

## Hayling Island Directional WaveRider Buoy

### Location

OS: 473504E 93216N  
 WGS84: Latitude: 50°43.9936'N Longitude: 00°57.5557'W

### Water Depth

10.2m CD

### Instrument Type

Datowell Directional WaveRider Buoy Mk III

### Data Quality

C1(%)	Sample interval
97	30 minutes

### Monthly Means

Hayling Island 2004							
Month	H <sub>s</sub>	H <sub>max</sub>	T <sub>p</sub>	T <sub>z</sub>	Direction	SST	No. of days
	(m)	(m)	(s)	(s)	(°)	(°C)	
January	0.967	1.471	9.9	4.2	-	7.9	31
February	0.687	1.039	9.2	4.1	-	-	26
March	0.689	1.048	9.4	4.0	208	-	30
April	0.532	0.814	8.7	3.8	185	-	29
May	0.403	0.621	7.3	3.4	186	-	31
June	0.505	0.779	5.9	3.2	203	16.3	30
July	0.474	0.731	4.9	3.2	200	17.3	31
August	0.611	0.945	5.8	3.5	191	19.3	31
September	0.705	1.101	6.5	3.5	193	17.8	30
October	1.020	1.587	6.8	3.9	182	14.5	31
November	0.491	0.746	7.2	3.4	203	12.0	30
December	0.635	0.982	10.7	4.2	183	9.6	26

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 2004									
Date/Time	H <sub>s</sub>	T <sub>p</sub>	T <sub>z</sub>	Dir.	Water level elevation* (OD)	Tidal stage	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
08-Jan-2004 10:30	3.64	8.3	6.3	-	1.75	HW -1	3.4	0.48	0.49
31-Jan-2004 11:00	3.19	9.1	6.1	-	0.19	HW -5	1.7	0.73	0.75
23-Jun-2004 15:30	2.99	11.8	6.3	186	1.36	HW -1	2.9	-0.06	-0.10

\* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Portsmouth). The surge shown is the residual at the time of the highest H<sub>s</sub>. The maximum tidal surge is the largest positive surge during the storm event.

Year	Annual $H_s$ exceedance* (m)					Annual Maximum $H_s$ (m)	
	0.5%	1%	2%	5%	10%	Date	$A_{max}$
2003	2.33	2.11	1.85	1.41	1.10	29-Nov-2003 10:00	2.68
2004	2.32	2.11	1.91	1.60	1.26	08-Jan-2004 10:30	3.64
2005							

\* i.e. 5 % of the  $H_s$  values measured in 2003 exceeded 1.41m

### 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 2004
- 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 2004, 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 2004 and for all previous years. Storms 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 waves threshold)

