99	P	SUR	57	2	2745	0	0.4	0.4	0.5
62154	99	P	SUR	56	2	2081	0	0.4	0.1	0.4
62155	99	P	SUR	58	1	2085	0	0.3	0.4	0.5
62157	99	P	SUR	58	0	2044	0	0.4	0.1	0.4
62160	99	P	SUR	57	2	2745	0	0.4	0.5	0.6
62161	99	P	SUR	58	1	2080	0	0.5	-0.0	0.5
62162	99	P	SUR	57	1	2083	0	0.3	0.1	0.4
62163	99	P	SUR	48	-8	1992	0	0.4	0.2	0.4
62164	99	P	SUR	57	1	2004	0	0.3	0.4	0.5
62165	99	P	SUR	54	1	2038	0	0.4	0.7	0.8
62168	99	P	SUR	58	1	2082	0	0.3	0.1	0.4
62296	99	P	SUR	53	2	2080	0	0.4	0.1	0.4
62297	99	P	SUR	59	2	2712	0	0.4	0.1	0.4
62302	99	P	SUR	61	-2	2081	0	0.3	-0.0	0.3
62304	99	P	SUR	51	2	2037	0	0.5	0.0	0.5
62305	99	P	SUR	50	0	18	0	0.2	-0.1	0.3
6301004	99	P	SUR	72	20	407	0	0.3	0.1	0.3
6301005	99	P	SUR	73	35	465	0	0.4	-0.1	0.4
6301006	99	P	SUR	63	6	476	0	0.4	-0.8	0.9
6301510	99	P	SUR	83	7	705	0	0.5	-0.2	0.5
6301511	99	P	SUR	83	7	708	0	0.5	-0.1	0.5
6301564	99	P	SUR	62	-29	743	0	0.5	0.6	0.8
6301566	99	P	SUR	81	-3	76	0	0.3	0.2	0.3
6301567	99	P	SUR	72	-13	741	0	1.0	-0.1	1.0
6301569	99	P	SUR	71	-15	736	0	0.9	0.5	1.0
6301570	99	P	SUR	69	-21	353	31	3.2	-0.6	3.3
6301571	99	P	SUR	69	-21	743	0	0.8	0.4	0.9
63055	99	P	SUR	61	2	2083	0	0.3	-0.2	0.4
63056	99	P	SUR	60	2	2081	0	0.6	0.4	0.7
63057	99	P	SUR	59	2	2080	0	0.3	0.0	0.3
63058	99	P	SUR	53	2	1963	0	0.3	0.3	0.5
63059	99	P	SUR	58	-1	2074	0	0.3	0.5	0.6
63101	99	P	SUR	61	1	1671	0	0.4	0.2	0.4
63102	99	P	SUR	61	1	2083	0	0.3	-0.1	0.3
63103	99	P	SUR	61	1	1704	0	0.3	0.1	0.3
63104	99	P	SUR	61	2	2079	0	0.3	0.1	0.3
63108	99	P	SUR	61	2	2077	0	0.3	-0.2	0.4
63109	99	P	SUR	60	2	2081	0	0.4	-0.2	0.4
63110	99	P	SUR	60	2	2081	0	0.5	-0.0	0.5
63112	99	P	SUR	61	1	1844	0	0.3	-0.3	0.5
63115	99	P	SUR	62	1	2083	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
63117	99	P	SUR	61	1	2188	0	0.5	0.4	0.6
63118	99	P	SUR	58	1	2061	0	1.0	1.2	1.6
6401531	99	P	SUR	64	-60	742	0	0.4	0.2	0.5
6401539	99	P	SUR	47	-7	742	0	0.3	0.6	0.7
6401569	99	P	SUR	66	-22	742	0	0.6	-0.1	0.6
6401573	99	P	SUR	84	-14	741	0	0.5	0.1	0.5
6401574	99	P	SUR	86	-32	743	0	0.4	-0.0	0.4
6401575	99	P	SUR	87	-45	737	0	0.5	0.5	0.7
6401578	99	P	SUR	89	-27	742	0	0.4	0.2	0.4
6401581	99	P	SUR	88	-69	741	0	0.4	0.2	0.5
6401784	99	P	SUR	81	7	2945	0	1.7	0.3	1.7
6401795	99	P	SUR	73	-8	738	0	0.3	0.4	0.5
6402539	99	P	SUR	61	-54	741	0	0.5	-0.0	0.5
6402540	99	P	SUR	60	-48	693	0	0.4	0.2	0.5
6402541	99	P	SUR	65	0	646	0	0.3	0.2	0.4
6402542	99	P	SUR	64	-18	741	0	0.4	-0.4	0.6
6402543	99	P	SUR	58	-42	723	0	0.5	0.1	0.5
6402544	99	P	SUR	63	-6	718	0	0.3	0.3	0.5
6402545	99	P	SUR	63	-4	688	0	0.3	0.1	0.3
6402546	99	P	SUR	63	-13	645	0	0.3	0.1	0.4
6402547	99	P	SUR	65	-39	696	0	0.5	0.3	0.6
6402548	99	P	SUR	68	-18	704	0	0.4	0.1	0.4
6402549	99	P	SUR	63	-4	740	0	0.3	0.1	0.3
6402550	99	P	SUR	64	-12	731	0	0.3	0.2	0.3
6402551	99	P	SUR	64	-28	95	0	0.5	0.5	0.7
64041	99	P	SUR	61	-3	2082	0	0.4	0.2	0.4
64045	99	P	SUR	59	-12	2046	0	0.4	-0.3	0.5
64046	99	P	SUR	61	-4	1993	0	0.4	-0.1	0.4

