



ECMWF Global Data Monitoring Report

October 2017

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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:

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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
32150	(00)	30	1	02527	(00)	15	26
32150	(12)	30	0	02591	(00)	18	30
42647	(00)	20	0	02591	(12)	19	30
43014	(00)	14	0	17516	(00)	10	30
43041	(00)	20	0	25123	(00)	4	31
43128	(00)	26	0	25123	(12)	4	30
43192	(00)	20	0	30054	(00)	16	28
43295	(00)	27	1	30054	(12)	19	30
48327	(00)	26	0	32477	(00)	1	27
48568	(00)	16	0	32477	(12)	1	26
65578	(00)	30	7	33837	(00)	16	27
65578	(12)	30	8	41112	(00)	17	28
71082	(00)	29	4	41316	(00)	2	31
74626	(00)	30	0	43346	(00)	0	26
74626	(12)	21	0	61052	(00)	6	30
76612	(12)	27	5	61052	(12)	0	31
76692	(12)	20	0	61442	(12)	10	27
94302	(00)	31	0	61641	(12)	0	11
94302	(12)	24	0	64910	(00)	0	21
96315	(12)	20	0	64910	(12)	0	21
-	-	-	-	67083	(12)	17	31
-	-	-	-	67197	(00)	0	12
-	-	-	-	68263	(00)	30	53
-	-	-	-	70026	(00)	19	34
-	-	-	-	70361	(12)	23	50
-	-	-	-	72206	(12)	27	38
-	-	-	-	72208	(00)	31	43
-	-	-	-	72210	(00)	30	41
-	-	-	-	72233	(00)	26	38
-	-	-	-	72274	(12)	30	41
-	-	-	-	74006	(00)	19	31
-	-	-	-	76458	(12)	9	25
-	-	-	-	76654	(12)	1	31
-	-	-	-	76743	(00)	0	15
-	-	-	-	82400	(12)	5	16
-	-	-	-	83566	(00)	0	28
-	-	-	-	83566	(12)	0	29
-	-	-	-	89009	(12)	6	18
-	-	-	-	89512	(12)	0	14
-	-	-	-	89592	(12)	0	14
-	-	-	-	89664	(12)	7	24
-	-	-	-	91212	(00)	15	40
-	-	-	-	91212	(12)	11	44
-	-	-	-	98444	(12)	18	30
-	-	-	-	98618	(12)	14	25

2.2 Drifting Buoys

Surface pressure observations from **1532** 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

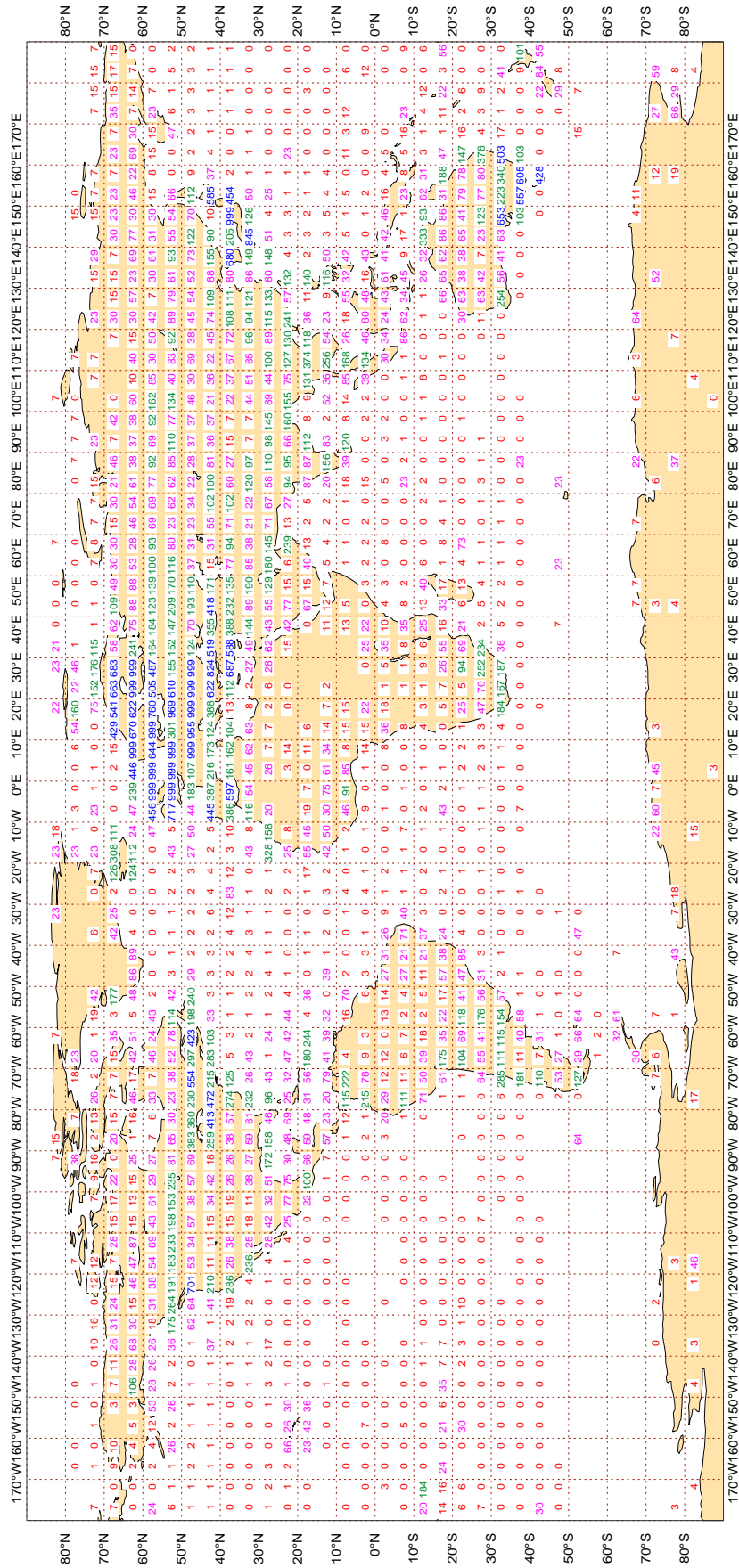
Table 12 provides quality statistics of aircraft wind observations stratified by airline carrier.

3.2.1 Figure 1 - Availability - SYNOP PRESSURE

Figure 1

ECMWF Monitoring Statistics - OCT 2017
 Availability - SYNOP/SHIP (manual, auto) pressure
 Average number of observations in 24 hours - 97627
 LAND - WMO Region I: 4411 II:18718 III: 4425 IV: 7175
 Region V: 8891 VI:39025 Antarctic: 927

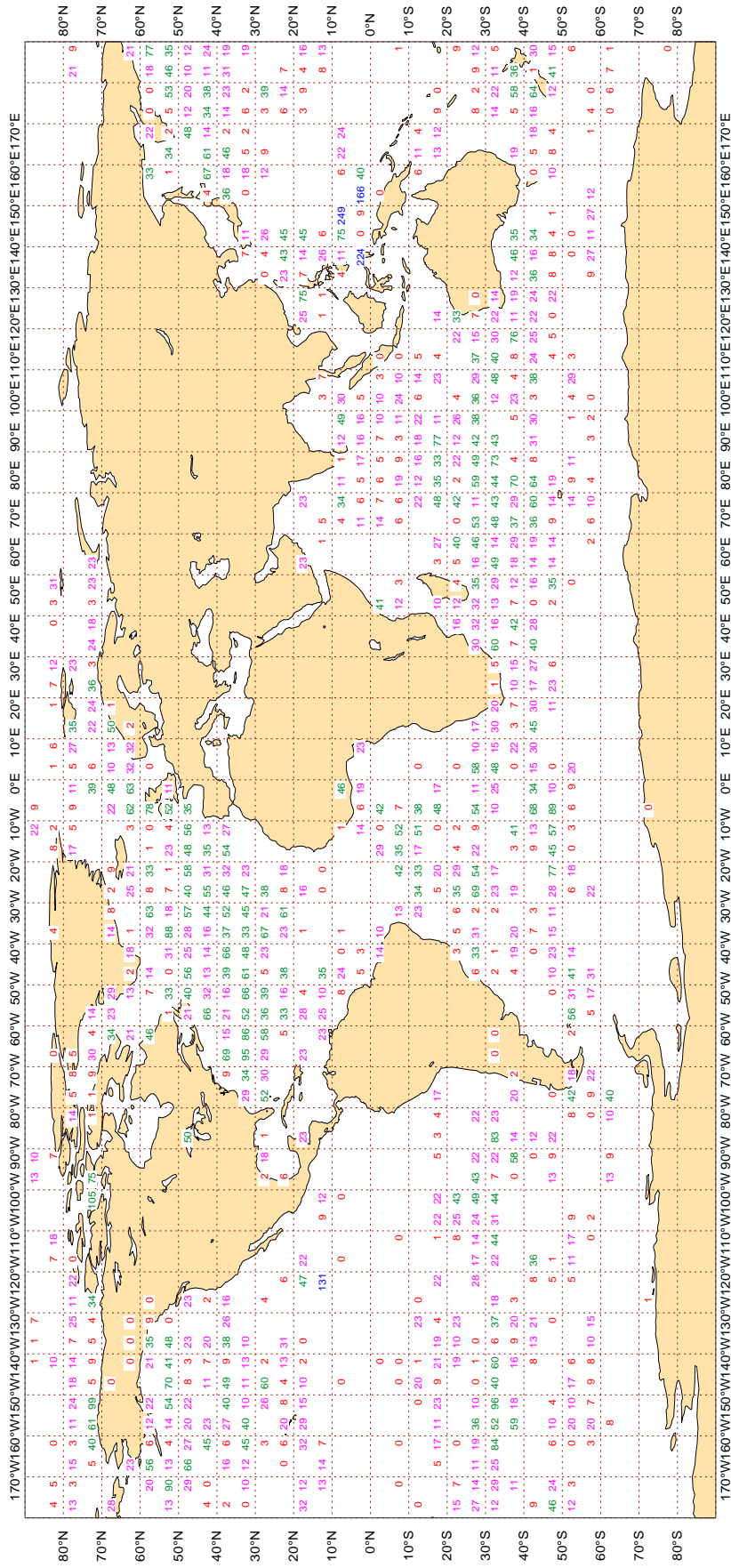
Oceans - N. Atlantic 8147 S. Atlantic 211 Indian 512 Pacific 5184



3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

Figure 2

ECMWF Monitoring Statistics - OCT 2017
 Availability - DRIFTER PRESSURE
 Average number of observations in 24 hours - 18720
 Oceans - N. Atlantic 4432 S. Atlantic 2292 Indian 3878 Pacific 8119



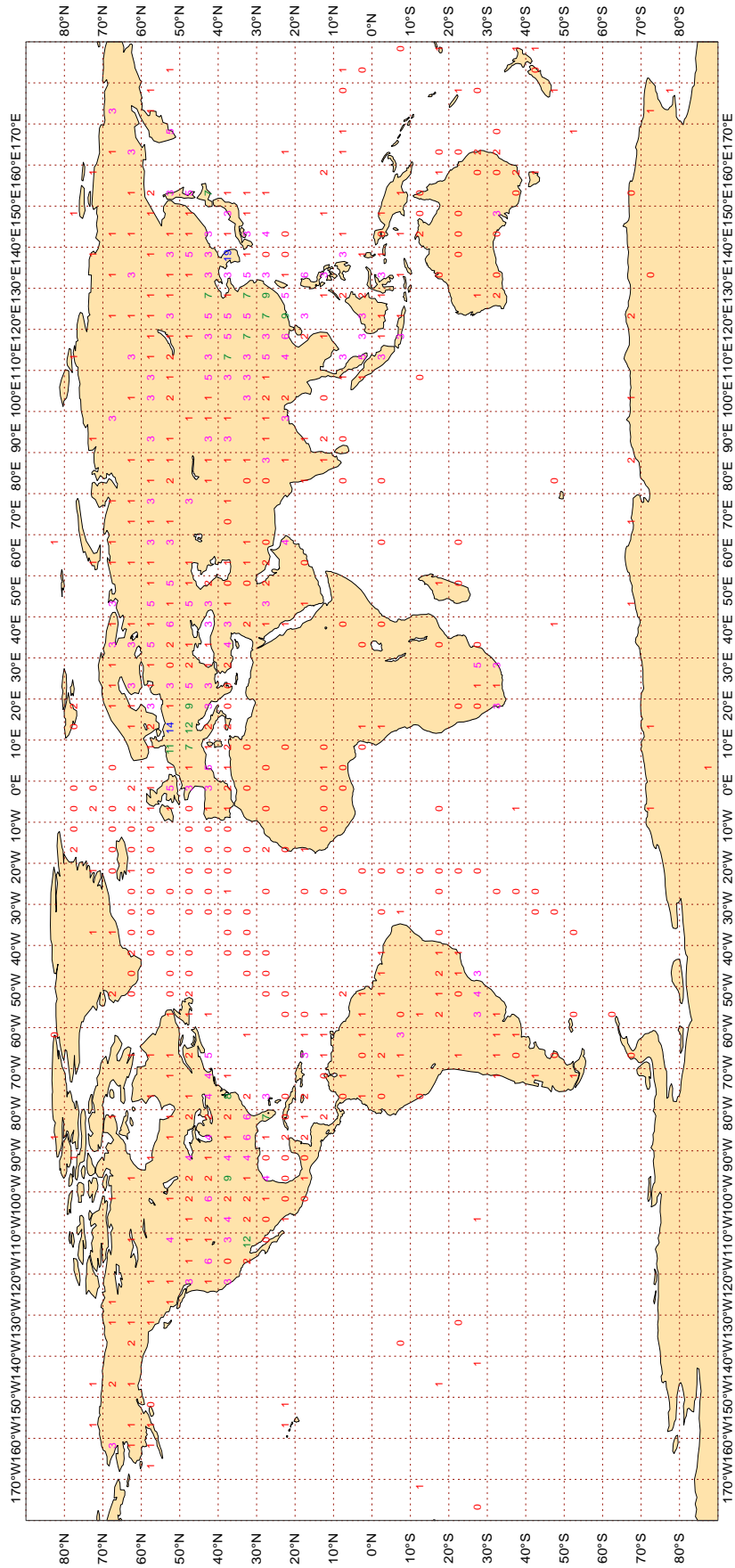
Magics 2.24.2 (64 bit)



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential

Figure 3

ECMWF Monitoring Statistics - OCT 2017
 Availability - TEMP 500 hPa Geopotential
 Average number of observations in 24 hours - 1307
 LAND - WMO Region I: 48 II: 486 III: 81 IV: 269
 Region V: 137 VI: 255 Antarctic: 18
 Oceans - N. Atlantic 14 S. Atlantic 1 Indian 0 Pacific 0



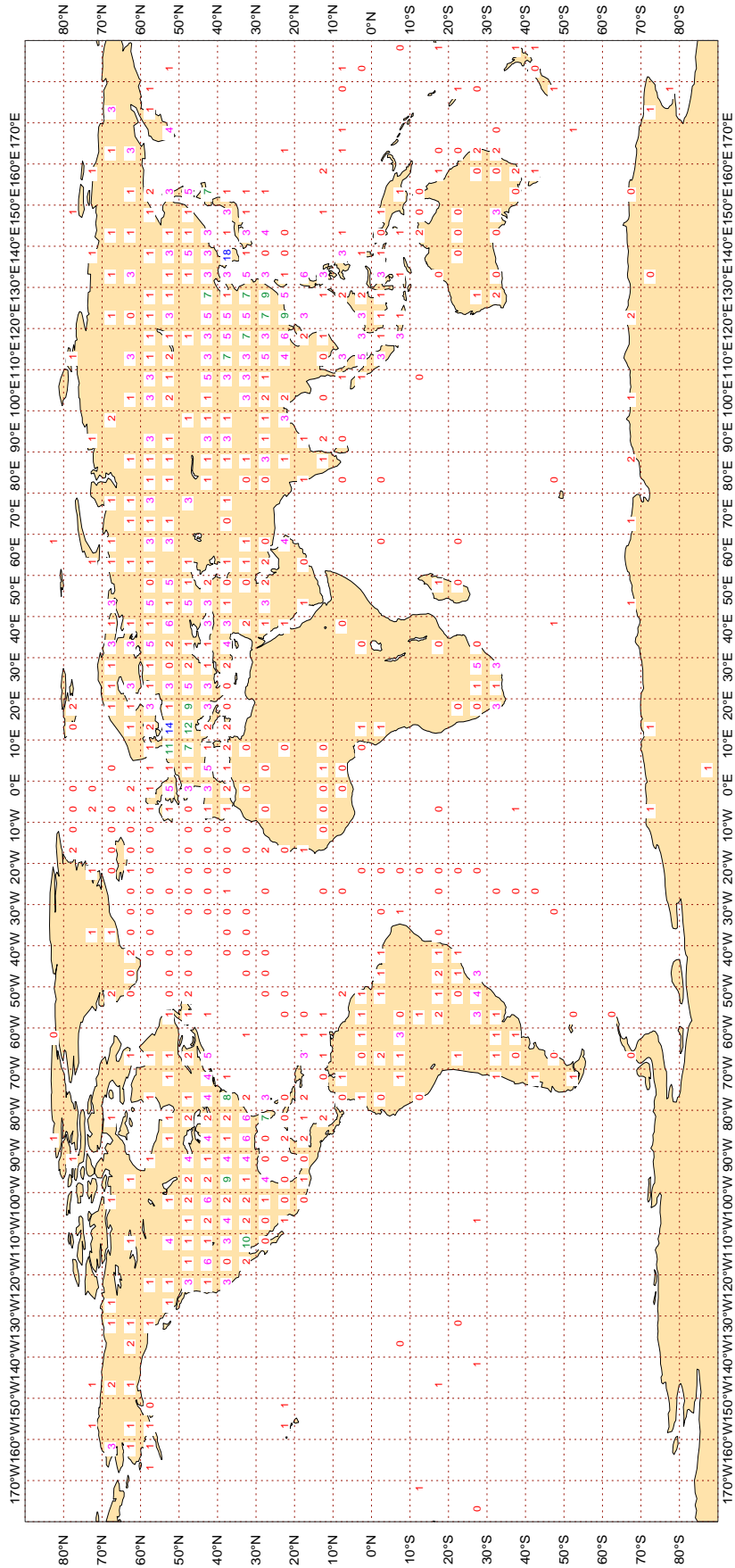
Magics 2.24.2 (64 bit)



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

Figure 4

ECMWF Monitoring Statistics - OCT 2017
 Availability - TEMP/PILOT 300 hPa wind
 Average number of observations in 24 hours - 1295
 LAND - WMO Region I: 47 II: 479 III: 81 IV: 268
 Region V: 135 VI: 253 Antarctic: 18
 Oceans - N. Atlantic 14 S. Atlantic 0 Indian 0 Pacific 0



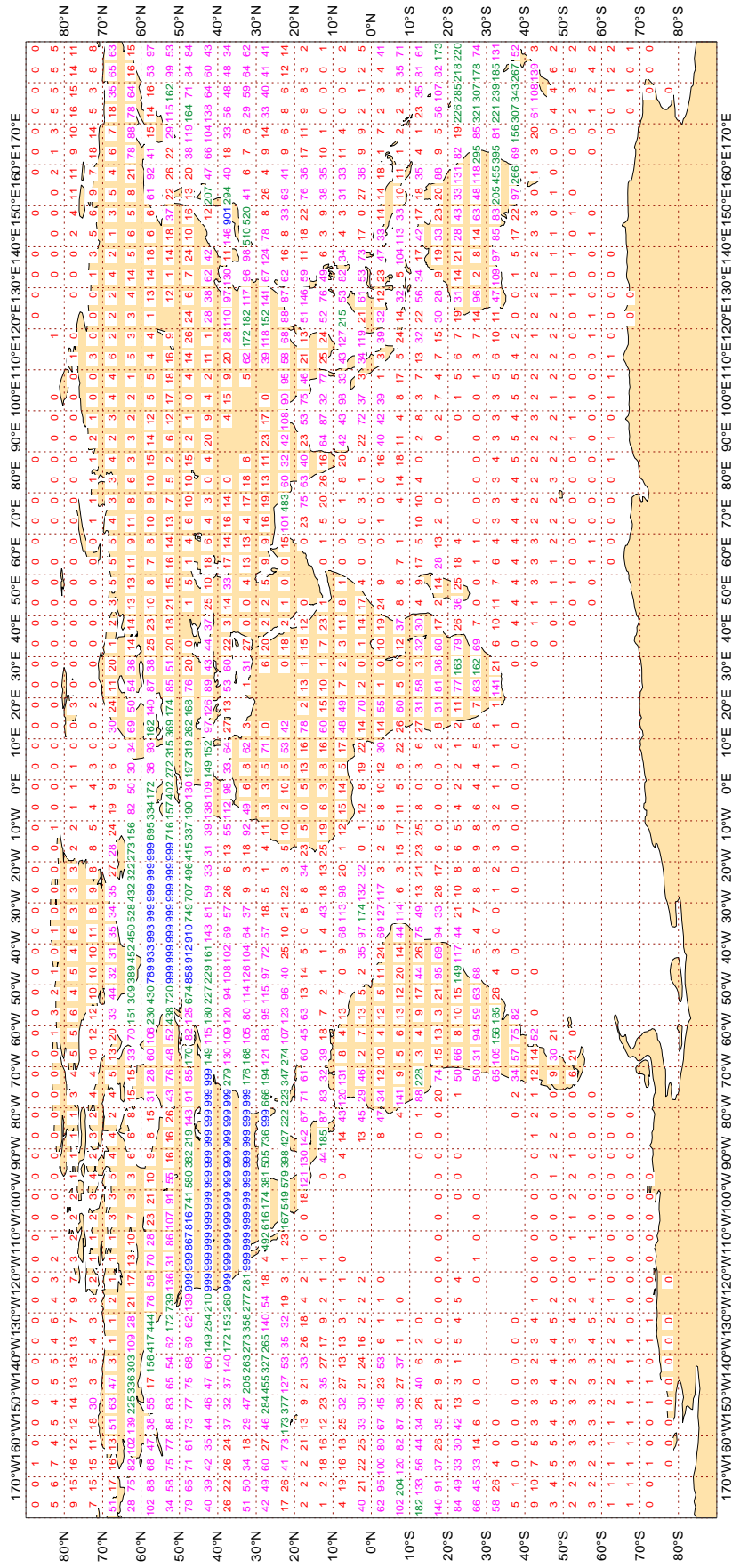
Magics 2.24.2 (64 bit)



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

Figure 5

ECMWF Monitoring Statistics - OCT 2017
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 196834



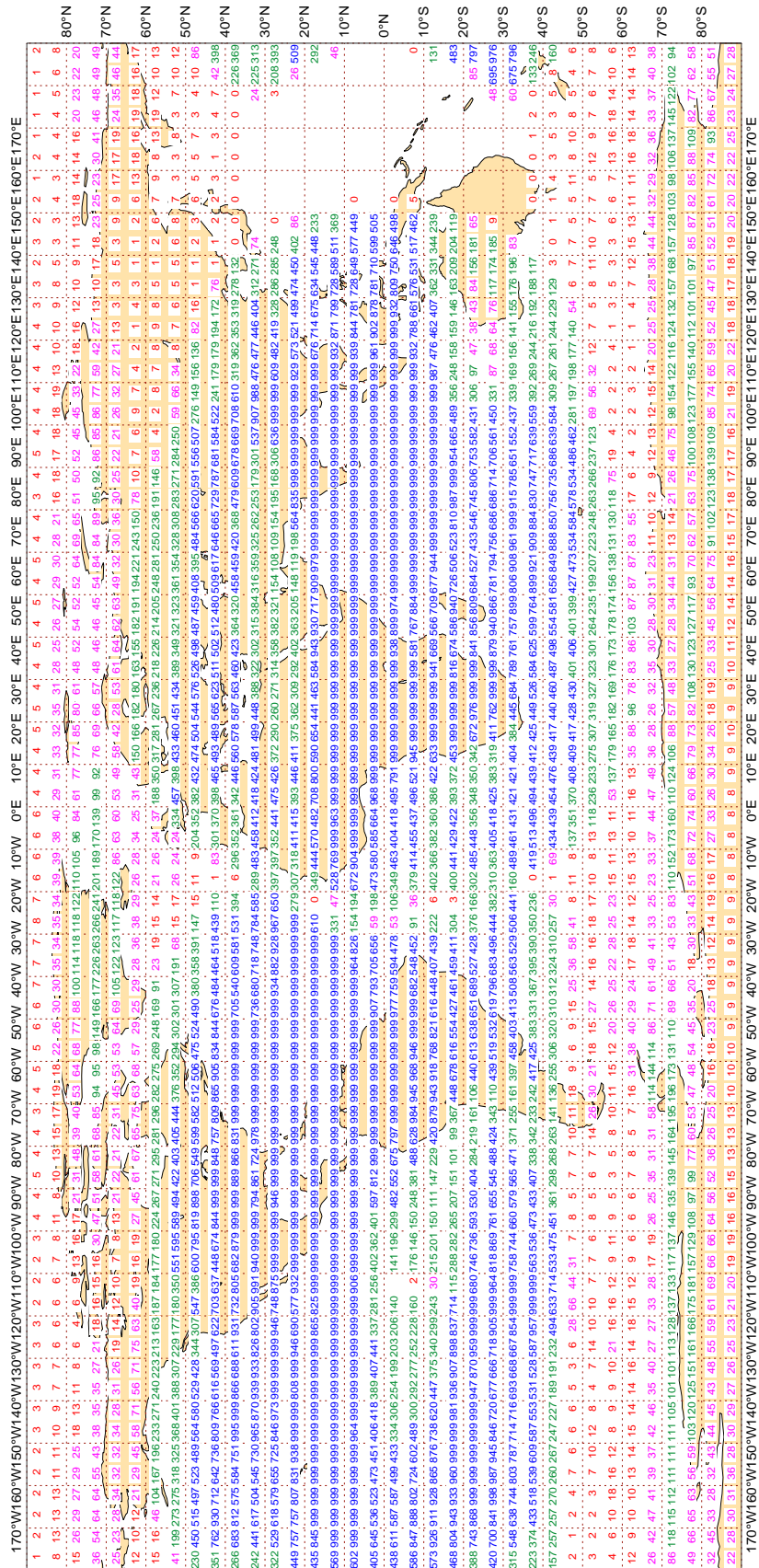
Majics 2.24.2 (64 bit)



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

Figure 6

ECMWF Monitoring Statistics - OCT 2017
Availability - AMV winds 400-150 hPa
Average number of observations in 24 hours - 1020672