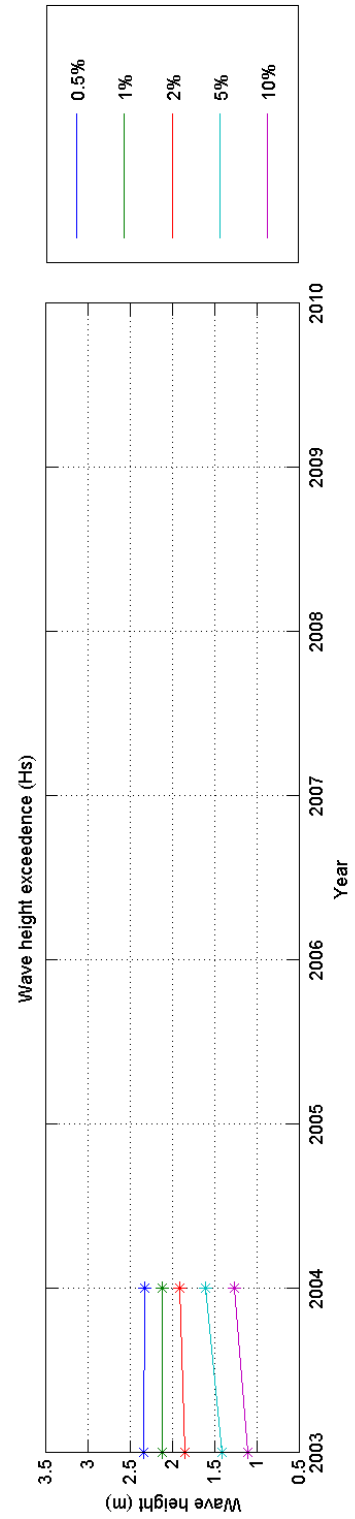
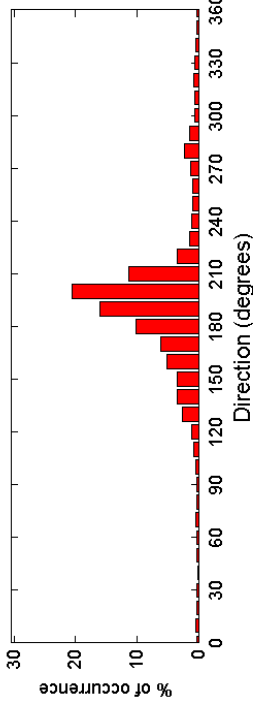
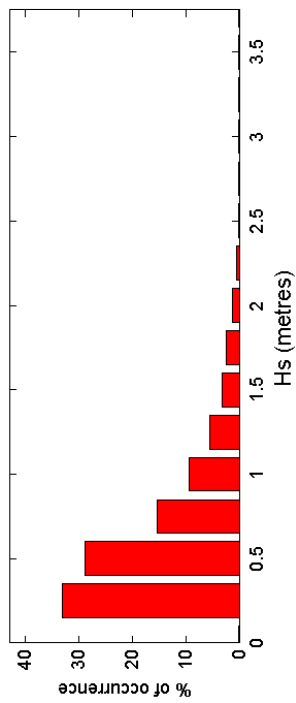
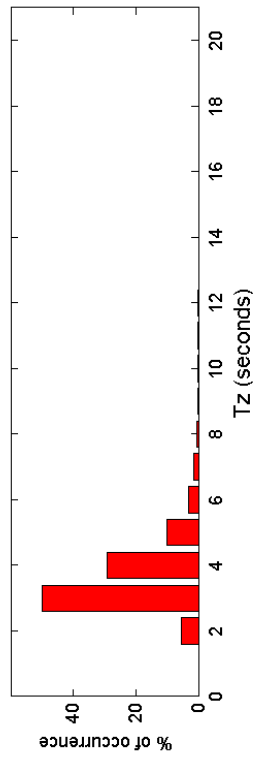
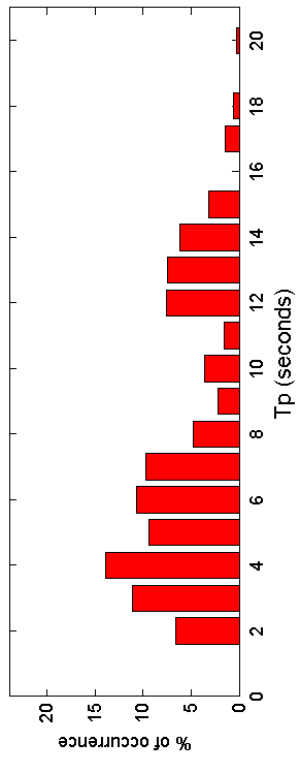
### General

The buoy was first deployed on 10 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 February 2004; wave directions measured before March 2004 were excluded from the analysis.