**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 : OCT 2020  
 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
0640046	99	SPEED	SUR	60	-4	694	0	0	1.2	-0.7	1.4
1300001	99	SPEED	SUR	11	-23	600	0	0	1.1	0.5	1.2
1300002	99	SPEED	SUR	20	-23	620	0	0	0.7	0.3	0.8
1300130	99	SPEED	SUR	28	-16	739	0	0	1.2	0.8	1.5
1300131	99	SPEED	SUR	28	-17	738	0	0	2.0	1.6	2.5
4100026	99	SPEED	SUR	12	-38	246	0	0	1.4	-0.5	1.5
4100040	99	SPEED	SUR	15	-53	4437	0	0	1.1	0.5	1.2
4100043	99	SPEED	SUR	21	-65	4455	0	0	1.0	0.2	1.0
4100044	99	SPEED	SUR	22	-59	4328	0	0	1.0	0.2	1.0
4100046	99	SPEED	SUR	24	-68	4319	0	0	0.9	0.0	0.9
4100048	99	SPEED	SUR	32	-70	4332	0	0	1.2	0.1	1.2
4100049	99	SPEED	SUR	27	-63	3892	0	0	1.0	-0.0	1.0
4100052	99	SPEED	SUR	18	-65	4405	0	0	1.1	-0.4	1.2
4100053	99	SPEED	SUR	18	-66	4428	0	0	1.5	0.8	1.7
4100056	99	SPEED	SUR	18	-65	4399	0	0	1.2	-0.6	1.3
4100139	99	SPEED	SUR	20	-38	614	0	0	0.9	0.2	1.0
4100300	99	SPEED	SUR	16	-57	742	0	0	1.1	-0.2	1.2
4101781	99	SPEED	SUR	39	-49	1481	0	0	1.5	3.0	3.3
4101782	99	SPEED	SUR	28	-65	1470	0	0	1.0	2.2	2.4
4101783	99	SPEED	SUR	27	-62	1464	0	0	1.1	2.1	2.3
4101784	99	SPEED	SUR	30	-63	1466	0	0	1.0	1.9	2.2
4101785	99	SPEED	SUR	30	-61	1432	0	0	1.4	2.6	3.0
4101806	99	SPEED	SUR	36	-61	428	0	0	1.9	4.1	4.6
4101807	99	SPEED	SUR	30	-60	1476	5	0	2.1	2.8	3.5
4101808	99	SPEED	SUR	27	-62	1093	0	0	3.0	-4.2	5.1
4101809	99	SPEED	SUR	29	-63	610	0	0	0.8	2.2	2.3
4101810	99	SPEED	SUR	30	-62	1480	0	0	2.9	-4.5	5.3
4101816	99	SPEED	SUR	36	-60	423	0	0	1.3	3.7	4.0
4101817	99	SPEED	SUR	36	-60	411	0	0	1.5	4.0	4.2
41040	99	SPEED	SUR	15	-53	1102	0	0	1.2	0.2	1.2
41043	99	SPEED	SUR	21	-65	1116	0	0	1.0	0.0	1.0
41044	99	SPEED	SUR	22	-59	1096	0	0	1.0	-0.1	1.0
41046	99	SPEED	SUR	24	-68	2952	0	0	0.9	-0.2	1.0
41048	99	SPEED	SUR	32	-70	2985	0	0	1.2	-0.2	1.2

## DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
41049	99	SPEED	SUR	28	-63	2672	0	0	1.1	-0.1	1.2
41052	99	SPEED	SUR	18	-65	2208	0	0	1.1	-0.2	1.2
41053	99	SPEED	SUR	19	-66	1701	0	0	1.5	0.2	1.5
41056	99	SPEED	SUR	18	-66	1752	0	0	1.2	-0.4	1.3
4200059	99	SPEED	SUR	15	-67	2463	0	0	1.4	0.6	1.5
4200060	99	SPEED	SUR	16	-63	4396	0	0	1.2	0.0	1.2
4200085	99	SPEED	SUR	18	-67	4364	0	0	1.5	-0.6	1.6
42059	99	SPEED	SUR	15	-68	596	0	0	1.4	0.3	1.4
42060	99	SPEED	SUR	16	-63	1104	0	0	1.2	-0.1	1.2
42085	99	SPEED	SUR	18	-67	2485	0	0	1.4	-0.2	1.4
4400005	99	SPEED	SUR	43	-69	100	0	0	1.0	0.5	1.1
4400008	99	SPEED	SUR	41	-69	4434	0	0	1.3	0.4	1.4
4400027	99	SPEED	SUR	44	-67	737	0	0	1.4	0.1	1.4
4400032	99	SPEED	SUR	44	-69	738	0	0	1.5	0.0	1.5
4400033	99	SPEED	SUR	44	-69	726	0	0	1.6	-0.2	1.6
4400034	99	SPEED	SUR	44	-68	736	0	0	1.4	-0.3	1.4
4400037	99	SPEED	SUR	43	-68	726	0	0	1.2	-0.2	1.2
44005	99	SPEED	SUR	43	-69	277	0	0	1.0	0.6	1.2
44008	99	SPEED	SUR	41	-69	2946	0	0	1.4	0.2	1.4
44027	99	SPEED	SUR	44	-67	1907	0	0	1.4	0.2	1.4
44032	99	SPEED	SUR	44	-69	1358	0	0	1.5	0.1	1.5
44033	99	SPEED	SUR	44	-69	1335	0	0	1.6	0.1	1.6
44034	99	SPEED	SUR	44	-68	1355	0	0	1.4	-0.2	1.4
44037	99	SPEED	SUR	44	-68	1335	0	0	1.3	-0.1	1.3
44078	99	SPEED	SUR	60	-40	3987	0	0	1.9	-2.0	2.8
44137	99	SPEED	SUR	42	-62	1258	0	0	1.4	0.2	1.4
44139	99	SPEED	SUR	44	-57	1287	0	0	1.5	-0.3	1.5
44150	99	SPEED	SUR	43	-64	1256	0	0	1.3	-0.1	1.3
6100001	99	SPEED	SUR	43	8	736	0	0	1.7	-0.1	1.7
6100002	99	SPEED	SUR	42	5	738	0	0	1.3	0.1	1.3
6100196	99	SPEED	SUR	42	4	701	0	0	1.8	-1.0	2.0
6100197	99	SPEED	SUR	40	4	724	0	0	1.4	-0.3	1.4
6100198	99	SPEED	SUR	37	-2	683	0	0	1.7	-0.7	1.8
6100280	99	SPEED	SUR	41	1	726	0	0	1.6	-0.8	1.8
6100281	99	SPEED	SUR	40	0	734	0	0	2.2	1.0	2.4
6100417	99	SPEED	SUR	38	0	734	0	0	1.4	-0.4	1.4
6100430	99	SPEED	SUR	40	2	732	0	0	1.6	-0.0	1.6
6101003	99	SPEED	SUR	40	25	146	0	0	1.6	-1.0	1.9
6101007	99	SPEED	SUR	36	25	206	0	0	1.6	0.2	1.6
6101008	99	SPEED	SUR	37	22	223	0	0	1.9	0.0	1.9
6101009	99	SPEED	SUR	35	25	164	0	0	1.9	0.8	2.0

