

Sandown Bay Directional Waverider Buoy

Location

OS: 461648E 83780N
 WGS84: Latitude: 50° 39.03' N Longitude: 001° 07.76' W

Water Depth

Approx. 11m CD

Instrument Type

Datowell Directional Waverider Buoy Mk III

Data Quality

C1(%)	Sample interval
100	30 minutes

Monthly Means

All times GMT

Month	H _s (m)	T _p (s)	T _z (s)	Direction (°)	SST (°C)	No. of days
January	0.81	7.4	4.0	175	8.5	31
February	0.60	5.8	3.7	155	8.2	29
March	0.56	6.1	3.8	174	8.3	31
April	0.47	5.6	3.6	159	9.4	30
May	0.41	4.7	3.4	133	12.9	31
June	0.32	5.3	3.5	172	15.7	30
July	0.43	5.5	3.4	174	17.3	31
August	0.50	5.1	3.5	177	18.1	31
September	0.55	5.2	3.6	151	16.8	30
October	0.52	6.0	3.8	175	14.8	31
November	0.51	5.7	3.9	159	11.6	30
December	0.55	6.1	3.9	155	8.6	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 11:30	3.63	8.3	6.3	173	2.12	HW -3	3.44	0.57	0.87
13-Dec-2008 06:00	3.36	8.3	6.2	172	-0.59	HW -5	2.86	0.13	-0.40
04-Feb-2008 01:00	2.75	7.7	5.6	153	0.04	HW +4	1.83	-0.01	0.15
04-Dec-2008 09:00	2.53	7.7	5.3	179	-0.18	HW -6	1.97	0.44	0.50

* Tidal information is obtained from the nearest recording tide gauge (the wave radar on Sandown 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 (m)	
	0.05%	0.5%	1%	2%	5%	10%	Date	A_{max}
2003	2.64	2.21	2.02	1.65	1.35	1.13	29-Nov-2003 09:00	2.79
2004	2.64	2.11	1.82	1.61	1.29	0.97	08-Jan-2004 10:30	3.17
2005	3.23	2.15	1.69	1.44	1.11	0.86	02-Dec-2005 18:00	3.79
2006	2.47	1.97	1.80	1.61	1.33	1.10	30-Dec-2006 00:00	2.75
2007	3.06	1.91	1.64	1.44	1.18	0.96	18-Nov-2007 16:00	3.22
2008	3.11	2.23	1.91	1.64	1.26	0.99	10-Mar-2008 11:30	3.63

* i.e. 5 % of the measured H_s values in 2003 exceeded 1.35m

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)
- 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)

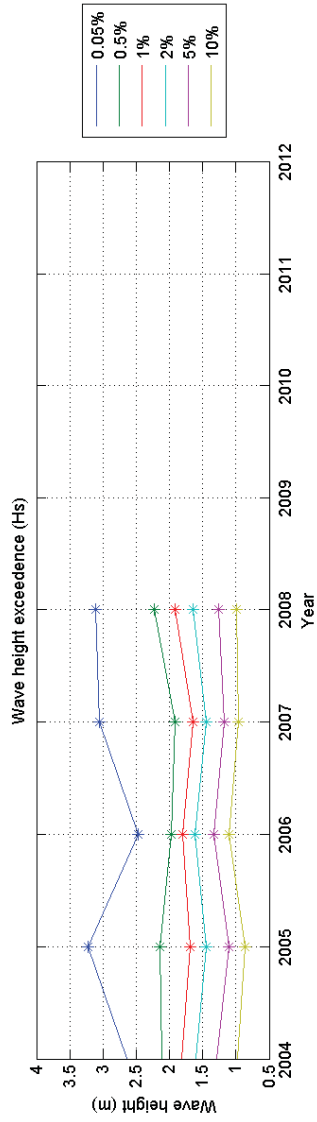
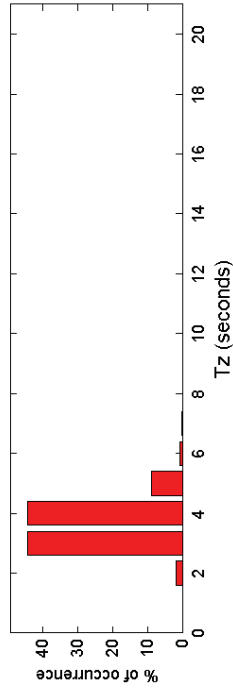
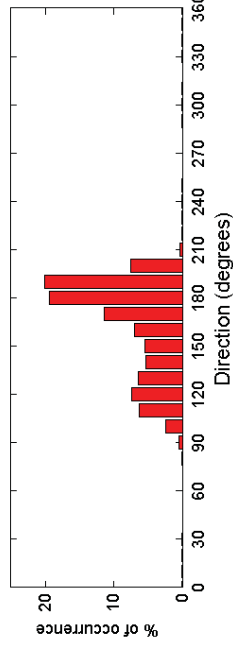
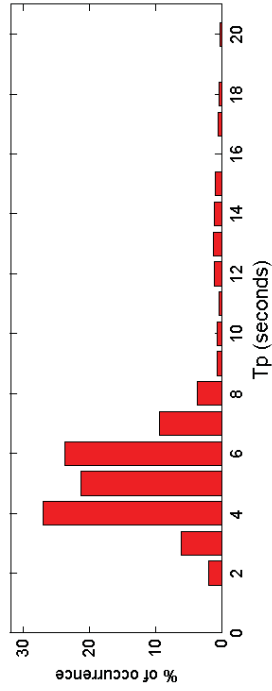
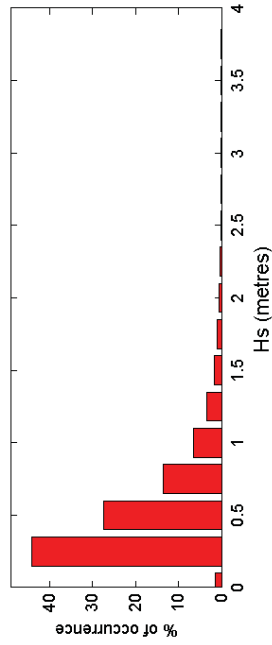
General

