Folkestone Directional Waverider Buoy

Location
OS: 619265E 133907N
WGS84: *Latitude:* 51° 03.76' N *Longitude:* 001° 07.67' E

Water Depth
12.7m CD

Instrument Type
Datawell Directional Waverider Buoy Mk III

Data Quality

C1(%)	Sample interval
95	30 minutes

Monthly Means *All times GMT*

Month	H_s (m)	T_p (s)	T_z (s)	Direction (°)	SST (°C)	No. of days
January	0.97	5.7	3.8	173	8.6	31
February	0.61	5.2	3.4	153	7.9	29
March	0.69	6.1	4.0	157	7.9	28
April	0.51	4.9	3.5	145	9.5	29
May	0.38	4.9	3.4	114	12.8	31
June	0.44	4.4	3.3	163	15.2	30
July	0.59	4.6	3.3	179	16.7	18
August	0.65	4.4	3.3	178	17.9	31
September	0.59	4.7	3.3	144	16.8	29
October	0.64	5.3	3.6	168	14.5	31
November	0.68	5.5	3.8	151	11.4	30
December	0.57	5.4	3.7	141	8.5	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 2008

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)
10-Mar-2008 10:30	3.58	8.3	6.1	177	0.53	HW 3	5.51	0.38	0.87
15-Jan-2008 14:30	2.98	8.3	5.3	186	1.55	HW 1	4.00	-0.30	-0.53
13-Dec-2008 13:00	2.97	7.1	5.5	170	1.43	HW 1	5.10	-0.82	-1.20
04-Dec-2008 10:30	2.61	6.7	5.1	174	-1.82	HW -5	4.10	0.00	-0.70

* *Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Dover). 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)
2003	2.79	2.23	2.03	1.75	1.37	1.16	29-Nov-2003 13:30	3.07
2004	2.91	2.30	1.97	1.75	1.44	1.18	08-Oct-2004 12:00	3.25
2005	2.90	2.15	1.81	1.54	1.25	0.97	30-Dec-2005 14:00	3.15
2006	2.55	2.08	1.84	1.68	1.42	1.17	03-Dec-2006 09:00	3.13
2007	2.56	2.06	1.83	1.59	1.34	1.11	08-Dec-2007 17:00	2.86
2008	2.98	2.4	2.1	1.85	1.44	1.16	10-Mar-2008 10:30	3.58

** i.e. 5 % of the H_s values measured in 2003 exceeded 1.37m*

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 2008
- Percentage wave height exceedence (all recorded years)
- Joint distribution of all parameters for 2008, given both as number of observations and as percentage of occurrence
- Cumulative joint distribution of parameters from start of records (percentage of occurrence only)
- Incidence of storms during 2008 and for all previous years. Storm events are defined using the Peaks-over-Threshold method. The highest H_s of each storm event is shown.
- Annual time series of H_s (red line is storm threshold)