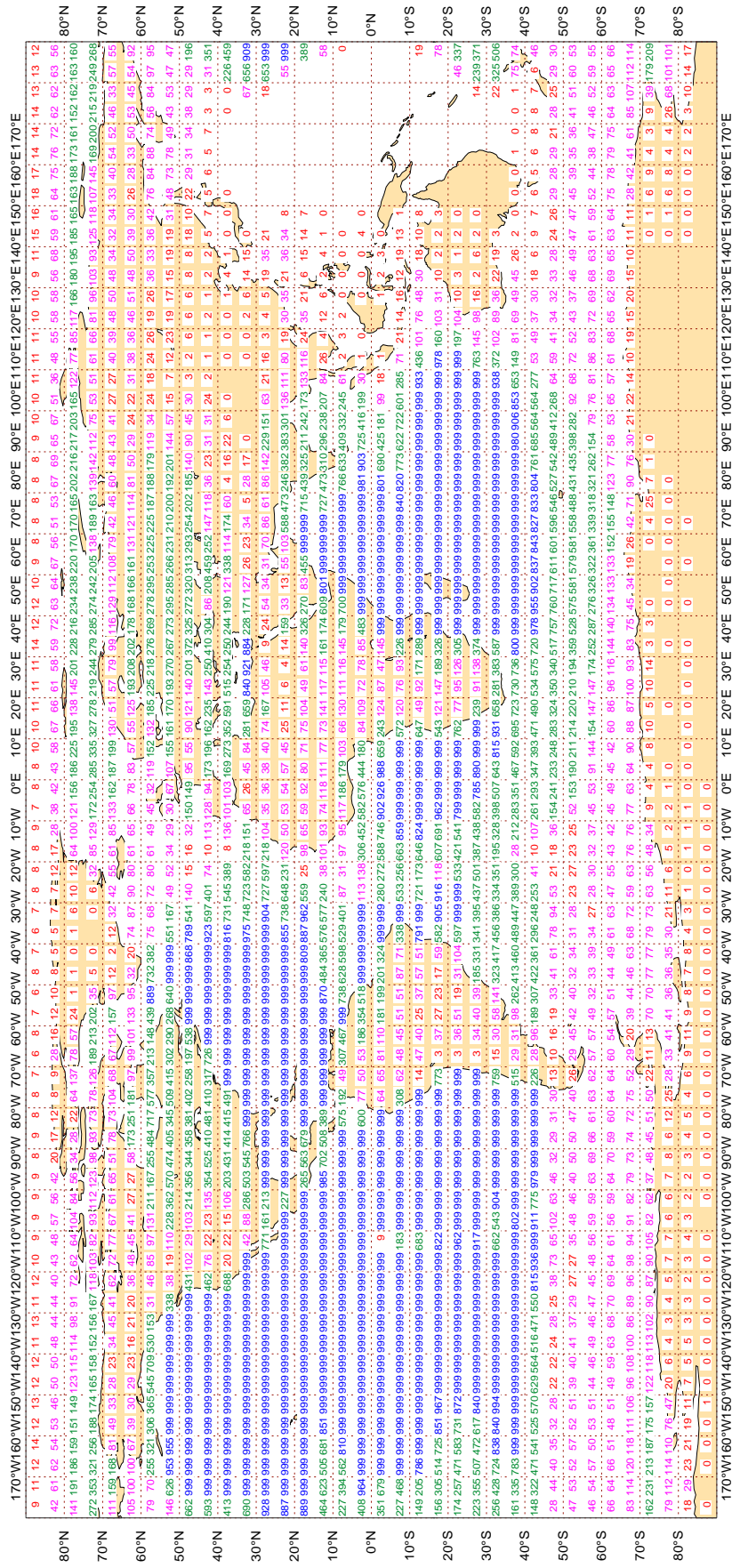
Magics 2.24.2 (64 bit)



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

Figure 7

ECMWF Monitoring Statistics - OCT 2017
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 1399203



Magics 2.24.2 (64 bit)



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

Figure 9.1

ECMWF Monitoring Statistics - OCT 2017
Availability - NOAA18 ATOVS : AMSU-A
Average number of observations in 24 hours - 579990

Latitude	170°W	160°W	150°W	140°W	130°W	120°W	110°W	100°W	90°W	80°W	70°W	60°W	50°W	40°W	30°W	20°W	10°W	0°E	10°E	20°E	30°E	40°E	50°E	60°E	70°E	80°E	90°E	100°E	110°E	120°E	130°E	140°E	150°E	160°E	170°E																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
80°N	54	61	63	62	64	65	67	69	68	68	70	71	72	71	73	74	75	74	73	76	73	74	73	76	74	74	73	75	74	73	72	73	71	71	69	68	70	68	67	65	66	64	63	61	59	58	57	56	55	54	54	55	55	55	55	55	58	58	57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
70°N	178	201	206	210	218	221	227	247	265	292	299	305	313	323	331	342	354	372	391	404	420	440	450	463	473	479	484	512	538	565	575	576	585	594	603	611	619	627	635	643	651	659	667	675	683	691	700	708	716	724	732	740	748	756	764	772	780	788	796	804	812	820	828	836	844	852	860	868	876	884	892	900	908	916	924	932	940	948	956	964	972	980	988	996	1004	1012	1020	1028	1036	1044	1052	1060	1068	1076	1084	1092	1100	1108	1116	1124	1132	1140	1148	1156	1164	1172	1180	1188	1196	1204	1212	1220	1228	1236	1244	1252	1260	1268	1276	1284	1292	1300	1308	1316	1324	1332	1340	1348	1356	1364	1372	1380	1388	1396	1404	1412	1420	1428	1436	1444	1452	1460	1468	1476	1484	1492	1500	1508	1516	1524	1532	1540	1548	1556	1564	1572	1580	1588	1596	1604	1612	1620	1628	1636	1644	1652	1660	1668	1676	1684	1692	1700	1708	1716	1724	1732	1740	1748	1756	1764	1772	1780	1788	1796	1804	1812	1820	1828	1836	1844	1852	1860	1868	1876	1884	1892	1900	1908	1916	1924	1932	1940	1948	1956	1964	1972	1980	1988	1996	2004	2012	2020	2028	2036	2044	2052	2060	2068	2076	2084	2092	2100	2108	2116	2124	2132	2140	2148	2156	2164	2172	2180	2188	2196	2204	2212	2220	2228	2236	2244	2252	2260	2268	2276	2284	2292	2300	2308	2316	2324	2332	2340	2348	2356	2364	2372	2380	2388	2396	2404	2412	2420	2428	2436	2444	2452	2460	2468	2476	2484	2492	2500	2508	2516	2524	2532	2540	2548	2556	2564	2572	2580	2588	2596	2604	2612	2620	2628	2636	2644	2652	2660	2668	2676	2684	2692	2700	2708	2716	2724	2732	2740	2748	2756	2764	2772	2780	2788	2796	2804	2812	2820	2828	2836	2844	2852	2860	2868	2876	2884	2892	2900	2908	2916	2924	2932	2940	2948	2956	2964	2972	2980	2988	2996	3004	3012	3020	3028	3036	3044	3052	3060	3068	3076	3084	3092	3100	3108	3116	3124	3132	3140	3148	3156	3164	3172	3180	3188	3196	3204	3212	3220	3228	3236	3244	3252	3260	3268	3276	3284	3292	3300	3308	3316	3324	3332	3340	3348	3356	3364	3372	3380	3388	3396	3404	3412	3420	3428	3436	3444	3452	3460	3468	3476	3484	3492	3500	3508	3516	3524	3532	3540	3548	3556	3564	3572	3580	3588	3596	3604	3612	3620	3628	3636	3644	3652	3660	3668	3676	3684	3692	3700	3708	3716	3724	3732	3740	3748	3756	3764	3772	3780	3788	3796	3804	3812	3820	3828	3836	3844	3852	3860	3868	3876	3884	3892	3900	3908	3916	3924	3932	3940	3948	3956	3964	3972	3980	3988	3996	4004	4012	4020	4028	4036	4044	4052	4060	4068	4076	4084	4092	4100	4108	4116	4124	4132	4140	4148	4156	4164	4172	4180	4188	4196	4204	4212	4220	4228	4236	4244	4252	4260	4268	4276	4284	4292	4300	4308	4316	4324	4332	4340	4348	4356	4364	4372	4380	4388	4396	4404	4412	4420	4428	4436	4444	4452	4460	4468	4476	4484	4492	4500	4508	4516	4524	4532	4540	4548	4556	4564	4572	4580	4588	4596	4604	4612	4620	4628	4636	4644	4652	4660	4668	4676	4684	4692	4700	4708	4716	4724	4732	4740	4748	4756	4764	4772	4780	4788	4796	4804	4812	4820	4828	4836	4844	4852	4860	4868	4876	4884	4892	4900	4908	4916	4924	4932	4940	4948	4956	4964	4972	4980	4988	4996	5004	5012	5020	5028	5036	5044	5052	5060	5068	5076	5084	5092	5100	5108	5116	5124	5132	5140	5148	5156	5164	5172	5180	5188	5196	5204	5212	5220	5228	5236	5244	5252	5260	5268	5276	5284	5292	5300	5308	5316	5324	5332	5340	5348	5356	5364	5372	5380	5388	5396	5404	5412	5420	5428	5436	5444	5452	5460	5468	5476	5484	5492	5500	5508	5516	5524	5532	5540	5548	5556	5564	5572	5580	5588	5596	5604	5612	5620	5628	5636	5644	5652	5660	5668	5676	5684	5692	5700	5708	5716	5724	5732	5740	5748	5756	5764	5772	5780	5788	5796	5804	5812	5820	5828	5836	5844	5852	5860	5868	5876	5884	5892	5900	5908	5916	5924	5932	5940	5948	5956	5964	5972	5980	5988	5996	6004	6012	6020	6028	6036	6044	6052	6060	6068	6076	6084	6092	6100	6108	6116	6124	6132	6140	6148	6156	6164	6172	6180	6188	6196	6204	6212	6220	6228	6236	6244	6252	6260	6268	6276	6284	6292	6300	6308	6316	6324	6332	6340	6348	6356	6364	6372	6380	6388	6396	6404	6412	6420	6428	6436	6444	6452	6460	6468	6476	6484	6492	6500	6508	6516	6524	6532	6540	6548	6556	6564	6572	6580	6588	6596	6604	6612	6620	6628	6636	6644	6652	6660	6668	6676	6684	6692	6700	6708	6716	6724	6732	6740	6748	6756	6764	6772	6780	6788	6796	6804	6812	6820	6828	6836	6844	6852	6860	6868	6876	6884	6892	6900	6908	6916	6924	6932	6940	6948	6956	6964	6972	6980	6988	6996	7004	7012	7020	7028	7036	7044	7052	7060	7068	7076	7084	7092	7100	7108	7116	7124	7132	7140	7148	7156	7164	7172	7180	7188	7196	7204	7212	7220	7228	7236	7244	7252	7260	7268	7276	7284	7292	7300	7308	7316	7324	7332	7340	7348	7356	7364	7372	7380	7388	7396	7404	7412	7420	7428	7436	7444	7452	7460	7468	7476	7484	7492	7500	7508	7516	7524	7532	7540	7548	7556	7564	7572	7580	7588	7596	7604	7612	7620	7628	7636	7644	7652	7660	7668	7676	7684	7692	7700	7708	7716	7724	7732	7740	7748	7756	7764	7772	7780	7788	7796	7804	7812	7820	7828	7836	7844	7852	7860	7868	7876	7884	7892	7900	7908	7916	7924	7932	7940	7948	7956	7964	7972	7980	7988	7996	8004	8012	8020	8028	8036	8044	8052	8060	8068	8076	8084	8092	8100	8108	8116	8124	8132	8140	8148	8156	8164	8172	8180	8188	8196	8204	8212	8220	8228	8236	8244	8252	8260	8268	8276	8284	8292	8300	8308	8316	8324	8332	8340	8348	8356	8364	8372	8380	8388	8396	8404	8412	8420	8428	8436	8444	8452	8460	8468	8476	8484	8492	8500	8508	8516	8524	8532	8540	8548	8556	8564	8572	8580	8588	8596	8604	8612	8620	8628	8636	8644	8652	8660	8668	8676	8684	8692	8700	8708	8716	8724	8732	8740	8748	8756	8764	8772	8780	8788	8796	8804	8812	8820	8828	8836	8844	8852	8860	8868	8876	8884	8892	8900	8908	8916	8924	8932	8940	8948	8956	8964	8972	8980	8988	8996	9004	9012	9020	9028	9036	9044	9052	9060	9068	9076	9084	9092	9100	9108	9116	9124	9132	9140	9148	9156	9164	9172	9180	9188	9196	9204	9212	9220	9228	9236	9244	9252	9260	9268	9276	9284	9292	9300	9308	9316	9324	9332	9340	9348	9356	9364	9372	9380	9388	9396	9404	9412	9420	9428	9436	9444	9452	9460	9468	9476	9484	9492	9500	9508	9516	9524	9532	9540	9548	9556	9564	9572	9580	9588	9596	9604	9612	9620	9628	9636	9644	9652	9660	9668	9676	9684	9692	9700	9708	9716	9724	9732	9740	9748	9756	9764	9772	9780	9788	9796	9804	9812	9820	9828	9836	9844	9852	9860	9868	9876	9884	9892	9900	9908	9916	9924	9932	9940	9948	9956	9964	9972	9980	9988	9996	10004	10012	10020	10028	10036	10044	10052	10060	10068	10076	10084	10092	10100	10108	10116	10124	10132	10140	10148	10156	10164	10172	10180	10188	10196	10204	10212	10220	10228	10236	10244	10252	10260	10268	10276	10284	10292	10300	10308	10316	10324	10332	10340	10348	10356	10364	10372	10

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 2017
 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
2HDG2	99	P	SUR	24	0	1.7	5.9	6.1
5BZE2	99	P	SUR	23	0	1.2	3.4	3.6
7JLI	99	P	SUR	19	0	0.8	3.8	3.9
9HJD9	99	P	SUR	21	0	1.4	-4.7	4.9
9V5332	99	P	SUR	31	0	1.7	-3.0	3.5
9V9793	99	P	SUR	26	0	1.4	4.8	5.0
AUXE	99	P	SUR	104	103	0.0	1.5	1.5
BKIC	99	P	SUR	32	0	1.8	3.5	3.9
C6BR3	99	P	SUR	24	0	0.7	12.9	13.0
C6FM9	99	P	SUR	20	0	1.1	5.7	5.8
C6FN2	99	P	SUR	64	0	1.0	4.3	4.4
C6LU4	99	P	SUR	24	0	1.2	3.5	3.7
C6UC3	99	P	SUR	66	0	1.6	3.4	3.8
C6UZ6	99	P	SUR	17	0	1.0	3.2	3.3
C6WW4	99	P	SUR	20	0	2.3	5.1	5.6
C6YM5	99	P	SUR	40	0	1.5	3.7	4.0
D5AG9	99	P	SUR	92	0	1.2	3.7	3.9
D5DY4	99	P	SUR	17	0	1.2	3.2	3.4
H3GR	99	P	SUR	16	0	1.3	3.2	3.4
H3VR	99	P	SUR	73	0	2.4	-3.3	4.1
ICJA	99	P	SUR	22	0	2.5	-4.2	4.9
LAQJ7	99	P	SUR	18	0	1.4	3.3	3.6
ONCD	99	P	SUR	53	0	1.0	-3.7	3.9
OUHC2	99	P	SUR	19	0	1.2	5.0	5.2
OXES2	99	P	SUR	41	0	3.4	-3.7	5.1
OZ2049	99	P	SUR	26	0	1.3	-5.4	5.5
PFBF	99	P	SUR	39	0	0.9	3.0	3.2
UAHF	99	P	SUR	46	11	4.6	-7.6	8.9
UBRI5	99	P	SUR	20	4	2.6	-3.7	4.5
UBXS	99	P	SUR	42	8	1.3	-12.6	12.7
UCLD	99	P	SUR	18	0	0.7	-4.8	4.9
UFJN	99	P	SUR	53	0	1.1	-4.5	4.6

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

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
UGZM	99	P	SUR	18	0	0.7	-3.6	3.7
UHOW	99	P	SUR	61	2	4.3	-7.5	8.6
V7SY6	99	P	SUR	91	0	4.1	-4.7	6.2
VREM6	99	P	SUR	52	0	1.6	3.2	3.6
VRF17	99	P	SUR	21	0	1.6	4.4	4.6
VRFI2	99	P	SUR	22	0	3.5	5.5	6.5
VRFI7	99	P	SUR	30	0	1.0	4.8	5.0
VRID2	99	P	SUR	60	0	1.7	3.7	4.0
VRKC2	99	P	SUR	39	0	1.3	3.5	3.7
VRLX5	99	P	SUR	23	1	1.9	-3.2	3.8
VRME7	99	P	SUR	15	0	0.8	-5.6	5.7
VRQK3	99	P	SUR	18	0	2.5	-3.1	3.9
VTXB	99	P	SUR	86	9	8.5	-1.5	8.6
WAIU	99	P	SUR	20	0	1.6	-4.3	4.6
WC5932	99	P	SUR	46	4	6.6	-10.9	12.7
WCX8884	99	P	SUR	28	0	0.7	5.8	5.8
WDB3161	99	P	SUR	61	0	0.8	4.9	5.0
WDD9283	99	P	SUR	66	0	5.7	-0.6	5.7
WDG8555	99	P	SUR	15	0	0.6	4.7	4.7
WDI5795	99	P	SUR	40	0	3.7	-4.7	6.0
WKPM	99	P	SUR	27	0	2.1	4.4	4.8
WLPI	99	P	SUR	16	0	0.6	-3.3	3.4
WSLH	99	P	SUR	46	0	2.3	-3.3	4.0
WTDH	99	P	SUR	37	0	0.4	-4.4	4.4

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 2017
 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 2017
 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
34002	99	DIRN	SUR	237	57	0	165.6	36.5	169.6
42045	99	DIRN	SUR	135	0	0	15.5	-45.2	47.8
44008	99	DIRN	SUR	101	5	0	168.4	20.5	169.6
44037	99	DIRN	SUR	98	0	0	13.4	36.4	38.8
45006	99	DIRN	SUR	23	0	0	96.9	-42.7	105.9
45154	99	DIRN	SUR	138	0	0	16.0	36.2	39.6
45166	99	DIRN	SUR	64	0	0	20.4	-44.1	48.6
46118	99	DIRN	SUR	43	0	0	75.2	21.8	78.3
46120	99	DIRN	SUR	101	0	0	68.6	-43.2	81.1

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 2017
 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
1501517	99	P	SUR	-37	-12	733	0	0.8	-5.8	5.8
1600512	99	P	SUR	-46	-171	34	34	0.0	0.0	0.0
1600522	99	P	SUR	-29	60	89	89	0.0	0.0	0.0
16512	99	P	SUR	-46	-171	34	34	0.0	0.0	0.0
16522	99	P	SUR	-29	60	89	89	0.0	0.0	0.0
3201537	99	P	SUR	-37	-96	105	40	2.4	0.5	2.5
41033	99	P	SUR	32	-80	39	0	0.6	5.7	5.8
4401754	99	P	SUR	63	2	259	209	3.8	9.8	10.5
4500508	99	P	SUR	45	-88	32	32	0.0	0.0	0.0
4500509	99	P	SUR	45	-88	1361	1361	0.0	0.0	0.0
45509	99	P	SUR	45	-88	630	630	0.0	0.0	0.0
4601657	99	P	SUR	44	150	468	57	5.3	-5.5	7.7
4700551	99	P	SUR	57	-6	535	391	6.7	-6.9	9.6
4700557	99	P	SUR	55	-9	638	0	0.6	-8.1	8.1
4701659	99	P	SUR	71	-104	116	116	0.0	0.0	0.0
4701674	99	P	SUR	73	-68	698	0	0.6	-5.5	5.5
47551	99	P	SUR	57	-6	324	173	6.6	-5.7	8.7
47552	99	P	SUR	67	-63	324	123	3.9	-1.8	4.3
47557	99	P	SUR	55	-9	324	0	0.4	-8.0	8.0
4800270	99	P	SUR	71	-104	413	413	0.0	0.0	0.0
4800279	99	P	SUR	84	-110	425	37	3.4	-5.1	6.1
4800631	99	P	SUR	83	27	709	605	5.0	-3.1	5.9
4800790	99	P	SUR	79	-173	525	354	8.3	-4.9	9.6
4801613	99	P	SUR	76	-155	239	3	5.8	7.2	9.3
4801622	99	P	SUR	74	-142	325	29	5.6	6.7	8.8
4801626	99	P	SUR	77	-145	631	459	5.2	-0.3	5.2
4802000	99	P	SUR	83	-110	125	61	2.9	-7.1	7.6
4802502	99	P	SUR	86	-99	592	517	7.6	-2.8	8.0
48270	99	P	SUR	71	-104	144	144	0.0	0.0	0.0
48279	99	P	SUR	83	-110	113	0	2.0	-4.9	5.2
48790	99	P	SUR	79	-177	321	284	2.3	-12.4	12.6
5301603	99	P	SUR	8	88	883	883	0.0	0.0	0.0

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

WMO IDENT	OBS TIME	ELM	ME LAT	N LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	
5400921	99	P	SUR	-33	-141	413	0	1.3	5.9	6.1
5401515	99	P	SUR	-52	-47	113	113	0.0	0.0	0.0
54921	99	P	SUR	-33	-141	413	0	1.3	5.9	6.1
5600942	99	P	SUR	-27	82	687	57	4.2	-6.3	7.5
5601611	99	P	SUR	-19	99	680	0	0.4	7.1	7.1
56942	99	P	SUR	-28	79	324	11	3.0	-8.8	9.3

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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

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

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : OCT 2017
 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
23092	99	DIRN	SUR	17	89	95	0	0	105.3	-58.3	120.3
23093	99	DIRN	SUR	16	88	127	0	0	20.6	22.4	30.4
23454	99	DIRN	SUR	10	73	109	0	0	18.3	26.8	32.4
23492	99	DIRN	SUR	11	72	70	0	0	40.6	25.6	48.0
23497	99	DIRN	SUR	11	72	112	0	0	18.3	24.4	30.5
3100229	99	DIRN	SUR	-3	-38	622	0	0	12.7	-21.2	24.8
3100231	99	DIRN	SUR	-27	-47	170	1	0	91.2	23.6	94.2
3100262	99	DIRN	SUR	-23	-43	160	1	0	42.2	-23.3	48.2
3101000	99	DIRN	SUR	-24	-42	20	0	0	56.1	-95.0	110.3
31229	99	DIRN	SUR	-3	-38	618	0	0	13.1	-21.6	25.3
31231	99	DIRN	SUR	-27	-47	169	1	0	90.9	21.9	93.5
31262	99	DIRN	SUR	-23	-43	176	0	0	48.8	-22.8	53.9
34002	99	DIRN	SUR	-55	-90	1915	504	0	161.8	51.2	169.7
42019	99	DIRN	SUR	28	-95	689	0	0	15.6	20.7	25.9
42045	99	DIRN	SUR	26	-97	804	0	0	17.3	-45.2	48.4
42085	99	DIRN	SUR	18	-67	829	0	0	29.3	28.3	40.8
42090	99	DIRN	SUR	18	-70	67	0	0	21.3	-41.1	46.3
42361	99	DIRN	SUR	28	-93	682	1	0	14.6	29.8	33.2
42365	99	DIRN	SUR	28	-89	444	2	0	19.9	-22.5	30.0
44008	99	DIRN	SUR	41	-69	607	35	0	165.1	34.1	168.6
44037	99	DIRN	SUR	44	-68	572	0	0	12.3	34.5	36.6
44058	99	DIRN	SUR	38	-76	686	0	0	15.4	-25.7	30.0
44137	99	DIRN	SUR	42	-62	706	0	0	20.6	-20.0	28.8
45006	99	DIRN	SUR	47	-90	161	0	0	95.9	-33.6	101.6
45154	99	DIRN	SUR	46	-83	799	0	0	17.1	35.7	39.6
45165	99	DIRN	SUR	42	-83	467	0	0	21.7	21.4	30.5
45166	99	DIRN	SUR	45	-73	301	0	0	18.4	-44.4	48.1
46060	99	DIRN	SUR	61	-147	498	0	0	34.5	22.8	41.4
46066	99	DIRN	SUR	53	-155	281	10	0	68.6	13.4	69.9
46118	99	DIRN	SUR	49	-123	302	0	0	73.9	16.1	75.6
46120	99	DIRN	SUR	48	-122	443	0	0	62.9	-43.6	76.6

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6100280	99	DIRN	SUR	41	1	279	0	0	51.1	48.1	70.2
6100281	99	DIRN	SUR	40	0	178	0	0	70.9	25.4	75.3
6101003	99	DIRN	SUR	40	25	67	0	0	46.0	29.6	54.7
6200200	99	DIRN	SUR	36	-8	511	0	0	161.0	-54.7	170.1

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 2017
 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
04360	12	Z	925	66	-38	30	0	8.5	44.8	45.6
04360	00	Z	925	66	-38	32	0	9.5	44.8	45.8
21946	12	Z	50	71	148	25	0	52.4	-146.1	155.2
27962	00	Z	30	53	45	19	0	103.0	-158.6	189.1
31873	12	Z	70	46	134	25	0	47.0	-124.0	132.6
33393	00	Z	200	50	24	14	0	47.9	93.0	104.6
34122	00	Z	30	52	39	24	0	59.2	-168.7	178.8
34300	00	Z	30	50	36	12	0	74.7	-178.7	193.7
38064	12	Z	100	45	66	28	1	84.8	91.3	124.6
38064	00	Z	70	45	66	20	3	79.5	112.8	138.0
40437	00	Z	925	25	47	31	0	0.0	33.3	33.3
42348	00	Z	30	27	76	22	0	16.7	198.6	199.3
43369	00	Z	30	8	73	18	0	23.1	189.2	190.6
78988	00	Z	50	12	-69	17	1	80.5	197.3	213.1
89512	00	Z	30	-71	12	30	0	81.9	-179.3	197.1
89592	00	Z	50	-67	93	27	0	54.4	-132.8	143.5
96147	00	Z	850	4	108	31	1	12.1	48.3	49.8
96147	12	Z	925	4	108	26	2	16.6	49.7	52.4
98223	00	Z	30	18	121	29	0	70.6	269.5	278.6

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 AREA : GLOBAL
 PERIOD : OCT 2017
 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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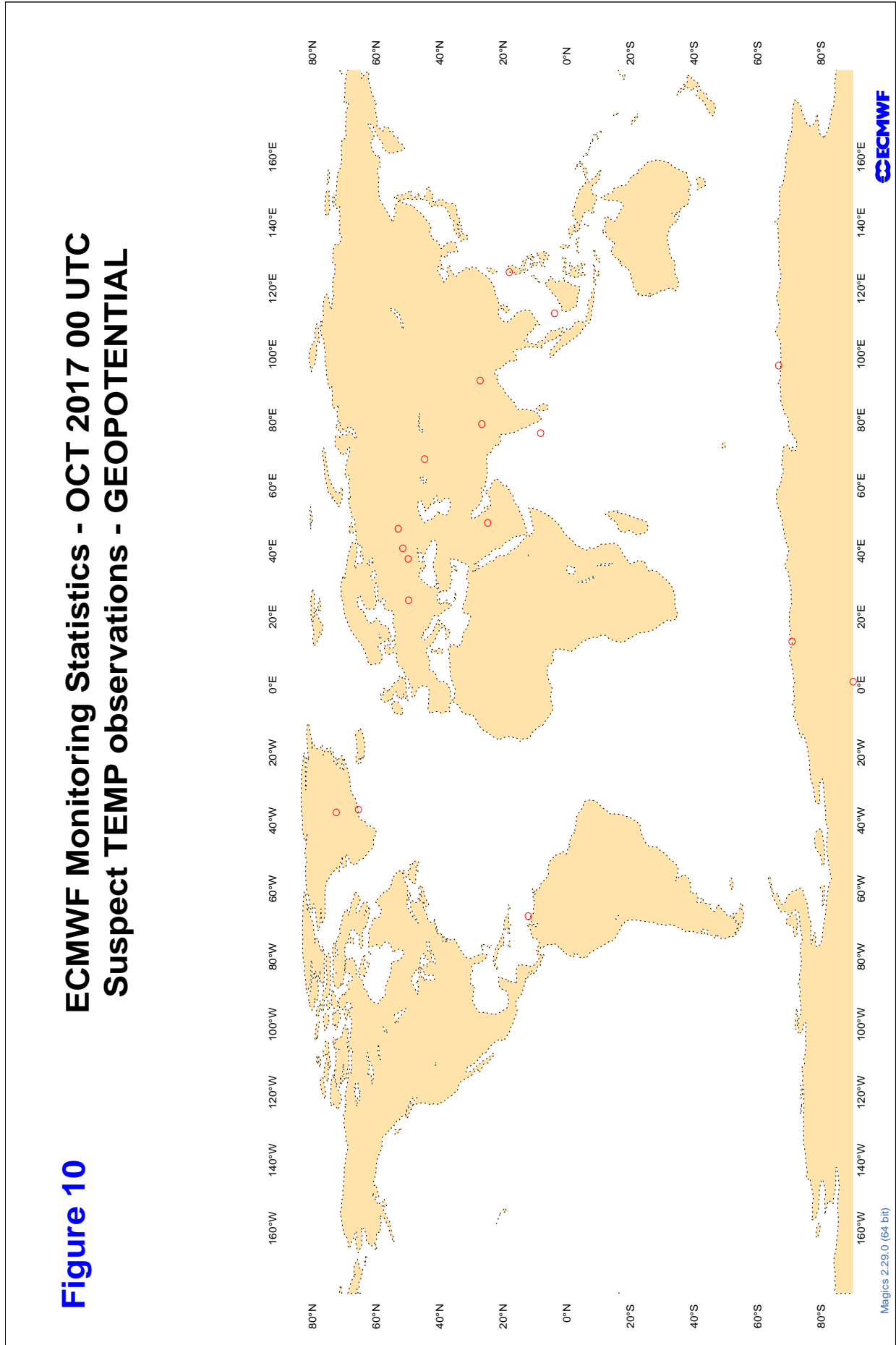
3.2.20 Table 9 - Suspect radiosondes: Wind direction (degrees)

