Pevensey Bay Directional WaveRider Buoy

Location
OS: 569358E 99118N
WGS84: *Latitude:* 50°47'0.2"N *Longitude:* 00°25'1.5"E

Water Depth
9.8m CD

Instrument Type
Datawell Directional WaveRider Buoy Mk III

Data Quality

C1(%)	Sample interval
96	30 minutes

Monthly Means *All times are GMT*

Month	H_s (m)	T_p (s)	T_m (s)	Direction (°)	SST (°C)	No. of days
January	0.87	5.6	3.8	161	6.9	28
February	0.79	6.2	3.7	161	5.6	28
March	0.90	5.5	3.8	168	5.2	31
April	0.59	4.5	3.4	183	8.5	30
May	0.72	6.0	3.7	201	11.9	31
June	0.37	4.3	3.1	126	14.1	18
July	0.44	4.3	3.1	167	17.9	31
August	0.56	4.9	3.4	204	15.4	31
September	0.63	5.5	3.4	183	18.5	30
October	1.01	5.5	3.8	189	16.9	31
November	1.12	5.9	4.0	195	13.7	30
December	1.27	6.1	4.1	189	10.7	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 2006									
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)
03-Dec-2006 09:30	4.10	9.1	6.6	205	6.67	HW	6.0	0.17	0.70
30-Dec-2006 06:30	3.59	7.7	5.9	205	5.53	HW	4.6	-0.32	0.65
11-Dec-2006 04:00	3.59	8.3	6.2	218	4.93	HW + 1	4.3	-0.24	-0.38
07-Dec-2006 07:30	3.34	9.1	6.0	211	1.65	HW - 5	6.0	0.12	0.45

* *Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Newhaven). 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.*

Highest storm events in 2006									
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)**
20-Nov-2006 04:00	3.13	8.3	5.9	212	1.60	HW - 6	5.5	0.22	0.70
17-Nov-2006 19:30	3.09	7.7	5.6	201	5.03	HW - 1	4.5	0.01	0.51

Annual Statistics

Year	Annual H_s exceedance* (m)						Annual Maximum H_s	
	0.05%	**0.5%**	**1%**	**2%**	**5%**	**10%**	**Date**	**A_{max} (m)**
2003	3.38	2.66	2.41	2.08	1.61	1.34	02-Nov-2003 11:30	4.18
2004	3.65	2.72	2.51	2.24	1.86	1.53	31-Oct-2004 17:00	3.92
2005	3.44	2.83	2.37	2.09	1.71	1.31	03-Dec-2005 00:00	3.55
2006	3.59	2.89	2.64	2.33	1.91	1.59	03-Dec-2006 09:30	4.10

