

Boscombe Directional Waverider Buoy

Location

OS: 411413E 90203N
 WGS84: Latitude: 50° 42.68' N Longitude: 001° 50.38' W

Water Depth

Approx. 10m CD

Instrument Type

Datwell Directional Waverider Buoy Mk III

Data Quality

C1(%)	Sample interval
99	30 minutes

Monthly Means

All times GMT

Month	H _s	T _p	T _z	Direction	SST	No. of days
	(m)	(s)	(s)	(°)	(°C)	
January	0.93	9.6	4.2	186	8.9	29
February	0.64	7.7	3.9	174	8.4	28
March	0.64	7.6	4.2	184	8.6	31
April	0.46	6.4	3.7	176	9.9	30
May	0.36	5.7	3.5	162	13.2	31
June	0.40	5.8	3.6	188	16.0	30
July	0.53	5.8	3.4	185	17.5	31
August	0.61	5.3	3.5	186	17.9	31
September	0.56	6.1	3.8	172	16.7	30
October	0.58	7.0	4.0	186	14.7	29
November	0.50	6.6	4.3	177	11.5	27
December	0.47	7.5	4.2	172	8.3	22

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 07:00	3.84	8.3	6.5	180	0.78	HW -4	2.34	0.70	1.17
13-Jan-2008 21:30	3.18	7.1	5.8	166	0.47	HW -3	1.02	0.27	0.53
03-Feb-2008 21:00	3.08	7.7	5.7	163	0.67	HW	0.63	0.33	0.46
05-Sep-2008 12:00	2.82	7.7	5.5	156	0.90	HW +1	1.03	0.40	0.48
15-Jan-2008 10:30	2.79	7.1	5.5	173	0.91	HW	2.15	0.65	0.73

* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge on Bournemouth Pier). 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	2.74	2.17	1.95	1.53	1.19	0.98	14-Nov-2003 11:00	2.79
2004	2.98	2.28	1.96	1.69	1.30	1.02	08-Jan-2004 09:30	3.62
2005	2.62	1.81	1.59	1.40	1.11	0.90	02-Nov-2005 01:00	2.84
2006	2.82	2.24	2.03	1.82	1.47	1.17	29-Dec-2006 23:00	3.14
2007	2.94	2.07	1.84	1.63	1.33	1.07	18-Nov-2007 14:00	3.19
2008	3.08	2.32	2.02	1.71	1.34	1.05	10-Mar-2008 07:00	3.84

* i.e. 5 % of the H_s values measured in 2003 exceeded 1.19m

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 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 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 storm waves for 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. Note that the buoy was not deployed during the late autumn storms in 2005 – see below.
- Annual time series of H_s (red line is storm threshold)

