Minehead Directional Waverider Buoy

Location
OS: E 297326 N 148693
WGS84: *Latitude:* 51° 13.690' N *Longitude:* 003° 28.310' W

Water Depth
~10m CD

Instrument Type
Datawell Directional WaveRider Mk III

Data Quality

C1(%)	Sample interval
97	30 minutes

Monthly Means *All times GMT*

Month	H_s (m)	T_p (s)	T_z (s)	Direction (^{o})	SST (^{o}C)	No. of days
January	0.86	6.5	4.3	283	9.1	30
February	0.56	9.1	4.2	267	8.2	28
March	0.63	6.6	4.0	261	9.0	27
April	0.37	6.5	3.7	224	10.6	29
May	0.60	5.3	3.7	256	13.5	27
June	0.37	6.1	3.7	270	15.6	30
July	0.58	5.6	3.9	293	16.8	31
August	0.47	5.3	3.7	281	17.9	31
September	0.49	5.5	3.6	268	17.3	30
October	0.41	6.6	3.9	242	15.1	31
November	0.61	5.7	3.7	269	12.3	30
December	0.87	6.7	4.4	243	9.2	31

Tables and plots of these values, together with the minimum and maximum values and the standard deviation are available on the website.

Highest storm events in 2007									
Date/Time	H_s	T_p	T_z	Dir.	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
02-Dec-2007 21:00	2.55	8.3	5.1	307	0.10	HW - 4	4.8	0.45	0.52
07-Dec-2007 05:00	2.47	9.1	5.2	305	3.19	HW	7.0	0.23	-0.31
09-Dec-2007 10:30	2.34	7.7	6.7	295	-	HW - 5	7.9	-	-
18-Mar-2007 08:30	2.28	7.1	6.3	304	-0.43	HW + 3	9.5	-0.11	0.33
12-Feb-2007 11:30	2.22	5.9	4.6	300	1.50	HW - 1	3.7	0.12	0.70

* *Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Ilfracombe). The surge shown is the residual at the time of the highest H_s. The maximum tidal surge is the largest positive surge during the storm event.*

Year	Annual H_S exceedance* (m)						Annual Maximum H_S	
	0.05%	0.5%	1%	2%	5%	10%	Date	A_{max} (m)
2007	2.36	2	1.84	1.67	1.38	1.09	02-Dec-2007 21:00	2.55

** i.e. 5 % of the H_s values measured in 2007 exceeded 1.38m*

Distribution plots

The distribution of wave parameters are shown in the accompanying graphs of:

