

## Rustington Directional WaveRider Buoy

### Location

OS: 506331E 93784N

WGS84: Latitude: 50°44.0365'N Longitude: 00°29.6765'W

### Water Depth

9.9m CD

### Instrument Type

Datawell Directional WaveRider Buoy Mk III

### Data Quality

C1(%)	Sample interval
99	30 minutes

### Monthly Means

All times GMT

Month	H <sub>s</sub>	T <sub>p</sub>	T <sub>z</sub>	Direction	SST	No. of days
	(m)	(s)	(s)	(°)	(°C)	
January	0.91	7.3	3.9	165	7.8	31
February	0.81	7.3	3.9	177	6.0	27
March	0.99	7.1	4.0	179	5.4	30
April	0.60	5.0	3.4	196	8.9	30
May	0.80	6.4	3.9	211	12.3	31
June	0.43	4.8	3.3	167	15.9	30
July	0.47	4.9	3.3	191	19.3	31
August	0.61	4.5	3.2	225	18.9	31
September	0.72	7.5	3.7	193	18.5	30
October	1.09	5.9	3.9	132	16.7	31
November	1.18	6.0	4.0	202	13.5	30
December	1.37	7.8	4.3	197	10.5	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 2006									
Date/Time	H <sub>s</sub>	T <sub>p</sub>	T <sub>z</sub>	Dir.	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
03-Dec-2006 08:00	4.81	9.1	6.8	200	6.50	HW - 1	5.0	0.60	0.70
30-Dec-2006 06:00	3.78	8.3	6.3	210	5.52	HW - 1	4.8	-0.16	-0.32
05-Dec-2006 10:30	3.55	10.0	6.5	214	6.99	HW - 5	5.2	0.35	0.58
07-Dec-2006 06:00	3.5	9.1	6.3	204	1.57	HW - 6	5.0	0.40	0.46

\* Tidal information is obtained from the nearest recording tide gauge (at Brighton Marina). 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)	
	0.05%	0.5%	1%	2%	5%	10%	Date	$A_{max}$
2003	3.27	2.76	2.47	2.27	1.85	1.45	29-Nov-2003 13:00	3.34
2004	3.83	2.81	2.62	2.37	2.03	1.65	08-Jan-2004 11:30	4.17
2005	3.64	3.01	2.56	2.19	1.79	1.42	02-Dec-2005 19:00	3.84
2006	3.84	3.01	2.76	2.45	2.05	1.68	03-Dec-2006 08:00	4.81

\* i.e. 5 % of the measured  $H_s$  values in 2003 exceeded 1.85m

## 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. 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 waves threshold)