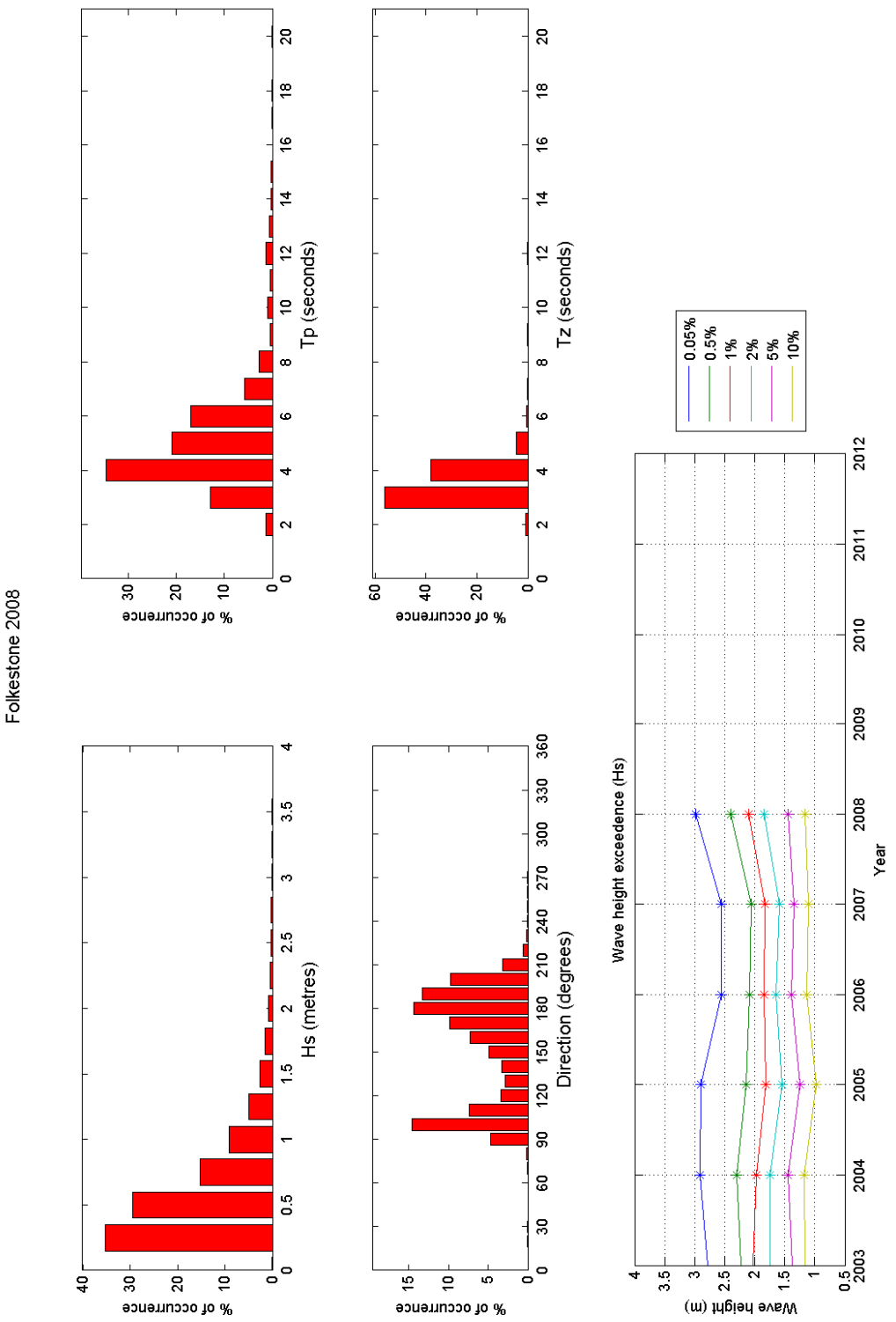
General

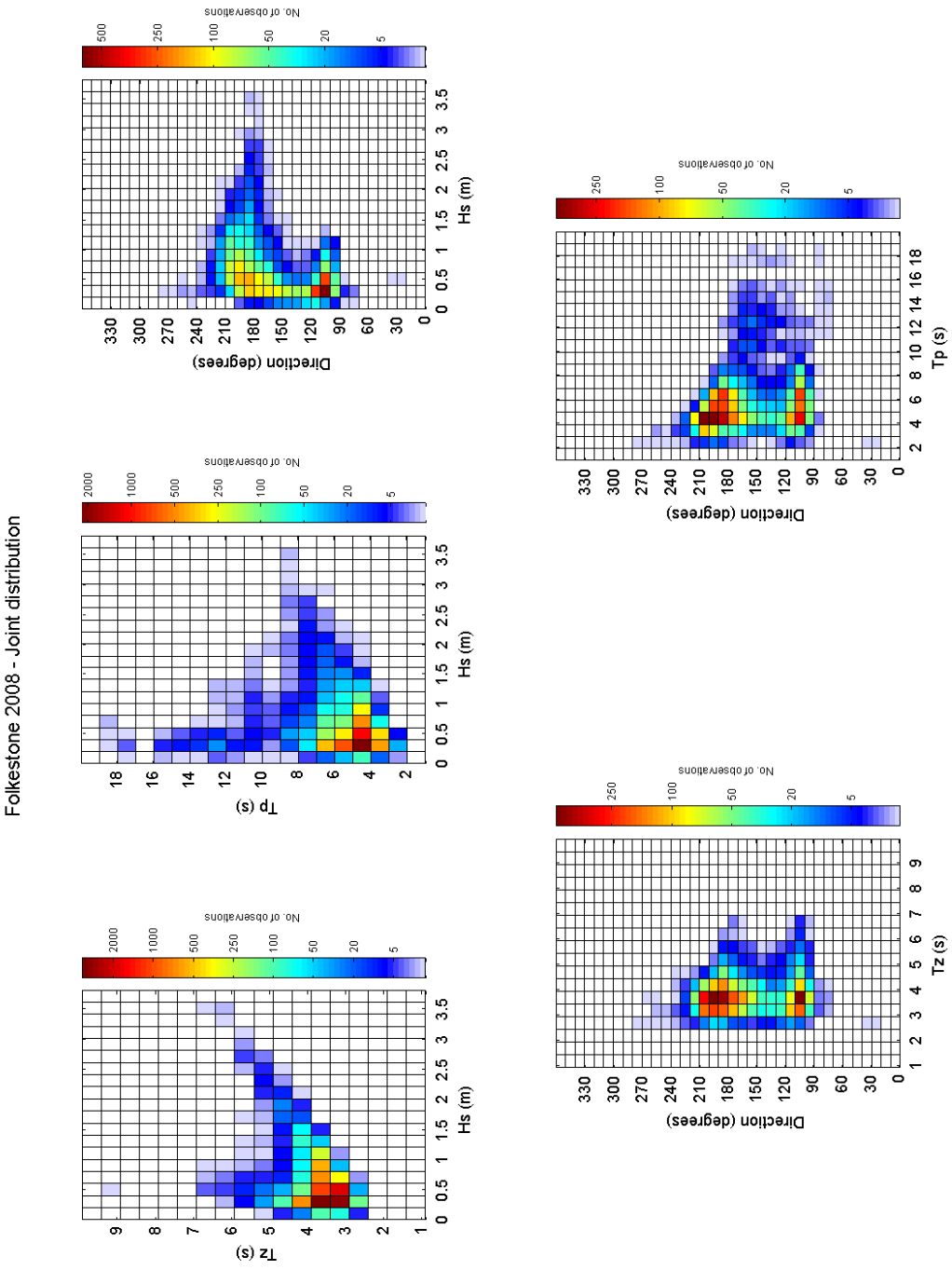
The buoy was first deployed on 08 July 2003. The wave directions recorded by the buoy were found to be contaminated by a significant tidal signature, compounded by the on-board data processing. The buoy received new electronics to fix this problem in February 2004; wave directions measured before April 2004 were excluded from the analysis.