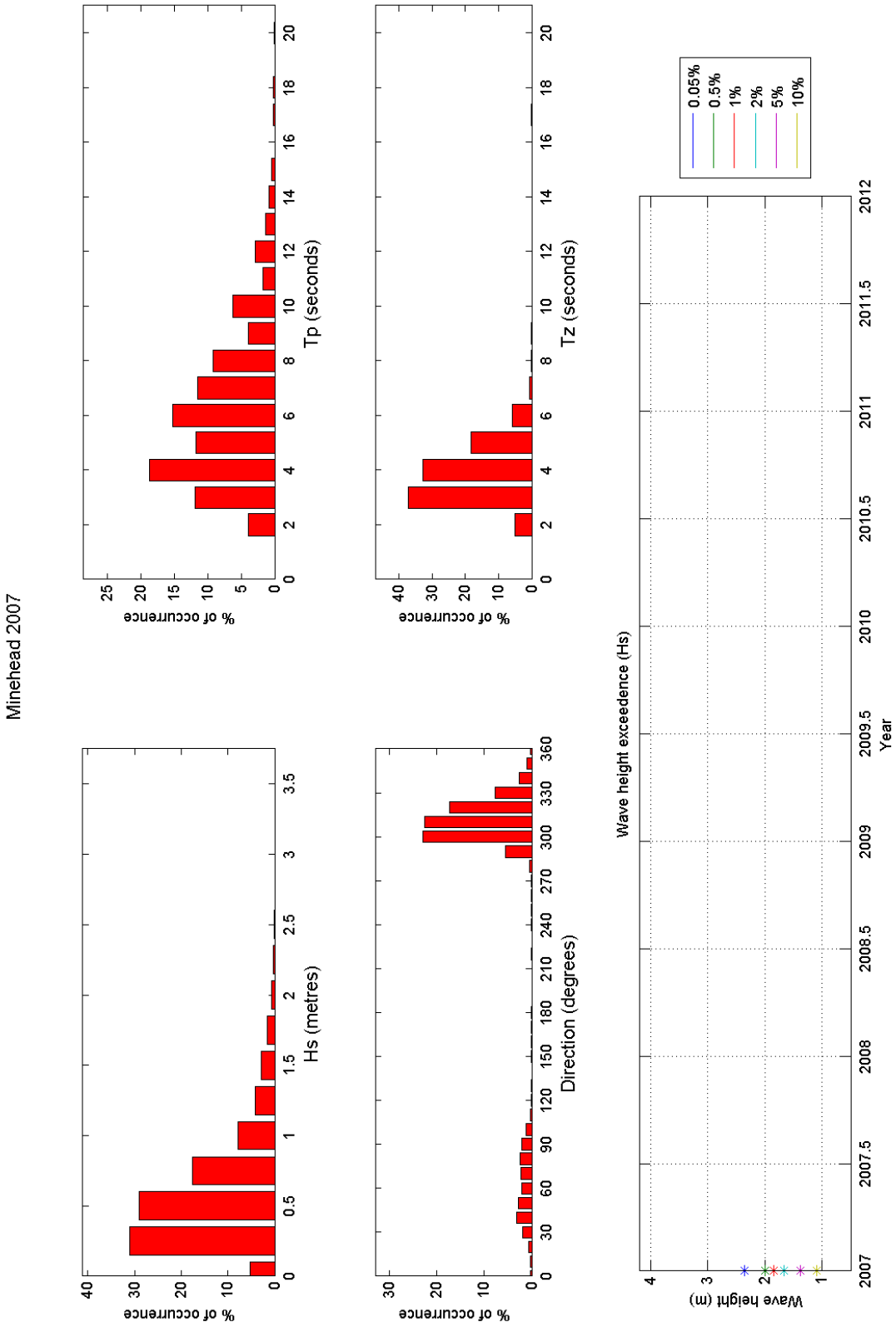
- Percentage of occurrence of H_s, T_p, T_z and Direction for 2007
- Percentage wave height exceedance (all recorded years)
- Joint distribution of all parameters for 2007, given both as number of observations and as percentage of occurrence
- Incidence of storms in 2007 and for all previous years. Storm events are defined using the Peaks-over-Threshold method
- Annual time series of H_s (red line is storm threshold)