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : OCT 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

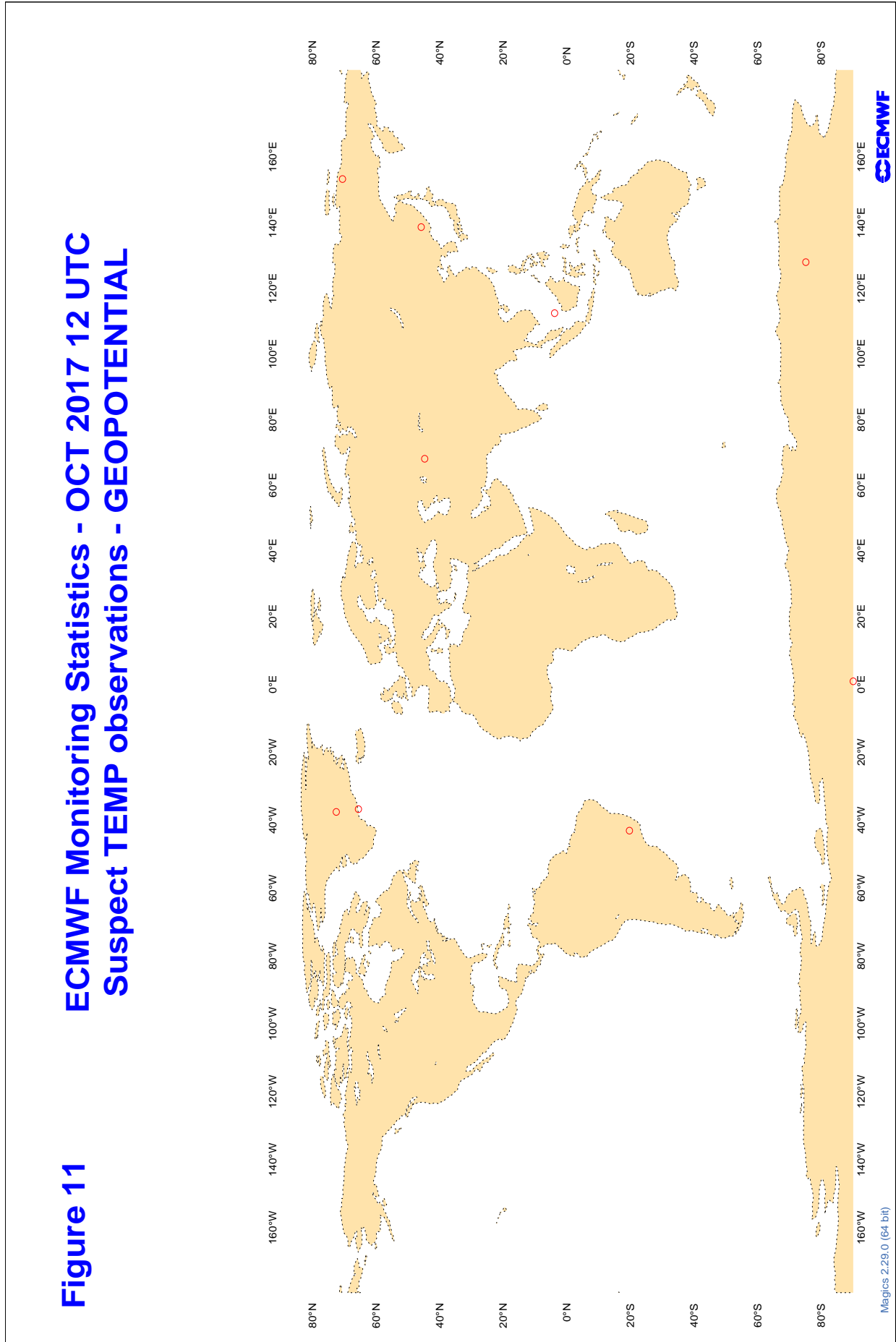
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS \geq 5 M/S
 NO. OF OBSERVATIONS \geq 5, AND,
 ABSOLUTE BIAS \geq 10 DEGREES, WITH
 STANDARD DEVIATION $<$ 30 DEGREES, AND,
 VERTICAL SPREAD $<$ 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
57972	00	DD	26	113	19	10.8	2.9	9.7

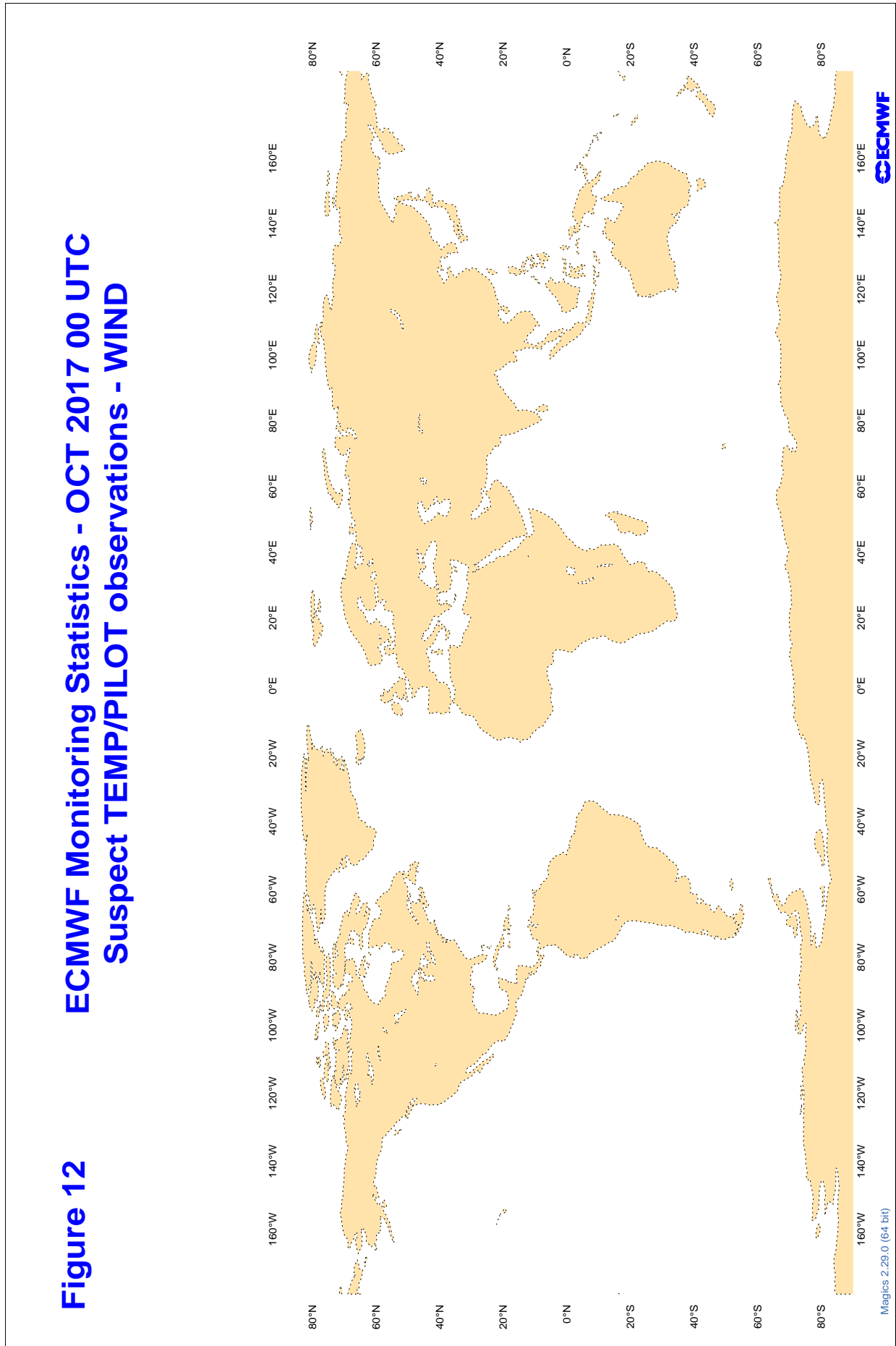
3.2.21 Figure 10 - Suspect TEMP observations - geopotential : 00 UTC



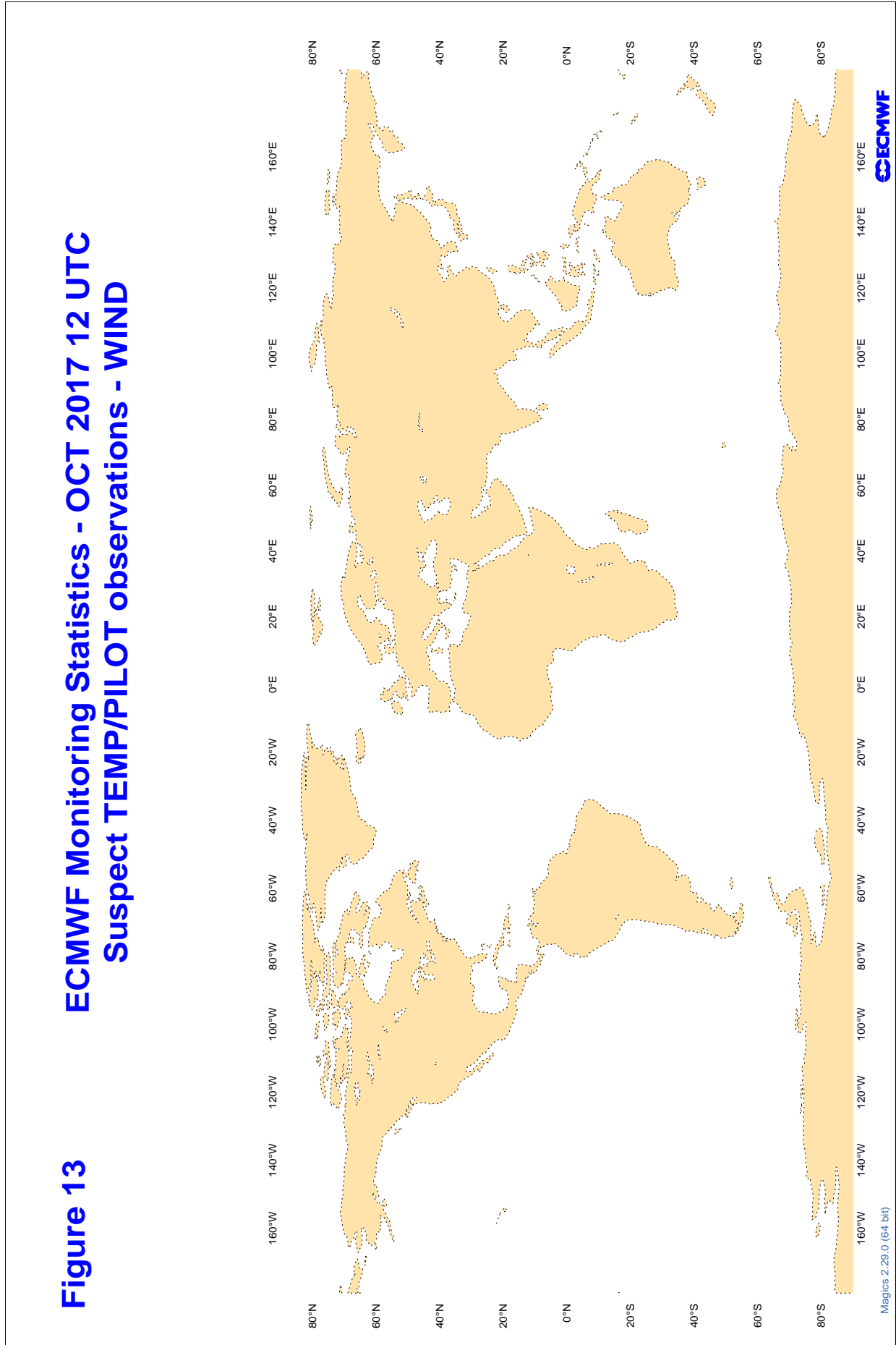
3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC



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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	00	Z	100	3	28.0	-27.9
7JUNA4	12	Z	100	2	79.8	60.7
ASDE02	12	Z	100	4	13.2	-4.6
ASDE02	00	Z	100	1	2.7	-2.7
ASDE09	12	Z	100	1	16.2	16.2
ASDK01	00	Z	100	10	22.6	12.4
ASDK01	12	Z	100	19	8.7	5.1
ASDK02	12	Z	100	10	8.0	-2.0
ASDK02	00	Z	100	8	6.6	2.9
ASDK03	12	Z	100	15	23.1	21.8
ASDK03	00	Z	100	13	21.0	20.3
ASDK1	00	Z	100	2	1.1	1.0
ASDK1	12	Z	100	4	12.8	-1.1
ASDK2	00	Z	100	1	6.8	6.8
ASDK2	12	Z	100	2	22.1	-18.0
ASDK3	12	Z	100	13	20.0	17.4
ASDK3	00	Z	100	11	19.3	18.1
ASFR1	12	Z	100	20	21.9	20.9
ASFR1	00	Z	100	17	40.1	6.6
ASFR2	12	Z	100	2	22.6	19.2
ASFR2	00	Z	100	8	19.0	18.8
ASFR3	00	Z	100	14	15.5	13.8
ASFR3	12	Z	100	15	20.6	18.7
ASFR4	12	Z	100	17	20.1	17.3
ASFR4	00	Z	100	22	21.7	20.4
ASUK3	12	Z	100	23	14.0	-7.7
DBLK	12	Z	100	16	10.6	-6.6
FPUW5G	12	Z	100	0	0.0	0.0
KMPLHP	12	Z	100	11	28.6	20.7
KMPLHP	00	Z	100	6	7.3	3.8
LRYQE3	00	Z	100	5	8.6	1.1
LRYQE3	12	Z	100	7	25.9	25.3
VKB4L5	12	Z	100	12	43.0	41.8
VKB4L5	00	Z	100	8	40.8	40.1
VKB4Q	12	Z	100	2	47.4	47.4
XKQLWQ	12	Z	100	20	16.1	14.0
XQFJRG	12	Z	100	10	9.7	8.1
XQFJRG	00	Z	100	10	11.3	3.0
XQFJX	12	Z	100	7	8.8	6.4

RADIOSONDE MONITORING STATISTICS (SHIPS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
XQFJX	00	Z	100	6	10.7	2.5

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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

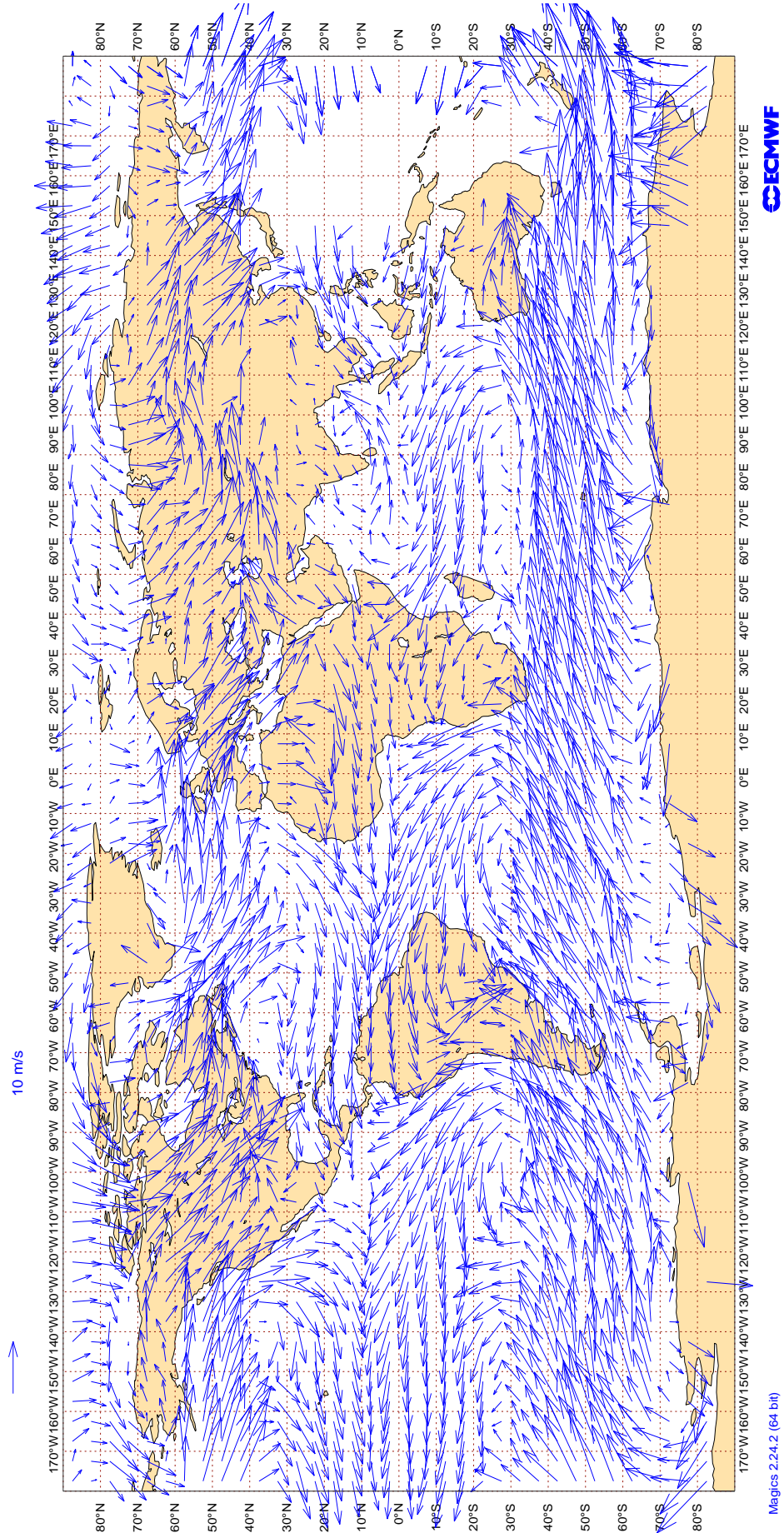
WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUN4	00	V	100	2	2.3	0.0	1.1
7JUN4	12	V	100	2	3.0	-0.2	0.2
ASDE02	12	V	100	3	3.3	-1.7	1.1
ASDE02	00	V	100	1	4.2	-3.4	-2.5
ASDE09	12	V	100	1	3.2	-3.0	1.1
ASDK01	00	V	100	9	3.9	0.3	1.1
ASDK01	12	V	100	16	3.5	0.5	0.3
ASDK02	12	V	100	9	3.6	0.5	-0.9
ASDK02	00	V	100	6	3.5	2.1	0.7
ASDK03	12	V	100	13	4.0	1.3	0.8
ASDK03	00	V	100	11	3.4	-1.0	0.0
ASDK1	00	V	100	2	5.2	2.4	3.0
ASDK1	12	V	100	4	4.4	1.7	1.4
ASDK2	00	V	100	1	3.2	3.1	0.7
ASDK2	12	V	100	2	4.3	0.2	-1.2
ASDK3	12	V	100	13	3.5	1.3	-0.2
ASDK3	00	V	100	11	3.4	-0.7	-0.1
ASFR1	12	V	100	12	4.1	-0.9	1.5
ASFR1	00	V	100	10	3.2	-0.2	1.6
ASFR2	12	V	100	2	1.3	-0.7	-0.7
ASFR2	00	V	100	4	2.1	-0.2	-0.1
ASFR3	00	V	100	7	2.6	0.6	-0.6
ASFR3	12	V	100	10	4.1	0.6	0.4
ASFR4	12	V	100	13	4.0	0.2	1.3
ASFR4	00	V	100	14	3.7	0.3	-0.5
ASUK3	12	V	100	12	4.5	0.5	1.1
DBLK	12	V	100	10	2.3	-0.8	0.2
FPUW5G	12	V	100	0	0.0	0.0	0.0
KMPLHP	12	V	100	7	3.3	-1.0	0.3
KMPLHP	00	V	100	4	4.0	-1.9	1.9
LRYQE3	00	V	100	2	4.6	-3.3	2.2
LRYQE3	12	V	100	6	3.9	-1.1	1.5
VKB4L5	12	V	100	9	3.6	0.8	-0.1
VKB4L5	00	V	100	7	4.7	1.2	0.4
VKB4Q	12	V	100	2	4.0	-2.9	1.7
XKQLWQ	12	V	100	14	3.8	0.5	-0.5
XQFJRG	12	V	100	8	3.7	-1.1	0.3
XQFJRG	00	V	100	6	3.3	0.5	-1.1
XQFJX	12	V	100	7	3.7	-1.6	-0.2

RADIOSONDE MONITORING STATISTICS (SHIPS)
(CONTINUED)

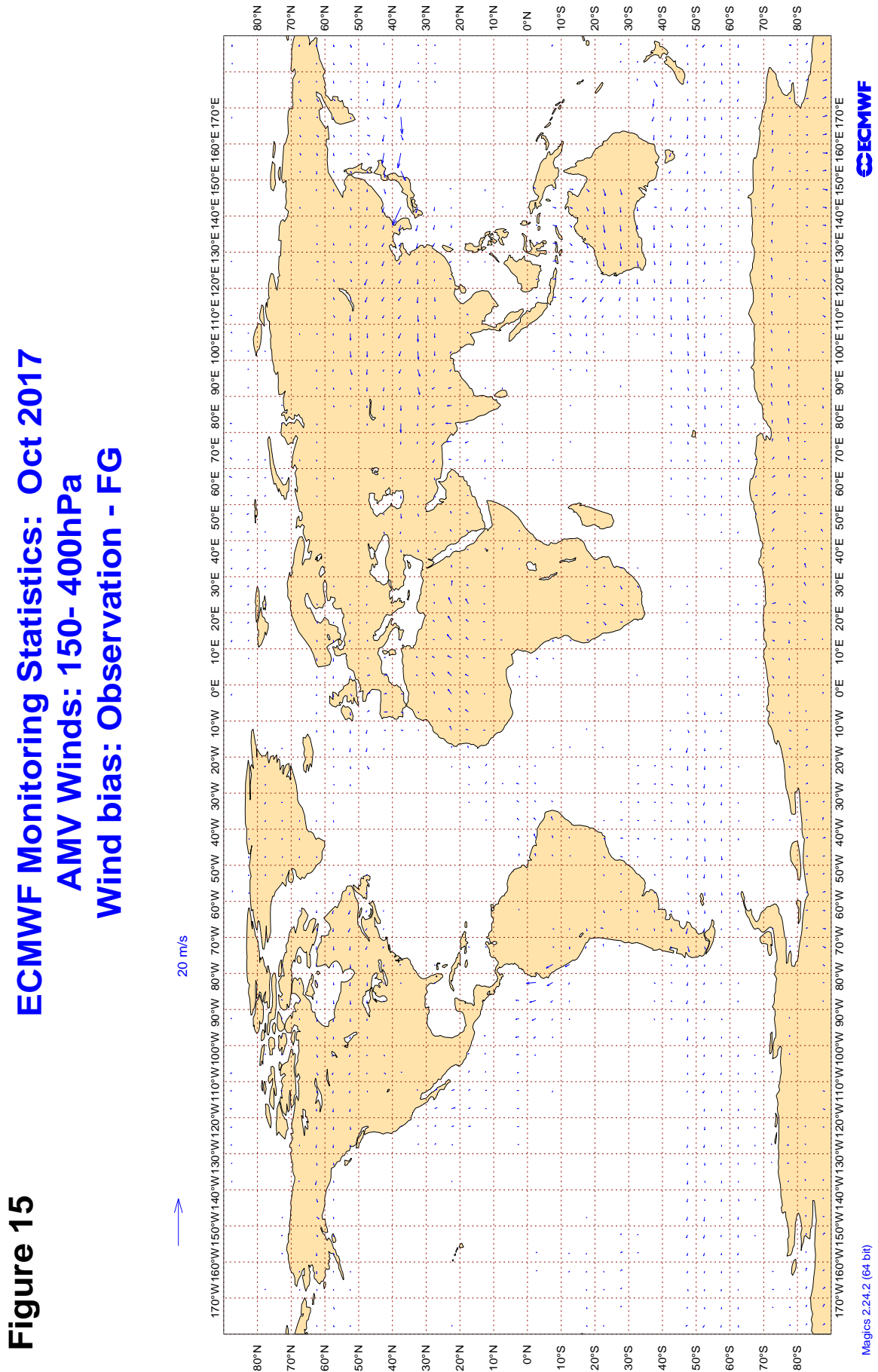
WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
XQFJX	00	V	100	6	4.0	1.3	-0.6

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

Figure 14
ECMWF Monitoring Statistics: Oct 2017
AMV Winds: 700-1000hPa
Mean Observed Wind