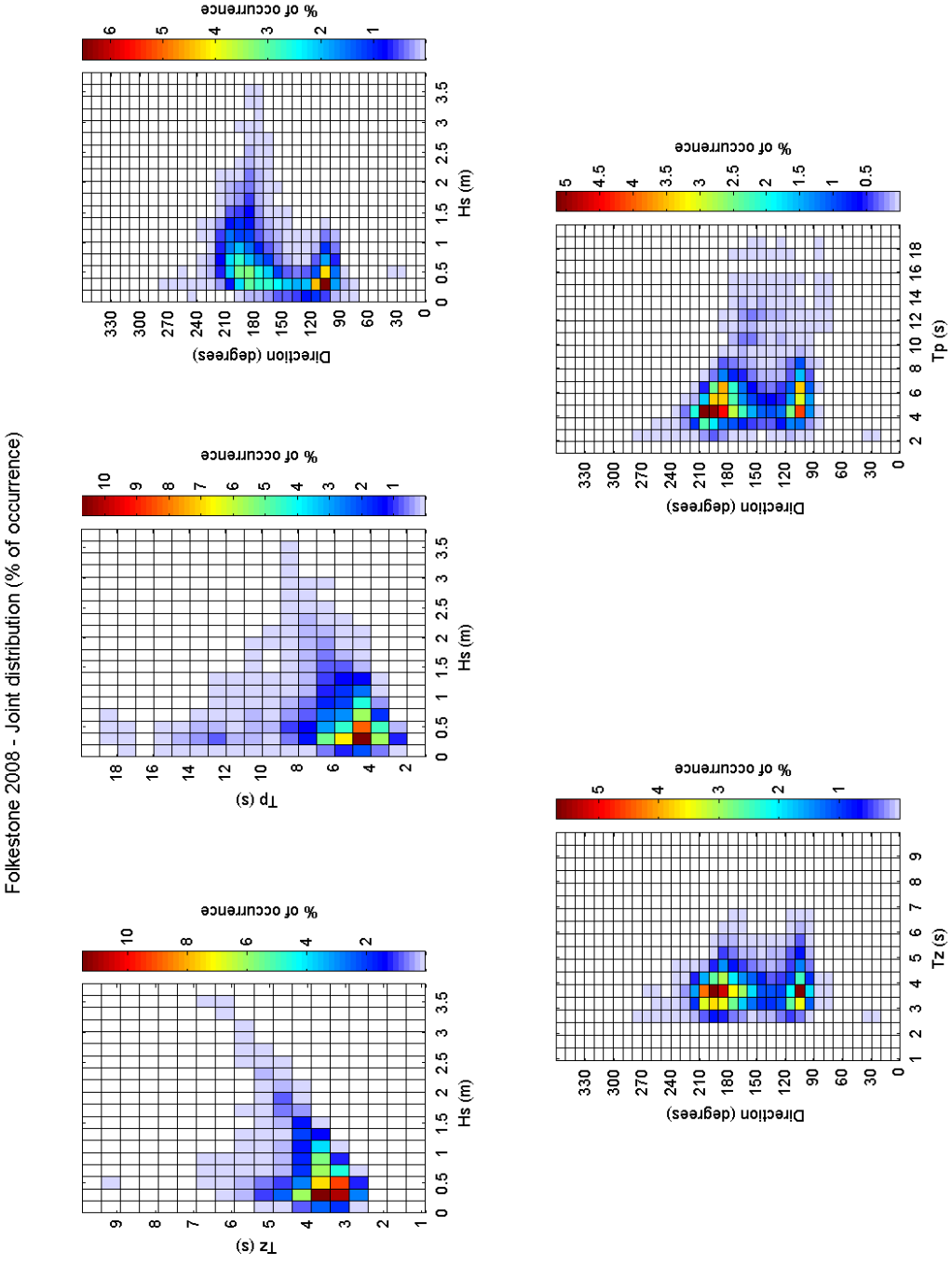
The buoy came adrift on 18 July 2008. It was recovered, serviced and re-painted, then re-deployed on 31 July.