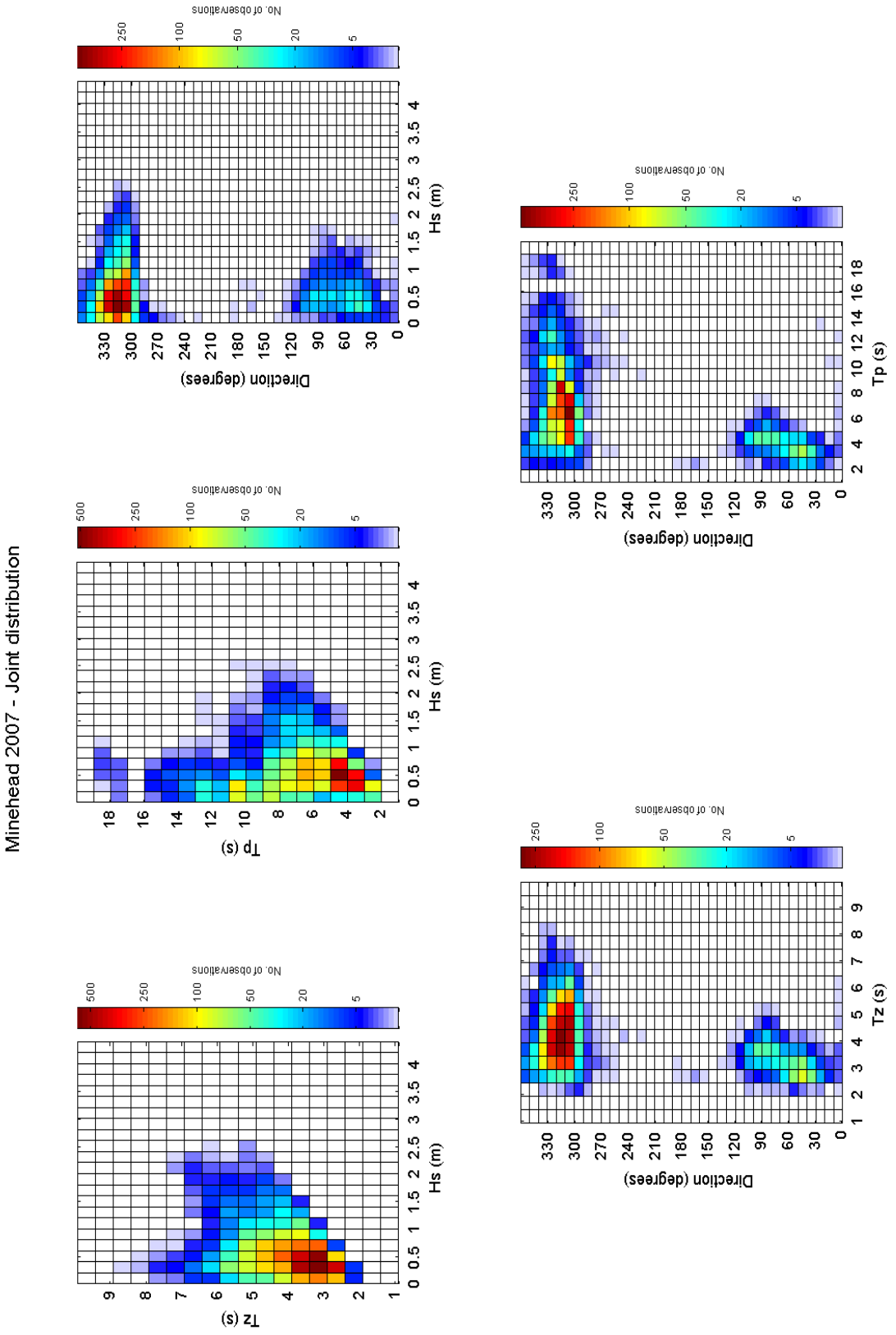
General

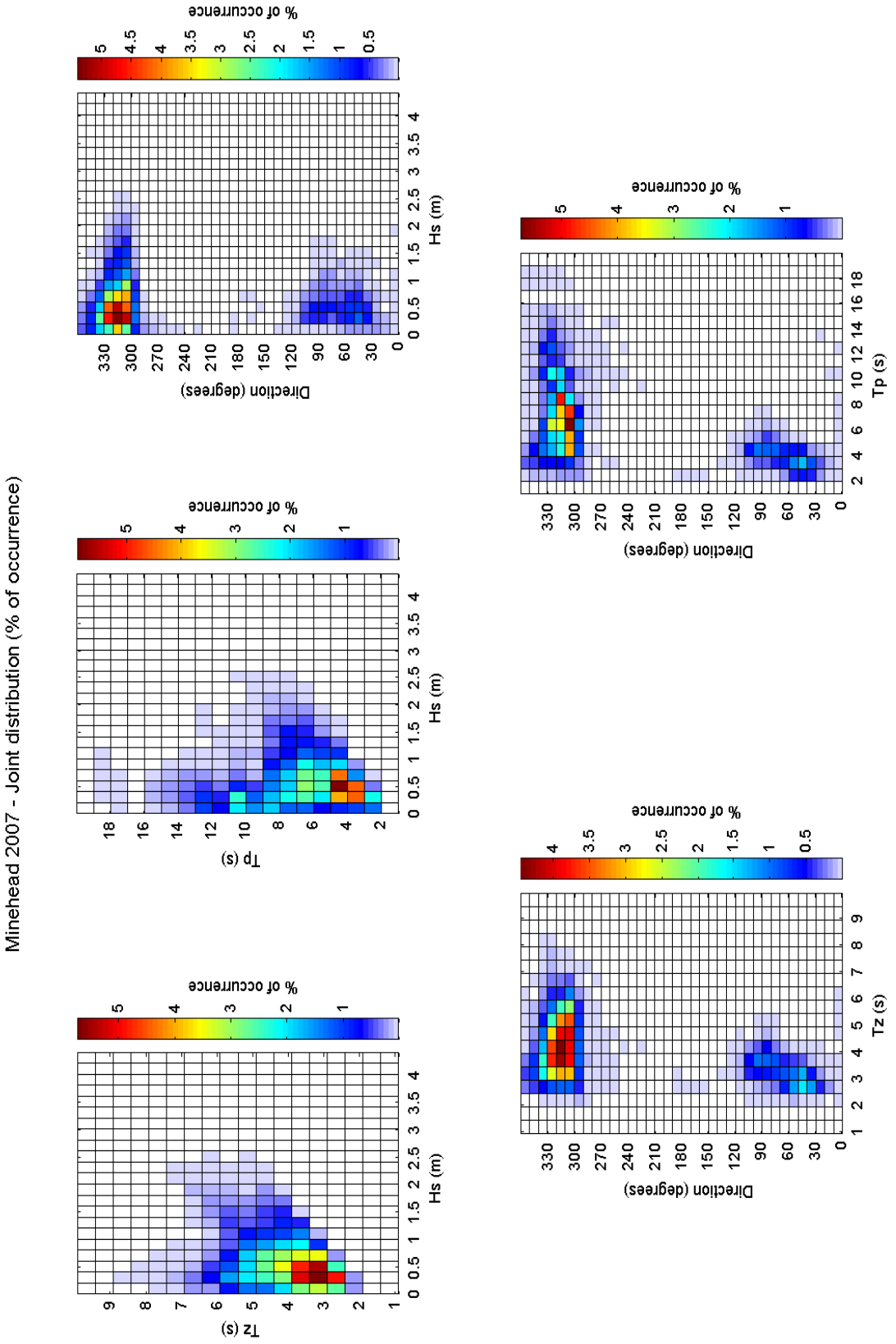
The Waverider was first deployed on 19 December 2006.