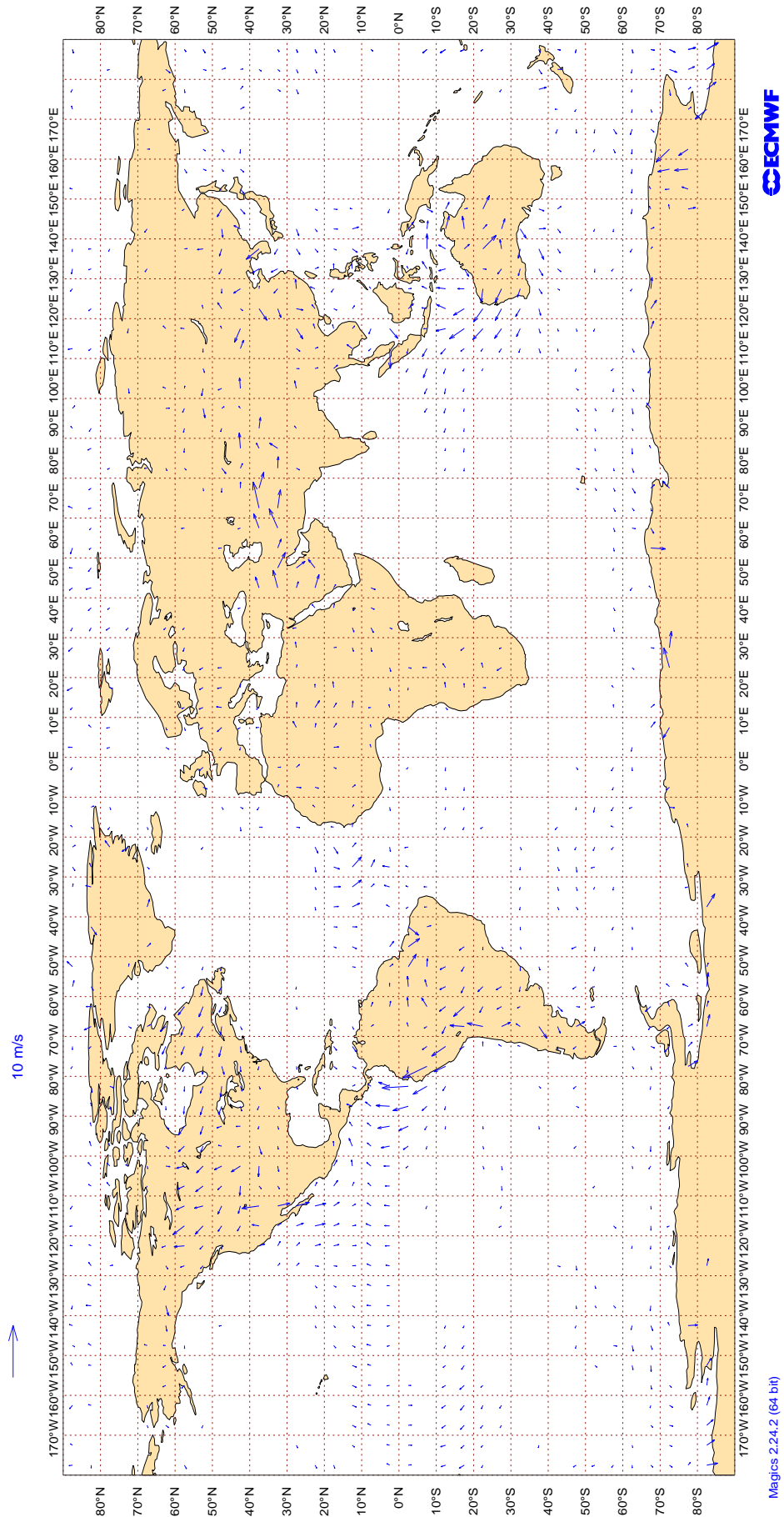


3.2.28 Figure 15 - SATOB Winds: 150- 400hPa



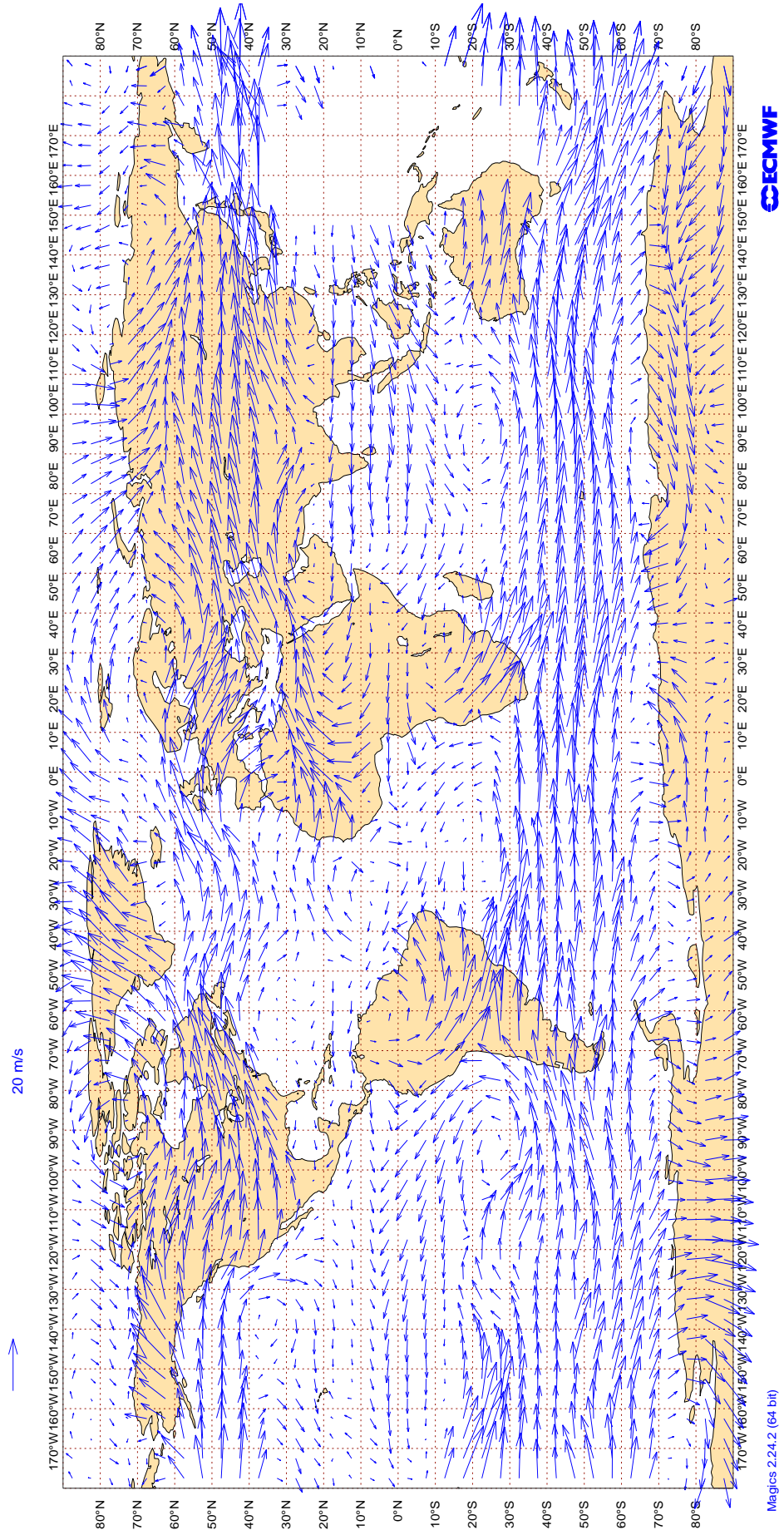
3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

Figure 16
ECMWF Monitoring Statistics: Oct 2017
AMV Winds: 700-1000hPa
Wind bias: Observation - FG



3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

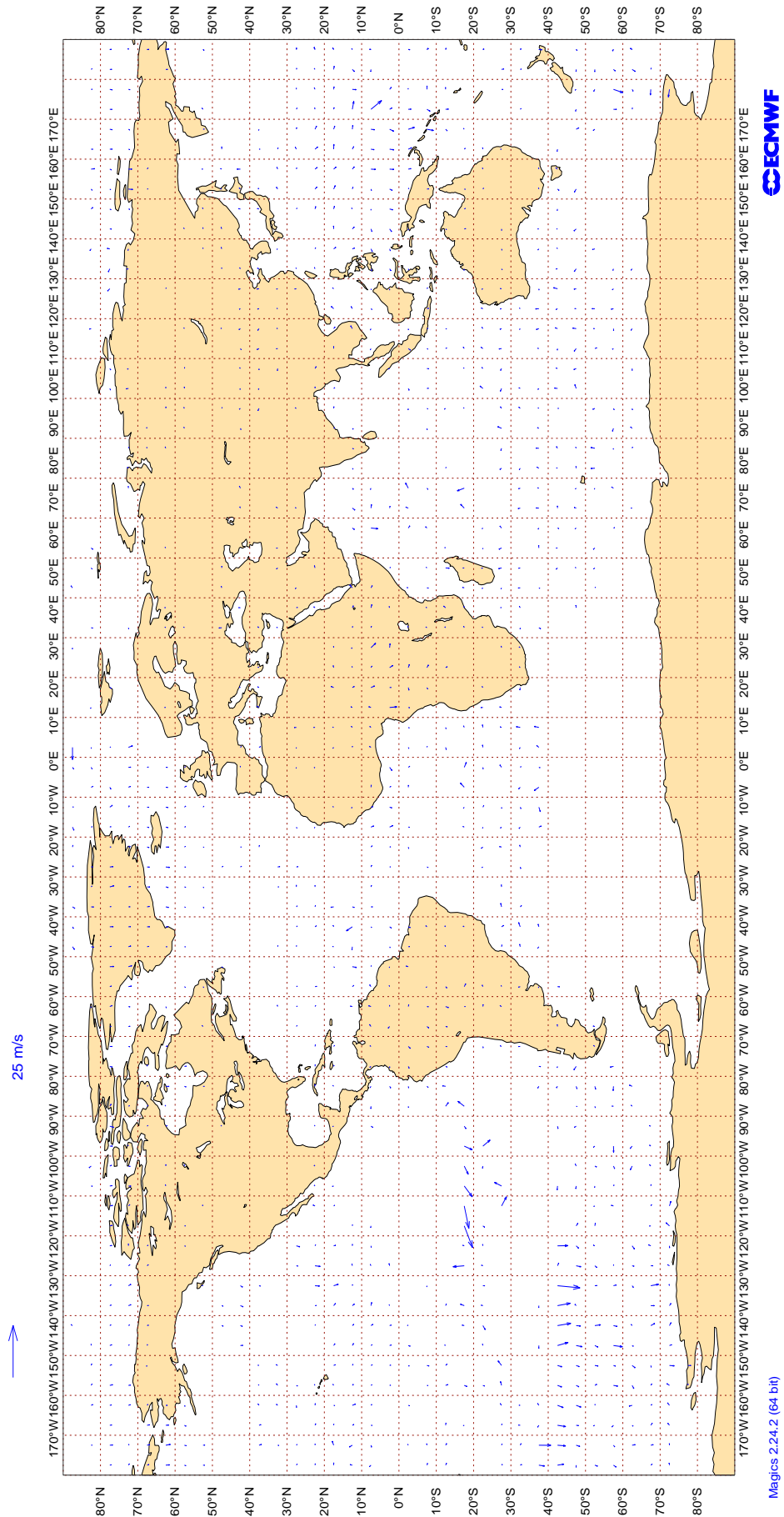
Figure 17
ECMWF Monitoring Statistics: Oct 2017
AMV Winds: 150- 400hPa
Mean Observed Wind



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

Figure 18

ECMWF Monitoring Statistics: Oct 2017
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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20

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

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
AAB	99	V	300-150	135	0	0	4.3	0.6
AAL	99	V	300-150	66105	2	0	5.3	0.2
AAR	99	V	300-150	330	0	1	4.1	-1.1
AAY	99	V	300-150	75	0	0	5.3	0.3
ABD	99	V	300-150	546	0	0	4.8	-0.5
ABP	99	V	300-150	27	0	0	3.9	-0.0
ABW	99	V	300-150	1158	0	0	3.9	-0.4
ABX	99	V	300-150	190	0	1	5.7	-0.1
ACA	99	V	300-150	31477	3	0	6.1	0.2
ACI	99	V	300-150	2715	0	0	4.0	0.3
ACT	99	V	300-150	30	0	0	4.2	0.5
AEA	99	V	300-150	930	8	0	6.6	0.2
AFL	99	V	300-150	2657	0	0	3.3	0.4
AFR	99	V	300-150	29523	1	0	4.2	0.2
AHO	99	V	300-150	45	36	0	20.0	-0.2
AHY	99	V	300-150	304	10	0	9.5	0.1
AIC	99	V	300-150	1985	3	0	5.5	0.2
AMX	99	V	300-150	3562	18	0	10.5	0.0
ANZ	99	V	300-150	22941	3	0	5.4	0.4
AOJ	99	V	300-150	118	8	0	9.8	1.2
ASA	99	V	300-150	3803	0	0	5.1	0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ASL	99	V	300-150	364	0	0	3.8	0.4
ASY	99	V	300-150	401	0	0	5.3	0.4
AUA	99	V	300-150	4623	0	0	4.2	-0.1
AUH	99	V	300-150	21	0	0	4.8	0.1
AVA	99	V	300-150	396	24	0	8.5	0.5
AXM	99	V	300-150	234	0	0	5.8	1.0
AZA	99	V	300-150	8828	0	0	4.0	0.3
AZG	99	V	300-150	289	0	0	3.8	-0.6
BAH	99	V	300-150	23	0	0	2.7	0.5
BAW	99	V	300-150	57512	2	0	5.3	0.2
BBA	99	V	300-150	51	0	0	3.8	0.3
BEL	99	V	300-150	2936	0	0	3.6	0.4
BER	99	V	300-150	2208	0	0	3.6	0.2
BLU	99	V	300-150	114	0	0	4.0	0.8
BMW	99	V	300-150	74	0	0	3.1	0.1
BOX	99	V	300-150	1052	0	0	4.0	-0.1
BOX	99	V	300-150	83	0	0	3.4	0.7
BRK	99	V	300-150	106	0	0	7.1	0.2
BVR	99	V	300-150	40	0	0	3.7	0.6
CAJ	99	V	300-150	41	0	0	2.8	0.7
CAL	99	V	300-150	221	0	0	4.5	0.3
CAT	99	V	300-150	22	0	0	9.2	-1.6
CAZ	99	V	300-150	258	0	0	4.2	0.1
CCA	99	V	300-150	1068	7	0	7.1	0.3
CES	99	V	300-150	1090	0	0	3.9	0.3
CFC	99	V	300-150	189	0	0	4.5	0.1
CFG	99	V	300-150	3818	0	0	4.3	-0.1
CHH	99	V	300-150	251	0	0	4.2	0.1
CJT	99	V	300-150	612	0	0	4.3	-0.3
CKS	99	V	300-150	1607	0	0	4.1	-0.0
CLE	99	V	300-150	125	0	0	4.4	0.2
CLU	99	V	300-150	261	0	0	3.8	0.2
CLX	99	V	300-150	4331	0	0	4.2	-0.4
CMB	99	V	300-150	784	0	0	4.2	0.2
CNV	99	V	300-150	314	0	0	3.9	0.5
COB	99	V	300-150	21	0	0	3.4	0.7
CPA	99	V	300-150	746	1	0	4.5	-0.0
CRK	99	V	300-150	955	0	0	4.1	-0.1
CRL	99	V	300-150	851	0	0	3.5	0.3
CRV	99	V	300-150	40	0	0	3.8	1.4
CSC	99	V	300-150	194	0	0	4.0	0.2
CSN	99	V	300-150	979	4	0	5.6	0.2
CXB	99	V	300-150	50	0	0	2.9	-0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
DAH	99	V	300-150	671	0	0	4.4	0.2
DAL	99	V	300-150	76415	0	0	3.9	0.2
DCS	99	V	300-150	37	0	0	3.2	1.5
DGX	99	V	300-150	76	0	0	4.5	0.3
DHK	99	V	300-150	1096	0	0	4.7	-0.3
DJT	99	V	300-150	2092	0	0	4.7	0.3
DLH	99	V	300-150	35032	0	0	3.7	0.0
DSO	99	V	300-150	100	0	0	4.6	1.5
DUB	99	V	300-150	92	0	0	3.8	-0.6
EDC	99	V	300-150	26	0	0	3.6	0.5
EDG	99	V	300-150	106	20	0	6.4	1.3
EDW	99	V	300-150	1427	0	0	4.0	0.2
EIN	99	V	300-150	16751	0	0	3.8	0.3
EJM	99	V	300-150	1188	7	0	8.4	0.1
ELY	99	V	300-150	2868	2	0	5.3	-0.2
ESR	99	V	300-150	22	5	0	6.7	-0.7
ETD	99	V	300-150	4323	2	0	5.3	-0.0
ETH	99	V	300-150	2090	5	0	6.8	0.2
EVE	99	V	300-150	226	0	0	4.0	0.2
EWG	99	V	300-150	2294	0	0	3.8	0.4
EXS	99	V	300-150	87	0	0	3.3	-0.3
FDX	99	V	300-150	6016	0	0	3.9	0.3
FIN	99	V	300-150	1282	0	0	3.3	0.2
FJI	99	V	300-150	6080	0	0	4.8	0.7
FPG	99	V	300-150	78	0	0	3.5	-0.2
FWI	99	V	300-150	1153	0	0	3.4	0.0
FWK	99	V	300-150	23	0	0	4.2	0.7
FYG	99	V	300-150	129	0	0	3.6	-0.0
GAF	99	V	300-150	76	0	0	3.8	0.6
GAJ	99	V	300-150	57	0	0	2.8	0.7
GCR	99	V	300-150	103	0	0	3.2	-0.4
GEC	99	V	300-150	2945	0	0	3.8	0.1
GES	99	V	300-150	103	0	0	4.5	-0.5
GLJ	99	V	300-150	38	37	0	20.7	-1.3
GLO	99	V	300-150	30	0	7	8.6	-0.0
GMA	99	V	300-150	34	0	0	3.5	0.3
GOL	99	V	300-150	174	0	0	3.8	0.6
GTH	99	V	300-150	72	0	0	3.4	0.3
GTI	99	V	300-150	2265	0	0	4.2	-0.2
HAL	99	V	300-150	3846	0	0	4.6	1.0
HDM	99	V	300-150	28	0	0	4.2	0.0
HRT	99	V	300-150	78	96	0	31.0	-1.5
HZH	99	V	300-150	38	0	0	3.6	0.5

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
HZM	99	V	300-150	58	0	0	3.5	0.2
HZS	99	V	300-150	84	0	0	3.4	-0.4
IAM	99	V	300-150	48	0	0	3.7	0.5
IBE	99	V	300-150	3447	0	0	3.8	0.2
IBK	99	V	300-150	320	0	1	4.0	0.5
ICE	99	V	300-150	171	5	5	9.9	-4.6
ICL	99	V	300-150	814	0	0	4.8	-0.3
ICV	99	V	300-150	304	0	0	4.3	-0.3
IFA	99	V	300-150	41	71	0	24.5	-1.9
IJM	99	V	300-150	36	0	0	11.5	-1.1
ISS	99	V	300-150	647	0	0	7.5	-1.0
JAF	99	V	300-150	1301	12	0	7.9	-0.1
JAI	99	V	300-150	1117	0	0	3.5	0.2
JAS	99	V	300-150	250	0	0	4.3	-0.5
JJA	99	V	300-150	49	2	0	5.6	0.6
JME	99	V	300-150	197	0	0	3.8	0.7
JST	99	V	300-150	2501	4	0	6.7	0.4
JTS	99	V	300-150	39	0	0	3.6	0.3
KAC	99	V	300-150	1180	0	0	4.0	0.5
KAI	99	V	300-150	58	0	0	4.0	-0.5
KAL	99	V	300-150	1485	0	0	3.9	0.6
KAY	99	V	300-150	98	0	0	4.4	0.7
KCE	99	V	300-150	41	0	0	4.0	0.0
KFS	99	V	300-150	28	54	4	28.3	-0.5
KIW	99	V	300-150	26	0	0	3.2	0.7
KLM	99	V	300-150	19077	1	0	5.0	-0.0
LAN	99	V	300-150	2352	12	0	8.6	0.1
LCO	99	V	300-150	127	0	0	3.7	-0.0
LDM	99	V	300-150	159	0	0	3.3	-0.1
LOT	99	V	300-150	3309	6	0	10.8	-0.0
LUC	99	V	300-150	50	0	0	3.2	0.3
LXG	99	V	300-150	35	0	0	3.3	0.8
LXJ	99	V	300-150	274	13	0	10.5	-0.3
MAS	99	V	300-150	408	0	0	3.9	0.4
MDT	99	V	300-150	29	0	0	3.3	-0.2
MJF	99	V	300-150	26	0	0	3.2	-0.4
MLM	99	V	300-150	38	0	0	5.7	-0.0
MLN	99	V	300-150	64	0	0	4.8	0.9
MMD	99	V	300-150	200	0	0	3.6	0.6
MNB	99	V	300-150	24	0	0	3.4	-0.9
MOV	99	V	300-150	56	0	0	4.3	1.4
MPH	99	V	300-150	758	0	0	4.3	-0.7
MSR	99	V	300-150	1197	0	0	3.7	-0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
NAF	99	V	300-150	35	0	0	4.9	-0.5
NAS	99	V	300-150	37	0	0	3.2	-0.2
NAX	99	V	300-150	12253	14	0	10.5	-0.1
NCA	99	V	300-150	279	0	0	3.8	-1.0
NJE	99	V	300-150	289	21	0	9.7	0.5
NOS	99	V	300-150	309	0	0	5.8	-0.7
NSH	99	V	300-150	41	0	0	4.1	1.0
NWS	99	V	300-150	65	0	3	4.3	0.5
OAE	99	V	300-150	213	0	2	4.4	0.4
OPM	99	V	300-150	21	100	0	0.0	0.0
PAC	99	V	300-150	202	0	0	4.6	0.2
PAL	99	V	300-150	92	2	3	8.8	-0.0
PAT	99	V	300-150	83	0	0	3.5	-0.4
PIA	99	V	300-150	472	0	0	4.0	-0.2
PLF	99	V	300-150	65	0	0	3.4	-0.2
PLM	99	V	300-150	61	0	0	4.5	-0.1
PNC	99	V	300-150	45	0	0	6.2	3.0
PRD	99	V	300-150	33	0	0	4.4	1.0
PVJ	99	V	300-150	36	0	0	5.2	1.0
QAF	99	V	300-150	35	0	0	3.7	-1.1
QFA	99	V	300-150	17625	0	0	4.4	0.4
QID	99	V	300-150	47	0	0	3.2	-0.5
QQE	99	V	300-150	26	4	0	7.1	0.4
QTR	99	V	300-150	10194	1	0	4.5	0.1
RAM	99	V	300-150	444	14	0	9.0	0.5
RCH	99	V	300-150	7045	0	0	4.6	0.3
RDN	99	V	300-150	42	0	0	4.7	0.1
REN	99	V	300-150	34	0	0	3.7	1.5
RJA	99	V	300-150	1603	11	0	11.0	0.0
ROJ	99	V	300-150	23	0	0	5.2	0.8
ROU	99	V	300-150	7075	0	0	4.5	-0.2
RRR	99	V	300-150	283	0	0	3.6	0.5
RSY	99	V	300-150	300	0	0	3.9	-0.0
RZO	99	V	300-150	38	0	16	4.0	-0.2
SAM	99	V	300-150	240	0	0	4.0	-0.0
SAS	99	V	300-150	5278	0	0	3.4	0.2
SDM	99	V	300-150	124	0	0	4.4	-0.1
SHE	99	V	300-150	41	0	0	4.2	0.1
SIA	99	V	300-150	2885	0	0	3.7	0.2
SIO	99	V	300-150	81	0	0	3.9	0.4
SJE	99	V	300-150	21	0	0	2.4	0.3
SLM	99	V	300-150	164	0	0	3.3	0.1
SOO	99	V	300-150	529	0	0	4.0	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
SPA	99	V	300-150	132	0	0	3.9	-0.3
SQC	99	V	300-150	540	0	0	4.6	-1.0
SUI	99	V	300-150	44	0	0	5.0	1.7
SVA	99	V	300-150	3250	3	0	5.7	0.1
SVF	99	V	300-150	20	0	0	3.9	-1.3
SVW	99	V	300-150	261	0	0	4.3	0.3
SWR	99	V	300-150	12093	0	0	3.7	0.2
TAM	99	V	300-150	316	0	0	4.1	0.1
TAP	99	V	300-150	1469	0	0	4.4	0.5
TAR	99	V	300-150	261	0	0	4.0	-0.2
TAY	99	V	300-150	839	0	0	4.9	-0.3
TBJ	99	V	300-150	23	0	0	3.2	-0.1
TCX	99	V	300-150	7680	0	0	3.7	0.2
TFL	99	V	300-150	2075	20	0	9.8	0.1
THA	99	V	300-150	205	0	0	4.2	0.1
THT	99	V	300-150	4075	0	0	4.0	0.5
THY	99	V	300-150	8807	0	0	3.9	0.1
TMN	99	V	300-150	77	0	19	5.5	1.0
TOM	99	V	300-150	7839	17	0	10.2	0.2
TOW	99	V	300-150	82	0	0	3.1	0.0
TRE	99	V	300-150	89	0	0	3.7	0.3
TRK	99	V	300-150	39	0	0	4.6	-1.8
TSC	99	V	300-150	12234	0	0	3.7	0.1
TWB	99	V	300-150	46	7	4	8.8	2.1
TWY	99	V	300-150	401	11	0	8.2	0.2
UAE	99	V	300-150	10654	0	0	3.9	0.1
UAL	99	V	300-150	87626	1	2	5.1	0.2
ULC	99	V	300-150	195	0	0	3.5	0.7
UPS	99	V	300-150	4749	0	0	4.3	-0.2
UZB	99	V	300-150	111	2	0	14.8	0.0
VIR	99	V	300-150	23503	3	0	5.4	0.0
VJT	99	V	300-150	887	43	0	17.1	0.2
VKG	99	V	300-150	215	0	0	3.5	0.6
VMP	99	V	300-150	87	8	0	10.9	0.4
VOZ	99	V	300-150	7420	0	0	4.2	0.3
VRD	99	V	300-150	562	0	0	4.5	0.4
WGT	99	V	300-150	77	0	0	3.0	-0.2
WJA	99	V	300-150	4880	0	0	4.0	0.1
WOW	99	V	300-150	182	2	4	6.8	-0.9
WWI	99	V	300-150	50	0	0	4.0	0.2
XAX	99	V	300-150	402	0	0	3.5	0.1
XLF	99	V	300-150	1132	0	0	4.2	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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	50	27	14.2	11.1
01001	12	Z	50	27	13.9	10.6
01028	00	Z	50	30	9.0	6.9
01028	12	Z	50	30	11.6	9.3
01400	12	Z	50	13	30.8	28.0
01400	00	Z	50	14	26.1	22.3
01415	00	Z	50	21	19.2	15.0
01415	12	Z	50	21	16.4	11.6
02365	12	Z	50	15	14.9	8.0
02365	00	Z	50	12	16.9	15.0
02591	12	Z	50	26	15.8	14.6
02591	00	Z	50	23	21.7	20.4
02836	12	Z	50	31	14.3	13.3
02836	00	Z	50	32	12.8	11.3
02963	00	Z	50	29	14.0	11.9
02963	12	Z	50	29	15.3	13.4
03005	12	Z	50	31	11.7	8.1
03005	00	Z	50	26	12.0	9.5
03238	12	Z	50	1	13.0	13.0
03238	00	Z	50	27	13.7	9.1
03808	00	Z	50	31	12.7	10.7
03808	12	Z	50	30	11.9	10.8
03918	12	Z	50	4	16.7	13.4
03918	00	Z	50	30	19.9	18.5
03953	00	Z	50	29	11.5	4.9
03953	12	Z	50	27	25.9	16.8
04018	12	Z	50	29	9.9	7.1
04018	00	Z	50	28	12.9	10.8
04220	12	Z	50	30	11.9	6.8
04220	00	Z	50	29	15.6	9.1
04270	12	Z	50	30	12.9	11.4
04270	00	Z	50	30	14.0	12.3
04320	00	Z	50	30	12.6	8.7
04320	12	Z	50	29	13.7	9.1
04339	12	Z	50	30	13.0	8.1
04339	00	Z	50	30	18.5	3.4
04360	00	Z	50	18	44.0	41.2
04360	12	Z	50	16	45.4	43.8
06011	12	Z	50	27	17.8	11.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	50	31	14.9	6.8
06260	00	Z	50	30	15.9	14.8
06260	12	Z	50	6	11.9	10.1
06610	00	Z	50	30	17.7	16.2
06610	12	Z	50	30	19.1	16.8
07110	12	Z	50	30	34.1	31.4
07110	00	Z	50	26	35.9	33.8
07510	00	Z	50	28	54.4	-4.0
07510	12	Z	50	30	51.3	4.9
07645	00	Z	50	32	34.6	33.8
07645	12	Z	50	28	33.0	31.0
07761	12	Z	50	31	49.6	48.2
07761	00	Z	50	31	51.2	50.4
08001	00	Z	50	9	15.3	14.4
08001	12	Z	50	30	39.4	17.4
08221	12	Z	50	23	24.3	22.4
08221	00	Z	50	23	22.2	21.2
08302	00	Z	50	29	13.2	11.9
08302	12	Z	50	29	32.5	7.3
08508	12	Z	50	30	24.1	22.0
08522	12	Z	50	31	25.8	24.4
085224	12	Z	50	0	0.0	0.0
08579	12	Z	50	30	30.0	28.6
10035	12	Z	50	29	23.0	21.9
10035	00	Z	50	28	25.6	24.9
10393	00	Z	50	32	14.7	12.8
10393	12	Z	50	29	14.5	13.0
10410	12	Z	50	31	12.8	9.2
10410	00	Z	50	29	14.4	12.3
10739	12	Z	50	29	13.3	11.7
10739	00	Z	50	29	16.2	15.3
11035	00	Z	50	31	24.3	22.9
11035	12	Z	50	31	19.4	17.9
12982	12	Z	50	29	45.3	44.1
12982	00	Z	50	27	21.9	19.9
16080	00	Z	50	31	15.1	12.8
16080	12	Z	50	31	15.1	9.9
16245	00	Z	50	30	18.8	18.1
16245	12	Z	50	30	18.5	16.1
16320	00	Z	50	29	32.0	30.5
16320	12	Z	50	28	25.1	23.5
16429	12	Z	50	31	14.5	12.3
16429	00	Z	50	31	16.2	15.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16622	00	Z	50	29	27.3	26.1
16754	00	Z	50	30	21.2	16.8
17607	12	Z	50	31	23.7	21.9
26435	00	Z	50	15	16.0	14.3
60018	00	Z	50	31	13.5	9.3
60018	12	Z	50	31	16.5	11.3
7JUNA4	00	Z	50	2	11.5	-10.2
7JUNA4	12	Z	50	0	0.0	0.0
ASDE02	12	Z	50	3	22.6	13.1
ASDE02	00	Z	50	1	14.8	14.8
ASDE09	12	Z	50	1	31.9	31.9
ASDK01	00	Z	50	9	32.9	25.7
ASDK01	12	Z	50	15	20.6	19.8
ASDK02	12	Z	50	9	15.8	6.0
ASDK02	00	Z	50	5	14.8	13.4
ASDK03	12	Z	50	13	32.1	29.9
ASDK03	00	Z	50	11	32.9	31.8
ASDK1	00	Z	50	2	12.0	11.9
ASDK1	12	Z	50	4	13.5	10.2
ASDK2	00	Z	50	1	5.9	5.9
ASDK2	12	Z	50	2	14.4	-8.5
ASDK3	12	Z	50	13	26.8	24.5
ASDK3	00	Z	50	11	32.0	31.0
ASFR1	12	Z	50	19	37.7	36.2
ASFR1	00	Z	50	15	33.1	31.3
ASFR2	12	Z	50	1	51.3	51.3
ASFR2	00	Z	50	8	34.5	33.2
ASFR3	00	Z	50	9	33.1	30.8
ASFR3	12	Z	50	13	32.0	31.4
ASFR4	12	Z	50	13	35.1	34.1
ASFR4	00	Z	50	19	35.9	34.6
ASUK3	12	Z	50	22	10.7	2.6
DBLK	12	Z	50	10	13.6	4.2
FPUW5G	12	Z	50	0	0.0	0.0
KMPLHP	12	Z	50	2	60.1	52.2
KMPLHP	00	Z	50	3	60.4	46.4
LRVQE3	00	Z	50	1	13.4	-13.4
LRVQE3	12	Z	50	5	56.5	56.0
VKB4L5	12	Z	50	6	57.7	57.1
VKB4L5	00	Z	50	7	56.4	55.5
VKB4Q	12	Z	50	2	62.3	62.2
XKQLWQ	12	Z	50	15	25.6	24.3
XQFJRG	12	Z	50	8	26.0	25.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
XQFJRG	00	Z	50	8	18.7	10.4
XQFJX	12	Z	50	7	21.6	19.8
XQFJX	00	Z	50	6	15.8	8.5