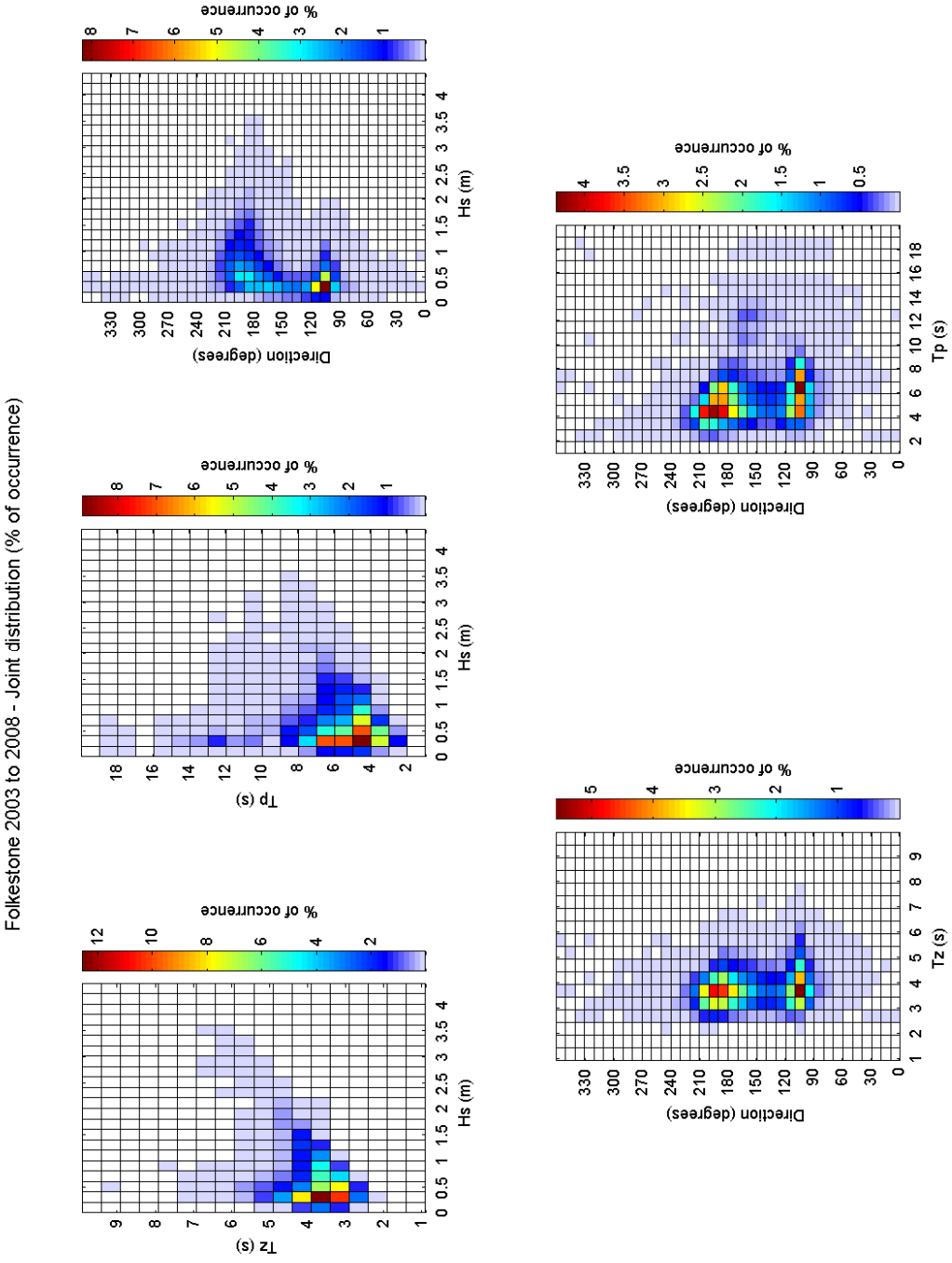
Acknowledgements