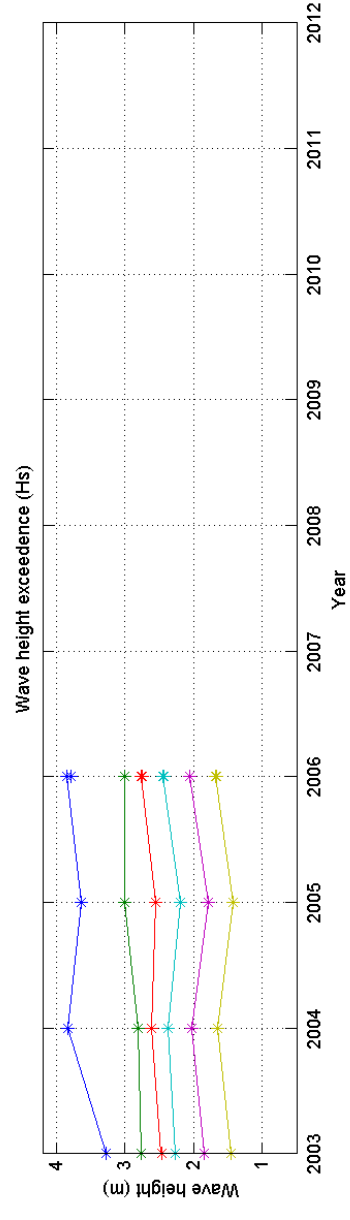
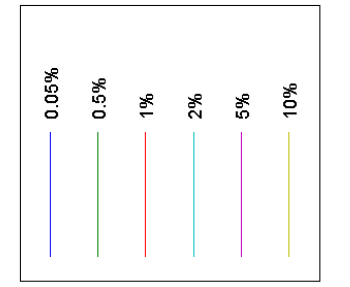
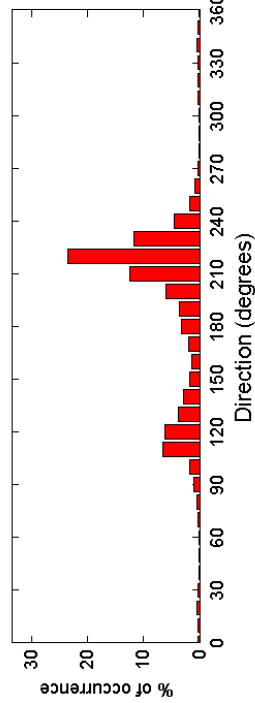
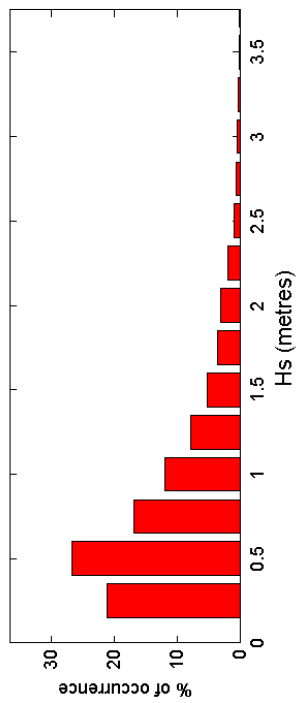
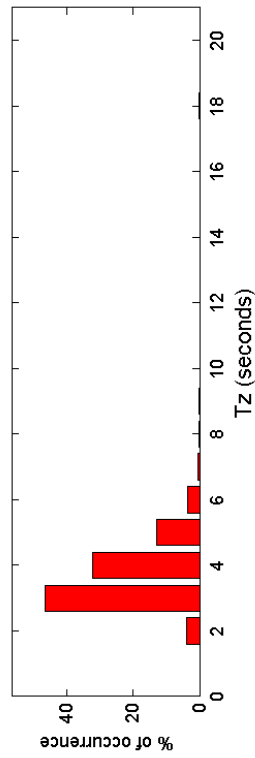
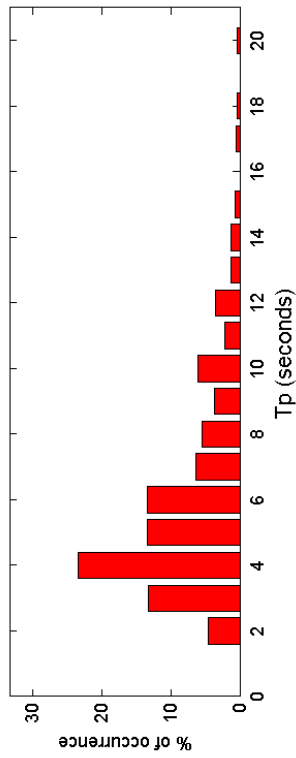
## General

The buoy was first deployed on 9 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 analysis.