## 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
6200024	99	SPEED	SUR	44	-3	709	0	0	1.7	-0.4	1.8
6200025	99	SPEED	SUR	44	-6	725	0	0	1.5	-0.7	1.6
6200082	99	SPEED	SUR	44	-8	729	0	0	1.3	-0.8	1.6
6200083	99	SPEED	SUR	43	-9	679	0	0	1.8	-1.2	2.2
6200084	99	SPEED	SUR	42	-9	727	0	0	1.2	-0.7	1.4
6200085	99	SPEED	SUR	36	-7	712	0	0	1.2	0.1	1.2
6200091	99	SPEED	SUR	53	-5	741	0	0	1.1	0.2	1.1
6200092	99	SPEED	SUR	51	-11	204	0	0	1.3	0.3	1.3
6200093	99	SPEED	SUR	55	-10	741	0	0	1.2	0.6	1.3
6200094	99	SPEED	SUR	52	-7	741	0	0	1.1	-0.1	1.1
6200095	99	SPEED	SUR	53	-16	740	0	0	1.6	-1.3	2.0
62001	99	SPEED	SUR	45	-5	1996	0	0	1.4	0.4	1.5
6200199	99	SPEED	SUR	40	-9	698	0	0	1.3	-0.5	1.4
6200200	99	SPEED	SUR	36	-8	707	0	0	1.1	0.4	1.2
6201030	99	SPEED	SUR	44	-4	559	0	0	1.7	-0.6	1.8
6201066	99	SPEED	SUR	55	7	686	0	0	1.8	0.4	1.9
62023	99	SPEED	SUR	51	-8	2196	0	0	1.7	1.0	1.9
62087	99	SPEED	SUR	55	7	704	0	0	1.6	2.2	2.7
62091	99	SPEED	SUR	53	-5	741	0	0	1.1	0.2	1.1
62092	99	SPEED	SUR	51	-11	204	0	0	1.3	0.4	1.4
62093	99	SPEED	SUR	55	-10	741	0	0	1.2	0.7	1.4
62094	99	SPEED	SUR	52	-7	741	0	0	1.1	-0.1	1.1
62095	99	SPEED	SUR	53	-16	740	0	0	1.6	-1.4	2.2
62102	99	SPEED	SUR	58	2	2081	0	0	1.6	0.0	1.6
62103	99	SPEED	SUR	50	-3	2022	0	0	1.7	1.8	2.4
62104	99	SPEED	SUR	57	1	2083	0	0	1.4	-0.5	1.5
62107	99	SPEED	SUR	50	-6	2692	0	0	1.7	1.2	2.1
62112	99	SPEED	SUR	58	0	2091	0	0	1.8	-0.7	2.0
62113	99	SPEED	SUR	58	0	2080	0	0	1.7	0.0	1.7
62114	99	SPEED	SUR	58	0	2764	1	0	1.8	0.4	1.8
62118	99	SPEED	SUR	58	1	2085	0	0	1.5	0.5	1.6
62119	99	SPEED	SUR	57	2	2046	0	0	1.9	-1.0	2.1
62120	99	SPEED	SUR	56	2	2079	0	0	1.6	-0.6	1.7
62121	99	SPEED	SUR	54	3	824	0	0	1.5	-1.0	1.8
62122	99	SPEED	SUR	57	2	2745	0	0	1.4	-0.1	1.4
62129	99	SPEED	SUR	58	0	742	0	0	1.8	0.1	1.8
62131	99	SPEED	SUR	54	1	2080	0	0	2.3	-0.4	2.3
62132	99	SPEED	SUR	56	2	2080	0	0	2.4	-1.8	3.0
62133	99	SPEED	SUR	57	1	2083	0	0	1.6	-0.1	1.6
62134	99	SPEED	SUR	58	1	2072	0	0	1.5	-0.1	1.5
62140	99	SPEED	SUR	57	1	2757	0	0	1.3	-0.1	1.3