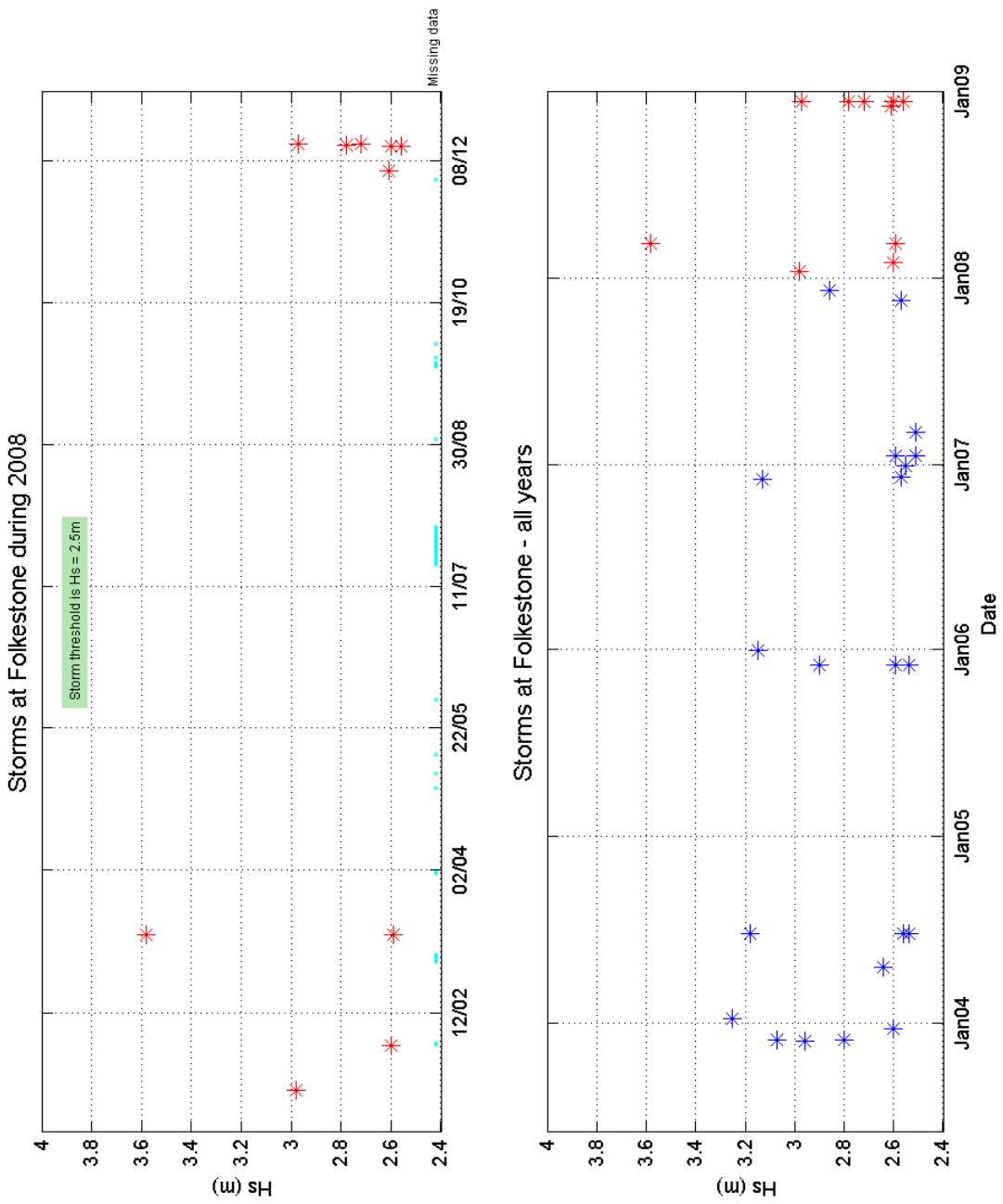
Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.