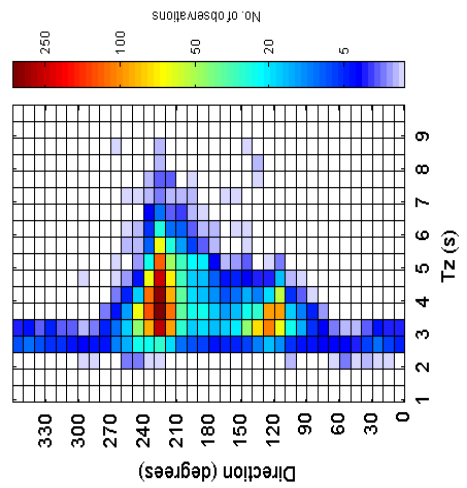
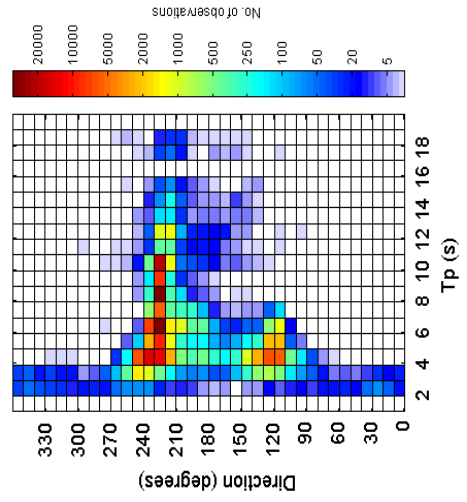
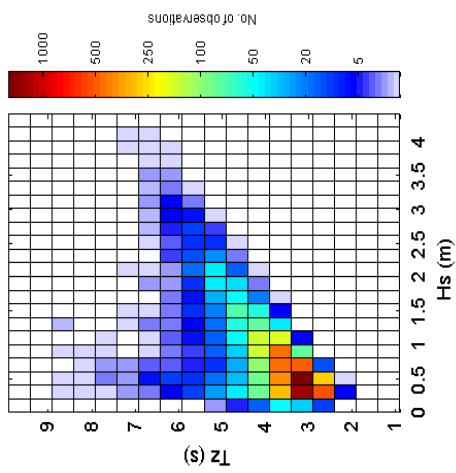
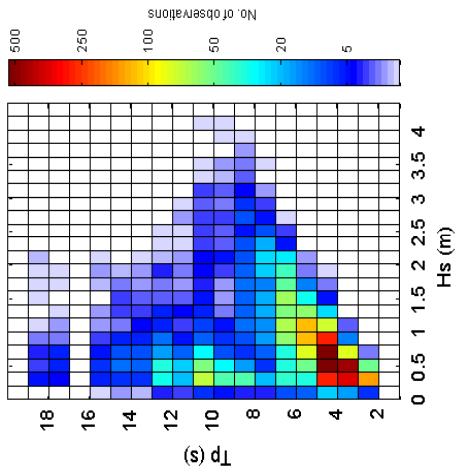
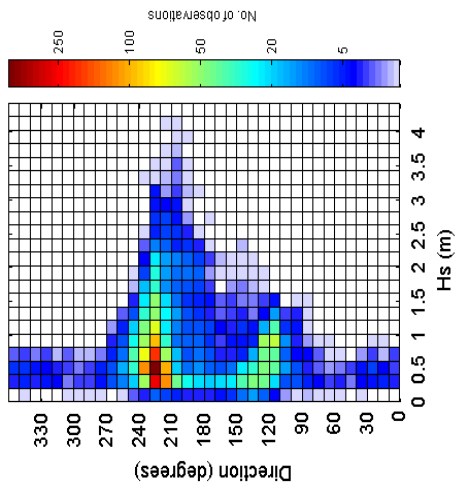
## Acknowledgements

Tidal data were kindly supplied by Brighton Marina.