** i.e. 5 % of the H_s values measured in 2003 exceeded 1.61m*

Distribution plots

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

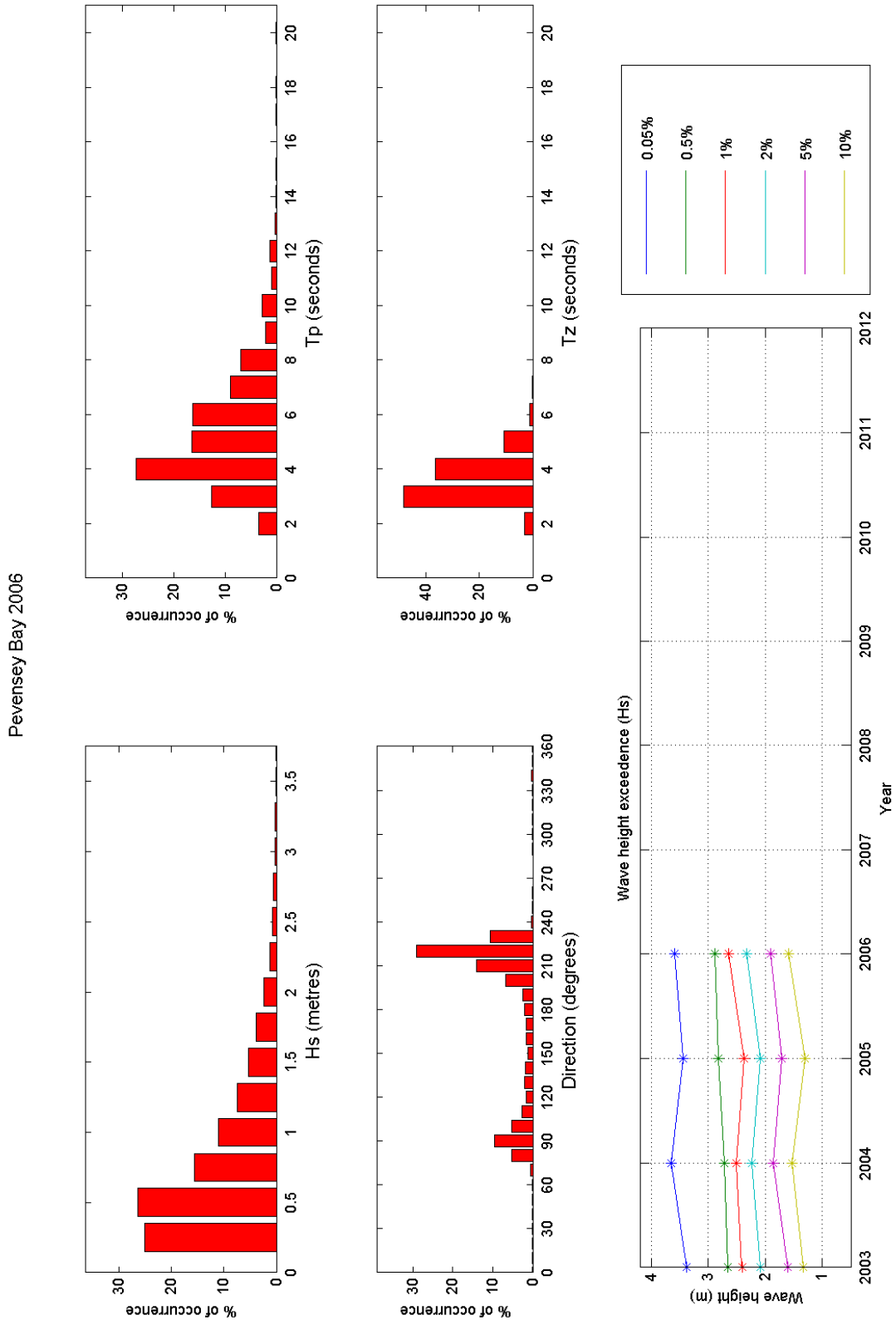
- Percentage of occurrence of H_s, T_p, T_z and Direction for 2006
- Percentage wave height exceedance (all recorded years) – note that the statistics for 2003 were based on measurements from July to December only
- Joint distribution of all parameters for 2006, given both as number of observations and as percentage of occurrence
- Cumulative joint distribution of parameters from start of records (percentage of occurrence only)
- Incidence of storms during 2006 and for all previous years. Storms are defined using the Peaks-over-Threshold method. The highest H_s of each storm is shown.
- Annual time series of H_s (red line is storm threshold)