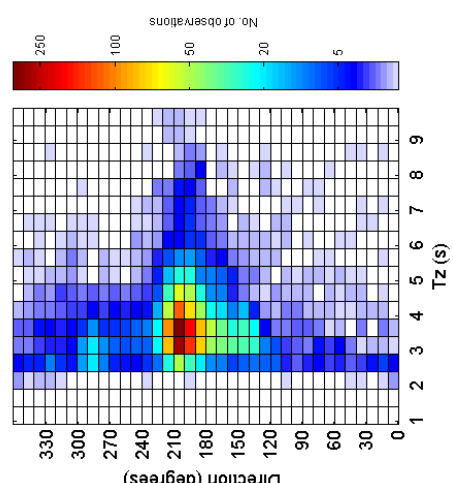
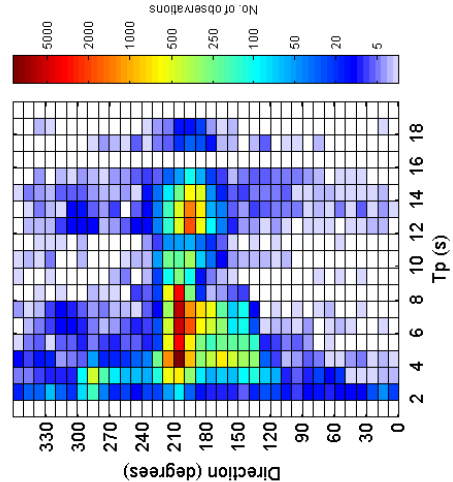
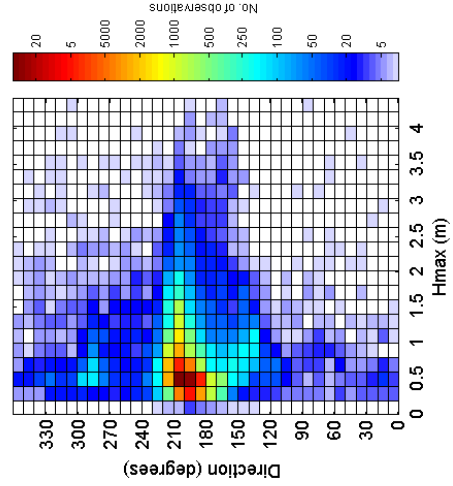
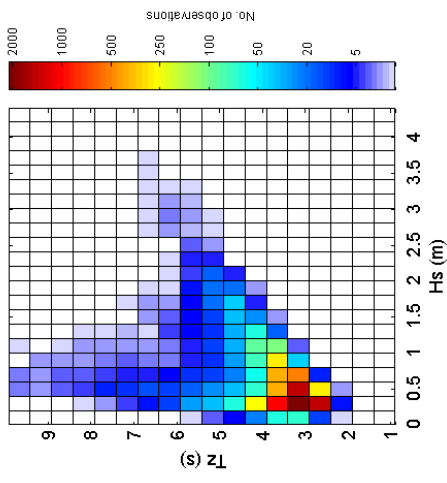
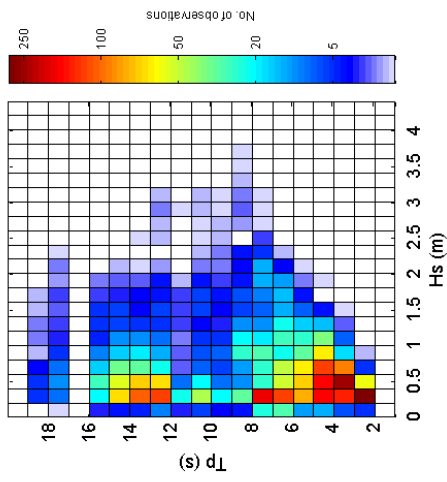
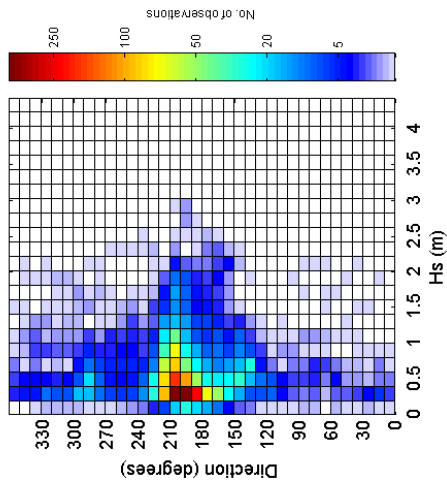
### Acknowledgements

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.