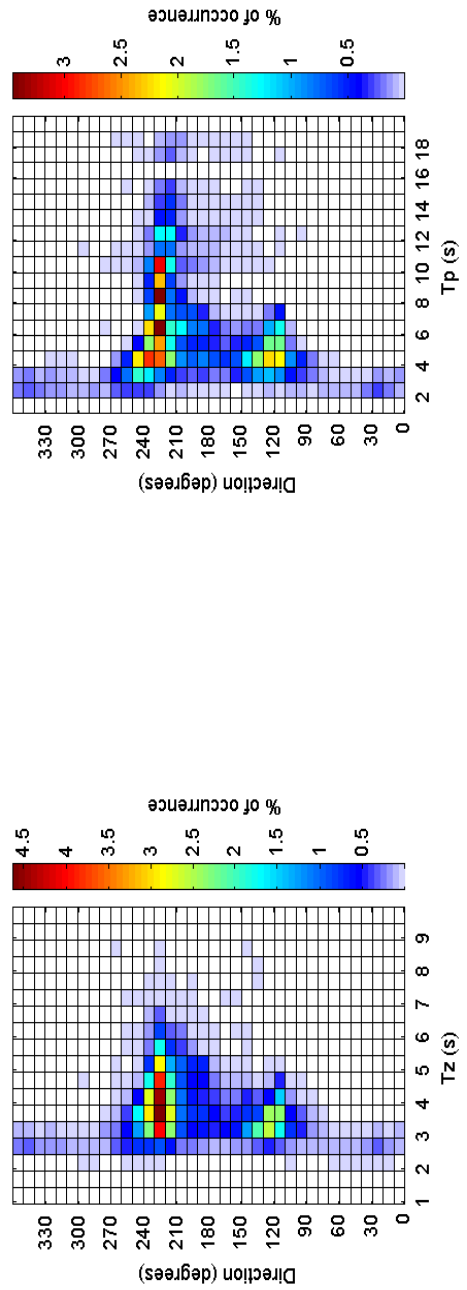
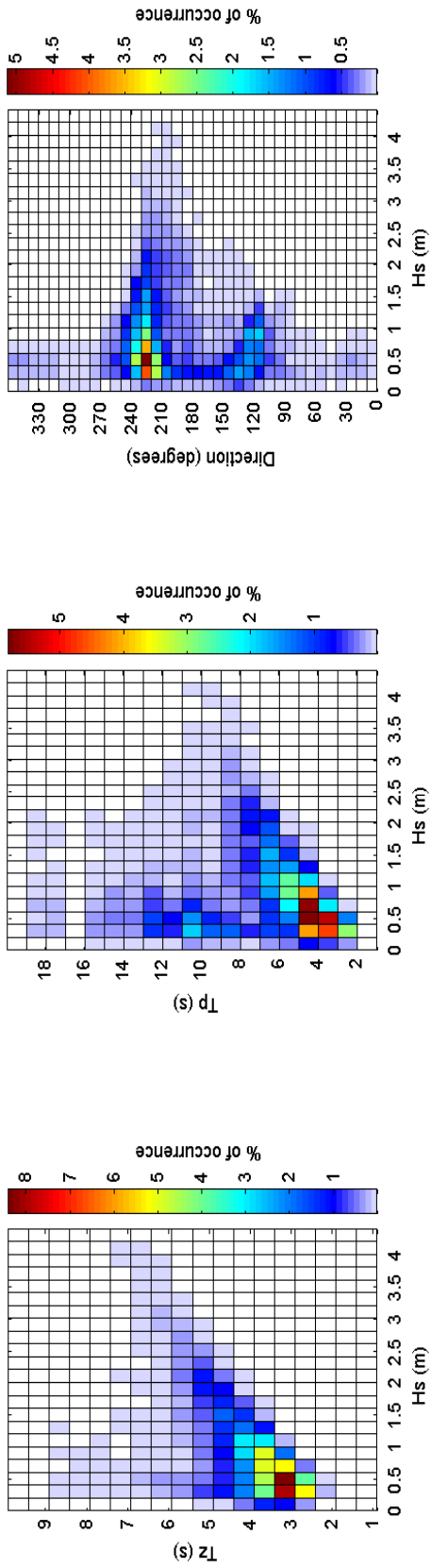
Rustington 2006



Rustington 2006 - Joint distribution



Rustington 2006 - Joint distribution (% of occurrence)



Rustington 2003 to 2006 - Joint distribution (% of occurrence)