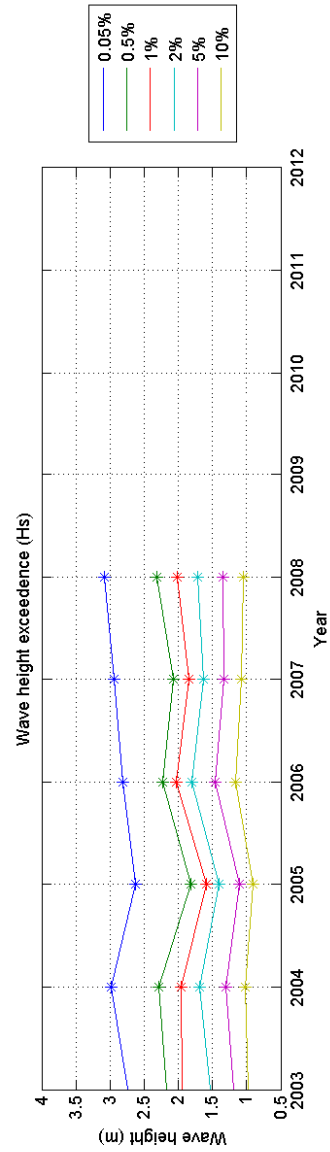
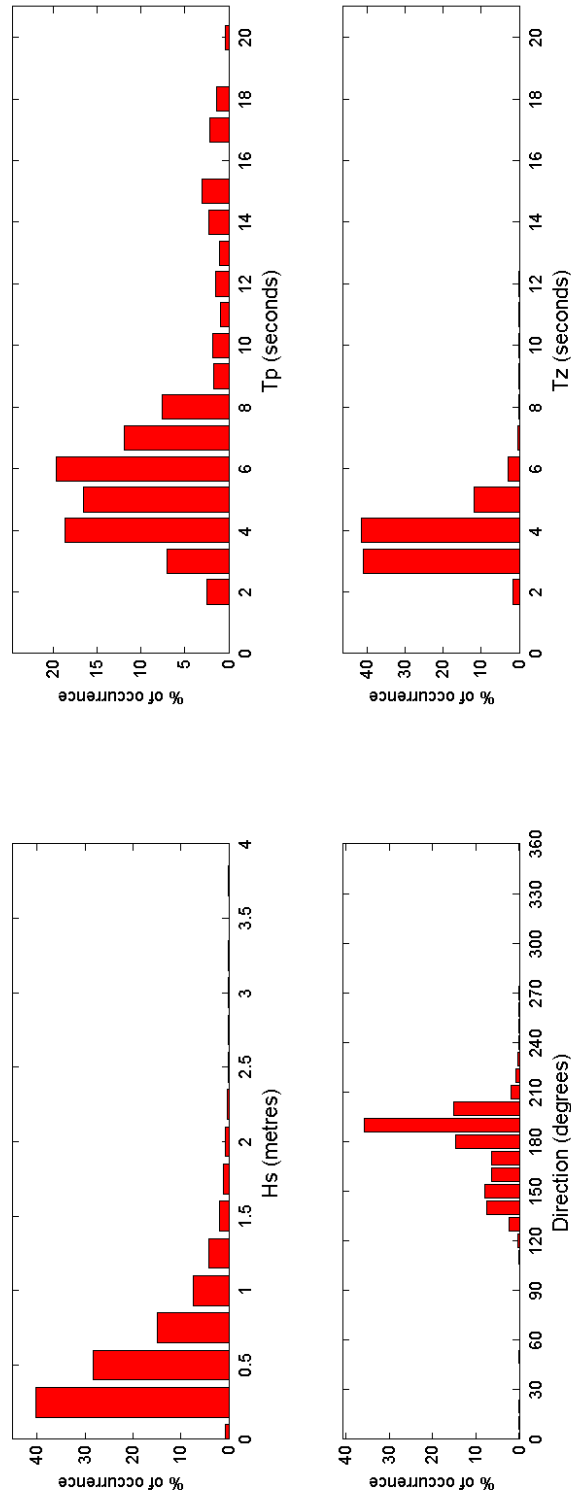
General

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 February 2004; wave directions measured before March 2004 were excluded from the analysis.

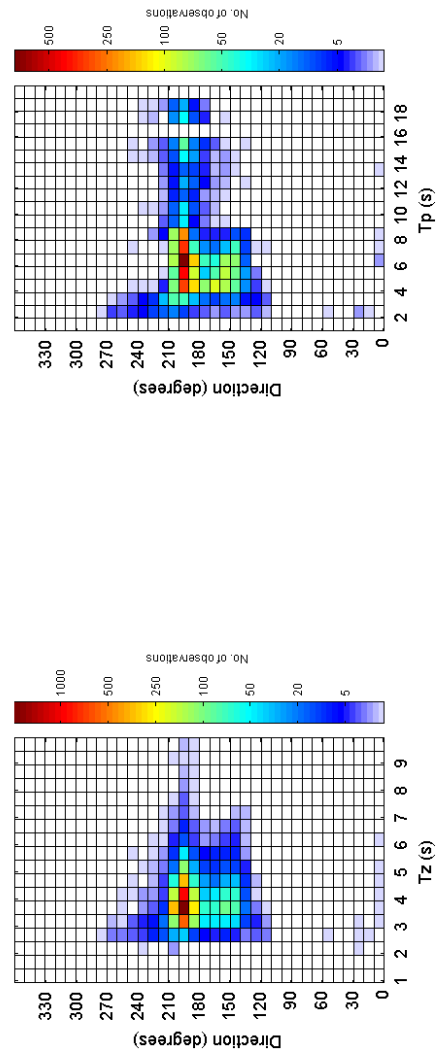
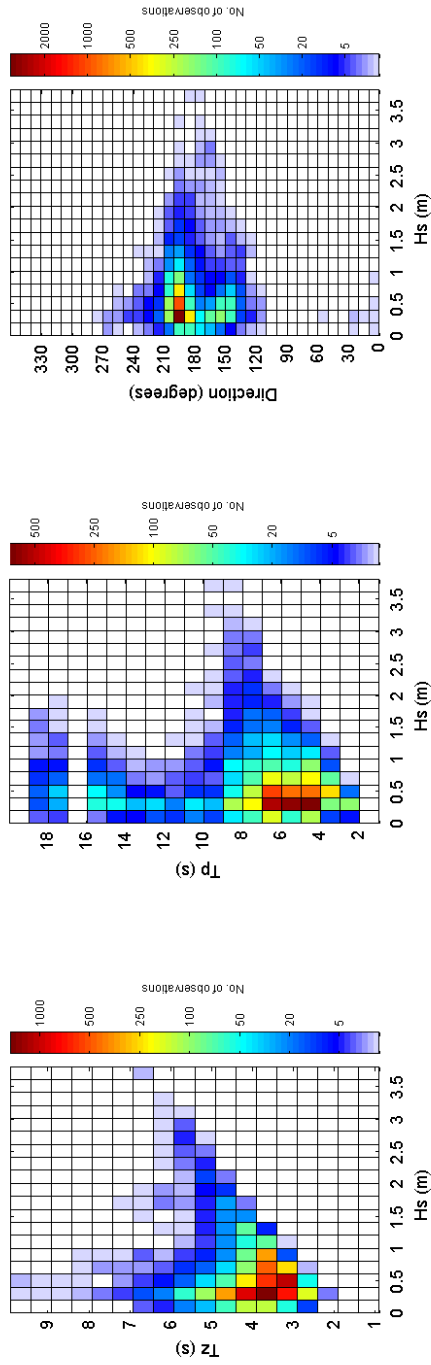
Acknowledgements