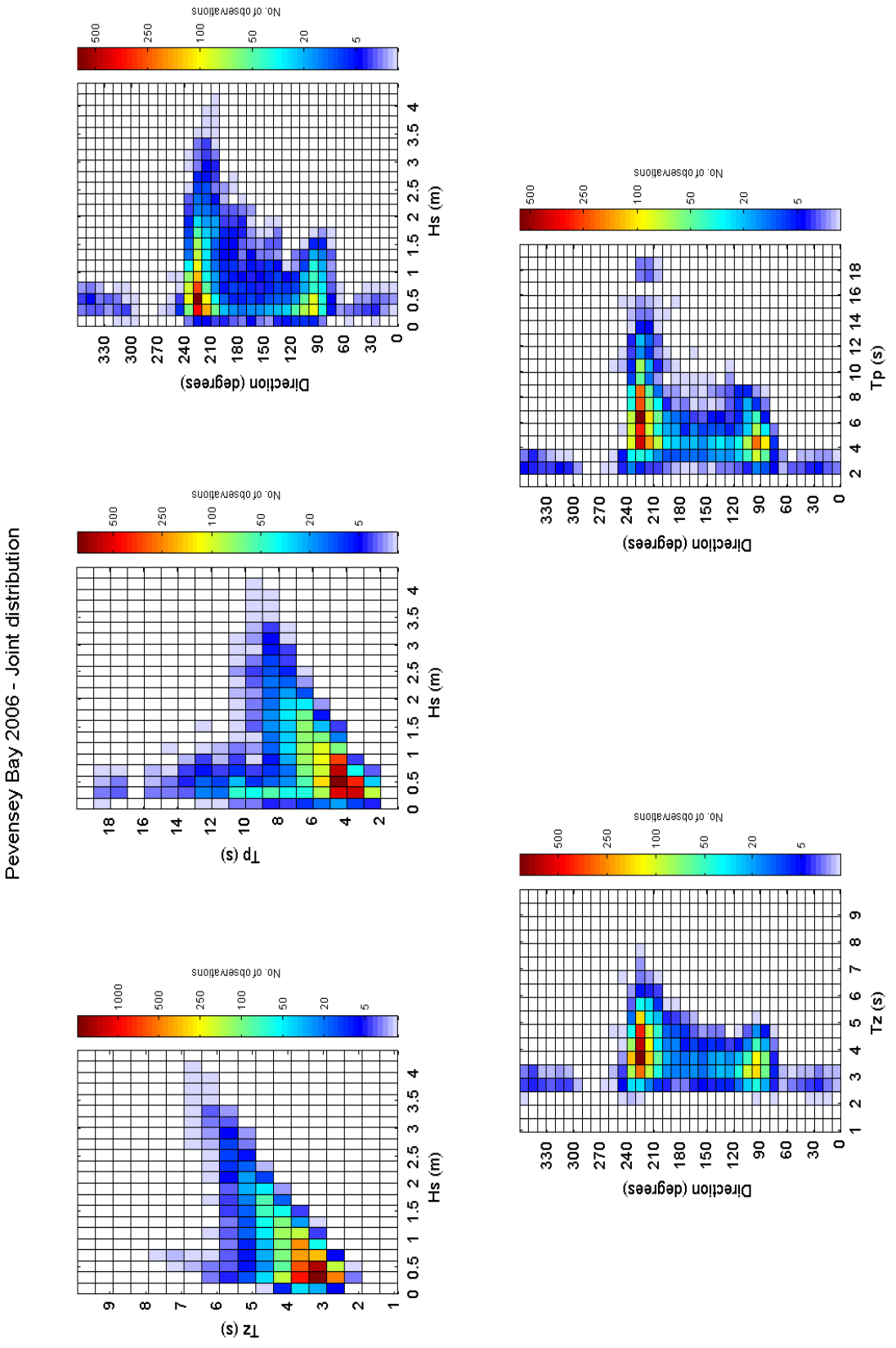
General

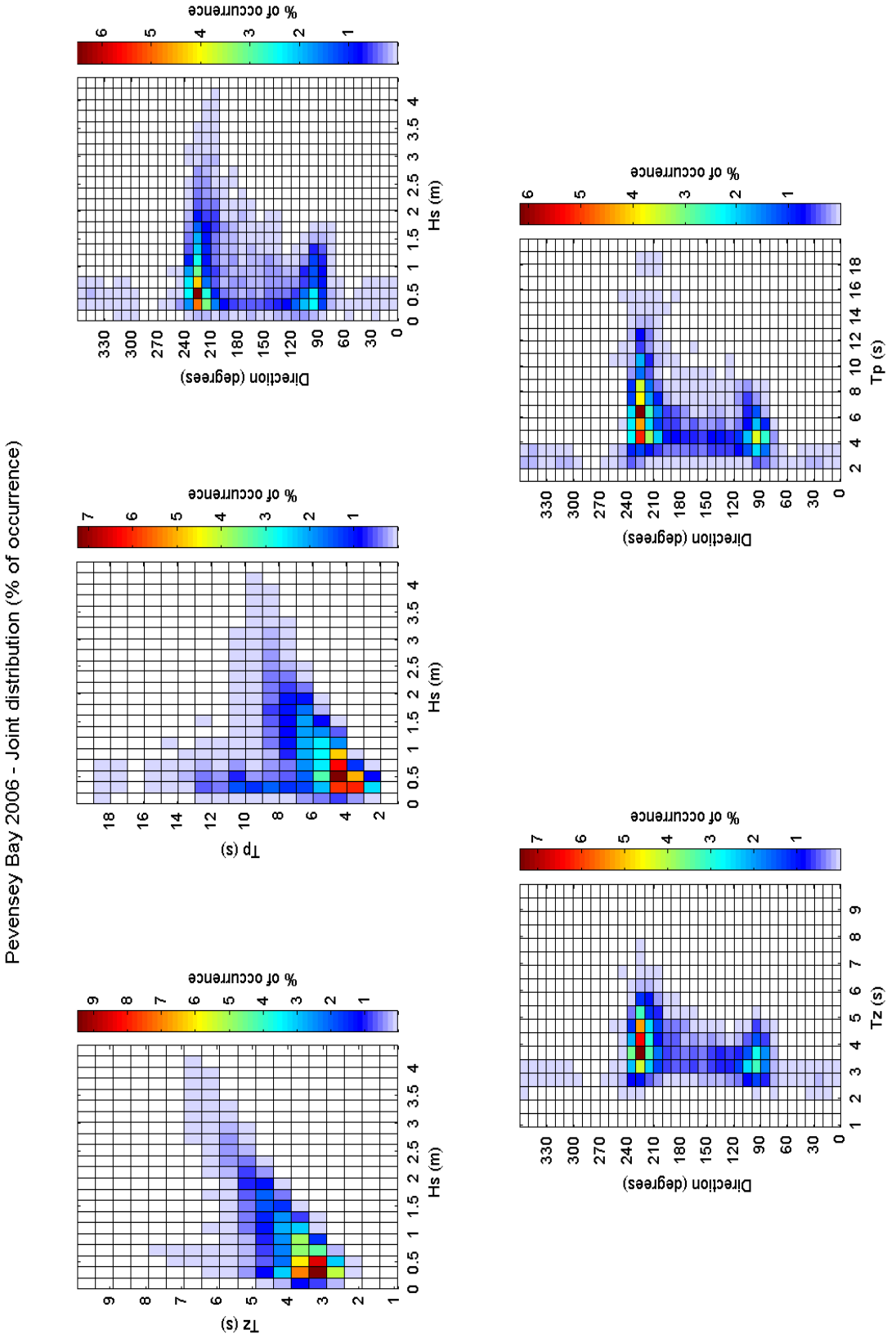
The buoy was first deployed on 8 July 2003. The wave directions recorded by the Datawell Directional WaveRider Mk III were found to be contaminated by a significant tidal signature, compounded by the on-board data processing. The buoy received new electronics to fix this problem in late March 2004; wave directions measured before April 2004 were excluded from the analysis.