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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	50	26	3.2	0.2	-0.3
01001	12	V	50	27	4.3	0.1	0.3
01028	00	V	50	30	2.8	-0.3	-0.3
01028	12	V	50	30	2.5	-0.3	0.3
01400	12	V	50	7	4.3	2.0	-1.4
01400	00	V	50	9	3.3	-0.4	-0.1
01415	00	V	50	19	4.4	0.1	-1.0
01415	12	V	50	21	4.4	0.4	-1.2
02365	12	V	50	11	4.6	1.1	-1.4
02365	00	V	50	8	3.8	-1.6	-0.7
02591	12	V	50	25	3.5	0.9	-0.1
02591	00	V	50	21	3.6	0.9	-0.5
02836	12	V	50	30	3.5	0.2	0.5
02836	00	V	50	30	3.3	-0.8	0.2
02963	00	V	50	26	3.5	-0.2	0.2
02963	12	V	50	29	3.9	0.6	-0.5
03005	12	V	50	30	3.7	1.0	0.0
03005	00	V	50	22	4.8	0.3	0.0
03238	12	V	50	1	12.4	11.2	-5.3
03238	00	V	50	25	4.5	1.0	-0.6
03808	00	V	50	30	4.0	-0.3	-0.8
03808	12	V	50	30	3.5	0.3	-1.1
03918	12	V	50	4	5.6	2.1	-2.5
03918	00	V	50	28	3.9	0.3	-0.1
03953	00	V	50	28	3.2	-0.4	-0.3
03953	12	V	50	27	3.0	0.8	0.1
04018	12	V	50	29	3.7	-0.8	-0.2
04018	00	V	50	26	4.5	-0.4	0.4
04220	12	V	50	30	5.2	-0.1	0.3
04220	00	V	50	28	4.0	-0.2	0.5
04270	12	V	50	30	3.9	-0.5	0.8
04270	00	V	50	30	3.8	-0.7	0.2
04320	00	V	50	29	3.1	0.4	-0.7
04320	12	V	50	29	3.3	0.1	-0.4
04339	12	V	50	30	3.8	-0.1	0.0
04339	00	V	50	29	4.8	0.5	-0.2
04360	00	V	50	18	3.8	-0.3	0.5
04360	12	V	50	16	3.3	-0.3	-0.3
06011	12	V	50	27	3.4	-0.1	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	50	30	3.8	-0.5	0.0
06260	00	V	50	29	4.3	0.4	-0.2
06260	12	V	50	6	4.6	-2.3	-0.5
06610	00	V	50	29	4.8	0.0	0.6
06610	12	V	50	30	4.9	1.1	1.0
07110	12	V	50	29	3.1	0.9	-0.5
07110	00	V	50	25	3.0	0.7	-0.5
07510	00	V	50	27	3.1	1.0	-0.5
07510	12	V	50	30	3.5	0.5	-0.4
07645	00	V	50	30	3.7	1.3	0.4
07645	12	V	50	28	4.1	0.3	-1.0
07761	12	V	50	31	3.4	0.9	1.0
07761	00	V	50	29	4.0	0.6	0.4
08001	00	V	50	8	2.5	0.1	0.5
08001	12	V	50	28	3.6	0.7	-0.2
08221	12	V	50	23	3.6	0.6	1.0
08221	00	V	50	22	3.4	0.5	0.5
08302	00	V	50	27	4.0	-0.1	-0.3
08302	12	V	50	28	3.6	0.0	0.7
08508	12	V	50	30	3.3	1.2	-0.1
08522	12	V	50	31	4.4	0.8	-0.2
085224	12	V	50	0	0.0	0.0	0.0
08579	12	V	50	29	3.4	0.4	-0.1
10035	12	V	50	29	3.8	0.0	-1.0
10035	00	V	50	28	4.1	0.7	-0.7
10393	00	V	50	30	3.9	0.8	-0.2
10393	12	V	50	29	3.5	-0.2	-0.3
10410	12	V	50	31	4.3	0.2	0.2
10410	00	V	50	25	4.3	0.3	-0.2
10739	12	V	50	29	4.0	1.6	0.5
10739	00	V	50	24	4.0	0.8	0.1
11035	00	V	50	30	4.9	0.2	1.1
11035	12	V	50	31	5.0	0.6	0.8
12982	12	V	50	29	4.0	0.3	0.5
12982	00	V	50	27	4.0	0.9	0.1
16080	00	V	50	30	4.9	0.6	0.6
16080	12	V	50	30	3.6	0.7	-0.3
16245	00	V	50	29	3.8	-0.6	-0.2
16245	12	V	50	30	4.2	0.8	0.0
16320	00	V	50	28	4.0	0.5	1.1
16320	12	V	50	27	3.5	1.8	-0.6
16429	12	V	50	31	4.5	1.0	0.5
16429	00	V	50	29	3.6	0.7	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16622	00	V	50	28	4.3	0.8	0.8
16754	00	V	50	27	4.6	1.3	0.5
17607	12	V	50	30	3.9	1.3	1.0
26435	00	V	50	14	3.5	0.8	-0.7
60018	00	V	50	30	3.4	0.2	2.0
60018	12	V	50	31	2.9	0.3	0.5
7JUNA4	00	V	50	1	2.3	1.6	1.7
7JUNA4	12	V	50	0	0.0	0.0	0.0
ASDE02	12	V	50	3	5.0	1.7	-0.8
ASDE02	00	V	50	1	1.5	-0.4	1.4
ASDE09	12	V	50	0	0.0	0.0	0.0
ASDK01	00	V	50	9	4.0	-0.8	-0.4
ASDK01	12	V	50	15	4.2	0.1	0.0
ASDK02	12	V	50	6	5.0	-1.0	-1.6
ASDK02	00	V	50	5	5.6	3.3	3.3
ASDK03	12	V	50	13	3.1	0.0	-0.5
ASDK03	00	V	50	11	3.7	0.9	0.9
ASDK1	00	V	50	2	2.7	-1.4	-0.8
ASDK1	12	V	50	4	4.6	0.7	-0.7
ASDK2	00	V	50	1	4.4	4.0	1.9
ASDK2	12	V	50	1	7.8	3.4	-7.0
ASDK3	12	V	50	13	3.5	0.1	-1.5
ASDK3	00	V	50	11	3.7	0.5	0.7
ASFR1	12	V	50	12	3.1	0.6	1.7
ASFR1	00	V	50	9	3.8	1.0	-0.7
ASFR2	12	V	50	1	3.2	-3.1	-0.9
ASFR2	00	V	50	4	3.8	-1.3	-1.4
ASFR3	00	V	50	6	3.2	1.3	0.1
ASFR3	12	V	50	10	2.9	-0.2	0.9
ASFR4	12	V	50	12	4.7	1.0	-0.7
ASFR4	00	V	50	14	4.1	0.2	-0.2
ASUK3	12	V	50	8	3.7	1.8	-2.3
DBLK	12	V	50	10	3.1	-0.6	0.7
FPUW5G	12	V	50	0	0.0	0.0	0.0
KMPLHP	12	V	50	2	4.2	-3.1	-1.3
KMPLHP	00	V	50	3	2.3	1.2	-0.6
LRYQE3	00	V	50	0	0.0	0.0	0.0
LRYQE3	12	V	50	5	4.3	0.3	1.1
VKB4L5	12	V	50	6	4.1	2.1	-0.4
VKB4L5	00	V	50	6	3.5	1.3	1.0
VKB4Q	12	V	50	2	5.2	2.7	-2.2
XKQLWQ	12	V	50	13	4.2	-0.7	0.2
XQFJRG	12	V	50	7	3.6	-0.5	-0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
XQFJRG	00	V	50	6	4.2	0.5	0.0
XQFJX	12	V	50	7	3.4	-0.8	-0.8
XQFJX	00	V	50	6	3.5	0.9	0.7

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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	100	31	5.6	0.7
01001	12	Z	100	28	6.8	-2.3
01028	00	Z	100	30	7.9	-6.2
01028	12	Z	100	30	5.5	-3.3
01400	12	Z	100	16	15.0	12.1
01400	00	Z	100	18	13.1	8.3
01415	00	Z	100	21	14.7	2.6
01415	12	Z	100	21	15.8	2.6
02365	12	Z	100	21	7.6	-1.8
02365	00	Z	100	24	6.5	3.0
02591	12	Z	100	30	7.1	4.9
02591	00	Z	100	29	8.7	8.2
02836	12	Z	100	31	4.3	-0.7
02836	00	Z	100	32	4.4	-0.4
02963	00	Z	100	29	5.2	1.2
02963	12	Z	100	29	6.1	1.8
03005	12	Z	100	32	7.6	-1.0
03005	00	Z	100	29	7.6	-3.1
03238	12	Z	100	1	9.8	-9.8
03238	00	Z	100	27	9.6	0.4
03808	00	Z	100	31	5.9	3.1
03808	12	Z	100	31	5.9	2.9
03918	12	Z	100	4	8.4	8.1
03918	00	Z	100	30	13.9	11.0
03953	00	Z	100	29	11.6	-4.4
03953	12	Z	100	29	13.4	2.5
04018	12	Z	100	30	6.3	-2.8
04018	00	Z	100	31	6.1	-0.6
04220	12	Z	100	31	8.6	-3.3
04220	00	Z	100	29	9.2	0.0
04270	12	Z	100	31	5.9	-0.2
04270	00	Z	100	30	12.0	-1.8
04320	00	Z	100	31	8.3	-1.0
04320	12	Z	100	30	6.9	-0.5
04339	12	Z	100	31	8.3	-0.1
04339	00	Z	100	30	18.5	-6.1
04360	00	Z	100	29	32.1	30.6
04360	12	Z	100	24	34.6	33.7
06011	12	Z	100	29	9.8	-0.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	100	31	10.5	-2.4
06260	00	Z	100	30	5.6	1.9
06260	12	Z	100	6	4.5	-2.2
06610	00	Z	100	30	9.0	5.4
06610	12	Z	100	31	6.1	3.2
07110	12	Z	100	30	19.1	15.7
07110	00	Z	100	26	20.3	17.2
07510	00	Z	100	29	43.4	-10.7
07510	12	Z	100	31	42.5	-6.5
07645	00	Z	100	32	16.0	14.3
07645	12	Z	100	30	17.5	15.7
07761	12	Z	100	31	31.4	30.3
07761	00	Z	100	31	32.5	31.7
08001	00	Z	100	9	6.3	4.4
08001	12	Z	100	30	35.2	3.5
08221	12	Z	100	24	15.7	14.5
08221	00	Z	100	23	14.7	13.5
08302	00	Z	100	29	7.1	2.1
08302	12	Z	100	29	30.3	-5.6
08508	12	Z	100	30	10.9	8.9
08522	12	Z	100	31	10.8	9.1
085224	12	Z	100	0	0.0	0.0
08579	12	Z	100	30	14.7	13.5
10035	12	Z	100	30	14.4	12.5
10035	00	Z	100	30	14.9	13.7
10393	00	Z	100	32	7.9	1.3
10393	12	Z	100	31	5.7	1.2
10410	12	Z	100	31	9.5	-1.3
10410	00	Z	100	31	6.4	0.1
10739	12	Z	100	30	6.4	-0.6
10739	00	Z	100	29	6.4	3.4
11035	00	Z	100	31	17.9	9.7
11035	12	Z	100	31	10.0	7.9
12982	12	Z	100	30	24.0	22.7
12982	00	Z	100	27	13.1	10.4
16080	00	Z	100	31	7.7	0.9
16080	12	Z	100	31	10.9	-2.4
16245	00	Z	100	30	6.8	4.7
16245	12	Z	100	30	8.5	3.0
16320	00	Z	100	29	20.5	19.3
16320	12	Z	100	30	14.2	12.6
16429	12	Z	100	31	5.8	1.2
16429	00	Z	100	31	7.6	4.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16622	00	Z	100	30	14.8	13.5
16754	00	Z	100	31	11.3	6.9
17607	12	Z	100	31	8.6	4.5
26435	00	Z	100	15	8.4	2.0
60018	00	Z	100	31	7.7	2.6
60018	12	Z	100	31	9.0	0.3
7JUNA4	00	Z	100	3	28.0	-27.9
7JUNA4	12	Z	100	2	79.8	60.7
ASDE02	12	Z	100	4	13.2	-4.6
ASDE02	00	Z	100	1	2.7	-2.7
ASDE09	12	Z	100	1	16.2	16.2
ASDK01	00	Z	100	10	22.6	12.4
ASDK01	12	Z	100	19	8.7	5.1
ASDK02	12	Z	100	10	8.0	-2.0
ASDK02	00	Z	100	8	6.6	2.9
ASDK03	12	Z	100	15	23.1	21.8
ASDK03	00	Z	100	13	21.0	20.3
ASDK1	00	Z	100	2	1.1	1.0
ASDK1	12	Z	100	4	12.8	-1.1
ASDK2	00	Z	100	1	6.8	6.8
ASDK2	12	Z	100	2	22.1	-18.0
ASDK3	12	Z	100	13	20.0	17.4
ASDK3	00	Z	100	11	19.3	18.1
ASFR1	12	Z	100	20	21.9	20.9
ASFR1	00	Z	100	17	40.1	6.6
ASFR2	12	Z	100	2	22.6	19.2
ASFR2	00	Z	100	8	19.0	18.8
ASFR3	00	Z	100	14	15.5	13.8
ASFR3	12	Z	100	15	20.6	18.7
ASFR4	12	Z	100	17	20.1	17.3
ASFR4	00	Z	100	22	21.7	20.4
ASUK3	12	Z	100	23	14.0	-7.7
DBLK	12	Z	100	16	10.6	-6.6
FPUW5G	12	Z	100	0	0.0	0.0
KMPLHP	12	Z	100	11	28.6	20.7
KMPLHP	00	Z	100	6	7.3	3.8
LRYQE3	00	Z	100	5	8.6	1.1
LRYQE3	12	Z	100	7	25.9	25.3
VKB4L5	12	Z	100	12	43.0	41.8
VKB4L5	00	Z	100	8	40.8	40.1
VKB4Q	12	Z	100	2	47.4	47.4
XKQLWQ	12	Z	100	20	16.1	14.0
XQFJRG	12	Z	100	10	9.7	8.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
XQFJRG	00	Z	100	10	11.3	3.0
XQFJX	12	Z	100	7	8.8	6.4
XQFJX	00	Z	100	6	10.7	2.5

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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	100	30	2.9	1.0	-0.4
01001	12	V	100	28	3.5	0.6	0.2
01028	00	V	100	30	2.8	0.1	-0.1
01028	12	V	100	30	2.7	-0.6	-0.2
01400	12	V	100	11	3.4	-1.2	-0.4
01400	00	V	100	11	2.6	-0.3	-0.9
01415	00	V	100	20	5.1	-0.1	-0.8
01415	12	V	100	21	7.1	-1.4	-0.6
02365	12	V	100	20	4.8	1.5	-0.3
02365	00	V	100	21	4.4	-1.1	-1.2
02591	12	V	100	29	4.2	1.2	-0.1
02591	00	V	100	28	3.3	-0.4	-1.3
02836	12	V	100	31	3.5	0.2	-0.5
02836	00	V	100	30	2.7	0.4	0.0
02963	00	V	100	28	3.8	-0.1	-0.1
02963	12	V	100	29	4.0	-0.7	0.1
03005	12	V	100	31	3.6	0.1	-0.8
03005	00	V	100	27	3.7	0.1	-1.0
03238	12	V	100	1	3.1	-1.0	-2.9
03238	00	V	100	26	5.8	-1.3	-0.7
03808	00	V	100	30	3.7	0.0	-0.6
03808	12	V	100	30	3.8	0.1	0.6
03918	12	V	100	4	5.7	-0.4	-1.9
03918	00	V	100	29	5.3	-0.4	-0.1
03953	00	V	100	28	3.4	-1.2	0.0
03953	12	V	100	29	3.7	0.4	0.0
04018	12	V	100	30	3.0	0.5	-0.1
04018	00	V	100	29	3.3	0.1	0.0
04220	12	V	100	31	3.1	0.3	-0.2
04220	00	V	100	28	3.0	-0.5	-0.5
04270	12	V	100	31	4.1	-0.3	-0.5
04270	00	V	100	30	4.5	-0.1	0.3
04320	00	V	100	30	3.1	-0.1	-0.5
04320	12	V	100	30	3.0	0.5	0.1
04339	12	V	100	31	3.7	-0.8	-0.5
04339	00	V	100	29	5.0	0.3	-0.8
04360	00	V	100	29	4.3	0.0	-0.8
04360	12	V	100	24	3.0	0.0	0.2
06011	12	V	100	29	3.2	0.4	-0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	100	30	3.5	0.1	-0.7
06260	00	V	100	29	4.1	0.2	-0.4
06260	12	V	100	6	4.3	0.8	-1.6
06610	00	V	100	29	4.0	0.0	0.1
06610	12	V	100	31	3.7	-0.4	0.8
07110	12	V	100	29	2.8	-0.2	0.0
07110	00	V	100	25	3.2	-0.8	0.1
07510	00	V	100	28	3.0	-0.1	-0.6
07510	12	V	100	31	3.0	0.1	0.0
07645	00	V	100	30	4.0	-0.2	-0.4
07645	12	V	100	30	4.6	-0.2	-0.9
07761	12	V	100	31	3.7	0.7	0.4
07761	00	V	100	29	4.6	-0.2	0.6
08001	00	V	100	9	2.6	0.5	0.5
08001	12	V	100	30	4.4	1.4	1.2
08221	12	V	100	24	4.0	0.6	0.7
08221	00	V	100	22	5.0	0.1	1.6
08302	00	V	100	28	4.0	0.9	-0.6
08302	12	V	100	29	3.7	0.3	-0.7
08508	12	V	100	30	4.3	0.3	0.3
08522	12	V	100	31	3.7	-0.1	0.4
085224	12	V	100	0	0.0	0.0	0.0
08579	12	V	100	30	3.3	0.1	0.9
10035	12	V	100	30	4.0	1.0	0.0
10035	00	V	100	29	4.5	0.2	-1.1
10393	00	V	100	30	3.6	0.0	0.1
10393	12	V	100	31	2.8	0.3	0.2
10410	12	V	100	31	3.8	0.8	0.0
10410	00	V	100	29	4.0	0.1	-0.4
10739	12	V	100	29	3.3	0.6	0.9
10739	00	V	100	27	4.0	0.1	-0.1
11035	00	V	100	30	5.2	-0.6	-0.7
11035	12	V	100	31	5.8	0.2	0.6
12982	12	V	100	30	4.0	0.0	0.5
12982	00	V	100	27	3.2	0.6	0.1
16080	00	V	100	30	4.7	0.7	0.5
16080	12	V	100	31	5.6	1.2	-0.4
16245	00	V	100	29	4.4	0.5	0.2
16245	12	V	100	30	5.5	0.3	0.4
16320	00	V	100	28	4.1	1.0	-1.1
16320	12	V	100	30	4.0	1.1	0.0
16429	12	V	100	31	3.4	0.2	-0.1
16429	00	V	100	29	4.6	1.0	0.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16622	00	V	100	29	3.2	0.6	0.3
16754	00	V	100	28	4.1	0.7	0.1
17607	12	V	100	31	4.3	1.1	0.1
26435	00	V	100	15	4.7	0.2	-1.1
60018	00	V	100	30	3.7	0.5	0.6
60018	12	V	100	31	4.0	-0.4	0.2
7JUNA4	00	V	100	2	2.3	0.0	1.1
7JUNA4	12	V	100	2	3.0	-0.2	0.2
ASDE02	12	V	100	3	3.3	-1.7	1.1
ASDE02	00	V	100	1	4.2	-3.4	-2.5
ASDE09	12	V	100	1	3.2	-3.0	1.1
ASDK01	00	V	100	9	3.9	0.3	1.1
ASDK01	12	V	100	16	3.5	0.5	0.3
ASDK02	12	V	100	9	3.6	0.5	-0.9
ASDK02	00	V	100	6	3.5	2.1	0.7
ASDK03	12	V	100	13	4.0	1.3	0.8
ASDK03	00	V	100	11	3.4	-1.0	0.0
ASDK1	00	V	100	2	5.2	2.4	3.0
ASDK1	12	V	100	4	4.4	1.7	1.4
ASDK2	00	V	100	1	3.2	3.1	0.7
ASDK2	12	V	100	2	4.3	0.2	-1.2
ASDK3	12	V	100	13	3.5	1.3	-0.2
ASDK3	00	V	100	11	3.4	-0.7	-0.1
ASFR1	12	V	100	12	4.1	-0.9	1.5
ASFR1	00	V	100	10	3.2	-0.2	1.6
ASFR2	12	V	100	2	1.3	-0.7	-0.7
ASFR2	00	V	100	4	2.1	-0.2	-0.1
ASFR3	00	V	100	7	2.6	0.6	-0.6
ASFR3	12	V	100	10	4.1	0.6	0.4
ASFR4	12	V	100	13	4.0	0.2	1.3
ASFR4	00	V	100	14	3.7	0.3	-0.5
ASUK3	12	V	100	12	4.5	0.5	1.1
DBLK	12	V	100	10	2.3	-0.8	0.2
FPUW5G	12	V	100	0	0.0	0.0	0.0
KMPLHP	12	V	100	7	3.3	-1.0	0.3
KMPLHP	00	V	100	4	4.0	-1.9	1.9
LRYQE3	00	V	100	2	4.6	-3.3	2.2
LRYQE3	12	V	100	6	3.9	-1.1	1.5
VKB4L5	12	V	100	9	3.6	0.8	-0.1
VKB4L5	00	V	100	7	4.7	1.2	0.4
VKB4Q	12	V	100	2	4.0	-2.9	1.7
XKQLWQ	12	V	100	14	3.8	0.5	-0.5
XQFJRG	12	V	100	8	3.7	-1.1	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
XQFJRG	00	V	100	6	3.3	0.5	-1.1
XQFJX	12	V	100	7	3.7	-1.6	-0.2
XQFJX	00	V	100	6	4.0	1.3	-0.6