The buoy was first deployed on 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 during before March 2004 were excluded from the analysis.

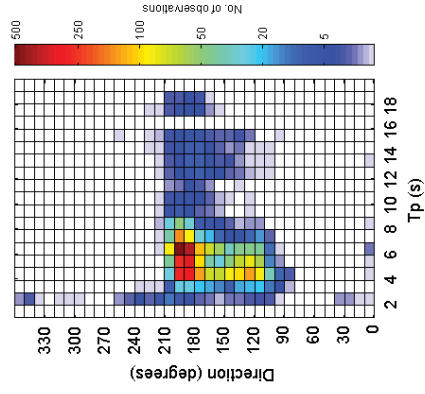
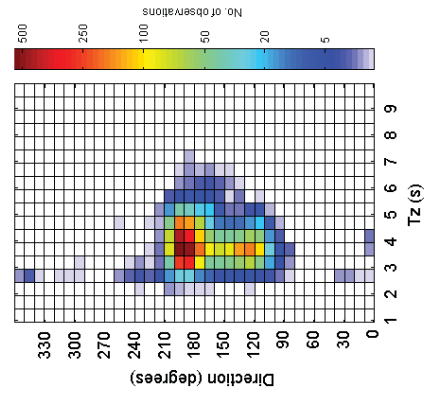
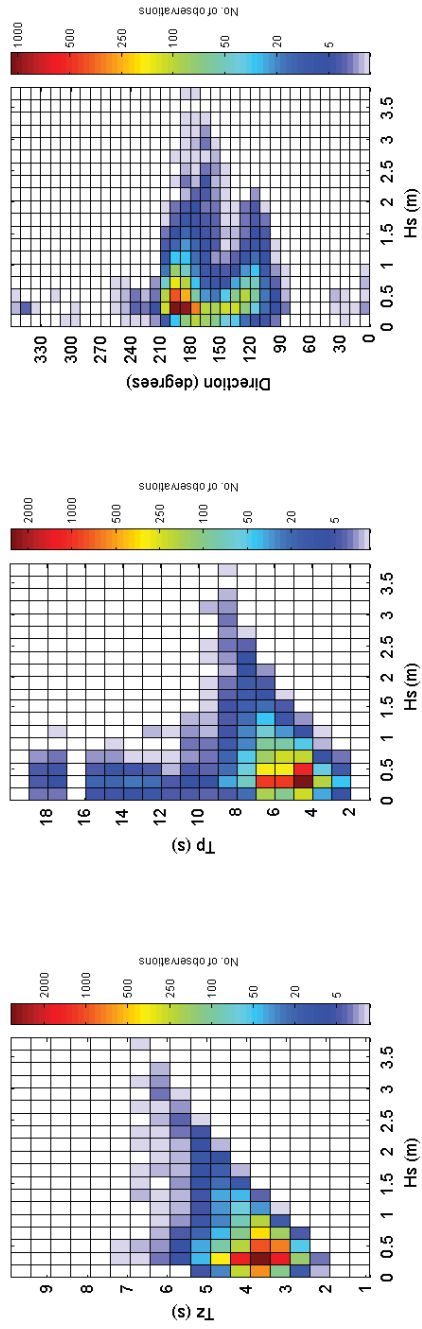
Acknowledgements