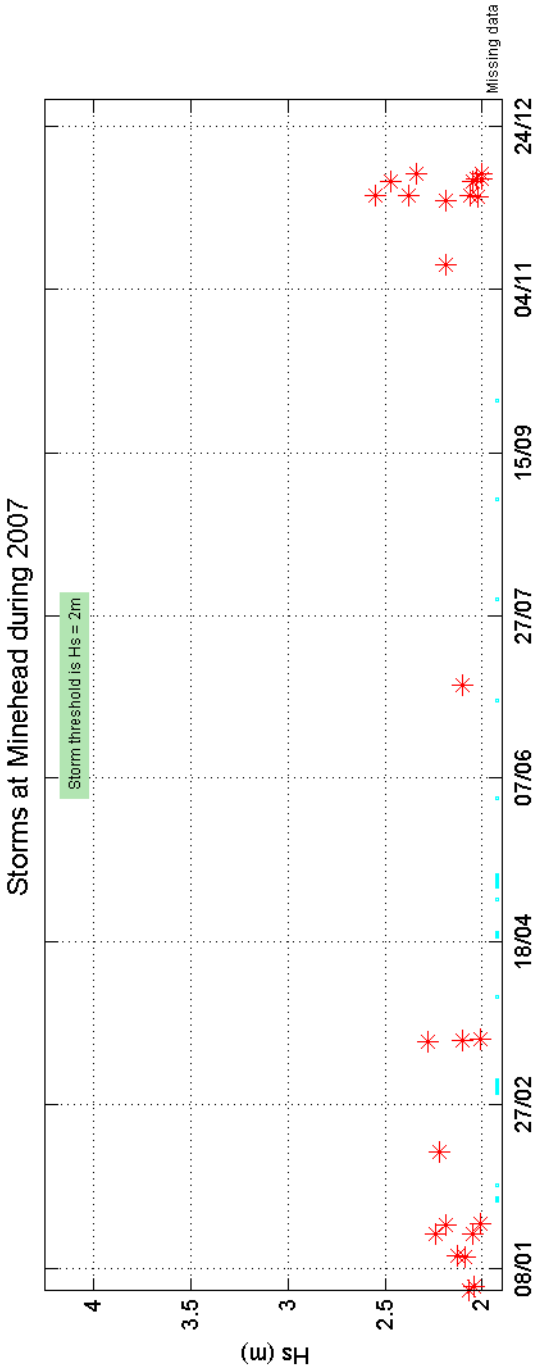
Acknowledgements

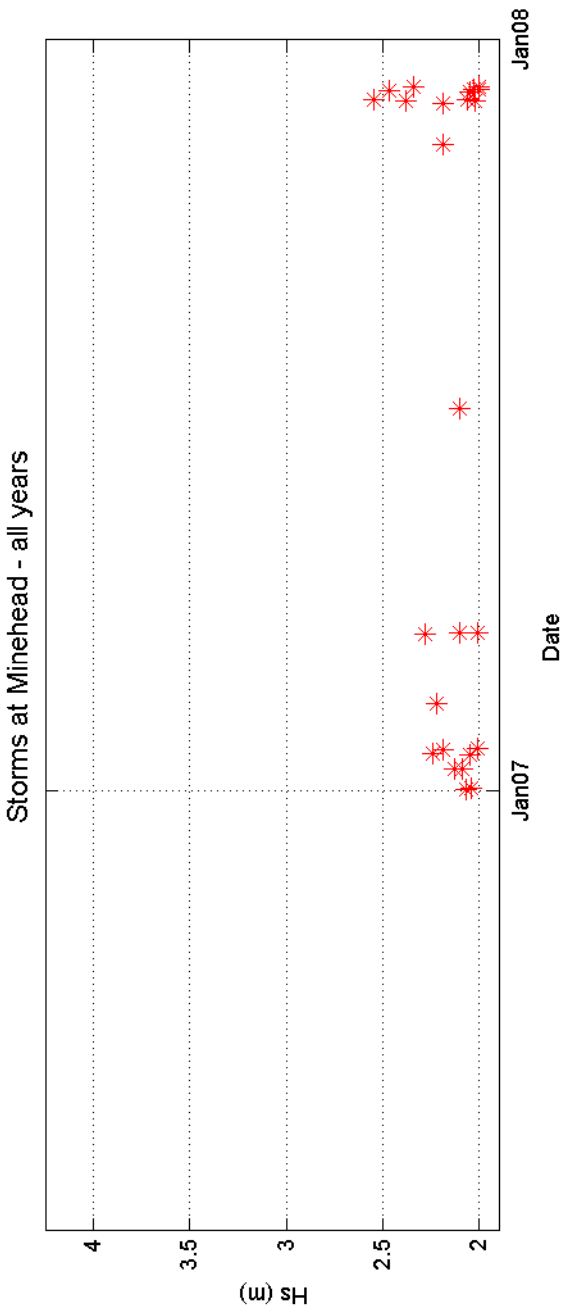
Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.