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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	500	31	5.4	1.7
01001	12	Z	500	29	4.6	1.0
01028	00	Z	500	31	4.8	-3.5
01028	12	Z	500	30	5.0	-2.3
01400	12	Z	500	23	11.8	7.6
01400	00	Z	500	22	9.9	8.2
01415	00	Z	500	21	7.1	4.0
01415	12	Z	500	21	5.8	2.5
02365	12	Z	500	27	3.6	0.3
02365	00	Z	500	29	5.0	3.2
02591	12	Z	500	30	7.8	6.5
02591	00	Z	500	30	8.8	8.3
02836	12	Z	500	31	3.2	0.3
02836	00	Z	500	32	3.0	1.9
02963	00	Z	500	29	4.0	3.0
02963	12	Z	500	29	3.4	0.7
03005	12	Z	500	32	6.5	-2.4
03005	00	Z	500	33	4.8	-0.6
03238	12	Z	500	1	12.2	-12.2
03238	00	Z	500	27	7.3	3.3
03808	00	Z	500	31	6.4	4.3
03808	12	Z	500	32	4.4	3.7
03918	12	Z	500	4	12.3	11.8
03918	00	Z	500	31	12.2	11.2
03953	00	Z	500	30	11.8	-4.8
03953	12	Z	500	31	8.3	0.0
04018	12	Z	500	30	5.2	0.8
04018	00	Z	500	31	5.0	1.6
04220	12	Z	500	31	3.9	-0.3
04220	00	Z	500	30	3.6	1.7
04270	12	Z	500	31	4.4	-0.9
04270	00	Z	500	31	4.2	-0.6
04320	00	Z	500	31	4.1	0.1
04320	12	Z	500	31	4.4	0.3
04339	12	Z	500	31	4.8	-0.6
04339	00	Z	500	30	18.0	-3.5
04360	00	Z	500	31	38.5	38.2
04360	12	Z	500	30	39.7	39.6
06011	12	Z	500	29	7.4	-0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	500	31	7.0	0.4
06260	00	Z	500	31	3.8	1.7
06260	12	Z	500	6	3.6	1.7
06610	00	Z	500	30	5.6	4.9
06610	12	Z	500	31	4.9	2.6
07110	12	Z	500	32	9.7	5.6
07110	00	Z	500	29	8.1	4.8
07510	00	Z	500	29	18.2	-3.6
07510	12	Z	500	31	18.7	-0.6
07645	00	Z	500	32	8.1	6.8
07645	12	Z	500	31	10.0	9.4
07761	12	Z	500	31	12.8	12.4
07761	00	Z	500	32	11.1	10.7
08001	00	Z	500	9	5.5	4.6
08001	12	Z	500	31	6.7	6.1
08221	12	Z	500	26	10.9	9.9
08221	00	Z	500	25	8.5	8.1
08302	00	Z	500	29	2.9	0.3
08302	12	Z	500	29	2.4	-0.2
08508	12	Z	500	30	8.3	6.9
08522	12	Z	500	31	8.3	7.7
085224	12	Z	500	1	2.7	-2.7
08579	12	Z	500	30	9.3	9.0
10035	12	Z	500	31	15.2	14.4
10035	00	Z	500	30	15.4	15.0
10393	00	Z	500	32	3.4	1.9
10393	12	Z	500	31	3.3	0.6
10410	12	Z	500	33	4.9	1.5
10410	00	Z	500	32	4.5	2.5
10739	12	Z	500	30	3.3	2.0
10739	00	Z	500	29	4.2	3.0
11035	00	Z	500	31	9.6	8.1
11035	12	Z	500	31	8.2	5.6
12982	12	Z	500	31	9.0	7.6
12982	00	Z	500	31	8.8	6.1
16080	00	Z	500	31	4.1	-0.4
16080	12	Z	500	31	4.5	-1.7
16245	00	Z	500	31	4.4	0.4
16245	12	Z	500	31	4.2	-1.6
16320	00	Z	500	29	15.4	14.5
16320	12	Z	500	31	14.1	13.3
16429	12	Z	500	32	4.3	1.5
16429	00	Z	500	31	4.5	2.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16622	00	Z	500	31	10.2	9.7
16754	00	Z	500	31	5.6	3.6
17607	12	Z	500	31	5.7	4.7
26435	00	Z	500	15	5.0	1.2
60018	00	Z	500	31	3.7	-0.9
60018	12	Z	500	31	2.9	1.2
7JUNA4	00	Z	500	5	27.4	-19.5
7JUNA4	12	Z	500	3	60.8	20.8
ASDE02	12	Z	500	4	14.3	-2.3
ASDE02	00	Z	500	1	4.6	4.6
ASDE09	12	Z	500	1	9.6	9.6
ASDK01	00	Z	500	10	27.0	13.2
ASDK01	12	Z	500	19	9.2	5.3
ASDK02	12	Z	500	10	7.6	5.5
ASDK02	00	Z	500	10	5.9	4.6
ASDK03	12	Z	500	15	23.9	23.0
ASDK03	00	Z	500	15	22.7	21.9
ASDK1	00	Z	500	2	4.6	3.6
ASDK1	12	Z	500	4	14.1	1.7
ASDK2	00	Z	500	1	11.0	11.0
ASDK2	12	Z	500	2	10.2	-2.9
ASDK3	12	Z	500	13	20.2	18.3
ASDK3	00	Z	500	11	22.8	20.6
ASFR1	12	Z	500	22	4.8	2.6
ASFR1	00	Z	500	18	7.6	-0.4
ASFR2	12	Z	500	2	3.5	2.8
ASFR2	00	Z	500	10	3.0	0.0
ASFR3	00	Z	500	18	4.4	2.4
ASFR3	12	Z	500	15	8.8	5.5
ASFR4	12	Z	500	18	6.7	2.8
ASFR4	00	Z	500	22	5.4	3.3
ASUK3	12	Z	500	27	13.1	-10.2
DBLK	12	Z	500	16	5.5	-2.3
FPUW5G	12	Z	500	3	7.8	7.2
KMPLHP	12	Z	500	12	6.8	-2.9
KMPLHP	00	Z	500	9	4.0	-0.1
LRVQE3	00	Z	500	5	5.5	0.6
LRVQE3	12	Z	500	8	3.5	2.2
VKB4L5	12	Z	500	12	33.6	33.1
VKB4L5	00	Z	500	9	33.1	32.3
VKB4Q	12	Z	500	2	34.9	34.9
XKQLWQ	12	Z	500	20	5.9	4.4
XQFJRG	12	Z	500	13	3.3	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
XQFJRG	00	Z	500	10	4.1	-3.3
XQFJX	12	Z	500	7	9.9	-8.0
XQFJX	00	Z	500	6	11.3	-9.6

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 500 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	500	30	3.2	-0.1	-0.2
01001	12	V	500	29	2.7	0.7	0.5
01028	00	V	500	30	2.3	0.0	-0.2
01028	12	V	500	30	2.9	0.1	-0.3
01400	12	V	500	23	2.1	0.1	0.3
01400	00	V	500	21	2.8	-0.2	0.3
01415	00	V	500	20	3.2	-0.4	0.5
01415	12	V	500	21	3.5	-0.1	0.1
02365	12	V	500	26	3.1	1.0	0.2
02365	00	V	500	27	2.7	-0.2	0.0
02591	12	V	500	30	3.4	0.5	0.0
02591	00	V	500	29	2.7	0.0	-0.5
02836	12	V	500	31	2.5	-0.2	0.1
02836	00	V	500	30	2.6	-0.8	0.0
02963	00	V	500	28	2.6	-0.4	0.1
02963	12	V	500	29	2.6	-0.2	-0.3
03005	12	V	500	31	4.1	0.2	0.3
03005	00	V	500	30	3.1	-0.5	0.1
03238	12	V	500	1	3.5	3.1	1.7
03238	00	V	500	26	4.2	1.0	0.7
03808	00	V	500	30	3.4	0.5	0.4
03808	12	V	500	31	3.5	0.7	-0.9
03918	12	V	500	4	3.7	2.3	-2.3
03918	00	V	500	30	3.4	0.4	-0.2
03953	00	V	500	29	4.2	-0.5	0.8
03953	12	V	500	31	4.0	-0.9	1.4
04018	12	V	500	30	3.4	-0.3	-0.5
04018	00	V	500	30	3.4	-0.7	-0.7
04220	12	V	500	31	3.3	0.9	0.0
04220	00	V	500	29	3.1	-0.4	-0.6
04270	12	V	500	31	3.2	0.0	-0.2
04270	00	V	500	30	2.9	-0.1	-0.1
04320	00	V	500	30	2.8	-0.1	0.8
04320	12	V	500	31	2.4	-0.2	0.3
04339	12	V	500	31	3.1	0.2	-0.1
04339	00	V	500	29	3.3	-0.7	-0.7
04360	00	V	500	30	3.2	0.0	0.5
04360	12	V	500	30	3.5	-0.2	0.5
06011	12	V	500	29	3.0	-0.2	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	500	30	3.1	-0.7	-0.4
06260	00	V	500	30	2.6	1.0	0.1
06260	12	V	500	6	2.5	-0.1	0.9
06610	00	V	500	29	2.9	0.2	0.1
06610	12	V	500	31	2.4	1.0	-0.7
07110	12	V	500	31	2.4	0.0	0.2
07110	00	V	500	27	2.3	0.0	0.0
07510	00	V	500	28	2.5	0.3	-0.5
07510	12	V	500	31	3.0	0.8	0.2
07645	00	V	500	30	2.7	-0.1	0.1
07645	12	V	500	31	2.9	0.5	-0.9
07761	12	V	500	31	2.7	0.1	-0.4
07761	00	V	500	30	2.3	0.1	0.3
08001	00	V	500	9	2.1	0.8	-0.3
08001	12	V	500	31	2.0	0.7	0.3
08221	12	V	500	26	2.5	0.2	0.1
08221	00	V	500	23	2.6	-0.4	0.2
08302	00	V	500	28	2.5	-0.8	-0.2
08302	12	V	500	29	2.8	0.1	-0.8
08508	12	V	500	30	2.5	0.8	-0.2
08522	12	V	500	31	3.1	0.6	-0.1
085224	12	V	500	1	2.4	0.7	-2.3
08579	12	V	500	30	2.2	0.4	0.2
10035	12	V	500	31	2.6	-0.2	-0.4
10035	00	V	500	29	2.3	-0.1	0.1
10393	00	V	500	30	3.0	0.4	-0.7
10393	12	V	500	31	2.6	0.6	-1.0
10410	12	V	500	31	2.8	0.0	0.3
10410	00	V	500	30	2.5	0.2	-0.2
10739	12	V	500	29	2.7	0.4	-0.3
10739	00	V	500	27	2.7	0.2	0.4
11035	00	V	500	30	3.1	-0.4	-0.3
11035	12	V	500	31	2.4	0.1	-0.4
12982	12	V	500	31	2.4	-0.2	0.0
12982	00	V	500	31	3.4	-0.6	0.0
16080	00	V	500	30	2.8	0.1	-0.3
16080	12	V	500	31	2.2	0.0	-0.5
16245	00	V	500	30	2.9	0.2	-0.7
16245	12	V	500	31	2.1	0.7	-0.1
16320	00	V	500	28	2.4	0.1	0.5
16320	12	V	500	31	2.6	0.4	0.1
16429	12	V	500	31	2.2	0.3	0.0
16429	00	V	500	29	2.4	0.3	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16622	00	V	500	29	1.9	0.1	-0.2
16754	00	V	500	28	2.8	0.0	1.0
17607	12	V	500	30	2.4	-0.2	0.0
26435	00	V	500	15	3.2	0.1	0.2
60018	00	V	500	30	2.9	-0.4	0.2
60018	12	V	500	31	2.9	0.5	0.1
7JUNA4	00	V	500	4	1.5	-0.5	0.4
7JUNA4	12	V	500	3	7.0	-3.2	-0.2
ASDE02	12	V	500	3	2.0	-1.5	-1.1
ASDE02	00	V	500	1	0.6	0.4	-0.4
ASDE09	12	V	500	1	2.5	2.4	0.7
ASDK01	00	V	500	9	2.6	-0.6	0.3
ASDK01	12	V	500	16	3.3	-1.1	-0.7
ASDK02	12	V	500	9	2.5	0.0	1.1
ASDK02	00	V	500	7	3.5	-0.9	1.0
ASDK03	12	V	500	13	3.5	0.7	0.1
ASDK03	00	V	500	12	5.4	0.9	-1.6
ASDK1	00	V	500	2	1.6	-0.9	-0.6
ASDK1	12	V	500	4	3.6	0.2	-0.7
ASDK2	00	V	500	1	8.7	-8.0	3.4
ASDK2	12	V	500	2	2.4	0.1	0.0
ASDK3	12	V	500	13	2.5	-0.1	0.1
ASDK3	00	V	500	11	4.9	0.1	-1.7
ASFR1	12	V	500	14	2.2	0.2	-0.2
ASFR1	00	V	500	10	2.2	0.6	-0.1
ASFR2	12	V	500	2	1.4	-0.7	0.6
ASFR2	00	V	500	5	3.1	1.8	0.2
ASFR3	00	V	500	9	2.1	-0.1	0.0
ASFR3	12	V	500	10	2.8	0.4	0.6
ASFR4	12	V	500	14	2.6	-0.2	0.8
ASFR4	00	V	500	14	2.9	0.2	-0.2
ASUK3	12	V	500	25	3.4	-0.3	0.1
DBLK	12	V	500	10	2.9	0.5	-1.0
FPUW5G	12	V	500	2	2.6	-1.2	0.5
KMPLHP	12	V	500	8	3.2	0.9	-1.4
KMPLHP	00	V	500	7	2.4	-0.4	0.1
LRYQE3	00	V	500	4	2.1	0.0	1.3
LRYQE3	12	V	500	7	3.1	0.2	0.7
VKB4L5	12	V	500	9	1.8	0.2	0.3
VKB4L5	00	V	500	8	3.2	0.7	-0.8
VKB4Q	12	V	500	2	1.1	0.7	-0.4
XKQLWQ	12	V	500	14	3.4	1.4	-0.9
XQFJRG	12	V	500	10	2.5	0.0	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
XQFJRG	00	V	500	6	3.5	-0.2	1.7
XQFJX	12	V	500	7	3.2	1.4	-1.5
XQFJX	00	V	500	6	4.1	-1.0	0.6

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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	850	31	4.0	0.5
01001	12	Z	850	29	4.5	-1.7
01028	00	Z	850	31	3.6	-2.5
01028	12	Z	850	30	4.5	-2.3
01400	12	Z	850	23	10.3	6.9
01400	00	Z	850	22	8.5	6.9
01415	00	Z	850	21	4.6	3.1
01415	12	Z	850	21	4.4	3.1
02365	12	Z	850	27	2.5	1.5
02365	00	Z	850	29	3.8	3.2
02591	12	Z	850	30	7.9	7.3
02591	00	Z	850	30	8.9	8.6
02836	12	Z	850	31	2.9	1.9
02836	00	Z	850	32	3.5	2.6
02963	00	Z	850	29	3.5	3.1
02963	12	Z	850	29	2.5	2.0
03005	12	Z	850	32	4.5	-1.4
03005	00	Z	850	33	3.5	-0.7
03238	12	Z	850	1	0.1	0.1
03238	00	Z	850	27	4.0	2.6
03808	00	Z	850	31	3.3	2.1
03808	12	Z	850	32	2.9	1.4
03918	12	Z	850	4	11.6	11.3
03918	00	Z	850	31	10.1	9.8
03953	00	Z	850	30	3.5	-0.2
03953	12	Z	850	31	4.9	1.8
04018	12	Z	850	30	2.0	0.9
04018	00	Z	850	31	2.8	0.9
04220	12	Z	850	31	2.9	1.3
04220	00	Z	850	30	3.4	1.6
04270	12	Z	850	31	3.9	-0.7
04270	00	Z	850	31	3.5	-0.8
04320	00	Z	850	31	4.1	-0.4
04320	12	Z	850	31	3.4	0.0
04339	12	Z	850	31	5.0	0.4
04339	00	Z	850	30	20.0	-4.2
04360	00	Z	850	32	42.7	42.5
04360	12	Z	850	29	43.2	43.0
06011	12	Z	850	29	3.9	1.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	850	31	4.5	3.7
06260	00	Z	850	31	2.6	1.9
06260	12	Z	850	6	3.8	0.7
06610	00	Z	850	30	6.1	5.8
06610	12	Z	850	31	3.7	3.0
07110	12	Z	850	32	3.2	0.8
07110	00	Z	850	29	3.8	0.6
07510	00	Z	850	29	5.7	2.2
07510	12	Z	850	31	6.6	3.2
07645	00	Z	850	32	3.6	2.2
07645	12	Z	850	31	4.2	3.6
07761	12	Z	850	31	4.5	3.8
07761	00	Z	850	32	3.4	2.5
08001	00	Z	850	9	2.4	1.8
08001	12	Z	850	31	2.6	1.4
08221	12	Z	850	28	3.7	3.1
08221	00	Z	850	25	5.1	4.7
08302	00	Z	850	29	2.3	-1.6
08302	12	Z	850	29	11.6	-5.5
08508	12	Z	850	30	5.3	3.6
08522	12	Z	850	31	4.1	3.2
085224	12	Z	850	1	0.4	-0.4
08579	12	Z	850	30	3.4	2.8
10035	12	Z	850	31	15.4	15.2
10035	00	Z	850	30	15.1	15.0
10393	00	Z	850	32	3.1	2.3
10393	12	Z	850	31	2.2	0.9
10410	12	Z	850	33	2.8	1.1
10410	00	Z	850	32	2.5	1.9
10739	12	Z	850	30	2.8	0.7
10739	00	Z	850	29	2.2	1.0
11035	00	Z	850	31	8.3	7.5
11035	12	Z	850	31	8.4	7.5
12982	12	Z	850	31	7.3	6.5
12982	00	Z	850	31	6.0	4.9
16080	00	Z	850	31	2.8	-2.0
16080	12	Z	850	31	5.3	-4.3
16245	00	Z	850	31	2.4	-0.2
16245	12	Z	850	31	3.1	-2.6
16320	00	Z	850	30	15.2	13.9
16320	12	Z	850	31	14.3	13.5
16429	12	Z	850	32	3.7	1.8
16429	00	Z	850	31	3.5	2.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16622	00	Z	850	31	9.3	9.2
16754	00	Z	850	31	4.7	2.5
17607	12	Z	850	31	3.4	2.9
26435	00	Z	850	15	3.9	3.4
60018	00	Z	850	31	3.0	-2.4
60018	12	Z	850	31	4.1	-3.4
7JUNA4	00	Z	850	5	30.7	-23.1
7JUNA4	12	Z	850	3	36.1	-26.6
ASDE02	12	Z	850	4	14.4	-6.5
ASDE02	00	Z	850	1	1.2	-1.2
ASDE09	12	Z	850	1	11.7	11.7
ASDK01	00	Z	850	10	9.6	6.1
ASDK01	12	Z	850	19	7.5	4.9
ASDK02	12	Z	850	10	8.7	7.5
ASDK02	00	Z	850	10	4.1	2.4
ASDK03	12	Z	850	15	24.1	23.4
ASDK03	00	Z	850	15	24.7	23.6
ASDK1	00	Z	850	2	11.7	11.6
ASDK1	12	Z	850	4	7.8	3.1
ASDK2	00	Z	850	1	18.8	18.8
ASDK2	12	Z	850	2	9.4	7.8
ASDK3	12	Z	850	13	24.6	23.4
ASDK3	00	Z	850	11	27.5	25.5
ASFR1	12	Z	850	25	2.1	-0.8
ASFR1	00	Z	850	23	1.9	-0.3
ASFR2	12	Z	850	3	3.8	-3.6
ASFR2	00	Z	850	10	5.0	-4.6
ASFR3	00	Z	850	18	3.9	1.6
ASFR3	12	Z	850	15	4.3	2.2
ASFR4	12	Z	850	18	6.8	-4.4
ASFR4	00	Z	850	24	4.1	-2.4
ASUK3	12	Z	850	28	13.5	-12.0
DBLK	12	Z	850	16	6.4	-3.4
FPUW5G	12	Z	850	3	8.5	1.7
KMPLHP	12	Z	850	14	6.0	-3.1
KMPLHP	00	Z	850	13	6.6	-3.5
LRYQE3	00	Z	850	5	2.1	0.9
LRYQE3	12	Z	850	8	5.3	2.2
VKB4L5	12	Z	850	12	28.6	27.4
VKB4L5	00	Z	850	9	28.5	28.0
VKB4Q	12	Z	850	2	27.2	27.2
XKQLWQ	12	Z	850	20	3.2	-0.7
XQFJRG	12	Z	850	13	6.8	-6.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
XQFJRG	00	Z	850	10	7.8	-7.2
XQFJX	12	Z	850	7	8.5	-8.1
XQFJX	00	Z	850	6	10.6	-9.3

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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	850	30	2.5	-0.2	0.5
01001	12	V	850	29	4.0	0.6	-0.6
01028	00	V	850	30	2.1	-0.1	-0.2
01028	12	V	850	30	2.7	-0.5	0.0
01400	12	V	850	23	2.9	-0.2	-0.6
01400	00	V	850	21	2.6	-0.6	0.2
01415	00	V	850	20	3.3	0.5	0.2
01415	12	V	850	21	3.0	0.5	0.7
02365	12	V	850	27	2.7	0.7	0.8
02365	00	V	850	27	2.6	0.0	0.4
02591	12	V	850	30	2.9	0.6	-0.6
02591	00	V	850	29	3.1	0.2	0.1
02836	12	V	850	31	2.3	0.3	-0.4
02836	00	V	850	30	2.7	-0.6	-0.1
02963	00	V	850	28	2.5	-0.1	0.2
02963	12	V	850	29	2.1	0.0	0.1
03005	12	V	850	31	3.0	0.0	-0.1
03005	00	V	850	30	2.8	0.7	-0.1
03238	12	V	850	1	3.5	-0.2	-3.5
03238	00	V	850	26	2.9	0.3	0.1
03808	00	V	850	30	2.5	0.0	-0.1
03808	12	V	850	31	2.8	0.2	-0.5
03918	12	V	850	4	3.1	0.2	-0.7
03918	00	V	850	30	3.1	0.2	-0.5
03953	00	V	850	29	3.1	0.1	0.7
03953	12	V	850	31	3.5	0.3	0.7
04018	12	V	850	30	2.8	0.1	0.6
04018	00	V	850	30	2.7	-0.5	-0.4
04220	12	V	850	31	3.2	0.7	0.1
04220	00	V	850	29	2.8	0.0	0.6
04270	12	V	850	31	3.0	0.0	0.3
04270	00	V	850	30	3.3	-0.1	0.7
04320	00	V	850	30	3.1	-0.2	0.1
04320	12	V	850	31	3.4	-0.5	0.9
04339	12	V	850	31	4.9	1.3	0.8
04339	00	V	850	29	4.4	0.4	1.3
04360	00	V	850	30	5.6	1.8	0.2
04360	12	V	850	29	6.5	1.9	0.9
06011	12	V	850	29	3.8	0.0	-1.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	850	30	3.3	-0.5	-0.2
06260	00	V	850	30	2.3	0.3	-0.3
06260	12	V	850	6	2.5	1.1	0.2
06610	00	V	850	29	3.0	1.0	-0.6
06610	12	V	850	31	3.1	0.7	-0.2
07110	12	V	850	31	3.5	0.0	0.0
07110	00	V	850	27	3.1	-0.3	0.1
07510	00	V	850	28	3.5	-0.3	0.6
07510	12	V	850	31	3.7	0.4	0.7
07645	00	V	850	30	3.1	-0.3	0.4
07645	12	V	850	31	3.6	-0.6	0.2
07761	12	V	850	31	3.4	0.6	0.8
07761	00	V	850	30	3.7	-0.4	0.0
08001	00	V	850	9	3.2	0.5	0.4
08001	12	V	850	31	2.8	-0.3	-0.1
08221	12	V	850	27	2.5	-0.3	0.3
08221	00	V	850	23	2.8	0.8	0.2
08302	00	V	850	28	3.3	0.7	-0.1
08302	12	V	850	29	2.7	0.4	0.2
08508	12	V	850	30	4.0	0.2	-0.9
08522	12	V	850	31	2.9	-0.1	0.3
085224	12	V	850	1	1.4	0.5	1.3
08579	12	V	850	29	2.3	-0.2	0.1
10035	12	V	850	31	2.6	0.1	0.3
10035	00	V	850	29	2.5	0.4	-0.4
10393	00	V	850	30	2.3	0.3	0.0
10393	12	V	850	31	3.1	-0.2	-0.4
10410	12	V	850	31	2.8	0.4	-0.7
10410	00	V	850	30	2.6	0.1	-0.1
10739	12	V	850	29	2.4	-0.4	0.1
10739	00	V	850	27	2.3	0.0	0.7
11035	00	V	850	30	3.2	0.1	0.3
11035	12	V	850	31	3.2	0.2	-0.9
12982	12	V	850	31	3.3	0.0	0.1
12982	00	V	850	31	2.6	-0.2	-0.2
16080	00	V	850	30	4.2	0.6	-0.3
16080	12	V	850	31	3.2	0.1	0.0
16245	00	V	850	30	3.6	0.6	0.3
16245	12	V	850	31	2.8	0.9	-0.3
16320	00	V	850	29	2.5	0.3	-0.8
16320	12	V	850	31	2.6	0.2	-0.4
16429	12	V	850	31	2.1	-0.2	-0.2
16429	00	V	850	29	2.5	0.0	-0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16622	00	V	850	29	2.4	0.6	-0.1
16754	00	V	850	28	2.6	0.3	0.0
17607	12	V	850	31	3.0	0.4	-0.4
26435	00	V	850	15	2.4	0.1	-0.8
60018	00	V	850	30	3.1	0.9	-0.2
60018	12	V	850	31	3.2	0.7	-0.1
7JUNA4	00	V	850	4	2.4	-1.9	-0.3
7JUNA4	12	V	850	3	1.9	0.5	-0.4
ASDE02	12	V	850	3	2.6	2.0	-0.8
ASDE02	00	V	850	1	4.2	0.7	4.1
ASDE09	12	V	850	1	2.2	-0.8	-2.1
ASDK01	00	V	850	9	2.4	0.4	0.2
ASDK01	12	V	850	16	3.5	-0.5	0.8
ASDK02	12	V	850	9	2.3	0.1	-0.1
ASDK02	00	V	850	7	4.8	-0.3	-0.4
ASDK03	12	V	850	13	3.1	-0.7	0.3
ASDK03	00	V	850	12	2.4	0.3	0.5
ASDK1	00	V	850	2	1.4	-0.2	-0.3
ASDK1	12	V	850	4	1.6	0.0	0.5
ASDK2	00	V	850	1	1.5	1.5	0.3
ASDK2	12	V	850	2	3.0	2.0	-2.2
ASDK3	12	V	850	13	3.3	-0.6	-0.1
ASDK3	00	V	850	11	2.9	0.7	0.6
ASFR1	12	V	850	16	3.1	0.9	0.7
ASFR1	00	V	850	13	2.5	0.3	0.0
ASFR2	12	V	850	3	0.7	0.4	-0.2
ASFR2	00	V	850	5	1.3	0.3	-0.4
ASFR3	00	V	850	9	3.0	0.1	-0.5
ASFR3	12	V	850	10	3.0	0.8	1.4
ASFR4	12	V	850	14	3.5	0.8	-0.7
ASFR4	00	V	850	15	2.3	0.7	0.4
ASUK3	12	V	850	28	2.6	-0.5	-0.1
DBLK	12	V	850	10	2.3	0.3	-0.6
FPUW5G	12	V	850	2	4.5	1.0	-2.7
KMPLHP	12	V	850	10	3.9	1.6	0.5
KMPLHP	00	V	850	10	4.5	0.4	-0.4
LRYQE3	00	V	850	4	5.7	1.0	2.0
LRYQE3	12	V	850	7	3.9	1.3	-0.2
VKB4L5	12	V	850	9	2.6	-0.5	0.1
VKB4L5	00	V	850	8	2.6	0.6	-0.7
VKB4Q	12	V	850	2	3.8	0.3	0.2
XKQLWQ	12	V	850	15	2.6	0.9	0.1
XQFJRG	12	V	850	10	2.7	0.3	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
XQFJRG	00	V	850	6	2.5	0.0	-1.8
XQFJX	12	V	850	7	2.9	-0.1	-0.2
XQFJX	00	V	850	6	3.1	0.5	-1.7