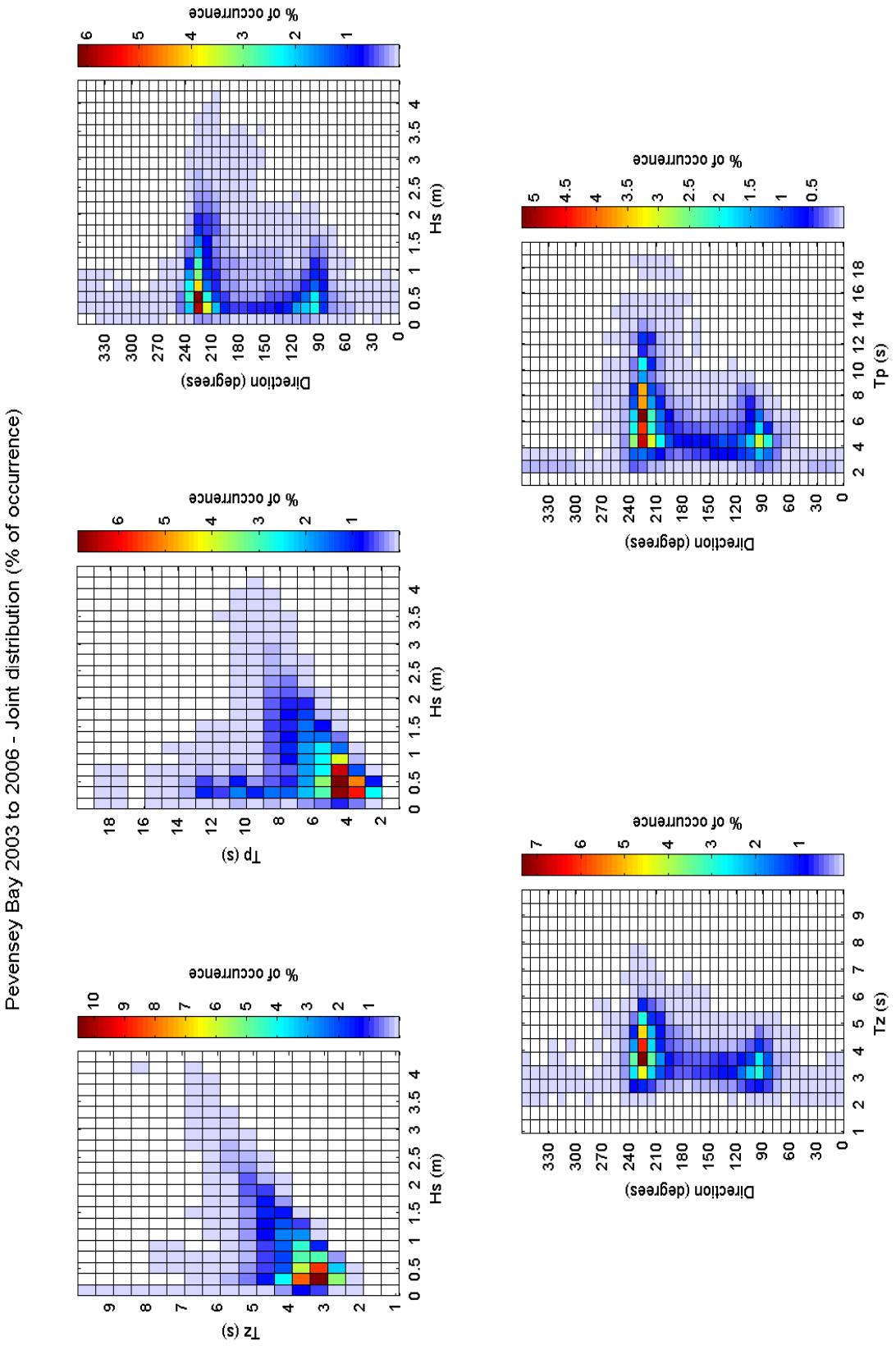
Acknowledgements

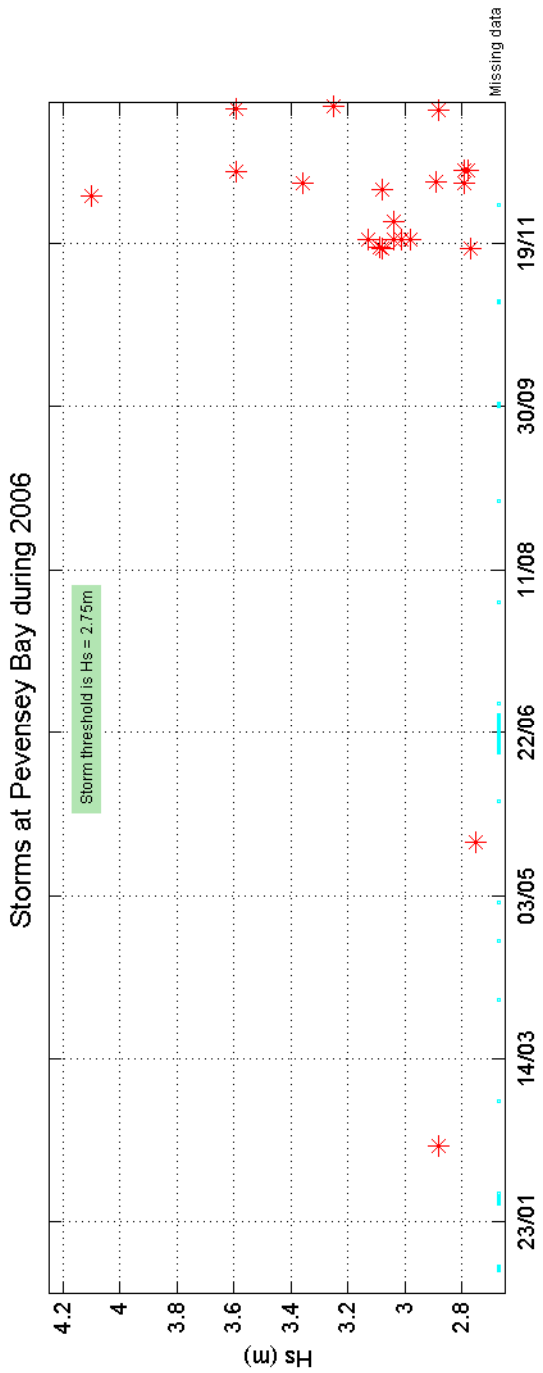
Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.