## 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	2083	0	0	1.8	-0.6	1.9
62144	99	SPEED	SUR	53	2	2084	0	0	2.1	-1.3	2.5
62145	99	SPEED	SUR	53	3	2753	0	0	1.5	0.2	1.5
62146	99	SPEED	SUR	57	2	1925	0	0	1.3	-0.2	1.4
62149	99	SPEED	SUR	54	1	2083	0	0	1.6	0.0	1.6
62150	99	SPEED	SUR	54	1	2083	0	0	2.3	-1.2	2.6
62152	99	SPEED	SUR	57	2	2076	0	0	1.5	-1.0	1.8
62153	99	SPEED	SUR	57	2	2745	0	0	2.2	-1.3	2.6
62154	99	SPEED	SUR	56	2	2081	0	0	1.6	-0.2	1.6
62155	99	SPEED	SUR	58	1	2085	0	0	1.5	-0.7	1.7
62163	99	SPEED	SUR	48	-8	1992	0	0	1.1	0.0	1.1
62164	99	SPEED	SUR	57	1	2004	0	0	1.6	-1.3	2.0
62165	99	SPEED	SUR	54	1	2038	0	0	1.7	-0.8	1.9
62304	99	SPEED	SUR	51	2	2037	0	0	2.0	1.6	2.6
62305	99	SPEED	SUR	50	0	9	0	0	0.8	3.0	3.1
6301004	99	SPEED	SUR	72	20	407	0	0	1.1	-1.0	1.5
6301006	99	SPEED	SUR	63	6	475	0	0	1.9	0.8	2.0
63055	99	SPEED	SUR	61	2	2083	0	0	1.4	-0.5	1.5
63056	99	SPEED	SUR	60	2	2081	0	0	1.6	0.4	1.6
63057	99	SPEED	SUR	59	2	2080	0	0	1.8	0.3	1.8
63058	99	SPEED	SUR	53	2	1963	0	0	1.4	-0.5	1.5
63101	99	SPEED	SUR	61	1	1671	0	0	1.4	-0.1	1.4
63103	99	SPEED	SUR	61	1	1704	0	0	1.4	-0.3	1.5
63104	99	SPEED	SUR	61	2	2079	0	0	1.5	0.0	1.5
63106	99	SPEED	SUR	61	2	1341	0	0	1.7	-0.6	1.8
63108	99	SPEED	SUR	61	2	2077	0	0	1.9	-0.4	2.0
63109	99	SPEED	SUR	60	2	1974	0	0	1.5	0.2	1.5
63110	99	SPEED	SUR	60	2	2081	0	0	1.6	-0.4	1.6
63112	99	SPEED	SUR	61	1	1844	0	0	1.4	-0.2	1.5
63115	99	SPEED	SUR	62	1	2083	0	0	1.5	-0.4	1.6
63117	99	SPEED	SUR	61	1	2188	0	0	1.5	-0.2	1.5
64041	99	SPEED	SUR	61	-3	2082	0	0	1.5	-0.2	1.5
64045	99	SPEED	SUR	59	-12	2046	0	0	1.2	0.2	1.2
64046	99	SPEED	SUR	61	-4	1993	0	0	1.1	0.4	1.2
66021	99	SPEED	SUR	55	14	382	0	0	1.2	1.1	1.6
66022	99	SPEED	SUR	54	14	491	0	0	1.9	0.1	1.9
66024	99	SPEED	SUR	55	13	189	0	0	1.3	1.1	1.7

**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 : OCT 2020  
 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
02164	99	DIRN	SUR	25	-84	1	0	0	0.0	13.8	13.8
03134	99	DIRN	SUR	26	-80	2	2	0	0.0	106.2	106.2
0640046	99	DIRN	SUR	60	-4	647	0	0	12.4	3.0	12.8
07164	99	DIRN	SUR	24	-83	1	1	0	0.0	107.6	107.6
1300001	99	DIRN	SUR	11	-23	441	0	0	16.8	5.9	17.8
1300002	99	DIRN	SUR	20	-23	618	0	0	8.4	1.9	8.6
1300130	99	DIRN	SUR	28	-16	692	0	0	12.4	-7.6	14.5
1300131	99	DIRN	SUR	28	-17	544	0	0	15.3	3.4	15.7
15124	99	DIRN	SUR	25	-81	2	2	0	0.0	73.2	73.2
18154	99	DIRN	SUR	25	-85	1	1	0	0.0	38.3	38.3
25124	99	DIRN	SUR	25	-80	1	1	0	0.0	123.1	123.1
28124	99	DIRN	SUR	25	-85	1	1	0	0.0	114.6	114.6
4100001	99	DIRN	SUR	35	-72	3636	0	0	19.2	7.4	20.6
4100002	99	DIRN	SUR	32	-75	2634	0	0	21.2	10.0	23.5
4100004	99	DIRN	SUR	33	-79	3481	0	0	18.4	9.5	20.7
4100008	99	DIRN	SUR	31	-81	593	0	0	17.7	7.4	19.2
4100009	99	DIRN	SUR	29	-80	3647	0	0	17.6	7.8	19.3
4100010	99	DIRN	SUR	29	-78	3746	0	0	20.4	5.1	21.0
4100013	99	DIRN	SUR	33	-78	3423	0	0	21.2	4.9	21.7
4100024	99	DIRN	SUR	34	-78	529	0	0	23.4	-15.5	28.1
4100025	99	DIRN	SUR	35	-75	3585	0	0	22.5	3.6	22.8
4100026	99	DIRN	SUR	12	-38	218	0	0	11.6	7.5	13.8
4100029	99	DIRN	SUR	33	-80	417	0	0	20.1	-10.1	22.5
4100033	99	DIRN	SUR	32	-80	571	0	0	21.8	-2.0	21.9
4100037	99	DIRN	SUR	34	-77	591	0	0	21.8	-13.2	25.5
4100038	99	DIRN	SUR	34	-78	590	0	0	24.4	-3.7	24.6
4100040	99	DIRN	SUR	15	-53	4283	0	0	12.4	7.8	14.7
4100043	99	DIRN	SUR	21	-65	4009	0	0	11.8	4.7	12.7
4100044	99	DIRN	SUR	22	-59	3989	0	0	13.7	4.1	14.3
4100046	99	DIRN	SUR	24	-68	3595	0	0	27.6	-15.9	31.8
4100048	99	DIRN	SUR	32	-70	3558	0	0	18.1	-0.1	18.1
4100049	99	DIRN	SUR	27	-63	3060	0	0	12.7	4.8	13.6