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 2017
 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	745	0	0.3	-0.2	0.4
1300001	99	P	SUR	11	-23	726	0	0.4	-0.1	0.4
1300130	99	P	SUR	28	-16	744	0	0.3	0.0	0.3
1300131	99	P	SUR	28	-17	744	0	0.3	0.0	0.3
1300869	99	P	SUR	26	-60	743	0	0.4	-0.0	0.4
1300872	99	P	SUR	34	-45	744	0	0.3	0.3	0.4
1301603	99	P	SUR	20	-23	744	0	0.3	0.3	0.4
1301604	99	P	SUR	11	-25	744	0	0.4	0.0	0.4
1301605	99	P	SUR	20	-30	638	0	0.3	0.2	0.3
1301606	99	P	SUR	16	-29	543	0	0.3	0.3	0.4
13869	99	P	SUR	26	-60	743	0	0.4	-0.0	0.4
13872	99	P	SUR	34	-45	744	0	0.3	0.3	0.4
1501529	99	P	SUR	29	-27	736	0	0.3	0.3	0.4
1501531	99	P	SUR	22	-36	736	0	0.3	0.1	0.3
1501533	99	P	SUR	15	-37	51	0	0.4	0.2	0.5
1501534	99	P	SUR	22	-33	735	0	0.3	-0.0	0.3
2500622	99	P	SUR	78	0	369	2	4.1	-1.1	4.2
25622	99	P	SUR	78	0	369	2	4.1	-1.1	4.2
2600545	99	P	SUR	57	-25	7	4	3.5	5.9	6.9
2601560	99	P	SUR	80	5	744	16	2.5	-0.7	2.6
26545	99	P	SUR	58	-22	1	1	0.0	0.0	0.0
4100139	99	P	SUR	20	-38	669	0	0.3	-0.1	0.4
4100506	99	P	SUR	31	-48	682	0	0.3	-0.1	0.3
4100590	99	P	SUR	37	-21	736	0	0.7	-0.4	0.8
4100597	99	P	SUR	37	-42	743	0	0.5	0.0	0.5
4100707	99	P	SUR	14	-61	744	0	2.3	-1.6	2.8
4100729	99	P	SUR	36	-32	744	0	0.3	0.1	0.4
4100731	99	P	SUR	33	-69	744	0	0.4	0.0	0.4
4100936	99	P	SUR	49	-8	122	0	0.3	-1.1	1.1
4101539	99	P	SUR	31	-67	624	0	0.4	0.5	0.7
4101554	99	P	SUR	34	-60	443	0	0.4	0.4	0.5
4101555	99	P	SUR	35	-69	386	0	0.3	0.1	0.4
4101556	99	P	SUR	41	-45	444	0	0.5	0.5	0.7
4101560	99	P	SUR	36	-50	362	0	0.6	1.0	1.2
4101561	99	P	SUR	33	-65	434	0	0.4	0.3	0.5
4101562	99	P	SUR	38	-40	354	0	0.4	0.4	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4101563	99	P	SUR	36	-55	353	0	0.5	0.6	0.8
4101564	99	P	SUR	37	-44	348	0	0.5	0.1	0.5
4101700	99	P	SUR	33	-35	708	0	0.4	0.3	0.5
4101702	99	P	SUR	28	-56	744	0	0.4	0.2	0.4
4101703	99	P	SUR	26	-58	744	0	0.4	0.5	0.6
4101704	99	P	SUR	18	-67	743	0	0.4	0.7	0.8
4101705	99	P	SUR	37	-43	744	0	0.5	0.1	0.5
4101706	99	P	SUR	36	-47	744	0	0.4	-0.5	0.6
4101707	99	P	SUR	38	-33	744	0	0.3	-0.1	0.4
4101708	99	P	SUR	33	-33	743	0	0.4	-0.3	0.5
4101709	99	P	SUR	39	-24	536	19	3.0	-0.4	3.0
4101710	99	P	SUR	34	-50	744	0	0.3	0.1	0.3
4101711	99	P	SUR	31	-56	474	0	0.4	0.0	0.4
4101712	99	P	SUR	30	-58	724	0	0.4	-0.1	0.4
4101713	99	P	SUR	28	-54	744	0	0.3	-0.0	0.3
4101741	99	P	SUR	23	-58	744	0	0.4	0.5	0.6
4101742	99	P	SUR	20	-47	744	0	0.4	-0.0	0.4
4101743	99	P	SUR	22	-46	744	0	0.3	0.5	0.6
4101744	99	P	SUR	12	-53	744	0	0.4	-0.5	0.6
4101746	99	P	SUR	15	-57	744	0	0.4	0.0	0.4
41040	99	P	SUR	15	-53	1151	0	0.5	-0.4	0.6
41041	99	P	SUR	14	-46	1252	0	0.5	0.2	0.5
41043	99	P	SUR	21	-65	1278	0	0.4	-0.4	0.6
41044	99	P	SUR	22	-59	1316	0	0.4	0.0	0.5
41046	99	P	SUR	24	-68	1316	0	0.4	0.2	0.5
41048	99	P	SUR	32	-70	1310	0	0.4	-0.0	0.5
41049	99	P	SUR	28	-63	743	0	0.4	0.1	0.4
41052	99	P	SUR	18	-65	1845	0	0.4	-1.9	2.0
41053	99	P	SUR	19	-66	1800	0	0.5	-0.8	0.9
41056	99	P	SUR	18	-66	737	0	0.4	-0.1	0.4
41506	99	P	SUR	31	-48	684	0	0.3	-0.1	0.3
41590	99	P	SUR	37	-21	738	0	0.7	-0.4	0.8
41597	99	P	SUR	37	-42	743	0	0.5	0.0	0.5
41707	99	P	SUR	14	-61	744	0	2.3	-1.6	2.8
41729	99	P	SUR	35	-32	744	0	0.3	0.1	0.4
41731	99	P	SUR	33	-69	744	0	0.4	0.0	0.4
41936	99	P	SUR	49	-8	124	0	0.3	-1.1	1.1
42059	99	P	SUR	15	-68	1265	0	0.5	-0.2	0.5
42085	99	P	SUR	18	-67	1200	0	0.5	-0.9	1.0
42088	99	P	SUR	11	-61	924	0	0.6	0.1	0.6
42090	99	P	SUR	18	-70	215	0	0.5	0.0	0.5
44005	99	P	SUR	43	-69	136	0	0.5	-0.2	0.6
4400510	99	P	SUR	46	-14	1415	0	0.4	0.5	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4400513	99	P	SUR	54	-10	744	0	0.4	-0.4	0.6
4400517	99	P	SUR	26	-36	742	0	0.3	0.3	0.4
4400521	99	P	SUR	32	-36	724	0	0.4	-0.7	0.8
4400746	99	P	SUR	29	-28	744	0	0.3	0.3	0.4
4400765	99	P	SUR	62	1	655	0	0.6	0.1	0.6
4400766	99	P	SUR	22	-32	744	0	0.3	-0.2	0.4
4400768	99	P	SUR	29	-61	744	0	0.4	0.4	0.6
4400776	99	P	SUR	26	-50	740	0	0.3	0.5	0.6
4400777	99	P	SUR	32	-50	744	0	0.3	0.2	0.4
4400778	99	P	SUR	30	-29	742	0	0.3	0.3	0.5
4400779	99	P	SUR	53	-10	369	0	0.4	-0.4	0.6
44008	99	P	SUR	41	-69	744	0	0.6	-0.6	0.9
4400839	99	P	SUR	36	-66	744	0	0.4	-0.4	0.6
4400848	99	P	SUR	29	-62	741	0	0.3	0.1	0.4
4400857	99	P	SUR	33	-23	744	0	0.3	0.4	0.5
4400874	99	P	SUR	30	-40	744	0	0.4	0.2	0.5
4400875	99	P	SUR	38	-34	537	21	2.4	-0.7	2.5
4400887	99	P	SUR	34	-42	744	0	0.4	-0.1	0.4
4400891	99	P	SUR	32	-55	743	0	0.4	-0.4	0.5
44011	99	P	SUR	41	-67	744	0	0.5	-0.9	1.0
4401501	99	P	SUR	51	-7	744	0	0.4	0.3	0.5
4401503	99	P	SUR	36	-60	743	0	0.5	0.2	0.5
4401525	99	P	SUR	13	-60	580	0	0.4	0.1	0.5
4401527	99	P	SUR	24	-63	743	0	0.4	0.0	0.4
4401529	99	P	SUR	26	-69	743	0	0.4	0.0	0.4
4401530	99	P	SUR	33	-53	733	0	0.3	-0.4	0.5
4401531	99	P	SUR	32	-64	742	0	0.4	0.4	0.6
4401535	99	P	SUR	54	-21	178	0	1.6	-1.0	1.9
4401536	99	P	SUR	48	-36	716	0	0.5	0.2	0.6
4401537	99	P	SUR	37	-28	708	0	0.3	-0.5	0.6
4401538	99	P	SUR	41	-29	658	0	0.3	-1.8	1.8
4401539	99	P	SUR	35	-49	743	0	0.3	0.2	0.4
4401540	99	P	SUR	31	-64	742	0	0.4	0.2	0.4
4401541	99	P	SUR	35	-69	740	0	0.4	0.1	0.4
4401542	99	P	SUR	34	-65	743	0	0.4	0.4	0.5
4401543	99	P	SUR	28	-65	740	0	0.4	-0.1	0.4
4401546	99	P	SUR	43	-22	742	0	0.4	0.6	0.7
4401548	99	P	SUR	48	-13	742	1	0.9	0.1	0.9
4401550	99	P	SUR	46	-29	689	0	0.5	-0.3	0.6
4401551	99	P	SUR	32	-45	736	0	0.3	0.3	0.5
4401552	99	P	SUR	41	-20	707	0	0.3	0.2	0.4
4401553	99	P	SUR	55	-39	744	0	0.4	0.2	0.5
4401554	99	P	SUR	56	-33	744	0	0.7	0.5	0.9

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4401555	99	P	SUR	56	-22	600	41	1.0	-0.5	1.1
4401556	99	P	SUR	39	-35	744	0	0.3	0.0	0.3
4401557	99	P	SUR	43	-60	744	0	0.5	0.3	0.6
4401558	99	P	SUR	43	-56	743	0	0.4	0.1	0.4
4401559	99	P	SUR	44	-34	743	0	0.6	0.1	0.6
4401560	99	P	SUR	43	-27	744	0	0.4	0.1	0.4
4401561	99	P	SUR	44	-52	743	0	0.3	0.2	0.4
4401562	99	P	SUR	39	-35	744	0	0.4	-0.3	0.5
4401563	99	P	SUR	30	-30	744	0	0.3	-0.3	0.4
4401564	99	P	SUR	37	-45	744	0	0.5	1.1	1.2
4401565	99	P	SUR	46	-47	744	0	0.4	0.3	0.5
4401566	99	P	SUR	46	-44	744	0	0.5	0.2	0.5
4401601	99	P	SUR	56	-50	698	0	0.4	0.1	0.4
4401602	99	P	SUR	46	-58	695	0	0.4	0.5	0.7
4401603	99	P	SUR	53	-36	696	0	0.4	0.3	0.5
4401605	99	P	SUR	53	-43	692	0	0.4	-0.2	0.5
4401606	99	P	SUR	49	-24	695	0	0.4	-0.2	0.5
4401609	99	P	SUR	42	-55	695	0	0.4	0.0	0.4
4401611	99	P	SUR	51	-55	695	0	0.4	0.4	0.5
4401613	99	P	SUR	47	-25	698	0	0.4	0.2	0.4
4401616	99	P	SUR	42	-50	695	0	0.5	-0.0	0.5
4401629	99	P	SUR	47	-38	688	0	0.5	1.3	1.4
4401631	99	P	SUR	52	-19	698	0	0.8	-0.2	0.9
4401633	99	P	SUR	45	-32	690	0	0.5	-0.0	0.5
4401634	99	P	SUR	60	-12	698	0	0.9	-0.1	0.9
4401754	99	P	SUR	63	2	259	209	3.8	9.8	10.5
4401756	99	P	SUR	65	-30	700	0	0.6	0.6	0.9
4401757	99	P	SUR	69	-3	698	0	0.5	0.5	0.7
4401802	99	P	SUR	44	-58	695	0	0.5	0.4	0.6
44027	99	P	SUR	44	-67	916	0	0.5	-0.1	0.6
44032	99	P	SUR	44	-69	683	0	0.5	-0.5	0.7
44033	99	P	SUR	44	-69	713	0	0.5	-0.4	0.6
44034	99	P	SUR	44	-68	713	0	0.4	-0.3	0.5
44037	99	P	SUR	44	-68	700	0	0.4	-0.9	1.0
44137	99	P	SUR	42	-62	772	0	0.4	0.1	0.4
44139	99	P	SUR	44	-57	727	0	0.4	0.1	0.4
44150	99	P	SUR	43	-64	737	0	0.4	0.0	0.4
44258	99	P	SUR	45	-63	733	0	0.4	0.2	0.5
44510	99	P	SUR	46	-14	1420	0	0.4	0.5	0.6
44513	99	P	SUR	54	-10	744	0	0.4	-0.4	0.6
44517	99	P	SUR	26	-36	742	0	0.3	0.3	0.4
44521	99	P	SUR	32	-36	726	0	0.4	-0.7	0.8
44746	99	P	SUR	29	-28	744	0	0.3	0.3	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
44765	99	P	SUR	62	1	655	0	0.6	0.1	0.6
44766	99	P	SUR	22	-31	744	0	0.3	-0.2	0.4
44768	99	P	SUR	29	-61	744	0	0.4	0.4	0.6
44776	99	P	SUR	26	-50	740	0	0.3	0.5	0.6
44777	99	P	SUR	32	-50	744	0	0.3	0.2	0.4
44778	99	P	SUR	30	-29	742	0	0.3	0.3	0.5
44779	99	P	SUR	53	-10	369	0	0.4	-0.4	0.6
44839	99	P	SUR	36	-66	744	0	0.4	-0.4	0.6
44848	99	P	SUR	29	-62	741	0	0.3	0.1	0.4
44857	99	P	SUR	33	-23	744	0	0.3	0.4	0.5
44874	99	P	SUR	30	-40	744	0	0.4	0.2	0.5
44875	99	P	SUR	38	-34	537	21	2.4	-0.7	2.5
44887	99	P	SUR	34	-42	744	0	0.4	-0.1	0.4
44891	99	P	SUR	32	-55	743	0	0.4	-0.4	0.5
45138	99	P	SUR	50	-66	726	0	0.6	-0.0	0.6
4700546	99	P	SUR	39	-26	682	0	0.3	0.3	0.5
4700551	99	P	SUR	57	-6	535	391	6.7	-6.9	9.6
4700552	99	P	SUR	67	-63	670	93	2.2	-1.6	2.7
4700555	99	P	SUR	44	-17	701	37	0.6	0.2	0.7
4700557	99	P	SUR	55	-9	638	0	0.6	-8.1	8.1
4700560	99	P	SUR	62	1	689	0	0.4	0.4	0.5
4700562	99	P	SUR	60	-1	647	0	0.5	0.4	0.6
4700568	99	P	SUR	46	-9	674	0	0.4	0.4	0.6
4700574	99	P	SUR	40	-15	700	0	0.3	0.2	0.4
4701657	99	P	SUR	80	-67	445	0	0.7	-1.2	1.4
4701661	99	P	SUR	84	-36	157	0	0.4	-0.1	0.4
4701662	99	P	SUR	71	-67	149	0	0.9	-2.6	2.7
4701668	99	P	SUR	50	-56	693	0	0.3	0.4	0.5
4701669	99	P	SUR	52	-54	692	0	0.3	0.4	0.5
4701670	99	P	SUR	62	-65	699	0	0.6	-1.0	1.2
4701674	99	P	SUR	73	-68	698	0	0.6	-5.5	5.5
4701675	99	P	SUR	48	-47	742	0	0.4	0.3	0.5
4701676	99	P	SUR	66	-60	744	0	0.5	0.3	0.6
4701677	99	P	SUR	59	-61	743	0	0.5	0.2	0.5
4701678	99	P	SUR	59	-63	744	0	0.6	0.2	0.7
4701679	99	P	SUR	69	-61	744	0	0.5	0.3	0.6
47546	99	P	SUR	39	-27	310	0	0.4	0.3	0.5
47551	99	P	SUR	57	-6	324	173	6.6	-5.7	8.7
47552	99	P	SUR	67	-63	324	123	3.9	-1.8	4.3
47555	99	P	SUR	44	-17	324	38	1.6	-0.1	1.6
47557	99	P	SUR	55	-9	324	0	0.4	-8.0	8.0
47560	99	P	SUR	63	5	323	0	0.4	0.3	0.5
47562	99	P	SUR	60	-1	324	0	0.4	0.3	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
47568	99	P	SUR	46	-9	318	0	0.4	0.6	0.7
47574	99	P	SUR	39	-16	324	0	0.3	0.2	0.4
4800274	99	P	SUR	82	-4	540	0	0.5	0.3	0.6
4800276	99	P	SUR	84	-36	540	0	0.6	-0.2	0.6
4800280	99	P	SUR	83	-8	537	0	0.4	-0.0	0.4
4800510	99	P	SUR	86	-10	691	0	0.5	-0.3	0.6
4800600	99	P	SUR	57	-28	740	0	0.5	-0.1	0.5
4800631	99	P	SUR	83	27	709	605	5.0	-3.1	5.9
4800770	99	P	SUR	80	-14	667	0	0.5	0.3	0.5
4802004	99	P	SUR	82	-6	156	0	0.9	0.0	0.9
4802008	99	P	SUR	84	-68	157	0	0.5	-0.3	0.6
4802009	99	P	SUR	81	-2	157	0	0.7	0.6	0.9
48274	99	P	SUR	81	-4	147	0	0.6	0.5	0.8
48275	99	P	SUR	84	-69	147	0	0.4	-0.4	0.5
48276	99	P	SUR	84	-36	146	0	0.3	-0.7	0.8
48280	99	P	SUR	83	-8	146	0	0.6	0.0	0.6
48510	99	P	SUR	86	-12	322	0	0.6	-0.2	0.6
48600	99	P	SUR	57	-28	740	0	0.5	-0.1	0.5
48770	99	P	SUR	79	-17	314	0	0.5	0.2	0.6
6100001	99	P	SUR	43	8	744	0	0.5	-0.0	0.5
6100002	99	P	SUR	42	5	743	0	0.4	-0.1	0.4
61001	99	P	SUR	43	8	744	0	0.5	-0.0	0.5
6100196	99	P	SUR	42	4	743	0	0.5	-0.1	0.5
6100197	99	P	SUR	40	4	744	0	0.4	0.0	0.4
6100198	99	P	SUR	37	-2	744	0	0.3	0.1	0.3
61002	99	P	SUR	42	5	743	0	0.4	-0.1	0.4
6100280	99	P	SUR	41	1	743	0	0.3	0.2	0.4
6100281	99	P	SUR	40	0	744	0	0.3	0.1	0.3
6100417	99	P	SUR	38	0	744	0	0.3	0.1	0.3
6100430	99	P	SUR	40	2	744	0	0.3	-0.0	0.3
6101001	99	P	SUR	38	24	217	0	0.5	0.3	0.6
6101003	99	P	SUR	40	25	198	0	0.4	0.3	0.6
6101007	99	P	SUR	36	25	217	0	0.7	1.8	1.9
6101008	99	P	SUR	37	22	180	0	0.5	0.1	0.5
6200024	99	P	SUR	44	-3	709	0	0.4	0.1	0.4
6200025	99	P	SUR	44	-6	733	0	0.3	-0.0	0.3
6200083	99	P	SUR	43	-9	744	0	0.4	-0.2	0.4
6200084	99	P	SUR	42	-9	702	0	0.4	0.0	0.4
6200085	99	P	SUR	36	-7	734	0	0.3	0.0	0.3
6200091	99	P	SUR	53	-5	396	14	1.3	-0.1	1.3
6200092	99	P	SUR	51	-11	308	11	2.5	-0.6	2.5
6200093	99	P	SUR	55	-10	744	0	0.6	-0.5	0.7
6200094	99	P	SUR	52	-7	392	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
62001	99	P	SUR	45	-5	744	0	0.3	0.0	0.3
6200191	99	P	SUR	41	-10	705	1	0.4	-0.3	0.5
6200192	99	P	SUR	40	-10	87	0	0.3	-0.7	0.8
6200199	99	P	SUR	40	-9	695	0	0.4	0.2	0.4
6200200	99	P	SUR	36	-8	695	0	0.3	-0.1	0.3
6200513	99	P	SUR	62	-26	744	0	0.5	-0.3	0.6
6200554	99	P	SUR	39	-19	686	0	0.3	0.2	0.4
6200559	99	P	SUR	56	-6	691	0	0.6	0.3	0.6
6200940	99	P	SUR	29	-35	744	0	0.4	-0.1	0.4
6200941	99	P	SUR	18	-53	744	0	0.4	-0.3	0.5
6201070	99	P	SUR	43	-9	660	0	0.7	-1.6	1.7
62023	99	P	SUR	51	-8	739	0	0.4	0.3	0.5
62027	99	P	SUR	49	-2	235	0	0.5	0.0	0.5
62029	99	P	SUR	49	-12	1429	2	1.0	-0.2	1.0
62030	99	P	SUR	50	-4	634	0	0.4	-0.0	0.4
6203503	99	P	SUR	27	-36	744	0	0.3	-0.5	0.6
6203504	99	P	SUR	27	-42	741	0	0.4	0.2	0.4
6203510	99	P	SUR	10	-46	734	0	0.4	0.0	0.5
6203524	99	P	SUR	62	-50	700	0	0.5	0.7	0.9
6203526	99	P	SUR	64	-6	696	0	0.5	0.4	0.6
6203528	99	P	SUR	36	-13	729	0	0.3	0.3	0.5
6203600	99	P	SUR	49	-20	744	0	0.5	0.2	0.5
6203601	99	P	SUR	48	-19	744	0	0.5	0.3	0.6
6203602	99	P	SUR	57	-34	744	0	0.4	0.1	0.4
6203603	99	P	SUR	54	-38	743	0	0.5	-0.0	0.5
6203604	99	P	SUR	49	-32	744	0	0.4	0.1	0.4
6203605	99	P	SUR	55	-36	744	0	0.5	-0.0	0.5
6203606	99	P	SUR	45	-28	744	0	0.5	0.2	0.6
62050	99	P	SUR	50	-4	745	0	0.4	0.3	0.5
62095	99	P	SUR	53	-16	1302	0	0.5	-0.2	0.5
62102	99	P	SUR	58	2	740	0	0.6	0.2	0.7
62103	99	P	SUR	50	-3	746	0	0.4	0.5	0.7
62104	99	P	SUR	57	1	745	0	0.5	0.1	0.5
62105	99	P	SUR	55	-13	716	0	0.6	-0.5	0.8
62107	99	P	SUR	50	-6	1485	4	0.9	0.4	1.0
62111	99	P	SUR	58	0	745	0	0.4	1.4	1.5
62112	99	P	SUR	58	0	745	0	0.4	0.3	0.5
62113	99	P	SUR	58	0	745	0	0.6	0.4	0.7
62114	99	P	SUR	58	0	1483	0	0.6	0.2	0.6
62115	99	P	SUR	58	-3	741	0	0.5	0.1	0.5
62116	99	P	SUR	58	1	745	0	0.5	0.0	0.5
62118	99	P	SUR	58	1	745	0	0.5	0.6	0.8
62119	99	P	SUR	57	2	745	0	0.5	0.4	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62120	99	P	SUR	56	2	745	0	0.6	-0.0	0.6
62121	99	P	SUR	54	3	745	0	0.5	0.4	0.7
62122	99	P	SUR	57	2	1483	0	0.5	0.2	0.5
62124	99	P	SUR	54	-4	745	0	0.4	0.0	0.4
62127	99	P	SUR	54	1	745	0	0.4	0.5	0.7
62129	99	P	SUR	58	0	745	0	0.5	0.2	0.6
62130	99	P	SUR	59	1	745	0	0.4	-0.0	0.5
62131	99	P	SUR	54	1	711	0	0.4	0.5	0.6
62132	99	P	SUR	56	2	446	0	0.4	0.6	0.7
62133	99	P	SUR	57	1	745	0	0.6	0.2	0.6
62134	99	P	SUR	58	1	742	0	0.4	0.4	0.6
62135	99	P	SUR	54	2	743	0	0.4	0.3	0.5
62136	99	P	SUR	54	3	745	0	0.4	0.6	0.8
62138	99	P	SUR	54	0	1476	0	0.5	1.1	1.2
62139	99	P	SUR	53	2	1477	0	0.4	0.4	0.5
62140	99	P	SUR	57	1	1477	0	0.5	0.2	0.5
62141	99	P	SUR	58	-4	488	0	0.6	-2.2	2.3
62143	99	P	SUR	58	2	729	0	0.6	1.0	1.1
62144	99	P	SUR	53	2	745	0	0.4	0.4	0.6
62145	99	P	SUR	53	3	1477	0	0.4	0.5	0.7
62146	99	P	SUR	57	2	708	0	0.6	0.5	0.8
62148	99	P	SUR	54	2	745	0	0.5	1.5	1.6
62149	99	P	SUR	54	1	614	0	0.3	0.7	0.8
62150	99	P	SUR	54	1	745	0	0.4	1.4	1.4
62151	99	P	SUR	57	2	1476	0	0.4	0.3	0.5
62152	99	P	SUR	57	2	745	0	0.4	0.6	0.8
62153	99	P	SUR	57	2	1483	0	0.5	0.3	0.6
62154	99	P	SUR	56	2	745	0	0.4	0.1	0.4
62155	99	P	SUR	58	1	551	0	0.4	0.6	0.7
62157	99	P	SUR	58	0	745	0	0.5	0.0	0.5
62160	99	P	SUR	57	2	1469	0	0.5	0.4	0.6
62161	99	P	SUR	58	1	744	0	0.6	0.2	0.6
62162	99	P	SUR	57	1	739	0	0.4	0.0	0.5
62163	99	P	SUR	48	-8	744	0	0.5	0.2	0.6
62164	99	P	SUR	57	1	744	0	0.4	0.2	0.4
62165	99	P	SUR	54	1	636	0	0.5	0.6	0.7
62168	99	P	SUR	58	1	736	0	0.4	0.2	0.5
62170	99	P	SUR	51	2	745	0	0.5	0.2	0.6
62296	99	P	SUR	53	2	745	0	0.4	0.1	0.4
62297	99	P	SUR	59	2	1482	0	0.5	0.1	0.5
62302	99	P	SUR	61	-2	745	0	0.6	0.0	0.6
62304	99	P	SUR	51	2	750	2	0.4	0.3	0.5
62305	99	P	SUR	50	0	744	0	0.4	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
62442	99	P	SUR	49	-16	744	0	0.4	-0.1	0.4
62513	99	P	SUR	62	-26	744	0	0.5	-0.3	0.6
62554	99	P	SUR	39	-19	686	0	0.3	0.2	0.4
62559	99	P	SUR	56	-6	691	0	0.6	0.3	0.6
62940	99	P	SUR	29	-35	744	0	0.4	-0.1	0.4
62941	99	P	SUR	18	-53	744	0	0.4	-0.3	0.5
6300923	99	P	SUR	62	-30	13	0	4.1	6.9	8.0
6301552	99	P	SUR	79	27	744	0	0.4	-0.2	0.5
6301554	99	P	SUR	69	13	744	0	0.4	-0.2	0.5
6301555	99	P	SUR	72	21	744	0	0.3	0.4	0.5
6301556	99	P	SUR	71	1	744	0	0.8	1.2	1.4
6301557	99	P	SUR	75	12	743	0	0.4	0.6	0.7
63055	99	P	SUR	61	2	728	0	0.5	0.1	0.5
63056	99	P	SUR	60	2	745	0	0.5	0.4	0.7
63057	99	P	SUR	59	2	745	0	0.5	-0.0	0.5
63058	99	P	SUR	53	2	2230	0	0.4	0.3	0.5
63059	99	P	SUR	58	-1	745	0	0.4	0.4	0.6
63101	99	P	SUR	61	1	745	0	0.6	0.3	0.6
63102	99	P	SUR	61	1	745	0	0.5	0.3	0.6
63103	99	P	SUR	61	1	745	0	0.5	0.4	0.6
63104	99	P	SUR	61	2	745	0	0.5	0.5	0.7
63105	99	P	SUR	61	2	745	0	0.6	-0.2	0.6
63108	99	P	SUR	61	2	745	0	0.5	0.1	0.6
63109	99	P	SUR	60	2	745	0	0.5	-0.1	0.5
63110	99	P	SUR	60	2	745	0	0.6	-0.0	0.6
63111	99	P	SUR	61	2	1449	0	0.6	-0.3	0.6
63112	99	P	SUR	61	1	745	0	0.5	-0.3	0.5
63115	99	P	SUR	62	1	745	0	0.6	0.2	0.6
63117	99	P	SUR	61	1	1483	0	0.5	0.5	0.8
63118	99	P	SUR	61	-2	1452	0	0.7	-0.4	0.8
63120	99	P	SUR	54	2	690	0	0.4	0.6	0.7
63923	99	P	SUR	63	-30	1	0	0.0	-5.6	5.6
6400524	99	P	SUR	67	13	743	0	0.5	-0.3	0.6
6400526	99	P	SUR	48	-32	632	0	1.0	0.0	1.0
6400528	99	P	SUR	71	34	743	1	0.3	0.3	0.4
6400551	99	P	SUR	52	-39	743	3	1.3	-0.0	1.3
6400562	99	P	SUR	68	-2	744	0	0.5	0.1	0.5
6401501	99	P	SUR	67	5	706	0	0.4	0.4	0.6
6401507	99	P	SUR	71	11	727	0	0.4	0.4	0.6
6401508	99	P	SUR	76	11	700	0	0.5	0.5	0.7
6401550	99	P	SUR	68	12	744	0	0.3	-0.0	0.3
6401555	99	P	SUR	70	0	744	0	0.4	0.5	0.6
6401556	99	P	SUR	68	-5	743	0	0.4	0.3	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6401557	99	P	SUR	66	-37	744	0	0.5	0.4	0.7
6401558	99	P	SUR	60	-5	744	0	0.4	0.5	0.6
6401559	99	P	SUR	66	-21	307	0	0.5	0.5	0.7
6401560	99	P	SUR	62	-9	744	0	0.4	0.3	0.5
6401561	99	P	SUR	62	-24	744	0	0.5	0.1	0.5
64041	99	P	SUR	61	-3	745	0	0.5	0.0	0.5
64045	99	P	SUR	59	-12	755	0	0.6	-0.3	0.6
64046	99	P	SUR	61	-4	744	0	0.5	-0.1	0.5
64524	99	P	SUR	67	13	743	0	0.5	-0.3	0.6
64526	99	P	SUR	48	-32	632	0	1.0	0.0	1.0
64528	99	P	SUR	71	34	743	1	0.3	0.3	0.4
64551	99	P	SUR	52	-39	743	3	1.3	-0.0	1.3
64562	99	P	SUR	68	-2	744	0	0.4	0.1	0.5
6500519	99	P	SUR	70	33	744	0	0.5	-0.1	0.5
6500596	99	P	SUR	77	14	742	0	0.6	0.3	0.6
6500599	99	P	SUR	73	16	744	0	0.4	0.1	0.4
6500602	99	P	SUR	64	-10	744	0	0.4	0.4	0.6
6501551	99	P	SUR	49	-47	744	0	0.4	-0.0	0.4
6501553	99	P	SUR	55	-40	744	0	0.5	0.4	0.7
6501555	99	P	SUR	65	-52	744	0	0.5	-0.4	0.7
6501556	99	P	SUR	54	-39	744	0	0.6	0.4	0.7
65519	99	P	SUR	70	33	744	0	0.5	-0.1	0.5
65596	99	P	SUR	77	14	742	0	0.6	0.3	0.6
65599	99	P	SUR	73	16	744	0	0.4	0.1	0.4
65602	99	P	SUR	64	-10	744	0	0.4	0.4	0.6