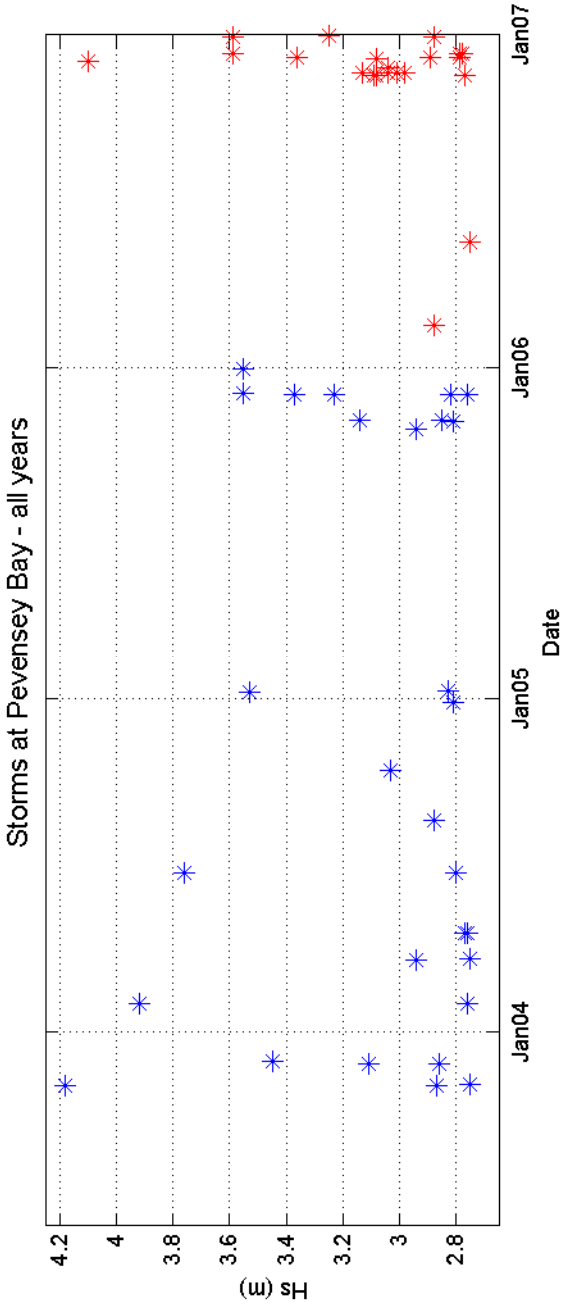

Pevensey Bay 2006
% of occurrence
Hs (metres)
Tp (seconds)
Direction (degrees)
Tz (seconds)
Wave height exceedence (Hs)
Wave height (m)
Year
0.05%
0.5%
1%
2%
5%
10%