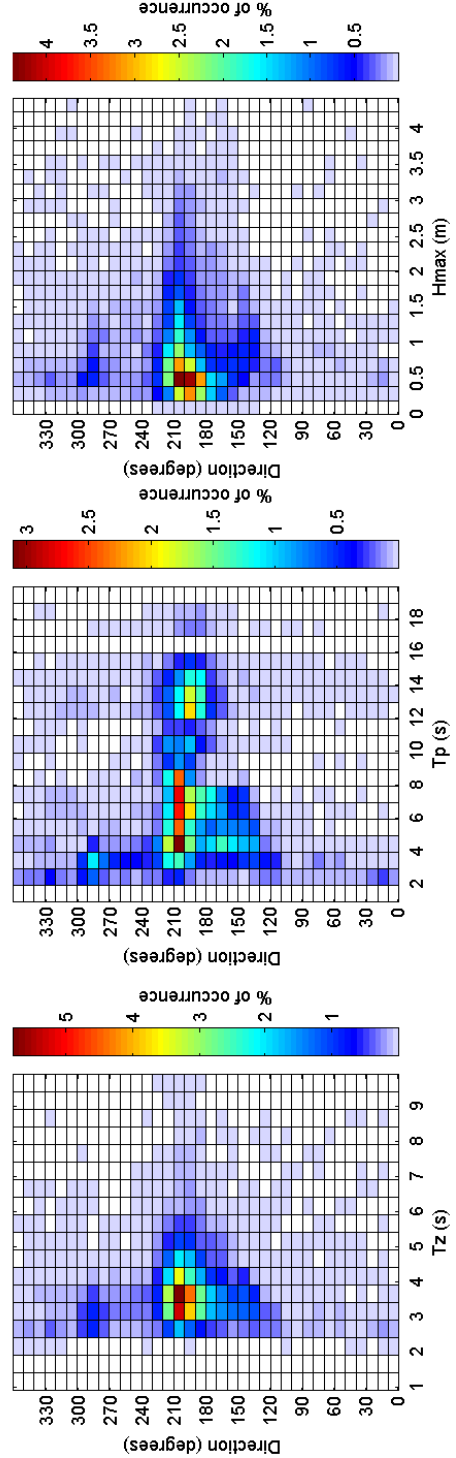
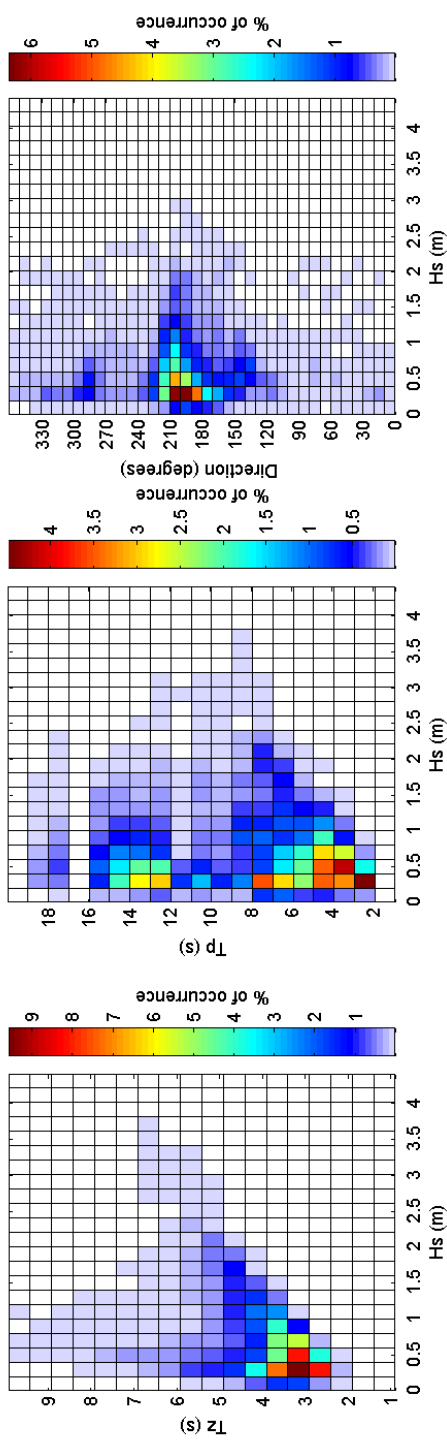
Hayling Island 2004



Hayling Island 2004 - Joint distribution



Hayling Island 2004 - Joint distribution (% of occurrence)



Hayling Island 2003 to 2004 - Joint distribution (% of occurrence)