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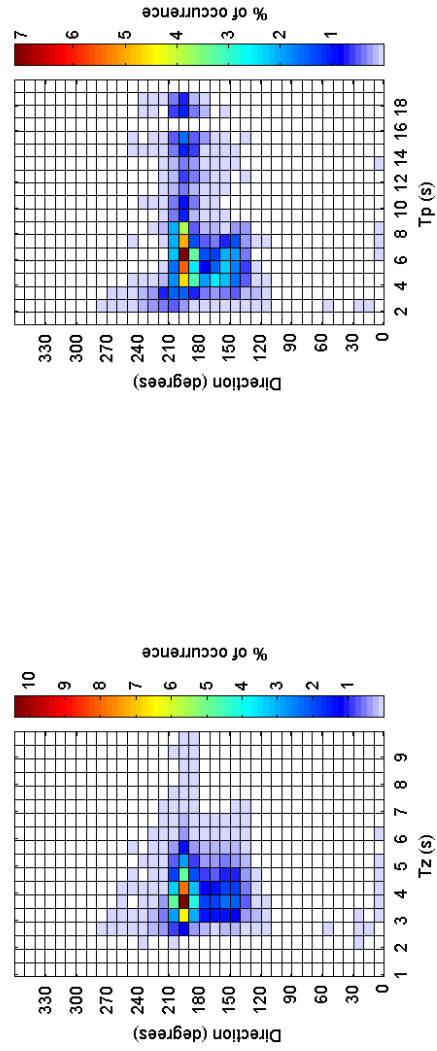
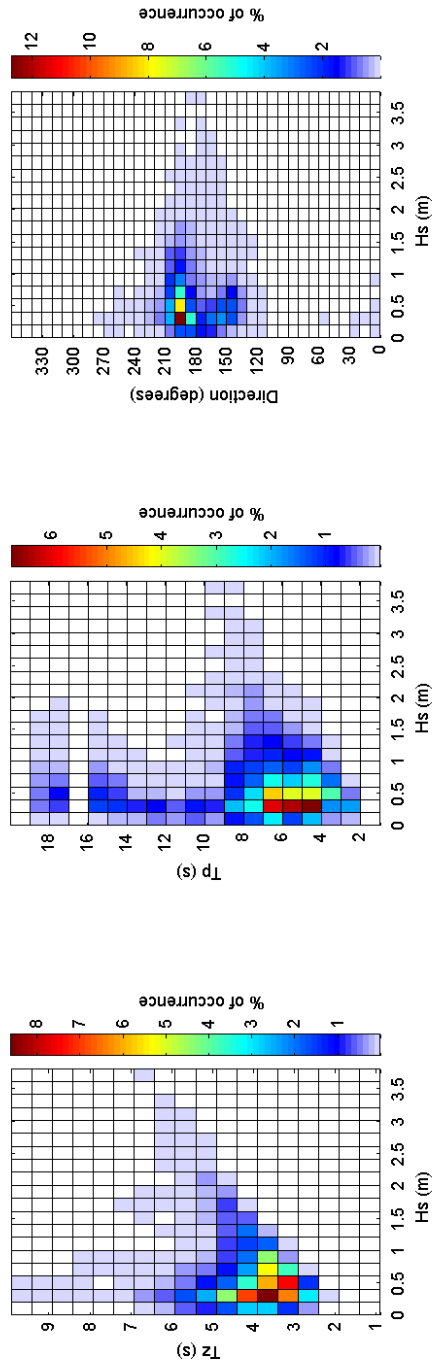
Boscombe 2008



Boscombe 2008 - Joint distribution



Boscombe 2008 - Joint distribution (% of occurrence)



Boscombe 2003 to 2008 - Joint distribution (% of occurrence)