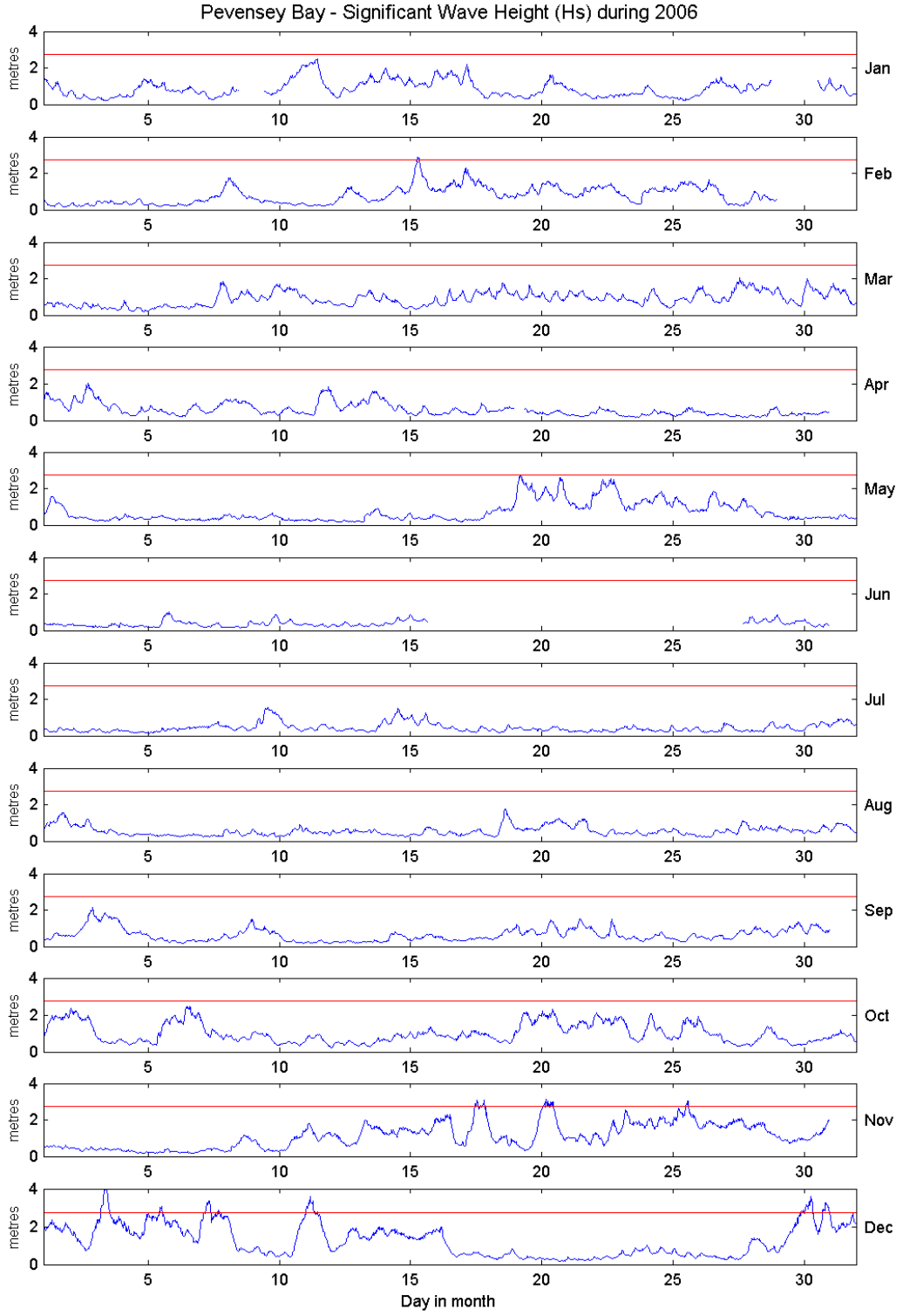

Pevensey Bay 2006 - Joint distribution
Direction (degrees)
Hs (m)
No. of observations
Tp (s)
Tz (s)


Pevensey Bay 2006 - Joint distribution (% of occurrence)
Direction (degrees)
Hs (m)
% of occurrence
Tp (s)
Tz (s)


Pevensey Bay 2003 to 2006 - Joint distribution (% of occurrence)
Direction (degrees)
Hs (m)
% of occurrence
Tp (s)
Tz (s)


Storms at Pevensey Bay during 2006
Storm threshold is Hs = 2.75m
Missing data
Hs (m)
4.2
4
3.8
3.6
3.4
3.2
3
2.8
23/01
14/03
03/05
22/06
11/08
30/09
19/11


Storms at Pevensey Bay - all years
Hs (m)
4.2
4
3.8
3.6
3.4
3.2
3
2.8
Jan04
Jan05
Jan06
Jan07
Date


Pevensey Bay - Significant Wave Height (Hs) during 2006
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