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
4100052	99	DIRN	SUR	18	-65	3805	0	0	16.9	4.4	17.5
4100053	99	DIRN	SUR	18	-66	2302	0	0	22.0	-0.5	22.0
4100056	99	DIRN	SUR	18	-65	3801	0	0	17.9	3.4	18.2
4100064	99	DIRN	SUR	34	-77	603	0	0	18.4	-17.5	25.3
41001	99	DIRN	SUR	35	-72	2371	0	0	20.3	2.8	20.5
4100139	99	DIRN	SUR	20	-38	595	0	0	11.6	5.5	12.9
41002	99	DIRN	SUR	32	-75	1758	0	0	21.8	9.3	23.7
4100300	99	DIRN	SUR	16	-57	660	0	0	14.5	6.9	16.0
41004	99	DIRN	SUR	33	-79	2663	0	0	18.1	4.8	18.8
41008	99	DIRN	SUR	31	-81	1478	0	0	18.1	6.5	19.2
41009	99	DIRN	SUR	29	-80	2843	0	0	18.9	5.0	19.6
41010	99	DIRN	SUR	29	-79	2538	0	0	20.6	-0.2	20.6
41013	99	DIRN	SUR	33	-78	2564	0	0	21.8	3.1	22.0
4101781	99	DIRN	SUR	39	-49	1314	0	0	23.4	-11.7	26.1
4101782	99	DIRN	SUR	28	-65	1056	0	0	13.6	-16.0	21.0
4101783	99	DIRN	SUR	27	-62	927	0	0	19.2	-17.3	25.8
4101784	99	DIRN	SUR	30	-63	997	0	0	11.1	-15.0	18.6
4101785	99	DIRN	SUR	30	-61	1008	0	0	14.1	-10.9	17.8
4101806	99	DIRN	SUR	36	-61	370	0	0	22.0	-17.3	28.0
4101807	99	DIRN	SUR	30	-60	933	5	0	19.0	-11.8	22.4
4101808	99	DIRN	SUR	27	-62	45	0	0	103.8	1.5	103.8
4101809	99	DIRN	SUR	29	-63	439	0	0	15.8	-6.8	17.2
4101816	99	DIRN	SUR	36	-60	359	0	0	12.6	-7.0	14.4
4101817	99	DIRN	SUR	36	-60	347	0	0	11.4	-9.2	14.7
41024	99	DIRN	SUR	34	-79	988	0	0	23.9	-15.5	28.5
41025	99	DIRN	SUR	35	-75	2617	0	0	24.1	3.5	24.4
41029	99	DIRN	SUR	33	-80	1042	0	0	21.7	-10.0	23.9
41033	99	DIRN	SUR	32	-80	1017	0	0	21.7	-2.9	21.9
41037	99	DIRN	SUR	34	-77	1077	0	0	21.6	-14.3	25.9
41038	99	DIRN	SUR	34	-78	1062	0	0	23.5	-3.8	23.8
41040	99	DIRN	SUR	15	-53	1041	0	0	12.2	8.2	14.7
41043	99	DIRN	SUR	21	-65	1004	0	0	11.4	3.5	11.9
41044	99	DIRN	SUR	22	-59	988	0	0	13.4	2.1	13.5
41046	99	DIRN	SUR	24	-68	2424	0	0	11.5	0.9	11.6
41048	99	DIRN	SUR	32	-70	2379	0	0	18.2	1.0	18.3
41049	99	DIRN	SUR	28	-63	2094	0	0	12.9	4.4	13.6
41052	99	DIRN	SUR	18	-65	1780	0	0	16.8	3.5	17.1
41053	99	DIRN	SUR	19	-66	952	0	0	22.6	-1.5	22.7
41056	99	DIRN	SUR	18	-66	1408	0	0	17.8	4.1	18.3
41064	99	DIRN	SUR	34	-77	1091	0	0	18.8	-17.2	25.5
4200013	99	DIRN	SUR	27	-83	1332	0	0	16.4	7.3	17.9