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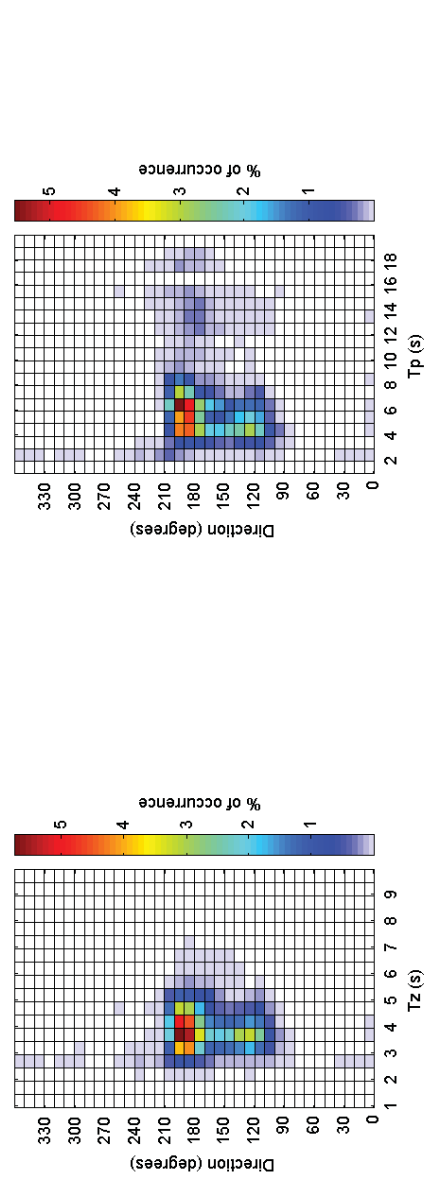
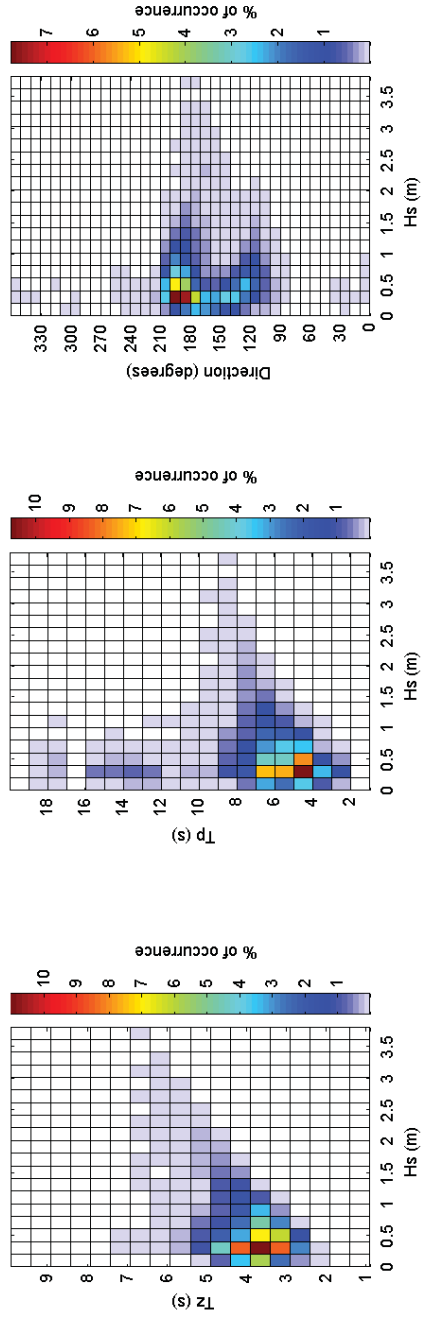
Sandown Bay 2008



Sandown Bay 2008 - Joint distribution



Sandown Bay 2008 - Joint distribution (% of occurrence)



Sandown Bay 2003 to 2008 - Joint distribution (% of occurrence)