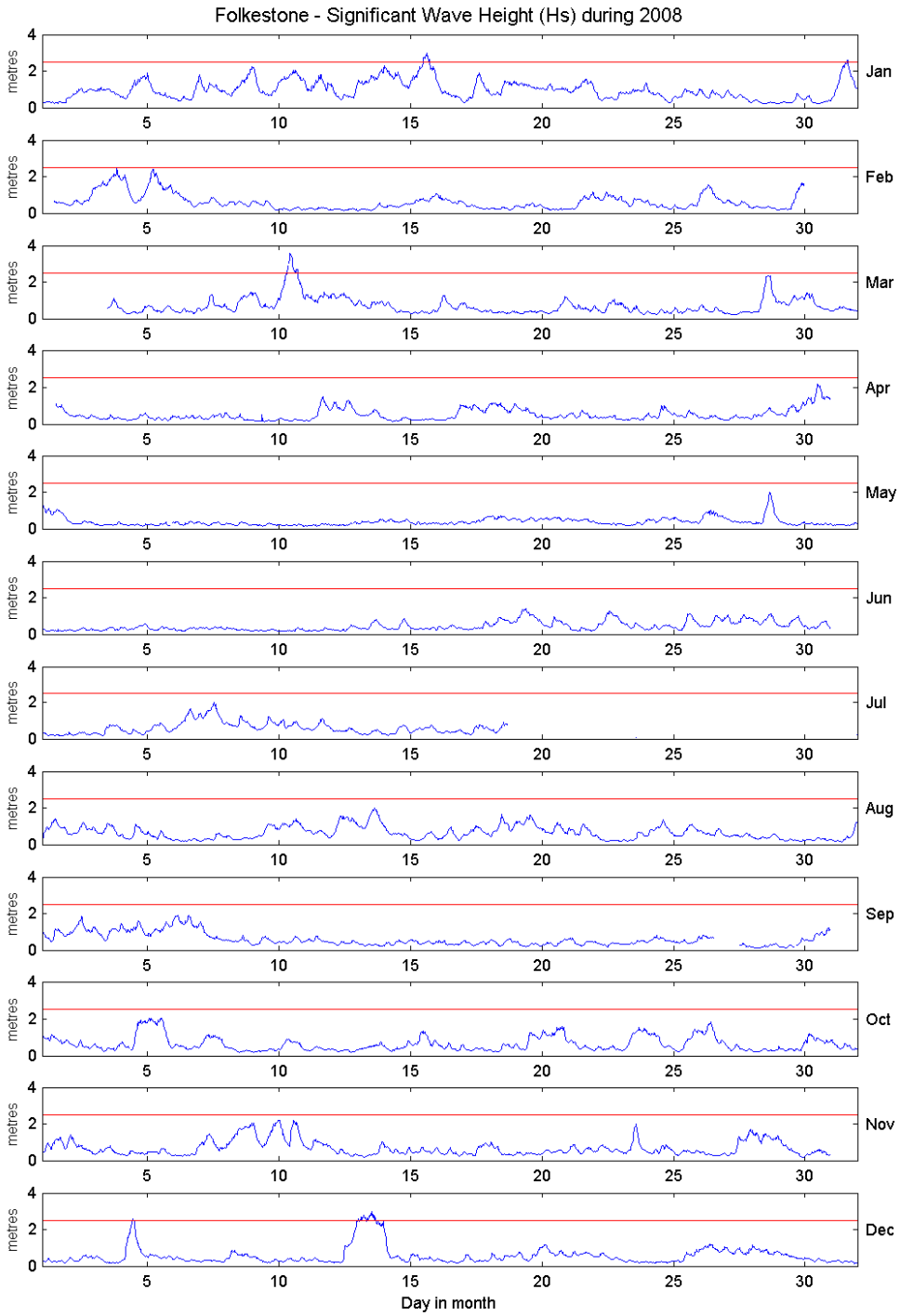

Folkestone 2008
% of occurrence
Hs (metres)
Direction (degrees)
Tp (seconds)
Tz (seconds)
Wave height exceedence (Hs)
Wave height (m)
Year
0.05%
0.5%
1%
2%
5%
10%


Folkestone 2008 - Joint distribution
Direction (degrees)
Hs (m)
Tp (s)
Tz (s)
No. of observations


Folkestone 2008 - Joint distribution (% of occurrence)
Direction (degrees)
Hs (m)
Tp (s)
Tz (s)
% of occurrence


Folkestone 2003 to 2008 - Joint distribution (% of occurrence)
Direction (degrees)
Hs (m)
% of occurrence
Tp (s)
Tz (s)


Storms at Folkestone during 2008
Storm threshold is Hs = 2.5m
Missing data
Hs (m)
4
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
12/02
02/04
22/05
11/07
30/08
19/10
08/12
Storms at Folkestone - all years
Hs (m)
Jan04
Jan05
Jan06
Jan07
Jan08
Jan09
Date


Folkestone - Significant Wave Height (Hs) during 2008
metres
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
0
2
4
5
10
15
20
25
30
Day in month