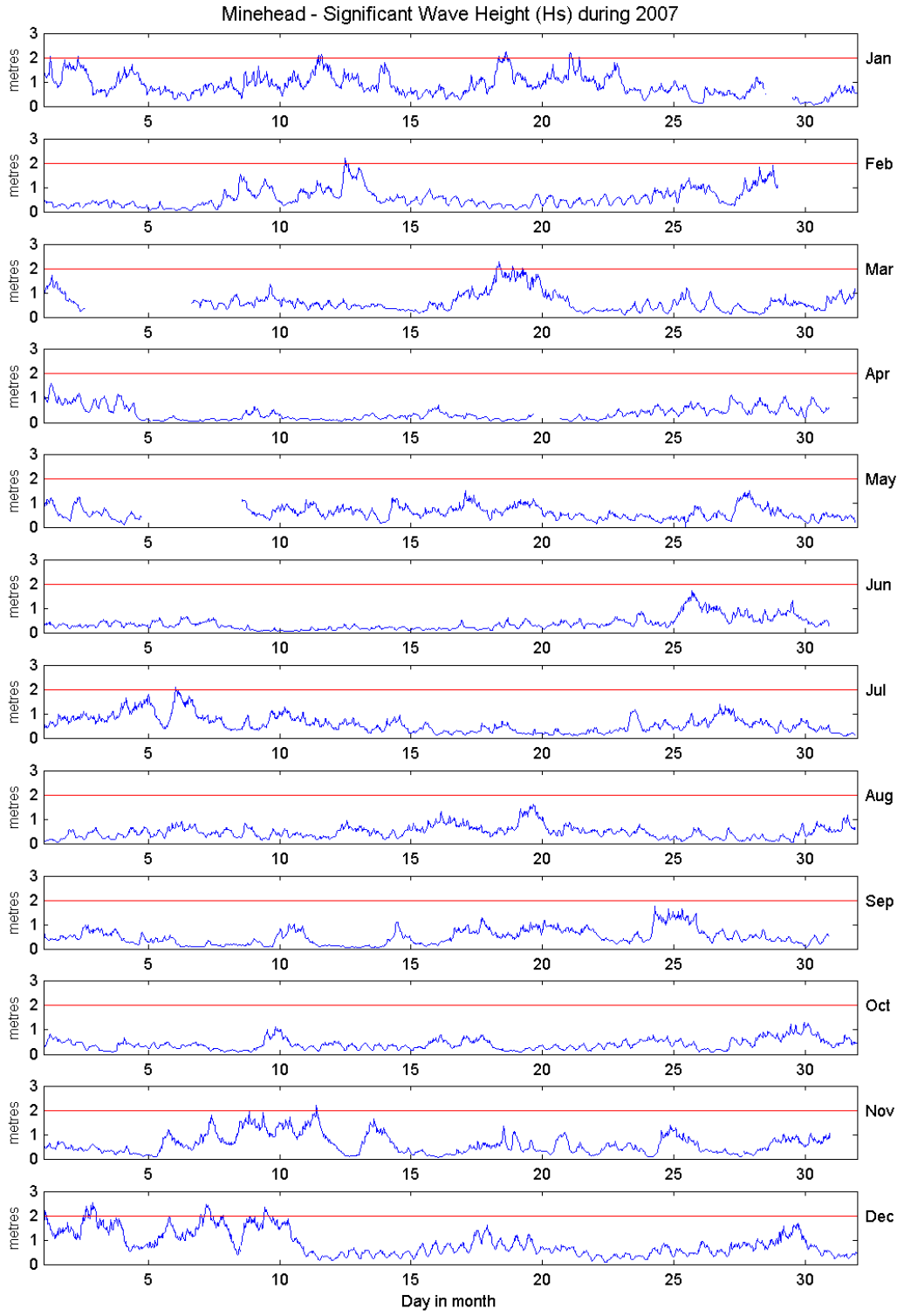

Minehead 2007
% of occurrence
Hs (metres)
Tp (seconds)
Tz (seconds)
Direction (degrees)
Wave height exceedence (Hs)
Wave height (m)
Year
0.05%
0.5%
1%
2%
5%
10%


Minehead 2007 - Joint distribution
Direction (degrees)
Hs (m)
Tp (s)
Tz (s)
No. of observations


Minehead 2007 - Joint distribution (% of occurrence)
Direction (degrees)
Hs (m)
% of occurrence
Tp (s)
Tz (s)


Storms at Minehead during 2007
Storm threshold is Hs = 2m
Missing data
Hs (m)
4
3.5
3
2.5
2
08/01
27/02
18/04
07/06
27/07
15/09
04/11
24/12


Storms at Minehead - all years
Hs (m)
4
3.5
3
2.5
2
Jan07
Jan08
Date


Minehead - Significant Wave Height (Hs) during 2007
metres
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
0
1
2
3
5
10
15
20
25
30
Day in month