## 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
4200022	99	DIRN	SUR	28	-84	1156	0	0	12.5	-6.1	13.9
4200023	99	DIRN	SUR	26	-83	1384	0	0	16.2	-6.4	17.4
4200026	99	DIRN	SUR	25	-83	1100	0	0	17.5	0.0	17.5
4200036	99	DIRN	SUR	29	-85	4026	0	0	11.3	11.3	16.0
4200056	99	DIRN	SUR	20	-85	3270	10	0	20.4	1.8	20.5
4200057	99	DIRN	SUR	17	-81	3428	0	0	24.7	0.7	24.7
4200059	99	DIRN	SUR	15	-67	2383	0	0	19.6	6.0	20.5
4200060	99	DIRN	SUR	16	-63	3820	0	0	14.2	8.9	16.8
4200085	99	DIRN	SUR	18	-67	3631	0	0	23.5	22.2	32.4
42013	99	DIRN	SUR	27	-83	1841	0	0	16.7	6.8	18.0
42022	99	DIRN	SUR	28	-84	1620	0	0	13.0	-6.7	14.6
42023	99	DIRN	SUR	26	-83	2012	0	0	15.9	-6.8	17.3
42026	99	DIRN	SUR	25	-84	1502	0	0	17.4	0.0	17.4
42036	99	DIRN	SUR	29	-85	2618	0	0	11.7	10.5	15.8
42056	99	DIRN	SUR	20	-85	816	2	0	19.5	0.6	19.5
42057	99	DIRN	SUR	17	-81	790	0	0	25.3	-0.3	25.3
42059	99	DIRN	SUR	15	-68	572	0	0	18.8	1.0	18.8
42060	99	DIRN	SUR	16	-63	924	0	0	14.5	8.2	16.7
42085	99	DIRN	SUR	18	-67	1867	0	0	21.9	20.3	29.8
4400005	99	DIRN	SUR	43	-69	80	0	0	16.8	2.7	17.0
4400007	99	DIRN	SUR	44	-70	870	0	0	19.2	2.4	19.4
4400008	99	DIRN	SUR	41	-69	3666	0	0	14.0	7.0	15.7
4400013	99	DIRN	SUR	42	-71	828	0	0	21.8	10.9	24.3
4400014	99	DIRN	SUR	37	-75	3221	0	0	15.7	5.9	16.7
4400017	99	DIRN	SUR	41	-72	3364	0	0	16.1	8.4	18.2
4400018	99	DIRN	SUR	42	-70	861	0	0	16.7	7.6	18.3
4400020	99	DIRN	SUR	41	-70	3499	0	0	16.3	4.2	16.8
4400022	99	DIRN	SUR	41	-74	942	0	0	19.3	5.6	20.1
4400025	99	DIRN	SUR	40	-73	3390	0	0	16.9	4.9	17.6
4400027	99	DIRN	SUR	44	-67	594	0	0	13.5	3.8	14.0
4400029	99	DIRN	SUR	43	-71	576	0	0	23.1	-1.0	23.2
4400030	99	DIRN	SUR	43	-70	534	0	0	20.1	-1.9	20.2
4400032	99	DIRN	SUR	44	-69	572	0	0	18.7	12.5	22.5
4400033	99	DIRN	SUR	44	-69	532	0	0	20.5	8.6	22.2
4400034	99	DIRN	SUR	44	-68	579	0	0	16.6	7.2	18.1
4400037	99	DIRN	SUR	43	-68	596	0	0	11.2	5.8	12.7
4400040	99	DIRN	SUR	41	-74	242	0	0	14.2	2.5	14.4
4400058	99	DIRN	SUR	38	-76	3374	0	0	23.0	-7.9	24.3
4400062	99	DIRN	SUR	39	-76	2538	0	0	24.7	-10.6	26.9
4400065	99	DIRN	SUR	40	-74	3227	0	0	16.2	6.7	17.5
4400072	99	DIRN	SUR	37	-76	3086	0	0	22.8	-65.1	69.0



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
4400073	99	DIRN	SUR	43	-71	543	0	0	17.3	5.1	18.0
4400075	99	DIRN	SUR	40	-71	2031	0	0	17.5	-16.1	23.8
4400076	99	DIRN	SUR	40	-71	2064	0	0	14.6	-15.7	21.4
4400077	99	DIRN	SUR	40	-71	2494	0	0	16.0	-13.9	21.2
44005	99	DIRN	SUR	43	-69	224	0	0	18.8	1.5	18.9
44007	99	DIRN	SUR	44	-70	1510	0	0	19.7	1.6	19.7
44008	99	DIRN	SUR	41	-69	2429	0	0	14.8	6.4	16.1
44013	99	DIRN	SUR	42	-71	1528	0	0	23.9	10.6	26.1
44014	99	DIRN	SUR	37	-75	2180	0	0	16.0	3.9	16.5
44017	99	DIRN	SUR	41	-72	2480	0	0	16.4	3.3	16.8
44018	99	DIRN	SUR	42	-70	1530	0	0	16.9	8.1	18.8
44020	99	DIRN	SUR	42	-70	2486	0	0	16.2	3.4	16.5
44022	99	DIRN	SUR	41	-74	808	0	0	20.1	6.3	21.1
44025	99	DIRN	SUR	40	-73	2485	0	0	16.4	4.2	16.9
44027	99	DIRN	SUR	44	-67	1541	0	0	14.6	3.5	15.0
44029	99	DIRN	SUR	43	-71	1459	0	0	23.0	0.2	23.0
44030	99	DIRN	SUR	43	-70	974	0	0	19.9	-1.8	20.0
44032	99	DIRN	SUR	44	-69	1038	0	0	18.8	12.6	22.7
44033	99	DIRN	SUR	44	-69	950	0	0	20.6	8.2	22.2
44034	99	DIRN	SUR	44	-68	1051	0	0	15.9	6.9	17.4
44037	99	DIRN	SUR	44	-68	1069	0	0	10.9	5.9	12.4
44040	99	DIRN	SUR	41	-74	349	0	0	14.5	3.2	14.8
44058	99	DIRN	SUR	38	-76	1847	0	0	22.6	-9.3	24.4
44062	99	DIRN	SUR	39	-76	1551	0	0	25.0	-10.9	27.3
44065	99	DIRN	SUR	40	-74	2369	0	0	16.4	6.0	17.5
44069	99	DIRN	SUR	41	-73	1013	0	0	19.6	4.5	20.2
44072	99	DIRN	SUR	37	-76	2159	0	0	24.2	-65.4	69.8
44073	99	DIRN	SUR	43	-71	1029	0	0	19.0	6.2	20.0
44075	99	DIRN	SUR	40	-71	1933	0	0	17.0	-16.2	23.5
44076	99	DIRN	SUR	40	-71	2290	0	0	15.1	-15.8	21.8
44077	99	DIRN	SUR	40	-71	2828	0	0	15.0	-14.0	20.5
44078	99	DIRN	SUR	60	-40	3432	0	0	13.7	-19.3	23.6
44137	99	DIRN	SUR	42	-62	1081	0	0	14.0	-28.0	31.3
44139	99	DIRN	SUR	44	-57	1127	0	0	16.2	-30.4	34.5
44150	99	DIRN	SUR	43	-64	1002	0	0	14.2	-33.4	36.2
4500003	99	DIRN	SUR	45	-83	3723	0	0	20.2	2.4	20.4
4500005	99	DIRN	SUR	42	-82	3936	0	0	15.4	7.7	17.2
4500008	99	DIRN	SUR	44	-82	3657	0	0	19.7	2.0	19.8
4500012	99	DIRN	SUR	44	-77	3880	0	0	21.3	8.2	22.8
4500162	99	DIRN	SUR	45	-83	1220	0	0	15.6	5.0	16.4
4500163	99	DIRN	SUR	44	-84	1148	0	0	18.3	1.9	18.4