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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
1300001	99	SPEED	SUR	11	-23	726	0	0	1.1	0.7	1.3
1300002	99	SPEED	SUR	20	-23	627	0	0	0.8	0.5	0.9
1300130	99	SPEED	SUR	28	-16	736	0	0	1.2	0.2	1.2
1300131	99	SPEED	SUR	28	-17	736	0	0	1.9	1.5	2.5
4100139	99	SPEED	SUR	20	-38	669	0	0	0.9	-0.0	0.9
4100300	99	SPEED	SUR	16	-57	550	0	0	1.3	-0.4	1.3
41040	99	SPEED	SUR	15	-53	1293	0	0	1.3	0.2	1.3
41041	99	SPEED	SUR	14	-46	1252	0	0	1.1	0.0	1.1
41043	99	SPEED	SUR	21	-65	131	0	0	1.4	-2.0	2.4
41044	99	SPEED	SUR	22	-59	1316	0	0	1.2	-0.4	1.3
41046	99	SPEED	SUR	24	-68	1314	0	0	1.2	-0.3	1.3
41048	99	SPEED	SUR	32	-70	1309	0	0	1.2	-0.0	1.2
41049	99	SPEED	SUR	28	-63	743	0	0	1.4	0.1	1.4
41052	99	SPEED	SUR	18	-65	1862	0	0	1.2	-0.3	1.3
41053	99	SPEED	SUR	19	-66	1794	0	0	1.5	0.6	1.6
41056	99	SPEED	SUR	18	-66	737	0	0	1.2	-0.7	1.4
41300	99	SPEED	SUR	16	-57	550	0	0	1.3	-0.4	1.4
42059	99	SPEED	SUR	15	-68	1293	0	0	1.1	-0.1	1.2
42085	99	SPEED	SUR	18	-67	1187	0	0	1.5	0.0	1.5
42088	99	SPEED	SUR	11	-61	924	0	0	1.4	-2.0	2.5
42090	99	SPEED	SUR	18	-70	215	0	0	1.4	-0.3	1.5
44008	99	SPEED	SUR	41	-69	744	35	0	1.8	-0.5	1.8
44032	99	SPEED	SUR	44	-69	683	0	0	1.6	-0.6	1.7
44033	99	SPEED	SUR	44	-69	714	0	0	1.7	-0.2	1.7
44034	99	SPEED	SUR	44	-68	714	0	0	1.5	-1.1	1.8
44037	99	SPEED	SUR	44	-68	700	0	0	1.2	-0.4	1.2
44137	99	SPEED	SUR	42	-62	773	0	0	1.3	-0.1	1.3
44139	99	SPEED	SUR	44	-57	732	0	0	1.2	-0.3	1.2
44150	99	SPEED	SUR	43	-64	739	0	0	1.2	-0.3	1.2
44258	99	SPEED	SUR	45	-63	733	0	0	1.3	0.4	1.4
45138	99	SPEED	SUR	50	-66	729	0	0	1.8	-0.1	1.8
6100001	99	SPEED	SUR	43	8	744	0	0	1.5	-0.1	1.5
6100002	99	SPEED	SUR	42	5	743	0	0	1.2	0.0	1.2
61001	99	SPEED	SUR	43	8	744	0	0	1.7	-0.4	1.7

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6100196	99	SPEED	SUR	42	4	680	0	0	1.6	-1.3	2.1
6100197	99	SPEED	SUR	40	4	735	0	0	1.3	-0.3	1.4
6100198	99	SPEED	SUR	37	-2	736	0	0	1.3	-1.0	1.6
61002	99	SPEED	SUR	42	5	743	0	0	1.2	-0.5	1.3
6100280	99	SPEED	SUR	41	1	706	0	0	1.6	-1.2	2.0
6100281	99	SPEED	SUR	40	0	572	0	0	2.0	-0.4	2.0
6100417	99	SPEED	SUR	38	0	721	0	0	1.0	-0.4	1.1
6100430	99	SPEED	SUR	40	2	737	0	0	1.4	-0.2	1.4
6101001	99	SPEED	SUR	38	24	217	0	0	1.4	-0.0	1.5
6101003	99	SPEED	SUR	40	25	198	0	0	2.2	-1.2	2.5
6101007	99	SPEED	SUR	36	25	217	0	0	1.7	-0.7	1.8
6101008	99	SPEED	SUR	37	22	180	0	0	1.4	-0.2	1.4
6200024	99	SPEED	SUR	44	-3	698	0	0	1.4	-0.1	1.4
6200025	99	SPEED	SUR	44	-6	722	0	0	1.4	-0.5	1.5
6200083	99	SPEED	SUR	43	-9	740	0	0	1.3	-0.3	1.3
6200084	99	SPEED	SUR	42	-9	691	0	0	1.4	-0.6	1.5
6200085	99	SPEED	SUR	36	-7	738	0	0	1.6	-0.6	1.8
6200091	99	SPEED	SUR	53	-5	396	0	0	3.6	0.6	3.7
6200092	99	SPEED	SUR	51	-11	407	0	0	2.6	-0.7	2.7
6200093	99	SPEED	SUR	55	-10	744	0	0	1.3	-0.3	1.3
6200094	99	SPEED	SUR	52	-7	392	0	0	0.9	-0.1	0.9
62001	99	SPEED	SUR	45	-5	744	0	0	1.2	0.5	1.3
6200191	99	SPEED	SUR	41	-10	705	0	0	1.2	-0.0	1.2
6200192	99	SPEED	SUR	40	-10	87	0	0	1.3	-0.1	1.3
6200199	99	SPEED	SUR	40	-9	695	0	0	1.6	-0.2	1.6
6200200	99	SPEED	SUR	36	-8	695	0	0	1.2	-0.3	1.3
6201070	99	SPEED	SUR	43	-9	657	0	0	1.6	-0.8	1.8
62023	99	SPEED	SUR	51	-8	739	0	0	2.0	-0.2	2.1
62027	99	SPEED	SUR	49	-2	228	0	0	1.3	0.3	1.3
62050	99	SPEED	SUR	50	-4	745	0	0	1.1	0.3	1.1
62095	99	SPEED	SUR	53	-16	1302	0	0	1.2	0.3	1.2
62102	99	SPEED	SUR	58	2	740	0	0	1.5	-0.1	1.5
62103	99	SPEED	SUR	50	-3	746	0	0	1.3	1.2	1.8
62104	99	SPEED	SUR	57	1	745	0	0	1.4	-0.4	1.4
62105	99	SPEED	SUR	55	-13	681	0	0	1.5	0.4	1.5
62107	99	SPEED	SUR	50	-6	1485	0	0	1.3	0.8	1.6
62111	99	SPEED	SUR	58	0	745	0	0	1.5	-0.0	1.5
62112	99	SPEED	SUR	58	0	745	0	0	2.4	-1.5	2.9
62113	99	SPEED	SUR	58	0	745	0	0	1.8	0.5	1.9
62114	99	SPEED	SUR	58	0	1483	0	0	1.5	0.9	1.8
62118	99	SPEED	SUR	58	1	745	0	0	1.5	0.6	1.6

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
62119	99	SPEED	SUR	57	2	745	0	0	1.7	-0.4	1.7
62120	99	SPEED	SUR	56	2	745	0	0	1.5	0.3	1.5
62121	99	SPEED	SUR	54	3	745	0	0	1.3	-0.3	1.4
62122	99	SPEED	SUR	57	2	1483	0	0	1.3	-0.3	1.3
62129	99	SPEED	SUR	58	0	745	0	0	1.5	0.1	1.5
62131	99	SPEED	SUR	54	1	711	0	0	1.3	-0.0	1.3
62132	99	SPEED	SUR	56	2	745	0	0	3.4	-2.0	3.9
62133	99	SPEED	SUR	57	1	745	0	0	1.5	0.2	1.5
62134	99	SPEED	SUR	58	1	742	0	0	1.6	0.0	1.6
62140	99	SPEED	SUR	57	1	547	0	0	1.3	-0.0	1.3
62143	99	SPEED	SUR	58	2	734	0	0	2.5	-1.3	2.8
62144	99	SPEED	SUR	53	2	745	0	0	1.8	-0.6	1.9
62145	99	SPEED	SUR	53	3	1477	0	0	1.5	0.3	1.5
62146	99	SPEED	SUR	57	2	708	0	0	1.3	0.0	1.3
62148	99	SPEED	SUR	54	2	745	0	0	2.0	-0.5	2.0
62149	99	SPEED	SUR	54	1	615	0	0	1.2	0.1	1.2
62150	99	SPEED	SUR	54	1	745	0	0	2.4	-0.8	2.6
62152	99	SPEED	SUR	57	2	745	0	0	2.5	-2.3	3.4
62153	99	SPEED	SUR	57	2	1483	0	0	3.5	-2.1	4.1
62154	99	SPEED	SUR	56	2	745	0	0	1.5	-0.2	1.5
62155	99	SPEED	SUR	58	1	551	0	0	2.1	-0.0	2.1
62163	99	SPEED	SUR	48	-8	744	0	0	1.1	0.2	1.1
62164	99	SPEED	SUR	57	1	744	0	0	1.7	-1.5	2.2
62165	99	SPEED	SUR	54	1	636	0	0	1.9	-0.9	2.1
62170	99	SPEED	SUR	51	2	745	0	0	1.8	1.7	2.5
62304	99	SPEED	SUR	51	2	751	0	0	1.7	1.3	2.1
62305	99	SPEED	SUR	50	0	744	0	0	1.5	1.4	2.1
62442	99	SPEED	SUR	49	-16	731	0	0	1.5	-0.4	1.5
63055	99	SPEED	SUR	61	2	729	0	0	1.4	-1.4	2.0
63056	99	SPEED	SUR	60	2	745	0	0	1.4	-0.1	1.5
63057	99	SPEED	SUR	59	2	745	0	0	2.1	0.3	2.1
63058	99	SPEED	SUR	53	2	1484	0	0	1.2	0.1	1.2
63101	99	SPEED	SUR	61	1	745	0	0	1.4	-0.7	1.6
63103	99	SPEED	SUR	61	1	745	0	0	1.6	-0.3	1.6
63104	99	SPEED	SUR	61	2	725	0	0	1.3	-0.7	1.5
63105	99	SPEED	SUR	61	2	745	0	0	1.5	-0.5	1.6
63106	99	SPEED	SUR	61	2	744	0	0	1.3	-0.4	1.4
63108	99	SPEED	SUR	61	2	745	0	0	1.6	-0.2	1.6
63109	99	SPEED	SUR	60	2	735	0	0	1.5	0.2	1.5
63110	99	SPEED	SUR	60	2	745	0	0	1.6	-0.4	1.7
63112	99	SPEED	SUR	61	1	745	0	0	1.4	-0.8	1.5

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
63113	99	SPEED	SUR	61	2	741	0	0	1.3	-0.7	1.5
63115	99	SPEED	SUR	62	1	745	0	0	1.4	-0.7	1.6
63117	99	SPEED	SUR	61	1	1483	0	0	1.4	-0.7	1.5
64041	99	SPEED	SUR	61	-3	745	0	0	1.4	-0.3	1.4
64045	99	SPEED	SUR	59	-12	755	0	0	1.1	-0.1	1.1
64046	99	SPEED	SUR	61	-4	744	0	0	1.2	0.1	1.2
66021	99	SPEED	SUR	55	14	743	0	0	1.3	0.7	1.5
66022	99	SPEED	SUR	54	14	1277	0	0	1.3	-0.2	1.3
66024	99	SPEED	SUR	55	13	743	0	0	1.4	0.5	1.5

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 2017
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
1300001	99	DIRN	SUR	11	-23	479	0	0	18.7	5.6	19.5
1300002	99	DIRN	SUR	20	-23	619	0	0	10.5	0.5	10.5
1300130	99	DIRN	SUR	28	-16	475	0	0	13.0	1.1	13.1
1300131	99	DIRN	SUR	28	-17	305	0	0	23.7	-0.9	23.7
4100139	99	DIRN	SUR	20	-38	598	0	0	10.7	3.1	11.2
41002	99	DIRN	SUR	32	-75	670	0	0	12.7	7.2	14.7
4100300	99	DIRN	SUR	16	-57	510	0	0	17.1	-14.8	22.6
41004	99	DIRN	SUR	33	-79	1098	0	0	16.5	7.8	18.3
41008	99	DIRN	SUR	31	-81	758	0	0	18.6	1.9	18.7
41009	99	DIRN	SUR	29	-80	1158	0	0	17.1	6.2	18.2
41010	99	DIRN	SUR	31	-79	451	0	0	11.9	-0.2	11.9
41013	99	DIRN	SUR	33	-78	1046	0	0	16.9	8.0	18.7
41024	99	DIRN	SUR	34	-79	512	0	0	17.4	-12.3	21.3
41025	99	DIRN	SUR	35	-75	631	0	0	21.4	5.3	22.0
41029	99	DIRN	SUR	33	-80	645	0	0	19.4	1.1	19.4
41033	99	DIRN	SUR	32	-80	571	0	0	15.0	0.2	15.0
41037	99	DIRN	SUR	34	-77	579	0	0	24.8	-2.9	25.0
41038	99	DIRN	SUR	34	-78	632	0	0	21.6	-4.0	22.0
41040	99	DIRN	SUR	15	-53	1259	0	0	15.0	-6.1	16.2
41041	99	DIRN	SUR	14	-46	1246	0	0	12.7	-7.8	14.9
41043	99	DIRN	SUR	21	-65	51	0	0	23.7	-8.0	25.0
41044	99	DIRN	SUR	22	-59	1130	0	0	17.9	-0.8	17.9
41046	99	DIRN	SUR	24	-68	1092	0	0	19.2	4.2	19.6
41047	99	DIRN	SUR	28	-72	1128	0	0	18.5	-2.6	18.7
41048	99	DIRN	SUR	32	-70	1274	0	0	14.0	-3.9	14.5
41049	99	DIRN	SUR	28	-63	655	0	0	18.2	7.1	19.5
41052	99	DIRN	SUR	18	-65	1685	0	0	21.1	7.7	22.4
41053	99	DIRN	SUR	19	-66	947	0	0	21.9	0.7	21.9
41056	99	DIRN	SUR	18	-66	593	0	0	21.3	5.5	22.0
41063	99	DIRN	SUR	35	-76	668	0	0	21.8	-4.0	22.1
41064	99	DIRN	SUR	34	-77	567	0	0	19.8	-3.0	20.1
41300	99	DIRN	SUR	16	-57	498	0	0	17.3	-14.0	22.3

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
42036	99	DIRN	SUR	29	-85	683	0	0	14.0	2.8	14.3
42056	99	DIRN	SUR	20	-85	1167	0	0	19.3	4.0	19.7
42057	99	DIRN	SUR	17	-81	1206	0	0	24.0	0.5	24.0
42058	99	DIRN	SUR	15	-75	1124	0	0	12.2	9.5	15.5
42059	99	DIRN	SUR	15	-68	1143	0	0	17.9	2.0	18.0
42085	99	DIRN	SUR	18	-67	829	0	0	29.3	28.3	40.8
42088	99	DIRN	SUR	11	-61	487	0	0	41.0	-19.9	45.5
42090	99	DIRN	SUR	18	-70	67	0	0	21.3	-41.1	46.3
44007	99	DIRN	SUR	44	-70	619	0	0	18.3	4.3	18.8
44008	99	DIRN	SUR	41	-69	607	35	0	165.1	34.1	168.6
44009	99	DIRN	SUR	39	-75	615	0	0	14.8	15.9	21.7
44013	99	DIRN	SUR	42	-71	691	0	0	19.4	15.5	24.8
44014	99	DIRN	SUR	37	-75	521	0	0	20.9	2.6	21.1
44020	99	DIRN	SUR	41	-70	608	0	0	15.4	5.2	16.2
44022	99	DIRN	SUR	41	-74	395	0	0	24.7	9.5	26.5
44025	99	DIRN	SUR	40	-73	773	0	0	12.2	0.3	12.2
44029	99	DIRN	SUR	43	-71	786	0	0	21.8	9.1	23.6
44030	99	DIRN	SUR	43	-70	513	0	0	15.4	6.2	16.7
44032	99	DIRN	SUR	44	-69	480	0	0	14.6	19.0	23.9
44033	99	DIRN	SUR	44	-69	483	0	0	20.5	2.5	20.7
44034	99	DIRN	SUR	44	-68	537	0	0	15.1	7.6	16.9
44037	99	DIRN	SUR	44	-68	572	0	0	12.3	34.5	36.6
44039	99	DIRN	SUR	41	-73	417	0	0	15.1	-0.2	15.1
44040	99	DIRN	SUR	41	-74	499	0	0	18.1	0.8	18.1
44041	99	DIRN	SUR	37	-77	192	0	0	19.4	-9.0	21.3
44042	99	DIRN	SUR	38	-76	711	0	0	18.0	-3.2	18.3
44043	99	DIRN	SUR	39	-76	697	0	0	14.7	-6.0	15.9
44057	99	DIRN	SUR	40	-76	418	0	0	16.8	-1.2	16.9
44058	99	DIRN	SUR	38	-76	686	0	0	15.4	-25.7	30.0
44062	99	DIRN	SUR	39	-76	723	0	0	25.4	-17.7	31.0
44063	99	DIRN	SUR	39	-76	646	0	0	27.4	-4.5	27.8
44065	99	DIRN	SUR	40	-74	634	0	0	13.8	4.8	14.6
44066	99	DIRN	SUR	40	-73	653	0	0	16.1	5.8	17.1
44069	99	DIRN	SUR	41	-73	608	0	0	16.1	0.1	16.1
44072	99	DIRN	SUR	37	-76	714	0	0	19.5	-7.9	21.1
44137	99	DIRN	SUR	42	-62	706	0	0	20.6	-20.0	28.8
44139	99	DIRN	SUR	44	-57	612	0	0	16.5	6.6	17.8
44150	99	DIRN	SUR	43	-64	685	0	0	11.7	7.5	13.9
44258	99	DIRN	SUR	45	-63	632	0	0	14.3	-14.4	20.3
45003	99	DIRN	SUR	45	-83	674	0	0	15.8	6.3	17.0
45005	99	DIRN	SUR	42	-82	1014	0	0	19.3	10.3	21.9

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
45008	99	DIRN	SUR	44	-82	970	0	0	14.4	1.5	14.4
45012	99	DIRN	SUR	44	-77	603	0	0	20.3	10.7	23.0
45132	99	DIRN	SUR	43	-81	624	0	0	19.4	-0.6	19.4
45135	99	DIRN	SUR	44	-77	751	0	0	14.7	0.4	14.7
45137	99	DIRN	SUR	46	-81	661	0	0	17.2	9.7	19.7
45138	99	DIRN	SUR	50	-66	560	0	0	19.6	2.3	19.8
45139	99	DIRN	SUR	43	-80	495	0	0	20.3	4.2	20.8
45142	99	DIRN	SUR	43	-79	562	0	0	19.6	-2.3	19.7
45143	99	DIRN	SUR	45	-81	992	0	0	15.1	4.0	15.7
45147	99	DIRN	SUR	42	-83	451	0	0	16.8	2.0	16.9
45149	99	DIRN	SUR	44	-82	633	0	0	16.5	-5.0	17.2
45151	99	DIRN	SUR	45	-79	544	0	0	15.0	4.9	15.8
45152	99	DIRN	SUR	46	-80	173	0	0	16.2	-2.7	16.4
45154	99	DIRN	SUR	46	-83	799	0	0	17.1	35.7	39.6
45162	99	DIRN	SUR	45	-83	515	0	0	18.7	-0.2	18.8
45163	99	DIRN	SUR	44	-84	329	0	0	16.2	-1.7	16.2
45164	99	DIRN	SUR	42	-82	364	0	0	24.4	-7.4	25.5
45165	99	DIRN	SUR	42	-83	467	0	0	21.7	21.4	30.5
45166	99	DIRN	SUR	45	-73	301	0	0	18.4	-44.4	48.1
45167	99	DIRN	SUR	42	-80	497	0	0	31.5	-15.6	35.2
45169	99	DIRN	SUR	42	-82	750	0	0	21.1	-9.3	23.0
45175	99	DIRN	SUR	46	-85	787	0	0	39.3	-11.1	40.8
45176	99	DIRN	SUR	42	-82	777	0	0	23.0	-7.8	24.3
45178	99	DIRN	SUR	45	-73	885	0	0	35.4	-10.2	36.8
45179	99	DIRN	SUR	47	-84	184	0	0	52.2	-11.7	53.5
6100198	99	DIRN	SUR	37	-2	476	0	0	17.0	0.8	17.0
6100281	99	DIRN	SUR	40	0	178	0	0	70.9	25.4	75.3
6100417	99	DIRN	SUR	38	0	337	0	0	14.4	2.6	14.7
6200024	99	DIRN	SUR	44	-3	428	0	0	20.3	5.9	21.2
6200025	99	DIRN	SUR	44	-6	469	0	0	24.1	2.6	24.3
6200083	99	DIRN	SUR	43	-9	498	0	0	13.2	3.2	13.6
6200084	99	DIRN	SUR	42	-9	391	0	0	15.9	5.7	16.9
6200085	99	DIRN	SUR	36	-7	512	0	0	14.2	7.1	15.9
6200091	99	DIRN	SUR	53	-5	353	0	0	10.9	2.2	11.1
6200092	99	DIRN	SUR	51	-11	332	0	0	16.2	2.7	16.4
6200093	99	DIRN	SUR	55	-10	687	0	0	10.7	-0.5	10.7
6200094	99	DIRN	SUR	52	-7	368	0	0	11.3	1.5	11.4
62001	99	DIRN	SUR	45	-5	546	0	0	16.6	3.5	17.0
6200191	99	DIRN	SUR	41	-10	472	0	0	14.3	-1.1	14.4
6200192	99	DIRN	SUR	40	-10	84	0	0	6.3	-1.3	6.4
6200199	99	DIRN	SUR	40	-9	369	0	0	22.2	-0.7	22.2

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6200200	99	DIRN	SUR	36	-8	511	0	0	161.0	-54.7	170.1
6201070	99	DIRN	SUR	43	-9	250	0	0	18.5	4.5	19.0
62023	99	DIRN	SUR	51	-8	666	0	0	11.6	10.8	15.8
62027	99	DIRN	SUR	49	-2	175	0	0	18.2	-7.2	19.5
62050	99	DIRN	SUR	50	-4	648	0	0	14.1	0.5	14.1
62095	99	DIRN	SUR	53	-16	1186	0	0	15.1	7.5	16.8
62103	99	DIRN	SUR	50	-3	661	0	0	14.0	4.9	14.8
62105	99	DIRN	SUR	55	-13	631	0	0	13.1	6.4	14.6
62107	99	DIRN	SUR	50	-6	1367	0	0	13.8	-0.5	13.8
62111	99	DIRN	SUR	58	0	673	0	0	10.8	-2.1	11.0
62112	99	DIRN	SUR	58	0	687	0	0	10.3	4.2	11.1
62114	99	DIRN	SUR	58	0	1410	0	0	9.5	0.9	9.5
62163	99	DIRN	SUR	48	-8	635	0	0	13.9	1.0	14.0
62305	99	DIRN	SUR	50	0	704	0	0	13.6	4.4	14.3
62442	99	DIRN	SUR	49	-16	672	0	0	17.8	-6.5	18.9
64041	99	DIRN	SUR	61	-3	711	0	0	9.7	9.2	13.4
64045	99	DIRN	SUR	59	-12	725	0	0	10.6	5.7	12.0
64046	99	DIRN	SUR	61	-4	709	0	0	12.0	-1.2	12.0

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ASDE02	ASDE09	ASDK01	ASDK02	ASDK03	ASFR1	ASFR2	ASFR3	ASFR4
DBLK	FPUW5GN	KMPLHPW	LRYQE3U	VKB4L5Q	XKQLWQB	XQFJRGX	ZVQEQCM	7JUNA4N
01001	01004	01010	01028	01241	01400	01415	01492	02185
02365	02527	02591	02836	02963	03005	03238	03354	03502
03743	03808	03882	03918	03953	04220	04270	04320	04339
04360	04417	06011	06260	06610	07101	07110	07145	07510
07645	07761	08001	08023	08190	08221	08302	08430	08522
08579	10035	10113	10184	10238	10304	10393	10410	10548
10618	10739	10771	10868	10954	10962	11010	11035	11120
11240	11520	11747	11952	12120	12374	12425	12843	16045
16080	16113	16144	16245	16320	16429	16546	16622	16716
16754	17030	17064	17095	17220	17281	17351	17516	17607
33008	40179	43599	47102	47104	47138	47155	47169	47186
60018	61901	61980	61998	67083	68263	68424	68442	68538
68816	68842	70026	70200	70261	70316	70326	70361	70398
71109	71600	71603	71722	71802	71811	71836	71845	71867
71906	71909	71913	71924	71925	71934	71945	71957	71964
72201	72206	72208	72210	72214	72233	72240	72248	72251
72261	72265	72274	72317	72327	72363	72364	72365	72426
72440	72476	72489	72501	72518	72520	72528	72558	72562
72632	72634	72645	72649	72659	72662	72672	72681	72712
72747	72764	74389	74494	74560	76679	76743	76805	76903
78897	78954	81405	85442	85469	85586	85799	85934	88889
89002	89564	89571	89611	89642	89859	91212	91592	91925
91938	91948	91958	93112	93417	93817	93844	93997	94120
94150	94170	94203	94294	94299	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

ASDE02	ASDE09	ASDK01	ASDK02	ASDK03	ASFR1	ASFR2	ASFR3	ASFR4
FPUW5GN	KMPLHPW	LRYQE3U	VKB4L5Q	XKQLWQB	XQFJRGX	ZVQEQCM	7JUNA4N	07101
08098	14101	15105	17607	42647	47155	76743	76903	94653
94767								

5 Annex - Explanations of figures and tables

5.1 General

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

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

5.2 Data Availability

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

5.3 Data Quality

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

It should be noted that:

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

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

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

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

The corresponding limits for wind (table 8) are:

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

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

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

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

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

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

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

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

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