## 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
4500165	99	DIRN	SUR	42	-83	3205	0	0	35.0	-9.1	36.2
4500167	99	DIRN	SUR	42	-80	1343	0	0	31.0	-13.7	33.9
4500169	99	DIRN	SUR	42	-82	1536	0	0	34.7	-37.3	51.0
4500175	99	DIRN	SUR	46	-85	3411	0	0	94.0	-11.1	94.6
4500176	99	DIRN	SUR	42	-82	1136	0	0	28.6	-7.2	29.5
4500178	99	DIRN	SUR	45	-73	102	0	0	15.2	-15.7	21.8
45003	99	DIRN	SUR	45	-83	2694	0	0	18.9	3.5	19.2
45005	99	DIRN	SUR	42	-82	2812	0	0	15.7	7.6	17.4
45008	99	DIRN	SUR	44	-82	2775	0	0	17.4	6.8	18.7
45012	99	DIRN	SUR	44	-77	2923	0	0	22.6	8.8	24.2
45132	99	DIRN	SUR	43	-81	1029	0	0	18.2	-2.4	18.4
45137	99	DIRN	SUR	46	-81	856	0	0	22.6	-2.5	22.8
45139	99	DIRN	SUR	43	-80	851	0	0	26.3	7.6	27.3
45142	99	DIRN	SUR	43	-79	932	0	0	22.1	-7.0	23.2
45143	99	DIRN	SUR	45	-81	620	0	0	18.2	-1.0	18.2
45147	99	DIRN	SUR	42	-83	927	0	0	16.7	5.2	17.5
45149	99	DIRN	SUR	44	-82	843	0	0	22.5	15.6	27.4
45152	99	DIRN	SUR	46	-80	524	0	0	19.6	8.8	21.5
45154	99	DIRN	SUR	46	-83	896	0	0	19.0	-5.0	19.7
45159	99	DIRN	SUR	44	-79	897	0	0	29.5	2.7	29.6
45162	99	DIRN	SUR	45	-83	789	0	0	16.6	4.7	17.3
45163	99	DIRN	SUR	44	-84	776	0	0	19.5	2.0	19.6
45165	99	DIRN	SUR	42	-83	2136	0	0	33.8	-10.2	35.3
45167	99	DIRN	SUR	42	-80	1320	0	0	29.5	-14.7	33.0
45169	99	DIRN	SUR	42	-82	1850	0	0	35.6	-37.3	51.5
45175	99	DIRN	SUR	46	-85	1860	0	0	94.5	-11.0	95.2
45176	99	DIRN	SUR	42	-82	1068	0	0	30.2	-6.4	30.9
45178	99	DIRN	SUR	45	-73	114	0	0	22.8	-13.5	26.5
45188	99	DIRN	SUR	44	-73	31	0	0	162.5	3.9	162.5
6100198	99	DIRN	SUR	37	-2	397	0	0	22.5	1.6	22.6
6100281	99	DIRN	SUR	40	0	404	0	0	31.5	-6.8	32.2
6100417	99	DIRN	SUR	38	0	461	0	0	16.4	8.6	18.5
6200024	99	DIRN	SUR	44	-3	567	0	0	20.1	3.4	20.4
6200025	99	DIRN	SUR	44	-6	543	0	0	18.1	-1.5	18.2
6200082	99	DIRN	SUR	44	-8	675	0	0	15.4	4.1	15.9
6200083	99	DIRN	SUR	43	-9	581	0	0	40.4	43.5	59.4
6200084	99	DIRN	SUR	42	-9	612	0	0	15.3	3.4	15.7
6200085	99	DIRN	SUR	36	-7	521	0	0	15.0	6.1	16.2
6200091	99	DIRN	SUR	53	-5	717	0	0	10.7	1.8	10.8
6200092	99	DIRN	SUR	51	-11	201	0	0	9.9	-1.9	10.0
6200093	99	DIRN	SUR	55	-10	704	0	0	11.2	2.8	11.6

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
6200094	99	DIRN	SUR	52	-7	712	0	0	9.4	0.3	9.4
6200095	99	DIRN	SUR	53	-16	723	0	0	9.6	1.9	9.7
62001	99	DIRN	SUR	45	-5	1820	0	0	14.5	5.1	15.3
6200199	99	DIRN	SUR	40	-9	488	0	0	166.4	13.2	166.9
6200200	99	DIRN	SUR	36	-8	563	0	0	12.6	1.9	12.8
6201030	99	DIRN	SUR	44	-4	474	0	0	18.3	3.6	18.7
62023	99	DIRN	SUR	51	-8	2139	0	0	9.5	4.0	10.3
62091	99	DIRN	SUR	53	-5	715	0	0	10.8	1.2	10.8
62092	99	DIRN	SUR	51	-11	201	0	0	10.5	-2.1	10.7
62093	99	DIRN	SUR	55	-10	701	0	0	11.5	2.4	11.8
62094	99	DIRN	SUR	52	-7	712	0	0	9.9	-0.1	9.9
62095	99	DIRN	SUR	53	-16	721	0	0	10.0	1.4	10.1
62103	99	DIRN	SUR	50	-3	1944	0	0	16.6	6.6	17.8
62107	99	DIRN	SUR	50	-6	2609	0	0	14.2	1.3	14.3
62112	99	DIRN	SUR	58	0	1893	0	0	14.7	-2.9	15.0
62114	99	DIRN	SUR	58	0	2526	1	0	13.3	1.2	13.4
62163	99	DIRN	SUR	48	-8	1925	0	0	10.6	0.7	10.6
62305	99	DIRN	SUR	50	0	9	0	0	20.1	0.6	20.2
64041	99	DIRN	SUR	61	-3	1878	0	0	18.3	11.0	21.3
64045	99	DIRN	SUR	59	-12	1925	0	0	12.1	4.6	13.0
64046	99	DIRN	SUR	61	-4	1853	0	0	13.1	0.0	13.1
81124	99	DIRN	SUR	24	-84	1	1	0	0.0	22.9	22.9

**4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations**

ASDE09	BPMWB2N	DBLK	FPUW5GN	HTXUH4H	JNKN7JF	KJJF9XN	KMPLHPW	LRYQE3U
UXK5JTU	VKB4L5Q	WDK38HS	XKQLWQB	XQFJRGX	YLV96WM	ZVQEQCM	7JUNA4N	01001
01004	01010	01028	01241	01400	01415	01492	02527	02836
02963	03005	03238	03354	03502	03743	03808	03882	03918
03953	04018	04220	04270	04320	04339	04360	04417	06011
06060	06260	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	11120	11240	11520
11747	11952	12120	12425	12843	12982	13275	13388	14015
14240	14430	15614	16045	16080	16113	16144	16245	16320
16429	16546	16622	16716	16754	17030	17064	17095	17130
17196	17220	17240	17281	17516	17607	22008	23205	23472
23884	26038	26435	26850	27459	27707	27713	28225	29612
29698	33008	33041	37789	40179	40186	45004	47102	47104
47138	47155	47169	47186	47401	47412	47418	47582	47600
47646	47678	47741	47778	47807	47827	47909	47918	47945
47971	47991	48698	50527	50557	50774	50953	51076	51243
51431	51463	51644	51656	51709	51777	51828	51839	52203
52267	52323	52418	52533	52652	52681	52818	52836	52866
52983	53068	53463	53513	53543	53614	53772	53845	53915
54102	54135	54161	54218	54292	54374	54511	54662	54727
54857	55299	55591	56029	56046	56080	56137	56187	56492
56651	56691	56739	56778	56964	56985	57083	57127	57131
57178	57245	57447	57494	57687	57816	57957	57993	58027
58203	58238	58362	58424	58606	58633	58665	58725	59023
59134	59211	59265	59280	59293	59431	59758	59981	60018
60096	60390	60571	60630	60656	60680	61901	61980	61998
63612	63741	68263	68424	68442	68512	68538	68816	68842
70026	70133	70200	70219	70231	70261	70308	70316	70326
70350	70361	70398	71043	71081	71082	71109	71119	71603
71722	71802	71811	71815	71816	71823	71836	71845	71867
71906	71907	71908	71909	71917	71924	71925	71926	71934
71945	71957	71964	72206	72208	72210	72214	72215	72230
72233	72235	72240	72248	72249	72250	72251	72265	72274
72293	72305	72317	72327	72340	72363	72364	72365	72376
72388	72413	72426	72440	72451	72476	72489	72493	72501
72518	72520	72528	72558	72562	72572	72582	72597	72632
72634	72645	72649	72659	72662	72672	72694	72712	72764
72768	72776	72786	72797	73033	73110	74389	74494	74560
76225	76256	76394	76405	76458	76526	76595	76612	76644
76654	76679	76692	76743	76805	76903	78897	78954	81405
83525	83649	83768	85442	85469	85586	85799	85934	87155
87344	87576	87623	87715	87860	88889	89002	89062	89564
89571	89611	89625	89642	89859	91212	91285	91592	91765
91925	91938	91948	91958	93112	93417	93817	93844	94120
94150	94170	94203	94299	94302	94312	94326	94332	94374
94403	94430	94461	94510	94578	94610	94637	94638	94653
94659	94672	94711	94767	94776	94802	94821	94866	94910
94975	94995	94996	94998	95527	96996			

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

ASDE09	BPMWB2N	DBLK	FPUW5GN	HTXUH4H	JNKN7JF	KJJF9XN	KMPLHPW	LRYQE3U
UXK5JTU	VKB4L5Q	WDK38HS	XKQLWQB	XQFJRGX	YLV96WM	ZVQEQCM	7JUNA4N	01001
01004	01010	01028	01241	01400	01415	01492	02365	02527
02836	02963	06610	07110	07145	07510	07645	07761	08536
11010	11035	11120	11240	17607	40186	47155	51243	51656
52652	53543	56046	56492	56651	57245	59023	59293	61980
61998	72413	76743	76903	78897	81405	89002	89642	89859
91592	91938	93817	94767					

## 5 Annex - Explanations of figures and tables

### 5.1 General

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

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

### 5.2 Data Availability

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

### 5.3 Data Quality

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

It should be noted that:

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

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

standard pressure level are shown. Units of RMS, standard deviation and bias are hPa in tables 1 and 4, m in table 7 and  $\text{ms}^{-1}$  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	$35\text{ms}^{-1}$
925	$35\text{ms}^{-1}$
850	$35\text{ms}^{-1}$
700	$40\text{ms}^{-1}$
500	$45\text{ms}^{-1}$
400	$50\text{ms}^{-1}$
300	$60\text{ms}^{-1}$
250	$60\text{ms}^{-1}$
200	$50\text{ms}^{-1}$
150	$50\text{ms}^{-1}$
100	$45\text{ms}^{-1}$

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.